#### Wortman, Eric

| From:        | Wortman, Eric                                                                         |
|--------------|---------------------------------------------------------------------------------------|
| Sent:        | Friday, September 22, 2017 9:56 AM                                                    |
| То:          | 'timothy_hermann@xtoenergy.com'                                                       |
| Cc:          | 'Allison, Craig'; minnieg@utetribe.com; 'Bruce Pargeets'; Fallon, Gail; Okubo, Noreen |
| Subject:     | Final Part 71 Permits for River Bend Dehydration Site and Tap 5 Compressor Station    |
| Attachments: | XTO River Bend Dehy FINAL Initial Part 71 Permit V-UO-000026-2011.00.pdf; XTO Tap 5   |
|              | CS FINAL Initial Part 71 Permit V-UO-000018-2007.00.pdf                               |

Mr. Hermann,

I have attached the final requested permits for XTO Energy, Inc.'s Tap 5 Compressor Station and River Bend Dehydration Site issued pursuant to the Title V Operating Permit Program at 40 CFR Part 71 (Part 71). We will also be posting each of the final Part 71 permits in PDF format on our website at: <u>https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8</u>.

In accordance with the regulations at §71.11(i), both permits are effective immediately upon issuance, on September 22, 2017. Please review each condition carefully and note any restrictions placed on these sources. Procedures for appealing these permits can be found in 40 CFR 71.11(I). A petition to the Environmental Appeals Board (EAB) must be filed within 30 days of receipt of the corresponding final permit action.

If you have any questions or concerns regarding these final permit actions, please contact me.

Thank you,

Eric Wortman

Eric Wortman | Environmental Scientist U.S. Environmental Protection Agency Telephone: (617) 918-1624 | Email: wortman.eric@epa.gov

#### Wortman, Eric

| From:    | Wortman, Eric                                                                  |
|----------|--------------------------------------------------------------------------------|
| Sent:    | Friday, September 22, 2017 9:58 AM                                             |
| То:      | Wortman, Eric                                                                  |
| Subject: | Notice of Issuance of Title V Operating Permits on the Uintah and Ouray Indian |
|          | Reservation                                                                    |

This is to notify you that the EPA has issued two (2) final Clean Air Act (CAA) Title V operating permits for XTO Energy Inc.'s Tap 5 Compressor Station and the River Bend Dehydration Site pursuant to the Title V Operating Permit Program at 40 CFR Part 71 (Part 71). The final Part 71 permits will be available in PDF format on our website at: <a href="https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8">https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8</a>.

In accordance with the regulations at §71.11(i), the permits are effective immediately upon issuance, on September 22, 2017. Any person who failed to file comments on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision or other new grounds that were not reasonably foreseeable during the public comment period on the draft permit. The 30-day period within which a person may request review under this section begins when we have fulfilled the notice requirements for these final permit decisions. Motions to reconsider a final order by the Environmental Appeals Board (EAB) must be filed within 10 days after service of the final order. A petition to the EAB is under Section 307(b) of the CAA, a prerequisite to seeking judicial review of the final agency action. For purposes of judicial review, final agency action occurs when we issue or deny a final permit and agency review procedures are exhausted.

Thank you,

Eric Wortman

Eric Wortman | Environmental Scientist U.S. Environmental Protection Agency Telephone: (617) 918-1624 | Email: <u>wortman.eric@epa.gov</u>

### **Public Notice: Request For Comments**



### Draft Air Quality Permit to Operate for Federal Clean Air Act Title V to Control Air Pollutant Emissions from Multiple Facilities on the Uintah and Ouray Indian Reservation

#### Public notice issued:

August 18, 2017

#### Written comments due:

5 p.m., September 18, 2017

#### What is being proposed?

The EPA proposes to issue a Clean Air Act (CAA), Title V Permit to Operate in accordance with 40 Code of Federal Register, Part 71, for the following facilities owned and operated by XTO Energy, Inc. on Indian country lands within the Uintah and Ouray Indian Reservation: Tap 5 Compressor Station and River Bend Dehydration Site.

EPA issues CAA Title V operating permits in Indian country where EPA has not approved a tribe to implement the Title V operating permit program. The Ute Indian Tribe does not have an approved Title V operating permit program.

Air pollutant emissions come from equipment operating at the facilities. The draft operating permit includes all CAA control requirements that apply to the facilities and associated equipment emitting air pollutants.

#### Where are the facilities located?

Tap 5 Compressor Station: Uintah and Ouray Indian Reservation Uintah County, Utah Latitude: 39.9750760N Longitude: 109.6360850W

<u>River Bend Dehydration Site</u>: Uintah and Ouray Indian Reservation Uintah County, Utah Latitude: 39.94851N Longitude: 109.77057W

#### **Permit number:**

Tap 5 CS: V-UO-000018-2007.00 River Bend Dehy: V-UO-000026-2011.00

#### How can I review documents? What happens next?

You can review the draft CAA Title V Operating Permit, the application, and Statement of Basis at:

Uintah County Clerk's Office 147 East Main St #6 Vernal, Utah 84078

Ute Indian Tribe Energy and Minerals Department Office 988 South 7500 East, Annex Building Fort Duchesne, Utah 84026

U.S. EPA Region 8 Air Program Office (8P-AR) 1595 Wynkoop St. Denver, CO 80202 Phone: 303-312-6649

All documents will be available for review at the U.S. EPA Region 8 office Monday through Friday from 8:00 am to 4:00 pm (excluding Federal holidays).

Electronic copies of the draft Title V permits, Statement of Basis and all supporting materials may also be viewed at: <u>http://www.epa.gov/caa-</u> <u>permitting/caa-permit-public-</u> comment-opportunities-region-8

### What are EPA's responsibilities?

The U.S. EPA Region 8 Air Program is the regulatory agency that helps protect and preserve air quality on the Ute Indian Reservation.

One way the EPA does this is by issuing CAA Title V operating permits for major air emission sources that require air pollutant emissions control and monitoring. The purpose of this notice is to invite you to submit written comments on this proposed permit through the process detailed in this notice. The EPA will review and consider all comments received during the comment period.

Following this review, the EPA may issue the permit as drafted, issue the permits with revisions, or deny the permit.

#### **Public Comment Period:**

The EPA will accept written comments on the draft Title V Operating Permits beginning:

August 18, 2017 Through 5 p.m., September 18, 2017.

### Where can I send written comments?

The EPA accepts comments by mail and e-mail.

### How can I make comments by e-mail?

To make comments via email, click on the name of the contact person at the website below.

U.S. EPA Region 8 Air Program Mail Code 8P-AR Tribal Permit Program 1595 Wynkoop Street Denver CO 80202 Phone: 800.227.8917

http://www.epa.gov/caapermitting/caa-permit-publiccomment-opportunities-

#### Smith, Claudia

| From:    | Wortman, Eric                                                                       |
|----------|-------------------------------------------------------------------------------------|
| Sent:    | Friday, August 18, 2017 5:12 AM                                                     |
| То:      | Wortman, Eric                                                                       |
| Subject: | Notice of Public Comment Period – Draft Title V Operating Permits on the Uintah and |
|          | Ouray Indian Reservation                                                            |

In accordance with 40 CFR 71.8 and 71.11(d)(2), the U.S. Environmental Protection Agency Region 8 is hereby providing notification to all affected states, tribes, and members of the public of the issuance of the draft title V federal operating permit for the following sources located on Indian country lands within the Uintah and Ouray Indian Reservation:

XTO Energy Inc. – Tap 5 Compressor Station XTO Energy Inc. – River Bend Dehydration Site

Part 71 Permit Contact - Eric Wortman, (617) 918-1624

A copy of the draft permits and Statement of Bases may be obtained by contacting the Part 71 Permit Contact. The permit applications and other supporting information pertinent to the permit decisions are available for review at the following locations:

| U.S. EPA Region 8   | Uintah & Ouray Indian Tribe           | Uintah County Clerk |
|---------------------|---------------------------------------|---------------------|
| Air Program (8P-AR) | Energy and Minerals Department Office | 147 E. Main St., #6 |
| 1595 Wynkoop St.    | 988 South 7500 East, Annex Building   | Vernal, UT 84078    |
| Denver, CO 80202    | Fort Duchesne, UT 84026               |                     |

Electronic copies of the draft permits, Statement of Bases, permit applications, and additional supporting information may also be viewed online at: <u>http://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8</u>.

In accordance with §71.11(d)(2), EPA Region 8 is providing a 30-day period from August 18, 2017 to September 18, 2017, for public comment on this draft permit. Comments must be received by 5 p.m. on September 18, 2017, to be considered in the issuance of the final permit. If a public hearing is held regarding this permit, you will be sent a copy of the public hearing notice at least 30 days in advance of the hearing date.

Please submit any written recommendations you may have concerning the terms and conditions of this permit to me by email or to the address listed above.

Sincerely,

Eric Wortman

Eric Wortman | Environmental Scientist U.S. Environmental Protection Agency

Telephone: (617) 918-1624 | Email: wortman.eric@epa.gov



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8 1595 Wynkoop Street Denver, CO 80202-1129 Phone 800-227-8917 http://www.epa.gov/region8

### AUG 1 4 2017

Ref: 8P-AR

Ms. Minnie Grant Air Coordinator Ute Indian Tribe, Energy and Minerals Department P.O. Box 70 Ft. Duchesne, Utah 84026

#### <u>CERTIFIED MAIL</u> <u>RETURN RECEIPT REQUESTED</u>

Re: Transmittal of Draft Title V Permits to Operate on the Uintah and Ouray Indian Reservation

Dear Ms. Grant: .

In accordance with 40 CFR 71.8 and 71.11(d)(2), the U.S. Environmental Protection Agency (EPA) Region 8 is hereby providing notification to all affected states and tribes of the issuance of the draft Clean Air Act Title V Permit to Operate for the following sources located on Indian country lands within the Uintah and Ouray Indian Reservation:

XTO Energy Inc. – Tap 5 Compressor Station XTO Energy Inc. – River Bend Dehydration Site

Region 8 is providing a 30-day period, from August 18, 2017 to September 18, 2017 for comment. Please make the enclosed draft permits, Statement of Bases, permit applications, and additional supporting information for each permit action available for public inspection until the end of the public comment period.

Electronic copies of the draft permits and Statement of Bases may also be viewed online at: http://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8.

We have also enclosed copies of a public notice bulletin. Please post this bulletin in locations that you see fit to broadly advertise this public comment period.

In addition to maintaining the docket in your tribal office, please submit any written recommendations you may have concerning the terms and conditions of the draft permits to me at the following address:

Eric Wortman US EPA Region 8 Air Program, 8P-AR 1595 Wynkoop Street Denver, CO 80202 (617) 918-1624 wortman.eric@epa.gov Should EPA not accept any or all of these recommendations, you will be notified in writing and will be provided with the reasons for not accepting them. Comments must be received by 5 p.m. on September 18, 2017, to be considered in the issuance of the final permits for these facilities. If a public hearing is held regarding these permits, you will be sent a copy of the public hearing notice at least 30 days in advance of the hearing date.

Sincerely,

Grie Wart

Eric Wortman, Environmental Scientist Air Permitting, Monitoring, and Modeling Unit

Enclosures

Cc: Bruce Pargeets, Acting Director of Energy & Minerals Department, Ute Indian Tribe (without enclosures)



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 8 1595 Wynkoop Street Denver, CO 80202-1129 Phone 800-227-8917 http://www.epa.gov/region8

Ref: 8P-AR

AUG 1 4 2017

Timothy Herman Manager of Mid Stream Operations XTO Energy, Inc. 810 Houston Street Fort Worth, Texas 76102

#### CERTIFIED MAIL RETURN RECEIPT REQUESTED

Re: Draft Part 71 Operating Permits for XTO Energy, Inc.'s Tap 5 Compressor Station (Permit #V-UO-000018-2007.00) and River Bend Dehydration Site (Permit #V-UO-000026-2011.00)

Dear Mr. Herman:

The U.S. Environmental Protection Agency Region 8 has completed its review of XTO Energy, Inc.'s applications for the Tap 5 Compressor Station and River Bend Dehydration Site to obtain initial Clean Air Act Title V operating permits pursuant to the Title V Operating Permit Program at 40 CFR part 71 (Part 71).

Enclosed you will find the draft Part 71 operating permits and the corresponding Statement of Basis for each permit. The regulations at 40 CFR 71.11(d) require that an applicant, the public and affected states (as defined in 40 CFR 71.2) have the opportunity to submit written comments on any draft Part 71 operating permit. All written comments submitted within 30 calendar days after the public notice is published will be considered by the agency in making its final permit decision. Enclosed is a copy of the public notice which will be published on the EPA's website located at: <u>https://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8</u>, on August 18, 2017. The public comment period will end at 5:00 p.m. MDT on September 18, 2017.

The conditions contained in the permits will become effective and enforceable by the agency if the permits are issued final. If you are unable to accept any term or condition of the draft permits, please submit your written comments, along with the reason(s) for non-acceptance to:

Part 71 Permitting Lead U.S. EPA, Region 8 Air Program (8P-AR) 1595 Wynkoop Street Denver, Colorado 80202 If you have any questions concerning the enclosed draft permits or the respective Statement of Basis, please contact Eric Wortman of my staff at (617) 918-1624.

Sincerely,

Monica & Suorales

Monica S. Morales Director, Air Program Office of Partnerships and Regulatory Assistance

Enclosures (5)

cc: Minnie Grant, Air Coordinator, Ute Indian Tribe Bruce Pargeets, Acting Director, Energy, Minerals and Air, Ute Indian Tribe (w/out enclosures) Craig Allison, Environmental Health & Safety Advisor, XTO Energy, Inc.

#### Air Pollution Control Federal Clean Air Act (CAA) Title V Permit to Operate Statement of Basis for Draft Permit No. V-UO-000026-2011.00

#### XTO Energy, Inc. River Bend Dehydration Site Uintah and Ouray Reservation Uintah County, Utah

#### I. <u>Facility Information</u>

#### A. Location

The River Bend Dehydration Site (River Bend), owned and operated by XTO Energy, Inc. (XTO), is located on Indian country lands within the Uintah and Ouray Indian Reservation in northeastern Utah. The exact locations are the following:

- River Bend: Latitude 39.94851N, Longitude 109.77057W
- Tap 1 Compressor Station: Latitude 39.95027N, Longitude 109.77465W
- RBU 6-15E Wellsite: Latitude 39.94851N, Longitude 109.77057W
- RBU 7-15E Wellsite: Latitude 39.95026N, Longitude 109.76701W
- RBU 11-15E Wellsite: Latitude 39.94478N, Longitude 109.76979W

The mailing address is:

XTO Energy, Inc. 810 Houston Street Fort Worth, Texas 76102

#### **B.** Contacts

#### **Facility Contact:**

Craig Allison XTO Energy, Inc. 810 Houston Street Fort Worth, Texas 76102 (817) 885-2672 craig\_allison@xtoenergy.com

#### **Responsible Official:**

Timothy Herman, Manager of Midstream Operations XTO Energy 810 Houston Street Fort Worth, Texas 76102 (817) 885-2584 timothy herman@xtoenergy.com **Tribal Contact:** Minnie Grant, Air Coordinator, Energy, Minerals, and Air Ute Indian Tribe P.O. Box 70 Fort Duchesne, UT 84026 (435) 725-4950 minnie g@ utetribe.com

#### C. Description of Operations

Natural gas produced from area wells is compressed at existing offsite locations up to a line pressure of 850 to 1,000 pounds per square inch gauge (psig) and then sent to the River Bend natural gas dehydrator site through 6" and 10" gathering flowlines. Once the gas enters the site, it flows through two (2) two-phase separators in order to reduce water and condensable liquids content in the gas stream, prior to entry into the triethylene glycol (TEG) dehydration system. The liquid produced from the inlet separators is then sent to a 30,000-gallon pressurized flash separator. The purpose of the flash separator is to flash the high-pressured liquids and route the flash gas back to the high-pressure gathering system, thereby eliminating the flash emissions from being vented to the atmosphere. The pressurized flash separator is then set to discharge the separated liquids at a pressure of approximately 50 psig into either of the onsite 400-barrel (bbl) atmospheric liquid storage tanks. The 400-bbl liquid storage tanks are used for temporary storage prior to the liquids being hauled offsite by tanker truck.

Following the inlet separation, the gas is discharged into the TEG natural gas dehydration system for further water removal from the natural gas stream. The TEG natural gas dehydration system consists of a 45 million standard cubic feet per day (MMscfd)-capacity natural gas TEG dehydration process still vent, a 1.5 million British thermal units per hour (MMBTU/hr) natural gas-fired process heater, and a TEG regenerator. The TEG natural gas dehydration system emissions are controlled by a thermal oxidizer. The TEG natural gas dehydration system utilizes a benzene, toluene, ethylbenzene and xylene (BTEX) emissions control system that captures vapors from the still vent and the flash tank and sends the vapors to the thermal oxidizer for destruction. Following dehydration, the natural gas stream leaves the site via a metered sales pipeline. The station has on-site electrical power supplied by a 65 kilowatt (kW) Capstone natural-gas fired microturbine-driven generator. In addition, the pneumatic control devices are operated by plant air supplied by the on-site electric driven air compressor.

Other production equipment located at River Bend consists of three production wellsites (RBU 6-15E, RBU 7-15E, and RBU 11-15E). Each wellsite includes  $a \le 400$ -bbl storage tank, natural gas-fired heaters, as well as minimal fugitive and truck loading emissions. The RBU 11-15E wellsite also operates a small 0.20 MMscfd capacity TEG natural gas dehydration system. The RBU 6-15E wellsite is located within the property boundaries of River Bend but does not discharge directly into River Bend. The RBU 7-15E and RBU 11-15E wellsites are located on a separate surface sites within a quarter mile of River Bend. The gas produced at the three (3) wellsites enters the common field gathering system and ultimately into off-site compressor stations. One of these compressor stations, the Tap-1 Compressor Station (Tap-1), is also located within a quarter mile of River Bend and consists of two (2) natural gas-fired compression

engines, two (2) condensate tanks with natural gas-fired heaters, truck loading emissions, and fugitive emissions.

#### D. Emission Points

The Title V Operating Permit Program at 40 CFR part 71 (Part 71) allows the Permittee to separately list in the permit application units or activities that qualify as "insignificant" based on potential emissions below 2 tons per year (tpy) for all regulated pollutants that are not listed as hazardous air pollutants (HAP) under section 112(b) and below 1,000 lbs/year or the de minimis level established under section 112(g), whichever is lower, for HAP. However, the application may not omit information needed to determine the applicability of or to impose, any applicable requirement. Units and activities that qualify as "insignificant" for the purposes of the Part 71 application are in no way exempt from applicable requirements or any requirements of the Part 71 permit.

Tables 1 and 2 list emission units and emission generating activities, including any air pollution control devices.

| Unit I.D.      | Description                                                                                                                                                                                                        | Control Equipment                       |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| RBD-1          | 45 MMscfd TEG Dehydration Unit (River Bend)<br>Serial #: 8156 Installed: 1/17/2010                                                                                                                                 | Thermal Oxidizer                        |
| RBT-1          | 400-bbl Condensate Storage Tank (River Bend)Serial #: 1764Installed: 12/15/2009                                                                                                                                    | None                                    |
| RBT-2          | 400-bbl Condensate Storage Tank (River Bend)<br>Serial #: 1765 Installed: 12/15/2009                                                                                                                               | None                                    |
| RBL-1          | Condensate Truck Loading Emissions (River Bend)                                                                                                                                                                    | None                                    |
| RBF-1          | Fugitive Emissions (River Bend)                                                                                                                                                                                    | None                                    |
| RBU 6-15E F-1  | Fugitive Emissions (RBU 6-15E)                                                                                                                                                                                     | None                                    |
| RBU 7-15E F-1  | Fugitive Emissions (RBU 7-15E)                                                                                                                                                                                     | None                                    |
| RBU 11-15E D-1 | 0.20 MMscfd TEG Dehydration Unit (RBU 11-15E)<br>Serial #: Unknown Installed: 2007                                                                                                                                 | None                                    |
| RBU 11-15E F-1 | Fugitive Emissions (RBU 11-15E)                                                                                                                                                                                    | None                                    |
| RBU 11-15E P-1 | Pneumatic Pump Emissions (RBU 11-15E)                                                                                                                                                                              | None                                    |
| T1C-1          | Caterpillar 3516 LE; 1,340 hp (Tap-1)         4-Stroke Lean-Burn Reciprocating Internal Combustion Engines         Natural Gas-Fired         Serial No. 4EK03995         Installed: 7/1/2013         Mfg: 1/1/2004 | Oxidation Catalyst<br>(not enforceable) |
| T1C-2          | Caterpillar 3516 LE; 1,340 hp (Tap-1)4-Stroke Lean-Burn Reciprocating Internal Combustion Engines<br>Natural Gas-FiredSerial No. 4EK03582Installed: 7/18/2013<br>Mfg: 8/12/2001                                    | Oxidation Catalyst<br>(not enforceable) |

Table 1 – Emission Units and Emission Generating Activities\*

| Unit I.D.       |                             | Control Equipment    |      |
|-----------------|-----------------------------|----------------------|------|
|                 | 300-bbl* Condensate Storage | e Tank (Tap-1)       |      |
| T1T-1           |                             |                      | None |
|                 | Serial #: 2024              | Installed: 6/18/2012 |      |
|                 | 300-bbl* Condensate Storag  | e Tank (Tap-1)       |      |
| T1T-2           | _                           | · • ·                | None |
|                 | Serial #: 8S06401-02        | Installed: 6/18/2012 |      |
| T1P-1 and T1P-2 | Two (2) Heat Trace Pneumat  | ic Pumps (Tap-1)     | None |
| T1F-1           | Fugitive Emissions (Tap-1)  | None                 |      |

\* Mfg = Manufactured; hp = horsepower; bbl = barrel; MMscfd = million standard cubic feet per day.

#### Table 2 - Insignificant Emission Units\*

| Description                                                     |
|-----------------------------------------------------------------|
| Capstone 65 kW Microturbine Genset (River Bend)                 |
| 1.0 MMBtu/hr** TEG Dehydration Unit Reboiler (River Bend)       |
| 0.25 MMBtu/hr** Tank Heater #1 (River Bend)                     |
| 0.25 MMBtu/hr**Tank Heater #2 (River Bend)                      |
| 0.25 MMBtu/hr** Natural Gas-Fired Separator Heater (River Bend) |
| 3.0 MMBtu/hr** Heater for Thermal Oxidizer (River Bend)         |
| Pipeline Pigging Operations (River Bend)                        |
| 400-bbl slop tank (RBU 6-15E)                                   |
| 0.25 MMBtu/hr Tank Heater (RBU 6-15E)                           |
| Condensate Truck Loading (RBU 6-15E)                            |
| 0.75 MMBtu/hr Separator Heater (RBU 6-15E)                      |
| 0.75 MMBtu/hr** Separator Heater (RBU 7-15E)                    |
| 0.25 MMBtu/hr** Tank Heater (RBU 7-15E)                         |
| Condensate Truck Loading (RBU 7-15E)                            |
| 400-bbl slop tank (RBU 7-15E)                                   |
| 0.175 MMBtu/hr** TEG Dehydration Unit Reboiler (RBU 11-15E)     |
| 0.25 MMBtu/hr** Separator Heater (RBU 11-15E)                   |
| 0.25 MMBtu/hr** Tank Heater (RBU 11-15E)                        |
| Condensate Truck Loading (RBU 11-15E)                           |
| 300-bbl Slop Tank (RBU 11-15E)                                  |
| Capstone 65 kW Microturbine Genset (Tap-1)                      |
| 0.25 MMBTU/hr** Separator Heater (Tap-1)                        |
| Two (2) 0.25 MMBTU/hr Tank Heaters (Tap-1)                      |
| Condensate Truck Loading Emissions (Tap-1)                      |
| Compressor Blowdown Emissions (Tap-1)                           |

\*Insignificant emission units can change at the facility as long as the new or replacement units meet the criteria for insignificance, and XTO supplies information as required under 40 CFR part 71 and this permit. The insignificant emission unit status does not exempt these emission units from the requirements of any standards that may apply under 40 CFR parts 60 or 63.

\*\* MMBtu/hr = million British Thermal units per hour.

#### **E. Potential to Emit**

Pursuant to 40 CFR 52.21, potential to emit (PTE) is defined as the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design <u>if</u> the limitation, or the effect it would have on emissions, is federally enforceable. Independently enforceable applicable

requirements are considered enforceable to the extent that the source is in compliance with the standard. In addition, beneficial reductions in non-targeted pollutants resulting from compliance with an independently enforceable applicable requirement may be counted towards PTE provided the emission reduction of the non-targeted pollutant is enforceable as a practical matter and compliance is being met. See the 1995 guidance memo signed by John Seitz, Director of the Office of Air Quality Planning and Standards titled, "Options for Limiting Potential to Emit of a Stationary Source under Section 112 and Title V of the Clean Air Act."<sup>1</sup>

XTO reported the controlled emission unit-specific PTE in their Part 71 permit application. The controlled emissions in Table 3 are based on the legally and practically enforceable requirements set forth in this proposed permit.

| Regulated Air Pollutants (tpy) |                   |      |      |     |                   |                    |               |                   |                      |                                             |                    |
|--------------------------------|-------------------|------|------|-----|-------------------|--------------------|---------------|-------------------|----------------------|---------------------------------------------|--------------------|
| Unit ID                        | NO <sub>X</sub> * | CO*  | VOC* | PM* | SO <sub>2</sub> * | CH <sub>2</sub> O* | Total<br>HAP* | CO <sub>2</sub> * | CH4*<br>(as<br>CO2e) | N <sub>2</sub> O*<br>(as CO <sub>2</sub> e) | CO <sub>2</sub> e* |
| RBD-1<br>w/Thermal<br>Oxidizer | 0.6               | 2.9  | 14.6 | 0.1 | 0.0               | 0.0                | 10.9          | 962.8             | 6.3                  | 0.0                                         | 6.3                |
| RBT-1                          | 0.0               | 0.0  | 4.3  | 0.0 | 0.0               | 0.0                | 0.2           | 0.0               | 31.4                 | 0.0                                         | 31.4               |
| RBT-2                          | 0.0               | 0.0  | 4.3  | 0.0 | 0.0               | 0.0                | 0.2           | 0.0               | 31.4                 | 0.0                                         | 31.4               |
| RBL-1                          | 0.0               | 0.0  | 2.4  | 0.0 | 0.0               | 0.0                | 0.0           | 0.0               | 0.0                  | 0.0                                         | 0.0                |
| RBF-1                          | 0.0               | 0.0  | 5.7  | 0.0 | 0.0               | 0.0                | 0.1           | 0.2               | 333.9                | 0.0                                         | 334.1              |
| RBU 6-15E<br>F-1               | 0.0               | 0.0  | 3.9  | 0.0 | 0.0               | 0.0                | 0.1           | 0.1               | 214.0                | 0.0                                         | 214.1              |
| RBU 6-15E<br>P-1               | 0.0               | 0.0  | 3.9  | 0.0 | 0.0               | 0.0                | 0.1           | 0.1               | 214.0                | 0.0                                         | 214.1              |
| BU 7-15E F-<br>1               | 0.6               | 2.9  | 14.6 | 0.1 | 0.0               | 0.0                | 10.9          | 962.8             | 6.3                  | 0.0                                         | 6.3                |
| RBU 11-<br>15E D-1             | 0.0               | 0.0  | 10.5 | 0.0 | 0.0               | 0.0                | 3.9           | 0.1               | 45.0                 | 0.0                                         | 45.1               |
| RBU 11-15E<br>F-1              | 0.0               | 0.0  | 3.9  | 0.0 | 0.0               | 0.0                | 0.1           | 0.1               | 214.0                | 0.0                                         | 214.1              |
| RBU 11-15E<br>P-1              | 0.0               | 0.0  | 5.1  | 0.0 | 0.0               | 0.0                | 0.1           | 0.4               | 1,057.4              | 0.0                                         | 1,057.8            |
| T1C-1                          | 19.4              | 32.3 | 4.9  | 0.0 | 0.0               | 3.8                | 4.4           | 4,968.0           | 1,411.4              | 0.0                                         | 6,379.3            |
| T1C-2                          | 16.7              | 29.4 | 4.7  | 0.0 | 0.0               | 3.2                | 3.8           | 4,197.1           | 958.2                | 0.0                                         | 5,155.3            |
| T1T-1                          | 0.0               | 0.0  | 2.2  | 0.0 | 0.0               | 0.0                | 0.1           | 0.0               | 24.0                 | 0.0                                         | 24.0               |
| T1T-2                          | 0.0               | 0.0  | 2.2  | 0.0 | 0.0               | 0.0                | 0.1           | 0.0               | 24.0                 | 0.0                                         | 24.0               |

Table 3 – Potential-to-Emit with Legally and Practically Enforceable Controls

<sup>1</sup> The 1995 guidance memo is available at <u>https://www.epa.gov/enforcement/options-limiting-potential-emit-pte-stationary-source-under-section-112-and-title-v</u>

|                    | Regulated Air Pollutants (tpy) |      |      |     |                   |                    |               |                   |                                                |                                             |                    |
|--------------------|--------------------------------|------|------|-----|-------------------|--------------------|---------------|-------------------|------------------------------------------------|---------------------------------------------|--------------------|
| Unit ID            | NO <sub>X</sub> *              | CO*  | VOC* | PM* | SO <sub>2</sub> * | CH <sub>2</sub> O* | Total<br>HAP* | CO <sub>2</sub> * | CH <sub>4</sub> *<br>(as<br>CO <sub>2</sub> e) | N <sub>2</sub> O*<br>(as CO <sub>2</sub> e) | CO <sub>2</sub> e* |
| T1P-1 and<br>T1P-2 | 0.0                            | 0.0  | 15.7 | 0.0 | 0.0               | 0.0                | 0.1           | 0.5               | 2,159.4                                        | 0.0                                         | 2,160.0            |
| T1F-1              | 0.0                            | 0.0  | 2.5  | 0.0 | 0.0               | 0.0                | 0.0           | 0.1               | 80.7                                           | 0.0                                         | 80.8               |
| IEUs*              | 1.9                            | 5.0  | 8.4  | 0.0 | 0.0               | 0.0                | 0.1           | 1,990.9           | 304.0                                          | 1.1                                         | 2,296.0            |
| TOTAL              | 38.6                           | 69.6 | 99.2 | 0.1 | 0.0               | 7.0                | 24.3          | 12,120.4          | 7,109.1                                        | 1.1                                         | 18,267.8           |

\*NO<sub>X</sub> = nitrogen oxide; CO = carbon monoxide; VOC = volatile organic compound; PM = particulate matter; SO<sub>2</sub> = sulfur dioxide; CH<sub>2</sub>O = formaldehy de; HAP = hazardous air pollutant; CO<sub>2</sub> = carbon dioxide; CH<sub>4</sub> = methane; N<sub>2</sub>O = nitrous oxide; CO<sub>2</sub>e = equivalent CO<sub>2</sub>; IEU = insignificant emission unit.

#### II. Applicable Requirement Review

The following sections discuss the information provided by XTO in their Part 71 application, certified to be true and accurate by the Responsible Official of this facility.

#### A. 40 CFR 52.21: Prevention of Significant Deterioration

The Prevention of Significant Deterioration (PSD) Permit Program at 40 CFR part 52 is a preconstruction review requirement of the CAA that applies to proposed projects that are sufficiently large (in terms of emissions) to be a "major" stationary source or "major modification" of an existing stationary source. Source size is defined in terms of PTE, which, as explained previously, is its capability at maximum design capacity to emit a pollutant, except as constrained by existing legally and practically enforceable conditions applicable to the source. A new stationary source or a modification to an existing minor stationary source is major if the proposed project has the PTE of any pollutant regulated under 40 CFR part 52 in amounts equal to or exceeding specified major source thresholds, which are 100 tpy for 28 listed industrial source categories and 250 tpy for all other sources. PSD also applies to modifications at existing major sources that cause a "significant net emissions increase" at that source. Significance levels for each pollutant are defined in the PSD regulations at 40 CFR 52.21.

According to the emissions information provided by XTO in their Part 71 application, this facility is currently not a major stationary source with respect to the PSD Permit Program, as the PTE of any pollutant does not exceed the thresholds of criteria pollutants regulated under the PSD Permit Program.

#### **B.** Source Determination

At 40 CFR 71.2, a major source is generally defined as any stationary source (or any group of stationary sources) that is located on one or more contiguous or adjacent properties, is under common control of the same person (or persons under common control)), and belongs to a single major industrial grouping. On June 3, 2016, the EPA published a final rule clarifying when oil and natural gas sector equipment and activities must be deemed a single source when determining whether major source permitting programs (PSD and New Source Review

preconstruction permit programs, and the Part 71 Permit Program) apply (81 FR 35622). By defining the term "adjacent," the rule specifies that equipment and activities in the oil and natural gas sector that are under common control will be considered part of the same source if they are located on the same surface site or on individual surface sites that share equipment and are within a quarter mile of each other.

According to information provided by XTO, the RBU 7-15E wellsite, RBU 11-15E wellsite, Tap-1 Compressor Station, and River Bend are located within a quarter mile of River Bend and share equipment with River Bend. In addition, the RBU 6-15E wellsite is located on the same surface site as River Bend. Therefore, the EPA has determined that the RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap-1 Compressor Station are adjacent to River Bend and thus part of the same stationary source. A more detailed source determination is included in the docket for this permit action.

#### C. 40 CFR Part 60, Subpart A: General Provisions

This subpart applies to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication of any standard in 40 CFR part 60 (Part 60). The general provisions under subpart A apply to sources that are subject to the specific subparts of Part 60.

As explained below, River Bend is not subject to any specific subparts of Part 60; therefore, the General Provisions of Part 60 do not apply.

#### D. 40 CFR Part 60, Subpart GG: Standards of Performance for Stationary Gas Turbines

This rule applies to stationary gas turbines, with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr), that commenced construction, modification or reconstruction after October 3, 1977.

Based on the information provided by XTO in their Part 71 application, the stationary gas turbines located at River Bend and Tap-1 Compressor Station have a maximum heat input less than 10.7 gigajoules per hour; therefore, this rule does not apply. The maximum heat input for each of the Capstone Microturbines is 0.2 MMBtu/hr.

#### E. 40 CFR Part 60, Subpart Kb: Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced After July 23, 1984

This subpart establishes requirements for controlling VOC emissions from storage vessels with a capacity greater than or equal to 75 cubic meters that are used to store volatile organic liquids for which construction, reconstruction or modification commenced after July 23, 1984.

Based on the information provided by XTO in their Part 71 application, the condensate tanks at River Bend, RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap-1

Compressor Station are exempt from these requirements because they have a capacity of less than 10,000 bbls.

# F. 40 CFR Part 60, Subpart KKK: Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

This subpart establishes requirements for controlling fugitive VOC emissions from onshore natural gas processing plants. It applies to natural gas processing plants that commenced construction, reconstruction, or modification after January 20, 1984 and on or before August 23, 2011.

Based on the information provided by XTO in their Part 71 application, River Bend, RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap-1 Compressor Station are not natural gas processing plants, therefore the facility is not subject to this subpart.

#### G. 40 CFR Part 60, Subpart LLL: Standards of Performance for SO<sub>2</sub> Emissions from Onshore Natural Gas Processing for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

This subpart applies to sweetening units and sulfur recovery units at onshore natural gas processing facilities. As defined in this subpart, sweetening units are process devices that separate hydrogen sulfide ( $H_2S$ ) and  $CO_2$  from a sour natural gas stream. Sulfur recovery units are defined as process devices that recover sulfur from the acid gas (consisting of  $H_2S$  and  $CO_2$ ) removed by a sweetening unit.

Based on the information provided by XTO in their Part 71 application, neither sweetening nor sulfur recovery are performed at the facility. Therefore, this facility is not subject to this subpart.

#### H. 40 CFR Part 60, Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

This subpart establishes emission standards and compliance requirements for the control of emissions from stationary spark ignition internal combustion engines that commenced construction, modification or reconstruction after June 12, 2006, and are manufactured on or after specified manufacture trigger dates. The manufacture trigger dates are based on the engine type, fuel used and maximum engine horsepower.

Based on the information provided by XTO in their Part 71 application, the engines operating at the facility were manufactured prior to the manufacture trigger dates in the rule (January 1, 2008 for engines T1C-1 and T1C-2). Therefore, this subpart does not apply.

#### I. 40 CFR Part 60, Subpart KKKK: Standards of Performance for Stationary Combustion Turbines

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005. The rule applies to stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour.

Based on the information provided by XTO in their Part 71 application, the stationary gas turbines located at River Bend and the Tap-1 Compressor Station have a maximum heat input less than 10.7 gigajoules per hour; therefore, this rule does not apply. The maximum heat input for each of the Capstone Microturbines is 0.2 MMBtu/hr.

#### J. 40 CFR Part 60, Subpart OOOO: Standards of Performance for Crude Oil and Natural Gas production, Transmission, and Distribution After August 23, 2011, and on or Before September 18, 2015

This subpart establishes emission standards for the control of VOC and SO<sub>2</sub> emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011 and on or before September 18, 2015. Affected facilities include, but are not limited to well completions, centrifugal compressors, reciprocating compressors, pneumatic controllers, storage vessels and sweetening units.

Based on the information provided by XTO in their Part 71 application, the two (2) 400-bbl storage vessels at the RBU 6-15E wellsite and RBU 7-15E wellsite commenced construction after August 23, 2011 and prior to September 18, 2015. However, according to XTO, the emissions from the storage vessels are below 6 tpy and do not satisfy the criteria for an affected source under the rule. XTO shall maintain records of each VOC emissions determination made under §60.5365(e) as specified in §60.5420(c)(5)(ii).

Based on the information provided by XTO in their Part 71 application, all of the remaining current equipment at River Bend, RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap-1 Compressor Station predates the applicability date for this subpart. Therefore, this subpart does not apply to any other emission units.

#### K. 40 CFR Part 60, Subpart OOOOa: Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015

This subpart establishes emission standards for the control of VOC and SO<sub>2</sub> emissions from affected facilities that commence construction, modification or reconstruction after September 18, 2015. Affected facilities include, but are not limited to well completions, centrifugal compressors, reciprocating compressors, pneumatic controllers, storage vessels and sweetening units.

Based on the information provided by XTO in their Part 71 application, the current equipment at River Bend, RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap-1 Compressor Station predates the applicability date for this subpart. Therefore, this subpart does not apply.

## L. 40 CFR Part 63, Subpart A: National Emission Standards for Hazardous Air Pollutants for Source Categories, General Provisions

The requirements of 40 CFR part 63, subpart A apply to sources that are subject to the specific subparts of 40 CFR part 63.

As explained below, River Bend is subject to 40 CFR part 63, subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities and subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines; therefore, the General Provisions of 40 CFR part 63 apply.

## M. 40 CFR Part 63, Subpart HH: National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities

This subpart establishes emission standards for the control of HAP emissions from affected units located at natural gas production facilities that process, upgrade or store natural gas prior to the point of custody transfer, or that process, upgrade or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. The affected units are glycol dehydration units, storage vessels with the potential for flash emissions (as defined in the rule) and the group of ancillary equipment and compressors intended to operate in volatile HAP service which are located at natural gas processing plants.

Based on the information provided by XTO in their Part 71 application, River Bend, RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and the Tap-1 compressor station do not operate any storage vessels with the potential for flash emissions (as defined in the rule). Uncontrolled emissions from dehydration unit RBD-1 exceed the major source thresholds for HAP. Therefore, dehydration unit RBD-1 is subject to the major source requirements of this subpart for large glycol dehydration units.

As defined in §63.761, emissions from processes, operations or equipment that are not part of the same facility, as defined in this section, shall not be aggregated to determine whether such emission points are major sources. Therefore, the RBU 11-15E wellsite is an area source under the rule and dehydration unit RBU 11-15E D-1 is subject to the area source requirements of the rule. However, dehydration unit RBU 11-15E D-1 meets the exemption criteria in §63.764(e) because, according to the information provided by XTO in their Part 71 application, the actual annual average flowrate of natural gas to the dehydration unit is less than 85 thousand standard cubic meters per day. XTO is subject to the recordkeeping requirements for the exemption criteria at §63.774(d)(1).

#### N. 40 CFR Part 63, Subpart YYYY: National Emission Standards for Hazardous Air Pollutants from Stationary Combustion Turbines

This rule establishes national emission limitations and work practice standards for HAP emitted from Stationary Combustion Turbines. The affected source includes the stationary combustion turbine located at a major source of HAP emissions.

As defined in §63.6090(b)(3), an existing, new or reconstructed stationary combustion turbine with a rated peak power output of less than 1.0 megawatt (MW) does not have to meet the requirements of this subpart. Based on the information provided by XTO in their Part 71 application, although River Bend is a major source of HAP emissions, the 65 kW Capstone Microturbine Generator at the facility is exempt from the requirements of this subpart, because according to XTO it has a peak power output of less than 1.0 MW. This subpart does not apply to the Captone Microturbine Generator at the Tap-1 Compressor Station because the Tap-1 Compressor Station is an area source of HAP emissions.

#### O. 40 CFR Part 63, Subpart ZZZZ (MACT ZZZZ): National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

This subpart establishes emission standards and operating limitations for the control of HAP emissions from spark ignition and compression ignition reciprocating internal combustion engines.

Based on the information provided by XTO in their Part 71 application, there are no reciprocating internal combustion engines operating at River Bend, RBU 6-15E wellsite, RBU 7-15E wellsite or RBU 11-15E wellsite. According to the regulations at §63.6585(b), a major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and natural gas production facilities, a major source of HAP emissions is determined for each surface site. Since the Tap-1 compressor station is not located on the same surface site as River Bend, the emissions from neither River Bend nor the wellsites shall be aggregated for the purposes of determining a major source of HAP. Therefore, the reciprocating internal combustion engines at the Tap-1 compressor station (T1C-1 and T1C-2) are subject to the area source requirements of this subpart.

#### P. 40 CFR Part 63, Subpart DDDDD (Boiler MACT): National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

This rule establishes national emission limitations and operating limitations for HAP emitted from new and existing industrial boilers, institutional boilers, commercial boilers and process heaters that are located at major sources of HAP. For the purposes of this subpart, a major source of HAP is as defined in §63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in §63.761. Boilers or process heaters that combust natural gas for fuel or have a maximum designed heat input capacity less than 10 MMBtu/hr are subject to work

practice standards in lieu of emission limits. For the purposes of this subpart, an affected unit is an existing unit if it was constructed prior to June 4, 2010.

The dehydration unit reboiler and heaters at River Bend meet the definition of process heaters in the rule. However, because River Bend is subject to the major source requirements of 40 CFR part 63, subpart HH, the EPA's "once in, always in" policy<sup>2</sup> allows XTO to account for the reductions of PTE achieved through compliance with previous MACT standards prior to the first compliance date of subsequent MACT standards. Based on the information provided by XTO in their Part 71 application, the PTE at River Bend with federally enforceable controls was below major source thresholds for HAP as of the first compliance date of this subpart (January 1, 2016 for existing process heaters and April 1, 2013 for new process heaters). Therefore, River Bend does not meet the definition of a major source under the rule and this subpart does not apply. This subpart does not apply to the RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, or Tap-1 compressor station because they do not meet the definition of a major source under the rule.

#### Q. 40 CFR Part 63, Subpart JJJJJJ (Boiler MACT (for Area Sources)): National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers

This rule establishes national emission standards and operating limitations for HAP emitted from new and existing industrial boilers, institutional boilers, and commercial boilers that are fueled by coal, biomass, or oil and are located at area sources of HAP. For the purposes of this subpart, an affected unit is an existing unit if it was constructed prior to June 4, 2010.

Based on the information provided by XTO in their Part 71 application, there are no industrial, commercial or institutional boilers located at River Bend, RBU6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap-1 compressor station as defined in the rule. Therefore, subpart JJJJJJ does not apply.

#### R. 40 CFR Part 64: Compliance Assurance Monitoring

Pursuant to requirements concerning enhanced monitoring and compliance certification under the CAA, the EPA promulgated regulations to implement compliance assurance monitoring (CAM) for major stationary sources of air pollution, for purposes of Title V permitting that are required to obtain operating permits under Part 71. The rule requires owners or operators of such sources to conduct monitoring that provide a reasonable assurance of compliance with applicable requirements under the CAA. The effective date of this rule is November 21, 1997.

#### 1. CAM Applicability

According to §64.2(a), CAM applies to <u>each</u> pollutant specific emission unit (PSEU) located at a major source which is required to obtain a Part 71 permit if the unit satisfies all of the following criteria:

<sup>&</sup>lt;sup>2</sup> See EPA's May 16, 1995 guidance document titled "Potential to Emit for MACT Standards -- Guidance on Timing Issues"

- (a) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant other than an emissions limitation or standard that is exempt under §64.2(b)(1);
- (b) The unit uses a control device to achieve compliance with any such limit or standard; and
- (c) The unit has pre-control device emissions of the applicable regulated pollutant that are equal to or greater than 100 percent of the amount, in tpy, required for a source to be classified as a major Title V source.
- 2. CAM Plan Submittal Deadlines
  - (a) <u>Large pollutant-specific emissions units</u>. A CAM plan submittal for all PSEUs with the PTE (taking into account control devices) of any one regulated air pollutant in an amount equal to or greater than 100 percent of the amount, in tpy, required for a source to be classified as a major source, is due at the following times:
    - (i) On or after April 20, 1998, if by that date, a Part 71 application has either:
      - (A) Not been filed; or
      - (B) Not yet been determined to be complete.
    - (ii) On or after April 20, 1998, if a Part 71 permit application for a significant modification is submitted with respect to those PSEUs for which the requested permit revision is applicable; or
    - (iii) Upon application for a renewed Part 71 permit and a CAM plan has not yet been submitted with an initial or a significant modification application, as specified above.
  - (b) <u>Other pollutant-specific emissions units</u>. A CAM Plan must be submitted for all PSEUs that are not large PSEUs, but are subject to this rule, upon application for a Part 71 renewal permit.

Based on the information provided by XTO in their Part 71 application, dehydration unit RBD-1 is a PSEU with pre-controlled emissions that equal or exceed 100 percent of VOC and HAP thresholds. However, RBD-1 is subject to the major source requirements of 40 CFR part 63, subpart HH and thus meets the exemption criteria of §64.2(b)(1). Since no other PSEUs at the facility have pre-controlled emissions that exceed or equal 100 percent of major source thresholds, River Bend is not subject to CAM requirements.

#### S. 40 CFR Part 68: Chemical Accident Prevention Provisions

This rule applies to stationary sources that manufacture, process, use, store or otherwise handle more than the threshold quantity of a regulated substance in a process. Regulated substances include 77 toxic and 63 flammable substances which are potentially present in the natural gas

stream entering the facility and in the storage vessels located at the facility. The quantity of a regulated substance in a process is determined according to the procedures presented under §68.115. Sections 68.115(b)(l) and (2)(i) indicate that toxic and flammable substances in a mixture do not need to be considered when determining whether more than a threshold quantity is present at a stationary source if the concentration of the substance is below one percent by weight of the mixture. Section 68.115(b)(2)(iii) indicates that prior to entry into a natural gas processing plant, regulated substances in naturally occurring hydrocarbon mixtures need not be considered when determining whether more than a threshold quantity is present at a stationary source. Naturally occurring hydrocarbon mixtures include condensate, field gas, and produced water. Based on the updated information provided in XTO's application, River Bend, RBU 6-15E wellsite, RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap-1 Compressor Station do not have regulated substances above the threshold quantities in this rule; and therefore, they are not subject to the requirement to develop and submit a risk management plan.

#### T. 40 CFR Part 71: Emergency Provisions

In this draft initial Part 71 permit, the EPA is proposing to not include the "Emergency Provisions" contained in the regulations in 40 CFR part 71 applicable to federal operating permit programs. Specifically, in the regulations discussing the contents of Title V operating permits issued under the federal operating permits program, 40 CFR 71.6(g) provides that certain "emergency" events can constitute "an affirmative defense in an action brought for non-compliance" with certain emission limits contained in the permit, when certain conditions are met. However, nothing in the CAA or 40 CFR part 71 requires that these types of emergency provisions be included as conditions in operating permits issued by the EPA, and for the reasons discussed below, we are exercising our discretion not to include them in this draft initial Part 71 permit.

In 2014, a federal court ruled that the CAA does not authorize the EPA to create affirmative defense provisions applicable to certain enforcement actions. See NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014). The court ruled that sections 113 and 304 of the CAA preclude the EPA from creating affirmative defense provisions in the Agency's regulations imposing HAP emission limits on sources. The court concluded that those affirmative defense provisions purported to alter the jurisdiction of federal courts generally provided in the CAA to assess liability and impose penalties for violations of emission limits in private civil enforcement cases, and that the CAA did not provide authority for the EPA to do so. Consistent with the reasoning in the NRDC v. EPA court decision, the EPA has determined that it is also not appropriate under the CAA to alter the jurisdiction of the federal courts through affirmative defenses provisions in its Title V regulations, such as those contained in the emergency provisions of 40 CFR 71.6(g), and that such provisions are inconsistent with the CAA. In light of the above-described D.C. Circuit Court decision and the EPA's obligation to issue Title V permits consistent with the applicable requirements of the Act, it is no longer appropriate to propose to include permit conditions modeled on affirmative defenses such as those contained in the emergency provisions of 40 CFR 71.6(g) in operating permits issued by the EPA.

Although the EPA views the Part 71 emergency provisions as discretionary (i.e., neither the

statute nor the regulations mandate their inclusion in Part 71 permits), the EPA is considering whether to make changes to the Part 71 Permit Program regulations in order to ensure the EPA's regulations are consistent with the recent D.C. Circuit decisions; and if so, how best to make those changes. Until that time, as part of the normal permitting process, it is appropriate for the EPA permitting authorities to rely on the discretionary nature of the existing emergency provisions to choose not to continue to include permit terms modeled on those provisions in Part 71 permits that we are issuing in the first instance or renewing. By doing so, we are not only fulfilling the EPA's obligation to issue Title V permits consistent with the applicable requirements of the Act, but we will also help ensure that permittee's do not continue to rely on permit provisions that have been found legally invalid.

Accordingly, in this draft initial Part 71 permit, the EPA is exercising its discretion to not include the "Emergency Provisions," in order to ensure the Part 71 permit is in compliance with the applicable requirements of the Act.

#### III. <u>EPA Authority</u>

Title V of the CAA requires that the EPA promulgate, administer and enforce a federal operating permit program when a state does not submit an approvable program within the time frame set by Title V or does not adequately administer and enforce its EPA-approved program. On July 1, 1996 (61 FR 34202), the EPA adopted regulations codified at 40 CFR part 71 setting forth the procedures and terms under which the agency would administer a federal operating permit program. These regulations were updated on February 19, 1999 (64 FR 8247) to incorporate the EPA's approach for issuing federal operating permits to stationary sources in Indian country.

As described in 40 CFR 71.4(a), the EPA will implement a Part 71 program in areas where a state, local, or tribal agency has not developed an approved Part 70 program. Unlike states, tribes are not required to develop operating permits programs, though the EPA encourages tribes to do so. See, e.g., Indian Tribes: Air Quality Planning and Management (63 FR 7253, February 12, 1998) (also known as the "Tribal Authority Rule"). Therefore, within Indian country, the EPA will administer and enforce a Part 71 federal operating permit program for stationary sources until a tribe receives approval to administer their own operating permit program. The Ute Indian Tribe has not applied for or received delegation of Part 71 or approval to administer their own operating permit program under 40 CFR part 70, so the EPA administers Part 71 within the exterior boundaries of the Uintah and Ouray Indian Reservation.

#### IV. <u>Use of All Credible Evidence</u>

Determinations of deviations, continuous or intermittent compliance status, or violations of the permit are not limited to the testing or monitoring methods required by the underlying regulations or this permit; other credible evidence (including any evidence admissible under the

Federal Rules of Evidence) must be considered by the Permittee and the EPA in such determinations.

#### V. <u>Public Participation</u>

#### A. Public Notice

As described in 40 CFR 71.11(a)(5), all Part 71 draft operating permits shall be publicly noticed and made available for public comment. The public notice of permit actions and public comment period is described in 40 CFR 71(d).

There will be a 30-day public comment period for actions pertaining to a draft permit. Notification will be given for this draft permit by providing notice to the permit applicant, the affected state, tribal and local air pollution control agencies, the city and county executives, and the state and federal land managers which have jurisdiction over the area where the source is located, as well as to all persons who have submitted a request to be included on the mailing list.

If you would like to be added to our mailing list to be informed of future Part 71 permit actions or other CAA permits issued in Indian country, please send an email using the link for the Region 8 CAA public comment opportunities provided at <a href="https://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8">https://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8</a>, or send your name and address to the contact listed below:

Part 71 Permitting Lead U.S. Environmental Protection Agency, Region 8 1595 Wynkoop Street (8P-AR) Denver, Colorado 80202-1129

Public notice will be provided at <u>https://www.epa.gov/caa-permitting/caa-permit-public-</u> <u>comment-opportunities-region-8</u> giving opportunity for public comment on the draft permit and the opportunity to request a public hearing.

#### B. Opportunity to Comment

Members of the public are given an opportunity to review a copy of the draft permit prepared by the EPA, the application, this Statement of Basis for the draft permit and all supporting materials for the draft permit. Copies of these documents are available at:

Uintah County Clerk's Office 147 East Main St #6 Vernal, Utah 84078 Contact: Michael Wilkins, Uintah County Clerk at (435) 781-5361 or <u>mwilkins@co.uintah.ut.us</u>

and

Ute Indian Tribe Energy and Minerals Department Office 988 South 7500 East, Annex Building Fort Duchesne, Utah 84026 Contact: Minnie Grant, Air Coordinator, at (435) 725-4900 or <u>minnieg@utetribe.com</u>

and

U.S. Environmental Protection Agency, Region 8 1595 Wynkoop Street (8P-AR) Denver, Colorado 80202-1129 Contact: Eric Wortman, Environmental Scientist, at (617) 918-1624 or <u>wortman.eric@epa.gov</u>

All documents are available for review at the Region 8 office Monday through Friday from 8:00 a.m. to 4:00 p.m. (excluding federal holidays). Electronic copies of the draft permit, statement of basis and supporting permit record may also be viewed at: https://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8.

Any interested person may submit written comments on the draft Part 71 operating permit during the public comment period to the Part 71 Permitting Lead at the address listed in Section A above, or by email using the instructions on the public comment opportunities web site address listed above. All comments will be considered and answered by the EPA in making the final decision on the permit. The EPA keeps a record of the commenters and of the issues raised during the public participation process.

Anyone, including the applicant, who believes any condition of the draft permit is inappropriate should raise all reasonable ascertainable issues and submit all arguments supporting their position by the close of the public comment period. Any supporting materials submitted must be included in full and may not be incorporated by reference, unless the material has already been submitted as part of the administrative record in the same proceeding or consists of state or federal statutes and regulations, EPA documents of general applicability or other generally available reference material.

The final permit will be a public record that can be obtained upon request. A statement of reasons for changes made to the draft permit and responses to comments received will be sent to all persons who comment on the draft permit. The final permit and response to comments document will also be available online at: <u>https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8</u>. Anyone may request a copy of the final permit at any time by contacting the Tribal Air Permit Program at (800) 227–8917 or by sending an email to r8airpermitting@epa.gov.

#### C. Opportunity to Request a Hearing

A person may submit a written request for a public hearing to the Part 71 Permitting Lead, U.S. EPA Region 8, by stating the nature of the issues to be raised at the public hearing. Based on the number of hearing requests received, the EPA will hold a public hearing whenever it finds there is a significant degree of public interest in a draft operating permit. The EPA will provide public

notice of the public hearing. If a public hearing is held, any person may submit oral or written statements and data concerning the draft permit.

#### D. Appeal of Permits

Within 30 days after the issuance of a final permit decision, any person who filed comments on the draft permit or participated in the public hearing may petition to the Environmental Appeals Board (EAB) to review any condition of the permit decision. Any person who failed to file comments or participate in the public hearing may petition for administrative review, only if the changes from the draft to the final permit decision or other new grounds were not reasonably foreseeable during the public comment period. The 30-day period to appeal a permit begins with the EPA's service of the notice of the final permit decision.

The petition to appeal a permit must include a statement of the reasons supporting the review, a demonstration that any issues were raised during the public comment period, a demonstration that it was impracticable to raise the objections within the public comment period, or that the grounds for such objections arose after such a period. When appropriate, the petition may include a showing that the condition in question is based on a finding of fact or conclusion of law which is clearly erroneous; or, an exercise of discretion, or an important policy consideration that the EAB should review.

The EAB will issue an order either granting or denying the petition for review, within a reasonable time following the filing of the petition. Public notice of the grant of review will establish a briefing schedule for the appeal and state that any interested person may file an amicus brief. Notice of denial of review will be sent only to the permit applicant and to the person requesting the review. To the extent review is denied, the conditions of the final permit decision become final agency action.

A motion to reconsider a final order shall be filed within ten days after the service of the final order. Every motion must set forth the matters claimed to have been erroneously decided and the nature of the alleged errors. Motions for reconsideration shall be directed to the Administrator rather than the EAB. A motion for reconsideration shall not stay the effective date of the final order unless it is specifically ordered by the EAB.

#### E. Petition to Reopen a Permit for Cause

Any interested person may petition the EPA to reopen a permit for cause, and the EPA may commence a permit reopening on its own initiative. The EPA will only revise, revoke and reissue, or terminate a permit for the reasons specified in 40 CFR 71.7(f) or 71.6(a)(6)(i). All requests must be in writing and must contain facts or reasons supporting the request. If the EPA decides the request is not justified, it will send the requester a brief written response giving a reason for the decision. Denial of these requests is not subject to public notice, comment, or hearings. Denials can be informally appealed to the EAB by a letter briefly setting forth the relevant facts.

United States Environmental Protection Agency Region 8 Air Program 1595 Wynkoop Street Denver, Colorado 80202



#### Air Pollution Control Permit to Operate Title V Operating Permit Program at 40 CFR Part 71

In accordance with the provisions of Title V of the Clean Air Act (CAA) and the Title V Operating Permit Program at 40 CFR part 71 (Part 71) and applicable rules and regulations,

#### XTO Energy, Inc. River Bend Dehydration Site (River Bend)

is authorized to operate air emission units and to conduct other air pollutant emitting activities in accordance with the permit conditions listed in this permit.

This source is authorized to operate at the following location(s):

Uintah and Ouray Indian Reservation, Uintah County, Utah River Bend: Latitude 39.94851N, Longitude 109.77057W Tap 1 Compressor Station: Latitude 39.95027N, Longitude 109.77465W RBU 6-15E Wellsite: Latitude 39.94851N, Longitude 109.77057W RBU 7-15E Wellsite: Latitude 39.95026N, Longitude 109.76701W RBU 11-15E Wellsite: Latitude 39.94478N, Longitude 109.76979W

Terms not otherwise defined in this permit have the meaning assigned to them in the referenced regulations. All terms and conditions of the permit are enforceable by the EPA and citizens under the CAA.

Monica S. Morales Director, Air Program Office of Partnerships and Regulatory Assistance PAGE INTENTIONALLY LEFT BLANK

#### Air Pollution Control Permit to Operate Title V Operating Permit Program at 40 CFR Part 71

#### XTO Energy, Inc. River Bend Dehydration Site

Permit Number: V-UO-000026-2011.00 Replaces Permit No.: N/A Issue Date: Effective Date: Expiration Date:

The permit number cited above should be referenced in future correspondence regarding this source.

Table 1. Part 71 Permitting History

| Date of Action | Permit Number       | Type of<br>Action | Description of Action |
|----------------|---------------------|-------------------|-----------------------|
| TBD            | V-UO-000026-2011.00 | Initial Permit    | N/A                   |

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#### ii

#### I. Facility Information and Emission Unit Identification

#### A. Facility Information

Parent Company Name: XTO Energy, Inc.

Plant Operator and Name: River Bend Dehydration Site

| Plant Location:       | River Bend: Latitude 39.94851N, Longitude 109.77057W<br>Tap 1 Compressor Station: Latitude 39.95027N, Longitude 109.77465W<br>RBU 6-15E Wellsite: Latitude 39.94851N, Longitude 109.77057W<br>RBU 7-15E Wellsite: Latitude 39.95026N, Longitude 109.76701W<br>RBU 11-15E Wellsite: Latitude 39.94478N, Longitude 109.76979W |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Region:               | 8                                                                                                                                                                                                                                                                                                                           |
| State:                | Utah                                                                                                                                                                                                                                                                                                                        |
| County:               | Uintah                                                                                                                                                                                                                                                                                                                      |
| Reservation:          | Uintah and Ouray Indian Reservation                                                                                                                                                                                                                                                                                         |
| Tribe:                | Ute Indian Tribe                                                                                                                                                                                                                                                                                                            |
| Responsible Official: | Manager of Midstream Operations - XTO Energy, Inc.                                                                                                                                                                                                                                                                          |
| SIC Code:             | 1311 – Crude Petroleum and Natural Gas                                                                                                                                                                                                                                                                                      |

#### **Description:**

Natural gas produced from area wells is compressed at existing offsite locations up to a line pressure of 850 to 1,000 pounds per square inch gauge (psig) and then sent to the River Bend natural gas dehydrator site through 6" and 10" gathering flowlines. Once the gas enters the site, it flows through two (2) two-phase separators in order to reduce water and condensable liquids content in the gas stream, prior to entry into the triethyle ne glycol (TEG) dehydration system. The liquid produced from the inlet separators is then sent to a 30,000-gallon pressurized flash separator. The purpose of the flash separator is to flash the high-pressured liquids and route the flash gas back to the high-pressure gathering system, thereby eliminating the flash emissions from being vented to the atmosphere. The pressurized flash separator is then set to discharge the separated liquids at a pressure of approximately 50 psig into either of the onsite 400-barrel atmospheric liquid storage tanks. The 400-barrel liquid storage tanks are used for temporary storage prior to the liquids being hauled offsite by tanker truck.

Following the inlet separation, the gas is discharged into the TEG natural gas dehydration system for further water removal from the natural gas stream. The TEG natural gas dehydration system consists of a 45 million standard cubic feet per day (MMscfd) capacity natural gas TEG dehydration process still vent, a 1.5 million British thermal units per hour (MMBTU/hr) natural gas-fired process heater and a TEG regenerator. The TEG natural gas dehydration system emissions are controlled by a thermal oxidizer. The TEG natural gas dehydration system utilizes a benzene, toluene, ethylbenzene and xylene (BTEX) emissions control system that

captures vapors from the still vent and the flash tank and sends the vapors to the thermal oxidizer for destruction. Following dehydration, the natural gas stream leaves the site via a metered sales pipeline. The station has on-site electrical power supplied by a 65 kilowatt (kW) Capstone natural-gas fired microturbine-driven generator. In addition, the pneumatic control devices are operated by plant air supplied by the on-site electric driven air compressor.

Other production equipment located at River Bend consists of three (3) production wellsites (RBU 6-15E, RBU 7-15E, and RBU 11-15E). Each wellsite includes  $a \le 400$ -barrel storage tank, natural gas-fired heaters, as well as minimal fugitive and truck loading emissions. The RBU 11-15E wellsite also operates a small 0.20 MMscfd capacity TEG natural gas dehydration system. The RBU 6-15E wellsite is located within the property boundaries of River Bend but does not discharge directly into River Bend. The RBU 7-15E and RBU 11-15E wellsites are located on a separate surface sites within a quarter mile of River Bend. The gas produced at the three (3) wellsites enters the common field gathering system and ultimately into off-site compressor stations. One of these compressor stations, the Tap-1 Compressor Station (Tap-1), is also located within a quarter mile of River Bend and consists of two (2) natural gas-fired compression engines, two (2) condensate tanks, natural gas-fired heaters, truck loading emissions and fugitive emissions.

#### **B.** Facility Emission Points

| Unit I.D.      | Description                                                                                                                                                                                 | Control Equipment                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| RBD-1          | 45 MMscfd TEG Dehydration Unit (River Bend)<br>Serial #: 8156 Installed: 1/17/2010                                                                                                          | Thermal Oxidizer                        |
| RBT-1          | 400 bbl Condensate Storage Tank (River Bend)Serial #: 1764Installed: 12/15/2009                                                                                                             | None                                    |
| RBT-2          | 400 bbl Condensate Storage Tank (River Bend)<br>Serial #: 1765 Installed: 12/15/2009                                                                                                        | None                                    |
| RBL-1          | Condensate Truck Loading Emissions (River Bend)                                                                                                                                             | None                                    |
| RBF-1          | Fugitive Emissions (River Bend)                                                                                                                                                             | None                                    |
| RBU 6-15E F-1  | Fugitive Emissions (RBU 6-15E)                                                                                                                                                              | None                                    |
| RBU 7-15E F-1  | Fugitive Emissions (RBU 7-15E)                                                                                                                                                              | None                                    |
| RBU 11-15E D-1 | 0.20 MMscfd TEG Dehydration Unit (RBU 11-15E)<br>Serial #: Unknown Installed: 2007                                                                                                          | None                                    |
| RBU 11-15E F-1 | Fugitive Emissions (RBU 11-15E)                                                                                                                                                             | None                                    |
| RBU 11-15E P-1 | Pneumatic Pump Emissions (RBU 11-15E)                                                                                                                                                       | None                                    |
| T1C-1          | Caterpillar 3516 LE; 1,340 hp (Tap-1)4-Stroke Lean-Burn Reciprocating Internal Combustion Engines<br>Natural Gas-FiredSerial No. 4EK03995Installed: 7/1/2013<br>Mfg: 1/1/2004               | Oxidation Catalyst<br>(not enforceable) |
| T1C-2          | Caterpillar 3516 LE; 1,340 hp (Tap-1)<br>4-Stroke Lean-Burn Reciprocating Internal Combustion Engines<br>Natural Gas-Fired<br>Serial No. 4EK03582<br>Installed: 7/18/2013<br>Mfg: 8/12/2001 | Oxidation Catalyst<br>(not enforceable) |

Table 2 - Emission Units and Emission Generating Activities\*

| Unit I.D.       | Description                                | Control Equipment |
|-----------------|--------------------------------------------|-------------------|
| T1T-1           | 300 bbl Condensate Storage Tank (Tap-1)    | None              |
|                 | Serial #: 2024 Installed: 6/18/2012        | None              |
| T1T-2           | 300 bbl Condensate Storage Tank (Tap-1)    | N                 |
|                 | Serial #: 8S06401-02 Installed: 6/18/2012  | None              |
| T1P-1 and T1P-2 | Two (2) Heat Trace Pneumatic Pumps (Tap-1) | None              |
| T1F-1           | Fugitive Emissions (Tap-1)                 | None              |

\* Mfg = Manufactured; hp = horsepower; bbl = barrel; MMscfd = million standard cubic feet per day

#### Table 3 - Insignificant Emission Units\*

| Description                                                     |  |  |
|-----------------------------------------------------------------|--|--|
| Capstone 65 kW Microturbine Genset (River Bend)                 |  |  |
| 1.0 MMBtu/hr** TEG Dehydration Unit Reboiler (River Bend)       |  |  |
| 0.25 MMBtu/hr** Tank Heater #1 (River Bend)                     |  |  |
| 0.25 MMBtu/hr** Tank Heater #2 (River Bend)                     |  |  |
| 0.25 MMBtu/hr** Natural Gas-fired Separator Heater (River Bend) |  |  |
| 3.0 MMBtu/hr* Heater for Thermal Oxidizer (River Bend)          |  |  |
| Pipeline Pigging Operations (River Bend)                        |  |  |
| 400-bbl slop tank (RBU 6-15E)                                   |  |  |
| 0.25 MMBtu/hr Tank Heater (RBU 6-15E)                           |  |  |
| Condensate Truck Loading (RBU 6-15E)                            |  |  |
| 0.75 MMBtu/hr Separator Heater (RBU 6-15E)                      |  |  |
| 0.75 MMBtu/hr** Separator Heater (RBU 7-15E)                    |  |  |
| 0.25 MMBtu/hr** Tank Heater (RBU 7-15E)                         |  |  |
| Condensate Truck Loading (RBU 7-15E)                            |  |  |
| 400-bbl Slop Tank (RBU 7-15E)                                   |  |  |
| 0.175 MMBtu/hr** TEG Dehydration Unit Reboiler (RBU 11-15E)     |  |  |
| 0.25 MMBtu/hr Separator Heater (RBU 11-15E)                     |  |  |
| 0.25 MMBtu/hr Tank Heater (RBU 11-15E)                          |  |  |
| Condensate Truck Loading (RBU 11-15E)                           |  |  |
| 300-bbl slop tank (RBU 11-15E)                                  |  |  |
| Capstone 65 kW Microturbine Genset (Tap-1)                      |  |  |
| 0.25 MMBTU/hr** separator heater (Tap-1)                        |  |  |
| Two (2) 0.25 MMBTU/hr** Tank Heaters (Tap-1)                    |  |  |
| Condensate Truck Loading Emissions (Tap-1)                      |  |  |
| Compressor Blowdown Emissions (Tap-1)                           |  |  |

\*Insignificant emission units can change at the facility as long as the new or replacement units meet the criteria for insignificance, and XTO supplies information as required under 40 CFR part 71 and this permit. The insignificant emission unit status does not exempt these emission units from the requirements of any standards that may apply under 40 CFR parts 60 or 63. \*\*MMBtu = million British thermal units.

#### II. <u>National Emission Standards for Hazardous Air Pollutants from Oil and Natural</u> Gas Production Facilities: 40 CFR Part 63, Subpart HH

#### A. Applicability [40 CFR 63.760]

- 1. 40 CFR part 63, subpart HH applies to the 45 MMscfd TEG dehydration unit identified as RBD-1 in Table 2 of this permit. [63.760(b)(1)(i)]
- 2. Notwithstanding conditions in this permit, the Permittee shall comply with all applicable requirements of 40 CFR part 63, subpart HH.

#### B. General Standards [40 CFR 63.764]

- 1. The General Provisions at 40 CFR part 63, subpart A apply as specified in Table 2 of 40 CFR part 63, subpart HH. Notwithstanding conditions in this permit, the Permittee shall comply with all applicable requirements of 40 CFR part 63, subpart A.
- 2. All reports required under 40 CFR part 63, subpart A shall be sent to the EPA at the following address as listed in §63.13:

Director, Air and Toxics Technical Enforcement Program, 8ENF-AT Office of Enforcement, Compliance and Environmental Justice 1595 Wynkoop Street, Denver, CO 80202–1129

- 3. Except as specified in §63.764(e), the Permittee shall comply with the following requirements for the glycol dehydration units:
  - (a) The control requirements for glycol dehydration unit process vents specified in §63.765;
  - (b) The monitoring requirements specified in §63.773; and
  - (c) The recordkeeping and reporting requirements specified in §§63.774 and 63.775.
- 4. At all times the Permittee shall operate and maintain any glycol dehydration unit, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the EPA which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records and inspection of the unit.

#### C. Glycol Dehydration Unit Process Vent Standards [40 CFR 63.765]

The Permittee shall comply with the control equipment requirements as follows:

- 1. Except as specified in §63.765(c), the Permittee shall comply with the applicable requirements for controlling air emissions specified in §63.765(b).
- 2. For each closed-vent system, the Permittee shall comply with the closed-vent system requirements specified in §63.771(c);
- 3. For each control device, the Permittee shall comply with the applicable control device requirements specified in §63.771(d) or §63.771(f); and
- 4. For each process modification made to comply with the glycol dehydration unit process vent standards at §63.765(c)(2), the Permittee shall comply with the process modification standards specified in §63.771(e).

#### D. Test Methods, Compliance Procedures and Compliance Determination Requirements [40 CFR 63.772]

The Permittee shall determine compliance with the requirements of 40 CFR part 63, subpart HH using the applicable test methods and compliance procedures specified in §63.772.

#### E. Inspection and Monitoring Requirements [40 CFR 63.773]

- 1. For each closed-vent system or cover required for the Permittee to comply with 40 CFR part 63, subpart HH, the Permittee shall comply with the inspection and monitoring requirements specified in §63.773(c).
- 2. For each control device required for the Permittee to comply with 40 CFR part 63, subpart HH, the Permittee shall comply with the inspection and monitoring requirements as specified in §63.773(b) or §63.773(d).

#### F. Recordkeeping Requirements [40 CFR 63.774]

- 1. The recordkeeping provisions of 40 CFR part 63, subpart A, that apply and those that do not apply to the Permittee are listed in Table 2 of 40 CFR part 63, subpart HH.
- 2. The Permittee shall maintain the records specified in §§63.774(b), (c), (d), (e), (g) and (h).
- 3. Except as specified in §§63.774(c), 63.774(d) and 63.774(f), the Permittee shall maintain the records specified in §63.774(b).
- 4. If compliance with the benzene emission limit specified in §63.765(b)(1)(ii) is elected, the Permittee shall document, to the Administrator's satisfaction, the items in §63.774(c).
- 5. For glycol dehydration units operating at the source that meet the exemption criteria in §63.764(e)(1)(i) or §63.764(e)(1)(ii), the Permittee shall maintain records as specified in §63.774(d). The Permittee shall maintain the records as specified in §63.774(d) for emission unit RBU 11-15E D-1 as identified in Table 2 of this permit.
- 6. The Permittee shall keep records of the requirements of §63.774(e) when using a flare to comply with §63.771(d).
- 7. The Permittee shall maintain records, pursuant to §63.774(g), of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control equipment and monitoring equipment. The Permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with §63.764(j), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- 8. The Permittee shall keep records of the requirements of §63.774(h) when using a control device whose model is tested under §63.772(h) to comply with §§63.771(d), (e)(3)(ii) and (f)(1).

9. The Permittee shall keep records, pursuant to §63.774(i), of the date the semi-annual maintenance inspection required under §63.773(b) is performed when using a control device whose model was tested under §63.772(h).

#### G. Reporting Requirements [40 CFR 63.775]

- 1. The reporting provisions of subpart A of this part, that apply and those that do not apply to the Permittee are listed in Table 2 of this subpart.
- 2. The Permittee shall submit the information specified in §63.775(b).
- 3. The Permittee shall submit Notification of Compliance Status Reports as specified in §63.775(d).
- 4. The Permittee shall submit Periodic Reports as specified in §63.775(e).
- 5. The Permittee shall submit notifications of process changes as specified in §63.775(f).
- 6. The Permittee shall comply with any applicable electronic reporting provisions specified at §63.775(g).

#### III. National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines: 40 CFR Part 63, Subpart <u>7222</u>

#### A. Applicability [40 CFR 63.6585]

40 CFR part 63, subpart ZZZZ applies to the following emission units:

- 1. Caterpillar 3516 LE engine identified as T1C-1 in Table 2 of this permit.
- 2. Caterpillar 3516 LE engine identified as T1C-2 in Table 2 of this permit.

#### B. General Provisions [40 CFR 63.6665]

- 1. The General Provisions at 40 CFR part 63, subpart A apply as specified in Table 8 of 40 CFR part 63, subpart ZZZZ. Notwithstanding conditions in this permit, the Permittee shall comply with all applicable requirements of 40 CFR part 63, subpart A.
- 2. All reports required under 40 CFR part 63, subpart A shall be sent to the EPA at the following address as listed in §63.13:

Director, Air and Toxics Technical Enforcement Program, 8ENF–AT Office of Enforcement, Compliance and Environmental Justice 1595 Wynkoop Street, Denver, CO 80202–1129

# C. Operation and Maintenance Requirements [40 CFR 63.6603, 63.6605, and 63.6625]

1. Engine units T1C-1 and T1C-2 are subject to the requirements for existing nonemergency spark ignition (SI) four-stroke lean-burn (4SLB) remote stationary reciprocating internal combustion engines (RICE) > 500 site-rated hp at an area source of HAP constructed prior to June 12, 2006 of 40 CFR part 63, subpart ZZZZ. The permittee shall evaluate the status of engine units T1C-1 and T1C-2 every 12 months to determine the engines meet the definition of remote stationary RICE. If the annual evaluation of the remote status of an engine indicates that the stationary RICE no longer meets the definition of remote stationary RICE in 40 CFR 63.6675, the permittee shall comply with all of the requirements for existing non-emergency ignition (SI) fourstroke lean-burn (4SLB) stationary RICE > 500 site-rated hp at area sources of hazardous air pollutants (HAP) that are not remote stationary RICE within 1 year of the evaluation and apply for a modification to this permit.

- 2. The permittee shall comply with the requirements in Table 2d of 40 CFR part 63, subpart ZZZZ as specified in §63.6603(a).
- 3. The permittee shall comply with the emission limitations, operating limitations and other requirements in 40 CFR part 63, subpart ZZZZ at all times.
- 4. The Permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions at all times. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if the required levels have been achieved. Determination of whether such operations and maintenance procedures are being used will be based on information available to the EPA, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records and inspection of the source.
- 5. The Permittee shall meet the monitoring, installation, collection, operation and maintenance requirements as specified in §63.6625.

#### D. Continuous Compliance Requirements [40 CFR 63.6640]

1. The permittee shall demonstrate continuous compliance with the emission limitations, operating limitations and other requirements in Table 2d that apply according to the methods specified in Table 6 of 40 CFR part 63, subpart ZZZZ.

# E. Recordkeeping and Reporting Requirements [40 CFR 63.6603, 63.6640, 63.6655, and 63.6660]

- 1. The Permittee shall keep records as specified in §63.6655.
- 2. The Permittee shall keep the records in the format and for the duration as specified in \$63.6660.
- 3. The permittee shall keep a record of initial and annual evaluations of the remote status of the stationary RICE. The initial evaluation must indicate that the stationary RICE

met the definition of remote stationary RICE in § 63.6675 as of the initial compliance date, October 19, 2013. The annual evaluations are thereafter required to be performed every 12 months.

- 4. The permittee shall report each instance in which an operating limit in Table 2d of 40 CFR part 63, subpart ZZZZ was not met. These instances are deviations from the operating limitations and must be reported according to the reporting requirements of \$63.6650(f) and in the semiannual monitoring report required under the Facility-Wide Reporting Requirements section of this permit.
- 5. The permittee shall report each instance in which the requirements in Table 8 of 40 CFR part 63, subpart ZZZZ, were not met.

# IV. Facility-Wide Requirements [40 CFR 71.6(a)(1)]

Conditions in this section of this permit apply to all emissions units located at the source, including any units not specifically listed in Table 2 and Table 3 of the Facility Emission Points section of this permit.

# A. Recordkeeping Requirements [40 CFR 71.6(a)(3)(ii)]

The Permittee shall comply with the following generally applicable recordkeeping requirements:

- 1. If the Permittee determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more HAP is not subject to a relevant standard or other requirement established under 40 CFR part 63, the Permittee shall keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination shall include an analysis (or other information) that demonstrates why the Permittee believes the source is unaffected (e.g., because the source is an area source). [40 CFR 63.10(b)(3)]
- 2. The permittee is the owner or operator of a TEG dehydration unit that is exempt from the control requirements under §63.764(e) (Unit RBU 11-15E D-1). The permittee shall retain each determination used to demonstrate that actual flowrate of natural gas throughput is less than 85,000 scm/day (3,000,000 scf/day) or the actual average benzene emissions are below 1 tpy. [40 CFR 63.764(e)(1), 63.772(b)(2) and 63.774(d)(1)]
- 3. Records shall be kept of off permit changes, as required by the Off Permit Changes section of this permit.

# B. Reporting Requirements [40 CFR 71.6(a)(3)(iii)]

1. The Permittee shall submit to the EPA all reports of any required monitoring under this permit semiannually. The first report shall cover the period from the effective date of this permit through December 31, 2017. Thereafter, the report shall be submitted semi-

annually, by April 1<sup>st</sup> and October 1<sup>st</sup> of each year. The report due on April 1<sup>st</sup> shall cover the 6-month period ending on the last day of December before the report is due. The report due on October 1<sup>st</sup> shall cover the 6-month period ending on the last day of June before the report is due. All instances of deviations from permit requirements shall be clearly identified in such reports. All required reports shall be certified by a responsible official consistent with the Submissions section of this permit.

To help Part 71 Permittees meet reporting responsibilities, the EPA has developed a form "SIXMON" for 6-month monitoring reports. The form may be found on the EPA's website at: <u>https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits</u>]

- 2. "Deviation" means any situation in which an emissions unit fails to meet a permit term or condition. A deviation is not always a violation. A deviation can be determined by observation or through review of data obtained from any testing, monitoring, or recordkeeping established in accordance with §71.6(a)(3)(i) and (a)(3)(ii). For a situation lasting more than 24 hours which constitutes a deviation, each 24-hour period is considered a separate deviation. Included in the meaning of deviation are any of the following:
  - (a) A situation where emissions exceed an emission limitation or standard;
  - (b) A situation where process or emissions control device parameter values indicate that an emission limitation or standard has not been met; or
  - (c) A situation in which observations or data collected demonstrate noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit.
- 3. The Permittee shall promptly report to the EPA deviations from permit requirements, including those attributable to upset conditions as defined in this permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. "Prompt" is defined as follows:
  - (a) Any definition of "prompt" or a specific time frame for reporting deviations provided in an underlying applicable requirement as identified in this permit.
  - (b) Where the underlying applicable requirement fails to address the time frame for reporting deviations, reports of deviations will be submitted based on the following schedule:
    - (i) For emissions of a HAP or a toxic air pollutant (as identified in the applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence.
    - (ii) For emissions of any regulated air pollutant, excluding a HAP or a toxic air pollutant that continues for more than 2 hours in excess of permit requirements, the report must be made within 48 hours.
    - (iii) For all other deviations from permit requirements, the report shall be submitted with the semi-annual monitoring report.

(c) If any of the conditions in (i) or (ii) of paragraph (b) above are met, the Permittee shall notify the EPA by telephone (1-800-227-6312), facsimile (303-312-6409), or by email to <u>r8airreportenforcement@epa.gov</u> based on the timetables listed above. [Notification must specify that this notification is a deviation report for a Part 71 permit]. A written notice, certified consistent with the Submissions section of this permit must be submitted within 10 working days of the occurrence. All deviations reported under this section must also be identified in the 6-month report required under Condition 1 in this section of this permit.

[Explanatory note: To help Part 71 Permittees meet reporting responsibilities, the EPA has developed a form "PDR" for prompt deviation reporting. The form may be found on the EPA's website at: <u>https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits</u>]

#### V. General Provisions

#### A. Annual Fee Payment [40 CFR 71.9]

- 1. The Permittee shall pay an annual permit fee in accordance with the procedures outlined below.
- 2. The Permittee shall pay the annual permit fee each year no later than April 1<sup>st</sup>. The fee shall cover the previous calendar year.
- 3. The fee payment shall be in United States currency and shall be paid by money order, bank draft, certified check, corporate check, or electronic funds transfer payable to the order of the U.S. Environmental Protection Agency.
- 4. The Permittee shall send fee payment and a completed fee filing form to:

| For regular U.S. Postal Service mail | For <u>non-U.S. Postal Service express</u> |
|--------------------------------------|--------------------------------------------|
|                                      | Mail (FedEx, Airborne, DHL, and UPS)       |
|                                      |                                            |
| U.S. Environmental Protection Agency | U.S. Bank                                  |
| FOIA and Miscellaneous Payments      | Government Lockbox 979078                  |
| Cincinnati Finance Center            | U.S. EPA FOIA & Misc. Payments             |
| P.O. Box 979078                      | 1005 Convention Plaza                      |
| St. Louis, MO 63197-9000             | SL-MO-C2-GL                                |
|                                      | St. Louis, MO 63101                        |

5. The Permittee shall send an updated fee calculation worksheet form and a photocopy of each fee payment check (or other confirmation of actual fee paid) submitted annually by the same deadline as required for fee payment to the address listed in the Submissions section of this permit.

[Explanatory note: The fee filing form "FF" and the fee calculation worksheet form "FEE" may be found on the EPA's website at: <u>https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits</u>]

- 6. Basis for calculating annual fee:
  - (a) The annual emissions fee shall be calculated by multiplying the total tons of actual emissions of all "regulated pollutants (for fee calculation)" emitted from the source by the presumptive emissions fee (in dollars per ton) in effect at the time of calculation.
    - (i) "Actual emissions" means the actual rate of emissions in tpy of any regulated pollutant (for fee calculation) emitted from a Part 71 source over the preceding calendar year. Actual emissions shall be calculated using each emissions unit's actual operating hours, production rates, inplace control equipment, and types of materials processed, stored, or combusted during the preceding calendar year.
    - (ii) Actual emissions shall be computed using methods required by the permit for determining compliance, such as monitoring or source testing data.
    - (iii) If actual emissions cannot be determined using the compliance methods in the permit, the Permittee shall use other federally recognized procedures.

# [Explanatory note: The presumptive fee amount is revised each calendar year to account for inflation, and it is available from the EPA prior to the start of each calendar year.]

- (b) The annual emissions fee shall be increased by a GHG fee adjustment for any source that has initiated an activity listed in the table at §71.9(c)(8) since the fee was last paid. The GHG fee adjustment shall be equal to the set fee provided in the table at §71.9(c)(8) for each activity that has been initiated since the fee was last paid.
- (c) The Permittee shall exclude the following emissions from the calculation of fees:

(i) The amount of actual emissions of each regulated pollutant (for fee calculation) that the source emits in excess of 4,000 tpy;

- (ii) Actual emissions of any regulated pollutant (for fee calculation) already included in the fee calculation; and
- (iii) The quantity of actual emissions (for fee calculation) of insignificant activities [defined in \$71.5(c)(11)(i)] or of insignificant emissions levels from emissions at the source identified in the Permittee's application pursuant to \$71.5(c)(11)(i).
- 7. Fee calculation worksheets shall be certified as to truth, accuracy, and completeness by a responsible official.

[Explanatory note: The fee calculation worksheet form already incorporates a section to help you meet this responsibility.]

8. The Permittee shall retain fee calculation worksheets and other emissions-related data used to determine fee payment for 5 years following submittal of fee payment. [Emission-related data include, for example, emissions-related forms provided by the

EPA and used by the Permittee for fee calculation purposes, emissions-related spreadsheets, and emissions-related data, such as records of emissions monitoring data and related support information required to be kept in accordance with §71.6(a)(3)(ii).]

- 9. Failure of the Permittee to pay fees in a timely manner shall subject the Permittee to assessment of penalties and interest in accordance with §71.9(l).
- 10. When notified by the EPA of underpayment of fees, the Permittee shall remit full payment within 30 days of receipt of notification.
- 11. A Permittee who thinks an EPA-assessed fee is in error and who wishes to challenge such fee, shall provide a written explanation of the alleged error to the EPA along with full payment of the EPA-assessed fee.

### B. Annual Emissions Inventory [40 CFR 71.9(h)(1) and (2)]

- 1. The Permittee shall submit an annual emissions report of its actual emissions for both criteria pollutants and regulated HAPs for this source for the preceding calendar year for fee assessment purposes. The annual emissions report shall be certified by a responsible official and shall be submitted each year to the EPA by April 1<sup>st</sup>.
- 2. The annual emissions report shall be submitted to the EPA at the address listed in the Submissions section of this permit.

[Explanatory note: An annual emissions report, required at the same time as the fee calculation worksheet by §71.9(h), has been incorporated into the fee calculation worksheet form as a convenience.]

# C. Compliance Requirements [40 CFR 71.6(a)(6), Section 113(a) and 113(e)(1) of the CAA, and 40 CFR 51.212, 52.12, 52.33, 60.11(g), 61.12]

- 1. Compliance with the Permit
  - (a) The Permittee must comply with all conditions of this Part 71 permit. Any permit noncompliance constitutes a violation of the CAA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.
  - (b) It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
  - (c) For the purpose of submitting compliance certifications in accordance with §71.6(c)(5), or establishing whether or not a person has violated or is in violation of any requirement of this permit, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

- 2. Compliance Schedule [40 CFR 71.5(c)(8)(iii)]
  - (a) For applicable requirements with which the source is in compliance, the source will continue to comply with such requirements.
  - (b) For applicable requirements that will become effective during the permit term, the source shall meet such requirements on a timely basis.
- 3. Compliance Certifications [40 CFR 71.6(c)(5)]
  - (a) The Permittee shall submit to the EPA a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices annually by April 1<sup>st</sup>, and shall cover the same 12-month period as the two consecutive semi-annual monitoring reports.

[Explanatory note: To help Part 71 Permittees meet reporting responsibilities, the EPA has developed a reporting form for annual compliance certifications. The form may be found on the EPA's website at: <u>https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits</u>]

- (b) The compliance certification shall be certified as to truth, accuracy, and completeness by a responsible official consistent with §71.5(d).
- (c) The certification shall include the following:
  - (i) Identification of each permit term or condition that is the basis of the certification;
  - (ii) The identification of the method(s) or other means used for determining the compliance status of each term and condition during the certification period, and whether such methods or other means provide continuous or intermittent data. Such methods and other means shall include, at a minimum, the methods and means required in this permit. If necessary, the Permittee also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the CAA, which prohibits knowingly making a false certification or omitting material information;
  - (iii) The status of compliance with each term and condition of the permit for the period covered by the certification based on the method or means designated in (ii) above. The certification shall identify each deviation and take it into account in the compliance certification;
  - (iv) Such other facts as the EPA may require to determine the compliance status of the source; and
  - (v) Whether compliance with each permit term was continuous or intermittent.

# D. Duty to Provide and Supplement Information [40 CFR 71.6(a)(6)(v), 71.5(a)(3), and 71.5(b)]

1. The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for modifying,

revoking, and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the EPA copies of records that are required to be kept pursuant to the terms of the permit, including information claimed to be confidential. Information claimed to be confidential must be accompanied by a claim of confidentiality according to the provisions of 40 CFR part 2, subpart B.

2. The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. In addition, a Permittee shall provide additional information as necessary to address any requirements that become applicable after the date a complete application is filed, but prior to release of a draft permit.

### E. Submissions [40 CFR 71.5(d), 71.6(c)(1) and 71.9(h)(2)]

1. Any document (application form, report, compliance certification, etc.) required to be submitted under this permit shall be certified by a responsible official as to truth, accuracy, and completeness. Such certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

[Explanatory note: the EPA has developed a reporting form "CTAC" for certifying truth, accuracy and completeness of Part 71 submissions. The form may be found on the EPA's website at: https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits]

2. All fee calculation worksheets and applications for renewals and permit modifications shall be submitted to:

Part 71 Permit Contact, Air Program, 8P-AR U.S. Environmental Protection Agency, 1595 Wynkoop Street Denver, Colorado 80202

3. Except where otherwise specified, all reports, test data, monitoring data, notifications, and compliance certifications shall be submitted to:

Director, Air Toxics and Technical Enforcement Program, 8ENF-AT U.S. Environmental Protection Agency, 1595 Wynkoop Street Denver, Colorado 80202

#### F. Severability Clause [40 CFR 71.6(a)(5)]

The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.

### G. Permit Actions [40 CFR 71.6(a)(6)(iii)]

This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

#### H. Administrative Permit Amendments [40 CFR 71.7(d)]

The Permittee may request the use of administrative permit amendment procedures for a permit revision that:

- 1. Corrects typographical errors;
- 2. Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- 3. Requires more frequent monitoring or reporting by the Permittee;
- 4. Allows for a change in ownership or operational control of a source where the EPA determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittee has been submitted to the EPA;
- 5. Incorporates into the Part 71 permit the requirements from preconstruction review permits authorized under an EPA-approved program, provided that such a program meets procedural requirements substantially equivalent to the requirements of §§71.7 and 71.8 that would be applicable to the change if it were subject to review as a permit modification, and compliance requirements substantially equivalent to those contained in §71.6; or
- 6. Incorporates any other type of change which the EPA has determined to be similar to those listed in (1) through (5) above.

[Note to Permittee: If 1 through 5 above do not apply, please contact the EPA for a determination of similarity prior to submitting your request for an administrative permit amendment under this provision.]

# I. Minor Permit Modifications [40 CFR 71.7(e)(1)]

- 1. The Permittee may request the use of minor permit modification procedures only for those modifications that:
  - (a) Do not violate any applicable requirement;
  - (b) Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;

- (c) Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
- (d) Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - (i) A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I; and
  - (ii) An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA;
- (e) Are not modifications under any provision of Title I of the CAA; and
- (f) Are not required to be processed as a significant modification.
- 2. Notwithstanding the list of changes ineligible for minor permit modification procedures in 1 above, minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in an applicable implementation plan or in applicable requirements promulgated by the EPA.
- 3. An application requesting the use of minor permit modification procedures shall meet the requirements of §71.5(c) and shall include the following:
  - (a) A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
  - (b) The source's suggested draft permit;
  - (c) Certification by a responsible official, consistent with §71.5(d), that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
  - (d) Completed forms for the permitting authority to use to notify affected States as required under §71.8.
- 4. The source may make the change proposed in its minor permit modification application immediately after it files such application. After the source makes the change allowed by the preceding sentence, and until the permitting authority takes any of the actions authorized by §71.7(e)(1)(iv)(A) through (C), the source must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time period, the source need not comply with the existing permit terms and conditions it seeks to modify. However, if the source fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against it.

5. The permit shield under §71.6(f) may not extend to minor permit modifications.

# J. Significant Permit Modifications [40 CFR 71.7(e)(3), 71.8(d) and 71.5(a)(2)]

- 1. The Permittee must request the use of significant permit modification procedures for those modifications that:
  - (a) Do not qualify as minor permit modifications or as administrative amendments;
  - (b) Are significant changes in existing monitoring permit terms or conditions; or
  - (c) Are relaxations of reporting or recordkeeping permit terms or conditions.
- 2. Nothing herein shall be construed to preclude the Permittee from making changes consistent with Part 71 that would render existing permit compliance terms and conditions irrelevant.
- 3. Permittees must meet all requirements of Part 71 for applications, public participation, and review by affected states and tribes for significant permit modifications. For the application to be determined complete, the Permittee must supply all information that is required by §71.5(c) for permit issuance and renewal, but only that information that is related to the proposed change.

# K. Reopening for Cause [40 CFR 71.7(f)]

The permit may be reopened and revised prior to expiration under any of the following circumstances:

- 1. Additional applicable requirements under the CAA become applicable to a major Part 71 source with a remaining permit term of three or more years. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to §71.7(c)(3);
- 2. Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit;
- 3. The EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or
- 4. The EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

# L. Property Rights [40 CFR 71.6(a)(6)(iv)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

### M. Inspection and Entry [40 CFR 71.6(c)(2)]

- 1. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the EPA or an authorized representative to perform the following:
- 2. Enter upon the Permittee's premises where a Part 71 source is located or emissionsrelated activity is conducted, or where records must be kept under the conditions of the permit;
- 3. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- 4. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- 5. As authorized by the CAA, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

# N. Transfer of Ownership or Operation [40 CFR 71.7(d)(1)(iv)]

A change in ownership or operational control of this source may be treated as an administrative permit amendment if the EPA determines no other change in this permit is necessary and provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittee has been submitted to the EPA.

# O. Off Permit Changes [40 CFR 71.6(a)(12) and 40 CFR 71.6(a)(3)(ii)]

The Permittee is allowed to make certain changes without a permit revision, provided that the following requirements are met, and that all records required by this section are kept for a period of five (5) years:

- 1. Each change is not addressed or prohibited by this permit;
- 2. Each change shall meet with all applicable requirements and shall not violate any existing permit term or condition;
- 3. Changes under this provision may not include changes subject to any requirement of 40 CFR parts 72 through 78 or modifications under any provision of Title I of the CAA;
- 4. The Permittee must provide contemporaneous written notice to the EPA of each change, except for changes that qualify as insignificant activities under §71.5(c)(11). The written notice must describe each change, the date of the change, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change;
- 5. The permit shield does not apply to changes made under this provision;

- 6. The Permittee must keep a record describing all changes that result in emissions of any regulated air pollutant subject to any applicable requirement not otherwise regulated under this permit, and the emissions resulting from those changes;
- 7. The notice shall be kept on site and made available to the EPA on request, in accordance with the general recordkeeping provision of this permit; and
- 8. Submittal of the written notice required above shall not constitute a waiver, exemption, or shield from applicability of any applicable standard or prevention of significant deterioration (PSD) permitting requirements under 40 CFR 52.21 that would be triggered by the change.

# P. Permit Expiration and Renewal [40 CFR 71.5(a)(1)(iii), 71.5(a)(2), 71.5(c)(5), 71.6(a)(11), 71.7(b), 71.7(c)(1) and 71.7(c)(3)]

- 1. This permit shall expire upon the earlier occurrence of the following events:
  - (a) Five (5) years elapse from the date of issuance; or
  - (b) The source is issued a Part 70 or Part 71 permit under an EPA-approved or delegated permit program.
- 2. Expiration of this permit terminates the Permittee's right to operate unless a timely and complete permit renewal application has been submitted at least six months but not more than 18 months prior to the date of expiration of this permit.
- 3. If the Permittee submits a timely and complete permit application for renewal, consistent with §71.5(a)(2), but the EPA has failed to issue or deny the renewal permit, then all the terms and conditions of the permit, including any permit shield granted pursuant to §71.6(f) shall remain in effect until the renewal permit has been issued or denied.
- 4. The Permittee's failure to have a Part 71 permit is not a violation of this part until the EPA takes final action on the permit renewal application. This protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit any additional information identified as being needed to process the application by the deadline specified in writing by the EPA.
- 5. Renewal of this permit is subject to the same procedural requirements that apply to initial permit issuance, including those for public participation, affected State, and tribal review.
- 6. The application for renewal shall include the current permit number, description of permit revisions and off permit changes that occurred during the permit term, any applicable requirements that were promulgated and not incorporated into the permit during the permit term, and other information required by the application form.



XTO Energy Inc. 810 Houston Street Fort Worth, TX 76102-6298 (817) 870-2800 (817) 870-1671 Fax

August 2, 2017

XTO Energy Inc. Riverbend Dehydration Site EPA Title V – Part 71 Permit V-UO-000026-2011.00 Application Update Information Uintah County, UT

US Certified Mail No: 7016 2140 0000 8376 9895

Part 71 Permit Lead U.S. EPA – Region 8 1595 Wynkoop Street, Mail Code 8P-AR Denver, CO 80202

To Whom It May Concern:

XTO Energy, Inc. (XTO) hereby submits the accompanying application update and supplemental information pursuant to the U.S. EPA's request for the XTO Energy Inc. Riverbend Dehydration Site located in Uintah County, Utah. The information submitted in this update includes the following items:

- Response to EPA Information Request.
- Updated PTE table.
- Updated Regulatory Applicability table.
- Description of relevant modifications.
- Updated map of the River Bend Dehydration site and Surrounding Facilities.
- Updated GIS form.
- Updated EPA EUD forms.
- New EPA EUD forms for the applicable aggregated sources.
- Updated applicable EMISS forms.
- Updated applicable EPA IE forms.
- Updated supporting emissions information.
- Signed EPA CTAC form.

The attached information is certified by the Responsible Official for the XTO Energy Inc. Riverbend Dehydration Site using the completed EPA CTAC form.

Should you have any questions regarding this submittal, please feel free to contact me by phone at 817-885-2672 or by email at craig\_allison@xtoenergy.com.

Sincerely,

Craig Allison EH&S Advisor XTO Energy Inc

WCA/encl Cc: Mr. Eric Wortman, U.S. EPA Region 8 Air Permitting



# CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 70 or 71 permit).

| A. Responsible Official                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: (Last) <u>Hermann</u> (First) <u>Timothy</u> (MI) <u>L</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Title XTO Energy Inc Manager of MSO Western Division Operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Street or P.O. Box 810 Houston St.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| City Fort Worth State TX ZIP 76102 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Telephone (817) 885-0313 Ext Facsimile (817) 870 - 8441                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official).                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| I certify under penalty of law that this document and all attachments were prepared under my supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. Name (signed)          Name (typed)       Timothy L. Hermann |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

# **XTO Uintah Basin Title V Applications – 2016 / 2017 EPA Information Request Response** 3/8/2017

#### **Riverbend Dehy EPA Questions:**

- A. Following up to our phone conversation a couple weeks back, can you please confirm if Tap 1 Compressor Station is still operating and how far away it is from the Riverbend Dehy site? The RBU Dehy Site is approximately 0.19 miles (< ¼ mile) from the Tap-1 Compressor Station. The Tap-1 Compressor Station is still in-service.
- B. In the July 2011 response from XTO to our information request for multiple U&O facilities, XTO (then SGG) provided lat/long coordinates for the Tap 1 Compressor Station and the Riverbend Dehydration site. My preliminary analysis of those coordinates puts the Tap 1 CS at 0.19 miles from Riverbend Dehy. If Tap 1 is < ¼ mile from Riverbend Dehy, we need to evaluate the equipment operating at the sites to determine if Tap 1 and Riverbend have "shared" equipment and should be treated as one source under the revised definition of major source in part 71. Based on the determination that the Tap-1 Compressor Station and the RBU Dehy site are within ¼ mile of each other, The Tap-1 Compressor Stations receives natural-gas production from nearby wells and serves to compress the produced gas up to a pressure whereby the gas can enter the XTO operated gas gathering system. The natural gas then goes into Gathering system pipeline segment that discharges directly into the RBU Dehy site. The Tap-1 Compressor Station and the RBU Dehy site do not "share" any surface equipment other than the connecting pipelines. The gas from Tap-1 becomes comingled with the other inlet gas streams from other production areas at the inlet (pipeline manifold) of the RBU Dehy site. The gas from the Tap-1 compressor station does require dehydration at the RBU Dehy site prior to being sold.</p>
- C. Please provide the following information by March 8<sup>th</sup>:
  - a. The distance between Tap 1 Compressor Station and Riverbend Dehydration Site
    - b. If the distance is < ¼ mile, please provide the following:
      - i. A list of equipment operating at Tap 1 CS See attached.
      - ii. The PTE for the equipment operating at Tap 1 CS See attached.
      - iii. If the two sites share equipment (i.e. what is the operational relationship between the sites). The Riverbend Dehy site receives the compressed gas from the Tap-1 Compressor Station to allow the gas to be dehydrated prior to sales.
- D. I had a question regarding the two wellsites at the Riverbend facility with regard to the revised definition of a major source. Since RBU 6-15E is located on the same surface site as Riverbend Dehy, it is included as part of the same source. Similar to my questions on Little Canyon, I'm working on EPA's interpretation for the RBU 7-15E wellsite since it's located within a ¼ mile of Riverbend Dehy but not on the same surface site.
  - a. The RBU 6-15E and 7-15E wellsites discharge gas into the common gathering pipeline then to Tap-1 Compressor Station and not directly to the Riverbend Dehydrator Site. That is correct.
  - b. My understanding from the application is that the gas then flows to an offsite compressor station for further processing. Yes, the gas flows from the wells into the common gathering system and then into the Tap-1 Compressor Station which is located within a ¼ mile of the River Bend Dehy site.
  - c. Does the gas eventually come back to Riverbend Dehy Site before going to market or can it go elsewhere? Yes, it eventually goes to RB dehy site through the discharge of the Tap-1 Compressor Station.
  - d. In other words is the operation of Riverbend Dehy site necessary for the RBU 7-15E wellsite to produce gas to market or can both sites operate independently of each other? The sites cannot operate separately in the sense that the wells require their gas to be compressed at Tap-1 which discharges directly to the Riverbend Dehy site. Therefore, they are tied together operationally.

| BU Dehy                      | ID                 | Emissions Units                                                | NO <sub>X</sub> * | co*  | VOC*        | PM*  | SO2* | Total       | CO2*   | CH4*                   | N <sub>2</sub> O*      | COze* |
|------------------------------|--------------------|----------------------------------------------------------------|-------------------|------|-------------|------|------|-------------|--------|------------------------|------------------------|-------|
| Site PTE                     |                    |                                                                |                   |      |             |      |      | HAPs*       |        | (as CO <sub>z</sub> e) | (as CO <sub>2</sub> e) |       |
|                              | RBL-1              | Condensate Truck Loading                                       | 0.0               | 0.0  | 2.44        | 0.0  | 0.0  | 0.0         | 0.0    | 0.0                    | 0.0                    | 0.0   |
|                              | RBTO-1             | Thermal Oxidizer Emissions                                     | 0.6               | 2.9  | 0.0         | 0.1  | 0.0  | 0.0         | 962.8  | 0.02                   | 0.002                  | 963.8 |
|                              | RBD-1              | 45 MMscfd TEG Dehydrator                                       | 0.0               | 0.0  | 14.6<br>5.7 | 0.0  | 0.0  | 10.9<br>0.1 | 0.0    | 6.3<br>333.9           | 0.0                    | 6.3   |
|                              | RBF-1<br>RBT-1     | Fugitive Emissions<br>400-bbl slop tank #1                     | 0.0               | 0.0  | 4.3         | 0.0  | 0.0  | 0.1         | 0.03   | 31,4                   | 0.0                    | 334.0 |
|                              | RBT-2              | 400-bbl slop tank #2                                           | 0.0               | 0.0  | 4.3         | 0.0  | 0.0  | 0.2         | 0.03   | 31.4                   | 0.0                    | 31.4  |
|                              |                    | RBU S-15E Wellsite 0.20                                        |                   |      |             |      |      |             |        |                        |                        |       |
|                              | RBU 6-15E D-1      | MMscfd TEG Dehydrator                                          | 0.0               | 0.0  | 0.00        | 0.0  | 0.0  | 0.00        | 0.0    | 0.0                    | 0.0                    | 0.0   |
|                              | RBU 6-15E F-1      | RBU 6-15E Wellsite Fugitive                                    |                   |      |             |      |      |             |        |                        |                        |       |
|                              |                    | Emissions<br>RBU 6-15E Weilsite                                | 0.0               | 0.0  | 3.9         | 0.0  | 0.0  | 0.1         | 0.1    | 214.0                  | 0.0                    | 214.1 |
|                              | RBU 6-15E P-1      | Pneumatic Pump Emissions                                       | 0.0               | 0.0  | 5.1         | 0.0  | 0.0  | 0.1         | 0.4    | 1057.4                 | 0.0                    | 1057. |
|                              |                    | RBU 7-15E Wellsite 0.20                                        | 0.0               | 0.0  | 3.2         | 0.0  | 0.0  | 0.4         | 0.4    | 1037.4                 | 0.0                    | 1037. |
|                              | RBU 7-15E D-1      | MMscfd glycol dehydrator                                       | 0.0               | 0.0  | 0.00        | 0.0  | 0.0  | 0.00        | 0.0    | 0.0                    | 0.0                    | 0.0   |
|                              | RBU 7-15E F-1      | RBU 7-15E Wellsite Fugitive                                    |                   |      |             |      |      |             |        |                        | 1                      |       |
|                              |                    | Emissions                                                      | 0.0               | 0.0  | 3.9         | 0.0  | 0.0  | 0.1         | 0.1    | 214.0                  | 0.0                    | 214.1 |
|                              | RBU 11-15E D-      | RBU 11-15E Wellsite 0.20                                       | 1                 |      |             | -    |      |             |        |                        |                        |       |
|                              | 1                  | MMscfd glycol dehydrator                                       | 0.0               | 0.0  | 10.54       | 0.0  | 0.0  | 3.90        | 0.1    | 45.0                   | 0.0                    | 45.1  |
|                              | RBU 11-15E F-      | RBU 11-15E Wellsite Fugitive                                   |                   |      |             |      |      |             |        |                        |                        |       |
|                              | 1                  | Emissions                                                      | 0.0               | 0.0  | 3.9         | 0.0  | 0.0  | 0.1         | 0.1    | 214.0                  | 0.0                    | 214.3 |
|                              | RBU 11-15E P-<br>1 | RBU 11-15E Wellsite<br>Pneumatic Pump Emissions                | 0.0               | 0.0  | 5.1         | 0.0  | 0.0  | 0.1         | 0.4    | 1057.4                 | 0.0                    | 1057. |
|                              |                    | Tap-1 Caterpillar 3516 TALE                                    | 0.0               | 0.0  | 212         | 0.0  | 0.0  | UIL         | 0.4    | 1037.4                 | 0.0                    | 10371 |
|                              | T1C-1              | Compressor Engine #1                                           | 19.4              | 32.3 | 4.9         | 0.01 | 0.0  | 4.4 -       | 4968.0 | 1411.4                 | 0.0                    | 6379. |
|                              |                    | Tap-1 Caterpillar 3516 TALE                                    |                   |      |             |      |      |             |        |                        |                        |       |
|                              | T1C-2              | Compressor Engine #2                                           | 16.7              | 29.4 | 4.7         | 0.00 | 0.0  | 3.8         | 4197.1 | 958.2                  | 0.0                    | 5155. |
|                              |                    | Tap-1 - 300-bbl Condensate                                     |                   |      |             |      |      |             |        |                        |                        |       |
| 1                            | T1T-1              | Tank #1                                                        | 0.0               | 0.0  | 2.2         | 0.0  | 0.0  | 0.13        | 0.03   | 24.0                   | 0.0                    | 24.0  |
| Emission Units               | T1T-2              | Tap-1 - 300-bbl Condensate                                     |                   |      |             |      |      |             |        |                        |                        |       |
| 5                            | 111-2              | Tank #2                                                        | 0.0               | 0.0  | 2.2         | 0.0  | 0.0  | 0.13        | 0.03   | 24.0                   | 0.0                    | 24.0  |
| niss                         | T1P-1/T1P-2        | Tap-1 Heat Trace Pumps (2)                                     | 0.0               | 0.0  | 15.7        | 0.0  | 0.0  | 0.1         | 0.5    | 2159.4                 | 0.0                    | 2160. |
| 5                            | T1F-1              | Tap-1 Fugitives                                                | 0.0               | 0.0  | 2.5         | 0.0  | 0.0  | 0.02        | 0.04   | 80.7                   | 0.0                    | 80.8  |
|                              | RBU Dehy Site      |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | IEU                | Pigging Operations                                             | 0.0               | 0.0  | 0.26        | 0.0  | 0.0  | 0.01        | 0.02   | 13.3                   | 0.0                    | 13.3  |
|                              | RBU Dehy Site      | Capstone Model C65NG                                           |                   | -    |             |      |      |             |        |                        |                        |       |
|                              | IEU                | Standard MicroTurbine                                          |                   | 17   | 0.0         | 0.0  | 0.0  | 0.0         | 80.3   | 0.0                    | 0.0                    | 80.7  |
|                              | DBU Dahu Sita      | (65kW)<br>1.0 MMBtu/hr Dehy Reboiler                           | 0.1               | 1.7  | 0.0         | 0.0  | 0.0  | 0.0         | 80.2   | 0.0                    | 0.0                    | 80.2  |
|                              | RBU Dehy Site      | for RBD-1                                                      | 0.5               | 0.5  | 0.1         | 0.0  | 0.0  | 0.0         | 512.0  | 0.2                    | 0.3                    | 639.  |
|                              | RBU Dehy Site      | 250 Mbtu/hr heater for slop                                    | 0.3               | 0.5  | 0.4         | 0.0  | 0.0  | 0.0         |        |                        |                        |       |
|                              | IEU                | tank #1                                                        | 0.1               | 0.1  | 0.01        | 0.0  | 0.0  | 0.0         | 127.99 | 0.06                   | 0.07                   | 128.1 |
|                              | RBU Dehy Site      | 250 Mbtu/hr heater for slop                                    |                   |      |             |      |      |             |        |                        |                        |       |
|                              | IEU                | tank #2                                                        | 0.1               | 0.1  | 0.01        | 0.0  | 0.0  | 0.0         | 127.99 | 0.06                   | 0.07                   | 128.1 |
|                              | RBU 6-15E          |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | 175 Mbtu/hr Reboiler                                           | 0.0               | 0.0  | 0.0         | 0.0  | 0.0  | 0.0         | 0.0    | 0.00                   | 0.00                   | 0.0   |
|                              | RBU 6-15E          | 250 Mbtu/hr heater for slop                                    |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | tank #1                                                        | 0.1               | 0.1  | 0.0         | 0.0  | 0.0  | 0.0         | 128.0  | 0.1                    | 0.1                    | 128.  |
|                              | RBU 6-15E          |                                                                |                   |      |             |      | 191  |             | - 1    |                        |                        |       |
|                              | Wellsite IEU       | 75 Mbtu/hr separator heater                                    | 0.04              | 0,03 | 0.00        | 0.0  | 0.0  | 0.0         | 38.4   | 0.02                   | 0.02                   | 38.4  |
|                              | RBU 6-15E          |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | Condensate Truck Loading                                       | 0.0               | 0.0  | 0.2         | 0.0  | 0.0  | 0.0         | 0.0    | 0.0                    | 0.0                    | 0.0   |
|                              | RBU 6-15E          | 400 bbl slop tapk                                              | 0.0               | 0.0  | 1.9         | 0.0  | 0.0  | 0.03        | 0.01   | 12.5                   | 0.0                    | 12.5  |
|                              | Wellsite IEU       | 400-bbl slop tank<br>RBU 7-15E Wellsite                        | 0.0               | 0.0  | 1.9         | 0.0  | 0.0  | 0.03        | 0.01   | 12.5                   | 0.0                    | 12.3  |
|                              | RBU 7-15E P-1      | Pneumatic Pump Emissions                                       | 0.0               | 0.0  | 0.8         | 0.0  | 0.0  | 0.1         | 0.1    | 169.2                  | 0.0                    | 169.  |
|                              | RBU 7-15E          | 250 Mbtu/hr Dehydrator                                         | 0.0               | 0.0  | 0.0         | 0.0  | 0.0  | 0.1         |        |                        | 0.0                    | 205.  |
|                              | Wellsite IEU       | Reboiler                                                       | 0.0               | 0.0  | 0.00        | 0.0  | 0.0  | 0.00        | 0.0    | 0.0                    | 0.0                    | 0.0   |
|                              | RBU 7-15E          |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | 250 Mbtu/hr tank heater                                        | 0.1               | 0.1  | 0.0         | 0.0  | 0.0  | 0.0         | 128.0  | 0.1                    | 0.1                    | 128.  |
|                              | RBU 7-15E          |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | 75 Mbtu/hr seperator heater                                    | 0.04              | 0.03 | 0.00        | 0.0  | 0.0  | 0.0         | 38.4   | 0.02                   | 0.02                   | 38.4  |
|                              | RBU 7-15E          |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | Condensate Truck Loading                                       | 0.0               | 0.0  | 0.2         | 0.0  | 0.0  | 0.0         | 0.0    | 0.0                    | 0.0                    | 0.0   |
|                              | RBU 7-15E          |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | 400-bbl slop tank                                              | 0.0               | 0.0  | 1.9         | 0.0  | 0.0  | 0.03        | 0.01   | 12.5                   | 0.0                    | 12.5  |
|                              | RBU 11-15E         | 175 Mbtu/hr Dehydrator                                         |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | Reboiler                                                       | 0.1               | 0.1  | 0.01        | 0.0  | 0.0  | 0.0         | 89.6   | 0.04                   | 0.05                   | 89.7  |
|                              | RBU 11-15E         |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | 250 Mbtu/hr tank heater                                        | 0.1               | 0.1  | 0.01        | 0.0  | 0.0  | 0.0         | 128.0  | 0.1                    | 0.1                    | 128.  |
|                              | RBU 11-15E         | 250 Mbtu/hr separator                                          | -                 |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | heater                                                         | 0.1               | 0.1  | 0.01        | 0.0  | 0.0  | 0.0         | 128.0  | 0.1                    | 0.1                    | 128.  |
|                              | RBU 11-15E         |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
|                              | Wellsite IEU       | Condensate Truck Loading                                       | 0.0               | 0.0  | 0.1         | 0.0  | 0.0  | 0.0         | 0.0    | 0.0                    | 0.0                    | 0.0   |
| atte                         | RBU 11-15E         |                                                                |                   |      |             |      |      |             |        |                        |                        |       |
| n u                          | Wellsite IEU       | 300-bbl slop tank                                              | 0.0               | 0.0  | 1.4         | 0.0  | 0.0  | 0.02        | 0.01   | 8.3                    | 0.0                    | 8.3   |
| isio                         |                    | Standard MicroTurbine                                          |                   |      |             |      |      |             |        |                        |                        |       |
| 80                           | Tap-1 Site IEU     | (65kW)                                                         | 0.1               | 1.7  | 0.0         | 0.0  | 0.0  | 0.0         | 80.2   | 0.0                    | 0.0                    | 80.   |
| E                            |                    | Tap-1 - Three (3) 250                                          |                   | 1    |             |      | 1    | 1           | 1      | 1                      |                        | 1     |
| nt Emi                       |                    |                                                                | 0.40              | 0.74 | 0.04        | 0.03 | 0.0  | 0.0         | 384.0  | 0.2                    | 0.2                    | 384   |
| icant Emi                    | T1-Heaters IEU     | Mbtu/hr Heaters                                                | 0.40              | 0.34 | 0.04        | 0.05 |      |             |        |                        | 0.6                    |       |
| gnificant Emi                | T1-Heaters IEU     | Motu/nr Heaters                                                |                   |      | -           | 1    | 1    |             | 1      |                        |                        | 1     |
| insignificant Emission Units |                    | Mbtu/hr Heaters<br>Tap-1 Truck Loading<br>Tap-1 Comp Blowdowns | 0.40              | 0.0  | 0.3         | 0.0  | 0.0  | 0.002       | 0.0    | 0.0 256.5              | 0.0                    | 0.0   |

#### XTO Energy Inc.

| RBT-1         400           RBT-2         400           RBU Pneumatic<br>Controllers         RBU Pn           RBU 6-15E         RBU<br>Pneumatic<br>Controllers         RBU<br>Pneumatic<br>Controllers           RBU 7-35E 0-1         MMacq           RBU 7-35E 0-1         MMacq           RBU 7-35E 0-1         MMacq           RBU 7-15E P-1         RBU<br>Pneumatic<br>Controllers         RBU           RBU 7-15E P-1         RBU           RBU 7-15E P-1         RBU           RBU 7-15E P-1         RBU           RBU 11-15E P-1         RBU           T1C-1         Com           T1C-1         Com           T1C-1         Com           T1C-2         Tap-1 C           Com         T1C-2         Com           T1C-2         Tap-1 C         Com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Visefd TEG Dehydrator<br>Vio-bbl slop tank #1<br>Vio-bbl slop tank #2<br>Pneumatic Controllers<br>16-15£ Wellsite 0.20<br>ecid 17£ G-Dehydrator<br>BU 6-15£ Wellsite 0.20<br>ecid 17£ Wellsite 0.20<br>ecid 17£ Wellsite 0.20<br>ecid 18<br>BU 7-15£ Wellsite 0.20<br>ecid glycol dehydrator<br>BU 7-15£ Pneumatic<br>Controllers<br>U 7-15£ Wellsite 0.20<br>ecid glycol dehydrator<br>BU 1-15£ Wellsite 0.20<br>ecid glycol dehydrator<br>BU 11-15£ Wellsite<br>matic Pump Emissions<br>J 11-15£ Pneumatic<br>Controllers<br>Controllers<br>Controllers<br>Controllers       | Natural Gas<br>Dehydrator<br>Storage Tank<br>Storage Tank<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Controllers | Pre-2010           Pre-2010           Pre-2010           Pre-2012           Pre-2012           Pre-2010           Pre-2010           Pre-2010           Pre-2012                    | 1/17/2010<br>12/15/2009<br>12/15/2009<br>1/17/2010<br>1/18/2010<br>1/18/2010<br>Pre-2010<br>3/2/2012<br>Pre-2010<br>Pre-2010<br>Pre-2010 | 14.56<br>4.31<br>4.31<br>0.30<br>N/A<br>N/A<br>N/A<br>N/A<br>N/A<br>10.54<br>N/A | МАСТ НН<br>NSPS 0000<br>NSPS 0000<br>MACT НН<br>NSPS 0000<br>MACT НН<br>NSPS 0000<br>MACT НН<br>NSPS 0000     | YES           NO           NO | Major Source of HAP's<br>Tank S/N 1764 - Pre-Aug 2011 Const<br>Date / BELOW 6 TPY VOC<br>Tank S/N 1765 - Pre-Aug 2011 Const<br>Date / BELOW 6 TPY VOC<br>Controllers operate On Plant<br>Instrument Air<br>Dehy Unit removed on July 28, 2017<br>Operate On Plant Instrument Air<br>Dehy Unit removed on July 28, 2017<br>Area Source - Unit is less than 3.0<br>mmscfd actual flowrate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| RBT-2         400           RBU Pneumatic<br>Controllers         RBU Pn           RBU 6-15E         RBU           RBU 6-15E         RBU           Pneumatic<br>Controllers         RBU           RBU 6-15E         Pneumatic           Controllers         RBU           RBU 7-15E P-1         RBU           RBU 11-15E P-1         RBU           RBU 11-15E P-1         RBU           RBU 11-15E         Pneumatic           Controllers         RBU           T1C-1         Com           T1C-1         Com           T1C-1         Com           T1C-1         Com           T1C-2         Tap-1 C           Com         Com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 00-bbl slop tank #2<br>Pneumatic Controllers<br>16-156 Weilsite-0.20<br>cid 16 G Dehydrator<br>BU 6-152 Weilsite<br>matic Pump Emissions<br>U 6-152 Pneumatic<br>Controllers<br>17-156 Weilsite 0.20<br>cid elyedal dehydrator<br>BU 7-155 Pneumatic<br>Controllers<br>11-155 Weilsite 0.20<br>cid glycol dehydrator<br>SU 11-155 Weilsite 0.20<br>controllers<br>11-155 Weilsite 0.20<br>controllers<br>11-155 Weilsite 0.20<br>controllers<br>11-155 Pneumatic<br>Controllers<br>11-155 Pneumatic<br>Controllers<br>Controllers<br>Controllers<br>Controllers<br>Controllers | Storage Tank<br>Pneumatic Controllers<br>Natural Gas-<br>Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas-<br>Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump               | 2009<br>Pre-2010<br>Pre-2010<br>Pre-2010<br>Pre-2010<br>Pre-2012<br>Pre-2012<br>Pre-2010<br>Pre-2010<br>Pre-2010                                                                    | 12/15/2009<br>1/17/2010<br>1/18/2010<br>1/18/2010<br>Pre-2010<br>3/2/2012<br>Pre-2010<br>Pre-2010                                        | 4.31<br>N/A<br>0-00<br>N/A<br>N/A<br>0.00<br>N/A<br>N/A<br>10.54                 | NSPS 0000<br>NSPS 0000<br>MACT-HH<br>NSPS 0000<br>MACT-HH<br>NSPS 0000a<br>NSPS 0000a<br>NSPS 0000<br>MACT-HH | NO<br>NO<br>NO<br>NO<br>NO<br>NO<br>NO                                                                                                                                                                                                                                  | Date / BELOW 6 TPY VOC<br>Tank S/N 1765 - Pre-Aug 2011 Const<br>Date / BELOW 6 TPY VOC<br>Controllers operate On Plant<br>Instrument Air<br>Dehy Unit removed on July 28, 2017<br>Operate On Plant Instrument Air<br>Dehy Unit removed on July 28, 2017<br>Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| RBU Pneumatic         AUU           Controllers         RBU Pneumatic           Controllers         RBU Pneumatic           RBU 6-15E P-1         Pneum           RBU 6-15E P-1         Pneumatic           Controllers         RBU           RBU 7-15E P-1         Pneumatic           Controllers         RBU 7-15E           RBU 7-15E P-1         RBU           Pneumatic         RBU           Controllers         RBU           Controllers         RBU           RBU 11-15E D-1         MMsei           RBU 11-15E P-1         RBU           Pneumatic         Controllers           Controllers         RBU           Controllers         RBU           T1C-1         Tap-1 C           Commatic         Commatic           Controllers         Commatic           T1C-1         Tap-1 C           Commatic         Commatic           T1C-1         Tap-1 C           Commatic         Commatic           T1C-2         Commatic           T1C-2         Commatic           T1C-2         Commatic           T1C-2         Commatic           Commatic         Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Pheumatic Controllers<br>5-155 Wellsite 0.20<br>scid TEG Dehydrator<br>BU 6-155 Wellsite<br>matic Pump Emissions<br>U 6-155 Pneumatic<br>Controllers<br>I - 155 Wellsite 0.20<br>cid gived Jehydrator<br>BU 7-155 Wellsite<br>Controllers<br>U 7-155 Pneumatic<br>Controllers<br>U 7-155 Wellsite<br>0.20<br>cid gived dehydrator<br>SU 11-155 Wellsite<br>0.20<br>cid gived dehydrator<br>SU 11-155 Pneumatic<br>Controllers<br>Caterpiller 3516 TALE                                                                                                                         | Pneumatic Controllers<br>Natural Gas-<br>Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas-<br>Dehydrator<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                 | Pre-2010           Pre-2010           Pre-2010           Pre-2012           Pre-2012           Pre-2010           Pre-2010           Pre-2010           Pre-2010           Pre-2010 | 1/17/2010<br>1/18/2010<br>1/18/2010<br>Pre-2010<br>3/2/2012<br>3/2/2012<br>Pre-2010<br>Pre-2010                                          | N/A<br>                                                                          | NSPS 0000<br>MACT HH<br>NSPS 0000a<br>NSPS 0000<br>MACT HH<br>NSPS 0000<br>MACT HH                            | NO<br>NO<br>NO<br>NO<br>NO<br>NO                                                                                                                                                                                                                                        | Date / BELOW 6 TPY VOC<br>Controllers operate On Plant<br>Instrument Air<br>Dehy Unit removed on July 28, 2017<br>Operate On Plant Instrument Air<br>Dehy Unit removed on July 28, 2017<br>Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Controllers         RBU Pri           RBU 6-15E P-1         MAKe           RBU 6-15E P-1         Pneumatic           RBU 6-15E P-1         Pneumatic           Controllers         RBU           RBU 7-15E P-1         RBU           RBU 17-15E P-1         RBU           Pneumatic         RBU           Controllers         RBU           RBU 17-15E         RBU           Pneumatic         RBU           Controllers         RBU           RBU 11-15E P-1         RBU           RBU 11-15E P-1         RBU           Pneumatic         RBU           Controllers         RBU           RBU 11-15E P-1         RBU           Pneumatic         Controllers           T1C-1         Tap-1 C           Commatic         Commatic           T1C-1         Tap-1 C           T1C-2         Commatic           T1C-2         Commatic           T1C-2         Commatic           T1C-2         Commatic           T1C-2         Commatic           T1C-2         Tap-1 C           Commatic         Commatic           T1C-2         Tap-1 C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6-15E Wellsite 0.20<br>scid TEG Dehydrator<br>BU 6-15E Wellsite<br>matic Pump Emissions<br>U 6-15E Pneumatic<br>Controllers<br>7-15E Wellsite 0.20<br>cdd gived dehydrator<br>BU 7-15E Wellsite<br>matic Pump Emissions<br>U 7-15E Wellsite<br>Controllers<br>11-15E Wellsite 0.20<br>cdd gived dehydrator<br>JU 1.15E Wellsite<br>Durp Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                 | Natural Gas<br>Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                            | Pre-2010           Pre-2010           Pre-2010           Pre-2012           Pre-2012           Pre-2010           Pre-2010           Pre-2010           Pre-2012                    | 1/18/2010<br>1/18/2010<br>Pre-2010<br>3/2/2012<br>3/2/2012<br>Pre-2010<br>Pre-2010                                                       | 0-00<br>N/A<br>N/A<br>0-00<br>N/A<br>N/A<br>10.54                                | МАСТ НН<br>NSP5 0000а<br>NSP5 0000<br>МАСТ НН<br>NSP5 0000<br>MACT НН                                         | NO<br>NO<br>NO<br>NO<br>NO                                                                                                                                                                                                                                              | Instrument Air Dehy Unit removed on July 28, 2017 Operate On Plant Instrument Air Dehy Unit removed on July 28, 2017 Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| REU 6-15E D-1         MitAge           RBU 6-15E         RBU           RBU 6-15E         Pneumatic           Controllers         RBU           RBU 7-15E         RBU           Pneumatic         RBU           Controllers         RBU           RBU 7-15E         RBU           Pneumatic         RBU           Controllers         RBU           RBU 11-15E         RBU           RBU 11-15E         RBU           RBU 11-15E         RBU           Pneumatic         Controllers           Controllers         Tap-10           T1C-1         Tap-10           Controllers         Com           T1C-1         Tap-10           Controllers         Com           T1C-1         Tap-10           Com         Com           T1C-2         Com           Com <t< td=""><td>seld TEG Dehydrator<br/>BU 6-15E Wellsite<br/>matic Pump Emissions<br/>U 6-15E Pneumatic<br/>Controllers<br/>U 7-15E Wellsite 0-20<br/>ded glycal dehydrator<br/>BU 7-15E Pneumatic<br/>Controllers<br/>U 7-15E Wellsite<br/>DI 1-15E Wellsite 0.20<br/>ded glycal dehydrator<br/>BU 11-15E Wellsite 0.20<br/>ded glycal dehydrator<br/>BU 11-15E Wellsite<br/>matic Pump Emissions<br/>J 11-15E Pneumatic<br/>Controllers<br/>Caterpillar 3516 TALE</td><td>Dehydrator<br/>Pneumatic Pump<br/>Pneumatic Controllers<br/>Natural-Gas-<br/>Dehydrator<br/>Pneumatic Pump<br/>Pneumatic Controllers<br/>Natural Gas<br/>Dehydrator<br/>Pneumatic Pump</td><td>Pre-2010<br/>Pre-2010<br/>Pre-2012<br/>Pre-2012<br/>Pre-2010<br/>Pre-2010<br/>Pre-2012</td><td>1/18/2010<br/>Pre-2010<br/>3/2/2012<br/>3/2/2012<br/>Pre-2010<br/>Pre-2010</td><td>N/A<br/>N/A<br/>0-00<br/>N/A<br/>N/A<br/>10.54</td><td>NSPS 0000a<br/>NSP5 0000<br/>МАСТ-НН<br/>NSPS 0000a<br/>NSPS 0000<br/>MACT HH</td><td>N0<br/>N0<br/>N0<br/>N0<br/>N0</td><td>Operate On Plant Instrument Air<br/>Dehy Unit removed on July 28, 2017<br/>Area Source - Unit is less than 3.0</td></t<> | seld TEG Dehydrator<br>BU 6-15E Wellsite<br>matic Pump Emissions<br>U 6-15E Pneumatic<br>Controllers<br>U 7-15E Wellsite 0-20<br>ded glycal dehydrator<br>BU 7-15E Pneumatic<br>Controllers<br>U 7-15E Wellsite<br>DI 1-15E Wellsite 0.20<br>ded glycal dehydrator<br>BU 11-15E Wellsite 0.20<br>ded glycal dehydrator<br>BU 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                             | Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural-Gas-<br>Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                        | Pre-2010<br>Pre-2010<br>Pre-2012<br>Pre-2012<br>Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                    | 1/18/2010<br>Pre-2010<br>3/2/2012<br>3/2/2012<br>Pre-2010<br>Pre-2010                                                                    | N/A<br>N/A<br>0-00<br>N/A<br>N/A<br>10.54                                        | NSPS 0000a<br>NSP5 0000<br>МАСТ-НН<br>NSPS 0000a<br>NSPS 0000<br>MACT HH                                      | N0<br>N0<br>N0<br>N0<br>N0                                                                                                                                                                                                                                              | Operate On Plant Instrument Air<br>Dehy Unit removed on July 28, 2017<br>Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| RBU 6-15E P-1         Pneum           RBU 6-15E         Pneumatic           Controllers         RBU           RBU 7-15E D-1         MMsci           RBU 7-15E D-1         MMsci           RBU 7-15E D-1         RBU           Pneumatic         Pneum           RBU 7-15E D-1         RBU           RBU 7-15E D-1         RBU           RBU 7-15E D-1         RBU           RBU 11-15E D-1         RBU           RBU 11-15E P-1         Pneumatic           Controllers         RBU           RBU 11-15E P-1         RBU           RBU 11-15E P-1         RBU           Controllers         RBU           T1C-1         Com           T1C-1         Tap-1 C           Com         Tap-1 C           T1C-2         Com           T1C-2         Com           T1C-2         Tap-1 C           Com         T1C-2           T1C-2         Tap-1 C           Com         T1C-2           T1C-2         Tap-1 C           Com         T1C-2           T1C-2         Tap-1 C           Com         Com           T1C-2         Tap-1 C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | natic Pump Emissions<br>U 6-15E Pneumatic<br>Controllers<br>17-15E Wellsite 0-20<br>ded alveed dehydrater<br>BU 7-15E Wellsite<br>matic Pump Emissions<br>U 7-15E Pneumatic<br>Controllers<br>11-15E Wellsite 0-20<br>dehydrator<br>SU 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Controllers<br>Controllers                                                                                                                                                                                                                              | Pneumatic Controllers<br>Natural Gas-<br>Dehydratar<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                        | Pre-2010<br>Pre-2012<br>Pre-2010<br>Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                | Pre-2010<br>3/2/2012<br>3/2/2012<br>Pre-2010<br>Pre-2010                                                                                 | N/A<br>0-00<br>N/A<br>N/A<br>10.54                                               | NSP5 0000<br>MACT HH<br>NSP5 0000a<br>NSP5 0000<br>MACT HH                                                    | NO<br>NO<br>NO<br>NO                                                                                                                                                                                                                                                    | Dehy Unit removed on July 28, 2017<br>Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Pneumatic<br>Controllers         RBU<br>RBU 7-15E P-1         RBU<br>RBU 7-15E P-1           RBU 7-15E P-1         RBU<br>Pneumatic<br>Controllers         RBU<br>Pneumatic<br>Controllers           RBU 11-15E P-1         RBU<br>Pneumatic<br>Controllers         RBU<br>Pneumatic<br>Controllers           RBU 11-15E P-1         RBU<br>Pneumatic<br>Controllers         RBU<br>Pneumatic<br>Controllers           T1C-1         Tap-1 C<br>Com         Tap-1 C<br>Com           T1C-1         Tap-1 C<br>Com         Tap-1 C<br>Com           T1C-2         Com         Tap-1 C<br>Com           T1C-2         Tap-1 C<br>Com         Tap-1 C<br>Com           T1C-2         Tap-1 C<br>Com         Tap-1 C<br>Com           T1C-2         Tap-1 C<br>Com         Tap-1 C<br>C C           T1C-2         Tap-1 C<br>C C         Tap-1 C<br>C C           T1C-2         Tap-1 C<br>C C         Tap-1 C           T1T-1         Tap-1 C         Tap-1 C           T1T-2         Tap-1 C         Tap-1 C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Controllers<br>17-15E Wellsite 0.20.<br>Controllers<br>BU 7-15E Wellsite<br>matic Pump Emissions<br>U 7-15E Pneumatic<br>Controllers<br>D 11-15E Wellsite 0.20.<br>Cód glycol dehydrator<br>BU 11-15E Wellsite<br>D 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                   | Natural Gas.<br>Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                                                 | Pre-2010<br>Pre-2012<br>Pre-2010<br>Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                | 3/2/2012<br>3/2/2012<br>Pre-2010<br>Pre-2010                                                                                             | 0.00<br>N/A<br>N/A<br>10.54                                                      | MACT HH<br>NSPS 0000a<br>NSPS 0000<br>MACT HH                                                                 | NO<br>NO<br>NO                                                                                                                                                                                                                                                          | Dehy Unit removed on July 28, 2017<br>Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Pneumatic<br>Controllers         Reu-T-<br>MMMel           R8U-7-15E         RBU<br>Pneumatic         RBU-<br>Pneumatic           RBU 7-15E         RBU<br>Pneumatic         RBU<br>Pneumatic           Controllers         RBU 11-15E           RBU 11-15E         Pneumatic           RBU 11-15E         Pneumatic           Controllers         RBU           RBU 11-15E         Pneumatic           Controllers         Tap-1 C           T1C-1         Com           T1C-1         Tap-1 C           Controllers         Com           T1C-1         Tap-1 C           Com         Tap-1 C           T1C-2         Com           T1C-2         Tap-1 C           Com         Com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Controllers<br>17-15E Wellsite 0.20.<br>Controllers<br>BU 7-15E Wellsite<br>matic Pump Emissions<br>U 7-15E Pneumatic<br>Controllers<br>D 11-15E Wellsite 0.20.<br>Cód glycol dehydrator<br>BU 11-15E Wellsite<br>D 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                   | Natural Gas.<br>Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                                                 | Pre-2010<br>Pre-2012<br>Pre-2010<br>Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                | 3/2/2012<br>3/2/2012<br>Pre-2010<br>Pre-2010                                                                                             | 0.00<br>N/A<br>N/A<br>10.54                                                      | MACT HH<br>NSPS 0000a<br>NSPS 0000<br>MACT HH                                                                 | NO<br>NO<br>NO                                                                                                                                                                                                                                                          | Dehy Unit removed on July 28, 2017<br>Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| RBU 7-15E D-1         MMsel           RBU 7-15E         RBU           RBU 7-15E         Pneumatic           Controllers         RBU           RBU 11-15E D-1         RBU           RBU 11-15E D-1         RBU           RBU 11-15E D-1         RBU           Controllers         RBU           RBU 11-15E         RBU           Controllers         RBU           Controllers         RBU           Controllers         RBU           T1C-1         Tap-1 C           Controllers         Com           T1C-2         Tap-1 -           T1T-1         Tap-1 -           T1T-1         Tap-1 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | efd giveal-dehydrator<br>BU 7-15E Wellsite<br>matic Pump Emissions<br>U 7-15E Pneumatic<br>Controllers<br>11-15E Wellsite 0.20<br>cfd glycol dehydrator<br>SU 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                            | Dehydrator<br>Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                                                                 | Pre-2012<br>Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                                        | 3/2/2012<br>Pre-2010<br>Pre-2010                                                                                                         | N/A<br>N/A<br>10.54                                                              | NSPS 0000a<br>NSPS 0000<br>MACT HH                                                                            | NO<br>NO<br>NO                                                                                                                                                                                                                                                          | Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RBU         RBU           RBU 7-15E         Pneum           RBU 7-15E         RBU           Pneumatic         RBU           Controllers         RBU           RBU 11-15E         Pneumatic           RBU 11-15E         Pneumatic           RBU 11-15E         Pneumatic           Controllers         RBU           T1C-1         Com           T1C-1         Tap-1 C           Controllers         Com           T1C-1         Tap-1 C           Com         Tap-1 C           T1C-2         Com           T1C-2         Tap-1 C           Com         Com           T1C-2         Tap-1 C           T1T-1         Tap-1 -           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           RBU 6-15E         Com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | BU 7-15E Wellsite<br>matic Pump Emissions<br>U 7-15E Pneumatic<br>Controllers<br>11-15E Wellsite 0.20<br>cfd glycol dehydrator<br>SU 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                     | Pneumatic Pump<br>Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                                                                               | Pre-2012<br>Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                                        | 3/2/2012<br>Pre-2010<br>Pre-2010                                                                                                         | N/A<br>N/A<br>10.54                                                              | NSPS 0000a<br>NSPS 0000<br>MACT HH                                                                            | NO<br>NO<br>NO                                                                                                                                                                                                                                                          | Area Source - Unit is less than 3.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RBU 7-15E         Pneumatic           Controllers         RBU 11           RBU 11-15E D-1         RBU 11           RBU 11-15E P-1         Pneumatic           Controllers         RBU           RBU 11-15E P-1         RBU           RBU 11-15E P-1         RBU           Controllers         RBU           T1C-1         Controllers           T1C-1         Tap-1 C           Controllers         Com           T1C-1         Tap-1 C           Controllers         Com           T1C-1         Tap-1 C           Controllers         Com           T1C-2         Tap-1 - C           T1T-1         Tap-1 - C           T1T-1         Tap-1 - C           T1T-2         Tap-1 - C           T1P-1 / T1P-2         Tap-1 - C           T1P-1 / T1P-2         Tap-1 - C           T1P-1 / T1P-2         Tap-1 - C           RBU 6-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | U 7-15E Pneumatic<br>Controllers<br>11-15E Wellsite 0.20<br>cfd glycol dehydrator<br>3U 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                  | Pneumatic Controllers<br>Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                                                                                                 | Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                                                    | Pre-2010<br>Pre-2010                                                                                                                     | N/A<br>10.54                                                                     | NSPS 0000<br>MACT HH                                                                                          | NO<br>NO                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Pneumatic<br>Controllers         RBU 1           RBU 11-15E D-1         RBU 1           RBU 11-15E P-1         RBU           T1C-1         Controllers           T1C-1         Tap-1 C           Com         T1C-1           T1C-1         Tap-1 C           Com         T1C-2           T1C-2         Com           T1C-1         Tap-1 C           Com         Com           T1C-2         Tap-1 C           Com         Com           T1T-1         Tap-1 C           T1T-1         Tap-1 C           T1T-2         Tap-1 C           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 F           RBU 6-15E         Com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Controllers<br>11-15E Wellsite 0.20<br>cfd glycol dehydrator<br>8U 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                                       | Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                                                                                                                          | Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                                                    | Pre-2010                                                                                                                                 | 10.54                                                                            | МАСТ НН                                                                                                       | NO                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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| Controllers           RBU 11-15E D-1         MMsci           RBU 11-15E P-1         Pneum           RBU 11-15E P-1         RBU           RBU 11-15E P-1         Pneum           RBU 11-15E P-1         RBU           Pneumatic         RBU           Controllers         Tap-1 C           T1C-1         Tap-1 C           T1C-1         Tap-1 C           T1C-1         Tap-1 C           T1C-2         Com           T1C-2         Tap-1 C           Com         C           T1C-2         Tap-1 C           T1C-3         Tap-1 C           T1T-1         Tap-1 -           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           RBU 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 11-15E Wellsite 0.20<br>cfd glycol dehydrator<br>3U 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                                                      | Natural Gas<br>Dehydrator<br>Pneumatic Pump                                                                                                                                                                                                          | Pre-2010<br>Pre-2010<br>Pre-2012                                                                                                                                                    | Pre-2010                                                                                                                                 | 10.54                                                                            | МАСТ НН                                                                                                       | NO                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| RBU 11-15E D-1         RBU 1           RBU 11-15E D-1         MMsci           RBU 11-15E P-1         Pneumi           RBU 11-15E P-1         RBU           Pneumic         RBU           T1C-1         Tap-1 C           T1C-1         Tap-1 C           T1C-1         Tap-1 C           T1C-1         Tap-1 C           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Tap-1 C           Com         T1C-2           T1T-1         Tap-1 C           T1T-2         Tap-1 C           T1T-2         Tap-1 C           T1P-1 / T1P-2         Tap-1 F           RBU 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | scfd glycol dehydrator<br>BU 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                                                                             | Dehydrator<br>Pneumatic Pump                                                                                                                                                                                                                         | Pre-2012                                                                                                                                                                            |                                                                                             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| Tit-15E P-1         RBU           RBU 11-15E P-1         Pneum           RBU 11-15E         RBU           Controllers         Tap-1 C           T1C-1         Com           T1C-1         Tap-1 C           Controllers         Tap-1 C           T1C-1         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Tap-1 C           T1C-3         Tap-1 C           T1C-4         Tap-1 C           T1C-7         Tap-1 C           T1C-8         Tap-1 C           T1T-1         Tap-1 C           T1T-2         Tap-1 C           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           RBU 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BU 11-15E Wellsite<br>matic Pump Emissions<br>J 11-15E Pneumatic<br>Controllers<br>Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Pneumatic Pump                                                                                                                                                                                                                                       | Pre-2012                                                                                                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| RBU 11-15E<br>Pneumatic         RBU           Controllers         Tap-1 C           T1C-1         Common C           T1C-1         Tap-1 C           Common C         Common C           T1C-1         Tap-1 C           Common C         Common C           T1C-1         Tap-1 C           Common C         Common C           T1C-2         Tap-1 C           T1T-1         Tap-1 C           T1T-2         Tap-1 - 1           T1T-2         Tap-1 - 1           T1P-1 / T1P-2         Tap-1 + 1           RBU 6-15E         RBU 6-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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                 | N/A                                                                              | NSPS UCOUR                                                                                                    | I NO                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Pneumatic<br>Controllers         RBU           T1C-1         Tap-1 C<br>Com           T1C-1         Tap-1 C<br>Com           T1C-1         Tap-1 C<br>Com           T1C-2         Tap-1 C<br>Com           T1T-1         Tap-1 -<br>Tap-1 -           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           RBU 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Pneumatic Controllers                                                                                                                                                                                                                                |                                                                                                                                                                                     |                                                                                                                      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| Controllers           T1C-1         Com           T1C-1         Tap-1 C           Com         Tap-1 C           T1C-1         Tap-1 C           T1C-1         Tap-1 C           T1C-1         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Com           T1C-2         Tap-1 C           C0         Com           T1C-2         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Tap-1 -           T1T-1         Tap-1 -           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           R8U 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | incomotic concro                                                                                                                                                                                                                                     |                                                                                                         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| T1C-1         Com           T1C-1         Tap-1 C           Com         Com           T1C-1         Tap-1 C           CO         Com           T1C-2         Com           T1C-2         Com           T1C-2         Tap-1 C           Com         Com           T1C-2         Tap-1 C           Com         Com           T1C-2         Tap-1 C           Com         Tap-1 C           T1T-1         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           R8U 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| T1C-1         Com           T1C-1         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Tap-1 C           Com         Tap-1 C           T1C-2         Tap-1 C           T1C-1         Tap-1 C           T1T-1         Tap-1 C           T1T-2         Tap-1 C           T1T-1         Tap-1 C           T1T-2         Tap-1 C           T1P-1 / T1P-2         Tap-1 F           R8U 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | mpressor Engine #1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RICE                                                                                                                                                                                                                                                 | 1/1/2004                                                                                                                                                                            | 7/1/2013                                                                                                                                 | N/A                                                                              | MACT ZZZZ                                                                                                     | YES                                                                                                                                                                                                                                                                     | REMOTE AREA - S/N 4EK03995                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| T1C-1         Tap-1 (<br>C           T1C-2         Com           T1C-2         Com           T1C-2         Com           T1C-2         Tap-1 (<br>Com           T1C-2         Tap-1 (<br>Com           T1C-2         Tap-1 (<br>Tap-1 -<br>Com           T1T-1         Tap-1 -<br>Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           R8U 6-15E         Fap-1 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Caterpillar 3516 TALE<br>mpressor Engine #1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RICE                                                                                                                                                                                                                                                 | 1/1/2004                                                                                                                                                                            | 7/1/2013                                                                                                                                 | N/A                                                                              | NSPS JJJJ                                                                                                     | NO                                                                                                                                                                                                                                                                      | S/N 4EK03995                                                                                                                                                                                                                                                                                                                       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| Tic-2         Tap-1 C           T1C-2         Com           T1C-2         Tap-1 C           Com         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Tap-1 C           T1T-1         Tap-1 -           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           R8U 6-15E         E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Reciprocating                                                                                                                                                                                                                                        |                                                                                                                                                                                     |                                                                                                                                          |                                                                                  |                                                                                                               |                                                                                                                                                                                                                                                                         | The second |
| T1C-2         Com           T1C-2         Tap-1 C           T1C-2         Tap-1 C           T1C-2         Tap-1 C           T1T-1         Tap-1 C           T1T-2         Tap-1 -           T1P-1/TIP-2         Tap-1 +           RBU 6-15E         Tap-1 +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compressor #1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compressor                                                                                                                                                                                                                                           | Pre-2010                                                                                                                                                                            | 7/1/2013                                                                                                                                 | N/A                                                                              | NSPS 0000                                                                                                     | NO                                                                                                                                                                                                                                                                      | Pre-Aug 2011 Construction date                                                                                                                                                                                                                                                                                                     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| T1C-2         Com           T1C-2         Tap-1 C           T1T-1         Tap-1 -           T1T-2         Tap-1 -           T1T-2         Tap-1 -           T1P-1 / T1P-2         Tap-1 +           R8U 6-15E         R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Caterpillar 3516 TALE<br>mpressor Engine #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RICE                                                                                                                                                                                                                                                 | 8/12/2001                                                                                                                                                                           | 7/18/2013                                                                                                                                | N/A                                                                              | MACT ZZZZ                                                                                                     | YES                                                                                                                                                                                                                                                                     | REMOTE AREA - S/N 4EK03582                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| TIC-2         C           T1T-1         Tap-1 -           T1T-2         Tap-1 -           T1P-1/TIP-2         Tap-1 +           RBU 6-15E         RBU 6-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Caterpillar 3516 TALE<br>mpressor Engine #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RICE                                                                                                                                                                                                                                                 | 8/12/2001                                                                                                                                                                           | 7/18/2013                                                                                                                                | N/A                                                                              | NSPS JUJ                                                                                                      | NO                                                                                                                                                                                                                                                                      | S/N 4EK03582                                                                                                                                                                                                                                                                                                                       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| T1T-1 Tap-1 -<br>T1T-2 Tap-1 -<br>T1P-1 / T1P-2 Tap-1 H<br>RBU 6-15E Tap-1 H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Caterpillar 3516 TALE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Reciprocating                                                                                                                                                                                                                                        | 1                                                                                                       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| T1T-1<br>T1T-2<br>Tap-1 -<br>T1P-1 / T1P-2<br>RBU 6-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Compressor #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compressor                                                                                                                                                                                                                                           | Pre-2010                                                                                                                                                                            | 7/18/2013                                                                                                                                | N/A                                                                              | NSPS 0000                                                                                                     | NO                                                                                                                                                                                                                                                                      | Pre-Aug 2011 Construction date                                                                                                                                                                                                                                                                                                     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| T1P-1 / T1P-2 Tap-1 H<br>RBU 6-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | - 300-bbl Condensate<br>Tank #1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Storage Tank                                                                                                                                                                                                                                         | 6/16/2010                                                                                                                                                                           | 6/18/2012                                                                                                                                | 2.19                                                                             | NSPS 0000                                                                                                     | NO                                                                                                                                                                                                                                                                      | Tank 1350 / S/N 2024 - Pre-Aug 2011<br>Const Date / BELOW 6 TPY VOC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| RBU 6-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | - 300-bbl Condensate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                      |                                                                                                                                                                                     |                                                                                                                                          |                                                                                  |                                                                                                               |                                                                                                                                                                                                                                                                         | Tank 78938/ S/N 8S06401-02 - Pre-<br>Aug 2011 Const Date / BELOW 6 TPY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| RBU 6-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Tank #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Storage Tank                                                                                                                                                                                                                                         | 9/12/2001                                                                                                                                                                           | 6/18/2012                                                                                                                                | 2.19                                                                             | NSPS 0000                                                                                                     | NO                                                                                                                                                                                                                                                                      | voc                                                                                                                                                                                                                                                                                                                                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BELOW 6 TP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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                                                                                       | 400-bbl slop tank                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Storage Tank                                                                                                                                                                                                                                         | 11/1/2012                                                                                                                                                                           | 11/21/2012                                                                                                                               | 1.85                                                                             | N5P5 0000                                                                                                     | YES                                                                                                                                                                                                                                                                     | VOC                                                                                                                                                                                                                                                                                                                                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| RBU 7-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                      |                                                                                                                                                                                     |                                                                                                                                          |                                                                                  |                                                                                                               |                                                                                                                                                                                                                                                                         | Tank E1414 / 5/N 2678 - BELOW 6 TP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| second and constants of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 400-bbl slop tank                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Storage Tank                                                                                                                                                                                                                                         | 7/1/2012                                                                                                                                                                            | 8/24/2012                                                                                                                                | 1.85                                                                             | NSPS 0000                                                                                                     | YES                                                                                                                                                                                                                                                                     | VOC                                                                                                                                                                                                                                                                                                                                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| RBU 11-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                      |                                                                                                                                                                                     |                                                                                                                                          |                                                                                  |                                                                                                               |                                                                                                                                                                                                                                                                         | Tank E1391/ S/N 0800 - Pre-2011 and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 300-bbl slop tank                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Storage Tank                                                                                                                                                                                                                                         | 3/1/2008                                                                                                                                                                            | 5/9/2012                                                                                                                                 | 1.42                                                                             | N5P5 0000                                                                                                     | NO                                                                                                                                                                                                                                                                      | BELOW 6 TPY VOC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| RBU 6-15E<br>Wellsite W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Natural Gas Well                                                                                                                                                                                                                                     | N/A                                                                                                                                                                                 | 1/22/2004                                                                                                                                | N/A                                                                              | NSPS OOOOa                                                                                                    | NO                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| RBU 7-15E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Well Completion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                      |                                                                                                                                                                                     | Initial - 4/3/1992 &                                                                                                                     |                                                                                  |                                                                                                               |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Wellsite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Well Completion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                    |                                                                                                                                                                                     | Recompletion -<br>1/3/2013                                                                                                               | N/A                                                                              | NSPS OOOOa                                                                                                    | NO                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                    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| RBU 11-1SE<br>Wellsite W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Well Completion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Natural Gas Well                                                                                                                                                                                                                                     | N/A                                                                                                                                                                                 |                                                                                                                                          |                                                                                  |                                                                                                               |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                    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#### XTO ENERGY INC. - UINTAH COUNTY, UTAH

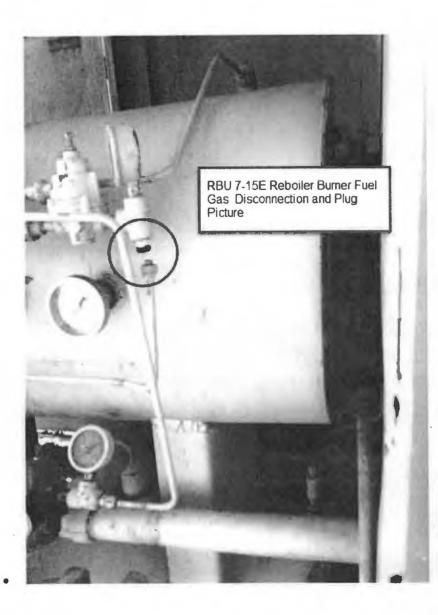
#### **XTO ENERGY INC. – RIVERBEND DEHYDRATION SITE DESCRIPTION OF RELEVANT APPLICATION MODIFICATIONS**

- Due to the update in the EPA aggregation policy to include locations within ¼ mile of the permitted location, the following locations were added into the Riverbend Dehydration site application since the original 2009 application was filed (refer to the attached map providing a location of the affected facilities around the Riverbend Dehydration site:
  - o Tap-1 Compressor Station
  - o RBU 11-15E
- Both the RBU 6-15E and RBU 7-15E natural gas dehydration systems were permanently disconnected and
  placed out of service as of July 28, 2017 (refer to the following pictures taken on 7/28/2017 and the
  accompanying work order).









# **Work Request**



Date: 7/25/17

Run 203

Location: RBU 6-15E & RBU 7-15E

Work Order: Remove Kimray glycol circulating pump from Dehy side of production unit, Plug any open ended lines. Disconnect, Block, Blind flange or thread plug Absorber tower inlet & outlet lines from any service or gas flow. Disconnect, Block or thread plug fuel supply to the Dehy fire box.

**Contractor/Department: Production Dept.** 

Contacts:

Lease Operator:

Foreman: Phone#: Phone#:





|   | <b>BERA</b> United States<br>Environmental Protection<br>Agency OMB No. 2060-0336, Approval Expires 06/30/201                                                                                            |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | Federal Operating Permit Program (40 CFR Part 71)                                                                                                                                                        |
| - | GENERAL INFORMATION AND SUMMARY (GIS)                                                                                                                                                                    |
|   | Mailing Address and Contact Information                                                                                                                                                                  |
|   | Facility nameRiverbend Dehydration Site                                                                                                                                                                  |
|   | Mailing address: Street or P.O. Box810 Houston Street, Petro-4                                                                                                                                           |
|   | CityFort Worth StateTX ZIP76102                                                                                                                                                                          |
|   | Contact person:Craig AllisonTitleEHS Advisor                                                                                                                                                             |
|   | Telephone (817)8852672 Ext                                                                                                                                                                               |
|   | Facsimile (817)8851847                                                                                                                                                                                   |
|   | Facility Location                                                                                                                                                                                        |
|   | Temporary source?Yes _X_No Plant site location39.9750760, -109.6360850                                                                                                                                   |
|   | CityRoosevelt State_UT CountyUintah EPA Region_8                                                                                                                                                         |
|   | Is the facility located within:                                                                                                                                                                          |
|   |                                                                                                                                                                                                          |
|   | Indian lands? _X - Indian AirshedYESNO OCS waters?YES _X_NO                                                                                                                                              |
|   | Indian lands? _X - Indian AirshedYESNO       OCS waters?YES _X_NO         Non-attainment area?YES _X_NO       If yes, for what air pollutants?N/A                                                        |
|   |                                                                                                                                                                                                          |
|   | Non-attainment area? YES X_NO If yes, for what air pollutants? N/A                                                                                                                                       |
|   | Non-attainment area?       YES _X_NO       If yes, for what air pollutants?       N/A         Within 50 miles of affected State?       X_YESNO       If yes, What State(s)?       Colorado               |
|   | Non-attainment area?       YES _X_NO       If yes, for what air pollutants?       N/A         Within 50 miles of affected State?       X_YESNO       If yes, What State(s)?       Colorado         Owner |
|   | Non-attainment area?       YES _X_NO       If yes, for what air pollutants?N/A         Within 50 miles of affected State?       X_YESNO       If yes, What State(s)?Colorado         Owner               |
|   | Non-attainment area?       YES _X_NO       If yes, for what air pollutants?N/A         Within 50 miles of affected State?       X_YESNO       If yes, What State(s)?Colorado         Owner               |
|   | Non-attainment area?       YES _X_NO       If yes, for what air pollutants?N/A         Within 50 miles of affected State?       _X_YESNO       If yes, What State(s)?Colorado         Owner              |
|   | Non-attainment area?       YES _X_NO       If yes, for what air pollutants?N/A         Within 50 miles of affected State?       _X_YESNO       If yes, What State(s)?Colorado         Owner              |

| E. Appl | ication Type              |                      |                       |                                      |        |
|---------|---------------------------|----------------------|-----------------------|--------------------------------------|--------|
|         | rk only one pern<br>rked. | nit application type | and answer the supple | ementary question appropriate for th | e type |
| _X_     | _Initial Permit           | Renewal              | Significant Mod       | Minor Permit Mod(MPM)                |        |

\_\_\_\_ Group Processing, MPM \_\_\_\_ Administrative Amendment

For initial permits, when did operations commence? \_\_\_\_/\_N/A\_\_\_/\_\_\_\_

For permit renewal, what is the expiration date of current permit? \_\_\_\_/\_N/A\_\_/\_\_\_

### F. Applicable Requirement Summary

| Mark all types of applicable                                                       | requirements that apply. |                       |                    |  |  |  |
|------------------------------------------------------------------------------------|--------------------------|-----------------------|--------------------|--|--|--|
| SIP                                                                                | FIP/TIP                  | PSD                   | Non-attainment NSR |  |  |  |
| Minor source NSR                                                                   | Section 111              | Phase I acid rair     | Phase II acid rain |  |  |  |
| Stratospheric ozone                                                                | OCS regulations          | _X_ NESHAP            | Sec. 112(d) MACT   |  |  |  |
| Sec. 112(g) MACT                                                                   | Early reduction of HAP   | Sec 112(j) MAC        | T RMP [Sec.112(r)] |  |  |  |
| Tank Vessel requirements, sec. 183(f)) Section 129 Standards/Requirement           |                          |                       |                    |  |  |  |
| Consumer / comm products, ' 183(e) NAAQS, increments or visibility (temp. sources) |                          |                       |                    |  |  |  |
| Has a risk management plan been registered?YES _X_NO Regulatory agency             |                          |                       |                    |  |  |  |
| Phase II acid rain application                                                     | on submitted?YES _X_N    | IO If yes, Permitting | authority          |  |  |  |

# G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

| None |  |
|------|--|
|      |  |
|      |  |
|      |  |
|      |  |
|      |  |
|      |  |

#### H. Process Description

List processes, products, and SIC codes for the facility.

| Process                | Products    | SIC  |
|------------------------|-------------|------|
| Natural Gas Production | Natural Gas | 1311 |
|                        | -           |      |
|                        |             |      |
|                        |             |      |

#### I. Emission Unit Identification

Assign an emissions unit ID and describe each emissions unit at the facility. Control equipment and/or alternative operating scenarios associated with emissions units should by listed on a separate line. Applicants may exclude from this list any insignificant emissions units or activities.

| Emissions Unit ID Description of Unit |                                                                                 |
|---------------------------------------|---------------------------------------------------------------------------------|
| RBF-1                                 | Fugitive Emissions                                                              |
| RBD-1                                 | 45 MMSCFD Glycol Dehydrator (controlled by thermal oxidizer)                    |
| RBTO-1                                | Thermal Oxidizer Emissions                                                      |
| RBL-1                                 | Condensate Truck Loading Emissions                                              |
| RBT-1                                 | One (1) 400-barrel condensate tank #1                                           |
| RBT-2                                 | One (1) 400-barrel condensate tank #2                                           |
| TIC-1                                 | Tap-1 Caterpillar G3516 TALE Compressor Engine Controlled By Oxidation Catalyst |
| TIC-2                                 | Tap-1 Caterpillar G3516 TALE Compressor Engine Controlled By Oxidation Catalyst |
| T1T-1                                 | Tap-1 One (1) 300-barrel condensate tank #1                                     |
| T1T-2                                 | Tap-1 One (1) 300-barrel condensate tank #2                                     |
| T1P-1 / T1P-2                         | Tap-1 Pneumatic Pumps                                                           |
| RBU 6-15E                             | RBU 6-15E Wellsite Emissions                                                    |
| RBU 7-15E                             | RBU 7-15E Wellsite Emissions                                                    |
| RBU 7-15E                             | RBU 11-15E Wellsite Emissions                                                   |

### J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

| NOx 38.8 tons/yr                                                                        | VOC104.7 tons/yr SO20.1 tons/yr |  |  |  |  |  |
|-----------------------------------------------------------------------------------------|---------------------------------|--|--|--|--|--|
| PM-100.3 tons/yr                                                                        | CO69.7 tons/yr Lead0.0 tons/yr  |  |  |  |  |  |
| Total HAP24.3 tons/yr                                                                   |                                 |  |  |  |  |  |
| Single HAP emitted in the greatest amount PTE tons/yr                                   |                                 |  |  |  |  |  |
| Total of regulated pollutants (for fee calculation), Sec. F, line 5 of form FEE tons/yr |                                 |  |  |  |  |  |
|                                                                                         |                                 |  |  |  |  |  |

### K. Existing Federally-Enforceable Permits

Permit number(s) \_\_None – Pending Permit \_\_\_\_ Permit type \_\_\_\_\_ Permitting authority \_\_\_\_\_

Permit number(s) \_V-UO-000026-2011.00 \_ Permit type \_Part 71 \_ Permitting authority \_EPA\_

### L. Emission Unit(s) Covered by General Permits

| Emission unit(s) subject to general perm                 |  |
|----------------------------------------------------------|--|
| Check one: Application made<br>General permit identifier |  |
|                                                          |  |
| 1. Cross-referenced Information                          |  |

Does this application cross-reference information? \_\_\_\_YES \_X\_NO (If yes, see instructions)

INSTRUCTIONS FOLLOW



# Federal Operating Permit Program (40 CFR Part 71) EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

#### A. General Information

Emissions unit ID \_T1C-1\_\_\_\_\_ Description\_Caterpillar G3516 TALE\_\_\_\_\_

SIC Code (4-digit) \_1311\_\_\_\_\_ SCC Code\_\_\_\_\_

#### **B. Emissions Unit Description**

| Primary useCompressor Engine Temporary SourceYes _XNo                  |  |  |  |  |  |  |
|------------------------------------------------------------------------|--|--|--|--|--|--|
| ManufacturerCaterpillar Model NoG3516 TALE                             |  |  |  |  |  |  |
| Serial Number4EK03995 Installation Date7 /_1 /_2013                    |  |  |  |  |  |  |
| Boiler Type: Industrial boiler Process burner Electric utility boiler  |  |  |  |  |  |  |
| Other (describe)Natural-Gas Compressor Engine                          |  |  |  |  |  |  |
| Engine horsepower rating1340 Boiler steam flow (lb/hr)                 |  |  |  |  |  |  |
| Type of Fuel-Burning Equipment (coal burning only):                    |  |  |  |  |  |  |
| Hand firedSpreader stokerUnderfeed stokerOverfeed stoker               |  |  |  |  |  |  |
| Traveling grateShaking gratePulverized, wet bed Pulverized, dry bed    |  |  |  |  |  |  |
| Actual Heat Input10.311MM BTU/hr Max. Design Heat Input10.311MM BTU/hr |  |  |  |  |  |  |

# C. Fuel Data

Primary fuel type(s)\_\_\_Natural Gas\_\_\_\_\_\_ Standby fuel type(s)\_\_\_\_\_\_

Describe each fuel you expected to use during the term of the permit.

| Fuel Type   | Max. Sulfur<br>Content<br>(%) | Max. Ash<br>Content<br>(%) | BTU Value<br>(cf, gal., or lb.) |
|-------------|-------------------------------|----------------------------|---------------------------------|
| Natural Gas | 0                             | 0                          | 1,044 BTU/scf                   |
|             |                               |                            |                                 |
|             |                               |                            |                                 |

#### D. Fuel Usage Rates

| Fuel Type   | Annual Actual | Maximum Usage |             |  |
|-------------|---------------|---------------|-------------|--|
|             | Usage         |               | Annual      |  |
| Natural Gas | 86.52 mmscf   | 9877 scf      | 86.52 mmscf |  |
|             |               |               |             |  |
|             |               |               |             |  |

### E. Associated Air Pollution Control Equipment

| Emissions unit IDT1C-1          | Device type            |
|---------------------------------|------------------------|
| Air pollutant(s) ControlledNONE | Manufacturer           |
| Model No                        | Serial No              |
| Installation date//             | Control efficiency (%) |
| Efficiency estimation method    |                        |

#### F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

| Stack height (ft)20 Inside stack diameter (ft)1.0        |
|----------------------------------------------------------|
| Stack temp (°F) _900 Design stack flow rate (ACFM) _7926 |
| Actual stack flow rate (ACFM)7926 Velocity (ft/sec)168   |



OMB No. 2060-0336, Approval Expires 05/31/2019

# Federal Operating Permit Program (40 CFR Part 71) EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID \_T1C-1\_\_\_\_\_

### **B. Identification and Quantification of Emissions**

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

|                |                                  | Emission Rates    |                     |         |
|----------------|----------------------------------|-------------------|---------------------|---------|
|                | Actual                           |                   |                     |         |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| NOx            |                                  | 4.43              | 19.41               |         |
| со             |                                  | 7.39              | 32.35               |         |
| VOC            |                                  | 1.12              | 4.92                |         |
| ACETALDEHYDE   |                                  | 0.09              | 0.38                | 75070   |
| ACROLEIN       |                                  | 0.053             | 0.2321              | 107028  |
| FORMALDEHYDE   |                                  | 0.86              | 3.7524              | 50000   |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |



# Federal Operating Permit Program (40 CFR Part 71) EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

#### A. General Information

Emissions unit ID \_T1C-2\_\_\_\_\_ Description\_Caterpillar G3516 TALE\_\_\_\_\_

SIC Code (4-digit) \_1311\_\_\_\_\_ SCC Code\_\_\_\_\_

#### **B. Emissions Unit Description**

| Primary useCompressor Engine Temporary SourceYes _XNo                 |  |  |  |  |  |  |
|-----------------------------------------------------------------------|--|--|--|--|--|--|
| ManufacturerCaterpillar Model NoG3516 TALE                            |  |  |  |  |  |  |
| Serial Number4EK03582 Installation Date7_/_18_/_2013                  |  |  |  |  |  |  |
| Boiler Type: Industrial boiler Process burner Electric utility boiler |  |  |  |  |  |  |
| Other (describe)Natural-Gas Compressor Engine                         |  |  |  |  |  |  |
| Engine horsepower rating1150 Boiler steam flow (lb/hr)                |  |  |  |  |  |  |
| Type of Fuel-Burning Equipment (coal burning only):                   |  |  |  |  |  |  |
| Hand firedSpreader stokerUnderfeed stokerOverfeed stoker              |  |  |  |  |  |  |
| Traveling grateShaking gratePulverized, wet bed Pulverized, dry bed   |  |  |  |  |  |  |
| Actual Heat Input8.711MM BTU/hr Max. Design Heat Input8.711MM BTU/hr  |  |  |  |  |  |  |

### C. Fuel Data

Primary fuel type(s)\_\_\_\_\_ Natural Gas\_\_\_\_\_\_ Standby fuel type(s)\_\_\_

Describe each fuel you expected to use during the term of the permit.

| Fuel Type   | Max. Sulfur<br>Content<br>(%) | Max. Ash<br>Content<br>(%) | BTU Value<br>(cf, gal., or lb.) |
|-------------|-------------------------------|----------------------------|---------------------------------|
| Natural Gas | 0                             | 0                          | 1,044 BTU/scf                   |
|             |                               |                            |                                 |

#### D. Fuel Usage Rates

| Fuel Type   | Annual Actual | Maximum Usage |             |  |
|-------------|---------------|---------------|-------------|--|
|             | Usage         | Hourly        | Annual      |  |
| Natural Gas | 73.09 mmscf   | 8344 scf      | 73.09 mmscf |  |
|             |               |               |             |  |
|             |               |               |             |  |

# E. Associated Air Pollution Control Equipment

| Emissions unit IDT1C-2          | Device type              |
|---------------------------------|--------------------------|
| Air pollutant(s) ControlledNONE | Manufacturer             |
| Model No                        | Serial No                |
| Installation date//             | _ Control efficiency (%) |
| Efficiency estimation method    |                          |

#### F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

| Stack height (ft)20 Inside stack diameter (ft)1.0        |
|----------------------------------------------------------|
| Stack temp (°F) _900 Design stack flow rate (ACFM) _6664 |
| Actual stack flow rate (ACFM)6664 Velocity (ft/sec)142   |



# Federal Operating Permit Program (40 CFR Part 71) EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID \_T1C-2\_\_\_\_\_

#### **B.** Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

|                | Emission Rates                   |                   |                     |         |
|----------------|----------------------------------|-------------------|---------------------|---------|
|                | Actual Potential to Emit         |                   |                     |         |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| NOx            |                                  | 3.80              | 16.7                |         |
| со             |                                  | 6.72              | 29.43               |         |
| VOC            |                                  | 1.06              | 4.66                |         |
| ACETALDEHYDE   |                                  | 0.073             | 0.32                | 75070   |
| ACROLEIN       |                                  | 0.05              | 0.20                | 107028  |
| FORMALDEHYDE   |                                  | 0.74              | 3.22                | 50000   |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |



OMB No. 2060-0336, Approval Expires 05/31/2019

# Federal Operating Permit Program (40 CFR Part 71) EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID \_T1P-1 / T1P-2\_\_\_\_\_

#### B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

| Air Pollutants | Emission Rates                             |                   |                     |         |
|----------------|--------------------------------------------|-------------------|---------------------|---------|
|                | Actual<br>Annual<br>Emissions<br>(tons/yr) | Potential to Emit |                     |         |
|                |                                            | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| VOC            |                                            | 3.6               | 15.7                |         |
| BENZENE        |                                            | 0.01              | 0.018               | 71432   |
| TOLUENE        |                                            | 0.01              | 0.023               | 108883  |
| XYLENE         |                                            | 0.002             | 0.01                | 1330207 |
| N-HEXANE       |                                            | 0.02              | 0.1                 | 110543  |
| ETHYLBENZENE   |                                            | 0.0002            | 0.001               | 100414  |
|                |                                            |                   |                     |         |
|                |                                            |                   |                     |         |
|                |                                            |                   |                     |         |



| Federal Operating Permit Program (40 CFR Par<br>EMISSIONS UNIT DESCRIPTION FOR VOC E                               |                               |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------|
| A. General Information                                                                                             |                               |
| Emissions unit ID _T1T-1       Description         SIC Code (4-digit)1311       SCC Code                           |                               |
| 3. Emissions Unit Description                                                                                      |                               |
| Equipment typeStorage Tank                                                                                         | Temporary source:Yes _XNo     |
| ManufacturerBenchmark                                                                                              | Model NoVerical Fixed Roof    |
| Serial No2024                                                                                                      | Installation date6/_18/_2012_ |
| Articles being coated or degreased                                                                                 |                               |
| Application method                                                                                                 | water ware to the task        |
| Overspray (surface coating) (%) Dry                                                                                | ing method                    |
| No. of dryers Tank capacity (c                                                                                     | egreasers) (gal)              |
| C. Associated Air Pollution Control Equipment                                                                      |                               |
| Emissions unit ID Device Type                                                                                      | NONE                          |
| Manufacturer Mod                                                                                                   | el No                         |
| Serial No                                                                                                          | Installation date//           |
| Control efficiency (%) Capture                                                                                     | efficiency (%)                |
| Air pollutant(s) controlled Efficie                                                                                | ncy estimation method         |
| D. Ambient Impact Assessment                                                                                       |                               |
| This information must be completed by temporary source applicable requirement for this emissions unit (this is not |                               |
| Stack height (ft)16 Inside st                                                                                      | ack diameter (ft)0.25         |
| Stack temp (F)60 Design s                                                                                          | stack flow rate (ACFM)        |
| Actual stack flow rate (ACFM)                                                                                      | Velocity (ft/sec)             |

# E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

| Substance<br>Name<br>(Chemical,<br>Brand Name) | CAS No. | Substance<br>Type | Actual<br>Usage<br>(gal/yr) | Max<br>Usage<br>(gal/day) | Max<br>Usage<br>(gal/year) | VOC<br>Content<br>(Ib/gal) |
|------------------------------------------------|---------|-------------------|-----------------------------|---------------------------|----------------------------|----------------------------|
| Condensate                                     |         | Condensate        | 191,625                     | 525                       | 191,625                    | 0.05                       |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |



# Federal Operating Permit Program (40 CFR Part 71) EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

### A. General Information

| Emissions unit ID _T1T-2 | Description300-barrel condensate storage tank |
|--------------------------|-----------------------------------------------|
| SIC Code (4-digit)1311   | SCC Code31000212                              |

#### **B. Emissions Unit Description**

| Equipment typeStorage Tank         | _Temporary source:Yes _XNo                                   |
|------------------------------------|--------------------------------------------------------------|
| ManufacturerNATCO M                | odel NoVerical Fixed Roof                                    |
| Serial No8S06401-02                | Installation date6_ / _18 / _2012_                           |
| Articles being coated or degreased |                                                              |
| Application method                 | n a a' an airseach a' an |
| Overspray (surface coating) (%) Dr | ying method                                                  |
| No. of dryers Tank capacity (      | degreasers) (gal)                                            |

### C. Associated Air Pollution Control Equipment

| Emissions unit ID Devi      | ce TypeNONE                  |
|-----------------------------|------------------------------|
| Manufacturer                | Model No                     |
| Serial No                   | Installation date//          |
| Control efficiency (%)      | Capture efficiency (%)       |
| Air pollutant(s) controlled | Efficiency estimation method |

### D. Ambient Impact Assessment

| This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common). |                                |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--|--|--|
| Stack height (ft)16                                                                                                                                                  | Inside stack diameter (ft)0.25 |  |  |  |
| Stack temp (F)60                                                                                                                                                     | Design stack flow rate (ACFM)  |  |  |  |
| Actual stack flow rate (ACFM)                                                                                                                                        | Velocity (ft/sec)              |  |  |  |

# E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

| Substance<br>Name<br>(Chemical,<br>Brand Name) | CAS No. | Substance<br>Type | Actual<br>Usage<br>(gal/yr) | Max<br>Usage<br>(gal/day) | Max<br>Usage<br>(gal/year) | VOC<br>Content<br>(Ib/gal) |
|------------------------------------------------|---------|-------------------|-----------------------------|---------------------------|----------------------------|----------------------------|
| Condensate                                     |         | Condensate        | 191,625                     | 525                       | 191,625                    | 0.05                       |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |



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| Federal Operating Permit Program (40 CFR Part 71)<br>EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)                                                     |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| A. General Information                                                                                                                                               |  |  |  |  |
| Emissions unit ID _RBT-1 Description400-barrel condensate storage tank<br>SIC Code (4-digit)1311 SCC Code31000212                                                    |  |  |  |  |
| B. Emissions Unit Description                                                                                                                                        |  |  |  |  |
| Equipment typeStorage Tank Temporary source:Yes _XNo                                                                                                                 |  |  |  |  |
| ManufacturerBenchmark Model NoVerical Fixed Roof                                                                                                                     |  |  |  |  |
| Serial No1764 Installation date12 /_15 /_2009_<br>Articles being coated or degreased                                                                                 |  |  |  |  |
| Application method                                                                                                                                                   |  |  |  |  |
|                                                                                                                                                                      |  |  |  |  |
| Overspray (surface coating) (%) Drying method                                                                                                                        |  |  |  |  |
| No. of dryers Tank capacity (degreasers) (gal)                                                                                                                       |  |  |  |  |
| C. Associated Air Pollution Control Equipment                                                                                                                        |  |  |  |  |
| Emissions unit ID Device TypeNONE                                                                                                                                    |  |  |  |  |
| Manufacturer Model No                                                                                                                                                |  |  |  |  |
| Serial No Installation date//                                                                                                                                        |  |  |  |  |
| Control efficiency (%) Capture efficiency (%)                                                                                                                        |  |  |  |  |
| Air pollutant(s) controlled Efficiency estimation method                                                                                                             |  |  |  |  |
| D. Ambient Impact Assessment                                                                                                                                         |  |  |  |  |
| This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common). |  |  |  |  |
| Stack height (ft)21 Inside stack diameter (ft)0.25                                                                                                                   |  |  |  |  |
| Stack temp (F)60 Design stack flow rate (ACFM)                                                                                                                       |  |  |  |  |

\_\_\_\_\_ Velocity (ft/sec)

Actual stack flow rate (ACFM)

# E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

| Substance<br>Name<br>(Chemical,<br>Brand Name) | CAS No. | Substance<br>Type | Actual<br>Usage<br>(gal/yr) | Max<br>Usage<br>(gal/day) | Max<br>Usage<br>(gal/year) | VOC<br>Content<br>(Ib/gal) |
|------------------------------------------------|---------|-------------------|-----------------------------|---------------------------|----------------------------|----------------------------|
| Condensate                                     |         | Condensate        | 245,280                     | 672                       | 245,280                    | 0.04                       |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   | u.                          |                           |                            |                            |
|                                                |         |                   |                             | a bi                      |                            | -                          |
|                                                |         |                   | 5                           |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |



OMB No. 2060-0336, Approval Expires 05/31/2019

| Federal Operating Permit Program (40 CFR Part 71)<br>EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)                                                     |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| A. General Information                                                                                                                                               |  |  |  |  |
| Emissions unit ID _RBT-2 Description400-barrel condensate storage tank SIC Code (4-digit)1311 SCC Code31000212                                                       |  |  |  |  |
| B. Emissions Unit Description                                                                                                                                        |  |  |  |  |
| Equipment typeStorage Tank Temporary source:Yes _XNo                                                                                                                 |  |  |  |  |
| ManufacturerBenchmark Model NoVerical Fixed Roof                                                                                                                     |  |  |  |  |
| Serial No1765 Installation date12/_15/_2009_                                                                                                                         |  |  |  |  |
| Articles being coated or degreased                                                                                                                                   |  |  |  |  |
| Application method                                                                                                                                                   |  |  |  |  |
| Overspray (surface coating) (%) Drying method                                                                                                                        |  |  |  |  |
| No. of dryers Tank capacity (degreasers) (gal)                                                                                                                       |  |  |  |  |
| C. Associated Air Pollution Control Equipment                                                                                                                        |  |  |  |  |
| Emissions unit ID Device TypeNONE                                                                                                                                    |  |  |  |  |
| Manufacturer Model No                                                                                                                                                |  |  |  |  |
| Serial No Installation date//                                                                                                                                        |  |  |  |  |
| Control efficiency (%) Capture efficiency (%)                                                                                                                        |  |  |  |  |
| Air pollutant(s) controlled Efficiency estimation method                                                                                                             |  |  |  |  |
| D. Ambient Impact Assessment                                                                                                                                         |  |  |  |  |
| This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common). |  |  |  |  |
| Stack height (ft)21 Inside stack diameter (ft)0.25                                                                                                                   |  |  |  |  |
| Stack temp (F)60 Design stack flow rate (ACFM)                                                                                                                       |  |  |  |  |
| Actual stack flow rate (ACFM) Velocity (ft/sec)                                                                                                                      |  |  |  |  |

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# E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

| Substance<br>Name<br>(Chemical,<br>Brand Name) | CAS No. | Substance<br>Type | Actual<br>Usage<br>(gal/yr) | Max<br>Usage<br>(gal/day) | Max<br>Usage<br>(gal/year) | VOC<br>Content<br>(Ib/gal) |
|------------------------------------------------|---------|-------------------|-----------------------------|---------------------------|----------------------------|----------------------------|
| Condensate                                     |         | Condensate        | 245,280                     | 672                       | 245,280                    | 0.04                       |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |
|                                                |         |                   |                             |                           |                            |                            |



# Federal Operating Permit Program (40 CFR Part 71) EMISSION UNIT DESCRIPTION FOR PROCESS SOURCES (EUD-3)

### A. General Information

Emissions unit ID \_\_\_\_RBU 11-15E D-1\_\_\_ Description \_\_\_\_\_0.20 mmscfd natural gas dehydrator\_\_

SIC Code (4-digit) \_\_\_\_1311\_\_\_\_\_ SCC Code\_\_\_\_\_

### **B. Emissions Unit Description**

| Primary use or equipment typeNatural Gas Dehydration |                          |  |  |  |
|------------------------------------------------------|--------------------------|--|--|--|
| ManufacturerSivalls                                  | Model No                 |  |  |  |
| Serial No                                            | Installation date//_2007 |  |  |  |
| Raw materialsWet Natural Gas                         |                          |  |  |  |
| Finished productsDry Natural Gas                     |                          |  |  |  |
| Temporary source: _XNoYes                            |                          |  |  |  |

### C. Activity or Production Rates

| Activity or<br>Production Rate | Amount/Hour  | Amount/Year   |  |
|--------------------------------|--------------|---------------|--|
| Actual Rate                    | 1.3 mscf/hr  | 11.6 mmscf/yr |  |
| Maximum rate                   | 8.34 mscf/hr | 73.1 mmscf/yr |  |

### D. Associated Air Pollution Control Equipment

| Emissions unit ID           | Device TypeNONE              |
|-----------------------------|------------------------------|
| Manufacturer                | Model No                     |
| Serial No.                  | Installation date ////       |
| Control efficiency (%)      | Capture efficiency (%)       |
| Air pollutant(s) controlled | Efficiency estimation method |
|                             |                              |

### E. Ambient Impact Assessment

|                               | This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (This is not common)). |  |  |  |  |  |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| Stack height (ft)12           | Inside stack diameter (ft)0.25                                                                                                                                        |  |  |  |  |  |
| Stack temp (F)350             | Design stack flow rate (ACFM)                                                                                                                                         |  |  |  |  |  |
| Actual stack flow rate (ACFM) | Velocity (ft/sec)                                                                                                                                                     |  |  |  |  |  |
|                               |                                                                                                                                                                       |  |  |  |  |  |

# INSTRUCTIONS FOR EUD-3 EMISSIONS UNIT DESCRIPTION FOR PROCESS SOURCES

This form is designed to describe emissions units for processes for which forms EUD-1 or EUD-2 are not appropriate. For example, sources such as rock crushers and asphalt batch plants. This form will help you to collect and organize technical information, including operational characteristics, applicable requirements, compliance terms, and emissions for each emissions unit.

**Section A** - The emissions unit ID should be consistent with the one used in section I of form **GIS**. Enter the four-digit SIC code for the unit, which may be different form that used for the facility as a whole. In addition, complete the Source Classification Code (SCC), if known or available, but this is not mandatory.

**Section B** - There may be other information that the permitting authority will need to know that is not specifically requested on the forms and that should be included on attachments. Such information would include information needed to adequately identify the emissions unit and to determine its applicable requirements.

Section C - The amount of raw materials that are processed and/or the number of activities performed are values that are typically multiplied by emissions factors to calculate PTE and actual emissions.

**Section D** - Identify and describe any associated air pollution control device. Attach copies of correspondence from the vendor documenting these values, if available, or indicate how these values were otherwise determined (e.g., AP-42).

Section E - Complete this section only if ambient impact assessment is an applicable requirement or the facility is a temporary source. This is not common.



# Federal Operating Permit Program (40 CFR Part 71) EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

# A. Emissions Unit ID \_RBD-1\_\_\_\_\_

### **B.** Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

|                |                                  | Emission Rate     |                     |         |
|----------------|----------------------------------|-------------------|---------------------|---------|
|                | Actual                           | Potentia          | l to Emit           |         |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| voc            | See<br>attached<br>PTE Table     |                   |                     |         |
| HAPs           | See<br>attached<br>PTE Table     |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |



# Federal Operating Permit Program (40 CFR Part 71) INSIGNIFICANT EMISSIONS (IE)

On this page list each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

| Number | Description of Activities or Emissions Units | RAP<br>(except HAP) | НАР    |
|--------|----------------------------------------------|---------------------|--------|
|        | Updated July-2017 - Refer to the             | X                   | Х      |
|        | attached Station PTE Table                   |                     |        |
|        |                                              |                     |        |
|        |                                              |                     |        |
|        |                                              |                     |        |
|        |                                              |                     |        |
|        |                                              |                     |        |
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|        |                                              |                     |        |
|        |                                              |                     |        |
|        |                                              |                     |        |

### UNCONTROLLED CONDENSATE TRUCK LOADING EMISSIONS

Company: XTO Energy Inc. Facility Name: Riverbend Dehydration Site Facility Location: Uintah County, Utah

### AP - 42, Chapter 5.2

#### L<sub>L</sub> = 12.46 x S x P x M / T Emissions = L<sub>L</sub> \* Throughput

TABLE 1. Emission factors are calculated utilizing AP-42 equations and data from EPA TANKS 4.09 LL is converted to tpy VOC emissions per barrel of production per

L<sub>L</sub> = Loading Loss Emission Factor (lbs VOC/1000 gal Loaded)

S = Saturation Factor (0.6 For Submerged Loading - Dedicated Service)

P = True Vapor Pressure of the Loaded Liquid (psi)

M = Vapor Molecular Weight of the Loaded Liquid (lbs/lbmol)

T = Temperature of Loaded Liquid (°R)

|               |         |     |           |    |        |             |        | L      |             | Production | VOC    |
|---------------|---------|-----|-----------|----|--------|-------------|--------|--------|-------------|------------|--------|
| Location      | Factors | S   | TVP (psi) | М  | T (°R) | lb/1000 gal | lb/gai | lb/bb1 | tpy VOC/bpd | bpd        | tpy    |
| Truck Loading | 12.46   | 0.6 | 10        | 68 | 511.68 | 9.9353      | 0.0099 | 0.4173 | 7.62E-02    | 32.00      | 2.4369 |

# **Thermal Oxidizer Emission Calculations**

| Company:           | XTO Energy Inc.                    |
|--------------------|------------------------------------|
| Facility Name:     | <b>River Bend Dehydration Site</b> |
| Facility Location: | Uintah County, Utah                |

| Flare Heat Input Capacity                | 1.787 | MMBtu/hr | (Dehydrator emissions only routed to | o thermal oxidizer) |
|------------------------------------------|-------|----------|--------------------------------------|---------------------|
| Dehy Still Overhead Gas Daily Volume     | 32.16 | Mscf/day | From Glycalc (scfh) =                | 1,340.00            |
| Thermal Oxidizer makeup gas Daily Volume | 6.603 | Mscf/day | From Glycalc (scfh) =                | 275.00              |
| Operating Time                           | 8,760 | hr/yr    |                                      |                     |

| Pollutant                              | (A)<br>Emission<br>Factor <sup>1</sup><br>(Ib/MMBtu) | (B) = (A)x<br>MMBtu/hr<br>Potential<br>Emission Rate<br>(Ibs/hr) | (C) = (B)xOT<br>Potential<br>Emission Rate<br>(Ibs/year) | (D) = (C)/2000<br>Potential<br>Emission Rate<br>(tons/year) |  |  |
|----------------------------------------|------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------|--|--|
| Particulate Matter (PM)                |                                                      | Negligible, Smokeless Design                                     |                                                          |                                                             |  |  |
| Particulate Matter (PM <sub>10</sub> ) |                                                      | Negligible, Smokeless Design                                     |                                                          |                                                             |  |  |
| Nitrogen Oxides (NO <sub>x</sub> )     | 0.068                                                | 0.12                                                             | 1064.23                                                  | 0.53                                                        |  |  |
| Sulfur Oxides (SO <sub>x</sub> )       |                                                      | None; no H <sub>2</sub> S present in fuel gas                    |                                                          |                                                             |  |  |
| Carbon Monoxide (CO)                   | 0.37                                                 | 0.66                                                             | 5790.69                                                  | 2.90                                                        |  |  |
| Volatile Organic Compounds (VOC)       | -                                                    | _                                                                |                                                          | -                                                           |  |  |

<sup>1</sup>Emission Factors for Waste Gas from AP-42 Tables 13.5-1 and 13.5-2 (9/91) in lb/MMBtu

# **Thermal Oxidizer Emission Calculations**

| Company:           | XTO Energy Inc.                    |
|--------------------|------------------------------------|
| Facility Name:     | <b>River Bend Dehydration Site</b> |
| Facility Location: | Uintah County, Utah                |
|                    | Facility Name:                     |

Pilot Emissions (One pilot)

| Total Heat Input Capacity of Pilot <sup>2</sup> | 0.1    | MMBtu/hr |
|-------------------------------------------------|--------|----------|
| Heating Value                                   | 1106   | Btu/scf  |
| Operating Time                                  | 8760   | hr/yr    |
| Total Natural Gas Usage                         | 0.0001 | MMscf/hr |
| 2                                               |        |          |

<sup>2</sup> Pilot light heat input based on 2Mscf/day.

| Pollutant                                           | (A)<br>Emission Factor<br>(Ib/MMscf) | (B) = (A)x MMscf/hr<br>Potential<br>Emission Rate<br>(Ibs/hr) | (C) = (B)xOT<br>Potential<br>Emission Rate<br>(Ibs/year) | (D) = (C)/2000<br>Potential<br>Emission Rate<br>(tons/year) |
|-----------------------------------------------------|--------------------------------------|---------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------|
| Particulate Matter (PM) <sup>3</sup>                | 7.6                                  | 0.0006                                                        | 5.5480                                                   | 0.0028                                                      |
| Particulate Matter (PM <sub>10</sub> ) <sup>3</sup> | 7.6                                  | 0.0006                                                        | 5.5480                                                   | 0.0028                                                      |
| Nitrogen Oxides (NO <sub>x</sub> ) <sup>4</sup>     | 100                                  | 0.0083                                                        | 73.0000                                                  | 0.0365                                                      |
| Sulfur Dioxide (SO <sub>2</sub> ) <sup>3</sup>      | 0.6                                  | 0.0001                                                        | 0.4380                                                   | 0.0002                                                      |
| Carbon Monoxide (CO) <sup>4</sup>                   | 84                                   | 0.0070                                                        | 61.3200                                                  | 0.0307                                                      |
| Volatile Organic Compounds (VOC) <sup>3</sup>       | 5.5                                  | 0.0005                                                        | 4.0150                                                   | 0.0020                                                      |
| HAPs <sup>3</sup>                                   | 0.0805                               | 0.0000                                                        | 0.0588                                                   | 0.0000                                                      |

<sup>3</sup>Emission Factors from AP-42 Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4 (7/98) and adjusted accordingly <sup>4</sup>Emission Factors from AP-42 Table 13.5-1 guidance issued in September 1991.

#### **Total Thermal Oxidizer Emissions**

| Pollutant                              | Total Potential<br>Emission Rate<br>(tons/year) |
|----------------------------------------|-------------------------------------------------|
| Particulate Matter (PM)                | 0.0028                                          |
| Particulate Matter (PM <sub>10</sub> ) | 0.0028                                          |
| Nitrogen Oxides (NO <sub>x</sub> )     | 0.5686                                          |
| Sulfur Dioxide (SO <sub>2</sub> )      | 0.0002                                          |
| Carbon Monoxide (CO)                   | 2.9260                                          |
| Volatile Organic Compounds (VOC)       | 0.0020                                          |

### POTENTIAL UNCONTROLLED EMISSIONS

Company: XTO ENERGY INC. Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

Unit: TEG Dehydrator - RBD-1

Rating: 45.0 MMscf/day total; Rotortech Model 1110 Electric Pump - max 9.5 gpm rate Updated May-2017

| Unit             | Gas Flow    |           |           |           |              |           |           |           | Total     | Total     |           |           |
|------------------|-------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Description      | Rate        | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | HAPs      | BTEX      | CO2       | Methane   |
|                  | (MMscf/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) |
| Dehy w/elec pump | 45.0        | 291.2777  | 68.8294   | 94.2297   | 4.0295       | 46.2320   | 3.5578    | 0.2604    | 217.1388  | 213.3206  | 0.0000    | 5.0094    |
| Flash Separator  |             | 37.8371   | 0.7824    | 0.6622    | 0.0158       | 0.1269    | 1.1697    | 0.08      | 2.8370    | 1.5873    | 0.0000    | 73.2515   |
| TOTAL            |             | 329.115   | 69.612    | 94.892    | 4.045        | 46.359    | 4.728     | 0.340     | 219.976   | 214.908   | 0.000     | 78.261    |

### POTENTIAL CONTROLLED EMISSIONS

| Unit             | Gas Flow    |           |           |           |              |                |           |           | Total     | Total     |           |           |
|------------------|-------------|-----------|-----------|-----------|--------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Description      | Rate        | VOCs      | Benzene   | Toluene   | Ethylbenzene | <b>Xylenes</b> | N-Hexane  | 224-TMP   | HAPs      | BTEX      | CO2       | Methane   |
|                  | (MMscf/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr)      | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) |
| Dehy w/elec pump | 45.0        | 14.5639   | 3.4415    | 4.7115    | 0.2015       | 2.3116         | 0.1779    | 0.0130    | 10.8569   | 10.6660   | 0.0000    | 0.2505    |
| Flash Separator* |             | 0.0000    | 0.0000    | 0.0000    | 0.0000       | 0.0000         | 0.0000    | 0.0000    | 0.0000    | 0.0000    | 0.0000    | 0.0000    |
| TOTAL            |             | 14.564    | 3.441     | 4.711     | 0.201        | 2.312          | 0.178     | 0.013     | 10.857    | 10.666    | 0.000     | 0.250     |

Dehydrator still vent controlled 99% through the use of a thermal oxidizer (see attached information)

\* Flash gas separator is routed to two places: any liquids go to the bullet tank onsite; gas is routed to a suction line and sent off-site to the Tap 1 Compressor Station.

updated w/2016 Analysis and updated pump rate (959pm)

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES

Case Name: RB Dehy Site - 2017 Updated PTE Uncontrolled Emissions File Name: W:YEHSYEnvironmentalYAirYAreas of OperationYUtahY\_MSOYRBU DehyYTitle VYEPA RBU Dehy 2016-20 17 Questions¥RBU Dehy 2017 Updated PTE .ddf Date: May 12, 2017 DESCRIPTION: Description: Throughput: 45 MMSCFD, Gas Analysis: 6/13/2016 Electric Rotor GS1110-E @ max 9.5 gpm Flash Tank w/ gas recycle, TOx Annual Hours of Operation: 8760.0 hours/yr WET GAS: -----------74.00 deg. F Temperature: 1042.00 psig Pressure: Wet Gas Water Content: Saturated Component Conc. (vol %) Carbon Dioxide 0.3517 Nitrogen 0.3686 Methane 89.6464 Ethane 6.0452 1.9291 Propane 0.4376 Isobutane n-Butane 0.4848 Isopentane 0.2080 0.1435 n-Pentanc n-Hexane 0.0608 0.0344 Cyclohexane Other Hexanes 0.0961 0.0881 Heptanes 0.0441 Methylcyclohexane 2, 2, 4-Trimethylpentane 0.0047 0,0228 Benzene Toluene 0.0190 Ethylbenzene 0.0006 Xylenes 0.0053 C8+ Heavies 0.0092 DRY GAS: Flow Rate: 45.0 MMSCF/day Water Content: 7.0 lbs. H20/MMSCF LEAN GLYCOL: 

> Glycol Type: TEG Water Content: 1.5 wt% H20 Flow Rate: 9.5 gpm

PUMP:

Glycol Pump Type: Electric/Pneumatic

FLASH TANK:

Flash Control: Recycle/recompression Temperature: 120.0 deg. F Pressure: 60.0 psig

REGENERATOR OVERHEADS CONTROL DEVICE:

Control Device: Combustion Device Dostruction Efficiency: 99.0 % Excess Oxygen: 13.8 % Ambient Air Temperature: 52.0 deg. F

Case Name: RB Dehy Site - 2017 Updated PTE Uncontrolled Emissions File Name: W:¥EHS¥Environmental¥AirYAreas of Operation¥Utah¥\_MSO¥RBU Dehy¥Title V¥EPA RBU Dehy 2016-20 17 Questions¥RBU Dehy 2017 Updated PTE .ddf Date: May 12, 2017

#### CONTROLLED REGENERATOR EMISSIONS

| Component                   | lbs/hr | lbs/day                                                                        | tons/yr |
|-----------------------------|--------|--------------------------------------------------------------------------------|---------|
| Methane                     | 0.0114 | $\begin{array}{c} 0.\ 274\\ 0.\ 338\\ 0.\ 401\\ 0.\ 213\\ 0.\ 362 \end{array}$ | 0. 0501 |
| Ethane                      | 0.0141 |                                                                                | 0. 0617 |
| Propane                     | 0.0167 |                                                                                | 0. 0732 |
| Isobutane                   | 0.0089 |                                                                                | 0. 0389 |
| n-Butane                    | 0.0151 |                                                                                | 0. 0660 |
| Isopentane                  | 0.0083 | 0. 200                                                                         | 0. 0365 |
| n-Pentane                   | 0.0082 | 0. 197                                                                         | 0. 0359 |
| n-Hexane                    | 0.0081 | 0. 195                                                                         | 0. 0356 |
| Cyclohexane                 | 0.0260 | 0. 625                                                                         | 0. 1140 |
| Other Hexancs               | 0.0091 | 0. 217                                                                         | 0. 0397 |
| Heptanes                    | 0.0280 | 0, 673                                                                         | 0. 1228 |
| Methylcyclohexane           | 0.0408 | 0, 980                                                                         | 0. 1789 |
| 2,2,4-Trimethylpentane      | 0.0006 | 0, 014                                                                         | 0. 0026 |
| Benzene                     | 0.1571 | 3, 771                                                                         | 0. 6883 |
| Toluene                     | 0.2151 | 5, 163                                                                         | 0. 9423 |
| Ethylbenzene                | 0.0092 | 0. 221                                                                         | 0.0403  |
| Xylenes                     | 0.1058 | 2. 538                                                                         | 0.4632  |
| C8+ Heavies                 | 0.0079 | 0. 189                                                                         | 0.0346  |
| Total Emissions             | 0.6905 | 16.573                                                                         | 3, 0246 |
| Total Hydrocarbon Emissions | 0.6905 | 16.573                                                                         | 3. 0246 |
| Total VOC Emissions         | 0.6650 | 15.960                                                                         | 2. 9128 |
| Total HAP Emissions         | 0.4960 | 11.903                                                                         | 2. 1723 |
| Total BTEX Emissions        | 0.4872 | 11.694                                                                         | 2. 1341 |

#### UNCONTROLLED REGENERATOR EMISSIONS

| Component              | lbs/hr  | lbs/day  | tons/yr                                                                                 |
|------------------------|---------|----------|-----------------------------------------------------------------------------------------|
| Methane                | 1. 1437 | 27. 449  | $5.\ 0094 \\ 6.\ 1737 \\ 7.\ 3168 \\ 3.\ 8869 \\ 6.\ 6033$                              |
| Ethane                 | 1. 4095 | 33. 829  |                                                                                         |
| Propane                | 1. 6705 | 40. 092  |                                                                                         |
| Isobutane              | 0. 8874 | 21. 298  |                                                                                         |
| n-Butane               | 1. 5076 | 36. 182  |                                                                                         |
| Isopentane             | 0.8340  | 20.015   | 3. 6527                                                                                 |
| n-Pentane              | 0.8206  | 19.694   | 3. 5942                                                                                 |
| n-Hexane               | 0.8123  | 19.495   | 3. 5578                                                                                 |
| Cyclohexane            | 2.6037  | 62.488   | 11. 4041                                                                                |
| Other Hexanes          | 0.9062  | 21.748   | 3. 9691                                                                                 |
| Heptanes               | 2.8030  | 67. 272  | $\begin{array}{c} 12.\ 2771\\ 17.\ 8853\\ 0.\ 2604\\ 68.\ 8294\\ 94.\ 2297 \end{array}$ |
| Methylcyclohexane      | 4.0834  | 98. 002  |                                                                                         |
| 2,2,4-Trimethylpentane | 0.0594  | 1. 427   |                                                                                         |
| Benzene                | 15.7145 | 377. 148 |                                                                                         |
| Toluenc                | 21.5136 | 516. 327 |                                                                                         |
| Ethylbenzene           | 0.9200  | 22. 079  | 4. 0295                                                                                 |
| Xylenes                | 10.5761 | 253. 826 | 46. 3232                                                                                |

| C8-                                                             | + Heavics              | 0. 7895                                  | 18.949                                           | Page: 2<br>3.4582                                |
|-----------------------------------------------------------------|------------------------|------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| Total I                                                         | Emissions              | 69.0550                                  | 1657.320                                         | 302, 4609                                        |
| Total Hydrocarbon  <br>Total VOC  <br>Total HAP  <br>Total BTEX | Emissions<br>Emissions | 69.0550<br>66.5018<br>49.5959<br>48.7242 | 1657. 320<br>1596. 042<br>1190. 302<br>1169. 380 | 302. 4609<br>291. 2777<br>217. 2301<br>213. 4119 |

#### FLASH GAS EMISSIONS

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Note: Flash Gas Emissions arc zero with the Recycle/recompression control option.

### FLASH TANK OFF GAS

| Component                              | lbs/hr   | lbs/day                 | tons/yr   |
|----------------------------------------|----------|-------------------------|-----------|
|                                        | 16.7241  | 401. 378                | 73. 2515  |
|                                        | 5.5263   | 132. 630                | 24. 2050  |
|                                        | 3.1219   | 74. 925                 | 13. 6738  |
|                                        | 1.0675   | 25. 621                 | 4. 6758   |
|                                        | 1.3661   | 32. 786                 | 5. 9835   |
| Isopentane                             | 0.6371   | 15. 289                 |           |
| n-Pentane                              | 0.5055   | 12. 132                 |           |
| n-Hexane                               | 0.2671   | 6. 409                  |           |
| Cyclohexane                            | 0.2065   | 4. 956                  |           |
| Other Hexanes                          | 0.3946   | 9. 470                  |           |
| Heptanes                               | 0. 4332  |                         | 1.8972    |
| Methylcyclohexane                      | 0. 2486  |                         | 1.0887    |
| 2,2,4-Trimethylpentane                 | 0. 0183  |                         | 0.0800    |
| Benzene                                | 0. 1786  |                         | 0.7824    |
| Toluene                                | 0. 1512  |                         | 0.6622    |
| Ethylbenzene<br>Xylenes<br>C8+ Hcavies |          | 0.087<br>0.695<br>0.240 |           |
| Total Emissions                        | 30. 8889 | 741.335                 | 135. 2936 |
| Total Hydrocarbon Emissions            | 30.8889  | 207.326                 | 135. 2936 |
| Total VOC Emissions                    | 8.6386   |                         | 37. 8371  |
| Total HAP Emissions                    | 0.6477   |                         | 2. 8370   |
| Total BTEX Emissions                   | 0.3624   |                         | 1. 5873   |

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: RB Dehy Site - 2017 Updated PTE Uncontrolled Emissions File Name: W:¥EHS¥Environmental¥Air¥Areas of Operation¥Utah¥\_MSO¥RBU Dehy¥Title V¥EPA RBU Dehy 2016-20 17 Questions¥RBU Dehy 2017 Updated PTE .ddf Date: August 02, 2017

#### DESCRIPTION:

Description: Throughput: 45 MMSCFD, Gas Analysis: 6/13/2016 Electric Rotor GS1110-E @ max 9.5 gpm Flash Tank w/ gas recycle, TOx

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

#### CONTROLLED REGENERATOR EMISSIONS

| Component                   | lbs/hr  | lbs/day                                                                        | tons/yr |
|-----------------------------|---------|--------------------------------------------------------------------------------|---------|
| Methane                     | 0. 0114 | $\begin{array}{c} 0.\ 274\\ 0.\ 338\\ 0.\ 401\\ 0.\ 213\\ 0.\ 362 \end{array}$ | 0.0501  |
| Ethane                      | 0. 0141 |                                                                                | 0.0617  |
| Propane                     | 0. 0167 |                                                                                | 0.0732  |
| Isobutane                   | 0. 0089 |                                                                                | 0.0389  |
| n-Butane                    | 0. 0151 |                                                                                | 0.0660  |
| Isopentane                  | 0.0083  | $\begin{array}{c} 0.\ 200\\ 0.\ 197\\ 0.\ 195\\ 0.\ 625\\ 0.\ 217 \end{array}$ | 0.0365  |
| n-Pentane                   | 0.0082  |                                                                                | 0.0359  |
| n-Hexane                    | 0.0081  |                                                                                | 0.0356  |
| Cyclohexane                 | 0.0260  |                                                                                | 0.1140  |
| Other Hexanes               | 0.0091  |                                                                                | 0.0397  |
| Heptanes                    | 0. 0280 | $\begin{array}{c} 0.\ 673\\ 0.\ 980\\ 0.\ 014\\ 3.\ 771\\ 5.\ 163 \end{array}$ | 0. 1228 |
| Methylcyclohexane           | 0. 0408 |                                                                                | 0. 1789 |
| 2,2,4-Trimethylpentane      | 0. 0006 |                                                                                | 0. 0026 |
| Benzene                     | 0. 1571 |                                                                                | 0. 6883 |
| Toluene                     | 0. 2151 |                                                                                | 0. 9423 |
| Ethylbenzene                | 0. 0092 | 0. 221                                                                         | 0.0403  |
| Xylenes                     | 0. 1058 | 2. 538                                                                         | 0.4632  |
| C8+ Heavies                 | 0. 0079 | 0. 189                                                                         | 0.0346  |
| Total Emissions             | 0. 6905 | 16. 573                                                                        | 3. 0246 |
| Total Hydrocarbon Emissions | 0.6905  | 16.573                                                                         | 3. 0246 |
| Total VOC Emissions         | 0.6650  | 15.960                                                                         | 2. 9128 |
| Total HAP Emissions         | 0.4960  | 11.903                                                                         | 2. 1723 |
| Total BTEX Emissions        | 0.4872  | 11.694                                                                         | 2. 1341 |

#### UNCONTROLLED REGENERATOR EMISSIONS

| Component                                             | lbs/hr                                                                              | Ibs/day                                        | tons/yr                                          |
|-------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------|
| Methane<br>Ethane<br>Propane<br>Isobutane<br>n-Butane | $\begin{array}{c} 1.\ 1437\\ 1.\ 4095\\ 1.\ 6705\\ 0.\ 8874\\ 1.\ 5076 \end{array}$ | 27.449<br>33.829<br>40.092<br>21.298<br>36.182 | $5.0094 \\ 6.1737 \\ 7.3168 \\ 3.8869 \\ 6.6033$ |

|                             |                                                                                       |           | Page: 2   |
|-----------------------------|---------------------------------------------------------------------------------------|-----------|-----------|
| Isopentane                  | 0.8340                                                                                | 20. 015   | 3.6527    |
| n-Pentane                   | 0.8206                                                                                | 19. 694   | 3.5942    |
| n-Hexane                    | 0.8123                                                                                | 19. 495   | 3.5578    |
| Cyclohexane                 | 2.6037                                                                                | 62. 488   | 11.4041   |
| Other Hexanes               | 0.9062                                                                                | 21. 748   | 3.9691    |
| Heptanes                    | $\begin{array}{c} 2.\ 8030\\ 4.\ 0834\\ 0.\ 0594\\ 15.\ 7145\\ 21.\ 5136 \end{array}$ | 67. 272   | 12. 2771  |
| Methylcyclohexane           |                                                                                       | 98. 002   | 17. 8853  |
| 2,2,4-Trimethylpentane      |                                                                                       | 1. 427    | 0. 2604   |
| Benzene                     |                                                                                       | 377. 148  | 68. 8294  |
| Toluene                     |                                                                                       | 516. 327  | 94. 2297  |
| Ethylbenzene                | 0. 9200                                                                               | 22. 079   | 4. 0295   |
| Xylenes                     | 10. 5761                                                                              | 253. 826  | 46. 3232  |
| C8+ Heavies                 | 0. 7895                                                                               | 18. 949   | 3. 4582   |
| Total Emissions             | 69.0550                                                                               | 1657.320  | 302.4609  |
| Total Hydrocarbon Emissions | 69. 0550                                                                              | 1657. 320 | 302. 4609 |
| Total VOC Emissions         | 66. 5018                                                                              | 1596. 042 | 291. 2777 |
| Total HAP Emissions         | 49. 5959                                                                              | 1190. 302 | 217. 2301 |
| Total BTEX Emissions        | 48. 7242                                                                              | 1169. 380 | 213. 4119 |

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FLASH GAS EMISSIONS

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Note: Flash Gas Emissions are zero with the Recycle/recompression control option.

### FLASH TANK OFF GAS

| Component                              | lbs/hr                                                                              | lbs/day                                                                                  | tons/yr                                                                               |
|----------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Methane                                | 16. 7241                                                                            | 401. 378                                                                                 | $\begin{array}{c} 73.\ 2515\\ 24.\ 2050\\ 13.\ 6738\\ 4.\ 6758\\ 5.\ 9835\end{array}$ |
| Ethane                                 | 5. 5263                                                                             | 132. 630                                                                                 |                                                                                       |
| Propane                                | 3. 1219                                                                             | 74. 925                                                                                  |                                                                                       |
| Isobutane                              | 1. 0675                                                                             | 25. 621                                                                                  |                                                                                       |
| n-Butane                               | 1. 3661                                                                             | 32. 786                                                                                  |                                                                                       |
| Isopentane                             | $\begin{array}{c} 0.\ 6371\\ 0.\ 5055\\ 0.\ 2671\\ 0.\ 2065\\ 0.\ 3946 \end{array}$ | 15. 289                                                                                  | 2. 7903                                                                               |
| n-Pentane                              |                                                                                     | 12. 132                                                                                  | 2. 2141                                                                               |
| n-Hexane                               |                                                                                     | 6. 409                                                                                   | 1. 1697                                                                               |
| Cyclohexane                            |                                                                                     | 4. 956                                                                                   | 0. 9045                                                                               |
| Other Hexanes                          |                                                                                     | 9. 470                                                                                   | 1. 7283                                                                               |
| Heptanes                               | 0. 4332                                                                             | $\begin{array}{c} 10. \ 396 \\ 5. \ 965 \\ 0. \ 439 \\ 4. \ 287 \\ 3. \ 629 \end{array}$ | 1.8972                                                                                |
| Methylcyclohexane                      | 0. 2486                                                                             |                                                                                          | 1.0887                                                                                |
| 2,2,4-Trimethylpentane                 | 0. 0183                                                                             |                                                                                          | 0.0800                                                                                |
| Benzene                                | 0. 1786                                                                             |                                                                                          | 0.7824                                                                                |
| Toluene                                | 0. 1512                                                                             |                                                                                          | 0.6622                                                                                |
| Ethylbenzene<br>Xylenes<br>C8+ Heavies | $\begin{array}{c} 0.\ 0036 \\ 0.\ 0290 \\ 0.\ 0100 \end{array}$                     | 0.087<br>0.695<br>0.240                                                                  | $\begin{array}{c} 0.\ 0158 \\ 0.\ 1269 \\ 0.\ 0438 \end{array}$                       |
| Total Emissions                        | 30. 8889                                                                            | 741. 335                                                                                 | 135. 2936                                                                             |
| Total Hydrocarbon Emissions            | 30, 8889                                                                            | 741. 335                                                                                 | 135. 2936                                                                             |
| Total VOC Emissions                    | 8, 6386                                                                             | 207. 326                                                                                 | 37, 8371                                                                              |
| Total HAP Emissions                    | 0, 6477                                                                             | 15. 545                                                                                  | 2, 8370                                                                               |
| Total BTEX Emissions                   | 0, 3624                                                                             | 8. 697                                                                                   | 1, 5873                                                                               |

EQUIPMENT REPORTS:

#### COMBUSTION DEVICE

| Ambient Temperatu<br>Excess Oxyg<br>Combustion Efficier<br>Supplemental Fuel Requireme                                      | gen: 13.80<br>ncy: 99.00                                                               | ) %<br>) %                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--|
| Component                                                                                                                   | Emitted                                                                                | Destroyed                                                                              |  |
| Methane<br>Ethane<br>Propane<br>Isobutane<br>n-Butane<br>sopentane<br>n-Pentane<br>n-Hexane<br>Cyclohexane<br>Other Hexanes | 1.00%<br>1.00%<br>1.00%<br>1.00%<br>1.00%<br>1.00%<br>1.00%<br>1.00%<br>1.00%<br>1.00% | 99.00%<br>99.00%<br>99.00%<br>99.00%<br>99.00%<br>99.00%<br>99.00%<br>99.00%<br>99.00% |  |
| Heptanes<br>Methylcyclohexane<br>2,2,4-Trimethylpentane<br>Benzene<br>Toluene                                               | 1.00%<br>1.00%<br>1.00%<br>1.00%<br>1.00%                                              | 99.00%<br>99.00%<br>99.00%<br>99.00%<br>99.00%                                         |  |
| Ethylbenzene<br>Xylenes<br>C8+ Heavies                                                                                      | 1.00%                                                                                  | 99.00%<br>99.00%<br>99.00%                                                             |  |

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

| Calculated Absorber Stages:<br>Calculated Dry Gas Dew Point:               | 1. 25<br>0. 98     | lbs. H20/MMSCF               |
|----------------------------------------------------------------------------|--------------------|------------------------------|
| Temperature:<br>Pressure:<br>Dry Gas Flow Rate:                            | 1042.0             | deg. F<br>psig<br>MMSCF/day  |
| Glycol Losses with Dry Gas:<br>Wet Gas Water Content:                      | 0.3171             |                              |
| Calculated Wet Gas Water Content:<br>Calculated Lean Glycol Recirc. Ratio: |                    | lbs. H2O/MMSCF<br>gal/lb H2O |
|                                                                            | maining<br>Dry Gas |                              |

| Water          | 3.75%   | 96.25% |
|----------------|---------|--------|
| Carbon Dioxide | 99, 63% | 0.37%  |
| Nitrogen       | 99.97%  | 0.03%  |
| Methane        | 99.97%  | 0.03%  |
| Ethane         | 99.92%  | 0.08%  |

| Propane                | 99.89% | 0.11%  |
|------------------------|--------|--------|
| Isobutane              | 99.84% | 0.16%  |
| n-Butane               | 99.79% | 0.21%  |
| Isopentane             | 99.80% | 0.20%  |
| n-Pentane              | 99.74% | 0.26%  |
| n-Hexane               | 99.58% | 0.42%  |
| Cyclohexane            | 98.04% | 1.96%  |
| Other Hexanes          | 99.68% | 0.32%  |
| Heptanes               | 99.26% | 0.74%  |
| Methylcyclohexane      | 97.98% | 2.02%  |
| 2,2,4-Trimethylpentane | 99.71% | 0.29%  |
| Benzene                | 81.95% | 18.05% |
| Toluene                | 74.97% | 25.03% |
| Ethylbenzene           | 70.67% | 29.33% |
| Xylenes                | 61.87% | 38.13% |
| C8+ Heavies            | 98.97% | 1.03%  |

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FLASH TANK

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| Flash Cont<br>Flash Temperatu<br>Flash Press | ure: 120          | /recompression<br>.0 deg. F<br>.0 psig |
|----------------------------------------------|-------------------|----------------------------------------|
| Component                                    | Left in<br>Glycol | Removed in<br>Flash Gas                |
| Water                                        | 99. 97%           | 0.03%                                  |
| Carbon Dioxide                               | 45. 61%           | 54.39%                                 |
| Nitrogen                                     | 6. 37%            | 93.63%                                 |
| Methane                                      | 6. 40%            | 93.60%                                 |
| Ethane                                       | 20. 32%           | 79.68%                                 |
| Propane                                      | 34.86%            | 65. 14%                                |
| Isobutane                                    | 45.39%            | 54. 61%                                |
| n-Butane                                     | 52.46%            | 47. 54%                                |
| Isopentane                                   | 56.91%            | 43. 09%                                |
| n-Pentane                                    | 62.07%            | 37. 93%                                |
| n-Hexane                                     | 75.38%            | 24.62%                                 |
| Cyclohexane                                  | 92.89%            | 7.11%                                  |
| Other Hexanes                                | 69.97%            | 30.03%                                 |
| Heptanes                                     | 86.68%            | 13.32%                                 |
| Methylcyclohexane                            | 94.49%            | 5.51%                                  |
| 2,2,4-Trimethylpentane                       | 76.84%            | 23. 16%                                |
| Benzene                                      | 98.93%            | 1. 07%                                 |
| Toluene                                      | 99.36%            | 0. 64%                                 |
| Ethylbenzene                                 | 99.65%            | 0. 35%                                 |
| Xylenes                                      | 99.76%            | 0. 24%                                 |
| C8+ Heavies                                  | 98.90%            | 1.10%                                  |

#### REGENERATOR

No Stripping Gas used in regenerator.

|           | Remaining | Distilled |
|-----------|-----------|-----------|
| Component | in Glycol | Overhead  |

|                        | daar dina tahii kana aan ilka cala dagi dagi dagi angi dage | Page:   | 5 |
|------------------------|-------------------------------------------------------------|---------|---|
| Water                  | 63.07%                                                      | 36.93%  |   |
| Carbon Dioxide         | 0.00%                                                       | 100.00% |   |
| Nitrogen               | 0.00%                                                       | 100.00% |   |
| Methane                | 0.00%                                                       | 100.00% |   |
| Ethane                 | 0.00%                                                       | 100.00% |   |
| Propane                | 0.00%                                                       | 100.00% |   |
| Isobutane              | 0.00%                                                       | 100.00% |   |
| n-Butane               | 0.00%                                                       | 100.00% |   |
| Isopentane             | 0.88%                                                       | 99.12%  |   |
| n-Pentane              | 0.81%                                                       | 99.19%  |   |
| n-Hexane               | 0.66%                                                       | 99.34%  |   |
| Cyclohexane            | 3.44%                                                       | 96.56%  |   |
| Other Hexanes          | 1.43%                                                       | 98.57%  |   |
| Heptanes               | 0.58%                                                       | 99.42%  |   |
| Methylcyclohexane      | 4.23%                                                       | 95.77%  |   |
| 2,2,4-Trimethylpentane | 1.95%                                                       | 98.05%  |   |
| Benzene                | 5.05%                                                       | 94.95%  |   |
| Toluene                | 7.95%                                                       | 92.05%  |   |
| Ethylbenzene           | 10.44%                                                      | 89.56%  |   |
| Xylenes                | 12.94%                                                      | 87.06%  |   |
| C8+ Heavies            | 12.14%                                                      | 87.86%  |   |

### STREAM REPORTS:

### WET GAS STREAM

| Temperature: 74.00 deg.<br>Pressure: 1056.70 psia<br>Flow Rate: 1.88c+006 scfh | 1                                                                                                                                             |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Component                                                                      | Conc. Loading<br>(vol%) (lb/hr)                                                                                                               |
| Carbon Dio<br>Nitr<br>Met                                                      | Vater 5.48e-002 4.88c+001<br>oxide 3.52e-001 7.65e+002<br>cogen 3.68e-001 5.10e+002<br>chane 8.96e+001 7.11e+004<br>chane 6.04e+000 8.99e+003 |
| Isobu<br>n-Bu<br>Isopen                                                        | ppane 1.93e+000 4.21e+003<br>itane 4.37e-001 1.26e+003<br>itane 4.85e-001 1.39e+003<br>itane 2.08e-001 7.42e+002<br>itane 1.43e-001 5.12e+002 |
| Cyclohe<br>Other Hex<br>Hept                                                   | exane 6.08e-002 2.59e+002<br>exane 3.44e-002 1.43e+002<br>canes 9.60e-002 4.09e+002<br>canes 8.81e-002 4.36e+002<br>exane 4.41e-002 2.14e+002 |
| Ben<br>Tol<br>Ethylben                                                         | ntane 4.70e-003 2.65e+001<br>nzene 2.28e-002 8.80e+001<br>uene 1.90e-002 8.65e+001<br>nzene 6.00e-004 3.15e+000<br>enes 5.30e-003 2.78e+001   |

C8+ Heavies 9.19e-003 7.75e+001

Total Components 100.00 9.13e+004

DRY GAS STREAM

| Temperature: 74.00 deg. F<br>Pressure: 1056.70 psia<br>Flow Rate: 1.88e+006 scfh |                                                                    |                                        |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------|
| Component                                                                        | Conc.<br>(vol%)                                                    | Loading<br>(lb/hr)                     |
| Carbon Dioxide<br>Nitrogen<br>Methane                                            | 2.06e-003<br>3.51e-001<br>3.69e-001<br>8.97e+001<br>6.04e+000      | 7.62e+002<br>5.10e+002<br>7.11e+004    |
| Isobutane<br>n-Butane<br>Isopentane                                              | 1. 93e+000<br>4. 37e-001<br>4. 84e-001<br>2. 08e-001<br>1. 43e-001 | 1.26e+003<br>1.39e+003<br>7.40e+002    |
| Cyclohexane<br>Other Hexanes                                                     | 9.58e-002<br>8.75e-002                                             | 1. 40e+002<br>4. 08e+002<br>4. 33e+002 |
| Toluene<br>Ethylbenzene                                                          | 1.87e-002<br>1.43e-002                                             | 7.22e+001<br>6.49e+001<br>2.23e+000    |
| C8+ Heavies                                                                      | 9.11e-003                                                          | 7.67e+001                              |
| Total Components                                                                 | 100.00                                                             | 9.11e+004                              |
|                                                                                  |                                                                    |                                        |

LEAN GLYCOL STREAM

| Temperature: 74.00 deg. F<br>Flow Rate: 9.49e+000 gpm |                                                               |                                     |
|-------------------------------------------------------|---------------------------------------------------------------|-------------------------------------|
| Component                                             | Conc.<br>(wt%)                                                | Loading<br>(lb/hr)                  |
| Water<br>Carbon Dioxide<br>Nitrogen                   | 9.84e+001<br>1.50e+000<br>5.36e-012<br>2.86e-013<br>1.12e-017 | 8.01e+001<br>2.86e-010<br>1.53e-011 |
| Propane<br>Isobutane                                  | 6.13e-008<br>3.65e-009<br>1.10e-009<br>1.33e-009<br>1.38e-004 | 1.95e-007<br>5.86e-008<br>7.13e-008 |
|                                                       | 1.25e-004<br>1.02e-004<br>1.74e-003                           | 5.42e-003                           |

| Other Hexanes<br>Heptanes | 2.46e-004<br>3.04e-004              | and and an output                      |
|---------------------------|-------------------------------------|----------------------------------------|
|                           | 2.22e-005<br>1.57e-002<br>3.48e-002 | 1. 18e-003<br>8. 36e-001<br>1. 86e+000 |
| C8+ Heavies               |                                     | 1.09e-001                              |
| Total Components          | 100.00                              | 5.34e+003                              |

### RICH GLYCOL STREAM

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| IU | H GLICOL SINEAM                                                                                     |                                                               |                                     |              |
|----|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------|--------------|
|    | Temperature:74.00 deg. FPressure:1056.70 psiaFlow Rate:9.81e+000 gpmNOTE:Stream has more than one p | ohase.                                                        |                                     | <sup>1</sup> |
|    | Component                                                                                           | Conc.<br>(wt%)                                                | Loading<br>(Ib/hr)                  |              |
|    | Water<br>Carbon Dioxide<br>Nitrogen                                                                 | 9.57e+001<br>2.32e+000<br>5.22e-002<br>2.79e-003<br>3.25e-001 | 1.27e+002<br>2.86e+000<br>1.53e-001 |              |
|    | Propane<br>Isobutane                                                                                | 1.26e-001<br>8.73e-002<br>3.56e-002<br>5.23e-002<br>2.69e-002 | 4.79e+000<br>1.95e+000<br>2.87e+000 |              |
|    | n-Hexane<br>Cyclohexane<br>Other Hexanes                                                            |                                                               | 1.08e+000<br>2.90e+000<br>1.31e+000 |              |
|    |                                                                                                     | 1.44e-003<br>3.05e-001<br>4.28e-001                           | 7.89e-002<br>1.67e+001<br>2.35e+001 |              |
|    | Xylenes<br>C8+ Heavies                                                                              | 2.22e-001<br>1.66e-002                                        |                                     |              |
|    | Total Components                                                                                    | 100.00                                                        | 5.49e+003                           |              |

### FLASH TANK OFF GAS STREAM

| Temperature:<br>Pressure:<br>Flow Rate: |           | sia |                        | na ang ang ang ang ang ang ang ang ang a | 6 100 (101 -000 -000 |
|-----------------------------------------|-----------|-----|------------------------|------------------------------------------|----------------------|
|                                         | Component |     |                        | Loading<br>(lb/hr)                       |                      |
|                                         | Carbon    |     | 1.26e-001<br>2.49e+000 |                                          |                      |

| Methane                             | 3.61e-001<br>7.35e+001<br>1.30e+001                           | 1.67e+001                           |
|-------------------------------------|---------------------------------------------------------------|-------------------------------------|
| Isobutane<br>n-Butane<br>Isopentane | 4.99e+000<br>1.29e+000<br>1.66e+000<br>6.22e-001<br>4.94e-001 | 1.07e+000<br>1.37e+000<br>6.37e-001 |
| Cyclohexane<br>Other Hexanes        | 3.23e-001<br>3.05e-001                                        | 2.07e-001<br>3.95e-001<br>4.33e-001 |
| Toluene<br>Ethylbenzene             | 1.61e-001<br>1.16e-001                                        | 1.79e-001<br>1.51e-001<br>3.61e-003 |
| C8+ Heavies<br>Total Components     |                                                               | 1.00e-002<br>3.26e+001              |
| Total components                    | 100,00                                                        | 0.200.001                           |

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FLASH TANK GLYCOL STREAM

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| Temperature: 120.00 deg. F<br>Flow Rate: 9.73e+000 gpm |                                                                    |                                     |
|--------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------|
| Component                                              | Conc.<br>(wt%)                                                     | Loading<br>(lb/hr)                  |
| Water<br>Carbon Dioxide<br>Nitrogen                    | 9. 63e+001<br>2. 33e+000<br>2. 39e-002<br>1. 79e-004<br>2. 10e-002 | 1.27e+002<br>1.31e+000<br>9.77e-003 |
| Propane<br>Isobutane                                   | 2.58e-002<br>3.06e-002<br>1.63e-002<br>2.76e-002<br>1.54e-002      | 1.67e+000<br>8.87e-001<br>1.51e+000 |
| n-Hexane<br>Cyclohexane<br>Other Hexanes               |                                                                    | 8.18e-001<br>2.70e+000<br>9.19e-001 |
|                                                        | 1.11e-003<br>3.03e-001<br>4.28e-001                                | 6.06e-002<br>1.66e+001<br>2.34e+001 |
| Xylenes<br>C8+ Heavies                                 | 2.23e-001<br>1.65e-002                                             |                                     |
| Total Components                                       | 100.00                                                             | 5.46e+003                           |

FLASH GAS EMISSIONS

Control Method: Recycle/recompression Control Efficiency: 100.00

Note: Flash Gas Emissions are zero with the Recycle/recompression control option.

#### REGENERATOR OVERHEADS STREAM

| Temperature: 212.00 deg. F<br>Pressure: 14.70 psia<br>Flow Rate: 1.34e+003 scfh |                                                               |                                     |
|---------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------|
| Component                                                                       | Conc.<br>(vol%)                                               | Loading<br>(lb/hr)                  |
| Carbon Dioxide<br>Nitrogen<br>Methane                                           | 7.39e+001<br>8.42e-001<br>9.89e-003<br>2.02e+000<br>1.33e+000 | 1.31e+000<br>9.77e-003<br>1.14e+000 |
| Isobutane<br>n-Butane<br>Isopentane                                             | 1.07e+000<br>4.33e-001<br>7.36e-001<br>3.28e-001<br>3.23e-001 | 8.87e-001<br>1.51e+000<br>8.34e-001 |
| Cyclohexane<br>Other Hexanes                                                    | 2.98e-001<br>7.94e-001                                        | 2.60e+000<br>9.06e-001<br>2.80e+000 |
| Toluene<br>Ethylbenzone                                                         | 5.71e+000<br>6.63e+000                                        | 1.57e+001<br>2.15e+001<br>9.20e-001 |
| C8+ Heavies<br>Total Components                                                 |                                                               | 7.90e-001<br>1.17e+002              |
|                                                                                 |                                                               |                                     |

### COMBUSTION DEVICE OFF GAS STREAM

| 1000.00 deg. F<br>14.70 psia<br>3.37e+000 scfh |                                                                    |                                        |
|------------------------------------------------|--------------------------------------------------------------------|----------------------------------------|
| <br>Component                                  |                                                                    | Loading<br>(lb/hr)                     |
| Ethane<br>Propane<br>Isobutane                 | 8. 02e+000<br>5. 27e+000<br>4. 26e+000<br>1. 72e+000<br>2. 92e+000 | 1. 41e-002<br>1. 67e-002<br>8. 87e-003 |
|                                                | 1.28e+000<br>1.06e+000<br>3.48e+000                                | 8.21e-003<br>8.12e-003<br>2.60e-002    |

| Methylcyclohexane<br>2,2,4-Trimethylpentane<br>Benzene     |                          | 4.08e-002<br>5.94e-004<br>1.57e-001 |
|------------------------------------------------------------|--------------------------|-------------------------------------|
| Ethylbenzene<br>Xylenes<br>C8+ Heavies<br>Total Components | 1. 12e+001<br>5. 22e-001 | 1.06e-001                           |

# QUESTAR APPLIED TECHNOLOGY

# 1210 D. Street, Rock Springs, Wyoming 82901

(307) 352-7292

| Description:<br>Field:<br>Meter Number:<br>Analysis Date/Time:<br>Date Sampled:<br>Sample Temperature: | River Bend Comp Pre Dehy<br>Turkey Track<br>6/15/2016, 11:43:18<br>6/13/2016<br>74<br>1042 | Company:<br>Data File:<br>G.C. Method:<br>GPA Method<br>Sampled By:<br>Analyst Initials: | XTO<br>001798.D<br>GAS EXTENDED.M<br>GPA 2286<br>BC<br>JFL |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------|
| Sample Pressure:<br>Component                                                                          | Mol%                                                                                       | Wt%                                                                                      | LV%                                                        |
|                                                                                                        |                                                                                            |                                                                                          |                                                            |
| Methane                                                                                                | 89.6464                                                                                    | 77.9606                                                                                  | 84.2910                                                    |
| Ethane                                                                                                 | 6.0452                                                                                     | 9.8537                                                                                   | 8.9926                                                     |
| Propane                                                                                                | 1.9291                                                                                     | 4.6112                                                                                   | 2.9504                                                     |
| Isobutane                                                                                              | 0.4376                                                                                     | 1.3786                                                                                   | 0.7945                                                     |
| n-Butane                                                                                               | 0.4848                                                                                     | 1.5273                                                                                   | 0.8483                                                     |
| Neopentane                                                                                             | 0.0071                                                                                     | 0.0279                                                                                   | 0.0152                                                     |
| Isopentane                                                                                             | 0.2009                                                                                     | 0.7856                                                                                   | 0.4081                                                     |
| n-Pentane                                                                                              | 0.1435                                                                                     | 0.5613                                                                                   | 0.2885                                                     |
| 2,2-Dimethylbutane                                                                                     | 0.0086                                                                                     | 0.0403                                                                                   | 0.0200                                                     |
| 2,3-Dimethylbutane                                                                                     | 0.0114                                                                                     | 0.0531                                                                                   | 0.0258                                                     |
| 2-Methylpentane                                                                                        | 0.0467                                                                                     | 0.2184                                                                                   | 0.1077                                                     |
| 3-Methylpentane                                                                                        | 0.0294                                                                                     | 0.1371                                                                                   | 0.0665                                                     |
| n-Hexane                                                                                               | 0.0608                                                                                     | 0.2839                                                                                   | 0.1387                                                     |
| Heptanes                                                                                               | 0.2131                                                                                     | 1.0708                                                                                   |                                                            |
| Octanes                                                                                                | 0.0085                                                                                     | 0.0526                                                                                   |                                                            |
| Nonanes                                                                                                | 0.0066                                                                                     | 0.0389                                                                                   |                                                            |
| Decanes plus                                                                                           | 0.0000                                                                                     | 0.0000                                                                                   |                                                            |
| Nitrogen                                                                                               | 0.3686                                                                                     | 0.5597                                                                                   |                                                            |
| Carbon Dioxide                                                                                         | 0.3517                                                                                     | 0.8390                                                                                   |                                                            |
| Oxygen                                                                                                 | ND                                                                                         | ND                                                                                       |                                                            |
| Hydrogen Sulfide                                                                                       | ND                                                                                         | ND                                                                                       |                                                            |
| Total                                                                                                  | 100.0000                                                                                   | 100.0000                                                                                 |                                                            |
| Calculated Global Pro                                                                                  |                                                                                            |                                                                                          |                                                            |
| Gross BTU/Real CF                                                                                      | 1129.5                                                                                     | BTU/SCF at 60                                                                            | )°F and14.73 psia                                          |
| Sat.Gross BTU/Real CF                                                                                  |                                                                                            |                                                                                          | )°F and14.73 psia                                          |
| Gas Compressibility (Z)                                                                                | 0.9973                                                                                     |                                                                                          |                                                            |
| Specific Gravity                                                                                       | 0.6388                                                                                     | air=1                                                                                    |                                                            |
| Avg Molecular Weight                                                                                   | 18.448                                                                                     | gm/mole                                                                                  |                                                            |
| Propane GPM                                                                                            | 0.528694                                                                                   | gal/MCF                                                                                  |                                                            |
| Butane GPM                                                                                             | 0.295282                                                                                   | gal/MCF                                                                                  |                                                            |
| Gasoline GPM                                                                                           | 0.273698                                                                                   | gal/MCF                                                                                  |                                                            |
| 26# Gasoline GPM                                                                                       | 0.426539                                                                                   | gal/MCF                                                                                  |                                                            |
| Total GPM                                                                                              | 2.817606                                                                                   | gal/MCF                                                                                  |                                                            |
| Base Mol%                                                                                              | 99.038                                                                                     | %v/v                                                                                     |                                                            |
|                                                                                                        |                                                                                            |                                                                                          |                                                            |

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100 ppm (+/-) H2S detection limit

| Component              | Mol%                     | Wt%    | LV%    |
|------------------------|--------------------------|--------|--------|
| Benzene                | 0.0228                   | 0.0965 | 0.0354 |
| Toluene                | 0.0190                   | 0.0948 | 0.0353 |
| Ethylbenzene           | 0.0006                   | 0.0033 | 0.0012 |
| M&P Xylene             | 0.0047                   | 0.0269 | 0.0100 |
| O-Xylene               | 0.0006                   | 0.0036 | 0.0013 |
| 2,2,4-Trimethylpentane | 0.0047                   | 0.0292 | 0.0131 |
| Cyclopentane           | 0.0000                   | 0.0000 | 0.0000 |
| Cyclohexane            | 0.0344                   | 0.1571 | 0.0651 |
| Methylcyclohexane      | 0.0441                   | 0.2347 | 0.0984 |
| Description:           | River Bend Comp Pre Dehy |        |        |

# GRI GlyCalc Information

| Component              | Mol%     | Wt%      | LV%      |
|------------------------|----------|----------|----------|
| Carbon Dioxide         | 0.3517   | 0.8390   | 0.3327   |
| Hydrogen Sulfide       | ND       | ND       | ND       |
| Nitrogen               | 0.3686   | 0.5597   | 0.2243   |
| Methane                | 89.6464  | 77.9606  | 84.2910  |
| Ethane                 | 6.0452   | 9.8537   | 8.9926   |
| Propane                | 1.9291   | 4.6112   | 2.9504   |
| Isobutane              | 0.4376   | 1.3786   | 0.7945   |
| n-Butane               | 0.4848   | 1.5273   | 0.8483   |
| Isopentane             | 0.2080   | 0.8135   | 0.4233   |
| n-Pentane              | 0.1435   | 0.5613   | 0.2885   |
| Cyclopentane           | 0.0000   | 0.0000   | 0.0000   |
| n-Hexane               | 0.0608   | 0.2839   | 0.1387   |
| Cyclohexane            | 0.0344   | 0.1571   | 0.0651   |
| Other Hexanes          | 0.0961   | 0.4489   | 0.2200   |
| Heptanes               | 0.0881   | 0.4585   | 0.2098   |
| Methylcyclohexane      | 0.0441   | 0.2347   | 0.0984   |
| 2,2,4 Trimethylpentane | 0.0047   | 0.0292   | 0.0131   |
| Benzene                | 0.0228   | 0.0965   | 0.0354   |
| Toluene                | 0.0190   | 0.0948   | 0.0353   |
| Ethylbenzene           | 0.0006   | 0.0033   | 0.0012   |
| Xylenes                | 0.0053   | 0.0305   | 0.0113   |
| C8+ Heavies            | 0.0092   | 0.0577   | 0.0261   |
| Subtotal               | 100.0000 | 100.0000 | 100.0000 |
| Oxygen                 | ND       | ND       | ND       |
| Total                  | 100.0000 | 100.0000 | 100.0000 |

|                              |                                                                                                                |                     |                 | FUGITIVE E                                                                                                     | NISSIONS                                                                                                       |                                                                                                                  |                                                       |
|------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------|-----------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|                              |                                                                                                                |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                  |                                                       |
|                              | Company:                                                                                                       | <b>XTO ENERGY</b>   | INC.            |                                                                                                                |                                                                                                                |                                                                                                                  |                                                       |
|                              | Facility Name:                                                                                                 | <b>Riverbend De</b> | hydration Si    | te                                                                                                             |                                                                                                                |                                                                                                                  |                                                       |
| Fa                           | cility Location:                                                                                               | Uintah County       | , Utah          | ennen in same en en ferender et algene er i er anse var a deren af er alle er er en er er er er er er er er er | ana dalama yana a 'anana 'an' a 'a falifanani. Anana yana a sana a dalama yana a sana a sana a sana a sana a s |                                                                                                                  |                                                       |
| Armen Coldina Instantion or  |                                                                                                                | 1                   |                 |                                                                                                                |                                                                                                                |                                                                                                                  |                                                       |
|                              |                                                                                                                | Estimated           | Hours of        | Factors*                                                                                                       | %NMNEVOC                                                                                                       | Emission                                                                                                         | îs                                                    |
|                              | The T-O scalars and any con-                                                                                   | Components<br>Count | Operation       | lb/hr/component                                                                                                | Weight                                                                                                         | Ibiyaar                                                                                                          | tons/year                                             |
| Valves                       |                                                                                                                |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                  |                                                       |
|                              | Gas/Vapor                                                                                                      | 300                 | 8760            | 0.00992000                                                                                                     | 10.68%                                                                                                         | 2783.27764                                                                                                       | 1.39164                                               |
|                              | Light Oil                                                                                                      | 100                 | 8760            | 0.00550000                                                                                                     | 100.00%                                                                                                        | 4818.00000                                                                                                       | 2.40900                                               |
|                              | Heavy Oil                                                                                                      | 0                   | 8760            | 0.00001900                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Water/Light Oil                                                                                                | 50                  | 8760            | 0.00021600                                                                                                     | 100.00%                                                                                                        | 94.60600                                                                                                         | 0.04730                                               |
| Pumps                        |                                                                                                                |                     |                 | 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.                                                                         |                                                                                                                |                                                                                                                  |                                                       |
|                              | Gas/Vapor                                                                                                      | - 6                 | 8760            | 0.00529000                                                                                                     | 10.68%                                                                                                         | 29.68455                                                                                                         | 0.01484                                               |
|                              | Light Oil                                                                                                      | 3                   | 8760            | 0.02866000                                                                                                     | 100.00%                                                                                                        | 753.18480                                                                                                        | 0.37659                                               |
|                              | Heavy Oil                                                                                                      | 0                   | 8760            | 0.00113000                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Water/Light Oil                                                                                                | 3                   | 8760            | 0.00005300                                                                                                     | 100.00%                                                                                                        | 1.39284                                                                                                          | 0.00070                                               |
| Flanges                      |                                                                                                                |                     | -               | , mail and a second |                                                                                                                |                                                                                                                  |                                                       |
|                              | Gas/Vapor                                                                                                      | 650                 | 8760            | 0.00086000                                                                                                     | 10.68%                                                                                                         | 522.79980                                                                                                        | 0.26140                                               |
|                              | Light Oil                                                                                                      | 75                  | 8760            | 0.00024300                                                                                                     | 100.00%                                                                                                        | 159.65100                                                                                                        | 0.07983                                               |
|                              | Heavy Oil                                                                                                      | 0                   | 8760            | 0.00000066                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Water/Light Oil                                                                                                | 50                  | 8760            | 0.00000620                                                                                                     | 100.00%                                                                                                        | 2.71560                                                                                                          | 0.00136                                               |
| Open-end                     | ded Lines                                                                                                      |                     |                 |                                                                                                                |                                                                                                                | and the second | manager with a convert with a subscript framework and |
|                              | GasNapor                                                                                                       | 15                  | 8760            | 0.00441000                                                                                                     | 10.68%                                                                                                         | 61.86620                                                                                                         | 0.03093                                               |
|                              | Light Oil                                                                                                      | 0                   | 6760            | 0.00309000                                                                                                     | 100,00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Heavy Oil                                                                                                      | 0                   | 8760            | 0.00030900                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Water/Light Oil                                                                                                | 5                   | 8760            | 0.00055000                                                                                                     | 100.00%                                                                                                        | 24.09000                                                                                                         | 0.01205                                               |
| Connecto                     | Name & Spinster, and and an an an and an an and |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                  |                                                       |
|                              | Gas/Vapor                                                                                                      | 250                 | 8760            | 0.00044000                                                                                                     | 10.68%                                                                                                         | 102.87653                                                                                                        | 0.05144                                               |
|                              | Light Oil                                                                                                      | 0                   | 8760            | 0.00046300                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Heavy Oil                                                                                                      | 0                   | 8760            | 0.00001700                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
| con the design of the design | Water/Light Oil                                                                                                | 50                  | 8760            | 0.00024300                                                                                                     | 100.00%                                                                                                        | 106.43400                                                                                                        | 0.05322                                               |
| Other: C                     | ompressors, relief v                                                                                           | alves, process dr   | alns, diephrace | ms, dump arms, hatches.                                                                                        | instruments, maters, polished ro                                                                               | ds, and vents                                                                                                    | <b></b>                                               |
|                              |                                                                                                                |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                  |                                                       |
|                              | Gas/Vapor                                                                                                      | 30                  | 8760            | 0.01940000                                                                                                     | 10.68%                                                                                                         | 544.31035                                                                                                        | 0.27216                                               |
|                              | Light Oil                                                                                                      | 0                   | 8760            | 0.01650000                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Heavy Oil                                                                                                      | 0                   | 8760            | 0.00006800                                                                                                     | 100.00%                                                                                                        | 0.00000                                                                                                          | 0.00000                                               |
|                              | Water/Light Oil                                                                                                | 5                   | 8760            | 0.03090000                                                                                                     | 100.00%                                                                                                        | 1353.42000                                                                                                       | 0.67671                                               |

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | FUGITIN                               | E EMISSIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            |                     |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------|
| Company:                                     | XTO ENERGY INC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            | 5<br>               |
| Facility Name:                               | The second secon | n Site                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |                     |
| Facility Location:                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |                     |
| 1                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       | Contrast of the second s |                            |                     |
| e e e e e chran, das muje.                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total in tons/year         | 5.6                 |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total in Lb/hr             | 1.3                 |
| Fugitive HAP                                 | Emissions Totals - Gas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Napor                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |                     |
|                                              | wt% in gas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total VOC wt %                        | Total Fugitive VOC tpy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Total tpy for HAP          | Total Ib/hr for HAP |
| Benzene                                      | 0.0647%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10.68%                                | 1.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.011                      | 0.002               |
| Toluene                                      | 0.0579%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10.68%                                | 1 75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.009                      | 0.002               |
| Xylene                                       | 0.0144%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10.68%                                | 1.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.002                      | 0.001               |
| n-Hexane                                     | 0.2581%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10.68%                                | 1.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.042                      | 0.010               |
| E-benzene                                    | 0.0017%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10.68%                                | 1.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.000                      | 0.000               |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | · · · · · · · · · · · · · · · · · · · | TOTAL Fugitive HAP's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.065                      | 0.015               |
|                                              | Emissions Totals - Ligh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | t Oil and Water                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |                     |
| wt% taken fro                                | om E&P Tanks v2011                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |                     |
| Benzene                                      | wt% in gas<br>0.0072%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Total VOC wt %                        | Total Fugitive VOC tpy<br>3.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Total tpy for HAP<br>0.000 | Total Ib/hr for HAP |
| Toluene                                      | 0.0384%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100.00%                               | 3,93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.000                      | 0.000               |
| Xylene                                       | 0.0148%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100.00%                               | 3.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.002                      | 0.000               |
| n-Hexane                                     | 0.0147%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100.00%                               | 3.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.001                      | 0.000               |
| E-benzene                                    | 0.0059%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100.00%                               | 3.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.001                      | 0.000               |
| IE-Delizelle                                 | 0.005970                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 100.00%                               | 0.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.000                      | 0.000               |
| I cannot and the destroy of and a series and | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1                                     | TOTAL Fugitive HAP's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.003                      | 0.001               |

# FUGITIVE CO<sub>2</sub> EMISSIONS

### Company: XTO ENERGY INC. Facility Name: Riverbend Dehydration Site Facility Location: Uintah County, Utah

|          |                 | Estimated<br>Components | Hours of  | Factors*        | %NMNEVOC | En        | issions          |
|----------|-----------------|-------------------------|-----------|-----------------|----------|-----------|------------------|
|          |                 | Count                   | Operation | lb/hr/component | Weight   | lb/year   | metric tons/year |
| Valves   |                 |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 300                     | 8760      | 0.00992000      | 0.85%    | 221.61457 | 0.10073          |
|          | Light Oil       | 100                     | 8760      | 0.00550000      | 0.00%    | 0.0000    | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00001900      | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00021600      | 0.00%    | 0.00000   | 0.00000          |
| Pumps    |                 |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 6                       | 8760      | 0.00529000      | 0.85%    | 2.36359   | 0.00107          |
|          | Light Oil       | 3                       | 8760      | 0.02866000      | 0.00%    | 0 00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00113000      | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 3                       | 8760      | 0.00005300      | 0.00%    | 0.00000   | 0.00000          |
| Flanges  |                 |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 650                     | 8760      | 0.00086000      | 0.85%    | 41.62720  | 0.01892          |
|          | Light Oil       | 75                      | 8760      | 0.00024300      | 0 00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.0000086       | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00000620      | 0.00%    | 0.00000   | 0.00000          |
| Open-end | led Lines       |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 15                      | 8760      | 0.00441000      | 0.85%    | 4.92601   | 0.00224          |
|          | Light Oil       | 0                       | 8760      | 0.00309000      | 0.00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00030900      | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 5                       | 8760      | 0.00055000      | 0.00%    | 0.00000   | 0.00000          |
| Connecto | ors             |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 250                     | 8760      | 0.00044000      | 0.85%    | 8.19140   | 0.00372          |
|          | Light Oil       | 0                       | 8760      | 0.00046300      | 0.00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00001700      | 0.00%    | 0.00000   | 0 00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00024300      | 0 00%    | 0.00000   | 0.00000          |
|          |                 |                         |           |                 |          |           |                  |

Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents

| Gas/Vapor       | 30 | 8760 | 0.01940000 | 0.85% | 43.33995 | 0.01970 |
|-----------------|----|------|------------|-------|----------|---------|
| Light Oil       | 0  | 8760 | 0.01650000 | 0.00% | 0.00000  | 0.00000 |
| Heavy Oil       | 0  | 8760 | 0.00006800 | 0.00% | 0.00000  | 0.00000 |
| Water/Light Oil | 5  | 8760 | 0.03090000 | 0.00% | 0 00000  | 0.00000 |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

Total in tons/year 0.15

### FUGITIVE METHANE EMISSIONS

#### Company: XTO ENERGY INC. Facility Name: Riverbend Dehydration Site Facility Location: Uintah County, Utah

|           |                      | Estimated<br>Components | Hours of        | Factors*               | %METHANE                  | Emissions          |                  |
|-----------|----------------------|-------------------------|-----------------|------------------------|---------------------------|--------------------|------------------|
|           |                      | Count                   | Operation       | lb/hr/component        | Weight                    | ib/year            | metric tons/year |
| Valves    |                      |                         |                 |                        |                           |                    |                  |
|           | Gas/Vapor            | 300                     | 8760            | 0.00992000             | 77.55%                    | 20216.69370        | 9.18941          |
|           | Light Oil            | 100                     | 8760            | 0.00550000             | 0.00%                     | 0.00000            | 0.00000          |
|           | Heavy Oil            | 0                       | 8760            | 0.00001900             | 0.00%                     | 0.00000            | 0.00000          |
|           | Water/Light Oil      | 50                      | 8760            | 0.00021600             | 0.00%                     | 0.00000            | 0.00000          |
| Pumps     |                      |                         |                 |                        |                           |                    |                  |
|           | Gas/Vapor            | 6                       | 8760            | 0.00529000             | 77.55%                    | 215.61756          | 0.09801          |
|           | Light Oil            | 3                       | 8760            | 0.02866000             | 0.00%                     | 0.00000            | 0.00000          |
|           | Heavy Oil            | 0                       | 8760            | 0.00113000             | 0.00%                     | 0.00000            | 0.00000          |
|           | Water/Light Oil      | 3                       | 8760            | 0.00005300             | 0.00%                     | 0.00000            | 0.00000          |
| Flanges   |                      |                         |                 |                        |                           |                    |                  |
|           | Gas/Vapor            | 650                     | 8760            | 0.00086000             | 77.55%                    | 3797.42331         | 1.72610          |
|           | Light Oil            | 75                      | 8760            | 0.00024300             | 0.00%                     | 0.00000            | 0.00000          |
|           | Heavy Oil            | 0                       | 8760            | 0.0000086              | 0.00%                     | 0.00000            | 0.00000          |
|           | Water/Light Oil      | 50                      | 8760            | 0.00000620             | 0.00%                     | 0.00000            | 0.00000          |
| Open-end  | ed Lines             |                         |                 |                        |                           |                    |                  |
|           | Gas/Vapor            | 15                      | 8760            | 0.00441000             | 77.55%                    | 449.37308          | 0.20426          |
|           | Light Oil            | 0                       | 8760            | 0.00309000             | 0.00%                     | 0.00000            | 0.00000          |
|           | Heavy Oil            | 0                       | 8760            | 0.00030900             | 0.00%                     | 0.00000            | 0.00000          |
|           | Water/Light Oil      | 5                       | 8760            | 0.00055000             | 0.00%                     | 0.00000            | 0.00000          |
| Connecto  | 13                   |                         |                 |                        |                           |                    |                  |
|           | Gas/Vapor            | 250                     | 8760            | 0.00044000             | 77.55%                    | 747.25682          | 0.33966          |
|           | Light Oil            | 0                       | 8760            | 0.00046300             | 0.00%                     | 0.00000            | 0.00000          |
|           | Heavy Oil            | 0                       | 6760            | 0.00001700             | 0.00%                     | 0.00000            | 0.00000          |
|           | Water/Light Oil      | 50                      | 8760            | 0.00024300             | 0.00%                     | 0.00000            | 0.00000          |
|           |                      |                         |                 |                        |                           |                    |                  |
|           |                      |                         |                 |                        |                           |                    |                  |
| Other: Co | ompressors, relief v | alves, process drai     | ns, diaphragms, | dump arms, hatches, in | struments, meters, polish | ed rods, and vents |                  |
|           | Gas/Vapor            | 30                      | 8760            | 0.01940000             | 77.55%                    | 3953.66792         | 1.79712          |
|           | Light Oil            | 0                       | 8760            | 0.01650000             | 0.00%                     | 0.00000            | 0.00000          |
|           | Heavy Oil            | 0                       | 8760            | 0.00006800             | 0.00%                     | 0.00000            | 0.00000          |
|           | Water/Light Oil      | 5                       | 8760            | 0.03090000             | 0.00%                     | 0.00000            | 0.00000          |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

Total in metric tons/year 13.35

Company: XTO Energy Inc.

Facility Name: RBU Dehydration Site

Facility Location: Uintah County, Utah

Description:

Uncontrolled - Two (2) X 400 bbl vertical, fixed-roof storage tanks

Jun-17

# Condensate Tank Flash Emissions

| Condensate<br>Rate (Two tanks)<br>(bbls/dav) | VOCs<br>(tons/yr) | Benzene<br>(tons/vr) | Toluene<br>(tons/vr) | Ethylbenzene<br>(tons/yr) | Xylenes<br>(tons/vr) | N-Hexane<br>(tons/vr) | 224-TMP<br>(tons/vr) | CO2<br>(tons/vr) | CH4<br>(tons/vr) | Total<br>HAPs<br>(tons/vr) | Total<br>BTEX<br>(tons/yr) |
|----------------------------------------------|-------------------|----------------------|----------------------|---------------------------|----------------------|-----------------------|----------------------|------------------|------------------|----------------------------|----------------------------|
| 32.00                                        | 5.451             | 0.0570               | 0.0860               | 0.0040                    | 0.0100               | 0.148                 | 0.002                | 0.064            | 2.509            | 0.3070                     | 0.1570                     |
| TOTAL                                        | 5.45              | 0.06                 | 0.09                 | 0.00                      | 0.01                 | 0.15                  | 0.00                 | 0.06             | 2.51             | 0.31                       | 0.16                       |

E&P TANKS v2011 used to calculate tank flash emissions; please see attached documentation.

# **Condensate Tank Working and Breathing Emissions**

| TANK<br>DESCRIPTION     | WORKING<br>LOSSES<br>(lbs/yr) | BREATHING<br>LOSSES<br>(lbs/yr) | VOC<br>LOSSES<br>(lbs/yr) | TOTAL<br>LOSSES<br>(tons/yr) |
|-------------------------|-------------------------------|---------------------------------|---------------------------|------------------------------|
| 400-bbl storage tank #1 | 1383.83                       | 1782.92                         | 3166.75                   | 1.58                         |
| 400-bbl storage tank #2 | 1383.83                       | 1782.92                         | 3166.75                   | 1.58                         |
| TOTAL                   | 2767.66                       | 3565.84                         | 6333.5                    | 3.17                         |

EPA TANKS 4.09D used to calculate emissions; please see attached documentation.

# **Condensate Tank Total Emissions**

| Condensate<br>Rate<br>(bbls/day) | VOCs<br>(tons/yr) | Benzene<br>(tons/yr) | Toluene<br>(tons/yr) | Ethylbenzene<br>(tons/yr) | Xylenes<br>(tons/yr) | N-Hexane<br>(tons/yr) | 224-TMP<br>(tons/yr) | CO2<br>(tons/yr) | CH4<br>(tons/yr) | Total<br>HAPs<br>(tons/yr) | Total<br>BTEX<br>(tons/yr) |
|----------------------------------|-------------------|----------------------|----------------------|---------------------------|----------------------|-----------------------|----------------------|------------------|------------------|----------------------------|----------------------------|
| 400-bbl storage tank #1          | 4.31              | 0.0285               | 0.0430               | 0.0020                    | 0.0050               | 0.074                 | 0.001                | 0.032            | 1.2545           | 0.1535                     | 0.0785                     |
| 400-bbl storage tank #2          | 4.31              | 0.0285               | 0.0430               | 0.0020                    | 0.0050               | 0.074                 | 0.001                | 0.032            | 1.2545           | 0.1535                     | 0.0785                     |
| TOTAL                            | 8.62              | 0.06                 | 0.09                 | 0.004                     | 0.01                 | 0.15                  | 0.002                | 0.064            | 2.51             | 0.31                       | 0.16                       |

```
* Project Setup Information
: W:\EHS\Environmental\Air\Areas of Operation\Utah\_MSO\RBU Dehy\Title V\EPA RBU Dehy 2016-2(
Project File
                : Oil Tank with Separator
Flowsheet Selection
Calculation Method : RVP Distillation
Control Efficiency : 0.00%
Known Separator Stream : Low Pressure Oil
Entering Air Composition : No
                 : C10+
Component Group
                : RBU Dehy - PTE Calc. May 2017
Filed Name
                : RBU 400 BBL Tank 1 - Condensate + Water
: PTE Est. Volume = 32 b/d; RBU 18-10E sample 2012
Well Name
Well ID
                 : 2017.05.22
Date
Data Input
Separator Pressure (psia): 40.00Separator Temperature (F): 80.0
C10+ SG
                      : 0.79
C10+ MW(lb/lbmol)
                      : 140.24
-- Low Preasure Oil ------
                Molet Wtt
No. Component
                  0.0000 0.0000
0.0000 0.0000
    H2S
1
2
    02
3
   CO2
                   0.0140 0.0055
   N2
                   0.0000 0.0000
1.2410 0.1771
4
                   1.2410
5
   C1
                   1.1160 0.2986
   C2
6
   C3
                  1.6120 0.6326
7
   i-C4
8
                   0.8900
                         0.4603
                   1.5600 0.8068
9
   n-C4
                  1.6000 1.0273
10
  i-C5
  n-C5
                  1.7030 1.0934
0.9670 0.7414
11
12
   C6
                 10.5110 9.3721
13
   C7
                 27.6200 28.0755
14
   C8
15
    C9
                  22.2340 25.3805
                 19.0540 23.7779
    C10+
16
                  1.0330 0.7180
17
   Benzene
                  4.6820 3.8385
0.6270 0.5924
    Toluene
18
   E-Benzene
Xylenes
19
                  1.5670 1.4805
20
                   1.9220 1.4740
0.0470 0.0478
21
    n-C6
22
    224Trimethylp
-- Sales Oil -----
Production Rate (bbl/day) : 32.00
Days of Annual Operation : 365
API Gravity
                   : 55.91
Reid Vapor Fressure (psia) : 12.10
Ambient Pressure (F) : 80.0
Reid Vapor Pressure (psia) : 6.20
                    : 12.10
*******************
  Calculation Results
-- Emission Summary ------
             Uncontrolled
```

|                               | ton              |
|-------------------------------|------------------|
| Total HAPs                    | 0.3070           |
| Total HC                      | 10.3400          |
| VOCs, C2+                     | 7.8310           |
| VOCs, C3+                     | 5.4510           |
| CO2                           | 0.0640           |
| CH4                           | 2.5090           |
| CH4                           | 2.3050           |
| Uncontrolled Recov            | ery Information: |
| Vapor (mscfd) :               | 0.6915           |
| HC Vapor (mscfd) :            | 0.6885           |
| CO2 (mscfd) :                 | 0.0000           |
| CH4 (mscfd) :                 | 0.3200           |
| GOR (SCF/STB) :               | 21.6094          |
| an mar a in Pir 43 75 - 18 mi |                  |
|                               | ition            |
| NoComponent                   | Uncontrolled     |
|                               | ton              |
| 1 H2S                         | 0.0000           |
| 2 02                          | 0.0000           |
| 3 CO2                         | 0.0640           |
| 4 N2                          | 0.0000           |
| 5 C1                          | 2.5090           |
| 6 C2                          | 2.3800           |
| 7 C3                          | 2.1080           |
| 8 i-C4                        | 0.7130           |
| 9 n-C4                        | 0.8720           |
| 10 i-C5                       | 0.4480           |
| 11 n-C5                       | 0.3570           |
| 12 C6                         | 0.0740           |
| 13 Benzene                    | 0.0570           |
| 14 Toluene                    | 0.0860           |
| 15 E-Benzene                  | 0.0040           |
| 16 Xylenes                    | 0.0100           |
| 17 n-C6                       | 0.1460           |
| 18 224Trimethylp              | 0.0020           |
| 19 Pseudo Compl               | 0.4560           |
| 20 Pseudo Comp2               | 0.0900           |
| 21 Pseudo Comp3               | 0.0230           |
| 22 Pseudo Comp4               | 0.0030           |
| 23 Pseudo Comp5               | 0.0000           |
| 24 Total                      | 10.4040          |
|                               |                  |

|    | tream Data    |          |         |           |           |           |         |                |
|----|---------------|----------|---------|-----------|-----------|-----------|---------|----------------|
| No | Component     | MW       | LP Oil  | Flash Oil | Sales Oil | Flash Gas | W4S Gas | Total Emission |
|    |               | lb/1bmol | mole %  | mole %    | mole %    | mole %    | mole %  | mole %         |
| 1  | H2S           | 34.80    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 2  | 02            | 32.00    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 3  | CO2           | 44.01    | 0.0140  | 0.0044    | 0.0038    | 0.4339    | 0.4344  | 0.4339         |
| 4  | N2            | 28.01    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 5  | C1            | 16.04    | 1.2410  | 0.1927    | 0.1280    | 46.9805   | 46.9362 | 46.9781        |
| 6  | C2            | 30.07    | 1.1160  | 0.5969    | 0.5647    | 23.7663   | 23.8029 | 23.7684        |
| 7  | C3            | 44.10    | 1.6120  | 1,3199    | 1.3018    | 14.3556   | 14.3779 | 14.3568        |
| 8  | 1-C4          | 58.12    | 0.8900  | 0.8259    | 0.8220    | 3.6851    | 3.6926  | 3.6855         |
| 9  | n-C4          | 58.12    | 1.5600  | 1.4925    | 1.4884    | 4.5037    | 4.5099  | 4.5040         |
| 10 | i-C5          | 72.15    | 1.6000  | 1.5939    | 1.5936    | 1.8643    | 1.8674  | 1.8645         |
| 11 | n~C5          | 72.15    | 1.7030  | 1.7080    | 1.7083    | 1.4851    | 1.4872  | 1.4852         |
| 12 | C6            | 84.00    | 0.9670  | 0.9831    | 0.9841    | 0.2643    | 0.2648  | 0.2643         |
| 13 | Benzene       | 78.11    | 1.0330  | 1.0517    | 1.0528    | 0.2182    | 0.2175  | 0.2181         |
| 14 | Toluene       | 92.14    | 4.6820  | 4.7829    | 4.7891    | 0.2812    | 0.2804  | 0.2812         |
| 15 | E-Benzene     | 106.17   | 0.6270  | 0.6411    | 0.6420    | 0.0127    | 0.0126  | 0.0127         |
| 16 | Xylenes       | 106.17   | 1.5670  | 1.6023    | 1.6045    | 0.0273    | 0.0272  | 0.0273         |
| 17 | n-C6          | 86.18    | 1.9220  | 1.9542    | 1.9562    | 0.5166    | 0.5174  | 0.5167         |
| 18 | 224Trimethylp | 114.23   | 0.0470  | 0.0480    | 0.0480    | 0.0046    | 0.0046  | 0.0046         |
| 19 | Pseudo Compl  | 103.97   | 38.1310 | 38.9748   | 39.0269   | 1.3174    | 1.2946  | 1.3161         |
| 20 | Pseudo Comp2  | 121.00   | 22.2340 | 22.7385   | 22.7697   | 0.2232    | 0.2155  | 0.2227         |
| 21 | Pseudo Comp3  | 134.00   | 13.1451 | 13.4452   | 13.4637   | 0.0527    | 0.0500  | 0.0526         |

| 22 Pseudo Comp4 147.00<br>23 Pseudo Comp5 167.47  | 4.0765<br>1.8324 | 4.1697<br>1.8744    | 4.1755<br>1.8770    | 0.0067<br>0.0007   | 0.0062<br>0.0006 | 0.0066                  |
|---------------------------------------------------|------------------|---------------------|---------------------|--------------------|------------------|-------------------------|
| MW (lb/lbmol):                                    | LP 0il<br>108.25 | Flash Oil<br>110.02 | Sales Oil<br>110.13 | Flash Gas<br>31.25 | W&S Gas<br>31.23 | Total Emission<br>31.25 |
| Stream Mole Ratio:<br>Stream Weight Ratio:        | 1.0000<br>108.25 | 0.9776<br>107.55    | 0.9762<br>107.51    | 0.0224<br>0.70     | 0.0014<br>0.04   | 0.0238<br>0.74          |
| Total Emission (ton):<br>Heating Value (BTU/scf): |                  |                     |                     | 9.812<br>1813.71   | 0.592<br>1813.02 | 10.404<br>1813.67       |
| Gas Gravity (Gas/Air):                            | 51.87            | 14.46               | 12.17               | 1.08               | 1.08             | 1.08                    |
| Bubble Pt. @100F (psia):<br>RVP @100F (psia):     | 14.84            | 7.09                | 6.58                |                    |                  |                         |
| Spec. Gravity @100F:                              | 0.73             | 0.73                | 0.73                |                    |                  |                         |

J.L.

SPL, Inc. 2440 Chambers Street Suite A Venus, TX 76084 817-539-2168 (O) 817-539-2170 (F)

6.567

6.560

17.826

Certificate of Analysis :

12120196-003A

|                          | Jnitah County<br>RBU 18-10E                       |         |         | For:        | Rykki Tepe                   |          |           |
|--------------------------|---------------------------------------------------|---------|---------|-------------|------------------------------|----------|-----------|
| Field: (<br>Sample of: ( | Unitah County<br>Condensate ;S<br>60 F @ 190 psig |         |         |             | 810 Houston<br>Fort Worth, T |          |           |
| Sampled by:              | J.Petree<br>12/10/2012<br>Separator               | 3       |         | Report Date | :: :                         | 5/8/2013 |           |
| Analysis: (GPA 21        | 03M )                                             | Mol. %  | MW      | Wt. %       | Sp. Gravity                  | L.V. %   |           |
| Nitrogen                 | /                                                 | 0.000   | 28.013  | 0.000       |                              | 0.000    |           |
| Methane                  |                                                   | 1.241   | 16.043  | 0.179       | 0.3000                       | 0.443    |           |
| Carbon Dioxide           |                                                   | 0.014   | 44.010  | 0.006       | 0.8180                       | 0.005    |           |
| Ethane                   |                                                   | 1.116   | 30.070  | 0.302       | 0.3562                       | 0.628    |           |
| Propane                  |                                                   | 1.612   | 44.097  | 0.640       | 0.5070                       | 0.935    |           |
| Iso-butane               |                                                   | 0.890   | 58.123  | 0.466       |                              | 0.613    |           |
| N-butane                 |                                                   | 1.560   | 58.123  | 0.817       |                              | 1.036    |           |
| Iso-pentane              |                                                   | 1.600   | 72.150  | 1.040       |                              | 1.233    |           |
| N-pentane                |                                                   | 1.703   | 72.150  | 1.107       | 0.6311                       | 1.299    |           |
| i-Hexanes                |                                                   | 0.967   | 86.177  | 0.756       |                              | 0.844    |           |
| n-Hexane                 |                                                   | 1.922   | 86.016  | 1.483       |                              | 1.654    |           |
| 2,2,4 trimethylpenta     | ane                                               | 0.047   | 114.231 | 0.048       |                              | 0.052    | 3         |
| Benzene                  |                                                   | 1.033   | 78.114  | 0.727       |                              | 0.608    |           |
| Heptanes                 |                                                   | 10.511  | 95.104  | 9.156       |                              | 9.522    |           |
| Toluene                  |                                                   | 4.682   | 92.141  | 3.886       |                              | 3.298    |           |
| Octanes                  |                                                   | 27.620  | 109.707 | 28.041      |                              | 28.409   |           |
| E-benzene                |                                                   | 0.627   | 106.167 | 0.600       |                              | 0.509    |           |
| M-,O-,P-xylene           |                                                   | 1.567   | 106.167 | 1.499       |                              | 1.273    |           |
| Nonanes                  |                                                   | 22.234  | 123.924 | 25.174      |                              | 25.007   |           |
| Decanes Plus             |                                                   | 19.054  | 140.237 | 24.073      | 0.7876                       | 22.632   |           |
|                          |                                                   | 100.000 |         | 100.000     |                              | 100.000  |           |
| Calculated Values        |                                                   |         | Т       | otal Sample |                              | Deca     | ines Plus |
| Specific Gravity at      |                                                   |         |         | 0.7405      |                              |          | 0.7876    |
| Api Gravity at 60 °F     |                                                   |         |         | 59.591      |                              |          | 48.149    |
| Molecular Weight         |                                                   |         |         | 110.998     |                              |          | 140.237   |
|                          | //                                                |         |         | 0 171       |                              |          | 0 507     |

Pounds per Gallon (in Vacuum) 6.174 Pounds per Gallon (in Air) 6.167 Cu. Ft. Vapor per Gallon @ 14.65 psia 21.041

Dauth V. L. jan.

Southern Petroleum Laboratories, Inc.



Certificate of Analysis Number: 3040-12120196-004A Venus Laboratory 2440 Chambers Street, Suite A Venus, TX 76084

Jan. 09, 2013

Rykki Tepe 810 Houston Street Fort Worth, Texas 76102

Station Name: RBU 18-10E Station Number: RS0686RF Station Location: Unitah County Sample Point: Separator Sampled By:J.PetreeSample Of:CondensateSpotSample Date:12/10/2012Sample Conditions:60 °FCylinder No:Tin Can

## **Analytical Data**

| Test                         | Method     | Result | Units | Detection Lab<br>Limit Tech. | Analysis<br>Date |
|------------------------------|------------|--------|-------|------------------------------|------------------|
| Reid Vapor Pressure @ 100°F  | ASTM D-323 | 6.2    | psia  | TF                           | 01/02/2013       |
| API Gravity @ 60° F          |            | 55.91  | • API | TF                           | 01/02/2013       |
| API Specific Gravity @ 60° F |            | 0.7551 | ° API | TF                           | 01/02/2013       |

# STOCK TANK WORKING AND BREATHING EMISSIONS

Company: XTO ENERGY INC. Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

| TANK<br>DESCRIPTION     | WORKING<br>LOSSES<br>(lbs/yr) | BREATHING<br>LOSSES<br>(Ibs/yr) | VOC<br>LOSSES<br>(lbs/yr) | TOTAL<br>LOSSES<br>(tons/yr) |
|-------------------------|-------------------------------|---------------------------------|---------------------------|------------------------------|
| 400-bbl storage tank #1 | 1383.83                       | 1782.92                         | 3166.75                   | 1.58                         |
| 400-bbl storage tank #2 | 1383.83                       | 1782.92                         | 3166.75                   | 1.58                         |
| TOTAL                   | 2767.66                       | 3565.84                         | 6333.5                    | 3.17                         |

EPA TANKS 4.09D used to calculate emissions; please see attached documentation.

### TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| Identification<br>User Identification:<br>City:<br>State:<br>Company:<br>Type of Tank:<br>Description:                                                                                             | R8U Dehy Condensate Tank #1<br>Vernal<br>Utah<br>XTO Energy<br>Vertical Fixed Roof Tank<br>400-bbl condensate storage tank |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Tank Dimensions<br>Shall Height (ft):<br>Diameter (ft):<br>Liquid Height (ft) :<br>Avg. Liquid Height (ft):<br>Volume (gailons):<br>Turmovers:<br>Net Throughput(gal/yr):<br>Is Tank Heeted (y/n): | 20.00<br>12.00<br>18.00<br>10.00<br>15,228.53<br>16.11<br>245,280.00<br>Y                                                  |
| Paint Characteristics<br>Shell Color/Shade:<br>Shell Condition<br>Roof Color/Shade:<br>Roof Condition:                                                                                             | Gray/Medium<br>Poor<br>Gray/Medium<br>Poor                                                                                 |
| Roof Characteristics<br>Type:<br>Height (ft)<br>Slope (ft/ft) (Cone Roof)                                                                                                                          | Cone 1.00<br>0.17                                                                                                          |
| Breather Vent Settings<br>Vacuum Settings (psig):<br>Pressure Settings (psig)                                                                                                                      | 0.00<br>0.00                                                                                                               |

Meterological Data used in Emissions Calculations: Salt Lake City, Utah (Avg Atmospheric Pressure = 12.64 psia)

### TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

RBU Dehy Condensate Tank #1 - Vertical Fixed Roof Tank Vernal, Utah

|                   |       |       | lly Liquid Si<br>persture (de |       | Liquid<br>Bulk<br>Temp | Vapo   | r Pressure | (psia) | Vapor<br>Mol | Liquid<br>Mass | Vepor<br>Mess | Mot    | Basis for Vapor Presaure      |  |
|-------------------|-------|-------|-------------------------------|-------|------------------------|--------|------------|--------|--------------|----------------|---------------|--------|-------------------------------|--|
| Mixture/Component | Month | Avg   | Min                           | Мах   | (deg F)                | Avg    | Min        | Max    | Waight       | Fract          | Fract         | Weight | Calculations                  |  |
| Gasoline (RVP 7)  | AR    | 60 00 | 60 00                         | 85 D0 | 00.00                  | 3 4847 | 3.4847     | 5.6644 | 68.0000      |                |               | 92.00  | Option 4: RVP=7, ASTM Slope=3 |  |

### TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

# RBU Dehy Condensate Tank #1 - Vertical Fixed Roof Tank Vernal, Utah

| and the second sec |                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Annual Emission Calcaulations<br>Standing Losses (Ib):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1,782 9244            |
| Vapor Space Volume (cu ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1,168 6725            |
| Vapor Density (lb/cu ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0 0425                |
| Vapor Space Expansion Factor:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 2861                |
| Vented Vapor Saturation Factor:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0 3438                |
| Tank Vapor Space Volume:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                       |
| Vepor Space Volume (cu ß);<br>Tank Diameter (ff):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1,168.6725            |
| Vapor Space Outage (ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 3333               |
| Tank Shell Height (ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 0000               |
| Average Liquid Height (ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10 0000               |
| Roof Outage (ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0 3333                |
| Roof Outage (Cone Roof)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |
| Roof Outage (R);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0 3333                |
| Roof Height (ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1 0000                |
| Roof Slope (ft/fi):<br>Shell Radius (ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0 1700 6 0000         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0 0000                |
| Vapor Density<br>Vapor Density (lb/cu ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0 0425                |
| Vapor Molecular Weight (ib/ib-mole):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 58 0000               |
| Vapor Pressure at Daily Average Liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 000000                |
| Surface Temperature (psie):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3 4847                |
| Daily Avg Liquid Surface Temp. (deg. R):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 519,6700              |
| Daily Average Amblent Temp (deg. F):<br>Ideal Gas Constant R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 51 9625               |
| (psie cuft / (lb-mol-deg R));                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 731                |
| Liquid Bulk Temperature (deg R):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 519 6700              |
| Tank Paint Solar Absorptance (Sheil):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0 7400                |
| Tank Paint Solar Absorptance (Roof):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0 7400                |
| Daily Total Solar Insulation<br>Factor (Btu/sqft day):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1,452 1184            |
| Vapor Space Expansion Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |
| Vapor Space Expansion Factor:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0 2861                |
| Daily Vapor Temperature Range (deg, R):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 25 0000               |
| Daily Vapor Pressure Range (psis):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2 1798                |
| Breather Vent Press Setting Range(psia):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0 0000                |
| Vapor Pressure at Daily Average Liquid<br>Sunface Temperature (psia):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3 4847                |
| Vapor Pressure at Daily Minimum Liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0 4047                |
| Surface Temperature (psia):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3 4847                |
| Vapor Pressure at Daily Maximum Liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |
| Surface Temperature (psia):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 5 6644                |
| Daily Avg Liquid Surface Temp. (deg R):<br>Daily Min. Liquid Surface Temp. (deg R):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 519 8700<br>519 6700  |
| Daily Max Liquid Surface Temp (deg R):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 544 6700              |
| Daily Ambient Temp, Range (deg R):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 23 3583               |
| Vented Vapor Saturation Factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |
| Vented Vapor Saturation Factor:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0 3438                |
| Vapor Pressure al Daily Average Liquid:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3 48 17               |
| Surface Temperature (psia):<br>Vapor Space Outage (it):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3 4847<br>10.3333     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |
| Working Losses (1b):<br>Vapor Molecular Weight (1b/lb-mole):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1,383 8320<br>68 0000 |
| Vapor Pressure el Dally Average Liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 00 0000               |
| Surface Temperature (psie):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3 4847                |
| Annual Net Throughpul (gal/yr ):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 245,280 0000          |
| Annual Tumovers:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 16 1066               |
| Turnover Factor;<br>Maximum Liquid Volume (gel);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1 0000<br>15,228 5332 |
| Maximum Liquid Height (ft):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 15,220 5332           |
| Tank Diameter (it):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 12 0000               |
| Working Loss Product Factor:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1 0000                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |
| Tatal Losses (b):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3,166 7563            |

### TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

**Emissions Report for: Annual** 

RBU Dehy Condensate Tank #1 - Vertical Fixed Roof Tank Vernal, Utah

|                  | Losses(ibs)  |                |                 |  |  |  |  |
|------------------|--------------|----------------|-----------------|--|--|--|--|
| Components       | Working Loss | Breathing Loss | Total Emissions |  |  |  |  |
| Gasoline (RVP 7) | 1,383.83     | 1,782.92       | 3,166.76        |  |  |  |  |

# **PIG RECEIVER EMISSIONS**

Company: XTO ENERGY INC. Facility Name: Riverbend Dehydration Site Facility Location: Uintah County, Utah

| GAS              | MOLECULAR                                 |          | COMPONENT | COMPONENT | COMPONENT |
|------------------|-------------------------------------------|----------|-----------|-----------|-----------|
| COMPONENT        | WEIGHT                                    | Weight   | FLOW RATE | FLOW RATE | FLOW RATE |
| (Wet Gas)        | (lb/lb-mole)                              | Fraction | (Mscf)    | (lb/yr)   | (tons/yr) |
| Methane          | 16.043                                    | 0.775    | 25.118    | 1061.849  | 0.531     |
| Ethane           | 30.07                                     | 0.103    | 3.350     | 265.474   | 0.133     |
| Propane          | 44.097                                    | 0.050    | 1.616     | 187.816   | 0.094     |
| i-Butane         | 58.123                                    | 0.013    | 0.435     | 66.624    | 0.033     |
| n-Butane         | 58.123                                    | 0.015    | 0.495     | 75.789    | 0.038     |
| i-Pentane        | 72.15                                     | 0.008    | 0.244     | 46.386    | 0.023     |
| n-Pentane        | 72.15                                     | 0.005    | 0.176     | 33.467    | 0.017     |
| Hexanes          | 86.177                                    | 0.007    | 0.230     | 52.138    | 0.026     |
| Heptanes         | 100.204                                   | 0.003    | 0.089     | 23.435    | 0.012     |
| Octanes          | 114.231                                   | 0.001    | 0.030     | 8.926     | 0.004     |
| Nonanes          | 128.258                                   | 0.000    | 0.013     | 4.258     | 0.002     |
| Decanes +        | 142.285                                   | 0.000    | 0.003     | 1.029     | 0.001     |
| Benzene          | 78.12                                     | 0.001    | 0.021     | 4.315     | 0.002     |
| Toluene          | 92.13                                     | 0.001    | 0.019     | 4.551     | 0.002     |
| Ethylbenzene     | 106.16                                    | 0.000    | 0.001     | 0.156     | 0.000     |
| Xylenes          | 106.16                                    | 0.000    | 0.005     | 1.302     | 0.001     |
| n-Hexane         | 86.177                                    | 0.003    | 0.084     | 18.981    | 0.009     |
| Helium           | 4.003                                     | 0.000    | 0.000     | 0.000     | 0.000     |
| Nitrogen         | 28.013                                    | 0.006    | 0.188     | 13.898    | 0.007     |
| Carbon Dioxide   | 44.01                                     | 0.009    | 0.275     | 31.931    | 0.016     |
| Oxygen           | 32                                        | 0.000    | 0.000     | 0.000     | 0.000     |
| Hydrogen Sulfide | 34.08                                     | 0.000    | 0.000     | 0.000     | 0.000     |
| VOC SUBTOTAL     |                                           | 0.107    | 3.458     | 529.173   | 0.265     |
| HAP SUBTOTAL     | An | 0.004    | 0.129     | 29.306    | 0.015     |
| TOTAL            |                                           | 1.000    | 32.390    | 1902.326  | 0.951     |

| PIG SPECIFICATIONS                                   | Receiver #1 | Receiver #2    |                                                                                                                 |                        |
|------------------------------------------------------|-------------|----------------|-----------------------------------------------------------------------------------------------------------------|------------------------|
| PIG SPECIFICATIONS                                   | 10" P/L     | 8" P/L (Tap-1) |                                                                                                                 | units                  |
| Pig Section Circumference :                          | 2.618       | 2.094          |                                                                                                                 | feet                   |
| Pig Section Diameter :                               | 0.833       | 0.667          |                                                                                                                 | feet                   |
| Pig Section Length :                                 | 10.0        | 8.000          |                                                                                                                 | feet                   |
| Pig Section Receiver Volume :                        | 5.454       | 2.793          |                                                                                                                 | actual ft <sup>3</sup> |
| Average Pipeline Pressure :                          | 800         | 800            |                                                                                                                 | lb/ft <sup>2</sup>     |
| Pig Volume corrected for Std Conditions(14.7 psia) : | 296.825     | 151.974        |                                                                                                                 | scf/event              |
| Number of activities :                               | 104         | 10             | en e                                                                        | per year               |
| Number of receivers :                                | 1           | 1              |                                                                                                                 |                        |
| Total events :                                       | 104         | 10             |                                                                                                                 | per year               |
| Total Annual Release Volume (per section) :          | 30869.769   | 1519.742       | La carrier de | scf/yr                 |
| Total Volume :                                       | 32.390      | Mscf/year      |                                                                                                                 |                        |

Pipeline Pressure provided by client

Wet Gas composition used for calculations Emissions (tpy) = Volume released (Mscf/yr) x Weight Fraction x 1000 (scf/Mscf) x 1/379.45 (lb-mol/scf) x MW (lb/mol) / 2000 (lb/ton)

## **Generator Micro-Turbine Emissions**

| Company:           | XTO ENERGY INC.                   |
|--------------------|-----------------------------------|
| Facility Name:     | <b>Riverbend Dehydration Site</b> |
| Facility Location: | Uintah County, Utah               |

EMISSION POINTS: Capstone Model C65NG Standard MicroTurbine

| Engine Make/Model | Capstone M | lodel C65NG Standard MicroTurbine |
|-------------------|------------|-----------------------------------|
| Site kWe Rating   | 65         | kWe                               |
| Heating Value     | 1106       | Btu/Scf                           |
| Operating Hours   | 8760       | hrs/yr                            |

|           |        |                 | Emissio | on Rate | Emission<br>Factor |
|-----------|--------|-----------------|---------|---------|--------------------|
| Pollutant |        | Emission Factor | (lb/hr) | (tpy)   | Reference          |
| NOx       | 0.46   | lb/MWhe         | 0.03    | 0.13    | [1]                |
| CO        | 6.00   | lb/MWhe         | 0.39    | 1.71    | [1]                |
| VOC/NMHC  | 0.10   | lb/MWhe         | 0.00    | 0.01    | [1]                |
| CO2       | 610.00 | lb/MWh          | 18.30   | 80.15   | [1]                |

## [1] Capstone Mfg. Emission Factors

\*CO2 emissions are expressed in tons per year; pounds per hour X hours/year / 2000 pounds)

|          | CALCULATION FORMULAS                                                   |
|----------|------------------------------------------------------------------------|
| ib/hr =  | (lb/10 <sup>6</sup> Watts-hr)*(site Watt rating 10 <sup>3</sup> Watts) |
| tons/yr= | (lb/hr)*(8760 hrs/yr)* (1 ton/2000lb)                                  |

POTENTIAL GHG EMISSIONS BASED ON 8760 HOURS FOR HEATERS, GENERATORS, ENGINES AND FLARES/THERMAL OXIDIZERS

Company: XTO Energy Inc. Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

GHG Mandatory Reporting Regulations, Combustion Sources (Subpart C, 40 CFR Part 98)

| Summ                   | ary    |         |
|------------------------|--------|---------|
| Engines COre =         | 0.0    | tons/yr |
| Heaters/Boilers COze = | 2794.9 | tons/yr |
| Total COge =           | 2794.9 | tons/yr |
| Reporting required ?   | No     |         |

Note: Reporting Threshold = 25,000 tons/yr COze

|                               |       |             |       |            |       |        |         |             |                  |         | Spe   | cies             |       |
|-------------------------------|-------|-------------|-------|------------|-------|--------|---------|-------------|------------------|---------|-------|------------------|-------|
|                               |       |             |       |            |       | [      |         | Species     |                  | CO2     | CH4   | N <sub>2</sub> O | CO2e  |
| Boilers/Hea                   | ters  |             | Rati  | ng         |       | T      | CO2     | CH4         | N <sub>2</sub> O | COze    | CO28  | CO2e             | Total |
| Source                        | Model | Fuel        | (hp)  | (MMbtu/hr) | Hours |        |         | metric tons |                  |         | metri | c tons           |       |
| RBU Dehy Heater (Dehy 1)      | -     | Natural Gas | -     | 1.000      | 8760  |        | 511.97  | 0.01        | 0.00             | 511.97  | 0.24  | 0.26             | 512.4 |
| RBU Dehy Thermal Oxidizer     |       | Natural Gas | -     | 1.879      | 8760  |        | 961.88  | 0.02        | 0.00             | 961.88  | 0.45  | 0.49             | 962.8 |
| RBU Dehy Tank Heater #1       | -     | Natural Gas | -     | 0.250      | 8760  |        | 127.99  | 0.00        | 0.00             | 127.99  | 0.06  | 0.07             | 128.1 |
| RBU Dehy Tank Heater #2       | -     | Natural Gas | -     | 0.250      | 8760  |        | 127.99  | 0.00        | 0.00             | 127.99  | 0.06  | 0.07             | 128.1 |
| RBU 6-15E Dehy Rebeller       | -     | Natural Gas | -     | 0.000      | 8760  |        | 0.00    | 0.00        | 0.00             | 0.00    | 0.00  | 0.00             | 0.00  |
| RBU 6-15E Tank Heater         | -     | Natural Gas |       | 0.250      | 8760  |        | 127.99  | 0.00        | 0.00             | 127.99  | 0.06  | 0.07             | 128.1 |
| RBU 6-15E Separator Heater    | -     | Natural Gas | -     | 0.075      | 8760  |        | 38.40   | 0.00        | 0.00             | 38.40   | 0.02  | 0.02             | 38.44 |
| RBU 7-15E Dehy Reboiler       | -     | Natural Gas |       | 0.000      | 8760  |        | 0.00    | 0-00        | 0.00             | 0.00    | 0.00  | 0.00             | 0.00  |
| RBU 7-15E Tank Heater         | -     | Natural Gas |       | 0.250      | 8760  |        | 127.99  | 0.00        | 0.00             | 127.99  | 0.06  | 0.07             | 128.1 |
| RBU 7-15E Separator Heater    | -     | Natural Gas | -     | 0.075      | 8760  |        | 38.40   | 0.00        | 0.00             | 38.40   | 0.02  | 0.02             | 38.44 |
| RBU 11-15E Dehy Reboiler      |       | Natural Gas | *     | 0.175      | 8760  |        | 89.60   | 0.00        | 0.00             | 89.60   | 0.04  | 0.05             | 89.68 |
| RBU 11-15E Tank Heater        | 1     | Natural Gas |       | 0.250      | 8760  |        | 127.99  | 0.00        | 0.00             | 127.99  | 0.08  | 0.07             | 128.1 |
| RBU 11-15E Separator Heater   |       | Natural Gas |       | 0.250      | 8760  |        | 127.99  | 0.00        | 0.00             | 127.99  | 0.06  | 0.07             | 128.1 |
| Tap-1 Heaters (3 X 0.25 each) |       | Natural Gas | -     | 0.750      | 8760  |        | 383.98  | 0.01        | 0.00             | 383.98  | 0.18  | 0.20             | 384.3 |
|                               |       |             | Total | 5.454      |       | Totals | 2792.18 | 0.05        | 0.00             | 2792.18 | 1.32  | 1.42             |       |

Engines GHG Emissions Total= 2792.24 tons

CO2e Total= 2794.9 metric tons

|                     |                                           |                           |         | Natural Gas                          |
|---------------------|-------------------------------------------|---------------------------|---------|--------------------------------------|
|                     | From 40 CFR Part 98, Subpart C, Table C-1 | kg CO2/MMBtu              | 53.02   | Emission Factor (CO2) =              |
| 1 kg =              | From 40 CFR Part 98, Subpart C, Table C-2 | kg CO <sub>z</sub> /MMBtu | 0.00100 | Emission Factor (CH <sub>4</sub> ) = |
| 1 metric ton = 1000 | From 40 CFR Part 98, Subpart C, Table C-2 | kg CO <sub>2</sub> /MMBtu | 0.0001  | Emission Factor (N <sub>2</sub> O) = |
|                     | 1                                         | BTU/scf                   | 1106    | HHV (Natural Gas) =                  |

|                    | Globel Warming Potentials |                                           |
|--------------------|---------------------------|-------------------------------------------|
| CO2 =              | 1                         | From 40 CFR Part 98, Subpart A, Table A-1 |
| CH4 =              | 25                        | From 40 CFR Part 98, Subpart A, Table A-1 |
| N <sub>2</sub> O = | 298                       | From 40 CFR Part 98, Subpart A, Table A-1 |

<sup>1</sup>CO<sub>2</sub>e Emissions (metric tons) = 0.001 (metric ton/kg) X Fuel (scf/yr) X HHV (MMBtu/scf) X Emission Factor (natural Gas) (kg CO<sub>2</sub>/MMBtu) X Global Warming Potentials Operational Factors from Newfield operational data

Engines Total (CO<sub>2</sub>e) = CO<sub>2</sub> emissions + CH<sub>4</sub> (CO<sub>2</sub>e) + N<sub>2</sub>O (CO2e) Heaters Total (CO<sub>2</sub>e) = CO<sub>2</sub> emissions + CH<sub>4</sub> (CO<sub>2</sub>e) + N<sub>2</sub>O (CO2e)

8

## PTE EMISSION SUMMARY

### Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah May-17

### Proposed Emissions

|                                  | N     | NOx    |       | со     |       | VOC    |       | Formaldehyde |       | HAPs   |  |
|----------------------------------|-------|--------|-------|--------|-------|--------|-------|--------------|-------|--------|--|
| Source                           | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr       | lb/hr | ton/yr |  |
| Caterpillar G3516LE #1           | 4.43  | 19.41  | 7.39  | 32.35  | 1.12  | 4.92   | 0.86  | 3.75         | 1.01  | 4.41   |  |
| Caterpillar G3516LE #2           | 3.80  | 16.66  | 6.72  | 29.43  | 1.06  | 4.66   | 0.74  | 3.22         | 0.74  | 3.78   |  |
| Tank Emissions - T1T-1 and T1T-2 | -     | -      | -     | -      | 1.00  | 4.37   | -     | -            | 0.06  | 0.25   |  |
| Gas-operated Heat Trace Pumps    | -     | -      | -     | -      | 1.79  | 7.84   | -     | -            | 0.01  | 0.06   |  |
| Boilers                          | 0.09  | 0.40   | 0.08  | 0.34   | 0.01  | 0.04   | -     | -            | 0.00  | 0.00   |  |
| Fugitives                        | -     | -      | -     | -      | 0.56  | 2.47   | -     | -            | 0.00  | 0.02   |  |
| Truck Loading Emissions          | -     | -      | -     | -      | 0.06  | 0.28   | -     | -            | -     | -      |  |
| Totals                           | 8.33  | 36.47  | 14.18 | 62.11  | 5.61  | 24.57  | 1.59  | 6.97         | 1.82  | 8.52   |  |

# **GHG EMISSION SUMMARY**

Company: XTO Energy

Facility Name: TAP 1 Compressor Station

Facility Location: Uintah County, Utah

May-17

## **Proposed Emissions**

|                                  | CH4 (CO2e) |          | С        | 02       | TOTAL CO2e |           |  |
|----------------------------------|------------|----------|----------|----------|------------|-----------|--|
| Source                           | lb/hr      | ton/yr   | lb/hr    | ton/yr   | lb/hr      | ton/yr    |  |
| Caterpillar G3516LE #1           | 322.23     | 1411.36  | 1134.24  | 4967.98  | 1456.47    | 6379.34   |  |
| Caterpillar G3516LE #2           | 272.23     | 1192.35  | 958.24   | 4197.08  | 1230.46    | 5389.43   |  |
| Tank Emissions - T1T-1 and T1T-2 | 10.96      | 48.00    | 0.01     | 0.05     | 10.97      | 48.05     |  |
| Gas-operated Heat Trace Pumps    | 246.51     | 1079.72  | 0.12     | 0.51     | 246.63     | 1080.23   |  |
| Heaters                          | 0.04       | 0.16     | 79.53    | 348.34   | 79.57      | 348.51    |  |
| Fugitives                        | 18.43      | 80.71    | 0.01     | 0.04     | 18.44      | 80.75     |  |
| Truck Loading Emissions          | -          | -        | -        | -        | -          | -         |  |
| Totals                           | 870.39     | 3,812.31 | 2,172.15 | 9,514.01 | 3,042.54   | 13,326.31 |  |

## **Compressor Engine Emissions**

Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah

#### EMISSION POINTS: Caterpillar G3516LE #1 Engine Serial #: 4EK03995 Engine mfg. date: 1/1/2004

Engine mfg. date: 1/1/2004 Engine Install Date: 7/1/2013 Unit #: T1C-1

| Engine Make/Model       | Caterpillar G3516LE # |             |  |  |  |  |
|-------------------------|-----------------------|-------------|--|--|--|--|
| Site Horsepower Rating  | 1340                  | hp          |  |  |  |  |
| Fuel Consumption (BSFC) | 7695                  | Btu/(hp-hr) |  |  |  |  |
| Heat Rating             | 10.311                | MMBtu/hr    |  |  |  |  |
| Hourly Fuel Use         | 9877                  | scf / hr    |  |  |  |  |
| Maximum Annual Fuel Use | 86.52                 | mmscf / yr  |  |  |  |  |
| Fuel LHV                | 1044                  | BTU/scf     |  |  |  |  |
| Operating Hours         | 8760                  | hrs/yr      |  |  |  |  |

| Pollutant | Emission Factor |         | Emissio<br>(lb/hr) | Emission<br>Factor<br>Reference |       |
|-----------|-----------------|---------|--------------------|---------------------------------|-------|
| NOx       | 1.5             | g/hp-hr | 4.43               | 19.41                           | i (1) |
| CO        | 2.50            | g/hp-hr | 7.39               | 32.35                           | [1]   |
| VOC/NMHC  | 0.38            | g/hp-hr | 1.12               | 4.92                            | [1]   |

|                          |        |            |        |        | - Lot - Initian | AP-42 Emission Factors |
|--------------------------|--------|------------|--------|--------|-----------------|------------------------|
| PM10                     | 0.0003 | g/hp-hr    | 0.001  | 0.003  | [2]             | 7.71E-05 Ib/MMBtu      |
| Hazardous Air Pollutants | )      |            |        |        |                 | -                      |
| Acetaldehyde             | 0.0292 | g/hp-hr    | 0.0862 | 0.3776 | [2]             | 8.36E-03 lb/MMBtu      |
| Acrolein                 | 0.0179 | g/hp-hr    | 0.0530 | 0.2321 | [2]             | 5.14E-03 lb/MMBtu      |
| Benzene                  | 0.0015 | g/hp-hr    | 0.0045 | 0.0199 | [2]             | 4.40E-04 lb/MMBtu      |
| Ethylbenzene             | 0.0001 | g/hp-hr    | 0.0004 | 0.0018 | [2]             | 3.97E-05 ib/MMBtu      |
| Formaldehyde             | 0.2900 | g/hp-hr    | 0.8567 | 3.7524 | [1]             | 5.28E-02 lb/MMBtu      |
| Toluene                  | 0,0014 | g/hp-hr    | 0.0042 | 0.0184 | [2]             | 4.08E-04 lb/MMBtu      |
| Xylene                   | 0.0006 | g/hp-hr    | 0.0019 | 0.0083 | [2]             | 1.84E-04 lb/MMBtu      |
|                          |        | Total HAPS | 1.01   | 4.41   |                 |                        |

[1] Emission Factors provided by Manufacturer

#### [2] AP-42 Table 3.2-3 for stationary IC sources; July 2000, 4-stroke lean burn

| GHG Emissions |          |         |           |           |     |                   |
|---------------|----------|---------|-----------|-----------|-----|-------------------|
| CO2           | 383.9497 | g/hp-hr | 1134.2430 | 4967.9843 | [2] | 1.10E+02 lb/MMBtu |
| CH4           | 4.3631   | g/hp-hr | 12.8891   | 56.4544   | [2] | 1.25E+00 lb/MMBtu |

|                          | CALCULATION FORMULAS                                                                         |
|--------------------------|----------------------------------------------------------------------------------------------|
| g/(hp-hr) =              | (lb/MMBtu)*(MMBtu/hr)*(453.6 g/lb) / (site-rated hp)                                         |
| lb/hr =                  | (g/hp-hr)*(site-rated hp) / (453.6 g/lb)                                                     |
| tpy =                    | (lb/hr)*(8760 hr/yr) / (2000 lb/ton)                                                         |
| Fuel Usage (MMscf/yr) =  | (Scf/btu)*(btu/{hp-hr})*(site-rated hp)*(24 hr/day)*(365 day/yr)*(MMScf/10 <sup>5</sup> Scf) |
| Heat Rating (MMbtu/hr) = | (site rated horsepower)*(Btu/(hp-hr)) / (453.6 g/lb)                                         |

## **Compressor Engine Emissions**

Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah

#### EMISSION POINTS: Caterpillar G3516LE #2 Engine Serial #: 4EK03582 Engine mfg. date: 8/12/2001 Engine Install Date: 7/18/2013 Unit #: T1C-2

| Engine Make/Model       | Caterpil | lar G3516LE #2 |
|-------------------------|----------|----------------|
| Site Horsepower Rating  | 1150     | hp             |
| Fuel Consumption (BSFC) | 7575     | Btu/(hp-hr)    |
| Heat Rating             | 8,711    | MMBtu/hr       |
| Hourly Fuel Use         | 8344     | scf / hr       |
| Maximum Annual Fuel Use | 73.09    | mmscf / yr     |
| Fuel LHV                | 1044     | BTU/scf        |
| Operating Hours         | 8760     | hrs/yr         |

| Pollutant | Emir | ssion Factor | Emissio<br>(lb/hr) | (tpy) | Emission<br>Factor<br>Reference |
|-----------|------|--------------|--------------------|-------|---------------------------------|
| NOx       | 1.5  | g/hp-hr      | 3.80               | 16.66 | [1]                             |
| CO        | 2.65 | g/hp-hr      | 6.72               | 29.43 | [1]                             |
| VOC/NMHC  | 0.42 | a/hp-hr      | 1.06               | 4,66  | [1]                             |

|                          |         |            |        |        |     | AP-42 Emission Factors |
|--------------------------|---------|------------|--------|--------|-----|------------------------|
| PM10                     | 0.00027 | g/hp-hr    | 0.001  | 0.003  | [2] | 7.71E-05 lb/MMBtu      |
| Hazardous Air Pollutants | 3       |            | -      |        |     |                        |
| Acetaldehyde             | 0.0287  | g/hp-hr    | 0.0728 | 0.3190 | [2] | 8.36E-03 lb/MMBtu      |
| Acrolein                 | 0.0177  | g/hp-hr    | 0.0448 | 0.1961 | [2] | 5.14E-03 lb/MMBtu      |
| Benzene                  | 0.0015  | g/hp-hr    | 0.0038 | 0.0168 | [2] | 4.40E-04 lb/MMBtu      |
| Ethylbenzene             | 0.0001  | g/hp-hr    | 0.0003 | 0.0015 | [2] | 3.97E-05 lb/MMBtu      |
| Formaldehyde             | 0.2900  | g/hp-hr    | 0.7352 | 3.2203 | [1] | 5.28E-02 lb/MMBtu      |
| Toluene                  | 0.0014  | g/hp-hr    | 0.0036 | 0.0156 | [2] | 4.08E-04 lb/MMBtu      |
| Xylene                   | 0,0006  | g/hp-hr    | 0.0016 | 0.0070 | [2] | 1,84E-04 lb/MMBtu      |
|                          |         | Total HAPS | 0.86   | 3.78   |     |                        |

[1] Emission Factors provided by Manufacturer

[2] AP-42 Table 3.2-3 for stationary IC sources; July 2000, 4-stroke lean burn

| GHG Emissions |          |         |          |           |     |                   |
|---------------|----------|---------|----------|-----------|-----|-------------------|
| CO2           | 377.9622 | g/hp-hr | 958.2375 | 4197.0803 | [2] | 1.10E+02 lb/MMBtu |
| CH4           | 4.2950   | g/hp-hr | 10.8891  | 47.6941   | [2] | 1.25E+00 lb/MMBtu |

|                          | CALCULATION FORMULAS                                                                         |
|--------------------------|----------------------------------------------------------------------------------------------|
| g/(hp-hr) =              | (lb/MMBtu)*(MMBtu/hr)*(453.6 g/lb) / (site-rated hp)                                         |
| lb/hr =                  | (g/hp-hr)*(site-rated hp) / (453.6 g/lb)                                                     |
| tpy =                    | (lb/hr)*(8760 hr/yr) / (2000 lb/ton)                                                         |
| Fuel Usage (MMscf/yr) =  | (Scf/btu)*(btu/{hp-hr})*(site-rated hp)*(24 hr/day)*(365 day/yr)*(MMScf/10 <sup>6</sup> Scf) |
| Heat Rating (MMbtu/hr) = | (site rated horsepower)*(Btu/(hp-hr)) / (453.6 g/lb)                                         |

## G3516 NON-CURRENT

#### GAS COMPRESSION APPLICATION

### GAS ENGINE SITE SPECIFIC TECHNICAL DATA

## **CATERPILLAR'**

## River Bend Tap 1 (Comp1)

| ENGINE SPEED (rpm):                | 1400         | RATING STRATEGY:                        | STANDARD                    |
|------------------------------------|--------------|-----------------------------------------|-----------------------------|
| COMPRESSION RATIO:                 | 8            | RATING LEVEL:                           | CONTINUOUS                  |
| AFTERCOOLER TYPE:                  | SCAC         | FUEL SYSTEM:                            | HPG IMPCO                   |
| AFTERCOOLER WATER INLET (°F):      | 130          |                                         | WITH AIR FUEL RATIO CONTROL |
| JACKET WATER OUTLET ("F);          | 210          | SITE CONDITIONS:                        |                             |
| ASPIRATION:                        | TA           | FUEL:                                   | River Bend Tap 1            |
| COOLING SYSTEM:                    | JW+OC, AC    | FUEL PRESSURE RANGE(psig): (See note 1) | 35.0-40.0                   |
| CONTROL SYSTEM:                    | EIS          | FUEL METHANE NUMBER:                    | 59.1                        |
| EXHAUST MANIFOLD:                  | ASWC         | FUEL LHV (Btu/scf):                     | 1044                        |
| COMBUSTION:                        | LOW EMISSION | ALTITUDE(ft):                           | 5162                        |
| NOx EMISSION LEVEL (g/bhp-hr NOx): | 1.5          | MAXIMUM INLET AIR TEMPERATURE(*F):      | 55                          |
| SET POINT TIMING:                  | 27           | STANDARD RATED POWER:                   | 1340 bhp@1400rpm            |
|                                    |              |                                         |                             |

|                                                                                            |             |            | RATING | SITE RATING AT MAX |       |       |
|--------------------------------------------------------------------------------------------|-------------|------------|--------|--------------------|-------|-------|
| RATING                                                                                     | NOTES       | LOAD       | 100%   | 100%               | 75%   | 52%   |
| ENGINE POWER (WITHOUT FAI                                                                  | (2)         | bhp        | 1340   | 1295               | 972   | 670   |
| INLET AIR TEMPERATURE                                                                      | 1           | °F         | 42     | 55                 | 55    | 55    |
| ENGINE DATA                                                                                | 1           |            |        |                    |       |       |
| FUEL CONSUMPTION (LHV)                                                                     | (3)         | Btu/bhp-hr | 7695   | 7729               | 8010  | 8449  |
| FUEL CONSUMPTION (HHV)                                                                     | (3)         | Btu/bhp-hr | 8507   | 8546               | 8856  | 9342  |
| AIR FLOW (@inlet air temp, 14.7 psia) (WEI                                                 | 1 (.)(*)    | ft3/min    | 2701   | 2685               | 2064  | 1355  |
| AIR FLOW (WET                                                                              | (4)(5)      | lb/hr      | 12799  | 12414              | 9541  | 6267  |
| FUEL FLOW (60°F, 14.7 psia)                                                                |             | scfm       | 165    | 160                | 124   | 90    |
| INLET MANIFOLD PRESSURE                                                                    | (6)         | in Hg(abs) | 69.2   | 67.3               | 52.9  | 38.7  |
| EXHAUST TEMPERATURE - ENGINE OUTLET                                                        | (7)         | *F         | 906    | 904                | 891   | 893   |
| EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia) (WE                                      | 1 10/10/    | ft3/min    | 7926   | 7677               | 5848  | 3872  |
| EXHAUST GAS MASS FLOW (WE                                                                  | (8)(5)      | lb/hr      | 13291  | 12892              | 9912  | 6536  |
| EMISSIONS DATA - ENGINE OUT                                                                | 1           |            |        |                    |       |       |
| NOx (as NO2)                                                                               | (9)(10)     | g/bhp-hr   | 1.50   | 1.50               | 1.50  | 1.50  |
| co                                                                                         | (9)(10)     | g/bhp-hr   | 2.50   | 2.51               | 2.60  | 2.51  |
| THC (mol, wt. of 15.84)                                                                    | (9)(10)     | g/bhp-hr   | 2.56   | 2.59               | 2.86  | 3.00  |
| NMHC (mol. wt. of 15.84)                                                                   | (9)(10)     | g/bhp-hr   | 0.66   | 0.67               | 0.74  | 0.77  |
| NMNEHC (VOCs) (mol. wt. of 15.84)                                                          | (9)(10)(11) | g/bhp-hr   | 0.38   | 0.39               | 0.43  | 0.45  |
| HCHO (Formaldehyde)                                                                        | (9)(10)     | g/bhp-hr   | 0.29   | 0.29               | 0.32  | 0.34  |
| CO2                                                                                        | (9)(10)     | g/bhp-hr   | 541    | 542                | 564   | 594   |
| EXHAUST OXYGEN                                                                             | (9)(12)     | % DRY      | 7.8    | 7.8                | 7.6   | 7.4   |
| HEAT REJECTION                                                                             | 1           |            |        |                    |       |       |
| HEAT REJ. TO JACKET WATER (JW)                                                             | (13)        | Btu/min    | 41800  | 41085              | 34782 | 30141 |
| HEAT REJ. TO ATMOSPHERE                                                                    | (13)        | Btu/min    | 5313   | 5196               | 4340  | 3543  |
| HEAT REJ. TO LUBE OIL (OC)                                                                 | (13)        | Btu/min    | 6610   | 6496               | 5500  | 4766  |
| HEAT REJ. TO AFTERCOOLER (AC)                                                              | (13)(14)    | Btu/min    | 10285  | 10285              | 6392  | 2437  |
| COOLING SYSTEM SIZING CRITERIA                                                             | 1           |            |        |                    |       |       |
| TOTAL JACKET WATER CIRCUIT (JW+OC)                                                         | (14)        | Btu/min    | 53912  |                    |       |       |
| TOTAL AFTERCOOLER CIRCUIT (AC)                                                             | (14)(15)    | Btu/min    | 10799  |                    |       |       |
| A cooling system safety factor of 0% has been added to the cooling system sizing criteria. |             |            |        |                    |       |       |

CONDITIONS AND DEFINITIONS Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site Inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

For notes information consult page three.

## G3516 NON-CURRENT

GAS COMPRESSION APPLICATION

### GAS ENGINE SITE SPECIFIC TECHNICAL DATA

## **CATERPILLAR**\*

### River Bend Tap 1 (Comp2)

| ENGINE SPEED (rpm):                | 1200         | RATING STRATEGY:                        | STANDARD                    |
|------------------------------------|--------------|-----------------------------------------|-----------------------------|
| COMPRESSION RATIO:                 | 8            | RATING LEVEL:                           | CONTINUOUS                  |
| AFTERCOOLER TYPE:                  | SCAC         | FUEL SYSTEM:                            | HPG IMPCO                   |
| AFTERCOOLER WATER INLET (°F):      | 130          |                                         | WITH AIR FUEL RATIO CONTROL |
| JACKET WATER OUTLET (*F):          | 210          | SITE CONDITIONS:                        |                             |
| ASPIRATION:                        | TA           | FUEL:                                   | River Bend Tap 1            |
| COOLING SYSTEM:                    | JW+OC, AC    | FUEL PRESSURE RANGE(psig): (See note 1) | 35.0-40.0                   |
| CONTROL SYSTEM:                    | EIS          | FUEL METHANE NUMBER:                    | 59.1                        |
| EXHAUST MANIFOLD:                  | ASWC         | FUEL LHV (Btu/scf):                     | 1044                        |
| COMBUSTION:                        | LOW EMISSION | ALTITUDE(ft):                           | 5162                        |
| NOx EMISSION LEVEL (g/bhp-hr NOx): | 1.5          | MAXIMUM INLET AIR TEMPERATURE("F):      | 55                          |
| SET POINT TIMING:                  | 27           | STANDARD RATED POWER:                   | 1150 bhp@1200rpm            |
|                                    |              | MAXIMUM                                 | I SITE RATING AT MAXIMUM    |

|                                                                                            |             |            | RATING | INLET A | IR TEMPE | RATURE |
|--------------------------------------------------------------------------------------------|-------------|------------|--------|---------|----------|--------|
| RATING                                                                                     | NOTE        | S LOAD     | 100%   | 100%    | 75%      | 50%    |
| ENGINE POWER (WITHOUT                                                                      | FAN) (2)    | bhp        | 1150   | 1150    | 862      | 575    |
| INLET AIR TEMPERATURE                                                                      |             | °F         | 55     | 55      | 55       | 55     |
| ENGINE DATA                                                                                |             |            |        |         |          |        |
| FUEL CONSUMPTION (LHV)                                                                     | (3)         | Btu/bhp-hr | 7575   | 7575    | 7758     | 8258   |
| FUEL CONSUMPTION (HHV)                                                                     | (3)         | Btu/bhp-hr | 8375   | 8375    | 8577     | 9131   |
| AIR FLOW (@inlet air temp, 14.7 psia) (                                                    | WET) (4)(5) | ft3/min    | 2353   | 2353    | 1804     | 1242   |
| AIR FLOW (                                                                                 | WET) (4)(5) | lb/hr      | 10881  | 10881   | 8339     | 5742   |
| FUEL FLOW (60°F, 14.7 psia)                                                                |             | scfm       | 139    | 139 .   | 107      | 76     |
| INLET MANIFOLD PRESSURE                                                                    | (6)         | in Hg(abs) | 67.8   | 67,8    | 53.4     | 37.9   |
| EXHAUST TEMPERATURE - ENGINE OUTLET                                                        | (7)         | ۴F         | 890    | 890     | 866      | 858    |
| EXHAUST GAS FLOW (@engine outlet temp, 14.5 psla)                                          | WET) (8)(5) | ft3/min    | 6664   | 6664    | 5014     | 3438   |
|                                                                                            | WET) (8)(5) | lb/hr      | 11295  | 11295   | 8657     | 5967   |
| EMISSIONS DATA - ENGINE OUT                                                                |             |            |        |         |          |        |
| NOx (as NO2)                                                                               | (9)(10      | g/bhp-hr   | 1.50   | 1.50    | 1.50     | 1.50   |
| co                                                                                         | (9)(10)     | g/bhp-hr   | 2.65   | 2.65    | 2.80     | 3.10   |
| THC (mal. wt. of 15.84)                                                                    | (9)(10)     | g/bhp-hr   | 2.82   | 2.82    | 3.07     | 3.50   |
| NMHC (mol. wt. of 15.84)                                                                   | (9)(10)     |            | 0.73   | 0.73    | 0.79     | 0.90   |
| NMNEHC (VOCs) (mol. wt. of 15.84)                                                          | (9)(10)(1   |            | 0.42   | 0.42    | 0.46     | 0.52   |
| HCHO (Formaldehyde)                                                                        | (9)(10)     |            | 0.29   | 0.29    | 0.31     | 0.34   |
| CO2                                                                                        | (9)(10      |            | 532    | 532     | 545      | 580    |
| EXHAUST OXYGEN                                                                             | (9)(12      |            | 7.9    | 7.9     | 7.7      | 7.4    |
| HEAT REJECTION                                                                             |             |            |        |         |          |        |
| HEAT REJ. TO JACKET WATER (JW)                                                             | (13)        | Btu/min    | 36022  | 36022   | 29623    | 24252  |
| HEAT REJ. TO ATMOSPHERE                                                                    | (13)        | Btu/min    | 4554   | 4554    | 3795     | 3037   |
| HEAT REJ. TO LUBE OIL (OC)                                                                 | (13)        | Btu/min    | 5696   | 5696    | 4684     | 3835   |
| HEAT REJ. TO AFTERCOOLER (AC)                                                              | (13)(14     |            | 8079   | 8079    | 5429     | 1914   |
| COOLING SYSTEM SIZING CRITERIA                                                             |             |            |        |         |          |        |
| TOTAL JACKET WATER CIRCUIT (JW+OC)                                                         | (14)        | Btu/min    | 46459  | 1       |          |        |
| TOTAL AFTERCOOLER CIRCUIT (AC)                                                             | (14)(15     |            | 8483   |         |          |        |
| A cooling system safety factor of 0% has been added to the cooling system sizing criteria. |             |            |        | 1       |          |        |

CONDITIONS AND DEFINITIONS Engine raling obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum raling is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature, Lowest load point is the lowest confinuous duty operating load allowed. No overload permitted at rating shown.

For notes information consult page three.

## XTO Energy, Inc. Tap-1 Compressor Station

# Calculation of Startup, Shutdown and Maintenance (SSM) Potential to Emit

| 2017 Update<br>Representative gas sample obtained 6/14 | V2011                      |                                  |                                   |
|--------------------------------------------------------|----------------------------|----------------------------------|-----------------------------------|
| Density of Air at 60 F & 14.7 psia =                   | 0.0764                     | lb/scf                           |                                   |
| Specific Gravity of Gas                                | 0.6559                     |                                  |                                   |
| Density of Gas                                         | 0.0501                     |                                  |                                   |
| Annual No. of Blowdowns =                              |                            |                                  |                                   |
| cubic ft / blowdown =                                  | 2:                         | 500                              | -                                 |
| Annual vent rate per Operations                        |                            |                                  |                                   |
| Unit No                                                | Annual<br>Venting<br>(scf) | Annual<br>Gas Vented<br>(lbs/yr) | Annual<br>Gas Vented<br>(tons/yr) |
| T1C-1/T1C-2                                            | 550000                     | 27551.090                        | 13.78                             |

| Emission                               | Speciated      | COMP1              | SSM Emissions |
|----------------------------------------|----------------|--------------------|---------------|
| Source                                 | Pollutant      | Wt %               | COMP1-BD      |
|                                        |                |                    | (tpy)         |
| Startup, Shutdown, Maintenance         | Nitrogen       | 0.4989%            | 0.069         |
|                                        | Carbon Dioxide | 0.8812%            | 0.121         |
|                                        | Methane        | 74.4858%           | 10.261        |
|                                        | Ethane         | 10.2704%           | 1.415         |
|                                        | Propane        | 5.4784%<br>1.4962% | 0.755         |
|                                        | I-Butane       |                    | 0.206         |
|                                        | N-Butane       | 1.8337%            | 0.253         |
|                                        | I-Pentane      | 0.9294%            | 0.128         |
|                                        | N-Pentane      | 0.0323%            | 0.004         |
|                                        | Hexanes Plus   | 4.0937%            | 0.564         |
|                                        | Total          | 100%               | -             |
| Annual VOC Emissions (tons)            |                |                    | 1.910         |
| Hourly VOC Emissions (lbs)             |                |                    | 318.300       |
| Annual Benzene Emissions (lbs)         |                |                    | 0.0095        |
| Hourly Benzene Emissions (tons)        |                |                    | 1.582         |
| Annual Carbon Dioxide Emissions (tons) | 0.121          |                    |               |
| Hourly Carbon Dioxide Emissions (ibs)  |                |                    | 20.233        |
| Annual Methane Emissions (tons)        |                |                    | 10.261        |
| Hourly Methane Emissions (lbs)         |                |                    | 1710.137      |

I Blowdown frequency is 130 blowdowns per year and 1 hour per blowdown and est. 2,500 scf/blowdown

| Natural Gas Analysis | Mol %    | Mol Wt. | Weighted Sum | Wt. %    |
|----------------------|----------|---------|--------------|----------|
| Nitrogen             | 0.3386   | 28.0134 | 0.0949       | 0.4989   |
| Carbon Dioxide       | 0.3807   | 44.0100 | 0.1675       | 0.8812   |
| Methane              | 88.2714  | 16.0432 | 14.1616      | 74.4858  |
| Ethane               | 6.4936   | 30.0703 | 1.9526       | 10.2704  |
| Propane              | 2.3620   | 44.0975 | 1.0416       | 5.4784   |
| I-Butane             | 0.4894   | 58.1246 | 0.2845       | 1.4962   |
| N-Butane             | 0.5998   | 58.1246 | 0.3486       | 1.8337   |
| I-Pentane            | 0.2449   | 72.1518 | 0.1767       | 0.9294   |
| N-Pentane            | 0.0085   | 72.1518 | 0.0061       | 0.0323   |
| Hexane plus          | 0.8111   | 95.9580 | 0.7783       | 4.0937   |
| Total                | 100.0000 |         | 19.0124      | 100.0000 |
| Total (C3+)          | 4.5157   | 1       |              | 13.8637  |
| VOC max              |          |         | 1            | 25.0000  |
| Methane max          |          |         |              | 65.0000  |
| Carbon Dioxide max   |          |         |              | 5.0000   |

## NATURAL GAS FUELED HEATER EMISSIONS

Company: XTO Energy

Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah

|                                    | HEATER            | HEATER     | FUEL*                   | HOURS OF                | FUEL                | NOx                               |                        | CO                                |                        |
|------------------------------------|-------------------|------------|-------------------------|-------------------------|---------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION              | SIZE<br>(MBtu/hr) | EFFICIENCY | HEAT VALUE<br>(Btu/scf) | OPERATION<br>(hrs/year) | USAGE<br>(MMscf/yr) | EF AP-42 <sup>1</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>1</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) |
| Separator                          | 250               | 0.8        | 1020                    | 8760                    | 2.684               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
| Tank Heaters - (2) X 0.25 MMBTU/hr | 500               | 0.8        | 1020                    | 8760                    | 5.368               | 100.0                             | 0.27                   | 84.0                              | 0.23                   |
|                                    |                   |            |                         | TOTALS                  | 2.684               |                                   | 0.40                   |                                   | 0.34                   |

|                                                                                                                | T                                 | TOC                    |                        | PN                                | 10                     | Formaldehyde                      |                        |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------|------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION                                                                                          | EF AP-42 <sup>2</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>2</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>3</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) |
| Separator                                                                                                      | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| Tank Heaters                                                                                                   | 11.0                              | 0,03                   | 0.03                   | 7.6                               | 0.02                   | 7.50E-02                          | 0.0002                 |
| A Children Constraint and a constraint of the second second second second second second second second second s | TOTALS                            | 0.01                   | 0.04                   |                                   | 0.03                   |                                   | 0.0003                 |

Criteria emissions rounded to the nearest 1/100 of a ton, VOC/HAP rounded to 1/1000 of a ton.

EF AP-42<sup>1</sup> = emission factor from AP-42 Table 1.4-1, Small Boilers <100 MMbtu/hr (EPA 7/98), Standard = 1,020 Btu/scf

EF AP-42<sup>2</sup> = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

EF AP-42<sup>3</sup> = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

Fuel Heat Value (Btu/scf) \* 1,000,000 (scf/MMscf) \* Heater Efficiency

NOx/CO/TOC Emissions (tons/yr) = AP-42 EF (lbs/MMscf) \* Fuel Consumption (MMscf/yr) \* (Fuel Heat Value/ Standard Fuel Heat Value) / 2,000 (lbs/ton) -Standard Fuel Heat Value, Natural Gas (AP-42, 7/98, p1.4-5) = 1,020 Btu/scf

VOC emissions assumed equal to TOC emissions

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### **XTO ENERGY INC. - TAP-1 COMPRESSOR STATION - FUGITIVE EMISSIONS**

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| Gross BTU                                                                                                       | 1000                |     | NMHC             | 4.5104   | 23.8896%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| Carbon Dioxide                                                                                                  | 0.3807              | 44  | 0.1675           | 0.886%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Nitrogen                                                                                                        | 0,3386              | 28  | 0.0948           | 0.502%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Methane                                                                                                         | 88.2714             | 16  | 14.1234          | 74.742%  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                      | Fugitive      | Truckloading                             | Comp Blowdowns |
| Ethane                                                                                                          | 6.4936              | 30  | 1.9481           | 10,309%  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Propane                                                                                                         | 2.3620              | 44  | 1,0393           | 5.500%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Iso-Butane                                                                                                      | 0,4894              | 58  | 0.2839           | 1,502%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                      | 0.00281       | 0.00032                                  | 0.00218        |
| N-Butane                                                                                                        | 0.5998              | 58  | 0.3479           | 1.841%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                      | 0.00369       | 0.00042                                  | 0.00285        |
| Iso-Pentane                                                                                                     | 0.2534              | 72  | 0.1824           | 0.966%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| N-Pentane                                                                                                       | 0.2016              | 72  | 0.1452           | 0.768%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                      | 0.00147       | 0.00017                                  | 0.00114        |
| Methylcyclopentane                                                                                              | 0.0079              | 86  | 0.0068           | 0.036%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                      | 0.01892       | 0.00216                                  | 0.01465        |
| n-Hexane                                                                                                        | 0,0982              | 88  | 0.0827           | 0.438%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Hexane +                                                                                                        | 0.1446              | 86  | 0.1244           | 0.658%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| 2.4-Dimethylpentane                                                                                             | 0.0000              | 100 | 0.0000           | 0.000%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Methycyclohexane                                                                                                | 0.0749              | 96  | 0.0719           | 0.381%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Berizane                                                                                                        | 0.0278              | 78  | 0,0215           | 0.114%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Cyclohexane                                                                                                     | 0.0498              | 84  | 0.0418           | 0.221%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| n-Heptane                                                                                                       | 0.1100              | 100 | 0.1100           | 0.582%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Toluene                                                                                                         | 0.0307              | 92  | 0.0282           | 0.749%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Ethylbenzene                                                                                                    | 0.0011              | 106 | 0,0012           | 0.008%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Xylenes                                                                                                         | 0.0106              | 106 | 0.0112           | 0.059%   | Canada and a state of the state |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                 |               | an a |                |
| Octanes+                                                                                                        | 0.0561              | 114 | 0.0640           | 0.338%   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | And the second se |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                 |               |                                          |                |
| Nonanes+                                                                                                        | 0.0000              | 128 | 0.0000           | 0.000%   | Parlan, G. and Milling and Anna San Campanan and Anna 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| Decanes+                                                                                                        | 0.0000              | 142 | 0.0000           | 0.000%   | and the spectrum particular the spectrum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| and a second  |                     | -   |                  |          | 13.560%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Talamatan ya valini ini va va va na za za na paka na paka na ka mata ka                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Const. and a processory control, Black Linear and provide the second structure of the second struct | 1                                                                                                               |               |                                          | 1              |
| Total                                                                                                           | 100.0000            | *   |                  | ******** | NMNEVOC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------|-------------------------------------------------------|-----------------------------------------|----------------------|-----------------|-------------------------------------------------------------------------|
|                                                                                                                |                                                 |                      | Ī                                                     |                                         |                      |                 |                                                                         |
|                                                                                                                | Company:                                        | <b>XTO Energy In</b> | <b>c.</b>                                             |                                         |                      |                 |                                                                         |
| Facility Name:                                                                                                 |                                                 | Tap-1 Compres        | ssor Station                                          |                                         |                      |                 |                                                                         |
| Fa                                                                                                             | cility Location:                                | Uintah County,       | Utah                                                  |                                         |                      |                 |                                                                         |
|                                                                                                                |                                                 |                      |                                                       | and a start of the start of the         |                      |                 | annan, a' an ann Bhan Mallanan Phanana Anna 7, a mhairt a shararan Anna |
| **                                                                                                             |                                                 | Estimated            | Hours of                                              | Factors*                                | %NMNEVOC             | En              | nissions                                                                |
| analise of a second |                                                 | Components<br>Count  | Operation                                             | lb/hr/component                         | Weight               | lb/year         | metric tons/year                                                        |
| Valves                                                                                                         |                                                 |                      | ar a mana may a na n | 11.0.0.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1. | N. W. SALM           |                 |                                                                         |
|                                                                                                                | Gas/Vapor                                       | 53                   | 8760                                                  | 0.00992000                              | 0.89%                | 40.82753        | 0.01856                                                                 |
|                                                                                                                | Light Oil                                       | 28                   | 8760                                                  | 0.00550000                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| M                                                                                                              | Heavy Oil                                       | 0                    | 8760                                                  | 0.00001900                              | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Water/Light Oil                                 | 6                    | 8760                                                  | 0.00021600                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| Pumps                                                                                                          |                                                 |                      | -                                                     |                                         |                      |                 |                                                                         |
|                                                                                                                | Gas/Vapor                                       | 2                    | 8760                                                  | 0.00529000                              | 0.89%                | 0.82158         | 0.00037                                                                 |
|                                                                                                                | Light Oil                                       | 0                    | 8760                                                  | 0.02866000                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| dama afa da ana an an 1990                                                                                     | Heavy Oil                                       | 0                    | 8760                                                  | 0.00113000                              | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Water/Light Oil                                 | 0                    | 8760                                                  | 0.00005300                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| Flanges                                                                                                        |                                                 |                      | 0700                                                  | 0.00000000                              |                      |                 |                                                                         |
| A                                                                                                              | Gas/Vapor                                       | 69                   | 8760                                                  | 0.00086000                              | 0.89%                | 4.60801         | 0.00209                                                                 |
|                                                                                                                | Light Oil                                       | 12                   | 8760                                                  | 0.00024300                              | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Heavy Oil                                       | 0                    | 8760                                                  | 0.0000086                               | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Water/Light Oil                                 | 2                    | 8760                                                  | 0.00000620                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| Open-end                                                                                                       |                                                 |                      | 0700                                                  |                                         | 0.000/               |                 |                                                                         |
|                                                                                                                | Gas/Vapor                                       | 0                    | 8760                                                  | 0.00441000                              | 0.69%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Light Oil                                       | 0                    | 8760                                                  | 0.00309000                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| - 1: 100000-00-00-0                                                                                            | Heavy Oil                                       | 0                    | 8760                                                  | 0.00030900                              | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Water/Light Oil                                 | 0                    | 8760                                                  | 0.00055000                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| Connecto                                                                                                       | Propagation and the second of the second second | 040                  |                                                       | 0.000.0000                              | 0.000/               | 10.00000        |                                                                         |
|                                                                                                                | Gas/Vapor                                       | 318                  | 8760                                                  | 0.00044000                              | 0.89%                | 10.86539        | 0.00494                                                                 |
| مر بر المرد ماد                                                                                                | Light Oil                                       | 15                   | 8760                                                  | 0.00046300                              | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Heavy Oil                                       | 0                    | 8760                                                  | 0.00001700                              | - 0.00%              | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Water/Light Oil                                 | 26                   | 8760                                                  | 0.00024300                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| Other Co                                                                                                       | i<br>mnressors rollef v                         | alves process drai   | ins diaphragms                                        | , dump arms, hatche                     | e instrumente mote   | na poliebed rod | and vente                                                               |
|                                                                                                                | preservey ronor v                               |                      |                                                       |                                         |                      |                 |                                                                         |
| C.C. STARK, "J. " of SMA ADDRESS (PP.).                                                                        | Gas/Vapor                                       | 18                   | 8760                                                  | 0.01940000                              | 0.89%                | 27.11689        | 0.01233                                                                 |
|                                                                                                                | Light Oil                                       | 8                    | 8760                                                  | 0.01650000                              | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Heavy Oil                                       | 0                    | 8760                                                  | 0.00006800                              | 0.00%                | 0.00000         | 0.00000                                                                 |
|                                                                                                                | Water/Light Oil                                 | 4                    | 8760                                                  | 0.03090000                              | 0.00%                | 0.00000         | 0.00000                                                                 |
| *NOTE - e                                                                                                      | mission factors base                            | d on Table 2-4 of U. | S. EPA's 1995 F                                       | Protocol for Equipment                  | Leak Emission Estima | tes.            | an a season a season an             |
|                                                                                                                |                                                 |                      | an mala state                                         |                                         | Total in mot         | ric tonnes/year | 0.04                                                                    |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Gas/Vapor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 18                      | 8760                                    | 0.01940000               | 74.74%                     | 2286.35822                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1.039                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 8                       | 8760                                    | 0.01650000               | 0.00%                      | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.000                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Heavy Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0                       | 6760                                    | 0.00006800               | 0.00%                      | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0,000                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Water/Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4                       | 8760                                    | 0.03090000               | 0.00%                      | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.0000                                                                                                         |
| NOTE - e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | mission factors base                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | d on Table 2-4 of U.    | S. EPA's 1995 Pr                        | otocol for Equipment Lea | k Emission Estimates.      | . <b>(1999)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | чикаландар — — — — — — — — — — — — — — — — — — —                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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                                                                                              |                         |                                         |                          | Total I                    | metric tonnes/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3.:                                                                                                            |

\*

# **VOC EMISSIONS FROM CONDENSATE TRUCK LOADING OPERATIONS**

| Company:           | XTO Energy                      |
|--------------------|---------------------------------|
| Facility Name:     | <b>TAP 1 Compressor Station</b> |
| Facility Location: | Uintah County, Utah             |

| Tank         | Oil        | Oil             | Saturation | True Vapor | Vapor    | Oil             | Loading         | VOC Loading |
|--------------|------------|-----------------|------------|------------|----------|-----------------|-----------------|-------------|
| Description  | Sales      | Sales           | Factor     | Pressure   | Mole Wt. | Temperature     | Losses          | Emissions   |
|              | (bbls/day) | (1,000 bbls/yr) | (S)        | (P) (psia) | (M)      | (T) (Degrees R) | (lbs/1,000 gal) | (tons/yr)   |
| Storage Tank | 25.000     | 9.125           | 0.6        | 4          | 26.79    | 545             | 1.4700          | 0.2817      |
| TOTAL        | 25.000     | 9.125           |            |            |          |                 |                 | 0.2817      |

Loading Losses (lbs/1,000 gal) = 12.46\*S\*P\*M

(AP-42 Section 5.2, Equation 1)

Loading Emissions (tons/year) = Loading Losses (lbs/1,000 gal) \* Oil Sales (1,000 bbls/yr) \* (42 gal/bbl) 2,000 lbs/ton

Degrees R =

Degrees F + 460

| Mode of Operation                   | S Factor |
|-------------------------------------|----------|
| Submerged loading of a clean tank   | 0.5      |
| Submerged loading-dedicated service | . 0.6    |
| Submerged loading-vapor balance     | 1.00     |
| Splash Loading-clean tank           | 1.45     |
| Splash loading-normal service       | 1.45     |
| Splash loading-vapor balance        | 1.00     |

Tank Truck S Factors

## Condensate Tank Emissions (F/W/B)

Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah Description: Uncontrolled - Two (2) X 300 bbl vertical, fixed-roof storage tanks

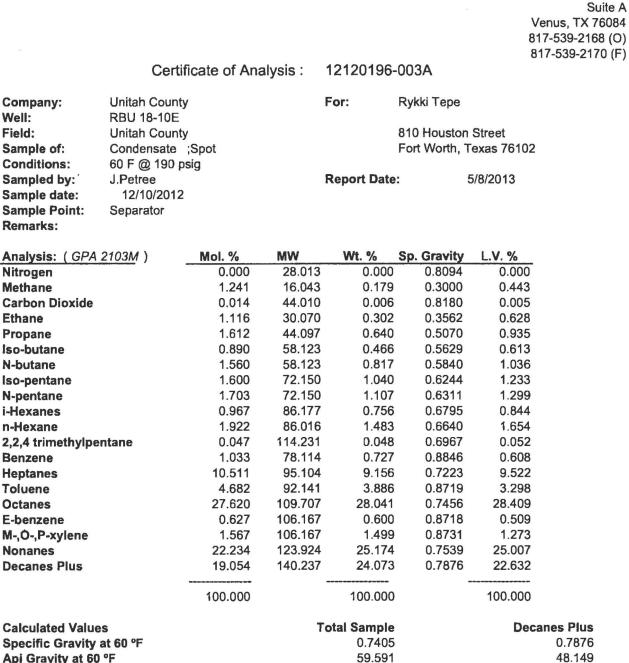
| Condensate |           |           |           |              |           |           |           |           |           | Total     | Total     |
|------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Rate       | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | CO2       | CH4       | HAPs      | BTEX      |
| (bbis/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) |
| 25.00      | 4.37      | 0.0460    | 0.0730    | 0.0040       | 0.0090    | 0.121     | 0.001     | 0.05      | 1.92      | 0.2540    | 0.1320    |
| TOTAL      | 4.37      | 0.05      | 0.07      | 0.00         | 0.01      | 0.12      | 0.00      | 0.05      | 1.92      | 0.25      | 0.13      |

\* Project Setup Information Project File : W:\EHS\Environmental\Air\Areas of Operation\Utah\\_MSO\RBU Dehy\Title V\EPA RBU Dehy : Flowsheet Selection : Oil Tank with Separator Calculation Method : RVP Distillation Control Efficiency : 0.00% Known Separator Stream : Low Pressure Oil Entering Air Composition : No : C10+ Component Group Filed Name : XTO Energy Well Name : TAP 1 Well ID : PTE Emissions : 2017.05.09 Date \*\*\*\*\*\*\*\*\*\*\* \* Data Input \*\*\*\*\* Separator Pressure (psia) : 190.00 Separator Temperature (F) : 80.0 C10+ SG : 0.79 C10+ MW(lb/lbmol) : 140.24 -- Low Pressure Oil ------No. Component Molet Wtt H2S 0.0000 0.0000 1 0.0000 0.0000 0.0140 0.0055 2 02 3 CO2 0.0000 0.0000 4 N2 0.1771 C1 5 1.2410 C2 C3 1.1160 6 0.2986 0.6326 7 0.8900 0.4603 1.5600 0.8068 1.6000 1.0273 1.7030 1.0934 0.9670 0.7414 i-C4 8 n-C4 i-C5 9 1.027: 1.0934 0.9670 0.7414 10.5110 9.3721 27.6200 28.0755 22.2340 25.3805 19.0540 23.777° 1.0330 4 10 n-C5 11 C6 12 13 C7 C8 14 15 C9 C10+ 16 17 Benzene 18 Toluene E-Benzene Xylenes n-C6 0.6270 0.5924 1.5670 1.4805 1.9220 1.4740 19 20 21 n-C6 0.0470 0.0478 22 224Trimethylp -- Sales Oil -----Production Rate (bbl/day) : 25.00 Days of Annual Operation : 365 API Gravity: 55.91Reid Vapor Pressure (psia): 6.20Ambient Pressure (psia): 12.40Ambient Temperature (F): 70.0 \*\*\*\*\*\* Calculation Results -- Emission Summary -----Uncontrolled

|                                   | ton              |
|-----------------------------------|------------------|
| Total HAPs                        | 0.2550           |
| Total HC                          | 8.1890           |
| VOCs, C2+                         | 6.2680           |
| VOCs, C3+                         | 4.3700           |
| CO2                               | 0.0500           |
| CH4                               | 1,9210           |
|                                   |                  |
| Uncontrolled Recove               | ery Information: |
| Vapor (mscfd) :                   | 0.5406           |
| HC Vapor (mscfd) :                | 0.5382           |
| CO2 (mscfd) :                     | 0.000            |
| CH4 (mscfd) :                     | 0.2500           |
| GOR (SCF/STB) :                   | 21,6240          |
|                                   |                  |
| Emission Composi                  | tion             |
| NoComponent                       | Uncontrolled     |
| _                                 | ton              |
| 1 H2S                             | 0.0000           |
| 2 02                              | 0,0000           |
| 3 CO2                             | 0.0500           |
| 4 N2                              | 0.0000           |
| 5 C1                              | 1.9210           |
| 6 C2                              | 1.8970           |
| 7 C3                              | 1.6590           |
| 8 i-C4                            | 0.5590           |
| 9 n-C4                            | 0.6850           |
| 10 i-C5                           | 0.3550           |
| 11 n-C5                           | 0.2840           |
| 12 C6                             | 0.0600           |
| 13 Benzene                        | 0.0460           |
| 14 Toluene                        | 0.0730           |
| 15 E-Benzene                      | 0.0040           |
| 16 Xylenes                        | 0.0090           |
| 17 n-C6                           | 0.1210           |
| 18 224Trimethylp                  | 0,0010           |
| 19 Pseudo Compl                   | 0.4030           |
| 20 Pseudo Comp2                   | 0.0840           |
| 21 Pseudo Comp3                   | 0.0230           |
| 22 Pseudo Comp4                   | 0.0030           |
| 23 Pseudo Comp5                   | 0.0000           |
| 24 Total                          | 8.2370           |
| Annual Angel (Angel Congregation) |                  |

| No | Component     | MW       | LP Oil  | Flash Oil | Sales Oil | Flash Gas | W&S Gas | Total Emission |
|----|---------------|----------|---------|-----------|-----------|-----------|---------|----------------|
|    |               | lb/lbmol | mole %  | mole %    | mole %    | mole %    | mole %  | mole %         |
|    | H2S           | 34.80    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 2  | 02            | 32.00    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 3  | CO2           | 44.01    | 0.0140  | 0.0050    | 0.0030    | 0.4532    | 0.3716  | 0.4397         |
| 4  | N2            | 28.01    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 5  | C1            | 16.04    | 1.2410  | 0.2213    | 0.0784    | 51.0125   | 20.9571 | 46.0144        |
| 6  | C2            | 30.07    | 1.1160  | 0.6568    | 0.5192    | 23.5275   | 27.8170 | 24.2408        |
| 7  | C3            | 44.10    | 1.6120  | 1.3781    | 1.2818    | 13.0292   | 21.5953 | 14.4537        |
| 8  | i-C4          | 58.12    | 0.8900  | 0.8427    | 0.8181    | 3.1993    | 6.1755  | 3.6942         |
| 9  | n-C4          | 58.12    | 1.5600  | 1.5133    | 1.4842    | 3.8380    | 7.9710  | 4.5253         |
| 10 | i-C5          | 72.15    | 1.6000  | 1.6013    | 1.5929    | 1.5376    | 3.6531  | 1.8894         |
| 11 | n-C5          | 72.15    | 1.7030  | 1.7131    | 1.7082    | 1.2109    | 3.0310  | 1.5136         |
| 12 | C6            | 84.00    | 0.9670  | 0.9825    | 0.9849    | 0.2082    | 0.6140  | 0.2757         |
| 13 | Benzene       | 78.11    | 1.0330  | 1.0507    | 1.0539    | 0.1709    | 0.5181  | 0.2287         |
| 14 | Toluene       | 92.14    | 4.6820  | 4.7736    | 4.7952    | 0.2129    | 0.7676  | 0.3051         |
| 15 | E-Benzene     | 106.17   | 0.6270  | 0.6397    | 0.6428    | 0.0093    | 0.0389  | 0.0142         |
| 16 | Xylenes       | 106.17   | 1.5670  | 1.5987    | 1.6067    | 0.0199    | 0.0856  | 0.0309         |
| 17 | n-C6          | 86.18    | 1.9220  | 1.9531    | 1.9579    | 0.4065    | 1.2045  | 0.5392         |
| 18 | 224Trimethylp | 114.23   | 0.0470  | 0.0479    | 0.0481    | 0.0036    | 0.0116  | 0.0049         |
| 19 | Pseudo Compl  | 103.97   | 38,1310 | 38.8925   | 39.0785   | 0.9617    | 4.1383  | 1.4900         |
| 20 | Pseudo Comp2  | 121.00   | 22.2340 | 22.6863   | 22.8018   | 0.1575    | 0.8053  | 0.2652         |
| 21 | Pseudo Comp3  | 134.00   | 13.1451 | 13.4137   | 13,4831   | 0.0363    | 0.2111  | 0.0654         |

| 22 Pseudo Comp4 147.00<br>23 Pseudo Comp5 167.47 | 4.0765<br>1.8324 | 4.1599<br>1.8699    | 4.1816<br>1.8797    | 0.0045             | 0.0295<br>0.0038 | 0.0086<br>0.0010        |
|--------------------------------------------------|------------------|---------------------|---------------------|--------------------|------------------|-------------------------|
| MW (lb/lbmol):                                   | LP Oil<br>108.25 | Flash Oil<br>109.87 | Sales Oil<br>110.24 | Flash Gas<br>29.41 | W&S Gas<br>42.88 | Total Emission<br>31.65 |
| Stream Mole Ratio:                               | 1.0000           | 0.9799              | 0.9748              | 0.0201             | 0.0040           | 0.0241                  |
| Stream Weight Ratio:                             | 108.25           | 107.66              | 107.46              | 0.59               | 0.17             | 0.76                    |
| Total Emission (ton):                            |                  |                     |                     | 6.383              | 1.856            | 8.239                   |
| Heating Value (BTU/scf):                         |                  |                     |                     | 1715.55            | 2435.89          | 1835.34                 |
| Gas Gravity (Gas/Air):                           |                  |                     |                     | 1.02               | 1.48             | 1.09                    |
| Bubble Pt. @100F (psia):                         | 51.87            | 15.86               | 10.28               |                    |                  |                         |
| RVP @100F (psia):                                | 14.84            | 7.50                | 6.17                |                    |                  |                         |
| Spec. Gravity @100F:                             | 0.73             | 0.73                | 0.73                |                    |                  |                         |



Specific Gravity at 60 °F Api Gravity at 60 °F Molecular Weight Pounds per Gallon (in Vacuum) Pounds per Gallon (in Air) Cu. Ft. Vapor per Gallon @ 14.65 psia

0.7876 48.149 140.237 6.567 6.560 17.826

SPL, Inc.

2440 Chambers Street

Daulle I. L. m. Ju.

110.998

6.174

6.167

21.041

Southern Petroleum Laboratories, Inc.



Certificate of Analysis Number: 3040-12120196-004A Venus Laboratory 2440 Chambers Street, Suite A Venus, TX 76084

Jan. 09, 2013

Rykki Tepe 810 Houston Street Fort Worth, Texas 76102

Station Name: RBU 18-10E Station Number: RS0686RF Station Location: Unitah County Sample Point: Separator Sampled By: J.Petree Sample Of: Condensate Spot Sample Date: 12/10/2012 Sample Conditions:60 °F Cylinder No: Tin Can

## **Analytical Data**

| Test                         | Method     | Result | Units | Detection Lab<br>Limit Tech. | Analysis<br>Date |
|------------------------------|------------|--------|-------|------------------------------|------------------|
| Reid Vapor Pressure @ 100°F  | ASTM D-323 | 6.2    | psia  | TF                           | 01/02/2013       |
| API Gravity @ 60° F          |            | 55.91  | API   | TF                           | 01/02/2013       |
| API Specific Gravity @ 60° F |            | 0.7551 | ° API | TF                           | 01/02/2013       |

| XTO Energy Inc. Tap-1       | Gas-Operated Pumps            | VOC    | CO2    | CH4    |
|-----------------------------|-------------------------------|--------|--------|--------|
| Sandaisen Network Can Duman | Fuel Usage (SCFD) - Measured  | 6000   | 6000   | 6000   |
| Sandpiper Natural Gas Pumps | Fuel Usage (SCFM)             | 4.17   | 4.17   | 4.17   |
|                             | MW Nat'l Gas (lb/lbmol)       | 20     | 20     | 20     |
|                             | Conversion Factor (scf/lbmol) | 379    | 379    | 379    |
| Colordation to outs         | Conversion Factor (lb/ton)    | 2000   | 2000   | 2000   |
| Calculation Inputs          | Operating Time (days)         | 365    | 365    | 365    |
|                             | Operating time (min)          | 525600 | 525600 | 525600 |
|                             | Constituent Weight (%)        | 14%    | 1%     | 75%    |
| Sandpiper Natural Gas Pumps | Total VOCs (using SCFM) TPY   | 7.84   | 0.51   | 43.19  |

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## XTO ENERGY INC. - TAP-1 COMPRESSOR STATION PUMP EMISSIONS

| Gas Analysis             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |                  |          |          |                                                                                                                  |                                                                                                                                     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|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------|----------|----------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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| Conversion of Mole Perce | ent to Weight Perce                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | nt  |                  |          |          |                                                                                                                  | and an other state and a second state of a state of the second sta | arrange - Andreas Andreas Andreas - Andreas | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| PUMP Calculations        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |                  |          |          | anna Anna ann an Anna an Anna an                                                                                 |                                                                                                                                     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| Specific Gravity         | and the second se |     | Molecular Weight | 18.8962  | wt %     |                                                                                                                  | Annania af Annania (annania) ann ann ann ann ann ann ann ann ann a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Gross BTU                | 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     | NMHC             | 4.5104   | 23.8696% |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     | VOCs (NMNEHC)    | 2.5624   | 13.560%  |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     | HAPs             | 0.1449   | 0.77%    |                                                                                                                  |                                                                                                                                     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| Component                | Mole %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | MW  | MW               | Weight % |          | SITEWIDE                                                                                                         | PUMP VOC TOTALS                                                                                                                     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| Carbon Dioxide           | 0.3807                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 44  | 0.1675           | 0.886%   |          |                                                                                                                  |                                                                                                                                     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| Nitrogen                 | 0.3386                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 28  | 0.0948           | 0.502%   |          |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | wt%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | HAP tpy - 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| Methane                  | 88.2714                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16  | 14.1234          | 74.742%  |          |                                                                                                                  | Toluene                                                                                                                             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| Ethane                   | 6.4936                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 30  | 1.9481           | 10.309%  |          |                                                                                                                  | Ethylbenzene                                                                                                                        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| Propane                  | 2.3620                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 44  | 1.0393           | 5.500%   |          |                                                                                                                  | Xylenes                                                                                                                             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| Iso-Butane               | 0.4894                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 58  | 0.2839           | 1.502%   |          |                                                                                                                  | TOTAL HAPS                                                                                                                          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| N-Butane                 | 0.5998                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 58  | 0.3479           | 1.841%   |          |                                                                                                                  | ninihanan sa                                                                                                                        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| Iso-Pentane              | 0.2534                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 72  | 0.1824           | 0.966%   |          |                                                                                                                  |                                                                                                                                     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| N-Pentane                | 0.2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 72  | 0.1452           | 0.768%   |          |                                                                                                                  | an an the second se                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | andersenting performance and destructions of a second second second second second second second second second s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ning to Mandala system menters in the management of the provide state of the second of the Application Application of the Application Application of the Application Application Application of the Application Applic |
| Methylcyclopentane       | 0.0079                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 86  | 0.0068           | 0.036%   |          | A MARINE AND A DECEMBER OF A |                                                                                                                                                                                                                         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| n-Hexane                 | 0.0962                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 86  | 0.0827           | 0.438%   |          |                                                                                                                  |                                                                                                                                     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| Hexane +                 | 0.1446                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 86  | 0.1244           | 0.658%   |          |                                                                                                                  | - Construction Construction                                                                                                         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| 2,4-Dimethylpentane      | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 100 | 0.0000           | 0.000%   |          | Anna an an Allandar an                                                                                           |                                                                                                                                     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| Methycyclohexane         | 0.0749                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 96  | 0.0719           | 0.381%   |          |                                                                                                                  |                                                                                                                                     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| Benzene                  | 0.0276                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 78  | 0.0215           | 0.114%   |          |                                                                                                                  |                                                                                                                                     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| Cyclohexane              | 0.0498                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 84  | 0.0418           | 0.221%   |          |                                                                                                                  |                                                                                                                                     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| n-Heptane                | 0.1100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 100 | 0.1100           | 0.582%   |          |                                                                                                                  |                                                                                                                                     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| 1                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |                  |          | WT %'s   |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                      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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

### RBU 6-15E, 7-15E, and 11-15E WELLSITE NATURAL GAS FUELED HEATER EMISSIONS

Company: XTO ENERGY INC. Facility Name: RBU 6-15E, 7-15E, and 11-15E Facility Location: Uintah County, Utah

|                                 | HEATER                   | HEATER                                                                                                          | FUEL                    | HOURS OF                | FUEL                | N                                 | Ox                     | C                                 | 0                      |
|---------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|---------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION           | SIZE<br>(MBtu/hr)        | EFFICIENCY                                                                                                      | HEAT VALUE<br>(Btu/scf) | OPERATION<br>(hrs/year) | USAGE<br>(MMscf/yr) | EF AP-42 <sup>1</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>1</sup><br>ib/MMscf | EMISSIONS<br>(tons/yr) |
| 6-15E TEG Dehy-Glycol Reboiler  | 0                        | 0.8                                                                                                             | 1106                    | 8760                    | 0.000               | 100.0                             | 0.00                   | 84.0                              | 0.00                   |
| 7-15E TEG Dehy Glycol Reboiler  | 0                        | 0.8                                                                                                             | 1106                    | 8760                    | 0.000               | 100.0                             | 0.00                   | 84.0                              | 0.00                   |
| 11-15E TEG Dehy Glycol Reboiler | 175                      | 0.8                                                                                                             | 1106                    | 8760                    | 1.732               | 100.0                             | 0.09                   | 84.0                              | 0.08                   |
| 6-15E Tank Heater               | 250                      | 0.8                                                                                                             | 1106                    | 8760                    | 2.475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
| 7-15E Tank Heater               | 250                      | 0.8                                                                                                             | 1106                    | 8760                    | 2,475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
| 11-15E Tank Heater              | 250                      | 0.8                                                                                                             | 1106                    | 8760                    | 2.475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
| 3-15E Separator Heater          | 75                       | 0.8                                                                                                             | 1106                    | 8760                    | 0.742               | 100.0                             | 0.04                   | 84.0                              | 0.03                   |
| 7-15E Separator Heater          | 75                       | 0.8                                                                                                             | 1106                    | 8760                    | 0.742               | 100.0                             | 0.04                   | 84.0                              | 0.03                   |
| 11-15E Separator Heater         | 250                      | 0.8                                                                                                             | 1106                    | 8760                    | 2.475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
|                                 | The second second second | and an an an and a second s |                         | TOTALS                  | 13.116              |                                   | 0.690                  |                                   | 0.580                  |

|                                                                           | Т                                 | 00                     | VOC                    | PM 10                             |                        | Forma                             | ldehyde                |
|---------------------------------------------------------------------------|-----------------------------------|------------------------|------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION                                                     | EF AP-42 <sup>2</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>2</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>3</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) |
| 6-15E TEG Dehy Glycol Reboiler                                            | 11.0                              | 0.00                   | 0.00                   | 7.6                               | 0.00                   | 7.50E-02                          | 0.0000                 |
| 7 15E TEG Dehy Glycel Rebeiler                                            | 11.0                              | 0.00                   | 0.00                   | 7.6                               | 0.00                   | 7.50E-02                          | 0.0000                 |
| 11-15E TEG Dehy Glycol Reboiler                                           | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| 6-15E Tank Heater                                                         | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| 7-15E Tank Heater                                                         | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| 11-15E Tank Heater                                                        | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| 6-15E Separator Heater                                                    | 11.0                              | 0.00                   | 0.00                   | 7.6                               | 0.00                   | 7.50E-02                          | 0.0000                 |
| 7-15E Separator Heater                                                    | 11.0                              | 0.00                   | 0.00                   | 7.6                               | 0.00                   | 7.50E-02                          | 0.0000                 |
| 11-15E Separator Heater                                                   | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| lan an taon ann an tao tao an tao ann an 1876. An 1877 ann an ann an 1877 | TOTALS                            | 0.05                   | 0.05                   |                                   | 0.05                   |                                   | 0.00                   |

Criteria emissions rounded to the nearest 1/100 of a ton, VOC/HAP rounded to 1/1000 of a ton.

EF AP-42<sup>1</sup> = emission factor from AP-42 Table 1.4-1, Small Boilers <100 MMbtu/hr (EPA 7/98), Standard = 1,020 Btu/scf

EF AP-42<sup>2</sup> = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

EF AP-42<sup>3</sup> = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

Fuel Consumption (MMscf/yr) = Heater Size (MBtu/hr) \* 1,000 (Btu/MBtu) \* Hours of Operation (hrs/yr)

Fuel Heat Value (Btu/scf) \* 1,000,000 (scf/MMscf) \* Heater Efficiency

NOx/CO/TOC Emissions (tons/yr) = AP-42 EF (lbs/MMscf) \* Fuel Consumption (MMscf/yr) \* (Fuel Heat Value/ Standard Fuel Heat Value) / 2,000 (lbs/ton) -Standard Fuel Heat Value, Natural Gas (AP-42, 7/98, p1.4-5) = 1,020 Btu/scf

VOC emissions assumed equal to TOC emissions

| Uintah Wellsite Heat          | Trace Pumps - VOC             | RBU 11-15E                                                                                                      | RBU 7-15E | RBU 6-15E |
|-------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------|-----------|
| Can dair an Natural Can Dumpa | Fuel Usage (SCFD) - Measured  | 6000                                                                                                            |           | 6000      |
| Sandpiper Natural Gas Pumps   | Fuel Usage (SCFM)             | 4.17                                                                                                            |           | 4.17      |
|                               | Fuel Usage (SCFH) - Spec      |                                                                                                                 | 40.00     | 0.00      |
| Kold Katcher HT-48 Pumps      | Fuel Usage (SCFM)             |                                                                                                                 | 0.67      | 0.00      |
|                               | MW Nat'l Gas (lb/lbmol)       | 18.2                                                                                                            | 18.2      | 18.2      |
|                               | Conversion Factor (scf/lbmol) | 379                                                                                                             | 379       | 379       |
| Coloriation Innuts            | Conversion Factor (lb/ton)    | 2000                                                                                                            | 2000      | 2000      |
| Calculation Inputs            | Operating Time (days)         | 365                                                                                                             | 365       | 365       |
|                               | Operating time (min)          | 525600                                                                                                          | 525600    | 525600    |
|                               | Weight NMNEVOCs (%)           | 10%                                                                                                             | 10%       | 10%       |
| Sandpiper Natural Gas Pumps   | Total VOCs (using SCFM) TPY   | 5.08                                                                                                            |           | 5.08      |
| Kold Katchers H-48 Pumps      | Total VOCs (using SCFM) TPY   | in the second | 0.81      | 0.00      |

| Uintah Wellsite Heat         | Trace Pumps - CO2             | RBU 11-15E                                                                                                                                                         | RBU 7-15E | RBU 6-15E |
|------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|
| Candalaan Natural Can Durana | Fuel Usage (SCFD) - Measured  | 6000                                                                                                                                                               |           | 6000      |
| Sandpiper Natural Gas Pumps  | Fuel Usage (SCFM)             | d     6000       4.17       40.00       0.67       18.2       18.2       379       379       2000       2000       365       365       525600       1%       40.00 | 4.17      |           |
|                              | Fuel Usage (SCFH) - Spec      |                                                                                                                                                                    | 40.00     | 0.00      |
| Kold Katcher HT-48 Pumps     | Fuel Usage (SCFM)             |                                                                                                                                                                    | 0.67      | 0.00      |
|                              | MW Nat'l Gas (lb/lbmol)       | 18.2                                                                                                                                                               | 18.2      | 18.2      |
|                              | Conversion Factor (scf/lbmol) | 379                                                                                                                                                                | 379       | 379       |
| Coloriation Increte          | Conversion Factor (lb/ton)    | 2000                                                                                                                                                               | 2000      | 2000      |
| Calculation Inputs           | Operating Time (days)         | 365                                                                                                                                                                | 365       | 365       |
|                              | Operating time (min)          | 525600                                                                                                                                                             | 525600    | 525600    |
|                              | Weight CO2 (%)                | 1%                                                                                                                                                                 | 1%        | 1%        |
| Sandpiper Natural Gas Pumps  | Total CO2 (using SCFM) TPY    | 0.40                                                                                                                                                               | ( i) (i)  | 0.40      |
| Kold Katchers H-48 Pumps     | Total CO2 (using SCFM) TPY    |                                                                                                                                                                    | 0.06      | 0.00      |

| Uintah Wellsite Heat                             | Trace Pumps - CH4             | RBU 11-15E | RBU 7-15E | RBU 6-15E |
|--------------------------------------------------|-------------------------------|------------|-----------|-----------|
|                                                  | Fuel Usage (SCFD) - Measured  | 6000       |           | 6000      |
| Sandpiper Natural Gas Pumps                      | Fuel Usage (SCFM)             | 4.17       |           | 4.17      |
| Kald Katakan UT 40 Dumma                         | Fuel Usage (SCFH) - Spec      |            | 40.00     | 0.00      |
| Kold Katcher HT-48 Pumps                         | Fuel Usage (SCFM)             |            | 0.67      | 0.00      |
| ny anna an an anna an anna an anna an anna an an | MW Nat'l Gas (lb/lbmol)       | 18.2       | 18.2      | 18.2      |
|                                                  | Conversion Factor (scf/lbmol) | 379        | 379       | 379       |
| Coloulation Innuts                               | Conversion Factor (lb/ton)    | 2000       | 2000      | 2000      |
| Calculation Inputs                               | Operating Time (days)         | 365        | 365       | 365       |
|                                                  | Operating time (min)          | 525600     | 525600    | 525600    |
|                                                  | Weight CH4 (%)                | 81%        | 81%       | 81%       |
| Sandpiper Natural Gas Pumps                      | Total CH4 (using SCFM) TPY    | 42.29      |           | 42.29     |
| Kold Katchers H-48 Pumps                         | Total CH4 (using SCFM) TPY    |            | 6.77      | 0.00      |

\*NOTE: RBU 6-15E PUMPS RUN ON INSTRUMENT AIR

#### POTENTIAL UNCONTROLLED EMISSIONS

Company: XTO ENERGY INC. Facility Name: 11-15E Wellsite Facility Location: Uintah County, Utah

> Unit: TEG Dehydrator at 11-15E wellsite Rating: 0.20 MMscf/day total; 4015 Pump at maximum glycol pump rate

| Unit             | Gas Flow    |           |           |           |              |           |           |           | Total     | Total     |          |          |
|------------------|-------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|----------|----------|
| Description      | Rate        | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | HAPs      | BTEX      | CO2      | Methane  |
|                  | (MMscf/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (MT/yr)* | (MT/yr)* |
| Dehy w/4015 pump | 0.20        | 10.54     | 1.0440    | 1.7200    | 0.0710       | 0.8830    | 0.163     | 0.022     | 3.9030    | 3.7180    | 0.1003   | 1.8018   |
| TOTAL            |             | 10.540    | 1.044     | 1.720     | 0.071        | 0.883     | 0.163     | 0.022     | 3.903     | 3.718     | 0.100    | 1.802    |

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GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: 11-15E Wellsite Dehy - PTE 2017 File Name: W:¥EHS¥Environmental¥Air¥Areas of Operation¥Utah¥\_MSO¥RBU Dehy¥Title V¥EPA RBU Dehy 2016-20 17 Questions¥RBU 11-15E¥RB 11-15E Dehy - PTE 2017.ddf Date: May 30, 2017

#### DESCRIPTION:

Description: Throughput = 0.20 mmSCFD Gas Analysis: 08/03/10 for RBU 6-18F 4015 glycol pump @ 0.68 GPM No Flash Tank, No Controls

Annual Hours of Operation: 8760.0 hours/yr

#### EMISSIONS REPORTS:

#### UNCONTROLLED REGENERATOR EMISSIONS

| Component                   | lbs/hr                                                                              | lbs/day | tons/yr  |
|-----------------------------|-------------------------------------------------------------------------------------|---------|----------|
| Methane                     | $\begin{array}{c} 0.\ 4117\\ 0.\ 0910\\ 0.\ 0733\\ 0.\ 0325\\ 0.\ 0484 \end{array}$ | 9.880   | 1.8031   |
| Ethane                      |                                                                                     | 2.185   | 0.3987   |
| Propane                     |                                                                                     | 1.759   | 0.3210   |
| Isobutane                   |                                                                                     | 0.781   | 0.1425   |
| n-Butane                    |                                                                                     | 1.161   | 0.2118   |
| Isopentane                  | 0.0338                                                                              | 0.810   | 0. 1479  |
| n-Pentane                   | 0.0308                                                                              | 0.740   | 0. 1350  |
| n-Hexane                    | 0.0372                                                                              | 0.892   | 0. 1627  |
| Cyclohexane                 | 0.0925                                                                              | 2.220   | 0. 4052  |
| Other Hexanes               | 0.0422                                                                              | 1.013   | 0. 1849  |
| Heptanes                    | 0. 1416                                                                             | 3. 398  | 0.6202   |
| Methylcyclohexane           | 0. 2147                                                                             | 5. 153  | 0.9404   |
| 2,2,4-Trimethylpentane      | 0. 0050                                                                             | 0. 120  | 0.0219   |
| Benzene                     | 0. 2384                                                                             | 5. 722  | 1.0443   |
| Toluene                     | 0. 3931                                                                             | 9. 434  | 1.7217   |
| Ethylbenzene                | 0.0161                                                                              | 0.388   | 0.0707   |
| Xylenes                     | 0.2016                                                                              | 4.838   | 0.8829   |
| C8+ Heavies                 | 0.8056                                                                              | 19.333  | 3.5283   |
| Total Emissions             | 2.9094                                                                              | 69.826  | 12.7433  |
| Total Hydrocarbon Emissions | 2.9094                                                                              | 69.826  | 12. 7433 |
| Total VOC Emissions         | 2.4067                                                                              | 57.762  | 10. 5415 |
| Total HAP Emissions         | 0.8914                                                                              | 21.393  | 3. 9042  |
| Total BTEX Emissions        | 0.8492                                                                              | 20.381  | 3. 7196  |

#### EQUIPMENT REPORTS:

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#### ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

| Calculated Absorber Stages:<br>Calculated Dry Gas Dew Point:                                                                                                                           | 1.25<br>6.91                                    | lbs. H20/MMSCF |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------|
| Temperature:<br>Pressure:<br>Dry Gas Flow Rate:<br>Glycol Losses with Dry Gas:<br>Wet Gas Water Content:<br>Calculated Wet Gas Water Content:<br>Calculated Lean Glycol Recirc. Ratio: | 80.0<br>0.2000<br>0.0006<br>Saturated<br>277.68 | MMSCF/day      |

| Component              | Remaining<br>in Dry Gas | Absorbed<br>in Glycol |
|------------------------|-------------------------|-----------------------|
| Water                  | 2.47%                   | 97.53%                |
| Carbon Dioxide         | 99.34%                  | 0.66%                 |
| Nitrogen               | 99.96%                  | 0.04%                 |
| Methane                | 99.96%                  | 0.04%                 |
| Ethane                 | 99.83%                  | 0.17%                 |
| Propane                | 99.62%                  | 0.38%                 |
| Isobutane              | 99.34%                  | 0.66%                 |
| n-Butane               | 99.08%                  | 0.92%                 |
| Isopentane             | 98.84%                  | 1.16%                 |
| n-Pentane              | 98.48%                  | 1.52%                 |
| n-Hexane               | 96.84%                  | 3.16%                 |
| Cyclohexane            | 87.11%                  | 12.89%                |
| Other Hexanes          | 97.70%                  | 2.30%                 |
| Heptanes               | 92.61%                  | 7.39%                 |
| Methylcyclohexane      | 82.49%                  | 17.51%                |
| 2,2,4-Trimethylpentane | 96.47%                  | 3.53%                 |
| Benzene                | 40.01%                  | 59.99%                |
| Toluene                | 25.49%                  | 74.51%                |
| Ethylbenzene           | 13.64%                  | 86.36%                |
| Xylenes                | 9.23%                   | 90.77%                |
| C8+ Heavies            | 56.74%                  | 43.26%                |

#### REGENERATOR

No Stripping Gas used in regenerator.

| Component      | Remaining<br>in Glycol | Distilled<br>Overhead |
|----------------|------------------------|-----------------------|
| Water          | 62.72%                 | 37.28%                |
| Carbon Dioxide | 0.00%                  | 100.00%               |
| Nitrogen       | 0.00%                  | 100.00%               |
| Methane        | 0.00%                  | 100.00%               |
| Ethane         | 0.00%                  | 100.00%               |
| Propane        | 0.00%                  | 100.00%               |
| Isobutane      | 0.00%                  | 100.00%               |
| n-Butane       | 0.00%                  | 100.00%               |
| Isopentane     | 0.46%                  | 99.54%                |
| n-Pentane      | 0.47%                  | 99.53%                |
| n-Hexane       | 0. 49%                 | 99. 51%               |
| Cyclohexane    | 3. 18%                 | 96. 82%               |

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|                        |        | Page:               |
|------------------------|--------|---------------------|
| Other Hexanes          | 0.96%  | 99.04%              |
| Heptanes               | 0.49%  | 99.51%              |
| Methylcyclohexane      | 3.98%  | 96.02%              |
|                        | 1.46%  | 98.54%              |
| 2,2,4-Trimethylpentane |        |                     |
| Benzene                | 4.99%  | 95.01%              |
| Toluene                | 7.89%  | 92.11%              |
| Ethylbenzene           | 10.39% | 89.61%              |
| Xylenes                | 12.89% | 87.11%              |
|                        |        | 22 220 <sup>(</sup> |
| C8+ Heavies            | 11.98% | 88.02%              |

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#### STREAM REPORTS:

#### WET GAS STREAM

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| Temperature: 82.00 deg. F<br>Pressure: 94.70 psia<br>Flow Rate: 8.39e+003 scfh |                                                                                                                 |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Component                                                                      | Conc. Loading<br>(vol%) (lb/hr)                                                                                 |
| Carbon Dioxide<br>Nitrogen<br>Methane                                          | 5.85e-001 2.33e+000<br>3.12e-001 3.04e+000<br>1.21e-001 7.52e-001<br>9.07e+001 3.22e+002<br>5.23e+000 3.48e+001 |
| Isobutane<br>n-Butane<br>Isopentane                                            | 1.59e+000 1.55e+001<br>3.36e-001 4.32e+000<br>3.74e-001 4.80e+000<br>1.69e-001 2.70e+000<br>1.20e-001 1.91e+000 |
| Cyclohexane<br>Other Hexanes<br>Heptanes                                       | 6.00e-002 1.14e+000<br>3.83e-002 7.13e-001<br>9.28e-002 1.77e+000<br>8.54e-002 1.89e+000<br>5.62e-002 1.22e+000 |
| Toluene<br>Ethylbenzene                                                        | 5.47e-003 1.38e-001<br>2.30e-002 3.97e-001<br>2.58e-002 5.27e-001<br>7.95e-004 1.87e-002<br>9.44e-003 2.22e-001 |
| C8+ Heavies                                                                    | 4.93e-002 1.86e+000                                                                                             |
| Total Components                                                               | 100.00 4.02e+002                                                                                                |

# DRY GAS STREAM

| - |                                         |                             |      |   |                 |                    |  |
|---|-----------------------------------------|-----------------------------|------|---|-----------------|--------------------|--|
|   | Temperature:<br>Pressure:<br>Flow Rate: | 82.00<br>94.70<br>8.33e+003 | psia | F |                 |                    |  |
|   |                                         | Component                   |      |   | Conc.<br>(vol%) | Loading<br>(lb/hr) |  |
|   |                                         |                             |      |   |                 |                    |  |

Water 1.46e-002 5.76e-002 Carbon Dioxide 3.13e-001 3.02e+000 Nitrogen 1.22e-001 7.52e-001 Methane 9.13e+001 3.22e+002 Ethane 5.26e+000 3.48e+001 Propane 1.59e+000 1.54e+001 Isobutane 3.36e-001 4.29e+000 n-Butane 3.73e-001 4.76e+000 Isopentane 1.69e-001 2.67e+000 n-Pentane 1.19e-001 1.88e+000 n-Hexane 5.86e-002 1.11e+000 Cyclohexane 3.36e-002 6.21e-001 Other Hexanes 9.13e-002 1.73e+000 Heptanes 7.97e-002 1.75e+000 Methylcyclohexane 4.67e-002 1.01e+000 2,2,4-Trimethylpentane 5.31e-003 1.33e-001 Benzene 9.26e-003 1.59e-001 Toluene 6.64e-003 1.34e-001 Ethylbenzene 1.09e-004 2.55e-003 Xylenes 8.78e-004 2.05e-002 C8+ Heavies 2.82e-002 1.05e+000 100.00 3.97e+002 Total Components

LEAN GLYCOL STREAM

| Temperature: 82.00 deg. F<br>Flow Rate: 6.80e-001 gpm |                                                               |                                        |
|-------------------------------------------------------|---------------------------------------------------------------|----------------------------------------|
| Component                                             | Conc.<br>(wt%)                                                | Loading<br>(lb/hr)                     |
| Water<br>Carbon Dioxide<br>Nitrogen                   | 9.89e+001<br>1.00e+000<br>5.28e-013<br>7.77e-015<br>1.13e-018 | 3.83e+000<br>2.02e-012<br>2.97e-014    |
| Propane<br>Isobutane                                  | 7.45e-009<br>6.34e-010<br>2.25e-010<br>2.86e-010<br>4.12e-005 | 2. 43e-009<br>8. 62e-010<br>1. 09e-009 |
| n-Hexane<br>Cyclohexane<br>Other Hexanes              |                                                               | 1.82e-004<br>3.04e-003<br>4.11e-004    |
|                                                       | 1.94e-005<br>3.27e-003<br>8.80e-003                           | 7.42e-005<br>1.25e-002<br>3.37e-002    |
| C8+ Heavies                                           |                                                               | 1.10e-001                              |
| Total Components                                      | 100.00                                                        | 3,83e+002                              |

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RICH GLYCOL AND PUMP GAS STREAM

| Temperature: | 82.00 deg. F             |
|--------------|--------------------------|
| Pressure:    | 94.70 psia               |
| Flow Rate:   | 6.90e-001 gpm            |
| NOTE: Stream | has more than one phase. |
|              |                          |

| Component                                | Conc.<br>(wt%)                                                     | Loading<br>(lb/hr)                     |
|------------------------------------------|--------------------------------------------------------------------|----------------------------------------|
| Water<br>Carbon Dioxide<br>Nitrogen      | 9.76e+001<br>1.57e+000<br>5.90e-003<br>2.48e-004<br>1.06e-001      | 6.10e+000<br>2.29e-002<br>9.60e-004    |
| Propane<br>Isobutane                     | 2. 35e-002<br>1. 89e-002<br>8. 39e-003<br>1. 25e-002<br>8. 75e-003 | 7. 33e-002<br>3. 25e-002<br>4. 84e-002 |
| n-Hexane<br>Cyclohexane<br>Other Hexanes |                                                                    | 3.73e-002<br>9.56e-002<br>4.26e-002    |
|                                          | 1.31e-003<br>6.47e-002<br>1.10e-001                                | 5.07e-003<br>2.51e-001<br>4.27e-001    |
| Xylenes<br>C8+ Heavies                   | 5.97e-002<br>2.36e-001                                             |                                        |
| Total Components                         | 100.00                                                             | 3.88e+002                              |

REGENERATOR OVERHEADS STREAM

| Temperature: 212.00 deg. F<br>Pressure: 14.70 psia<br>Flow Rate: 6.80e+001 scfh |                                                               |                                     |
|---------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------|
| Component                                                                       | Conc.<br>(vol%)                                               | Loading<br>(lb/hr)                  |
| Carbon Dioxide<br>Nitrogen<br>Methane                                           | 7.05e+001<br>2.90e-001<br>1.91e-002<br>1.43e+001<br>1.69e+000 | 2.29e-002<br>9.60e-004<br>4.12e-001 |
| Isobutane<br>n-Butane<br>Isopentane                                             | 9.27e-001<br>3.12e-001<br>4.64e-001<br>2.61e-001<br>2.38e-001 | 3.25e-002<br>4.84e-002<br>3.38e-002 |
| Cyclohexane<br>Other Hexanes                                                    | 2.73e-001<br>7.88e-001                                        | 9.25e-002<br>4.22e-002<br>1.42e-001 |

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| 2, 2, 4-Trimethylpentane |           |           |
|--------------------------|-----------|-----------|
| Benzene                  | 1.70e+000 | 2.38e-001 |
| Toluene                  | 2.38e+000 | 3.93e-001 |
| Ethylbenzene             | 8.48e-002 | 1.61e-002 |
| Xylenes                  | 1.06e+000 | 2.02e-001 |
| C8+ Heavies              | 2.64e+000 | 8.06e-001 |
| Total Components         | 100.00    | 5.21e+000 |

## CONDENSATE TANK FLASH, WORKING, AND BREATHING EMISSIONS

Company: XTO ENERGY INC. Facility Name: Wellsites

Facility Location: Uintah County, Utah

| TANK<br>DESCRIPTION         | WORKING<br>LOSSES*<br>(lbs/yr) | BREATHING<br>LOSSES*<br>(Ibs/yr) | FLASH VOC<br>LOSSES**<br>(lbs/yr) | TOTAL VOC<br>LOSSES<br>(Ibs/yr) | TOTAL<br>LOSSES<br>(tons/yr) |
|-----------------------------|--------------------------------|----------------------------------|-----------------------------------|---------------------------------|------------------------------|
| 400-bbi storage tank 6-15E  | 518.94                         | 1782.92                          | 1400                              | 3701.86                         | 1.851                        |
| 400-bbl storage tank 7-15E  | 518.94                         | 1782.92                          | 1400                              | 3701.86                         | 1.851                        |
| 300-bbl storage tank 11-15E | 345.96                         | 1563.07                          | 934                               | 2843.03                         | 1.422                        |
| TOTAL                       | 1037.88                        | 3565.84                          | 3734                              | 10246.75                        | 5.12                         |

\*EPA TANKS 4.09D used to calculate emissions; please see attached documentation. \*\*E&P TANKS v3.0 used to calculate tank flash emissions; please see attached documentation.

#### **Condensate Tank Total Emissions**

| Condensate                  |           |           |           |              |                |           |           |           |           | Total     | Total     |
|-----------------------------|-----------|-----------|-----------|--------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Rate                        | VOCs      | Benzene   | Toluene   | Ethylbenzene | <b>Xylenes</b> | N-Hexane  | 224-TMP   | CO2       | CH4       | HAPs      | BTEX      |
| (bbls/day)                  | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr)      | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) |
| 400-bbl storage tank 6-15E  | 1.85      | 0.0060    | 0.0090    | 0.0000       | 0.0010         | 0.016     | 0.0000    | 0.012     | 0,498     | 0.0320    | 0.0160    |
| 400-bbl storage tank 7-15E  | 1.85      | 0.0060    | 0.0090    | 0.0000       | 0.0010         | 0.016     | 0.0000    | 0.012     | 0.498     | 0.0320    | 0.0160    |
| 300-bbl storage tank 11-15E | 1.42      | 0.0040    | 0.0060    | 0.0000       | 0.0010         | 0.011     | 0         | 0.008     | 0.332     | 0.0220    | 0.0110    |
| TOTAL                       | 5.12      | 0.02      | 0.02      | 0.000        | 0.00           | 0.04      | 0.000     | 0.032     | 1.33      | 0.09      | 0.04      |

6/29/2017

| ****     |                        | *****************                                                                       |
|----------|------------------------|-----------------------------------------------------------------------------------------|
|          | Project Setup Infor    |                                                                                         |
|          |                        | : W:\EHS\Environmental\Air\Areas of Operation\Utah\ MSO\RBU Dehy\Title V\EPA RBU Dehy 2 |
|          | sheet Selection        |                                                                                         |
|          | ulation Method         | : RVP Distillation                                                                      |
| Cont     | rol Efficiency         | : 0.00%                                                                                 |
| Know     | n Separator Stream     | : Low Pressure Oil                                                                      |
| Ente     | ring Air Composition   | : No                                                                                    |
| Сощр     | onent Group            | : C10+                                                                                  |
| File     | d Name                 | : RBU 6-15E                                                                             |
|          | Name                   | : Wasatch - Mesa Verde Representative Sample                                            |
| Well     | ID                     | : PTE for Permit                                                                        |
| Date     |                        | : 6/29/2017                                                                             |
| *        | Data Input             | ***************************************                                                 |
|          | ****************       | ************                                                                            |
|          | rator Pressure (psia)  |                                                                                         |
|          | rator Temperature (F)  |                                                                                         |
| C10+     |                        | : 0.79<br>: 140.24                                                                      |
| CI0+     | MW(1b/1bmo1)           | : 140.24                                                                                |
| L        | ow Pressure Oil        |                                                                                         |
| No.      | Component              | Mole% Wt%                                                                               |
| 1        | H2S                    | 0.0000 0.0000                                                                           |
| 2        | 02                     | 0.0000 0.0000                                                                           |
| 3        | CO2<br>N2              | 0.0140 0.0055                                                                           |
| 4<br>5   | C1                     | 0.0000 0.0000<br>1.2410 0.1771                                                          |
| 6        | C1<br>C2               | 1.1160 0.2986                                                                           |
| 7        | C3                     | 1.6120 0.6326                                                                           |
| 8        | i-C4                   | 0.8900 0.4603                                                                           |
| 9        | n-C4                   | 1.5600 0.8068                                                                           |
| 10       | i-C5                   | 1.6000 1.0273                                                                           |
| 11       | n-C5                   | 1.7030 1.0934                                                                           |
| 12       | C6                     | 0.9670 0.7414                                                                           |
| 13       | C7                     | 10.5110 9.3721                                                                          |
| 14       | C8                     | 27.6200 28.0755                                                                         |
| 15       | C9                     | 22.2340 25.3805                                                                         |
| 16       | C10+                   | 19.0540 23.7779                                                                         |
| 17<br>18 | Benzene                | 1.0330 0.7180<br>4.6820 3.8385                                                          |
| 19       | Toluene<br>E-Benzene   | 0.6270 0.5924                                                                           |
| 20       | Xylenes                | 1.5670 1.4805                                                                           |
| 21       | n-C6                   | 1.9220 1.4740                                                                           |
| 22       | 224Trimethylp          | 0.0470 0.0478                                                                           |
| 9        | ales Oil               |                                                                                         |
|          | uction Rate (bbl/day)  |                                                                                         |
|          | of Annual Operation    |                                                                                         |
| API      | Gravity                | : 55.91                                                                                 |
|          | l Vapor Pressure (psia |                                                                                         |
| Ambi     | ent Pressure (psia)    | : 12.10                                                                                 |
| Ambi     | ent Temperature (F)    | : 60.0                                                                                  |
| ****     | *****                  | **********************                                                                  |
| *        | Calculation Results    | 3 *                                                                                     |
| ****     | ******                 | ***************************************                                                 |
| E        | mission Summary        |                                                                                         |
| -        |                        | htrolled                                                                                |
|          |                        |                                                                                         |

| Total HAPs<br>Total HC<br>VOCs, C2+<br>VOCs, C3+ | ton<br>0.0320<br>1.6010<br>1.1030<br>0.7000 |
|--------------------------------------------------|---------------------------------------------|
| CO2<br>CH4                                       | 0.0120<br>0.4980                            |
| Girt                                             | 0.4500                                      |
| Uncontrolled Recove                              | ry Information:                             |
| Vapor (mscfd) :                                  | 0.1194                                      |
| HC Vapor (mscfd) :                               | 0.1188                                      |
| CO2 (mscfd) :                                    | 0.000.0                                     |
| CH4 (mscfd) :                                    | 0.0600                                      |
| GOR (SCF/STB) :                                  | 19.9000                                     |
|                                                  |                                             |
|                                                  | tion                                        |
| NoComponent                                      | Uncontrolled                                |
| 1                                                | ton                                         |
| 1 H2S                                            | 0.0000                                      |
| 2 02                                             | 0.0000                                      |
| 3 CO2                                            | 0.0120                                      |
| 4 N2                                             | 0.0000                                      |
| 5 C1                                             | 0.4980                                      |
| 6 C2                                             | 0.4030                                      |
| 7 C3                                             | 0.3050                                      |
| 8 i-C4                                           | 0.0950<br>0.1120                            |
| 9 n-C4<br>10 i-C5                                | 0.0540                                      |
| 10 1-C5                                          | 0.0420                                      |
| 12 C6                                            | 0.0080                                      |
| 13 Benzene                                       | 0.0060                                      |
| 14 Toluene                                       | 0.0090                                      |
| 15 E-Benzene                                     | 0.0000                                      |
| 16 Xylenes                                       | 0.0010                                      |
| 17 n-C6                                          | 0.0160                                      |
| 18 224Trimethylp                                 | 0.0000                                      |
| 19 Pseudo Compl                                  | 0.0420                                      |
| 20 Pseudo Comp2                                  | 0.0080                                      |
| 21 Pseudo Comp3                                  | 0.0020                                      |
| 22 Pseudo Comp4                                  | 0.0000                                      |
| 23 Pseudo Comp5                                  | 0.0000                                      |
| 24 Total                                         | 1.6130                                      |
|                                                  |                                             |

| 91 | tream Data    |          |         |           |           |           |         |                |
|----|---------------|----------|---------|-----------|-----------|-----------|---------|----------------|
|    | Component     | MW       | LP Oil  | Flash Oil | Sales Oil | Flash Gas | W&S Gas | Total Emission |
|    |               | lb/lbmol | mole %  | mole %    | mole %    | mole %    | mole %  | mole %         |
| 1  | H2S           | 34.80    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 2  | 02            | 32.00    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 3  | CO2           | 44.01    | 0.0140  | 0.0054    | 0.0036    | 0.4664    | 0.5054  | 0.4727         |
| 4  | N2            | 28.01    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 5  | C1            | 16.04    | 1.2410  | 0.2375    | 0.0425    | 54.1055   | 53.6562 | 54.0331        |
| 6  | C2            | 30.07    | 1.1160  | 0.6956    | 0.6119    | 23.2621   | 23.6341 | 23.3220        |
| 7  | C3            | 44.10    | 1.6120  | 1.4146    | 1.3758    | 12.0098   | 12.0481 | 12.0159        |
| 8  | i-C4          | 58.12    | 0.8900  | 0.8530    | 0.8457    | 2.8383    | 2.8462  | 2.8396         |
| 9  | n-C4          | 58.12    | 1.5600  | 1.5261    | 1.5195    | 3.3447    | 3.3511  | 3.3458         |
| 10 | i-C5          | 72.15    | 1.6000  | 1.6057    | 1.6069    | 1.2975    | 1.3002  | 1.2979         |
| 11 | n-C5          | 72.15    | 1.7030  | 1.7162    | 1.7187    | 1.0094    | 1.0113  | 1.0097         |
| 12 | C6            | 84.00    | 0.9670  | 0.9822    | 0.9852    | 0.1672    | 0.1675  | 0.1672         |
| 13 | Benzene       | 78.11    | 1.0330  | 1.0500    | 1.0534    | 0.1365    | 0.1361  | 0.1365         |
| 14 | Toluene       | 92.14    | 4.6820  | 4.7678    | 4.7846    | 0.1635    | 0.1631  | 0.1635         |
| 15 | E-Benzene     | 106.17   | 0.6270  | 0.6388    | 0.6411    | 0.0069    | 0.0069  | 0.0069         |
| 16 | Xylenes       | 106.17   | 1.5670  | 1.5965    | 1.6022    | 0.0147    | 0.0147  | 0.0147         |
| 17 | n-C6          | 86.18    | 1.9220  | 1.9523    | 1.9582    | 0.3260    | 0.3267  | 0.3261         |
| 18 | 224Trimethylp | 114.23   | 0.0470  | 0.0478    | 0.0480    | 0.0028    | 0.0028  | 0.0028         |
|    | Pseudo Compl  | 103.97   | 38.1310 | 38.8414   | 38.9806   | 0.7087    | 0.6954  | 0.7065         |
| 20 | Pseudo Comp2  | 121.00   | 22.2340 | 22.6539   | 22.7363   | 0.1116    | 0.1075  | 0.1110         |
| 21 | Pseudo Comp3  | 134.00   | 13.1451 | 13.3941   | 13.4430   | 0.0250    | 0.0236  | 0.0248         |

| 22 Pseudo Comp4 147.00<br>23 Pseudo Comp5 167.47 | 4.0765<br>1.8324 | 4.1538<br>1.8672 | 4.1689<br>1.8740 | 0.0030<br>0.0003 | 0.0028<br>0.0003 | 0.0030<br>0.0003 |
|--------------------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                                                  | LP Oil           | Flash Oil        | Sales Oil        | Flash Gas        | W&S Gas          | Total Emission   |
| MW (lb/lbmol):                                   | 108.25           | 109.78           | 110.08           | 28.05            | 28.11            | 28.06            |
| Stream Mole Ratio:                               | 1.0000           | 0.9814           | 0.9778           | 0.0186           | 0.0036           | 0.0222           |
| Stream Weight Ratio:                             | 108.25           | 107.73           | 107.63           | 0.52             | 0.10             | 0.62             |
| Total Emission (ton):                            |                  |                  |                  | 1.353            | 0.260            | 1.613            |
| Heating Value (BTU/scf):                         |                  |                  |                  | 1642.57          | 1645.06          | 1642.97          |
| Gas Gravity (Gas/Air):                           |                  |                  |                  | 0.97             | 0.97             | 0.97             |
| Bubble Pt. 0100F (psia):                         | 51.87            | 16.69            | 9.88             |                  |                  |                  |
| RVP @100F (psia):                                | 14.84            | 7.81             | 6.45             |                  |                  |                  |
| Spec. Gravity @100F:                             | 0.73             | 0.73             | 0.73             |                  |                  |                  |

Project Setup Information 

 Project File
 : W:\EHS\Environmental\Air\Areas of Operation\Utah\\_MSO\RBU Dehy\Title V\EPA RBU Dehy :

 Flowsheet Selection
 : Oil Tank with Separator

 Calculation Method
 : RVP Distillation

 Control Efficiency
 : 0.00%

 Known Separator Stream
 : Low Pressure Oil

 Entering Air Composition : No : C10+ Component Group Filed Name : RBU 7-15E 400 BBL tank Well Name : Wasatch - Mesa Verde Representative Sample Well ID : PTE for Permit Date : 6/29/2017 \* Data Input Separator Pressure (psia) : 190.00 Separator Pressure (psia) : 190.( Separator Temperature (F) : 60.0 C10+ SG : 0.79 C10+ MW(lb/lbmol) : 140.24 -- Low Pressure Oil ------Mole% Wt% No. Component 0.0000 0.0000 0.0000 H2S 1 02 2 3 CO2 0.0140 0.0055 N2 0.0000 0.0000 1.2410 0.1771 4 5 C1 6 C2 1.1160 0.2986 C3 1.6120 0.6326 0.8900 0.4603 1.5600 0.8068 7 8 i-C4  $\begin{array}{ccccccc} 1.5600 & 0.8068 \\ 1.6000 & 1.0273 \\ 1.7030 & 1.0934 \\ 0.9670 & 0.7414 \\ 10.5110 & 9.3721 \\ 27.6200 & 28.0755 \\ 22.2340 & 25.3805 \\ 19.0540 & 23.7779 \\ 1.0330 & 0.7180 \\ 4.6820 & 3.8385 \\ 0.6270 & 0.5924 \\ 1.5670 & 1.4805 \\ 1.9220 & 1.4740 \end{array}$ n-C4 9 10 i-C5 n-C5 11 C6 12 13 C7 C8 14 15 C9 C10+ 16 Benzene 17 E-Benzene Xylenes n-C6 Toluene 18 19 20 21 1.9220 1.4740 22 224Trimethylp 0.0470 0.0478 -- Sales Oil -----Production Rate (bbl/day) : 6.00 Days of Annual Operation : 365 API Gravity : 55.91 Reid Vapor Pressure (psia) : 6.20 Ambient Pressure (psia) : 12.10 Ambient Temperature (F) : 60.0 \*\*\*\*\*\*\*\*\* Calculation Results -- Emission Summary -----Uncontrolled

|                     | ton              |
|---------------------|------------------|
| Total HAPs          | 0.0320           |
| Total HC            | 1.6010           |
| VOCs, C2+           | 1.1030           |
| VOCs, C3+           | 0.7000           |
| CO2                 | 0.0120           |
| CH4                 | 0.4980           |
|                     |                  |
| Uncontrolled Recove | ery Information: |
| Vapor (mscfd) :     | 0.1194           |
| HC Vapor (mscfd) :  | 0.1188           |
| CO2 (mscfd) :       | 0.0000           |
| CH4 (mscfd) :       | 0.0600           |
| GOR (SCF/STB) :     | 19.9000          |
|                     |                  |
|                     | ition            |
| NoComponent         | Uncontrolled     |
|                     | ton              |
| 1 H2S               | 0.0000           |
| 2 02                | 0.0000           |
| 3 CO2               | 0.0120           |
| 4 N2                | 0.0000           |
| 5 C1                | 0.4980           |
| 6 C2                | 0.4030           |
| 7 C3                | 0.3050           |
| 8 i-C4              | 0.0950           |
| 9 n-C4              | 0.1120           |
| 10 i-C5             | 0.0540           |
| 11 n-C5             | 0.0420           |
| 12 C6               | 0.0080           |
| 13 Benzene          | 0.0060           |
| 14 Toluene          | 0.0090           |
| 15 E-Benzene        | 0.0000           |
| 16 Xylenes          | 0.0010           |
| 17 n-C6             | 0.0160           |
| 18 224Trimethylp    |                  |
| 19 Pseudo Compl     | 0.0420           |
| 20 Pseudo Comp2     | 0.0080           |
| 21 Pseudo Comp3     | 0.0020           |
| 22 Pseudo Comp4     | 0.0000           |
| 23 Pseudo Comp5     | 0.0000           |
| 24 Total            | 1.6130           |

| St  | tream Data    |          |         |           |           |           |         |                |
|-----|---------------|----------|---------|-----------|-----------|-----------|---------|----------------|
| Not | Component     | MW       | LP Oil  | Flash Oil | Sales Oil | Flash Gas | W&S Gas | Total Emission |
|     |               | lb/lbmol | mole %  | mole %    | mole %    | mole %    | mole %  | mole %         |
| 1   | H2S           | 34.80    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 2   | 02            | 32.00    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 3   | CO2           | 44.01    | 0.0140  | 0.0054    | 0.0036    | 0.4664    | 0.5054  | 0.4727         |
| 4   | N2            | 28.01    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 5   | C1            | 16.04    | 1.2410  | 0.2375    | 0.0425    | 54.1055   | 53.6562 | 54.0331        |
| 6   | C2            | 30.07    | 1.1160  | 0.6956    | 0.6119    | 23.2621   | 23.6341 | 23.3220        |
| 7   | C3            | 44.10    | 1.6120  | 1.4146    | 1.3758    | 12.0098   | 12.0481 | 12.0159        |
| 8   | i-C4          | 58.12    | 0.8900  | 0.8530    | 0.8457    | 2.8383    | 2.8462  | 2.8396         |
| 9   | n-C4          | 58.12    | 1.5600  | 1.5261    | 1.5195    | 3.3447    | 3.3511  | 3.3458         |
| 10  | i-C5          | 72.15    | 1.6000  | 1.6057    | 1.6069    | 1.2975    | 1.3002  | 1.2979         |
| 11  | n-C5          | 72.15    | 1.7030  | 1.7162    | 1.7187    | 1.0094    | 1.0113  | 1.0097         |
| 12  | C6            | 84.00    | 0.9670  | 0.9822    | 0.9852    | 0.1672    | 0.1675  | 0.1672         |
| 13  | Benzene       | 78.11    | 1.0330  | 1.0500    | 1.0534    | 0.1365    | 0.1361  | 0.1365         |
| 14  | Toluene       | 92.14    | 4.6820  | 4.7678    | 4.7846    | 0.1635    | 0.1631  | 0.1635         |
| 15  | E-Benzene     | 106.17   | 0.6270  | 0.6388    | 0.6411    | 0.0069    | 0.0069  | 0.0069         |
| 16  | Xylenes       | 106.17   | 1.5670  | 1.5965    | 1.6022    | 0.0147    | 0.0147  | 0.0147         |
| 17  | n-C6          | 86.18    | 1.9220  | 1.9523    | 1.9582    | 0.3260    | 0.3267  | 0.3261         |
| 18  | 224Trimethylp | 114.23   | 0.0470  | 0.0478    | 0.0480    | 0.0028    | 0.0028  | 0.0028         |
| 19  | Pseudo Comp1  | 103.97   | 38.1310 | 38.8414   | 38.9806   | 0.7087    | 0.6954  | 0.7065         |
| 20  | Pseudo Comp2  | 121.00   | 22.2340 | 22.6539   | 22.7363   | 0.1116    | 0.1075  | 0.1110         |
| 21  | Pseudo Comp3  | 134.00   | 13.1451 | 13.3941   | 13.4430   | 0.0250    | 0.0236  | 0.0248         |
|     |               |          |         |           |           |           |         |                |

| 22 Pseudo Comp4 147.00<br>23 Pseudo Comp5 167.47 | 4.0765<br>1.8324 | 4.1538<br>1.8672 | 4.1689<br>1.8740 | 0.0030<br>0.0003 | 0.0028  | 0.0030<br>0.0003 |
|--------------------------------------------------|------------------|------------------|------------------|------------------|---------|------------------|
|                                                  | LP Oil           | Flash Oil        | Sales Oil        | Flash Gas        | WES Gas | Total Emission   |
| MW (lb/lbmol):                                   | 108.25           | 109.78           | 110.08           | 28.05            | 28.11   | 28.06            |
| Stream Mole Ratio:                               | 1.0000           | 0.9814           | 0.9778           | 0.0186           | 0.0036  | 0.0222           |
| Stream Weight Ratio:                             | 108.25           | 107.73           | 107.63           | 0.52             | 0.10    | 0.62             |
| Total Emission (ton):                            |                  |                  |                  | 1.353            | 0.260   | 1.613            |
| Heating Value (BTU/scf):                         |                  |                  |                  | 1642.57          | 1645.06 | 1642.97          |
| Gas Gravity (Gas/Air):                           |                  |                  |                  | 0.97             | 0.97    | 0.97             |
| Bubble Pt. @100F (psia):                         | 51.87            | 16.69            | 9.88             |                  |         |                  |
| RVP @100F (psia):                                | 14.84            | 7.81             | 6.45             |                  |         |                  |
| Spec. Gravity @100F:                             | 0.73             | 0.73             | 0.73             |                  |         |                  |

\* Project Setup Information Project File : W:\EHS\Environmental\Air\Areas of Operation\Utah\\_MSO\RBU Dehy\Title V\EPA RBU Dehy 2 Flowsheet Selection : Oil Tank with Separator Calculation Method : RVP Distillation Control Efficiency : 0.00% Known Separator Stream : Low Pressure Oil Entering Air Composition : No : C10+ Component Group Filed Name : RBU 11-15E Well Name Well ID : Wasatch - Mesa Verde Representative Sample : RBU 11-15E PTE 4 bopd Date : 2017.06.29 \* Data Input Separator Pressure (psia) : 190.00 : 60.0 Separator Temperature (F) : 0.79 C10+ SG C10+ MW(lb/lbmol) : 140.24 -- Low Pressure Oil ------Mole% Wt% No. Component 0.0000 0.0000 0.0000 H2S 1 2 02 0.0140 0.0055 3 CO2 N2 C1 4 0.0000 0.0000 1.2410 0.1771 5 6 C2 1.1160 0.2986 СЗ 1.6120 0.8900 1.5600 0.6326 7 8 i-C4 0.8068 9 n-C4 1.6000 1.7030 0.9670 10 i-C5 1.0273 n-C5 C6 11 1.0934 0.9670 10.5110 9.3721 27.6200 28.0755 22.2340 25.3805 19.0540 23.7779 2.7180 12 13 C7 CB 14 22.2340 25.3805 19.0540 23.7779 15 C9 C10+ 16 1.0330 17 Benzene 0.7180 4.6820 3.8385 0.6270 0.5924 1.5670 1.4805 18 Toluene E-Benzene Xylenes n-C6 19 20 1.9220 1.4740 21 224Trimethylp 0.0470 0.0478 22 -- Sales Oil ------Production Rate (bbl/day) : 4.00 Days of Annual Operation : 365 API Gravity : 55.91 Reid Vapor Pressure (psia) : 6.20 

 Reid Vapor ressure (psia)
 : 12.10

 Ambient Pressure (F)
 : 60.0

 : 12.10 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* + Calculation Results -- Emission Summary ------Uncontrolled

|                     | ton             |
|---------------------|-----------------|
| Total HAPs          | 0.0220          |
| Total HC            | 1.0680          |
| VOCs, C2+           | 0.7350          |
| VOCs, C3+           | 0.4670          |
| CO2                 | 0.0080          |
| CH4                 | 0.3320          |
| Che                 | 0.5520          |
| Uncontrolled Recove | ry Information: |
| Vapor (mscfd) :     | 0.0796          |
| HC Vapor (mscfd) :  | 0.0792          |
| CO2 (mscfd) :       | 0.0000          |
| CH4 (mscfd) :       | 0.0400          |
| GOR (SCF/STB) :     | 19.9000         |
|                     |                 |
| Emission Composi    | tion            |
| NoComponent         | Uncontrolled    |
|                     | ton             |
| 1 H2S               | 0.0000          |
| 2 02                | 0.0000          |
| 3 CO2               | 0.0080          |
| 4 N2                | 0.0000          |
| 5 C1                | 0.3320          |
| 6 C2                | 0.2690          |
| 7 C3                | 0.2030          |
| 8 i-C4              | 0.0630          |
| 9 n-C4              | 0.0750          |
| 10 i-C5             | 0.0360          |
| 11 n-C5             | 0.0280          |
| 12 C6               | 0.0050          |
| 13 Benzene          | 0.0040          |
| 14 Toluene          | 0.0060          |
| 15 E-Benzene        | 0.0000          |
| 16 Xylenes          | 0.0010          |
| 17 n-C6             | 0.0110          |
| 18 224Trimethylp    | 0.0000          |
| 19 Pseudo Compl     | 0.0280          |
| 20 Pseudo Comp2     | 0.0050          |
| 21 Pseudo Comp3     | 0.0010          |
| 22 Pseudo Comp4     | 0.0000          |
| 23 Pseudo Comp5     | 0.0000          |
| 24 Total            | 1.0750          |
|                     |                 |

| NoComponent      | MW       | LP Oil  | Flash Oil | Sales Oil | Flash Gas | W&S Gas | Total Emission |
|------------------|----------|---------|-----------|-----------|-----------|---------|----------------|
|                  | 1b/1bmol | mole %  | mole %    | mole %    | mole %    | mole %  | mole %         |
| 1 H2S            | 34.80    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 2 02             | 32.00    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 3 CO2            | 44.01    | 0.0140  | 0.0054    | 0.0036    | 0.4664    | 0.5054  | 0.4727         |
| 4 N2             | 28.01    | 0.0000  | 0.0000    | 0.0000    | 0.0000    | 0.0000  | 0.0000         |
| 5 C1             | 16.04    | 1.2410  | 0.2375    | 0.0425    | 54.1055   | 53.6562 | 54.0331        |
| 6 C2             | 30.07    | 1.1160  | 0.6956    | 0.6119    | 23.2621   | 23.6341 | 23.3220        |
| 7 C3             | 44.10    | 1.6120  | 1.4146    | 1.3758    | 12.0098   | 12.0481 | 12.0159        |
| 8 i-C4           | 58.12    | 0.8900  | 0.8530    | 0.8457    | 2.8383    | 2.8462  | 2.8396         |
| 9 n-C4           | 58.12    | 1.5600  | 1.5261    | 1.5195    | 3.3447    | 3.3511  | 3.3458         |
| LO i-C5          | 72.15    | 1.6000  | 1.6057    | 1.6069    | 1.2975    | 1.3002  | 1.2979         |
| l1 n-C5          | 72.15    | 1.7030  | 1.7162    | 1.7187    | 1.0094    | 1.0113  | 1.0097         |
| L2 C6            | 84.00    | 0.9670  | 0.9822    | 0.9852    | 0.1672    | 0.1675  | 0.1672         |
| 13 Benzene       | 78.11    | 1.0330  | 1.0500    | 1.0534    | 0.1365    | 0.1361  | 0.1365         |
| 4 Toluene        | 92.14    | 4.6820  | 4.7678    | 4.7846    | 0.1635    | 0.1631  | 0.1635         |
| 15 E-Benzene     | 106.17   | 0.6270  | 0.6388    | 0.6411    | 0.0069    | 0.0069  | 0.0069         |
| l6 Xylenes       | 106.17   | 1.5670  | 1.5965    | 1.6022    | 0.0147    | 0.0147  | 0.0147         |
| L7 n-C6          | 86.18    | 1.9220  | 1.9523    | 1.9582    | 0.3260    | 0.3267  | 0.3261         |
| 18 224Trimethylp | 114.23   | 0.0470  | 0.0478    | 0.0480    | 0.0028    | 0.0028  | 0.0028         |
| 19 Pseudo Compl  | 103.97   | 38.1310 | 38.8414   | 38.9806   | 0.7087    | 0.6954  | 0.7065         |
| 20 Pseudo Comp2  | 121.00   | 22.2340 | 22.6539   | 22.7363   | 0.1116    | 0.1075  | 0.1110         |
| 21 Pseudo Comp3  | 134.00   | 13.1451 | 13.3941   | 13.4430   | 0.0250    | 0.0236  | 0.0248         |

| 22 Pseudo Comp4 147.00                                                                                                                                                                       | 4.0765                                                 | 4.1538                                                   | 4.1689                                                  | 0.0030                                                           | 0.0028                                                         | 0.0030                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------|
| 23 Pseudo Comp5 167.47                                                                                                                                                                       | 1.8324                                                 | 1.8672                                                   | 1.8740                                                  | 0.0003                                                           |                                                                | 0.0003                                                                |
| MW (lb/lbmol):<br>Stream Mole Ratio:<br>Stream Weight Ratio:<br>Total Emission (ton):<br>Heating Value (BTU/scf):<br>Gas Gravity (Gas/Air):<br>Bubble Pt. @100F (psia):<br>RVF @100F (psia): | LP Oil<br>108.25<br>1.0000<br>108.25<br>51.87<br>14.84 | Flash Oil<br>109.78<br>0.9814<br>107.73<br>16.69<br>7.81 | Sales Oil<br>110.08<br>0.9778<br>107.63<br>9.88<br>6.45 | Flash Gas<br>28.05<br>0.0186<br>0.52<br>0.902<br>1642.57<br>0.97 | W&S Gas<br>28.11<br>0.0036<br>0.10<br>0.173<br>1645.06<br>0.97 | Total Emission<br>28.06<br>0.0222<br>0.62<br>1.075<br>1642.97<br>0.97 |

## TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| Identification<br>User Identification:<br>City:<br>State:<br>Company:<br>Type of Tank:<br>Description:                                                                                             | RBU 6-15E 400 bb!<br>Vernal<br>Utah<br>XTO Energy<br>Vertical Fixed Roof Tank<br>400-bbl condensate storage tank |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Tank Dimensions<br>Shell Height (ft):<br>Diameter (ft):<br>Liquid Height (ft) :<br>Avg. Liquid Height (ft):<br>Volume (gallons):<br>Turnovers:<br>Net Throughput(gal/yr):<br>Is Tank Heated (y/n): | 20.00<br>12.00<br>18.00<br>10.00<br>15,228.53<br>6.04<br>91,980.00<br>Y                                          |
| Paint Characteristics<br>Shell Color/Shade:<br>Shell Condition<br>Roof Color/Shade:<br>Roof Condition:                                                                                             | Gray/Medium<br>Poor<br>Gray/Medium<br>Poor                                                                       |
| Roof Characteristics<br>Type:<br>Height (ft)<br>Slope (ft/ft) (Cone Roof)                                                                                                                          | Cone<br>1.00<br>0.17                                                                                             |
| Breather Vent Settings<br>Vacuum Settings (psig):<br>Pressure Settings (psig)                                                                                                                      | 0.00<br>0.00                                                                                                     |

Meterological Data used in Emissions Calculations: Salt Lake City, Utah (Avg Atmospheric Pressure = 12.64 psia)

# TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

RBU 6-15E 400 bbl - Vertical Fixed Roof Tank Vernal, Utah

|                   |       |       | ily Liquid S<br>perature (de |       | Liquid<br>Bulk<br>Temp | Vapo   | or Pressure | (psia) | Vapor<br>Mol. | Liquid<br>Mass | Vapor<br>Mass | Mol.   | Basis for Vapor Pressure      |
|-------------------|-------|-------|------------------------------|-------|------------------------|--------|-------------|--------|---------------|----------------|---------------|--------|-------------------------------|
| Mixture/Component | Month | Avg.  | Min.                         | Max.  | (deg F)                | Avg.   | Min.        | Max.   | WeighL        | Fract.         | Fract.        | Weight | Calculations                  |
| Gasoline (RVP 7)  | All   | 60.00 | 60.00                        | 85.00 | 60.00                  | 3.4847 | 3.4847      | 5.6644 | 68.0000       |                |               | 92.00  | Option 4: RVP=7, ASTM Slope=3 |

# TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

# RBU 6-15E 400 bbl - Vertical Fixed Roof Tank Vernal, Utah

| Annual Emission Calcautations                                 |            |
|---------------------------------------------------------------|------------|
| Standing Losses (ib):                                         | 1,782.9244 |
| Vapor Space Volume (cu ft):                                   | 1,168.6725 |
| Vapor Density (lb/cu ft):                                     | 0.0425     |
| Vapor Space Expansion Factor:                                 | 0.2861     |
| Vented Vapor Saturation Factor:                               | 0.3438     |
| Verkea Vapor Galanden i acion.                                | 0.0400     |
| Tank Vapor Space Volume:                                      |            |
| Vapor Space Volume (cu ft):                                   | 1,168.6725 |
| Tank Diameter (ft):                                           | 12.0000    |
| Vapor Space Outage (ft):                                      | 10.3333    |
| Tank Shell Height (ft):                                       | 20.0000    |
| Average Liquid Height (ft):                                   | 10.0000    |
| Roof Outage (ft):                                             | 0.3333     |
| Roof Outage (Cone Roof)                                       |            |
| Roof Outage (ft):                                             | 0.3333     |
| Roof Height (ft):                                             | 1.0000     |
| Roof Slope (ft/ft):                                           | 0.1700     |
| Shell Radius (ft):                                            | 6,0000     |
| Crist rusting (r).                                            | 0.0000     |
| Vapor Density                                                 | 0.0425     |
| Vapor Density (tb/cu ft):                                     |            |
| Vapor Molecular Weight (ib/ib-mole):                          | 68.0000    |
| Vapor Pressure at Daily Average Liquid                        | 0.4047     |
| Surface Temperature (psia):                                   | 3.4847     |
| Daily Avg. Liquid Surface Temp. (deg. R):                     | 519.6700   |
| Daily Average Ambient Temp. (deg. F):<br>Ideal Gas Constant R | 51.9625    |
| (psia cuft / (lb-mol-deg R)):                                 | 10.731     |
| Liquid Bulk Temperature (deg. R):                             | 519.6700   |
| Tank Paint Solar Absorptance (Shell):                         | 0.7400     |
| Tank Paint Solar Absorptance (Roof):                          | 0.7400     |
| Daily Total Solar Insulation                                  |            |
| Factor (Btu/sqft day):                                        | 1,452.1184 |
|                                                               | 1,102.1101 |
| Vapor Space Expansion Factor                                  | 0.0004     |
| Vapor Space Expansion Factor:                                 | 0.2861     |
| Daily Vapor Temperature Range (deg. R):                       | 25.0000    |
| Daily Vapor Pressure Range (psia):                            | 2.1798     |
| Breather Vent Press, Setting Range(psia);                     | 0.0000     |
| Vapor Pressure at Daily Average Liquid                        | 0.4047     |
| Surface Temperature (psia):                                   | 3.4847     |
| Vapor Pressure at Daily Minimum Liquid                        | 2 40 47    |
| Surface Temperature (psia):                                   | 3.4847     |
| Vapor Pressure at Dally Maximum Liquid                        | 5 6044     |
| Surface Temperature (psia):                                   | 5.6644     |
| Daily Avg. Liquid Surface Temp. (deg R):                      | 519.6700   |
| Daily Min. Liquid Surface Temp. (deg R):                      | 519.6700   |
| Daily Max. Liquid Surface Temp. (deg R):                      | 544.6700   |
| Daily Ambient Temp. Range (deg. R):                           | 23.3583    |
| Vented Vapor Saturation Factor                                |            |
| Vented Vapor Saturation Factor:                               | 0.3438     |
| Vapor Pressure at Daily Average Liquid:                       |            |
| Surface Temperature (psia):                                   | 3.4847     |
| Vapor Space Outage (ft):                                      | 10.3333    |
|                                                               |            |

| Working Losses (lb):                   | 518.9370    |
|----------------------------------------|-------------|
| Vapor Molecular Weight (Ib/Ib-mole):   | 68.0000     |
| Vapor Pressure at Daily Average Liquid |             |
| Surface Temperature (psia):            | 3.4847      |
| Annual Net Throughout (gel/yr.):       | 91,980.0000 |
| Annual Turnovers:                      | 6.0400      |
| Turnover Factor:                       | 1.0000      |
| Maximum Liquid Volume (gal):           | 15,228.5332 |
| Maximum Liquid Height (ft):            | 18.0000     |
| Tank Diameter (ft):                    | 12.0000     |
| Working Loss Product Factor:           | 1.0000      |
| Total Losses (lb):                     | 2,301,8614  |

## TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

## **Emissions Report for: Annual**

RBU 6-15E 400 bbl - Vertical Fixed Roof Tank Vernal, Utah

| Components       | Working Loss | Breathing Loss | Total Emissions |
|------------------|--------------|----------------|-----------------|
| Gasoline (RVP 7) | 518.94       | 1,782.92       | 2,301.86        |

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# TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| Identification<br>User Identification:<br>City:<br>State:<br>Company:<br>Type of Tank:<br>Description:                                                                                             | RBU 7-15E TK #1<br>Vernal<br>Utah<br>XTO Energy<br>Vertical Fixed Roof Tank<br>RBU 7-15E 2017 PTE - 400-bbl condensate storage tank |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Tank Dimensions<br>Shell Height (ft):<br>Diameter (ft):<br>Liquid Height (ft) :<br>Avg. Liquid Height (ft):<br>Volume (gallons):<br>Turnovers:<br>Net Throughput(gal/yr):<br>Is Tank Heated (y/n): | 20.00<br>12.00<br>18.00<br>10.00<br>15,228.53<br>6.04<br>91,980.00<br>Y                                                             |
| Paint Characteristics<br>Shell Color/Shade:<br>Shell Condition<br>Roof Color/Shade:<br>Roof Condition:                                                                                             | Gray/Medium<br>Poor<br>Gray/Medium<br>Poor                                                                                          |
| Roof Characteristics<br>Type:<br>Height (ft)<br>Slope (ft/ft) (Cone Roof)                                                                                                                          | Cone 1.00 0.17                                                                                                                      |
| Breather Vent Settings<br>Vacuum Settings (psig):<br>Pressure Settings (psig)                                                                                                                      | 0.00<br>0.00                                                                                                                        |

Meterological Data used in Emissions Calculations: Salt Lake City, Utah (Avg Atmospheric Pressure = 12.64 psia)

## TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

# RBU 7-15E TK #1 - Vertical Fixed Roof Tank Vernal, Utah

|                   |       |       | illy Liquid S<br>perature (d |       | Liquid<br>Bulk<br>Temp | Vapo   | r Pressure | (psia) | Vapor<br>Mol. | Liquid<br>Mass | Vapor<br>Mass | Mol.   | Basis for Vapor Pressure      |
|-------------------|-------|-------|------------------------------|-------|------------------------|--------|------------|--------|---------------|----------------|---------------|--------|-------------------------------|
| Mixture/Component | Month | Avg.  | Min.                         | Max.  | (deg F)                | Avg.   | Min,       | Max.   | Weight.       | Fract.         | Fract.        | Weight | Calculations                  |
| Gasoline (RVP 7)  | All   | 60.00 | 60.00                        | 85 00 | 60.00                  | 3.4847 | 3.4847     | 5.6644 | 68.0000       |                |               | 92.00  | Option 4: RVP=7, ASTM Slope=3 |

# TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

#### RBU 7-15E TK #1 - Vertical Fixed Roof Tank Vernal, Utah

| Annual Emission Calcaulations                                                       |            |
|-------------------------------------------------------------------------------------|------------|
| Standing Losses (lb):                                                               | 1,782.9244 |
| Vapor Space Volume (cu ft):                                                         | 1,168.6725 |
| Vapor Density (lb/cu ft):                                                           | 0.0425     |
| Vapor Space Expansion Factor:                                                       | 0.2861     |
| Vented Vapor Saturation Factor:                                                     | 0.3438     |
| Tank Vapor Space Volume:                                                            |            |
| Vapor Space Volume (cu ft):                                                         | 1,168.6725 |
| Tank Diameter (ft):                                                                 | 12.0000    |
| Vapor Space Outage (ft):                                                            | 10.3333    |
| Tank Shell Height (ft):                                                             | 20.0000    |
| Average Liquid Height (ft):                                                         | 10.0000    |
| Roof Outage (ft):                                                                   | 0.3333     |
| Roof Outage (Cone Roof)                                                             |            |
| Roof Outage (ft):                                                                   | 0.3333     |
| Roof Height (ft):                                                                   | 1.0000     |
| Roof Slope (ft/ft):                                                                 | 0.1700     |
| Shell Radius (ft):                                                                  | 6.0000     |
| Vapor Density                                                                       |            |
| Vapor Density (lb/cu ft):                                                           | 0.0425     |
| Vapor Molecular Weight (lb/lb-mole):                                                | 68.0000    |
| Vapor Pressure at Daily Average Liquid                                              |            |
| Surface Temperature (psia):                                                         | 3.4847     |
| Daily Avg. Liquid Surface Temp. (deg. R):                                           | 519.8700   |
| Daily Average Ambient Temp. (deg. F):<br>Ideal Gas Constant R                       | 51,9625    |
| (psia cuft / (lb-mol-deg R)):                                                       | 10.731     |
| Liquid Bulk Temperature (deg. R):                                                   | 519,6700   |
| Tank Paint Solar Absorptance (Shell):                                               | 0.7400     |
| Tank Paint Solar Absorptance (Roof):                                                | 0.7400     |
| Daily Total Solar Insulation                                                        |            |
| Factor (Btu/sqft day):                                                              | 1,452.1184 |
| Vapor Space Expansion Factor                                                        |            |
| Vapor Space Expansion Factor:                                                       | 0.2861     |
| Daily Vapor Temperature Range (deg. R):                                             | 25.0000    |
| Daily Vapor Pressure Range (psia):                                                  | 2.1798     |
| Breather Vent Press. Setting Range(psia):<br>Vapor Pressure at Daily Average Liquid | 0.0000     |
| Surface Temperature (psia):                                                         | 2 4047     |
| Vapor Pressure at Daily Minimum Liquid                                              | 3.4847     |
| Surface Temperature (psia):                                                         | 3.4847     |
| Vapor Pressure at Daily Maximum Liquid                                              | 3.4047     |
| Surface Temperature (psia):                                                         | 5.6644     |
| Daily Avg. Liquid Surface Temp, (deg R):                                            | 519.6700   |
| Daily Min, Liquid Surface Temp, (deg R):                                            | 519.6700   |
| Daily Max. Liquid Surface Temp. (deg R):                                            | 544.6700   |
| Daily Ambient Temp. Range (deg, R):                                                 | 23.3583    |
| Vented Vapor Saturation Factor                                                      |            |
| Vented Vapor Saturation Factor:                                                     | 0.3438     |
| Vapor Pressure at Daily Average Liquid:                                             |            |
| Surface Temperature (psia):                                                         | 3.4847     |
| Vapor Space Outage (ft):                                                            | 10.3333    |
|                                                                                     |            |

## TANKS 4.0 Report

| Working Losses (lb):                   | 518.9370    |
|----------------------------------------|-------------|
| Vapor Molecular Weight (Ib/Ib-mole):   | 68.0000     |
| Vapor Pressure at Daily Average Liquid |             |
| Surface Temperature (psia):            | 3.4847      |
| Annual Net Throughput (gal/yr.):       | 91,980.0000 |
| Annual Turnovers:                      | 6.0400      |
| Turnover Factor:                       | 1.0000      |
| Maximum Liquid Volume (gal):           | 15,228.5332 |
| Maximum Liquid Height (ft):            | 18.0000     |
| Tank Diameter (ft):                    | 12.0000     |
| Working Loss Product Factor:           | 1.0000      |
| Total Losses (lb):                     | 2,301,8614  |

# TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

## **Emissions Report for: Annual**

RBU 7-15E TK #1 - Vertical Fixed Roof Tank Vernal, Utah

| Components       | Working Loss | Breathing Loss | Total Emissions |
|------------------|--------------|----------------|-----------------|
| Gasoline (RVP 7) | 518.94       | 1,782.92       | 2,301.86        |

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## TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| Identification<br>User Identification:<br>City:<br>State:<br>Company:<br>Type of Tank:<br>Description:                                                                                             | RBU 11-15E<br>Vernal<br>Utah<br>XTO Energy<br>Vertical Fixed Roof Tank<br>RBU 11-15E - 2017 PTE 300-bbl condensate storage tank |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Tank Dimensions<br>Shell Height (ft):<br>Diameter (ft):<br>Liquid Height (ft) :<br>Avg. Liquid Height (ft):<br>Volume (gallons):<br>Turnovers:<br>Net Throughput(gal/yr):<br>Is Tank Heated (y/n): | 15.00<br>12.00<br>10.00<br>8.00<br>8,460.30<br>7.25<br>61,320.00<br>Y                                                           |
| Paint Characteristics<br>Shell Color/Shade:<br>Shell Condition<br>Roof Color/Shade:<br>Roof Condition:                                                                                             | Gray/Medium<br>Poor<br>Gray/Medium<br>Poor                                                                                      |
| Roof Characteristics<br>Type:<br>Height (ft)<br>Slope (ft/ft) (Cone Roof)                                                                                                                          | Cone<br>1.00<br>0.17                                                                                                            |
| Breather Vent Settings<br>Vacuum Settings (psig):<br>Pressure Settings (psig)                                                                                                                      | 0.00<br>0.00                                                                                                                    |

Meterological Data used in Emissions Calculations: Salt Lake City, Utah (Avg Atmospheric Pressure = 12.64 psia)

# TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

RBU 11-15E - Vertical Fixed Roof Tank Vernal, Utah

|                   |       |       | ily Liquid Si<br>perature (de |       | Liquid<br>Bulk<br>Temp | Vapo   | or Pressure | (psia) | Vapor<br>Mol. | Liquid<br>Mass | Vapor<br>Mass | Mol.   | Basis for Vapor Pressure      |
|-------------------|-------|-------|-------------------------------|-------|------------------------|--------|-------------|--------|---------------|----------------|---------------|--------|-------------------------------|
| Mixture/Component | Month | Avg.  | Min.                          | Max.  | (deg F)                | Avg.   | Min.        | Max.   | Weight.       | Fract.         | Fract         | Weight | Calculations                  |
| Gasoline (RVP 7)  | AR I  | 60.00 | 60.00                         | 85.00 | 60.00                  | 3.4847 | 3.4847      | 5.6644 | 68.0000       |                |               | 92.00  | Option 4: RVP=7, ASTM Slope=3 |

# TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

#### RBU 11-15E - Vertical Fixed Roof Tank Vernal, Utah

| Annual Emission Calcaulations                                 |                                                                                                                 |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Standing Losses (Ib):                                         | 1,563.0685                                                                                                      |
| Vapor Space Volume (cu ft):                                   | 829.3805                                                                                                        |
| Vapor Density (Ib/cu ft):                                     | 0.0425                                                                                                          |
| Vapor Space Expansion Factor:                                 | 0.2861                                                                                                          |
| Vented Vapor Saturation Factor:                               | 0.4247                                                                                                          |
| Tank Vapor Space Volume:                                      |                                                                                                                 |
| Vapor Space Volume (cu fl):                                   | 829,3805                                                                                                        |
| Tank Diameter (ft):                                           | 12.0000                                                                                                         |
| Vapor Space Outage (ft):                                      | 7.3333                                                                                                          |
| Tank Shell Height (ft):                                       | 15.0000                                                                                                         |
| Average Liquid Height (ft):                                   | 8.0000                                                                                                          |
| Roof Outage (ft):                                             | 0.3333                                                                                                          |
| Roof Outage (Cone Roof)                                       |                                                                                                                 |
| Roof Outage (ft):                                             | 0.3333                                                                                                          |
| Roof Height (ft):                                             | 1.0000                                                                                                          |
| Roof Slope (ft/ft):                                           | 0.1700                                                                                                          |
| Shell Radius (ft):                                            | 6.0000                                                                                                          |
| Vapor Densily                                                 |                                                                                                                 |
| Vapor Density (lb/cu ft):                                     | 0.0425                                                                                                          |
| Vapor Molecular Weight (lb/lb-mole):                          | 68.0000                                                                                                         |
| Vapor Pressure at Daily Average Liquid                        | the second se |
| Surface Temperature (psia):                                   | 3.4847                                                                                                          |
| Daily Avg. Liquid Surface Temp. (deg. R):                     | 519.6700                                                                                                        |
| Daily Average Ambient Temp. (deg. F):<br>Ideal Gas Constant R | 51.9625                                                                                                         |
| (psia cuft / (lb-mol-deg R)):                                 | 10,731                                                                                                          |
| Liquid Bulk Temperature (deg. R):                             | 519.6700                                                                                                        |
| Tank Paint Solar Absorptance (Shell):                         | 0,7400                                                                                                          |
| Tank Paint Solar Absorptance (Sheir).                         | 0.7400                                                                                                          |
| Daily Total Solar Insulation                                  | 0.7400                                                                                                          |
| Factor (Btu/sqft day):                                        | 1,452.1184                                                                                                      |
| Vapor Space Expansion Factor                                  |                                                                                                                 |
| Vapor Space Expansion Factor:                                 | 0.2861                                                                                                          |
| Daily Vapor Temperature Range (deg. R):                       | 25.0000                                                                                                         |
| Daily Vapor Pressure Range (psia):                            | 2.1798                                                                                                          |
| Breather Vent Press, Setting Range(psia):                     | 0.0000                                                                                                          |
| Vapor Pressure at Daily Average Liquid                        | 0.0000                                                                                                          |
| Surface Temperature (psia):                                   | 3,4847                                                                                                          |
| Vapor Pressure at Daily Minimum Liquid                        | 0.4041                                                                                                          |
| Surface Temperature (psia):                                   | 3.4647                                                                                                          |
| Vapor Pressure at Dally Maximum Liquid                        | 0.4047                                                                                                          |
| Surface Temperature (psia):                                   | 5.6644                                                                                                          |
| Daily Avg. Liquid Surface Temp. (deg R):                      | 519.6700                                                                                                        |
| Daily Min. Liquid Surface Temp. (deg R):                      | 519.6700                                                                                                        |
| Daily Max. Liquid Surface Temp. (deg R):                      | 544.6700                                                                                                        |
| Daily Ambient Temp. Range (deg. R):                           | 23.3583                                                                                                         |
| Vented Vapor Saturation Factor                                |                                                                                                                 |
| Vented Vapor Saturation Factor:                               | 0.4247                                                                                                          |
| Vapor Pressure at Daily Average Liquid:                       |                                                                                                                 |
| Surface Temperature (psia):                                   | 3.4847                                                                                                          |
| Vapor Space Outage (ft):                                      | 7.3333                                                                                                          |
|                                                               |                                                                                                                 |

| Working Losses (lb):                   | 345.9580    |
|----------------------------------------|-------------|
| Vapor Molecular Weight (lb/lb-mole):   | 68.0000     |
| Vapor Pressure at Daily Average Liquid |             |
| Surface Temperature (psia):            | 3.4847      |
| Annual Net Throughput (gal/yr.):       | 61,320.0000 |
| Annual Turnovers:                      | 7.2480      |
| Turnover Factor:                       | 1.0000      |
| Maximum Liquid Volume (gal):           | 8,460.2962  |
| Maximum Liquid Height (ft):            | 10.0000     |
| Tank Diameter (ft):                    | 12.0000     |
| Working Loss Product Factor:           | 1.0000      |
| Total Losses (Ib):                     | 1,909.0265  |

## TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

## **Emissions Report for: Annual**

RBU 11-15E - Vertical Fixed Roof Tank Vernal, Utah

|                  | Losses(lbs)  |                |                 |  |  |  |  |  |
|------------------|--------------|----------------|-----------------|--|--|--|--|--|
| Components       | Working Loss | Breathing Loss | Total Emissions |  |  |  |  |  |
| Gasoline (RVP 7) | 345.96       | 1,563.07       | 1,909.03        |  |  |  |  |  |

#### WELLSITE UNCONTROLLED CONDENSATE TRUCK LOADING EMISSIONS

Company: Summit Gas Gathering Facility Name: RBU Wellsites Facility Location: Uintah County, Utah

#### AP - 42, Chapter 5.2

#### $L_L = 12.46 \times S \times P \times M / T$ Emissions = $L_L$ \* Throughput

TABLE 1. Emission factors are calculated utilizing AP-42 equations and data from EPA TANKS 4.09 L is converted to tpy VOC emissions per barrel of production per

L<sub>L</sub> = Loading Loss Emission Factor (lbs VOC/1000 gal Loaded)

- S = Saturation Factor (0.6 For Submerged Loading Dedicated Service)
- P = True Vapor Pressure of the Loaded Liquid (psi)
- M = Vapor Molecular Weight of the Loaded Liquid (lbs/lbmoi)
- T = Temperature of Loaded Liquid (°R)

| RBU 6-15E Truck Loading |         |     |           |    |        |             | L,     |        |             |      | VOC    |
|-------------------------|---------|-----|-----------|----|--------|-------------|--------|--------|-------------|------|--------|
| Location                | Factors | S   | TVP (psi) | M  | T (°R) | lb/1000 gal | lb/gal | lb/bbl | tpy VOC/bpd | bpd  | tpy    |
| Truck Loading           | 12.46   | 0.6 | 3.5       | 68 | 511.68 | 3.4773      | 0.0035 | 0.1460 | 2.67E-02    | 6.00 | 0.1599 |

| RBU 7-15E Truck Loading |         |     |           |    |        |             |        | Production | VOC         |      |        |
|-------------------------|---------|-----|-----------|----|--------|-------------|--------|------------|-------------|------|--------|
| Location                | Factors | S   | TVP (psi) | М  | T (°R) | lb/1000 gal | lb/gai | ib/bbl     | tpy VOC/bpd | bpd  | tpy    |
| Truck Loading           | 12.46   | 0.6 | 3.5       | 68 | 511.68 | 3.4773      | 0.0035 | 0.1460     | 2.67E-02    | 6.00 | 0.1599 |

|               | RBU 11-15E Truck Loading |     |           |    |        |             |        | Production | VOC         |      |        |
|---------------|--------------------------|-----|-----------|----|--------|-------------|--------|------------|-------------|------|--------|
| Location      | Factors                  | S   | TVP (psi) | М  | T (°R) | Ib/1000 gal | lb/gal | lb/bbl     | tpy VOC/bpd | bpd  | tpy    |
| Truck Loading | 12.46                    | 0.6 | 3.5       | 68 | 511.68 | 3.4773      | 0.0035 | 0.1460     | 2.67E-02    | 4.00 | 0.1066 |

|                                                    | 1                                                                                                               | 1                   | EAC       | HWELLSITEFU                                                                                                      | IGITIVE EMISSIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | an a                                                                       |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------|-----------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|                                                    | Company:                                                                                                        | XTO ENERGY          | INC.      |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |
|                                                    | Facility Name:                                                                                                  | Each Wellsite       |           | a de la companya de la |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Management of the second s |
| Fa                                                 | cility Location:                                                                                                | Uintah County       |           | 1.                                                                                                               | a to a second to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | an an ann an                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | annen bereitet (* 19. deser versenstige                                                                        |
|                                                    |                                                                                                                 | Contant Dourne      |           |                                                                                                                  | and a sub-standing the strength with the strength of the stren | Menta period page and a second s |                                                                                                                |
|                                                    | and a second  | Estimated           | Hours of  | Factors*                                                                                                         | %NMNEVOC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Emission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15                                                                                                             |
|                                                    |                                                                                                                 | Components<br>Count | Operation | lb/hr/component                                                                                                  | Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | lb/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | tons/year                                                                                                      |
| Valves                                             |                                                                                                                 |                     |           | **************************************                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |
|                                                    | Gas/Vapor                                                                                                       | 150                 | 8760      | 0.00992000                                                                                                       | 9.68%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1261.92850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.63096                                                                                                        |
| April 1                                            | Light Oil                                                                                                       | 20                  | 8760      | 0.00550000                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 963.60000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.48180                                                                                                        |
|                                                    | Heavy Oil                                                                                                       |                     | 8760      | 0.00001900                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0,00000                                                                                                        |
|                                                    | Water/Light Oil                                                                                                 | 6                   | 8760      | 0.00021600                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 11.35296                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.00568                                                                                                        |
| Pumps                                              |                                                                                                                 |                     |           |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The second contraction of the second second second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                |
|                                                    | Gas/Vapor                                                                                                       | 7                   | 8760      | 0.00529000                                                                                                       | 9,68%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 31.40404                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0,01570                                                                                                        |
|                                                    | Light Oil                                                                                                       | 3                   | 8760      | 0.02866000                                                                                                       | 100,00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 753.18480                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.37659                                                                                                        |
|                                                    | Heavy Oil                                                                                                       |                     | 8760      | 0.00113000                                                                                                       | 100,00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00000                                                                                                        |
|                                                    | Water/Light Oil                                                                                                 |                     | 8760      | 0.00005300                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00000                                                                                                        |
| Flanges                                            |                                                                                                                 |                     |           |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | reconstruction and and and and and and and and and an                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1971                                                                                                           |
|                                                    | Gas/Vapor                                                                                                       | 300                 | 8760      | 0.00086000                                                                                                       | 9.68%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 218.80212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.10940                                                                                                        |
|                                                    | Light Oil                                                                                                       | 30                  | 8760      | 0.00024300                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 63.86040                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.03193                                                                                                        |
|                                                    | Heavy Oil                                                                                                       |                     | 8760      | 0.00000086                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00000                                                                                                        |
|                                                    | Water/Light Oil                                                                                                 | 20                  | 8760      | 0.00000620                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1.08624                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00054                                                                                                        |
| Open-end                                           | weiling |                     |           |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |
|                                                    | Gas/Vapor                                                                                                       |                     | 8760      | 0.00441000                                                                                                       | 9.68%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00000                                                                                                        |
|                                                    | Light Oil                                                                                                       |                     | 8760      | 0.00309000                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00000                                                                                                        |
|                                                    | Heavy Oil                                                                                                       |                     | 8760      | 0.00030900                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00000                                                                                                        |
| and the formation of the state of the state of the | Water/Light Oil                                                                                                 |                     | 8760      | 0.00055000                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00000                                                                                                        |
| Connecto                                           |                                                                                                                 |                     |           |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                |
|                                                    | Gas/Vapor                                                                                                       | 20                  | 8760      | 0.00044000                                                                                                       | 9.68%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 7.46302                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.00373                                                                                                        |
|                                                    | Light Oil                                                                                                       | 20                  | 8760      | 0.00046300                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 81.11760                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0,04056                                                                                                        |
| •                                                  | Heavy Oil                                                                                                       |                     | 8760      | 0.00001700                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0,00000                                                                                                        |
|                                                    | Water/Light Oil                                                                                                 | 20                  | 8760      | 0.00024300                                                                                                       | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 42.57360                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.02129                                                                                                        |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                                                                                                                                                                                                                                                                                                                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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Company:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XTO ENERGY          | INC                                                                                                             | 1<br>                       | and a state of the |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | acility Name:                                                                                                                                                                                                                                                                                                                    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|                                                                                                                 | Company:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>XTO ENERGY</b>   | INC.            |                                                                                                                |                                                                                                                |                                                                                                                | and a second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                 | Facility Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Each Wellsite       |                 |                                                                                                                |                                                                                                                |                                                                                                                | an and a find the second s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Fa                                                                                                              | cility Location:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Uintah County       | /, Utah         |                                                                                                                | and a second |                                                                                                                | and a second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                 | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1                   |                 | and an and a second |                                                                                                                |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 994 - 6 West (1999 and 1999 and                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Estimated           | Hours of        | Factors*                                                                                                       | %METHANE                                                                                                       | Emissi                                                                                                         | ons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Components<br>Count | Operation       | lb/hr/component                                                                                                | Weight                                                                                                         | lb/year                                                                                                        | metric tons/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| /alves                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                 |                                                                                                                | · · · · · · · · · · · · · · · · · · ·                                                                          |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                 | Gas/Vapor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 150                 | 8760            | 0.00992000                                                                                                     | 80.65%                                                                                                         | 10512.32934                                                                                                    | 5,25616                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20                  | 8760            | 0,00550000                                                                                                     | 50.91%                                                                                                         | 490.58563                                                                                                      | 0.24529                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Heavy Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 8760            | 0.00001900                                                                                                     | 0.00%                                                                                                          | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Water/Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6                   | 8760            | 0.00021600                                                                                                     | 50.91%                                                                                                         | 5.77999                                                                                                        | 0.00289                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| umps                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                 | Gas/Vapor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 7                   | 8760            | 0,00529000                                                                                                     | 80.65%                                                                                                         | 261.60723                                                                                                      | 0.13080                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3:                  | 8760            | 0.02866000                                                                                                     | 50.91%                                                                                                         | 383.45957                                                                                                      | 0,19173                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Heavy Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 8760            | 0.00113000                                                                                                     | 0.00%                                                                                                          | 0.00000                                                                                                        | 0,00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Water/Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     | 8760            | 0.00005300                                                                                                     | 50.91%                                                                                                         | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| langes                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                | 11.1.4 M 247 93 10107 20 AL 20 M 2010 1017 1017 1017 1017 1017 1017 1017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                 | Gas/Vapor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 300                 | 8760            | 0.00086000                                                                                                     | 80.65%                                                                                                         | 1822.70226                                                                                                     | 0.91135                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 30                  | 8760            | 0.00024300                                                                                                     | 50.91%                                                                                                         | 32.51245                                                                                                       | 0.01626                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Heavy Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 8760            | 0.00000086                                                                                                     | 0.00%                                                                                                          | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Water/Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20                  | 8760            | 0.00000620                                                                                                     | 50.91%                                                                                                         | 0.55302                                                                                                        | 0.00028                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| pen-end                                                                                                         | the property of the second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                | and the set of the set |
|                                                                                                                 | Gas/Vapor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 6760            | 0.00441000                                                                                                     | 80.65%                                                                                                         | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 8760            | 0.00309000                                                                                                     | 50.91%                                                                                                         | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| - consideration of the state                                                                                    | Heavy Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 8760            | 0.00030900                                                                                                     | 0.00%                                                                                                          | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Water/Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     | 8760            | 0.00055000                                                                                                     | 50,91%                                                                                                         | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| onnecto                                                                                                         | CALL OF THE OWNER OWNE |                     |                 |                                                                                                                |                                                                                                                |                                                                                                                | ale e e e en energiese production de la construction de la construction de la construction de la constru                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                 | Gas/Vapor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20                  | 8760            | 0.00044000                                                                                                     | 80.65%                                                                                                         | 62,16969                                                                                                       | 0.03108                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 20                  | 8760            | 0,00046300                                                                                                     | 50.91%                                                                                                         | 41,29839                                                                                                       | 0.02085                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Heavy Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     | 8760            | 0.00001700                                                                                                     | 0.00%                                                                                                          | 0.00000                                                                                                        | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| an and a second seco | Water/Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20                  | 8760            | 0.00024300                                                                                                     | 50.91%                                                                                                         | 21.67496                                                                                                       | 0.01084                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| )ther: Co                                                                                                       | mpressors, relief v                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | alves, process dra  | lins, diaphragm | ns, dump arms, hatches, i                                                                                      | nstruments, meters, polished roo                                                                               | is, and vents                                                                                                  | er en nomen ander en                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                 | Gas/Vapor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10                  | 8760            | 0.01940000                                                                                                     | 80.65%                                                                                                         | 1370,55907                                                                                                     | 0.68528                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10                  | 8760            | 0.01650000                                                                                                     | 50.91%                                                                                                         | 735.87844                                                                                                      | 0,36794                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                 | Heavy Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1                   | 8760            | 0.00006800                                                                                                     | 0.00%                                                                                                          | 0.00000                                                                                                        | 0.0000.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                 | Water/Light Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10                  | 8760            | 0.03090000                                                                                                     | 50.91%                                                                                                         | 1378.09963                                                                                                     | 0.68905                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| NOTE - e                                                                                                        | mission factors base                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | d on Table 2-4 of U | .S. EPA's 1995  | Protocol for Equipment Lea                                                                                     | ak Emission Estimates.                                                                                         |                                                                                                                | аланын түүн төлөө төлөрөн түүлөрөн төрөөн төрөө төрө<br>төрөө төрөө түүүн төрөө төрө                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                 |                                                                                                                | Methane Total                                                                                                  | n tons/vear                                                                                                    | 8.56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                 |                                                                                                                | Methane Total                                                                                                  | and a second | 1.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

|                                                    |                      |                      |                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -                                                                                                               | 999 gagar can be an               |
|----------------------------------------------------|----------------------|----------------------|----------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|                                                    | Company:             | XTO ENERGY           | INC.           |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | a second and a second and a second and a second and a second a second second second second second second second |                                                                       |
| far far sen an | Facility Name:       | Each Wellsite        |                | and an |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 | nenne ar ner tellen er en er en sekente sakke om en sekente sek telle |
|                                                    | cility Location:     | Uintah County        | , Utah         |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 |                                                                       |
|                                                    | T                    |                      |                |                                            | ANN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                 |                                                                       |
|                                                    |                      | Estimated            | Hours of       | Factors*                                   | %CO2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Emis                                                                                                            | sions                                                                 |
|                                                    |                      | Components<br>Count  | Operation      | lb/hr/component                            | Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | lb/year                                                                                                         | metric tons/year                                                      |
| /aives                                             |                      | 10                   | <u></u>        |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 |                                                                       |
|                                                    | Gas/Vapor            | 150                  | 8760           | 0.00992000                                 | 0.76%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 99.33144                                                                                                        | 0.04515                                                               |
|                                                    | Light Oil            | 20                   | 8760           | 0,00550000                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8.00321                                                                                                         | 0.00364                                                               |
|                                                    | Heavy Oil            |                      | 8760           | 0.00001900                                 | 0.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00000                                                                                                         | 0.00000                                                               |
|                                                    | Water/Light Oil      | 6                    | 8760           | 0.00021600                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.09429                                                                                                         | 0.00004                                                               |
| umps                                               |                      |                      |                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 |                                                                       |
|                                                    | Gas/Vapor            | 7                    | 8760           | 0.00529000                                 | 0.76%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2.47194                                                                                                         | 0.00112                                                               |
|                                                    | Light Oil            | 3                    | 8760           | 0,02866000                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.25560                                                                                                         | 0.00284                                                               |
|                                                    | Heavy Oil            |                      | 8760           | 0.00113000                                 | 0.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0,00000                                                                                                         | 0.00000                                                               |
|                                                    | Water/Light Oil      |                      | 8760           | 0.00005300                                 | , 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.00000                                                                                                         | 0.00000                                                               |
| langes                                             |                      |                      |                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 |                                                                       |
|                                                    | Gas/Vapor            | 300                  | 8760           | 0.00086000                                 | 0.76%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 17.22279                                                                                                        | 0,00783                                                               |
|                                                    | Light Oil            | 30                   | 8760           | 0.00024300                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.53039                                                                                                         | 0.00024                                                               |
|                                                    | Heavy Oil            |                      | 8760           | 0.0000086                                  | 0.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00000                                                                                                         | 0.00000                                                               |
|                                                    | Water/Light Oil      | 20                   | 8760           | 0.00000620                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00902                                                                                                         | 0,00000                                                               |
| )pen-ende                                          | d Lines              |                      |                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                                                                                                               |                                                                       |
|                                                    | Gas/Vapor            |                      | 8760           | 0.00441000                                 | 0.76%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00000                                                                                                         | 0.00000                                                               |
|                                                    | Light Oil            |                      | 8760           | 0.00309000                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00000                                                                                                         | 0,00000                                                               |
|                                                    | Heavy Oil            |                      | 8760           | 0.00030900                                 | 0.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00000                                                                                                         | 0.00000                                                               |
|                                                    | Water/Light Oil      |                      | 8760           | 0.00055000                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00000                                                                                                         | 0.00000                                                               |
| onnector                                           | 6                    |                      |                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 |                                                                       |
|                                                    | Gas/Vapor            | 20                   | 8760           | 0.00044000                                 | 0.76%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0,58744                                                                                                         | 0.00027                                                               |
|                                                    | Light Oil            | 20                   | 8760           | 0.00046300                                 | 0,83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.67372                                                                                                         | 0.00031                                                               |
|                                                    | Heavy Oil            |                      | 8760           | 0.00001700                                 | 0.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.00000                                                                                                         | 0.00000                                                               |
|                                                    | Water/Light Oil      | 20                   | 8760           | 0,00024300                                 | 0,83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0,35360                                                                                                         | 0.00016                                                               |
|                                                    |                      |                      |                |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 |                                                                       |
| Other: Col                                         | mpressors, relief v  | alves, process dra   | ins, dlaphragm | is, dump arms, hatches, ins                | truments, meters, polish                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ed rods, and vents                                                                                              |                                                                       |
|                                                    | Gas/Vapor            | 10                   | 8760           | 0.01940000                                 | 0.76%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 12.95047                                                                                                        | 0.00589                                                               |
|                                                    | Light Oil            | 10                   | 8760           | 0.01650000                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | for a second  | 0.00546                                                               |
|                                                    | Heavy Oil            | 10                   | 8760           | 0.00006800                                 | 0.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | a france for 5 might prister in a france and an announcement and the second and and an an an and a second and a | 0.00000                                                               |
| Statement many tenant a sum                        | Water/Light Oil      | 10                   | 8760           | 0.03090000                                 | 0.83%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                 | 0.01022                                                               |
|                                                    | - returning in On    | .0                   | 0100           | 0.0000000                                  | 0.00.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 22.70173                                                                                                        | 0.01022                                                               |
| NOTE - en                                          | ission factors based | d on Table 2-4 of U. | S. EPA's 1995  | Protocol for Equipment Leak                | Emission Estimates.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                 | n y y y a zakada adala da sa      |
|                                                    |                      |                      |                |                                            | CO <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Total in metric tons/year                                                                                       | 0.08                                                                  |
|                                                    |                      |                      |                |                                            | When the second | Total in Lb/hr                                                                                                  | 0.02                                                                  |



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8 1595 Wynkoop Street DENVER, CO 80202-1129 Phone 800-227-8917 http://www.epa.gov/region08

August 9, 2017

## **MEMORANDUM**

- SUBJECT: Source Determination Analysis for River Bend Dehydrator Site
- FROM: Eric Wortman, Permit Engineer, EPA Region 8 Air Program

TO: XTO Energy – River Bend Dehydrator Site Initial Part 71 Permit File

The 8/2/16 revised definition of a major source at 40 CFR 71.2 (81 FR 35622) states that "For onshore activities belonging to Standard Industrial Classification (SIC) Major Group 13: Oil and Gas Extraction, pollutant emitting activities shall be considered adjacent if they are located on the same surface site; or if they are located on surface sites within a quarter mile of one another (measured from the center of the equipment on the surface site) and they share equipment." "Surface site" is given the same meaning as in 40 CFR 63.761, which defines a surface site as any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed. "Shared equipment includes, but is not limited to, produced fluids storage tanks, phase separators, natural gas dehydrators or emissions control devices." The preamble explains that shared equipment generally means equipment "used to process or store the oil, natural gas or the byproducts of production." (see 81 FR 35624/2)

In the initial part 71 permit application for the River Bend Dehydrator Site, XTO Energy (XTO) included emissions from the RBU 6-15E, RBU 7-15E, and RBU 11-15E wellsites. The RBU 6-15E wellsite is located on the same gravel pad within the property boundaries of the River Bend Dehydrator facility and is part of the same "surface site" as defined in 63.761. The RBU 7-15E and RBU 11-15E wellsites are located within a quarter mile of the River Bend Dehydrator Site, but are not located on the same surface site. Emissions equipment at the three wellsites each consist of a condensate storage tank, fugitive emissions, truck loading emissions, and various natural gas-fired process heaters. The RBU 11-15E wellsite also operates a small < 2.0 MMscfd dehydration unit. Natural gas produced from the RBU 6-15E, RBU 7-15E and RBU 11-15E wellsites enters a common low-pressure gathering pipeline that flows to the Tap 1 Compressor Station (Tap 1 CS), and eventually back to the River Bend Dehydrator Site for further processing before entering the sales pipeline. (see Figure 1 below)

The Tap 1 CS is also located within a quarter mile of the River Bend Dehydrator Site, but is not located on the same surface site. The Tap 1 CS receives natural gas from nearby wells (including RBU 6-15E, RBU 7-15E, and RBU 11-15E wellsites) and compresses the gas up to a pressure where it can enter the XTO-operated high-pressure gas gathering pipeline. The emission units at Tap 1 CS include two natural gas-fired reciprocating internal combustion engines, two condensate storage tanks, heat trace pneumatic pumps, natural gas-fired heaters, condensate truck loading emissions, and fugitive emissions. The compressed natural gas from Tap 1 CS discharges directly into the River Bend Dehydrator Site, where the natural gas is dehydrated to meet pipeline specifications before entering the sales pipeline. Emissions equipment at the River Bend Dehydrator facility consists of a 45 MMscfd dehydration unit, two

condensate storage tanks, truck loading emissions, fugitive emissions, and various natural gas-fired process heaters.

All sites—the River Bend Dehydrator Site, the Tap 1 CS, and the RBU 6-15E, RBU 71-5E, and RBU 11-15E wellsites—have the same two-digit SIC code 13 and are under common control.

This source determination analysis uses the River Bend Dehydrator facility's surface site as the center site for the quarter-mile distance. (See 81 FR 35627/2-3; Response to Comments, Source Determination for Certain Emission Units in the Oil and Natural Gas Sector, at 71 "If there is any question remaining of which emitting activity should be the center point, such a determination is left to the discretion of the permitting authority.") In this case, because the River Bend Dehydrator facility was a new operation at the time of the permit application—and would thus need a title V permit regardless of any adjacent surface sites—it is reasonable to use the dehydrator facility as the center site.

Based on the information in the permit application and the definition of "surface site" in 40 CFR 63.761, the RBU 6-15E wellsite is located on the same surface site as the River Bend Dehydrator facility, but the RBU 7-15E wellsite, RBU 11-15E wellsite, and the Tap 1 CS are on three other, separate surface sites within a quarter-mile radius of the center site. Because the RBU 6-15E wellsite is on the same surface site as the center site, it is adjacent to the center site and thus part of the same major source as defined in part 71. The RBU 7-15E wellsite, RBU 11-15E wellsite, and Tap 1 CS share the equipment at the River Bend Dehydrator facility. For example, the 45 MMscfd dehydrator at River Bend is used to dehydrate the natural gas discharged from the Tap 1 CS, which includes gas produced from the RBU 7-15E and RBU 11-15E wellsites. Accordingly, pursuant to 40 CFR 71.2, the River Bend Dehydrator facility has "shared equipment" with the RBU 7-15E wellsite, RBU 11-15E wellsite, and the Tap 1 CS. Therefore, the emission units located at the RBU 7-15E wellsite, RBU 11-15E wellsite, and the Tap 1 CS are adjacent to the River Bend Dehydrator Site under the revised definition of a major source. Because activities at the RBU 7-15E wellsite, RBU 11-15E wellsite, and the Tap 1 CS also share the same two-digit SIC code and are under common control, they are thus considered part of the same major source as defined in part 71.

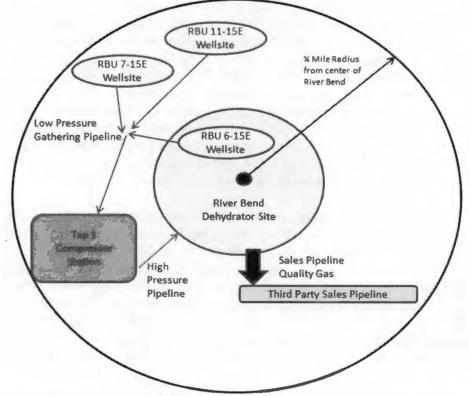


Figure 1. Flow Diagram of XTO Energy Natural Gas Production Operations – Uinta Basin, Utah River Bend Dehydration Site, RBU 6-15E Wellsite, RBU 7-15E Wellsite, RBU 11-15E Wellsite, Tap 1 Compressor Station

# **Manzanares**, Candice

From:Allison, Craig < Craig\_Allison@xtoenergy.com>Sent:Friday, July 7, 2017 1:34 PMTo:Wortman, EricSubject:RE: River Bend Dehy and Title VAttachments:XTO Riverbend Dehy Site Reg Applicability Table-7-7-2017.pdf; Emissions - Riverbend<br/>PTE Table-7-7-2017.pdf

Eric:

Thanks for your response. My comments in RED:

- Note that you can take credit for the 95% reduction from MACT HH on RRBU D-1, so the controlled PTE in the Statement of Basis will be 14.6 tpy VOC and 10.9 tpy Total HAPs. Please refer to the attached, revised PTE table.
- With regard to your question on Title V applicability...after reviewing the updated PTE information, the controlled PTE for the aggregation of all sources is major for VOC and Total HAPs. This brings the site into Title V in addition to the major source status for HH. XTO is looking at permanently removing the dehy's at RBU 11-15E and RBU 7-15E, and can do so before the end of July of 2017. Since the dehy's are only used for 4 months or so during the winter, we can eliminate them at these locations by installing a solar powered methanol system instead of using the dehy's. This would get the facility VOC PTE below the 100 tpy limit, thereby eliminating the Title V applicability for uncontrolled VOC's and total HAP's. What are your comments on this modification?
- I disagree with your applicability that the small dehydrator at RBU 6-15E is an area source. According to §63.761, only HAP emissions from glycol dehydration units and storage vessels shall be aggregated for a major source determination at production field facilities. Since the RBU 6-15E wellsite is part of the same surface site as River Bend, emissions from dehydration unit RBU 6-15E D-1 and RBD-1 shall be aggregated to determine major source status. Therefore, dehydration unit RBU 6-15E D-1 is subject to the major source requirements of this subpart for small glycol dehydration units. The RBU 6-15E dehy system is currently not operating and will be permanently removed as of 7/31/2017. Therefore, XTO is removing this source from the application. Please let me know if you need anything else to support this revision.
- I'm also assuming that the operations at RBU 11-15E are similar to RBU 7-15E in that the gas is fed to a gathering flowline that eventually leads into Tap-1 CS. Let me know if I'm mistaken. Yes, you are correct.

In light of my comments, please let me know how we need to proceed with the RBU dehy Title V. Thanks.

Regards, Craig Allison EH&S Advisor Environmental Health & Safety Office: 817-885-2672 | Cell: 817-201-2379 | Fax: 817-885-1847 XTO ENERGY INC., an ExxonMobil subsidiary 810 Houston Street, Fort Worth, Texas 76102

From: Wortman, Eric [mailto:Wortman.Eric@epa.gov]
Sent: Monday, July 03, 2017 10:49 AM
To: Allison, Craig
Subject: RE: River Bend Dehy and Title V

Thanks Craig. Here's a few quick notes based on the info. you sent.....just an fyi. - Eric

- Note that you can take credit for the 95% reduction from MACT HH on RRBU D-1, so the controlled PTE in the Statement of Basis will be 14.6 tpy VOC and 10.9 tpy Total HAPs.
- With regard to your question on Title V applicability...after reviewing the updated PTE information, the controlled PTE for the aggregation of all sources is major for VOC and Total HAPs. This brings the site into Title V in addition to the major source status for HH.
- I disagree with your applicability that the small dehydrator at RBU 6-15E is an area source. According to §63.761, only HAP emissions from glycol dehydration units and storage vessels shall be aggregated for a major source determination at production field facilities. Since the RBU 6-15E wellsite is part of the same surface site as River Bend, emissions from dehydration unit RBU 6-15E D-1 and RBD-1 shall be aggregated to determine major source status. Therefore, dehydration unit RBU 6-15E D-1 is subject to the major source requirements of this subpart for small glycol dehydration units.
- I'm also assuming that the operations at RBU 11-15E are similar to RBU 7-15E in that the gas is fed to a gathering flowline that eventually leads into Tap-1 CS. Let me know if I'm mistaken.

From: Allison, Craig [mailto:Craig\_Allison@xtoenergy.com] Sent: Friday, June 30, 2017 5:09 PM To: Wortman, Eric <<u>Wortman.Eric@epa.gov</u>> Subject: RE: River Bend Dehy and Title V

Eric:

Thanks for the reply on the RBU Dehy TV. I wanted to have this formal response in order to answer any questions on why we have a Part 71 at RBU dehy.

Attached are the main two tables that we discussed that you will need to move forward on the draft permit. I will be following up next week with the other formal documents (EUD's, CTAC, supporting emissions calcs, etc.). Also, I will finish Tap-5 next week and get it to you as well. All of this will be coming the latter half of the week because I am out of the office until Wednesday, 7/5/2017.

Take a look at the attachments and let me know if you need any clarification on the information for RBU Dehy. Hopefully, this will help you get moving on the RBU Dehy draft. Thanks.

Regards, **Craig Allison EH&S Advisor Environmental Health & Safety** Office: 817-885-2672 | Cell: 817-201-2379 | Fax: 817-885-1847 **XTO ENERGY INC.**, an ExxonMobil subsidiary 810 Houston Street, Fort Worth, Texas 76102

From: Wortman, Eric [mailto:Wortman.Eric@epa.gov]
Sent: Friday, June 30, 2017 1:19 PM
To: Allison, Craig
Cc: Smith, Claudia
Subject: River Bend Dehy and Title V

Craig,

Per our discussion earlier on the phone, the dehydrator at the River Bend Dehydration Site is subject to the major source requirements of MACT HH because uncontrolled emissions exceed major HAP thresholds and there are no federally enforceable controls on the dehydration unit. Part 71 and MACT HH require major sources to obtain a title V permit

[see 40 CFR 63.760(h) and 40 CFR 71.3(a)]. The consent decree is not relevant because it expired/terminated in April of 2014. Because of the "Once In, Always In" policy, XTO cannot obtain a synthetic minor permit for the dehydrator at River Bend to avoid title V because the compliance date for MACT HH has already passed. EPA's "Once In, Always In" policy can be accessed at the following link: <u>https://www.epa.gov/sites/production/files/2015-08/documents/pteguid.pdf</u>.

Please note that this email is only provided to assist with your inquiry and is not an official determination of applicability to Federal air permitting requirements. If you would like more information or to proceed with a formal applicability determination, please let me know.

Eric

Eric Wortman | Environmental Scientist U.S. Environmental Protection Agency Telephone: (617) 918-1624 | Email: <u>wortman.eric@epa.gov</u>

| Equipment ID         | Emissions Units                                | Equipment Type                        | Equipment<br>Construction /<br>Manufacture<br>Date | Equipment Install<br>Date | Uncontrolled<br>VOC<br>Emissions<br>rate (TPY) | Potential<br>Applicable<br>Regulation | Regulatory<br>Applicability<br>(Yes / No) | Comments                                                              |
|----------------------|------------------------------------------------|---------------------------------------|----------------------------------------------------|---------------------------|------------------------------------------------|---------------------------------------|-------------------------------------------|-----------------------------------------------------------------------|
| RBD-1                |                                                | Natural Gas                           |                                                    |                           |                                                |                                       |                                           |                                                                       |
|                      | 45 MMscfd TEG Dehydrator                       | Dehydrator                            | Pre-2010                                           | 1/17/2010                 | 14.56                                          | MACT HH                               | YES                                       | Major Source of HAP's                                                 |
| RBT-1                | 400-bbl slop tank #1                           | Storage Tank                          | 2009                                               | 12/15/2009                | 4.31                                           | NSPS 0000                             | NO                                        |                                                                       |
| RBT-2                | 400-bbl slop tank #2                           | Storage Tank                          | 2009                                               | 12/15/2009                | 4.31                                           | NSPS 0000                             | NO                                        |                                                                       |
| RBU Pneumatic        | <b>RBU Pneumatic Controllers</b>               | Pneumatic                             | D== 2010                                           | 1/17/2010                 | A1/A                                           |                                       |                                           | Controllers operate On Plant                                          |
| Controllers          | Againer (1.2 Stargensternet                    | Controllers                           | Pre-2010                                           | 1/17/2010                 | N/A                                            | NSPS 0000                             | NO                                        | Instrument Air                                                        |
| herein gen anne anne | betredition in the second second second second | يون بور بوريد دور<br>رون و مور و در د | Magni, Highes                                      | And Andrewski and the     | 3.9.4                                          | Synth Cirlinan a s                    | 64                                        | Deby Unit to the removed on ar<br>Debyto July 31, 2017                |
|                      | RBU 6-15E Wellsite                             |                                       |                                                    | if o Silve Boole A        |                                                |                                       | •••                                       | and the testing of a local state                                      |
| RBU 6-15E P-1        | Pneumatic Pump Emissions                       | Pneumatic Pump                        | Pre-2010                                           | 1/18/2010                 | N/A                                            | NSPS 0000a                            | NO                                        |                                                                       |
| RBU 6-15E            |                                                |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |
| Pneumatic            | RBU 6-15E Pneumatic                            | Pneumatic                             |                                                    |                           |                                                |                                       |                                           |                                                                       |
| Controllers          | Controllers                                    | Controllers                           | Pre-2010                                           | Pre-2010                  | N/A                                            | NSPS 0000                             | NO                                        | Operate On Plant Instrument Air                                       |
|                      | RBU 7-15E Wellsite 0.20                        | Natural Gas                           |                                                    |                           |                                                |                                       |                                           | Area Source - Unit is less than 3.0                                   |
| RBU 7-15E D-1        | MMscfd glycol dehydrator                       | Dehydrator                            | Pre-2012                                           | 3/2/2012                  | 10.54                                          | MACT HH                               | NO                                        | mmscfd actual flowrate                                                |
| 00117 455 5 -        | RBU 7-15E Wellsite                             |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |
| RBU 7-15E P-1        | Pneumatic Pump Emissions                       | Pneumatic Pump                        | Pre-2012                                           | 3/2/2012                  | N/A                                            | NSPS OOOOa                            | NO                                        |                                                                       |
| RBU 7-15E            | 00117 165 0                                    | Deeus                                 |                                                    |                           |                                                |                                       |                                           |                                                                       |
| Pneumatic            | RBU 7-15E Pneumatic<br>Controllers             | Pneumatic<br>Controllers              |                                                    |                           |                                                |                                       |                                           |                                                                       |
| Controllers          | Controllers                                    | Controllers                           | Pre-2010                                           | Pre-2010                  | N/A                                            | NSPS 0000                             | NO                                        |                                                                       |
| RBU 11-15E D-1       | RBU 11-15E Wellsite 0.20                       | Natural Gas                           |                                                    |                           |                                                |                                       |                                           | Area Source - Unit is less than 3.0                                   |
| KBU 11-15E D-1       | MMscfd glycol dehydrator                       | Dehydrator                            | Pre-2010                                           | Pre-2010                  | 10.54                                          | MACT HH                               | NO                                        | mmscfd actual flowrate                                                |
| RBU 11-15E P-1       | RBU 11-15E Wellsite                            |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |
| KBO 11-13E F-1       | Pneumatic Pump Emissions                       | Pneumatic Pump                        | Pre-2012                                           | Pre-2012                  | N/A                                            | NSPS OOOOa                            | NO                                        |                                                                       |
| RBU 11-15E           | RBU 11-15E Pneumatic                           | Pneumatic                             |                                                    |                           |                                                |                                       |                                           |                                                                       |
| Pneumatic            | Controllers                                    | Controllers                           |                                                    | 1                         |                                                |                                       |                                           |                                                                       |
| Controllers          | 14 M 11 M 1 M 10 M 10 M 10 M                   | controllers                           | Pre-2010                                           | Pre-2010                  | N/A                                            | NSPS 0000                             | NO                                        |                                                                       |
| T1C-1                | Tap-1 Caterpillar 3516 TALE                    |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |
| 110-1                | Compressor Engine #1                           | RICE                                  | 1/1/2004                                           | 7/1/2013                  | N/A                                            | MACT ZZZZ                             | YES                                       | REMOTE AREA - S/N 4EK03995                                            |
| T1C-1                | Tap-1 Caterpillar 3516 TALE                    |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |
|                      | Compressor Engine #1                           | RICE                                  | 1/1/2004                                           | 7/1/2013                  | N/A                                            | NSPS JJJJ                             | NO                                        | S/N 4EK03995                                                          |
| T1C-1                | Tap-1 Caterpillar 3516 TALE                    | Reciprocating                         |                                                    |                           |                                                |                                       | 10000                                     |                                                                       |
|                      | Compressor #1                                  | Compressor                            | Pre-2010                                           | 7/1/2013                  | N/A                                            | NSPS 0000                             | NO                                        | Pre-Aug 2011 Construction date                                        |
| T1C-2                | Tap-1 Caterpillar 3516 TALE                    |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |
|                      | Compressor Engine #2                           | RICE                                  | 8/12/2001                                          | 7/18/2013                 | N/A                                            | MACT 2222                             | YES                                       | REMOTE AREA - S/N 4EK03582                                            |
| T1C-2                | Tap-1 Caterpillar 3516 TALE                    |                                       |                                                    | 7/10/2010                 |                                                |                                       |                                           |                                                                       |
|                      | Compressor Engine #2                           | RICE                                  | 8/12/2001                                          | 7/18/2013                 | N/A                                            | NSPS IIII                             | NO                                        | S/N 4EK03582                                                          |
| T1C-2                | Tap-1 Caterpillar 3516 TALE                    | Reciprocating                         | D == 2010                                          | 7/10/2012                 |                                                | 10000                                 |                                           |                                                                       |
|                      | Compressor #2                                  | Compressor                            | Pre-2010                                           | 7/18/2013                 | N/A                                            | NSPS 0000                             | NO                                        | Pre-Aug 2011 Construction date<br>Tank 1350 / S/N 2024 - Pre-Aug 2013 |
| T1T-1                | Tap-1 - 300-bbl Condensate                     | Storage Teals                         | 6/16/2010                                          | 6/18/2012                 | 2.19                                           | NSPS 0000                             | NO                                        | Const Date / BELOW 6 TPY VOC                                          |
|                      | Tank #1<br>Tap-1 - 300-bbl Condensate          | Storage Tank                          | 6/16/2010                                          | 6/18/2012                 | 2.19                                           | NSPS 0000                             | NU                                        | Aug 2011 Const Date / BELOW 6 TPY                                     |
| T1T-2                | Tank #2                                        | Storage Tank                          | 9/12/2001                                          | 6/18/2012                 | 2.19                                           | NSPS 0000                             | NO                                        | VOC                                                                   |
| T1P-1/T1P-2          | Tap-1 Heat Trace Pumps (2)                     | Pneumatic Pump                        | Pre-2014                                           | Pre-2014                  | N/A                                            | NSPS OOQOa                            | NO                                        | Pre- 2015 Install date                                                |
| RBU 6-15E            | rop 1 near nace rumps (2)                      | i neumatic rump                       | FIC-2014                                           | 116-2014                  | N/A                                            | 1151 3 00000                          |                                           | Tank E1427 / S/N 2802 - BELOW 6                                       |
| Wellsite IEU         | 400-bbl slop tank                              | Storage Tank                          | 11/1/2012                                          | 11/21/2012                | 1.85                                           | N5P5 0000                             | YES                                       | TPY VOC                                                               |
| RBU 7-15E            | too an hop tons                                | 515100C 1011K                         | **/*/2012                                          |                           | 2.00                                           |                                       |                                           | Tank E1414 / S/N 2678 - BELOW 6                                       |
| Wellsite IEU         | 400-bbl slop tank                              | Storage Tank                          | 7/1/2012                                           | 8/24/2012                 | 1.85                                           | NSPS 0000                             | YES                                       | TPY VOC                                                               |
| RBU 11-1SE           | 400-bbi siop tank                              | storage rank                          | 7/1/2012                                           | 6/24/2012                 | C6.1                                           | 11353 0000                            | TES                                       |                                                                       |
|                      | 200 bbl size and                               | Canada Tan'                           | 2/1/2007                                           | 5/0/2012                  |                                                | NERS 0000                             |                                           | Tank E1391/ S/N 0800 - Pre-2011 an                                    |
| Wellsite IEU         | 300-bbl slop tank                              | Storage Tank                          | 3/1/2008                                           | 5/9/2012                  | 1.42                                           | NSPS 0000                             | NO                                        | BELOW 6 TPY VOC                                                       |
| RBU 6-15E            | Mall Completion                                | Natural Car Mi-II                     | 11/4                                               | 1/22/2005                 |                                                | NERE COOC-                            | NO                                        |                                                                       |
| Wellsite             | Well Completion                                | Natural Gas Well                      | N/A                                                | 1/22/2004                 | N/A                                            | NSPS 0000a                            | NO                                        |                                                                       |
| <b>RBU 7-15E</b>     |                                                |                                       |                                                    | Initial - 4/3/1992 &      |                                                |                                       |                                           |                                                                       |
| Wellsite             |                                                |                                       |                                                    | Recompletion -            |                                                |                                       |                                           |                                                                       |
|                      | Well Completion                                | Natural Gas Well                      | N/A                                                | 1/3/2013                  | N/A                                            | NSPS OOOOa                            | NO                                        |                                                                       |
| RBU 11-15E           |                                                |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |
|                      |                                                |                                       |                                                    |                           |                                                |                                       |                                           |                                                                       |

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| Emissions Units<br>Condensate Truck Loading<br>Thermal Oxidizer Emissions<br>45 MMscfd TEG Dehydrator<br>Fugitive Emissions<br>400-bbl slop tank #1<br>400-bbl slop tank #2<br>RBL 6-16E Wellister Oxid-<br>MMscfd Ste Wellister Oxid-<br>RBU 6-15E Wellister<br>RBU 6-15E Wellister<br>Pneumatic Pump Emissions<br>RBU 7-15E Welliste Fugitive<br>Emissions<br>RBU 7-15E Welliste Fugitive<br>Emissions<br>RBU 7-15E Welliste Fugitive<br>Emissions<br>RBU 7-15E Welliste Fugitive<br>Emissions<br>RBU 1-15E Welliste Oxid | NOx*<br>0.0<br>0.5<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0 | CO*<br>0.0<br>2.9<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0                                                                                                                              | <b>VOC*</b><br>2.44<br>0.0<br>14.6<br>5.7<br>4.3<br>4.3<br>0.00                                                                                                                                                                                                                                       | PM* 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.                                                                                                                                                                                                                                                                              | SO2°<br>0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                | Total<br>HAPs*<br>0.0<br>0.0<br>10.9<br>0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CO2*<br>0.0<br>962.8<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (as CO <sub>2</sub> e)<br>0.0<br>0.02<br>6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                            | (as CO <sub>2</sub> e)<br>0.0<br>0.002<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CO2e*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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| Thermal Oxidizer Emissions<br>45 MMscfd TEG Dehydrator<br>Fugitive Emissions<br>400-bbl slop tank #1<br>400-bbl slop tank #2<br>RBU 6-156 Wellotte 0.20<br>ANAddd TEG-Dehydrator<br>RBU 6-15E Wellsite Fugitive<br>Emissions<br>RBU 6-15E Wellsite<br>Pneumatic Pump Emissions<br>RBU 7-15E Wellsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                           | 0.5<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.9<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                        | 0.0<br>14.6<br>5.7<br>4.3<br>4.3                                                                                                                                                                                                                                                                      | 0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                | 0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                               | 0.0<br>10.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 962.8<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 963.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 45 MMscfd TEG Dehydrator<br>Fugitive Emissions<br>400-bbl slop tank #1<br>400-bbl slop tank #2<br>RBU 6-15E Wellste Fugitive<br>Emissions<br>RBU 6-15E Wellste Fugitive<br>Pneumatic Pump Emissions<br>RBU 7-15E Wellsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                                                                                                      | 0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                                                             | 14.6<br>5.7<br>4.3<br>4.3                                                                                                                                                                                                                                                                             | 0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                       | 0.0<br>0.0                                                                                                                                                                                                                                                                                              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| Fugitive Emissions<br>400-bbl slop tank #1<br>400-bbl slop tank #1<br>RBL 6-166 Weilute 0-26<br>MNaeld TEG-Dehydrahor<br>RBU 6-15E Wellsite Fugitive<br>Emissions<br>RBU 6-15E Wellsite Fugitive<br>Pneumatic Pump Emissions<br>RBU 7-15E Wellsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                                                                             | 0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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                                                                                             | 5.7<br>4.3<br>4.3                                                                                                                                                                                                                                                                                     | 0.0<br>0.0                                                                                                                                                                                                                                                                                                              | 0.0                                                                                                                                                                                                                                                                                                     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| 400-bbl slop tank #1<br>400-bbl slop tank #2<br>RBU 6-156 Welliste 0.20<br>ANAdeld TEG-Dehydroben<br>RBU 6-15E Welliste Fugitive<br>Emissions<br>RBU 6-15E Welliste<br>Pneumatic Pump Emissions<br>RBU 7-15E Welliste 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Welliste Fugitive<br>Emissions                                                                                                                                                                                                                          | 0.0<br>0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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                                                                                             | 4.3<br>4.3                                                                                                                                                                                                                                                                                            | 0.0                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                         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| 400-bbl slop tank #2<br>R&II-6-165 Weilsten 0.20-<br>6345613 TEG-Delvydration<br>RBU 6-155 Weilster Fugitive<br>Emissions<br>RBU 6-155 Weilsite<br>Pneumatic Pump Emissions<br>RBU 7-155 Weilsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-155 Weilsite Fugitive<br>Emissions                                                                                                                                                                                                                                              | 0.0<br>0.0<br>0.0<br>0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| RBU 6-15E Welliste 0.20<br>MAdeds TEG-Dehydrotor<br>RBU 6-15E Welliste Fugitive<br>Emissions<br>RBU 6-15E Welliste<br>Pneumatic Pump Emissions<br>RBU 7-15E Welliste 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Welliste Fugitive<br>Emissions                                                                                                                                                                                                                                                                           | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| MNbeld TEG-Delydrator<br>RBU 6-15E Wellsite Fugitive<br>Emissions<br>RBU 6-15E Wellsite Fugitive<br>7.05E Wellsite<br>Pneumatic Pump Emissions<br>RBU 7-15E Wellsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                                                                                                                                                           | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Emissions<br>RBU 6-15E Wellsite<br>Pneumatic Pump Emissions<br>RBU 7-15E Wellsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                                                                                                                                                                                                                                              | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Pneumatic Pump Emissions<br>RBU 7-15E Wellsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| RBU 7-15E Wellsite 0.20<br>MMscfd glycol dehydrator<br>RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| RBU 7-15E Wellsite Fugitive<br>Emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| MMscfd glycol dehydrator<br>RBU 11-15E Wellsite Fugitive                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| RBU 11-15E Wellsite<br>Pneumatic Pump Emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Tap-1 Caterpillar 3516 TALE<br>Compressor Engine #1                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 19.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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| Tap-1 Caterpillar 3516 TALE<br>Compressor Engine #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 16.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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| Tap-1 - 300-bbl Condensate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Tank #1<br>Tap-1 - 300-bbl Condensate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Tap-1 Heat Trace Pumps (2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Tap-1 Fugitives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Pigging Operations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Capstone Model C65NG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Standard MicroTurbine<br>(65kW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 1.0 MMBtu/hr Dehy Reboiler<br>for RBD-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 250 Mbtu/hr heater for slop<br>tank #1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 250 Mbtu/hr heater for slop<br>tank #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 175 Mbruthr Roboiler                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 250 Mbtu/hr heater for slop<br>tank #1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 75 Mbtu/hr separator heater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Condensate Truck Loading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 400-bbl slop tank<br>RBU 7-15E Wellsite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Pneumatic Pump Emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 250 Mbtu/hr Dehydrator<br>Reboiler                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 250 Mbtu/hr tank heater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 75 Mbtu/hr seperator heater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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| Condensate Truck Loading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 400-bbl slop tank<br>175 Mbtu/hr Dehydrator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Reboiler                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 250 Mbtu/hr tank heater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 250 Mbtu/hr separator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| heater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Condensate Truck Loading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| 300-bbl slop tank                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Standard MicroTurbine<br>(65kW)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Tap-1 - Three (3) 250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Tap-1 Truck Loading                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 300-bbl slop tank<br>Standard MicroTurbine<br>(65kW)<br>Tap-1 - Three (3) 250<br>Mbtu/hr Heaters<br>Tap-1 Truck Loading<br>Tap-1 Comp Blowdowns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 300-bbl slop tank     0.0       Standard MicroTurbine<br>(65kW)     0.1       Tap-1 - Three (3) 250<br>Mbtu/hr Heaters     0.40       Tap-1 Truck Loading     0.0       Tap-1 Comp Blowdowns     0.0 | 300-bbl slop tank         0.0         0.0           Standard MicroTurbine<br>(65kW)         0.1         0.8           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34           Tap-1 Truck Loading         0.0         0.0           Tap-1 Comp Blowdowns         0.0         0.0 | 300-bbl slop tank         0.0         0.0         1.4           Standard MicroTurbine<br>(65kW)         0.1         0.8         0.0           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04 | 300-bbl slop tank         0.0         0.0         1.4         0.0           Standard MicroTurbine<br>(65kW)         0.1         0.8         0.0         0.0           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04         0.03           Tap-1 Truck Loading         0.0         0.0         0.3         0.0           Tap-1 Comp Blowdowns         0.0         0.0         1.9         0.0 | 300-bbl slop tank         0.0         0.0         1.4         0.0         0.0           Standard MicroTurbine<br>(65kW)         0.1         0.8         0.0         0.0         0.0           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04         0.03         0.0           Tap-1 Truck Loading         0.0         0.0         0.3         0.0         0.0           Tap-1 Comp Blowdowns         0.0         0.0         1.9         0.0         0.0 | 300-bbl slop tank         0.0         0.0         1.4         0.0         0.0         0.02           Standard MicroTurbine<br>(65kW)         0.1         0.8         0.0         0.0         0.0         0.0           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04         0.03         0.0         0.0           Tap-1 Truck Loading         0.0         0.0         0.3         0.0         0.002         Tap-1 Comp Blowdowns         0.0         0.01         0.01 | 300-bbl slop tank         0.0         0.0         1.4         0.0         0.0         0.02         0.01           Standard MicroTurbine<br>(65kW)         0.1         0.8         0.0         0.0         0.0         0.0         80.2           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04         0.03         0.0         0.0         384.0           Tap-1 Truck Loading         0.0         0.0         0.3         0.0         0.00         0.00         1.4 | 300-bbl slop tank         0.0         0.0         1.4         0.0         0.0         0.02         0.01         8.3           Standard MicroTurbine<br>(65kW)         0.1         0.8         0.0         0.0         0.0         0.0         80.2         0.0           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04         0.03         0.0         0.0         384.0         0.2           Tap-1 Truck Loading         0.0         0.0         0.3         0.0         0.00         0.00         0.0           Tap-1 Comp Blowdowns         0.0         0.0         1.9         0.0         0.01         0.1         256.5 | 300-bbl slop tank         0.0         0.0         1.4         0.0         0.0         0.02         0.01         8.3         0.0           Standard MicroTurbine<br>(65kW)         0.1         0.8         0.0         0.0         0.0         0.0         8.3         0.0           Tap-1 - Three (3) 250<br>Mbtu/hr Heaters         0.40         0.34         0.04         0.03         0.0         0.0         384.0         0.2         0.2           Tap-1 Truck Loading         0.0         0.0         0.3         0.0         0.00         0.00         0.0         0.0           Tap-1 Comp Blowdowns         0.0         0.0         1.9         0.0         0.01         0.1         256.5         0.0 |

XTO Energy Inc.

# Manzanares, Candice

From:Allison, Craig <Craig\_Allison@xtoenergy.com>Sent:Tuesday, March 14, 2017 3:22 PMTo:Wortman, EricSubject:RE: Riverbend & Accompanying WellsitesAttachments:XTO RBU Dehy EPA Request Response-3-14-2017.pdf

Eric:

Attached is the response to your information request. Also, XTO submitted a Tribal Registration in 2013 for the Tap-1 Compressor Station. The emissions that I sent for Tap-1 were an update to the tribal registration emission because the compressor engines were changed out in 2013 for a similar, lower horsepower model. The Tap-1 site is a true-minor site by itself.

Please let me know if you need anything else. I am working on the certified submittal and completing the Tap-5 information to hopefully be sent to you this Thursday. Thanks.

Regards, Craig Allison EH&S Advisor Environmental Health & Safety Office: 817-885-2672 | Cell: 817-201-2379 | Fax: 817-885-1847 XTO ENERGY INC., an ExxonMobil subsidiary 810 Houston Street, Fort Worth, Texas 76102

From: Wortman, Eric [mailto:Wortman.Eric@epa.gov]
Sent: Tuesday, March 14, 2017 12:24 PM
To: Allison, Craig
Subject: RE: Riverbend & Accompanying Wellsites

Great, thanks.

From: Allison, Craig [mailto:Craig\_Allison@xtoenergy.com]
Sent: Tuesday, March 14, 2017 1:22 PM
To: Wortman, Eric <<u>Wortman.Eric@epa.gov</u>>
Subject: RE: Riverbend & Accompanying Wellsites

Eric – yes. I am working on it right now. You will have the below requested information today. As far as the timing for the certified submittal of Tap-5 and RBU Dehy requested information, I should be submitting the full packages by this Thursday.

Regards, Craig Allison EH&S Advisor Environmental Health & Safety Office: 817-885-2672 | Cell: 817-201-2379 | Fax: 817-885-1847 XTO ENERGY INC., an ExxonMobil subsidiary 810 Houston Street, Fort Worth, Texas 76102 From: Wortman, Eric [mailto:Wortman.Eric@epa.gov] Sent: Tuesday, March 14, 2017 11:55 AM To: Allison, Craig Subject: RE: Riverbend & Accompanying Wellsites

Craig,

Is it possible to send the info. requested below for Riverbend via email and the rest of the application update can come later if you need more time? Let me know your timeline on this, I may have to reschedule some things depending on if it's ready or not.

Eric

From: Wortman, Eric [mailto:Wortman.Eric@epa.gov] Sent: Wednesday, February 22, 2017 12:23 PM To: Allison, Craig Subject: FW: Riverbend & Accompanying Wellsites

Craig,

Following up to our phone conversation a couple weeks back, can you please confirm if Tap 1 Compressor Station is still operating and how far away it is from the Riverbend Dehy site? In the July 2011 response from XTO to our information request for multiple U&O facilities, XTO (then SGG) provided lat/long coordinates for the Tap 1 Compressor Station and the Riverbend Dehydration site. My preliminary analysis of those coordinates puts the Tap 1 CS at 0.19 miles from Riverbend Dehy. If Tap 1 is < ¼ mile from Riverbend Dehy, we need to evaluate the equipment operating at the sites to determine if Tap 1 and Riverbend have "shared" equipment and should be treated as one source under the revised definition of major source in part 71.

Please provide the following information by March 8th:

- The distance between Tap 1 Compressor Station and Riverbend Dehydration Site
- If the distance is < ¼ mile, please provide the following:

o A list of equipment operating at Tap 1 CS

- o The PTE for the equipment operating at Tap 1 CS
- o If the two sites share equipment (i.e. what is the operational relationship between the sites).

Thanks,

Eric

From: Simpson, Dustin [mailto:Dustin Simpson@xtoenergy.com] Sent: Wednesday, December 21, 2016 5:29 PM To: Wortman, Eric <<u>Wortman.Eric@epa.gov</u>> Subject: RE: Riverbend & Accompanying Wellsites

Eric,

The gas does go to an off-site compressor and then returns to the dehy at the RBU dehy. The dehy could operate independently of either one of the specific wells but the wells could not operate independently of the dehy facility as the gas has to be dehydrated prior to sales.

Thanks,

**Dustin Simpson** 

#### **XTO ENERGY INC.**, an ExxonMobil subsidiary

Dustin Simpson | 810 Houston Street PTR4 | Fort Worth, TX 76102 | ph: 817.885.2845 | fax: 817.885.1847 | dustin\_simpson@xtoenergy.com

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From: Wortman, Eric [mailto:Wortman.Eric@epa.gov] Sent: Wednesday, December 21, 2016 4:01 PM To: Simpson, Dustin Subject: Riverbend & Accompanying Wellsites

Hi Dustin,

I had a question regarding the two wellsites at the Riverbend facility with regard to the revised definition of a major source. Since RBU 6-15E is located on the same surface site as Riverbend Dehy, it is included as part of the same source. Similar to my questions on Little Canyon, I'm working on EPA's interpretation for the RBU 7-15E wellsite since it's located within a ¼ mile of Riverbend Dehy but not on the same surface site. The RBU 6-15E and 7-15E wellsites discharge gas into the common gathering pipeline and not directly to the Riverbend Dehydrator Site. My understanding from the application is that the gas then flows to an offsite compressor station for further processing. Does the gas eventually come back to Riverbend Dehy Site before going to market or can it go elsewhere? In other words is the operation of Riverbend Dehy site necessary for the RBU 7-15E wellsite to produce gas to market or can both sites operate independently of each other?

Thanks,

Eric

Eric Wortman | Environmental Scientist U.S. Environmental Protection Agency – Region 8 1595 Wynkoop Street (8P-AR), Denver, Colorado 80202 Telephone: (303) 312-6649 Email: wortman.eric@epa.gov

# XTO Uintah Basin Title V Applications – 2016 / 2017 EPA Information Request 3/8/2017

#### Riverbend Dehy EPA Questions:

- A. Following up to our phone conversation a couple weeks back, can you please confirm if Tap 1 Compressor Station is still operating and how far away it is from the Riverbend Dehy site? The RBU Dehy Site is approximately 0.19 miles (< ½ mile) from the Tap-1 Compressor Station. The Tap-1 Compressor Station is still in-service.
- B. In the July 2011 response from XTO to our information request for multiple U&O facilities, XTO (then SGG) provided lat/long coordinates for the Tap 1 Compressor Station and the Riverbend Dehydration site. My preliminary analysis of those coordinates puts the Tap 1 CS at 0.19 miles from Riverbend Dehy. If Tap 1 is < ¼ mile from Riverbend Dehy, we need to evaluate the equipment operating at the sites to determine if Tap 1 and Riverbend have "shared" equipment and should be treated as one source under the revised definition of major source in part 71. Based on the determination that the Tap-1 Compressor Station and the RBU Dehy site are within ¼ mile of each other, The Tap-1 Compressor Stations receives natural-gas production from nearby wells and serves to compress the produced gas up to a pressure whereby the gas can enter the XTO operated gas gathering system. The natural gas then goes into Gathering system plpeline segment that discharges directly into the RBU Dehy site. The Tap-1 Compressor Station and the RBU Dehy site do not "share" any surface equipment other than the connecting pipelines. The gas from Tap-1 becomes comingled with the other inlet gas streams from other production areas at the inlet (pipeline manifold) of the RBU Dehy site. The gas from the Tap-1 compressor station does require dehydration at the RBU Dehy site prior to being sold.</p>
- C. Please provide the following information by March 8<sup>th</sup>:
  - a. The distance between Tap 1 Compressor Station and Riverbend Dehydration Site
  - b. If the distance is < ¼ mile, please provide the following:
    - i. A list of equipment operating at Tap 1 CS See attached.
    - ii. The PTE for the equipment operating at Tap 1 CS See attached.
    - iii. If the two sites share equipment (i.e. what is the operational relationship between the sites). The Riverbend Dehy site receives the compressed gas from the Tap-1 Compressor Station to allow the gas to be dehydrated prior to sales.
- D. I had a question regarding the two wellsites at the Riverbend facility with regard to the revised definition of a major source. Since RBU 6-15E is located on the same surface site as Riverbend Dehy, it is included as part of the same source. Similar to my questions on Little Canyon, I'm working on EPA's interpretation for the RBU 7-15E wellsite since it's located within a ¼ mile of Riverbend Dehy but not on the same surface site.
  - a. The RBU 6-15E and 7-15E wellsites discharge gas into the common gathering pipeline then to Tap-1 Compressor Station and not directly to the Riverbend Dehydrator Site. That is correct.
  - b. My understanding from the application is that the gas then flows to an offsite compressor station for further processing. Yes, the gas flows from the wells into the common gathering system and then into the Tap-1 Compressor Station which is located within a ¼ mile of the River Bend Dehy site.
  - c. Does the gas eventually come back to Riverbend Dehy Site before going to market or can it go elsewhere? Yes, it eventually goes to RB dehy site through the discharge of the Tap-1 Compressor Station.
  - d. In other words is the operation of Riverbend Dehy site necessary for the RBU 7-15E wellsite to produce gas to market or can both sites operate independently of each other? The sites cannot operate separately in the sense that the wells require their gas to be compressed at Tap-1 which discharges directly to the Riverbend Dehy site. Therefore, they are tied together operationally.

# PTE EMISSION SUMMARY

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#### Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah Mar-17

#### Proposed Emissions

|                                  | N     | NOx    |       | CO     |       | VOC    |       | Formaldehyde |       | HAPs   |  |
|----------------------------------|-------|--------|-------|--------|-------|--------|-------|--------------|-------|--------|--|
| Source                           | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr       | lb/hr | ton/yr |  |
| Caterpillar G3516LE #1           | 4.43  | 19.41  | 7.39  | 32.35  | 1.12  | 4.92   | 0.86  | 3.75         | 1.01  | 4.41   |  |
| Caterpillar G3516LE #2           | 3.80  | 16.66  | 6.72  | 29.43  | 1.06  | 4.66   | 0.74  | 3.22         | 0.74  | 3.78   |  |
| Tank Emissions - T1T-1 and T1T-2 | -     | -      | -     | -      | 0.26  | 1.14   | -     | -            | 0.00  | 0.02   |  |
| Gas-operated Heat Trace Pumps    | -     | -      | -     | -      | 2.60  | 11.40  | -     | -            | 0.02  | 0.09   |  |
| Boilers                          | 0.09  | 0.40   | 0.08  | 0.34   | 0.01  | 0.04   | -     | -            | 0.00  | 0.00   |  |
| Fugitives                        | -     | -      | ~     | -      | 0.68  | 2.96   | -     | -            | 0.01  | 0.02   |  |
| Truck Loading Emissions          | -     | -      | -     | -      | 0.04  | 0.17   |       | -            | -     | -      |  |
| Totals                           | 8.33  | 36.47  | 14.18 | 62.11  | 5.77  | 25.29  | 1.59  | 6.97         | 1.78  | 8.32   |  |

#### **Compressor Engine Emissions**

Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah

EMISSION POINTS: Caterpillar G3516LE #1 Engine Serial #: 4EK03995 Engine mfg. date: 1/1/2004 Engine Install Date: 7/1/2013 Unit #: T1C-1

| Engine Make/Model       | Caterpilla | r G3516LE #1 |
|-------------------------|------------|--------------|
| Site Horsepower Rating  | 1340       | hp           |
| Fuel Consumption (BSFC) | 7695       | Btu/(hp-hr)  |
| Heat Rating             | 10.311     | MMBtu/hr     |
| Operating Hours         | 8760       | hrs/yr       |

|                          |         |            | Emissi  | on Rate | Emission<br>Factor |                        |
|--------------------------|---------|------------|---------|---------|--------------------|------------------------|
| Pollutant                | Emiss   | ion Factor | (lb/hr) | (tpy)   | Reference          |                        |
| NOx                      | 1.5     | g/hp-hr    | 4.43    | 19.41   | [1]                |                        |
| CO                       | 2.50    | g/hp-hr    | 7.39    | 32.35   | [1]                |                        |
| VOC/NMHC                 | 0.38    | g/hp-hr    | 1.12    | 4.92    | [1]                |                        |
|                          |         |            |         |         |                    | AP-42 Emission Factors |
| PM10                     | 0.00027 | g/hp-hr    | 0.00    | 0.0     | [2]                | 7.71E-05 lb/MMBtu      |
| Hazardous Air Pollutants |         |            |         |         |                    |                        |
| Acetaldehyde             | 0.0292  | g/hp-hr    | 0.0862  | 0.3776  | [2]                | 8.36E-03 lb/MMBtu      |
| Acrolein                 | 0.0179  | g/hp-hr    | 0.0530  | 0.2321  | [2]                | 5.14E-03 lb/MMBtu      |
| Benzene                  | 0.0015  | g/hp-hr    | 0.0045  | 0.0199  | [2]                | 4.40E-04 lb/MMBtu      |
| Ethylbenzene             | 0.0001  | g/hp-hr    | 0.0004  | 0.0018  | [2]                | 3.97E-05 lb/MMBtu      |
| Formaldehyde             | 0.2900  | g/hp-hr    | 0.8567  | 3.7524  | [1]                | 5.28E-02 lb/MMBtu      |
| Toluene                  | 0.0014  | g/hp-hr    | 0.0042  | 0.0184  | [2]                | 4.08E-04 lb/MMBtu      |
| Xylene                   | 0.0006  | g/hp-hr    | 0.0019  | 0.0083  | [2]                | 1.84E-04 lb/MMBtu      |
|                          |         | Total HAPS | 1.01    | 4.41    |                    |                        |

[1] Emission Factors provided by Manufacturer

[2] AP-42 Table 3.2-3 for stationary IC sources; July 2000, 4-stroke lean burn

|                          | CALCULATION FORMULAS                                                                         |
|--------------------------|----------------------------------------------------------------------------------------------|
| g/(hp-hr) =              | (lb/MMBtu)*(MMBtu/hr)*(453.6 g/lb) / (site-rated hp)                                         |
| ib/hr =                  | (g/hp-hr)*(site-rated hp) / (453.6 g/lb)                                                     |
| tpy =                    | (lb/hr)*(8760 hr/yr) / (2000 lb/ton)                                                         |
| Fuel Usage (MMscf/yr) =  | (Scf/btu)*(btu/{hp-hr})*(site-rated hp)*(24 hr/day)*(365 day/yr)*(MMScf/10 <sup>6</sup> Scf) |
| Heat Rating (MMbtu/hr) = | (site rated horsepower)*(Btu/(hp-hr)) / (453.6 g/lb)                                         |

## **Compressor Engine Emissions**

Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah

EMISSION POINTS: Caterpillar G3516LE #2 Engine Serial #: 4EK03582 Engine mfg. date: 8/12/2001 Engine Install Date: 7/18/2013 Unit #: T1C-2

| Engine Make/Model       | Caterpillar G3516LE #2 |             |  |  |
|-------------------------|------------------------|-------------|--|--|
| Site Horsepower Rating  | 1150                   | hp          |  |  |
| Fuel Consumption (BSFC) | 7575                   | Btu/(hp-hr) |  |  |
| Heat Rating             | 8.711                  | MMBtu/hr    |  |  |
| Operating Hours         | 8760                   | hrs/yr      |  |  |

| Pollutant |      | sion Factor | Emissio | on Rate | Emission<br>Factor<br>Reference |
|-----------|------|-------------|---------|---------|---------------------------------|
| NOr       | 15   | a/hp-hr     | 3.80    | 16.66   | [1]                             |
| CO        | 2.65 | g/hp-hr     | 6.72    | 29.43   | [1]                             |
| VOC/NMHC  | 0.42 | g/hp-hr     | 1.06    | 4.66    | [1]                             |

|         |                                                          |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                | AP-42 Emission Factors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.00027 | g/hp-hr                                                  | 0.00                                                                                                                       | 0.0                                                                                                                                                                                                                                                                                                                                   | [2]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 7.71E-05 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|         |                                                          |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 0.0287  | g/hp-hr                                                  | 0.0728                                                                                                                     | 0.3190                                                                                                                                                                                                                                                                                                                                | [2]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8.36E-03 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 0.0177  | g/hp-hr                                                  | 0.0448                                                                                                                     | 0.1961                                                                                                                                                                                                                                                                                                                                | [2]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.14E-03 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 0.0015  | g/hp-hr                                                  | 0.0038                                                                                                                     | 0.0168                                                                                                                                                                                                                                                                                                                                | [2]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.40E-04 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 0.0001  | g/hp-hr                                                  | 0.0003                                                                                                                     | 0.0015                                                                                                                                                                                                                                                                                                                                | [2]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.97E-05 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 0.2900  | g/hp-hr                                                  | 0.7352                                                                                                                     | 3.2203                                                                                                                                                                                                                                                                                                                                | [1]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5.28E-02 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 0.0014  | g/hp-hr                                                  | 0.0036                                                                                                                     | 0.0156                                                                                                                                                                                                                                                                                                                                | [2]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4.08E-04 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 0.0006  | g/hp-hr                                                  | 0.0016                                                                                                                     | 0.0070                                                                                                                                                                                                                                                                                                                                | [2]                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.84E-04 lb/MMBtu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|         | Total HAPS                                               | 0.86                                                                                                                       | 3.78                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|         | 0.0287<br>0.0177<br>0.0015<br>0.0001<br>0.2900<br>0.0014 | 0.0287 g/hp-hr<br>0.0177 g/hp-hr<br>0.0015 g/hp-hr<br>0.0001 g/hp-hr<br>0.2900 g/hp-hr<br>0.0014 g/hp-hr<br>0.0006 g/hp-hr | 0.0287         g/hp-hr         0.0728           0.0177         g/hp-hr         0.0448           0.0015         g/hp-hr         0.0038           0.0001         g/hp-hr         0.0003           0.2900         g/hp-hr         0.7352           0.0014         g/hp-hr         0.0036           0.0006         g/hp-hr         0.0016 | 0.0287         g/hp-hr         0.0728         0.3190           0.0177         g/hp-hr         0.0448         0.1961           0.0015         g/hp-hr         0.0038         0.0168           0.0001         g/hp-hr         0.0003         0.0015           0.2900         g/hp-hr         0.7352         3.2203           0.0014         g/hp-hr         0.0036         0.0156           0.0006         g/hp-hr         0.0016         0.0070 | 0.0287         g/hp-hr         0.0728         0.3190         [2]           0.0177         g/hp-hr         0.0448         0.1961         [2]           0.0015         g/hp-hr         0.0038         0.0168         [2]           0.0001         g/hp-hr         0.0003         0.0015         [2]           0.2900         g/hp-hr         0.7352         3.2203         [1]           0.0014         g/hp-hr         0.0036         0.0156         [2]           0.0006         g/hp-hr         0.0016         0.0070         [2] |

AD 42 Emission Eastern

[1] Emission Factors provided by Manufacturer

[2] AP-42 Table 3.2-3 for stationary IC sources; July 2000, 4-stroke lean burn

|                          | CALCULATION FORMULAS                                                           |
|--------------------------|--------------------------------------------------------------------------------|
| g/(hp-hr) =              | (Ib/MMBtu)*(MMBtu/hr)*(453.6 g/lb) / (site-rated hp)                           |
| lb/hr =                  | (g/hp-hr)*(site-rated hp) / (453.6 g/lb)                                       |
| tpy =                    | (lb/hr)*(8760 hr/yr) / (2000 lb/ton)                                           |
| Fuel Usage (MMscf/yr) =  | (Scl/btu)*(btu/{hp-hr})*(site-rated hp)*(24 hr/day)*(365 day/yr)*(MMScl/106Scf |
| Heat Rating (MMbtu/hr) = | (site rated horsepower)*(Btu/(hp-hr)) / (453.6 g/lb)                           |

.

#### NON-CURRENT

GAS COMPRESSION APPLICATION

#### GAS ENGINE SITE SPECIFIC TECHNICAL DATA

# River Bend Tap 1 (Comp2)

| ENGINE SPEED (rpm);<br>COMPRESSION RATIO;<br>AFTERCOOLER TYPE;<br>AFTERCOOLER WATER INLET (°F); | 1200<br>8<br>SCAC<br>130          | RATING STRATEGY:<br>RATING LEVEL:<br>FUEL SYSTEM:                                                   | STANDARD<br>CONTINUOUS<br>HPG IMPCO<br>WITH AIR FUEL RATIO CONTROL |
|-------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| JACKET WATER OUTLET ("F):<br>ASPIRATION:<br>COOLING SYSTEM:<br>CONTROL SYSTEM:                  | 210<br>TA<br>JW+OC, AC<br>EIS     | <u>SITE CONDITIONS:</u><br>FUEL:<br>FUEL PRESSURE RANGE(psig): (See note 1)<br>FUEL METHANE NUMBER: | River Bend Tap 1<br>35.0-40.0<br>59.1                              |
| EXHAUST MANIFOLD:<br>COMBUSTION:<br>NOX EMISSION LEVEL (g/bhp-hr NOX):<br>SET POINT TIMING:     | ASWC<br>LOW EMISSION<br>1 5<br>27 | FUEL LHV (Btu/scf):<br>ALTITUDE(h):<br>MAXIMUM INLET AIR TEMPERATURE(°F):<br>STANDARD RATED POWER:  | 58.1<br>1044<br>5162<br>55<br>1150 bhp@1200rpm                     |

|                                                                                            |             |            | MAXIMUM |       | TING AT N |       |
|--------------------------------------------------------------------------------------------|-------------|------------|---------|-------|-----------|-------|
| RATING                                                                                     | NOTES       | LOAD       | 100%    | 100%  | 75%       | 50%   |
| ENGINE POWER (WITHOUT FAN)                                                                 | (2)         | bhp        | 1150    | 1150  | 862       | 575   |
| INLET AIR TEMPERATURE                                                                      |             | ۴F         | 55      | 55    | 55        | 55    |
| ENGINE DATA                                                                                |             |            |         |       |           |       |
| FUEL CONSUMPTION (LHV)                                                                     | (3)         | Btu/bhp-hr | 7575    | 7575  | 7758      | 8258  |
| FUEL CONSUMPTION (HHV)                                                                     | (3)         | Btu/bhp-hr | 8375    | 8375  | 8577      | 9131  |
| AIR FLOW (@inlet air temp, 14.7 psia) (WET)                                                | (4)(5)      | ft3/min    | 2353    | 2353  | 1804      | 1242  |
| AIR FLOW (WET)                                                                             | (4)(5)      | lb/hr      | 10881   | 10881 | 8339      | 5742  |
| FUEL FLOW (60°F, 14.7 psia)                                                                | 6 0044 35A  | scfm       | 139     | 139   | 107       | 76    |
| INLET MANIFOLD PRESSURE                                                                    | (6)         | in Hg(abs) | 87.8    | 67.8  | 53.4      | 37.9  |
| EXHAUST TEMPERATURE - ENGINE OUTLET                                                        | (7)         | ۴F         | 890     | 890   | 866       | 858   |
| EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia) (WET)                                    | (8)(5)      | ft3/min    | 6564    | 6664  | 5014      | 3438  |
| EXHAUST GAS MASS FLOW (WET)                                                                | (8)(5)      | lb/hr      | 11295   | 11295 | 8657      | 5967  |
| EMISSIONS DATA - ENGINE OUT                                                                |             |            |         |       |           |       |
| NOx (as NO2)                                                                               | (9)(10)     | g/bhp-hr   | 1.50    | 1 50  | 1.50      | 1.50  |
| co                                                                                         | (9)(10)     | g/bhp-hr   | 2.65    | 2.65  | 2.80      | 3.10  |
| THC (mol. wt. of 15.84)                                                                    | (9)(10)     | g/bhp-hr   | 2.82    | 2.82  | 3.07      | 3.50  |
| NMHC (mol. wt. of 15.84)                                                                   | (9)(10)     | g/bhp-hr   | 0.73    | 0.73  | 0,79      | 0.90  |
| NMNEHC (VOCs) (mol. wt. of 15.84)                                                          | (9)(10)(11) | g/bhp-hr   | 0.42    | 0.42  | 0.45      | 0.52  |
| HCHO (Formaldehyde)                                                                        | (9)(10)     | g/bhp-hr   | 0.29    | 0.29  | 0.31      | 0.34  |
| CO2                                                                                        | (9)(10)     | g/bhp-hr   | 532     | 532   | 545       | 580   |
| EXHAUST OXYGEN                                                                             | (9)(12)     | % DRY      | 7.9     | 7.9   | 7.7       | 7.4   |
| HEAT REJECTION                                                                             |             |            |         |       |           |       |
| HEAT REJ. TO JACKET WATER (JW)                                                             | (13)        | Btu/min    | 36022   | 36022 | 29623     | 24252 |
| HEAT REJ. TO ATMOSPHERE                                                                    | (13)        | Btu/min    | 4554    | 4554  | 3795      | 3037  |
| HEAT REJ. TO LUBE OIL (OC)                                                                 | (13)        | Btu/min    | 5696    | 5696  | 4684      | 3835  |
| HEAT REJ. TO AFTERCOOLER (AC)                                                              | (13)(14)    | Btu/min    | 8079    | 8079  | 5429      | 1914  |
| COOLING SYSTEM SIZING CRITERIA                                                             |             |            |         |       |           |       |
| TOTAL JACKET WATER CIRCUIT (JW+OC)                                                         | (14)        | Btu/min    | 46459   |       |           |       |
| TOTAL AFTERCOOLER CIRCUIT (AC)                                                             | (14)(15)    | Btu/min    | 8483    |       |           |       |
| A cooling system safety factor of 0% has been added to the cooling system sizing criteria. |             |            |         |       |           |       |

#### CONDITIONS AND DEFINITIONS

CONDITIONS AND DEFINITIONS Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

For notes information consult page three.

**CATERPILLAR'** 

## G3516 NON-CURRENT

GAS COMPRESSION APPLICATION

#### GAS ENGINE SITE SPECIFIC TECHNICAL DATA

# **CATERPILLAR'**

#### **River Bend Tap 1 (Comp1)**

| RATING STRATEGY:                        | 1400                                                                                                                                                                  | ENGINE SPEED (rpm):                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RATING LEVEL:                           | 8                                                                                                                                                                     | COMPRESSION RATIO:                                                                                                                                                                                                                                                                                                         |
| FUEL SYSTEM:                            | SCAC                                                                                                                                                                  | AFTERCOOLER TYPE:                                                                                                                                                                                                                                                                                                          |
|                                         | 130                                                                                                                                                                   | AFTERCOOLER WATER INLET ("F):                                                                                                                                                                                                                                                                                              |
| SITE CONDITIONS:                        | 210                                                                                                                                                                   | JACKET WATER OUTLET ("F):                                                                                                                                                                                                                                                                                                  |
| FUEL:                                   | TA                                                                                                                                                                    | ASPIRATION:                                                                                                                                                                                                                                                                                                                |
| FUEL PRESSURE RANGE(psig): (See note 1) | JW+OC, AC                                                                                                                                                             | COOLING SYSTEM:                                                                                                                                                                                                                                                                                                            |
| FUEL METHANE NUMBER:                    | EIS                                                                                                                                                                   | CONTROL SYSTEM:                                                                                                                                                                                                                                                                                                            |
| FUEL LHV (Btu/scf):                     | ASWC                                                                                                                                                                  | EXHAUST MANIFOLD:                                                                                                                                                                                                                                                                                                          |
| ALTITUDE(ft):                           | LOW EMISSION                                                                                                                                                          | COMBUSTION:                                                                                                                                                                                                                                                                                                                |
| MAXIMUM INLET AIR TEMPERATURE("F):      | 1.5                                                                                                                                                                   | NOx EMISSION LEVEL (g/bhp-hr NOx):                                                                                                                                                                                                                                                                                         |
| STANDARD RATED POWER:                   | 27                                                                                                                                                                    | SET POINT TIMING:                                                                                                                                                                                                                                                                                                          |
|                                         | RATING LEVEL:<br>FUEL SYSTEM:<br>FUEL:<br>FUEL PRESSURE RANGE(psig): (<br>FUEL METHANE NUMBER:<br>FUEL LHV (Btu/scf):<br>ALTITUDE(th):<br>MAXIMUM INLET AIR TEMPERATI | 8     RATING LÉVEL:       SCAC     FUEL SYSTEM:       130     210       210     SITE CONDITIONS:       TA     FUEL:       JW+OC, AC     FUEL PRESSURE RANGE(psig): (       EIS     FUEL METHANE NUMBER:       ASWC     FUEL LHV (BN/scf):       LOW EMISSION     ALTITUDE(ft):       1.5     MAXIMUM INLET AIR TEMPERATION |

|                                                                                            |       |          |            | RATING |       | R TEMPE |       |
|--------------------------------------------------------------------------------------------|-------|----------|------------|--------|-------|---------|-------|
| RATING                                                                                     | N     | IOTES    | LOAD       | 100%   | 100%  | 75%     | 52%   |
| ENGINE POWER (WITHOUT                                                                      | FAN)  | (2)      | bhp        | 1340   | 1295  | 972     | 670   |
| INLET AIR TEMPERATURE                                                                      |       |          | ۴F         | 42     | 55    | 55      | 55    |
| ENGINE DATA                                                                                |       |          |            |        |       |         |       |
| FUEL CONSUMPTION (LHV)                                                                     |       | (3)      | Btu/bhp-hr | 7695   | 7729  | 8010    | 8449  |
| FUEL CONSUMPTION (HHV)                                                                     |       | (3)      | Btu/bhp-hr | 8507   | 8546  | 8856    | 9342  |
| AIR FLOW (@inlet air temp, 14.7 psia)                                                      | WET)  | (4)(5)   | ft3/min    | 2701   | 2685  | 2064    | 1355  |
| AIR FLOW                                                                                   | (WET) | (4)(5)   | lb/hr      | 12799  | 12414 | 9541    | 6267  |
| FUEL FLOW (60°F, 14.7 pela)                                                                |       |          | scfm       | 165    | 160   | 124     | 90    |
| INLET MANIFOLD PRESSURE                                                                    |       | (6)      | in Hg(abs) | 69.2   | 67.3  | 52.9    | 38.7  |
| EXHAUST TEMPERATURE - ENGINE OUTLET                                                        |       | (7)      | ۴F         | 906    | 904   | 891     | 893   |
| EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)                                          | (WET) | (8)(5)   | ft3/min    | 7926   | 7677  | 5848    | 3872  |
| EXHAUST GAS MASS FLOW                                                                      | (WET) | (8)(5)   | lb/hr      | 13291  | 12892 | 9912    | 6536  |
| EMISSIONS DATA - ENGINE OUT                                                                |       |          |            |        |       |         |       |
| NOx (as NO2)                                                                               |       | (9)(10)  | g/bhp-hr   | 1.50   | 1.50  | 1.50    | 1.50  |
| CO                                                                                         |       | (9)(10)  | g/bhp-hr   | 2.50   | 2.51  | 2.60    | 2.51  |
| THC (mol. wt. of 15.84)                                                                    |       | (9)(10)  | g/bhp-hr   | 2.56   | 2.59  | 2.86    | 3 00  |
| NMHC (mol. wt. of 15.84)                                                                   |       | (9)(10)  | g/bhp-hr   | 0.66   | 0.67  | 0.74    | 0.77  |
| NMNEHC (VOCs) (mol. wl. of 15.84)                                                          | (9)   | (10)(11) | g/bhp-hr   | 0.38   | 0.39  | 0.43    | 0.45  |
| HCHO (Formaldehyde)                                                                        |       | (9)(10)  | g/bhp-hr   | 0.29   | 0.29  | 0,32    | 0.34  |
| CO2                                                                                        |       | (9)(10)  | g/bhp-hr   | 541    | 542   | 564     | 594   |
| EXHAUST OXYGEN                                                                             |       | (9)(12)  | % DRY      | 7.8    | 7.8   | 7.6     | 7.4   |
| HEAT REJECTION                                                                             |       |          |            |        |       |         |       |
| HEAT REJ. TO JACKET WATER (JW)                                                             |       | (13)     | Btu/min    | 41800  | 41085 | 34782   | 30141 |
| HEAT REJ. TO ATMOSPHERE                                                                    |       | (13)     | Btu/min    | 5313   | 5198  | 4340    | 3543  |
| HEAT REJ. TO LUBE OIL (OC)                                                                 |       | (13)     | Btu/min    | 6610   | 6496  | 5500    | 4766  |
| HEAT REJ. TO AFTERCOOLER (AC)                                                              | 1 (   | 13)(14)  | Btu/min    | 10285  | 10285 | 6392    | 2437  |
| COOLING SYSTEM SIZING CRITERIA                                                             |       |          |            |        |       |         |       |
| TOTAL JACKET WATER CIRCUIT (JW+OC)                                                         |       | (14)     | Btu/min    | 53912  |       |         |       |
| TOTAL AFTERCOOLER CIRCUIT (AC)                                                             | (     | 14)(15)  | Btu/min    | 10799  |       |         |       |
| A cooling system safety factor of 0% has been added to the cooling system sizing criteria. |       |          |            |        |       |         |       |

CONDITIONS AND DEFINITIONS Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Maximum rating is the maximum capability at the specified aftercooler inlet temperature for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

For notes information consult page three.

# NATURAL GAS FUELED HEATER EMISSIONS

Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah

|                                    | HEATER            | HEATER     | FUEL*                   | HOURS OF                | FUEL                | N                                 | Ox                     | C                                 | 0                      |
|------------------------------------|-------------------|------------|-------------------------|-------------------------|---------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION              | SIZE<br>(MBtu/hr) | EFFICIENCY | HEAT VALUE<br>(Btu/scf) | OPERATION<br>(hrs/year) | USAGE<br>(MMscf/yr) | EF AP-42 <sup>1</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>1</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) |
| Separator                          | 250               | 0.8        | 1020                    | 8760                    | 2.684               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
| Tank Heaters - (2) X 0.25 MMBTU/hr | 500               | 0.8        | 1020                    | 8760                    | 5.368               | 100.0                             | 0.27                   | 84.0                              | 0.23                   |
|                                    |                   |            |                         | TOTALS                  | 2.684               |                                   | 0.40                   |                                   | 0.34                   |

|                       | 1                                 | 00                     | VOC                    | PN                                | 10                     | Forma                             | ldehyde                |
|-----------------------|-----------------------------------|------------------------|------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION | EF AP-42 <sup>2</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>2</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>3</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) |
| Separator             | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| Tank Heaters          | 11.0                              | 0.03                   | 0.03                   | 7.6                               | 0.02                   | 7.50E-02                          | 0.0002                 |
|                       | TOTALS                            | 0.01                   | 0.04                   |                                   | 0.03                   |                                   | 0.0003                 |

Criteria emissions rounded to the nearest 1/100 of a ton, VOC/HAP rounded to 1/1000 of a ton.

EF AP-42<sup>1</sup> = emission factor from AP-42 Table 1.4-1, Small Boilers <100 MMbtu/hr (EPA 7/98), Standard = 1,020 Btu/scf

 $EF AP-42^2$  = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

EF AP-42<sup>3</sup> = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

Fuel Consumption (MMscf/yr) = <u>Heater Size (MBtu/hr) \* 1,000 (Btu/MBtu) \* Hours of Operation (hrs/yr)</u> Fuel Heat Value (Btu/scf) \* 1,000,000 (scf/MMscf) \* Heater Efficiency

NOx/CO/TOC Emissions (tons/yr) = AP-42 EF (lbs/MMscf) \* Fuel Consumption (MMscf/yr) \* (Fuel Heat Value/ Standard Fuel Heat Value) / 2,000 (lbs/ton) -Standard Fuel Heat Value, Natural Gas (AP-42, 7/98, p1.4-5) = 1,020 Btu/scf

VOC emissions assumed equal to TOC emissions

# VOC EMISSIONS FROM CONDENSATE TRUCK LOADING OPERATIONS

| Company:           | XTO Energy                      |
|--------------------|---------------------------------|
| Facility Name:     | <b>TAP 1 Compressor Station</b> |
| Facility Location: | Uintah County, Utah             |

| Tank         | Oil        | Oil             | Saturation | True Vapor | Vapor    | Oil             | Loading         | VOC Loading |
|--------------|------------|-----------------|------------|------------|----------|-----------------|-----------------|-------------|
| Description  | Sales      | Sales           | Factor     | Pressure   | Mole Wt. | Temperature     | Losses          | Emissions   |
|              | (bbls/day) | (1,000 bbls/yr) | (S)        | (P) (psia) | (M)      | (T) (Degrees R) | (lbs/1,000 gal) | (tons/yr)   |
| Storage Tank | 15.000     | 5.475           | 0.6        | 4          | 26.79    | 545             | 1.4700          | 0.1690      |
| TOTAL        | 15.000     | 5.475           |            |            |          |                 |                 | 0.1690      |

Loading Losses (lbs/1,000 gal) =  $\frac{12.46*S*P*M}{T}$ 

(AP-42 Section 5.2, Equation 1)

Loading Emissions (tons/year) = Loading Losses (lbs/1,000 gal) \* Oil Sales (1,000 bbls/yr) \* (42 gal/bbl) 2,000 lbs/ton

Degrees R =

Degrees F + 460

#### **Tank Truck S Factors**

| Mode of Operation                   | S Factor |
|-------------------------------------|----------|
| Submerged loading of a clean tank   | 0.5      |
| Submerged loading-dedicated service | 0.6      |
| Submerged loading-vapor balance     | 1.00     |
| Splash Loading-clean tank           | 1.45     |
| Splash loading-normal service       | 1.45     |
| Splash loading-vapor balance        | 1.00     |

# Condensate Tank Emissions (F/W/B)

#### Company: XTO Energy Facility Name: TAP 1 Compressor Station Facility Location: Uintah County, Utah Description: Uncontrolled - Two (2) X 300 bbl vertical, fixed-roof storage tanks

| Condensate |           |           |           |              |           |           |           | Total     | Total     |
|------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|
| Rate       | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | HAPs      | BTEX      |
| (bbls/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) |
| 15.00      | 1.142     | 0.0060    | 0.0020    | 0.0000       | 0.0010    | 0.012     | 0         | 0.0210    | 0.0090    |
|            |           |           |           |              |           |           |           |           |           |
|            |           |           |           | · · ·        |           |           |           |           |           |
| TOTAL      | 1.14      | 0.01      | 0.00      | 0.00         | 0.00      | 0.01      | 0.00      | 0.02      | 0.01      |

 Project Setup Information \*\*\*\*\*\*\* : C:\Users\ETullos\Desktop\Work\142 - XTO\Tribal\Liquid and Gas Samples\Utah Liquids\D Project File Flowsheet Selection : Oil Tank with Separator Calculation Method : RVP Distillation Control Efficiency : 100.0% Known Separator Stream : Low Pressure Oil Entering Air Composition : No Filed Name : Dakota/Mancos Formations Date : 2013.02.01 \* Data Input : 190.00[psig] Separator Pressure Separator Temperature : 76.00[F] Ambient Pressure : 11.80[psia] Ambient Pressure : 11.80 [ps. Ambient Tamperature : 50.00 [F] C10+ SG : 0.8164 C10+ MW : 195.16 -- Low Pressure Oil -----mol % No. Component 0.0000 H2S 1 2 02 0.0000 3 CO2 0.0190 N2 C1 4 0.0050 0.9100 5 6 C2 0.6050 C3 1-C4 7 1.1120 8 0.6830 1.4420 9 n-C4 10 i-C5 n-C5 1.8900 1.7960 11 C6 C7 C8 12 0.3550 11.4800 13 27.4050 14 15 C9 C10+ 20.7240 27.5170 16 0.6150 Benzene 17 Toluene E-Benzene 18 0.7150 0.3400 19 20 Xylenes 1.3530 21 n-C6 0.9880 224Trimethylp 0.0460 22 -- Sales Oil ------Production Rate : 15[bbl/day] Days of Annual Operation : 365 [days/year] API Gravity : 7.36 Reid Vapor Pressure : 4.60[psia] Calculation Results - Emission Summary -----Item Uncontrolled Uncontrolled 
 [ton/yr]
 [lb/hr]

 Total HAPs
 0.020
 0.005

 Total HC
 2.866
 0.654

VOCs, C2+1.8290.418VOCs, C3+1.1420.261

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| Unc  | controlled Recove: | ry Info.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |         |                                       |         |         |         |
|------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|---------------------------------------|---------|---------|---------|
|      | Vapor              | 227.1700 x1E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -3 [MSCFD] |         |                                       |         |         |         |
|      | HC Vapor           | 223.8600 x1E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -3 [MSCFD] |         |                                       |         |         |         |
|      | GOR                | 15.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | [SCF/bb1]  |         |                                       |         |         |         |
|      |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |         |                                       |         |         |         |
|      | Emission Composi   | tion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |         |                                       |         |         |         |
| No   | Component          | Uncontrol1ed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Uncontrol  | 1ed     |                                       |         |         |         |
|      |                    | [ton/yr]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | [1b/hr]    |         |                                       |         |         |         |
| 1    | H2S                | 0.000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.000      |         |                                       |         |         |         |
| 2    | 02                 | 0.000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.000      |         |                                       |         |         |         |
| 3    | CO2                | 0.054                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.012      |         |                                       |         |         |         |
| 4    | N2                 | 0.010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.002      |         |                                       |         |         |         |
| 5    | C1                 | 1.037                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.237      |         |                                       |         |         |         |
| 6    | C2                 | 0.687                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.157      |         |                                       |         |         |         |
| 7    | C3                 | 0.450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.103      |         |                                       |         |         |         |
| 8    | 1-C4               | 0.137                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.031      |         |                                       |         |         |         |
| 9    | n-C4               | 0.197                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.045      |         |                                       |         |         |         |
| 10   | 1-C5               | 0.117                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.027      |         |                                       |         |         |         |
| 11   | n-C5               | 0.080                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.018      |         |                                       |         |         |         |
| 12   | C6                 | 0.006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.001      |         |                                       |         |         |         |
| 13   | C7                 | 0.065                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.015      |         |                                       |         |         |         |
| 14   | C8                 | 0.052                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.012      |         |                                       |         |         |         |
| 15   | C9                 | 0.014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.003      |         |                                       |         |         |         |
|      | C10+               | 0.000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.000      |         |                                       |         |         |         |
| 17   | Benzene            | 0.006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.001      |         |                                       |         |         |         |
| 18   | Toluene            | 0.002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.000      |         |                                       |         |         |         |
|      | E-Benzene          | 0.000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.000      |         |                                       |         |         |         |
| 20   | Xylenes            | 0.001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.000      |         |                                       |         |         |         |
|      | n-C6               | 0.012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.003      |         |                                       |         |         |         |
|      | 224Trimethy1p      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.000      |         |                                       |         |         |         |
| ~~   | Total              | 2.927                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.668      |         |                                       |         |         |         |
|      | TOCAL              | 2.321                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.000      |         |                                       |         |         |         |
|      | Stream Data        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | *******    |         | 10 out too too out ut all up up too p |         |         |         |
|      | Component          | MW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LP 011     |         | l Sale Oil                            |         |         |         |
| 110. | componenc          | £-344                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | mol %      | mol %   | mol %                                 | mol %   |         | mol %   |
| 1    | H2S                | 34.80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0000     |         |                                       | 0.0000  |         |         |
| 2    | 02                 | 32.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0000     |         |                                       | 0.0000  |         |         |
| 3    | C02                | 44.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |         |                                       |         |         |         |
| 4    | N2                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.0190     |         |                                       | 0.8119  |         |         |
| 5    |                    | 28.01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0050     | 0.0006  |                                       |         |         |         |
|      | C1                 | 16.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.9100     |         |                                       | 65.0314 |         |         |
| 6    | C2                 | 30.07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.6050     | 0.4638  | 0.2883                                | 15.5221 |         |         |
| 7    | C3                 | 44.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1,1120     | 1.0372  | 0.9836                                | 9.0153  | 9.8259  | 9.3317  |
| 8    | i-C4               | 58.12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.6830     | 0.6693  | 0.6600                                | 2.1338  | 2.1853  | 2.1539  |
| 9    | n-C4               | 58.12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.4420     | 1.4265  | 1.4160                                | 3.0841  | 3.1383  | 3.1052  |
| 10   | 1-C5               | 72.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.8900     | 1.8939  | 1.8964                                | 1.4765  | 1.4923  | 1.4827  |
| 11   | n-C5               | 72.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1.7960     | 1.8035  | 1.8082                                | 1.0081  | 1.0186  | 1.0122  |
| 12   | C6                 | 86.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.3550     | 0.3578  |                                       | 0.0613  |         |         |
| 13   | C7                 | 100.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11.4800    | 11.5828 |                                       | 0.6122  |         |         |
| 14   | C8                 | 114.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 27.4050    | 27.6603 |                                       | 0.4266  | 0.4328  | 0.4290  |
|      | C9                 | 128.28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20.7240    | 20.9191 | 21.0460                               | 0.1034  | 0.1123  | 0.1069  |
|      | C10+               | 195.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            | 27.7774 | 27.9467                               |         | 0.0005  | 0.0005  |
| 17   | Benzene            | 78.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.6150     | 0.6201  | 0.6235                                | 0.0731  | 0.0741  | 0.0735  |
| 18   | Toluane            | 92.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.7150     | 0.7216  | 0.7258                                | 0.0219  | 0.0222  | 0.0220  |
| 19   | E-Benzene          | 106.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.3400     | 0.3432  | 0.3453                                | 0.0032  | 0.0032  | 0.0032  |
| 20   | Xylenes            | 106.17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.3530     | 1.3657  | 1.3740                                | 0.0108  | 0.0110  | 0.0109  |
| 21   | n-C6               | 86.18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.9880     | 0.9961  | 1.0014                                | 0.1300  | 0.1314  | 0.1306  |
| 22   | 224Trimethylp      | 114.24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0460     | 0.0464  | 0.0467                                | 0.0020  | 0.0020  | 0.0020  |
|      |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |         |                                       |         |         |         |
|      | MW                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 129.57     | 130.55  | 131.17                                | 25.84   | 28.27   | 26.79   |
|      | Stream Mole Rati   | .0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.0000     | 0.9906  | 0.9846                                | 0.0094  | 0.0060  | 0.0154  |
|      | Heating Value      | [BTU/SCI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | F]         |         |                                       | 1507.44 | 1624.03 | 1552.95 |
|      | Gas Gravity        | [Gas/Ai                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | r]         |         |                                       | 0.89    | 0.98    | 0.92    |
|      | Bubble Pt. @ 100   | F [psia]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 36.99      | 16.88   | 6.34                                  |         |         |         |
|      | RVP @ 100F         | [psia]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 9.90       | 6.65    | 4.78                                  |         |         |         |
|      | Spec. Gravity @    | And the second sec | 0.707      | 0.708   | 0.708                                 |         |         |         |
|      | 4.0                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |         |                                       |         |         |         |

#### PUMP EMISSIONS

| Conversion of Mole Perce                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | nt to Weight Perce                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nt                                                                         |                                                                                                                                |                                                                                                                                |                                                              |                                                                                                                                                                                  |                                                                                                                                                                                                             |                                                    |                                                              |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------|--|
| PUMP Calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                            | 1                                                                                                                              |                                                                                                                                | In the first school in the second school and second          |                                                                                                                                                                                  |                                                                                                                                                                                                             | famarina and an<br>t                               |                                                              |  |
| Specific Gravity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                            | Molecular Weight                                                                                                               | 18.8962                                                                                                                        | wt %                                                         | ·                                                                                                                                                                                |                                                                                                                                                                                                             | ŗ                                                  |                                                              |  |
| Gross BTU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                            | NMHC                                                                                                                           | 4,5104                                                                                                                         | 23.8696%                                                     | · · · · · · · · · · · · · · · · · · ·                                                                                                                                            |                                                                                                                                                                                                             | 40.00 Mar. 1.00 Mar. 1.00                          |                                                              |  |
| 1<br>1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1999 <b>- Andrew Constantine Constant</b> |                                                                            | VOCs (NMNEHC)                                                                                                                  | 2,5624                                                                                                                         | 13,560%                                                      |                                                                                                                                                                                  | 2000.0 μ <sup>-</sup> .                                                                                                                                                                                     |                                                    |                                                              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                            | HAPs                                                                                                                           | 0.1449                                                                                                                         | 0.77%                                                        | данная наколология накология накология накология на накология на накология на накология на накология на наколог<br>С                                                             | **************************************                                                                                                                                                                      |                                                    |                                                              |  |
| ******                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                            | ·                                                                                                                              |                                                                                                                                |                                                              | Winner Glauna commenter a l'anna gant a communa de l'anna and a communa de l'anna a communa de la communa de la                                                                  |                                                                                                                                                                                                             | k- •                                               |                                                              |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ·····                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                            | Mole % *                                                                                                                       |                                                                                                                                |                                                              |                                                                                                                                                                                  |                                                                                                                                                                                                             |                                                    | •                                                            |  |
| Component                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Mole %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | MW                                                                         | MW                                                                                                                             | Weight %                                                                                                                       |                                                              | SITEWIDE PUMP VOC TOTALS                                                                                                                                                         | GAS VOC tpy                                                                                                                                                                                                 | 6                                                  | 11.4000                                                      |  |
| Carbon Dioxide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.3807                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 44                                                                         | 0,1675                                                                                                                         | 0.886%                                                                                                                         |                                                              |                                                                                                                                                                                  | n - Annon a cana in the second se                                                                                              | -                                                  |                                                              |  |
| Nitrogen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.3386                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 28                                                                         | 0.0948                                                                                                                         | 0.502%                                                                                                                         |                                                              | **************************************                                                                                                                                           | wt%                                                                                                                                                                                                         | HAP tpy                                            | - GAS                                                        |  |
| Hydrogen Sulfide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 34                                                                         | 0.0000                                                                                                                         | 0.000%                                                                                                                         |                                                              | n-Hexane                                                                                                                                                                         | 0.0044                                                                                                                                                                                                      |                                                    | 0.04991                                                      |  |
| Helium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4                                                                          | 0.0000                                                                                                                         | 0.000%                                                                                                                         | www.una                                                      | Benzene                                                                                                                                                                          | 0.0011                                                                                                                                                                                                      |                                                    | 0.01299                                                      |  |
| Methane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 88.2714                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 16                                                                         | 14,1234                                                                                                                        | 74.742%                                                                                                                        |                                                              | Toluene                                                                                                                                                                          | 0.0015                                                                                                                                                                                                      |                                                    | 0.01704                                                      |  |
| Ethane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 6,4936                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 30                                                                         | 1.9481                                                                                                                         | 10.309%                                                                                                                        |                                                              | Ethylbenzene                                                                                                                                                                     | 0.0001                                                                                                                                                                                                      |                                                    | 0.00070                                                      |  |
| Propane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2.3620                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 44                                                                         | 1.0393                                                                                                                         | 5.500%                                                                                                                         | annon a Anno 5, Anno 1000,000,000,000,000,000,000,000,000,00 | Xylenes                                                                                                                                                                          | 0.0006                                                                                                                                                                                                      |                                                    | 0.00678                                                      |  |
| Iso-Butane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.4894                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 58                                                                         | 0.2839                                                                                                                         | 1.502%                                                                                                                         |                                                              |                                                                                                                                                                                  | 0.77%                                                                                                                                                                                                       |                                                    | 0.08742                                                      |  |
| N-Butane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0,5998                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 58                                                                         | 0.3479                                                                                                                         | 1.841%                                                                                                                         |                                                              |                                                                                                                                                                                  |                                                                                                                                                                                                             |                                                    |                                                              |  |
| Iso-Pentane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.2534                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 72                                                                         | 0.1824                                                                                                                         | 0,966%                                                                                                                         | 4.00 ···· 1.0.000 ····· 0.000 ···· 0.000                     | XTO Energy, Inc.                                                                                                                                                                 |                                                                                                                                                                                                             |                                                    |                                                              |  |
| Units as our same the should be an an an an an and the state and the state of the s |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                            |                                                                                                                                |                                                                                                                                |                                                              |                                                                                                                                                                                  |                                                                                                                                                                                                             |                                                    |                                                              |  |
| N-Pentane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 72                                                                         | 0.1452                                                                                                                         | 0.768%                                                                                                                         |                                                              |                                                                                                                                                                                  | - Clation                                                                                                                                                                                                   |                                                    |                                                              |  |
| N-Pentane<br>Methylcyclopentane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 72<br>86                                                                   | 0.1452                                                                                                                         | 0.768%                                                                                                                         | *****                                                        | Roosevelt Tap I Compresso                                                                                                                                                        |                                                                                                                                                                                                             |                                                    |                                                              |  |
| Methylcyclopentane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | a more and a second and a second s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                            | and an                                                                                     |                                                                                                                                |                                                              |                                                                                                                                                                                  |                                                                                                                                                                                                             |                                                    |                                                              |  |
| Methylcyclopentane<br>n-Hexane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0079                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 86                                                                         | 0.0068                                                                                                                         | 0.036%                                                                                                                         |                                                              | Roosevelt Tap I Compresso                                                                                                                                                        |                                                                                                                                                                                                             |                                                    |                                                              |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0079<br>0.0962                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 86<br>86                                                                   | 0.0068<br>0.0827                                                                                                               | 0.036%<br>0.438%                                                                                                               |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions                                                                                                                           |                                                                                                                                                                                                             | -                                                  |                                                              |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0079<br>0.0962<br>0.1446                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 86<br>86<br>86                                                             | 0.0068<br>0.0827<br>0.1244                                                                                                     | 0.036%<br>0.438%<br>0.658%                                                                                                     |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions                                                                                                                           | n Heat Trace Pumps                                                                                                                                                                                          |                                                    | 1 6000                                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.0079<br>0.0962<br>0.1446<br>0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 86<br>86<br>86<br>100                                                      | 0.0068<br>0.0827<br>0.1244<br>0.0000                                                                                           | 0.036%<br>0.438%<br>0.658%<br>0.000%                                                                                           |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions                                                                                                                           | Heat Trace Pumps<br>Fuel Usage (SCFD) - M                                                                                                                                                                   |                                                    | 6000                                                         |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0,0749                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 86<br>88<br>86<br>100<br>96                                                | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719                                                                                 | 0.036%<br>0.438%<br>0.658%<br>0.000%<br>0.381%                                                                                 |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions<br>Uintal<br>Sandpiper Natural Gas Pumps                                                                                  | Heat Trace Pumps<br>Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)                                                                                                                                              | leasured                                           | 4.17                                                         |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene<br>Cyclohexane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0,0749<br>0.0276                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 86<br>86<br>86<br>100<br>96<br>78                                          | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215                                                                       | 0.036%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%                                                                       |                                                              | Roosevelt Tap I Compresso<br>Heat Trace Pump Emissions<br>Uintał                                                                                                                 | Heat Trace Pumps<br>Fuel Usage (SCFD) - M                                                                                                                                                                   | leasured                                           |                                                              |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene<br>Cyclohexane<br>n-Heptane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0.0749<br>0.0276<br>0.0498                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 86<br>88<br>86<br>100<br>96<br>78<br>84                                    | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215<br>0.0418                                                             | 0.036%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%<br>0.221%                                                             |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions<br>Uintal<br>Sandpiper Natural Gas Pumps                                                                                  | Heat Trace Pumps<br>Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM) -                                                                                                                       | feasured<br>Spec                                   | 4.17                                                         |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0.0749<br>0.0276<br>0.0498<br>0.1100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 86<br>86<br>100<br>96<br>78<br>84<br>100                                   | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215<br>0.0418<br>0.1100                                                   | 0.038%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%<br>0.221%<br>0.582%                                                   |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions<br>Uintal<br>Sandpiper Natural Gas Pumps                                                                                  | Fuel Usage (SCFD) - M<br>Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM) -<br>Fuel Usage (SCFM)                                                                                             | feasured<br>Spec                                   | 4.17<br>40.00<br>0.67                                        |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene<br>Cyclohexane<br>n-Heptane<br>Toluene<br>Ethylbenzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0.0749<br>0.0276<br>0.0498<br>0.1100<br>0.0307                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 86<br>86<br>100<br>96<br>78<br>84<br>100<br>92                             | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215<br>0.0418<br>0.1100<br>0.0282                                         | 0.038%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%<br>0.221%<br>0.582%<br>0.149%                                         |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions<br>Uintat<br>Sandpiper Natural Gas Pumps<br>Kold Katcher HT-48 Pumps                                                      | Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>MW Nat'l Gas (Ib/Ibm                                                                           | feasured<br>Spec<br>nol)<br>f/lbmol)               | 4.17<br>40.00<br>0.67<br>20                                  |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene<br>Cyclohexane<br>n-Heptane<br>Toluene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0.0749<br>0.0276<br>0.0498<br>0.1100<br>0.0307<br>0.0011                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 86<br>86<br>86<br>100<br>96<br>78<br>84<br>100<br>92<br>106                | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215<br>0.0418<br>0.1100<br>0.0282<br>0.0012                               | 0.038%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%<br>0.221%<br>0.582%<br>0.149%<br>0.006%                               |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions<br>Uintal<br>Sandpiper Natural Gas Pumps                                                                                  | Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>MW Nat'l Gas (Ib/Ibm<br>Conversion Factor (sc                                                  | Spec<br>nol)<br>f/lbmol)<br>/ton)                  | 4.17<br>40.00<br>0.67<br>20<br>379                           |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene<br>Cyclohexane<br>n-Heptane<br>Toluene<br>Ethylbenzene<br>Xylenes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0.0749<br>0.0276<br>0.0498<br>0.1100<br>0.0307<br>0.0011<br>0.0106                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 86<br>86<br>100<br>96<br>78<br>84<br>100<br>92<br>106<br>106               | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215<br>0.0418<br>0.1100<br>0.0282<br>0.0012<br>0.0112                     | 0.038%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%<br>0.221%<br>0.582%<br>0.149%<br>0.006%<br>0.059%                     |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions<br>Uintat<br>Sandpiper Natural Gas Pumps<br>Kold Katcher HT-48 Pumps                                                      | Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>MW Nat'l Gas (Ib/Ibm<br>Conversion Factor (sc<br>Conversion Factor (Ib                         | feasured<br>Spec<br>nol)<br>f/lbmol)<br>/ton)      | 4.17<br>40.00<br>0.67<br>20<br>379<br>2000                   |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene<br>Cyclohexane<br>n-Heptane<br>Toluene<br>Ethylbenzene<br>Xylenes<br>Octanes+<br>Nonanes+                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0.0749<br>0.0276<br>0.0498<br>0.1100<br>0.0307<br>0.0011<br>0.0108<br>0.0591                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 86<br>88<br>86<br>100<br>96<br>78<br>84<br>100<br>92<br>106<br>106<br>114  | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215<br>0.0418<br>0.1100<br>0.0282<br>0.0012<br>0.0112<br>0.0840           | 0.038%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%<br>0.221%<br>0.582%<br>0.149%<br>0.006%<br>0.059%<br>0.339%           |                                                              | Roosevelt Tap 1 Compresso<br>Heat Trace Pump Emissions<br>Uintat<br>Sandpiper Natural Gas Pumps<br>Kold Katcher HT-48 Pumps                                                      | Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>MW Nat'l Gas (Ib/Ibm<br>Conversion Factor (SC<br>Conversion Factor (Ib<br>Operating Time (days | feasured<br>Spec<br>nol)<br>f/lbmol)<br>/ton)      | 4.17<br>40 00<br>0.67<br>20<br>379<br>2000<br>180            |  |
| Methylcyclopentane<br>n-Hexane<br>Hexane +<br>2,4-Dimethylpentane<br>Methycyclohexane<br>Benzene<br>Cyclohexane<br>n-Heptane<br>Toluene<br>Ethylbenzene<br>Xylenes<br>Octanes+                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0079<br>0.0962<br>0.1446<br>0.0000<br>0.0749<br>0.0276<br>0.0498<br>0.1100<br>0.0307<br>0.0011<br>0.0001<br>0.0108<br>0.0561<br>0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 86<br>86<br>100<br>96<br>78<br>84<br>100<br>92<br>106<br>106<br>114<br>128 | 0.0068<br>0.0827<br>0.1244<br>0.0000<br>0.0719<br>0.0215<br>0.0418<br>0.1100<br>0.0282<br>0.0012<br>0.0112<br>0.0840<br>0.0000 | 0.038%<br>0.438%<br>0.658%<br>0.000%<br>0.381%<br>0.114%<br>0.221%<br>0.582%<br>0.149%<br>0.006%<br>0.059%<br>0.339%<br>0.000% | 13.560%                                                      | Roosevelt Tap I Compresso<br>Heat Trace Pump Emissions<br>Uintal<br>Sandpiper Natural Gas Pumps<br>Kold Katcher HT-48 Pumps<br>Calculation Inputs<br>Sandpiper Natural Gas Pumps | Fuel Usage (SCFD) - M<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>Fuel Usage (SCFM)<br>MW Nat'l Gas (Ib/Ibm<br>Conversion Factor (Ib<br>Operating Time (days<br>Operating time (min)  | feasured<br>Spec<br>noi)<br>f/ibmol)<br>/ton)<br>) | 4.17<br>40.00<br>0.67<br>20<br>379<br>2000<br>180<br>259.200 |  |

3/14/2017

| -             | 1                                      |                                                                                                                 | 3 a       | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                        | Component<br>s Count                                                                                            | Hour<br>s | Factors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | %NMVO<br>C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | %Reductio                              |            | sions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|               |                                        |                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ţ                                      | lb/year    | tons/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Valves        |                                        |                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Gas/Vapor                              | 1                                                                                                               | 8760      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                                      | 1099.35179 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Light Oil                              | 26                                                                                                              | 8760      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                                      | 1252.68000 | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|               | Heavy Oil                              |                                                                                                                 | 8760      | a second s |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                                      | 0.00000    | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| -             | Water/Light Oil                        | 6                                                                                                               | 8760      | 0.00021600                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                      | 11.35296   | 0.0056                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Pumps         |                                        | • •                                                                                                             | · · · ·   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | *******                                |            | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|               | Gas/Vapor                              | 2                                                                                                               | 8760      | 0.00529000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 23.87%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                      | 22.12253   | 0.0110                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|               | Light Oil                              |                                                                                                                 | 8760      | 0.02866000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                      | 0.00000    | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|               | Heavy Oil                              |                                                                                                                 | 8760      | 0.00113000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                      | 0.00000    | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|               | Water/Light Oil                        | an a                                                                        | 8760      | 0.00005300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                      | 0.00000    | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Flanges       |                                        |                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | an waange selecterangese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Gas/Vapor                              | 69                                                                                                              | 8760      | 0.00086000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 23.87%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                      | 124.07854  | 0.06204                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|               | Light Oil                              | 12                                                                                                              | 8760      | 0.00024300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                      | 25.54416   | 0.0127                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| in sub        | Heavy Oil                              |                                                                                                                 | 8760      | 0.0000086                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ó                                      | 0.00000    | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|               | Water/Light Oil                        | 2                                                                                                               | 8760      | 0.00000620                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                      | 0.10862    | 0.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Open-ended    |                                        | 5<br>5<br>7<br>7<br>8<br>7<br>8<br>7<br>8<br>7<br>8<br>7<br>8<br>7<br>8<br>7<br>8<br>7<br>8<br>7                | ·····     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ······································ |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Gas/Vapor                              | An an and a second s | 8760      | 0.00441000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 23.87%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                      | 0.00000    | 0.00000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|               | Light Oil                              |                                                                                                                 | 8760      | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0                                      |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Heavy Oil                              |                                                                                                                 | 8760      | \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0                                      | 0.00000    | a second and a second se |
|               | Water/Light Oil                        | •                                                                                                               | 8760      | 0.00055000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A company and an other states and the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0                                      | 0.00000    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Connectors    | + ···································· | •                                                                                                               |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 00111001010   | Gas/Vapor                              | 318                                                                                                             | 8760      | 0.00044000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 23.87%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0                                      | 292.56943  | 0.14628                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|               | Light Oil                              |                                                                                                                 | 8760      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                      | \$         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Heavy Oil                              |                                                                                                                 | 8760      | A DIA THE DIA CONTRACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | â                                      |            | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|               | Water/Light Oil                        | 26                                                                                                              | 8760      | 0.00024300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | and the second se | 1                                      |            | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|               | pressors, relief v                     | herear weep the second second                                                                                   | 2         | š                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | alaan a                                | ·          | Ac environment of an and the environment of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| polished rods | s, and vents                           |                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Gas/Vapor                              | 18                                                                                                              | -         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                      |            | 0.365084492                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|               | Light Oil                              | 8                                                                                                               | 2.        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ÷                                      | 1156.32    | 0.5781                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|               | Heavy Oil                              |                                                                                                                 | 8760      | 0.00006800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                        | -          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | Water/Light Oil                        | 4                                                                                                               | 8760      | 0.03090000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 100.00%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0                                      | 1082.736   | 0.54136                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|               | ļ                                      |                                                                                                                 | <br>      | an a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total in target                        | haar       | 2.957                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|               | I                                      |                                                                                                                 |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total in tons                          |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               |                                        |                                                                                                                 |           | l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Total in Lb/h                          | 11         | 0.675                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

FUGITIVES

| Conversion of Mole Perce            | ant to Weight Perce   | nt                                     |                                                                                                                |          |                                                                 | and an                                                                       | anna anna anna anna anna anna anna ann                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
|-------------------------------------|-----------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Tap-1 Fugitives                     | The se troight failes | ·                                      |                                                                                                                | 4        |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| Specific Gravity                    | ····· •               |                                        | Molecular Weight                                                                                               | 18.8962  | wt %                                                            |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| Gross BTU                           | 1000                  |                                        | NMHC                                                                                                           | 4.5104   | 23.8696%                                                        |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ······································                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                               |
|                                     | 1000                  |                                        | VOCs (NMNEHC)                                                                                                  | 2.5624   | 13.560%                                                         |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                               |
|                                     |                       |                                        | HAPs                                                                                                           | 0.1449   | 0.77%                                                           |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
|                                     |                       |                                        | 1                                                                                                              | 0.1440   | 0.1.1 /4                                                        | www.en.en.en.en.en.en.en.en.en.en.en.en.en.                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Anne and an and an an an and an an an and an an an and an |
|                                     | ····· •               |                                        | Mole % *                                                                                                       |          |                                                                 |                                                                                                                  | and an or other on the second se |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| Component                           | Mole %                | MW                                     | MW                                                                                                             | Weight % |                                                                 | SITEWIDE                                                                                                         | FUGITIVE VOC TOTALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | GAS VOC tpy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.9570                                                                                        |
| Carbon Dioxide                      | 0.3807                | 44                                     | 0.1675                                                                                                         | 0.886%   |                                                                 | ·· •                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | · ·····                                                                                       |
| Nitrogen                            | 0.3386                | 28                                     | 0.0948                                                                                                         | 0.502%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| Hydrogen Sulfide                    | 0.0000                | 34                                     | 0.0000                                                                                                         | 0.000%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | · · · · · · · · · · · · · · · · · · ·                                                         |
| Helium                              | 0.0000                | 4                                      | 0.0000                                                                                                         | 0.000%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ÷                                                                                             |
| Methane                             | 88.2714               | 16                                     | 14.1234                                                                                                        | 74.742%  | 9000 000 000000000                                              | appenses in assess the anaropeistic of a material                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | gi announ announ ann announaigh anna Announ ann                                               |
| Ethane                              | 6.4936                | 30                                     | 1.9481                                                                                                         | 10.309%  |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | wt%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | HAP tpy - GAS                                                                                 |
| Propane                             | 2.3620                | 44                                     | 1.0393                                                                                                         | 5.500%   |                                                                 |                                                                                                                  | n-Hexane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0044                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                               |
| Iso-Butane                          | 0.4894                | 58                                     | 0.2839                                                                                                         | 1.502%   |                                                                 |                                                                                                                  | Benzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0011                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.00337                                                                                       |
| N-Butane                            | 0.5998                | 58                                     | 0.3479                                                                                                         | 1.841%   |                                                                 | and a second s | Toluene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0015                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                               |
| Iso-Pentane                         | 0.2534                | 72                                     | 0.1824                                                                                                         | 0.966%   |                                                                 |                                                                                                                  | Ethylbenzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.0001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                               |
| N-Pentane                           | 0.2016                | 72                                     | 0.1452                                                                                                         | 0.768%   |                                                                 |                                                                                                                  | Xylenes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.0006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                               |
| Methylcyclopentane                  | 0.0079                | 86                                     | 0.0068                                                                                                         | 0.036%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.77%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                               |
| n-Hexane                            | 0.0962                | 86                                     | 0.0827                                                                                                         | 0.438%   | ng ng nangangangan <b>awa</b> nanggiga ang asi na na ng nang na |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | a contraction of the second se |                                                                                               |
| Hexane +                            | 0.1446                | 86                                     | 0.1244                                                                                                         | 0.658%   |                                                                 |                                                                                                                  | • • • • • • • • • • • • • • • • • • •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | **                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                               |
| 2,4-Dimethylpentane                 | 0.0000                | 100                                    | 0.0000                                                                                                         | 0.000%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| Methycyclohexane                    | 0.0749                | 96                                     | 0.0719                                                                                                         | 0.381%   |                                                                 | 6 464 474 7 <b>200</b>                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | • • • • • • • • • • • • • • • • • • •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                               |
| Benzene                             | STREES.               |                                        | 0.0215                                                                                                         | 0.114%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ressonan                                                                                      |
| Cyclohexane                         | 0.0498                | 84                                     | 0.0418                                                                                                         | 0.221%   | 6                                                               | Marina                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| n-Heptane                           | 0.1100                | 100                                    | 0.1100                                                                                                         | 0.582%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ······································                                                        |
| Toluene                             | 0.0307                | 92                                     | 0.0282                                                                                                         | 0.149%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| Ethylbenzene                        | 0.0011                | 106                                    | 0.0012                                                                                                         | 0.006%   | ······                                                          | ······                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
| Xylenes                             | 0.0106                | 106                                    | 0.0112                                                                                                         | 0.059%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | *                                                                                             |
| Octanes+                            | 0.0561                | 114                                    | 0.0640                                                                                                         | 0.338%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3                                                                                             |
| Nonanes+                            | 0.0000                | 128                                    | 0.0000                                                                                                         | 0.000%   |                                                                 |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I                                                                                             |
| Decanes+                            | 0.0000                | 142                                    | 0.0000                                                                                                         | 0.000%   |                                                                 |                                                                                                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |
|                                     |                       | •                                      |                                                                                                                |          | 13.560%                                                         |                                                                                                                  | 10000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | aber www. www.weiner                                                                          |
| Total                               | 100.0000              | ************************************** |                                                                                                                |          | NMNEVOC                                                         | and Anna and Anna                                                                                                | inter an a de la se                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                             |
| n and mentalization of antipulation |                       |                                        | and an and a second |          | WT %'s                                                          |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                               |

# QUESTAR APPLIED TECHNOLOGY

- - - **-**--

.

## 1210 D. Street, Rock Springs, Wyoming 82901

### (307) 352-7292

| LIMS ID:<br>Analysis Date/Time:<br>Analyst Initials:<br>Instrument ID:<br>Data File:<br>Date Sampled:                                                                                                                             | N/A<br>6/20/2011<br>AST<br>Instrument 1<br>QPC62.D<br>6/14/2011                                                                                                         | 2:33 PM | Description:<br>Field:<br>ML#:<br>GC Method:                                                                                                                             | Riverbend Tap 1<br>Riverbend<br>Summit Gas Gahtering<br>Quesbtex                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Component                                                                                                                                                                                                                         | Mol%                                                                                                                                                                    | ,       | Wt%                                                                                                                                                                      | b LV%                                                                                                                                                                   |
| Methane<br>Ethane<br>Propane<br>Isobutane<br>n-Butane<br>Neopentane<br>Isopentane<br>2,2-Dimethylbutane<br>2,3-Dimethylbutane<br>2-Methylpentane<br>3-Methylpentane<br>n-Hexane<br>Heptanes<br>Octanes<br>Nonanes<br>Decanes plus | 88.2714<br>6.4936<br>2.3620<br>0.4894<br>0.5998<br>0.0085<br>0.2449<br>0.2016<br>0.0095<br>0.0238<br>0.0721<br>0.0392<br>0.0962<br>0.3009<br>0.0440<br>0.0212<br>0.0026 |         | 74.7508<br>10.3070<br>5.4979<br>1.5013<br>1.8403<br>0.0322<br>0.9328<br>0.7678<br>0.0434<br>0.1082<br>0.3281<br>0.1783<br>0.4374<br>1.4759<br>0.2640<br>0.1297<br>0.0199 | 82.1153<br>9.5569<br>3.5741<br>0.8791<br>1.0385<br>0.0178<br>0.4923<br>0.4010<br>0.0218<br>0.0535<br>0.1644<br>0.0878<br>0.2171<br>0.6371<br>0.1201<br>0.0542<br>0.0089 |
| Nitrogen<br>Carbon Dioxide                                                                                                                                                                                                        | 0.3386<br>0.3807                                                                                                                                                        |         | 0.5006<br>0.8844                                                                                                                                                         | 0.2038<br>0.3563                                                                                                                                                        |
| Oxygen<br>Hydrogen Sulfide                                                                                                                                                                                                        | 0.0000<br>0.0000                                                                                                                                                        |         | 0.0000<br>0.0000                                                                                                                                                         | 0.0000<br>0.0000                                                                                                                                                        |
| Total<br>Clabel Broportion                                                                                                                                                                                                        | 100.0000                                                                                                                                                                | Units   | 100.0000                                                                                                                                                                 | 100.0000                                                                                                                                                                |
| Global Properties<br>Gross BTU/Real CF<br>Sat.Gross BTU/Real CF<br>Gas Compressibility (Z)<br>Specific Gravity<br>Avg Molecular Weight<br>Propane GPM<br>Butane GPM                                                               | 1156.1<br>1137.1<br>0.9971<br>0.6559<br>18.945<br>0.647336<br>0.348352                                                                                                  | Onito   |                                                                                                                                                                          | )°F and14.73 psia<br>)°F and14.73 psia                                                                                                                                  |
| Gasoline GPM<br>26# Gasoline GPM<br>Total GPM<br>Base Mol%                                                                                                                                                                        | 0.384325<br>0.575632<br>1.382709<br>99.642                                                                                                                              |         | gal/MCF<br>gal/MCF<br>gal/MCF<br>%v/v                                                                                                                                    |                                                                                                                                                                         |
| Sample Temperature:<br>Sample Pressure:<br>H2OLength of StainTube                                                                                                                                                                 | 78<br>55<br>273.0                                                                                                                                                       | )       | °F<br>psig<br>#/MMCF                                                                                                                                                     |                                                                                                                                                                         |

| Component              | Mol%            | Wt%    | LV%    |
|------------------------|-----------------|--------|--------|
| Benzene                | 0.0276          | 0.1139 | 0.0424 |
| Toluene                | 0.0307          | 0.1494 | 0.0565 |
| Ethylbenzene           | 0.0011          | 0.0062 | 0.0023 |
| M&P Xylene             | 0.0094          | 0.0526 | 0.0200 |
| O-Xylene               | 0.0012          | 0.0067 | 0.0025 |
| 2,2,4-Trimethylpentane | 0.0079          | 0.0478 | 0.0219 |
| Cyclopentane           | 0.0000          | 0.0000 | 0.0000 |
| Cyclohexane            | 0.0498          | 0.2215 | 0.0932 |
| Methylcyclohexane      | 0.0749          | 0.3880 | 0.1652 |
| Description:           | Riverbend Tap 1 |        |        |

• • •

# GRI GlyCalc Information

| Component              | Mol%     | Wt%      | LV%      |
|------------------------|----------|----------|----------|
| Carbon Dioxide         | 0.3807   | 0.8844   | 0.3563   |
| Hydrogen Sulfide       | 0.0000   | 0.0000   | 0.0000   |
| Nitrogen               | 0.3386   | 0.5006   | 0.2038   |
| Methane                | 88.2714  | 74.7508  | 82.1153  |
| Ethane                 | 6.4936   | 10.3070  | 9.5569   |
| Propane                | 2.3620   | 5.4979   | 3.5741   |
| Isobutane              | 0.4894   | 1.5013   | 0.8791   |
| n-Butane               | 0.5998   | 1.8403   | 1.0385   |
| Isopentane             | 0.2534   | 0.9650   | 0.5101   |
| n-Pentane              | 0.2016   | 0.7678   | 0.4010   |
| Cyclopentane           | 0.0000   | 0.0000   | 0.0000   |
| n-Hexane               | 0.0962   | 0.4374   | 0.2171   |
| Cyclohexane            | 0.0498   | 0.2215   | 0.0932   |
| Other Hexanes          | 0.1446   | 0.6580   | 0.3275   |
| Heptanes               | 0.1100   | 0.5553   | 0.2579   |
| Methylcyclohexane      | 0.0749   | 0.3880   | 0.1652   |
| 2,2,4 Trimethylpentane | 0.0079   | 0.0478   | 0.0219   |
| Benzene                | 0.0276   | 0.1139   | 0.0424   |
| Toluene                | 0.0307   | 0.1494   | 0.0565   |
| Ethylbenzene           | 0.0011   | 0.0062   | 0.0023   |
| Xylenes                | 0.0106   | 0.0593   | 0.0225   |
| C8+ Heavies            | 0.0561   | 0.3481   | 0.1584   |
| Subtotal               | 100.0000 | 100.0000 | 100.0000 |
| Oxygen                 | 0.0000   | 0.0000   | 0.0000   |
| Total                  | 100.0000 | 100.0000 | 100.0000 |

# **Manzanares, Candice**

From: Sent: To: Subject: Simpson, Dustin <Dustin\_Simpson@xtoenergy.com> Wednesday, December 21, 2016 3:29 PM Wortman, Eric RE: Riverbend & Accompanying Wellsites

Eric,

The gas does go to an off-site compressor and then returns to the dehy at the RBU dehy. The dehy could operate independently of either one of the specific wells but the wells could not operate independently of the dehy facility as the gas has to be dehydrated prior to sales.

Thanks,

#### Dustin Simpson

**XTO ENERGY INC.**, an ExxonMobil subsidiary Dustin Simpson | 810 Houston Street PTR4 | Fort Worth, TX 76102 | ph: 817.885.2845 | fax: 817.885.1847 | dustin\_simpson@xtoenergy.com

The information in this transmission is confidential and may also contain privileged attorney-client information or work product. The information is intended for the use of the individual or entity to whom it is addressed. If you are not the intended recipient, your are notified any use, dissemination, distribution, or copying of this communication is strictly prohibited. If you received this communication in error, please notify us immediately by e-mail or by telephone.

From: Wortman, Eric [mailto:Wortman.Eric@epa.gov]
Sent: Wednesday, December 21, 2016 4:01 PM
To: Simpson, Dustin
Subject: Riverbend & Accompanying Wellsites

Hi Dustin,

I had a question regarding the two wellsites at the Riverbend facility with regard to the revised definition of a major source. Since RBU 6-15E is located on the same surface site as Riverbend Dehy, it is included as part of the same source. Similar to my questions on Little Canyon, I'm working on EPA's interpretation for the RBU 7-15E wellsite since it's located within a ¼ mile of Riverbend Dehy but not on the same surface site. The RBU 6-15E and 7-15E wellsites discharge gas into the common gathering pipeline and not directly to the Riverbend Dehydrator Site. My understanding from the application is that the gas then flows to an offsite compressor station for further processing. Does the gas eventually come back to Riverbend Dehy Site before going to market or can it go elsewhere? In other words is the operation of Riverbend Dehy site necessary for the RBU 7-15E wellsite to produce gas to market or can both sites operate independently of each other?

Thanks,

Eric

Eric Wortman | Environmental Scientist U.S. Environmental Protection Agency – Region 8

1595 Wynkoop Street (8P-AR), Denver, Colorado 80202 Telephone: (303) 312-6649 Email: <u>wortman.eric@epa.gov</u>



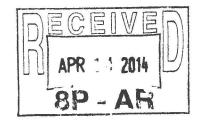
April 7, 2014

Alternate Designated Representative EPA Region 8 Operations 40 CFR Part 71, 40 CFR Part 63

Via USPS Certified Mail: 7013 2630 0001 2576 9242

Mr. Eric Wortman Office of Partnership & Regulatory Assistance EPA Region 8 (AP-AR) 1595 Wynkoop Street Denver, CO 80202-1129

To Whom It May Concern:



XTO Energy, Inc. (XTO) respectfully submits an Alternative Designated Responsible Official for 40 CFR 71 and 40 CFR 63. XTO confirms that the individuals listed in the table below meet the definition of Responsible Official stated in 40 CFR 63.2 and 40 CFR 71.2.

| Designated Responsible Official            | Alternate Designated Responsible Official |
|--------------------------------------------|-------------------------------------------|
| Mr. Kenneth S. Rose                        | Timothy Hermann                           |
| Sr. Vice President of Midstream Operations | Manager of Midstream Operations           |
| 810 Houston Street                         | 810 Houston Street                        |
| Fort Worth, TX 76102                       | Fort Worth, TX 76102                      |
| 817-885-1623 - Office                      | 817-885-2584 - Office                     |
| RO Designation began 01/01/2012            | Alt. RO Designation begins 04/07/2014     |

As stated in 40 CFR 63.2 and 40 CFR 71.2, Responsible Official is considered the following for a corporation such as XTO:

- (1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decisionmaking functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:
  - (i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars);
  - (ii) The delegation of authority to such representative is approved in advance by the Administrator.

Should you have any questions, please feel free to contact me at 817-885-1249 or via e-mail at Rykki\_Tepe@xtoenergy.com.

Sincerely,

Rykki Tepe

Rykki Tepe Environmental Engineer XTO Energy Inc.

Ms. Alexis North (Via USPS Certified Mail: 7013 2630 0001 2576 9259) Enforcement and Compliance EPA Region 8 (AP-AR) 1595 Wynkoop Street Denver, CO 80202-1129

BC: XTO EFILE, FIRE SO Rigs Blagge County Agency Terrespondance (2017) 870-2800 • Fax: (817) 885-1671

## Wortman, Eric

From: Sent: To: Subject: Patefield, Scott Thursday, March 20, 2014 9:38 AM Wortman, Eric FW: Uintah County, UT - Leak Detection and Monitoring

fyi

From: Patefield, Scott Sent: Thursday, January 24, 2013 2:05 PM To: Tepe, Rykki Subject: Re: Uintah County, UT - Leak Detection and Monitoring

Hi Rykki,

As we discussed on the telephone, if a source is no longer considered an onshore natural gas processing plant, the LDAR requirements of 40CFR60, subpart KKK would no longer apply. The consent decree identifies the Kings Canyon, TAP-4 and TAP-5 Facilities as onshore natural gas processing facilities. If the equipment rendering any of these facilities as a natural gas processing plant is removed (in this case, the dew point skids) and there are no other processes at any given facility that would subject them to the natural gas processing plant requirements, then they would no longer be subject to the NSPS, subpart KKK.

The requirements of MACT HH, MACT ZZZZ and the Consent Decree are independent of a facility's applicability to NSPS KKK, so the requirements of each would still apply even if the facility is no longer subject to the requirements of NSPS KKK.

I hope this helps, please feel free to contact me if you have any further questions or comments.

Thanks,

Scott Patefield, Environmental Scientist Office of Enforcement, Compliance & Environmental Justice EPA Region 8 1595 Wynkoop Street (8ENF-AT) Denver, CO 80202-1129 Phone: (303) 312-6248 Email: patefield.scott@epa.gov

| From:    | "Tepe, Rykki" < <u>Rykki_Tepe@xtoenergy.com</u> > |
|----------|---------------------------------------------------|
| To:      | Scott Patefield/R8/USEPA/US@EPA,                  |
| Date:    | 01/22/2013 01:43 PM                               |
| Subject: | Uintah County, UT - Leak Detection and Monitoring |

Hi Scott: As mentioned in the phone call, I am trying to determine whether we can eliminate our Leak Detection Monitoring for our Uintah County Facilities. In an Oct.31, 2011 Semi-Annual LDAR Report it was noted in the cover letter that because we were no longer considered a gas processing plant we would no longer be submitting LDAR Reports. We have continued to perform the leak detection surveys, and would like to eliminate them if not required. However, before eliminating I would like to ensure we are meeting EPA's expectations and that you agree with us. My areas that I have been reviewing in which we previously had applicable leak detection standards are MACT HH, NSPS ZZZZ, and our Consent Decree. We currently perform leak detection at any compressor station in Uintah County, UT where we have a dehydration unit – which includes Riverbend Dehy, Wild Horse Bench, Tap 5, River bend 11-18F, and Riverbend 9-17E, and LCU – Compressor Stations. Could you possibly offer me guidance on how we should move forward, and ensure we're still in compliance?

Feel free to call me if you have questions. Thanks!

Rykki R. Tepe Environmental Engineer XTO Energy, Inc. 810 Houston Street, Fort Worth TX, 76102 Office: 817-885-1249 Cell: 817-253-2986 Fax:817-885-1847 Email: <u>Rykki\_Tepe@xtoenergy.com</u>

## Wortman, Eric

From: Sent: To: Subject: Simpson, Dustin <Dustin\_Simpson@xtoenergy.com> Wednesday, December 21, 2016 3:29 PM Wortman, Eric RE: Riverbend & Accompanying Wellsites

Eric,

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Thanks,

# Dustin Simpson

**XTO ENERGY INC.**, an ExxonMobil subsidiary Dustin Simpson | 810 Houston Street PTR4 | Fort Worth, TX 76102 | ph: 817.885.2845 | fax: 817.885.1847 | <u>dustin\_simpson@xtoenergy.com</u>

The information in this transmission is confidential and may also contain privileged attorney-client information or work product. The information is intended for the use of the individual or entity to whom it is addressed. If you are not the intended recipient, your are notified any use, dissemination, distribution, or copying of this communication is strictly prohibited. If you received this communication in error, please notify us immediately by e-mail or by telephone.

From: Wortman, Eric [mailto:Wortman.Eric@epa.gov]
Sent: Wednesday, December 21, 2016 4:01 PM
To: Simpson, Dustin
Subject: Riverbend & Accompanying Wellsites

Hi Dustin,

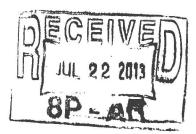
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Thanks,

Eric

Eric Wortman | Environmental Scientist U.S. Environmental Protection Agency – Region 8 1595 Wynkoop Street (8P-AR), Denver, Colorado 80202 Telephone: (303) 312-6649 Email: <u>wortman.eric@epa.gov</u>





July 19, 2013

Via USPS Certified Mail: 7008 1830 0001 0477 2835

U.S. EPA, Region 8 – Air Program 1595 Wynkoop Street (8P-AR) Denver, Colorado 80202

#### RE: Change of Ownership – Title V Permits Previous Owner/Operator: Summit Gas Gathering, LLC New Owner/Operator: XTO Energy, Inc. Federal Tax ID 75-2347769

To Whom It May Concern:

Summit Gas Gathering, LLC has been dissolved and starting July 1, 2013, XTO Energy, Inc. assumed the role of owner/operator for Summit Gas Gathering, LLC. Kings Canyon Compressor Station was previously a Title V facility, and is currently registered as a True Minor NSR Registration (8/26/2010). Tap 4 Compressor Station was shut in and decommissioned (2/17/2012).

The following lists the active Title V facilities that require the change in owner/operator to XTO Energy, Inc.

- Little Canyon Unit Compressor Station
- River Bend Dehydration Site & Accompanying Well sites
- Tap 5 Compressor Station

If you have any questions or need any additional information to process these registration changes, please feel free to contact me at 817.885.1249 or by email at rykki\_tepe@xtoenergy.com.

Sincerely,

Klen Tepe

Rykki Tepe Environmental Engineer XTO Energy, Inc.

Cc: Mr. Eric Wortman (Via USPS Certified Mail: 7008 1830 0001 0477 2859) Office of Partnerships & Regulatory Assistance 1595 Wynkoop Street (8P-AR) Denver, Colorado 80202

> Ms. Alexis North (Via USPS Certified Mail: 7008 1830 0001 0477 2842) US EPA Region 8, Enforcement & Compliance 1595 Wynkoop Street Denver, Colorado 80202

SEPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 06/30/2015

Federal Operating Permit Program (40 CFR Part 71)

# **GENERAL INFORMATION AND SUMMARY (GIS)**

## A. Mailing Address and Contact Information

| Facility nameRiver Bend Dehydrator & Accompanying Wellsites                |
|----------------------------------------------------------------------------|
| Mailing address: Street or P.O. Box810 Houston Street, Petro-4             |
| CityFort Worth StateTX ZIP76102                                            |
| Contact person:Rykki Tepe TitleEnvironmental Engineer                      |
| Telephone (817)8851249 Ext                                                 |
| Facsimile (817)8852986                                                     |
| . Facility Location                                                        |
| Temporary source? Yes X_No Plant site location 39.94851, -109.77057        |
| CityRoosevelt State_UT CountyUintah EPA Region_8                           |
| Is the facility located within:                                            |
| Indian lands? _X – Indian AirshedYESNO OCS waters?YES _X_NO                |
| Non-attainment area?YES _X_NO If yes, for what air pollutants?N/A          |
| Within 50 miles of affected State? _X_YESNO If yes, What State(s)?Colorado |
| . Owner                                                                    |
| NameXTO Energy, Inc Street/P.O. Box810 Houston Street, Petro-4             |
| CityFort Worth State _TX _ ZIP76102                                        |
| Telephone (_817_)8851249 Ext                                               |
| . Operator                                                                 |
| NameXTO Energy, Inc Street/P.O. Box _810 Houston Street, Petro-4           |
| CityFort Worth StateTX ZIP _76102                                          |
| Telephone (817)8851249 Ext                                                 |

| E.                                                                                                 | Application Type                                                         |  |  |  |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--|--|--|
| Mark only one permit application type and answer the supplementary question appropriate fo marked. |                                                                          |  |  |  |
|                                                                                                    | Initial Permit Renewal Significant Mod Minor Permit Mod(MPM)             |  |  |  |
|                                                                                                    | Group Processing, MPMX Administrative Amendment                          |  |  |  |
|                                                                                                    | For initial permits, when did operations commence? /N/A /                |  |  |  |
|                                                                                                    | For permit renewal, what is the expiration date of current permit?/_N/A/ |  |  |  |
|                                                                                                    |                                                                          |  |  |  |

## F. Applicable Requirement Summary

| Mark all types of applicable requirements that apply.                             |                        |                        |                     |  |  |
|-----------------------------------------------------------------------------------|------------------------|------------------------|---------------------|--|--|
| SIP                                                                               | FIP/TIP                | PSD                    | Non-attainment NSR  |  |  |
| Minor source NSR                                                                  | Section 111            | Phase I acid rai       | nPhase II acid rain |  |  |
| Stratospheric ozone                                                               | OCS regulations        | _X_ NESHAP             | Sec. 112(d) MACT    |  |  |
| Sec. 112(g) MACT                                                                  | Early reduction of HAP | Sec 112(j) MAC         | T RMP [Sec.112(r)]  |  |  |
| Tank Vessel requirem                                                              | ents, sec. 183(f)) Se  | ection 129 Standards/R | equirement          |  |  |
| Consumer / comm products, ' 183(e)NAAQS, increments or visibility (temp. sources) |                        |                        |                     |  |  |
| Has a risk management plan been registered? YES X_NO Regulatory agency            |                        |                        |                     |  |  |
| Phase II acid rain applicati                                                      | on submitted?YES _X_I  | NO If yes, Permitting  | authority           |  |  |

## G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

| None |  |
|------|--|
|      |  |
|      |  |
|      |  |
|      |  |
|      |  |

List processes, products, and SIC codes for the facility.

| Process                | Products    | SIC  |
|------------------------|-------------|------|
| Natural Gas Production | Natural Gas | 1311 |
|                        |             |      |
|                        |             |      |
|                        |             |      |

#### I. Emission Unit Identification

Assign an emissions unit ID and describe each emissions unit at the facility. Control equipment and/or alternative operating scenarios associated with emissions units should by listed on a separate line. Applicants may exclude from this list any insignificant emissions units or activities.

| Emissions Unit ID | Description of Unit                                         |
|-------------------|-------------------------------------------------------------|
|                   | No Changes Administrative Amendment – Owner/Operator Change |
|                   |                                                             |
|                   |                                                             |
|                   |                                                             |
|                   |                                                             |
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|                   |                                                             |
|                   |                                                             |
|                   |                                                             |
|                   |                                                             |

#### J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

4

| No Changes Administrative Amendment - Owner/Operator Change                             |  |  |  |  |
|-----------------------------------------------------------------------------------------|--|--|--|--|
| NOx tons/yr VOC tons/yr SO2tons/yr                                                      |  |  |  |  |
| PM-10 tons/yr CO tons/yr Lead tons/yr                                                   |  |  |  |  |
| Total HAPtons/yr                                                                        |  |  |  |  |
| Single HAP emitted in the greatest amount PTE tons/yr                                   |  |  |  |  |
| Total of regulated pollutants (for fee calculation), Sec. F, line 5 of form FEE tons/yr |  |  |  |  |
| K. Existing Federally-Enforceable Permits                                               |  |  |  |  |
| Permit number(s)None – Pending Permit Permit type Permitting authority                  |  |  |  |  |
| Permit number(s) Permit type _Consent Decree_ Permitting authorityEPA                   |  |  |  |  |
| L. Emission Unit(s) Covered by General Permits                                          |  |  |  |  |
| Emission unit(s) subject to general permit                                              |  |  |  |  |
| Check one: Application made Coverage granted                                            |  |  |  |  |
| General permit identifier Expiration Date/_/                                            |  |  |  |  |
| M. Cross-referenced Information                                                         |  |  |  |  |
| Does this application cross-reference information?YES _X_NO (If yes, see instructions)  |  |  |  |  |

INSTRUCTIONS FOLLOW

**GERA** United States Environmental Protection Agency OMB No. 2060-0336, Approval Expires 6/30/2015 Federal Operating Permit Program (40 CFR Part 71) CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).

| A. Responsible Official                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: (Last)Rose (First)Kenneth (MI) S                                                                                                                                                        |
| TitleSR VP Midstream Operations                                                                                                                                                               |
| Street or P.O. Box810 Houston Street                                                                                                                                                          |
| CityFort Worth State TX ZIP 76102 6298                                                                                                                                                        |
| Telephone (817)8851623 Ext Facsimile (_817) _885<br>_2683                                                                                                                                     |
| <b>B. Certification of Truth, Accuracy and Completeness</b> (to be signed by the responsible official)                                                                                        |
| I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete. |
| Name (signed) KSRose                                                                                                                                                                          |
| Name (typed)Kenneth S. Rose Date:7 / _18 / _20/3                                                                                                                                              |

# Summit Gas Gathering, LLC

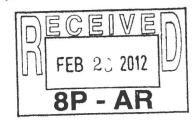
810 Houston Street Ft. Worth, TX 76102-6298

February 17, 2012

Responsible Official Notification of Change 40 CFR Part 71 and 40 CFR Part 63 Uintah County, UT

Via FedEx 2Day: 7932 4251 8563

Mr. Eric Wortman U.S. EPA Region 8 Office of Partnerships & Regulatory Assistance 1595 Wynkoop Denver, CO 80202



Dear Mr. Wortman:

Due to recent internal reorganization, Summit Gas Gathering, LLC (SGG), respectfully submits a Responsible Official Notification of Change for all sources in Uintah County, UT subject to 40 CFR 71 and 40 CFR 63. These sources include, but are not limited to, the following:

- Kings Canyon Unit Compressor Station 40 CFR 71 Permit # V-OU-0019-07.00
- TAP-4 Compressor Station 40 CFR 71 Permit # V-OU-0017-07.00
- TAP-5 Compressor Station 40 CFR 71 Permit # V-OU-0018-07.00
- Little Canyon Unit Compressor Station 40 CFR 71 Permit # Pending Issuance
- River Bend Dehydrator Site & Accompanying Wellsites 40 CFR 71 Permit # Pending Issuance

SGG confirms that the individuals listed in the table below meet the definition of Responsible Official stated in 40 CFR 63.2 and 40 CFR 71.2.

| Current Designated Responsible Official                       | New Designated Responsible Official      |  |
|---------------------------------------------------------------|------------------------------------------|--|
| Mr. Nick Dungey                                               | Mr. Kenneth S. Rose                      |  |
| Chairman of the Board and President                           | Vice President of Natural Gas Operations |  |
| 810 Houston Street                                            | 810 Houston Street                       |  |
| Fort Worth, TX 76102                                          | Fort Worth, TX 76102                     |  |
| 817-885-2440 - Office                                         | 817-870-2800 - Office                    |  |
| RO Designation ends March 16, 2012 RO Designation begins Marc |                                          |  |

As stated in 40 CFR 63.2 and 40 CFR 71.2, Responsible Official is considered the following for a corporation such as SGG:

(1) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:

*(i)* The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

# Summit Gas Gathering, LLC 810 Houston Street

Ft. Worth, TX 76102-6298

(ii) The delegation of authority to such representative is approved in advance by the Administrator.

Attached is the completed CTAC form signed by the current designated Responsible Official for the operations of the Title V, 40 CFR Part 71 and 40 CFR Part 63 facilities referenced in this request.

Should you have any questions, please feel free to contact me at 817-885-2845 or via e-mail at Clare Hoang@xtoenergy.com.

Sincerely,

Clare Hoang **Environmental Engineer** XTO Energy Inc.

Cc: Via FedEx 2 Day Mail: 7932 4252 2875 Mr. Josh Rickard Office of Enforcement and Compliance 1595 Wynkoop Street Denver, Colorado 80202

SEPA United States Environmental Protection Agency

Federal Operating Permit Program (40 CFR Part 71)

## CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit). This certification is also being used to certify documents and reports submitted as part of the Consent Decree for U.S. Civil Action No. 2:09-CV-00331-SA.

| A. Responsible Official                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: (Last) <b>Dungey</b>                                                                                                                                                                                                                       | _ (First)Nick (MI)                                                                                                                                                                                                                                                                                                                                                                                                       |
| Title Senior Vice President of Natu                                                                                                                                                                                                              | Iral Gas Operations - XTO Energy                                                                                                                                                                                                                                                                                                                                                                                         |
| Street or P.O. Box810 Houston St.                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                          |
| City Fort Worth                                                                                                                                                                                                                                  | _ State _ <b>TX</b> ZIP <b>76102</b>                                                                                                                                                                                                                                                                                                                                                                                     |
| Telephone (817) 885-2440 Ext                                                                                                                                                                                                                     | Facsimile (817) 870 - 8441                                                                                                                                                                                                                                                                                                                                                                                               |
| and includes the certification language as stand<br>I certify under penalty of law that this docume<br>supervision in accordance with a system des<br>gather and evaluate the information submittee<br>who manage the system, or those persons d | <b>ompleteness</b> (to be signed by the responsible official ated in Paragraph 52 of the E.P.A. Consent Decree) ent and all attachments were prepared under my signed to assure that qualified personnel properly ed. Based on my inquiry of the person or persons lirectly responsible for gathering the information, the nowledge and belief, true, accurate and complete.<br>$M_{1} = \frac{2}{16} \frac{2012}{2012}$ |

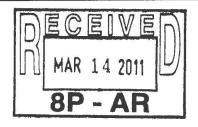
# Summit Gas Gathering, LLC

810 Houston Street Ft. Worth, TX 76102-6298 (817) 870-2800 (office)

March 4, 2011

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Mr. Eric Wortman Air Program - US EPA Region 8 Part 71 - Permitting, Monitoring and Modeling Unit 1595 Wynkoop St. (8P-AR) Denver, CO 80202-1129



Fedex Renner Realing NO. 1000-0001-0000 2020 79451865 2127 Trkg # 0201

RE: Summit Gas Gathering, LLC River Bend Dehydrator Site & Accompanying Wellsites – Uintah County, Utah – Part 71 Permit Pending Initial Part 71 Permit Application – Supplemental Information

Dear Mr. Wortman:

Per your request, Summit Gas Gathering, LLC, hereby submits the attached supplemental information related to the Initial Title V - Part 71 Permit Application for the Summit Gas Gathering, LLC (SGG) River Bend Dehydrator Site & Accompanying Wellsites. The attached information includes the U.S. EPA "Initial Compliance Plan and Compliance Certification (I-COMP)" forms that were missing from the original application

If you should have any questions or require additional information, please feel free to contact me via e-mail at <u>craig\_allison@xtoenergy.com</u> or at (817) 885-2672.

Sincerely, Summit Gas Gathering, LLC

my di

Craig Allison EH&S Advisor

- WCA/Encl: U.S. EPA I-COMP Form Certification of Truth, Accuracy, and Completeness (CTAC)
   Cc: Damien Jones, Nathen Young - XTO – SGG Roosevelt NGO Offic
  - c: Damien Jones, Nathen Young XTO SGG Roosevelt NGO Office, Ms. Clare Hoang - XTO Corporate Office - Fort Worth



Federal Operating Permit Program (40 CFR Part 71)

## INITIAL COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION (I-COMP)

#### SECTION A - COMPLIANCE STATUS AND COMPLIANCE PLAN

Complete this section for each unique combination of applicable requirements and emissions units at the facility. List all compliance methods (monitoring, recordkeeping and reporting) you used to determine compliance with the applicable requirement described above. Indicate your compliance status at this time for this requirement and compliance methods and check "YES" or "NO" to the follow-up question.

Emission Unit ID(s): RBD-1

Applicable Requirement (Describe and Cite) MACT Subpart HH – Dehydration Controls

Compliance Methods for the Above (Description and Citation): Oil and Gas MACT (40 CFR 63, Subpart HH) – The glycol dehydration Unit has uncontrolled PTE for HAPs above the 10/25 TPY threshold. HAP emissions from emission unit RBD-1 will be reduced by greater than or equal to 95%.

Compliance Status:

| _X | In Compliance: | Will you continue to comply up to permit issuance? _ | _X | Yes |
|----|----------------|------------------------------------------------------|----|-----|
|    | No             |                                                      |    |     |

| Not In Compliance: | Will you be in | compliance at permit issuance? | Yes | No |
|--------------------|----------------|--------------------------------|-----|----|
|--------------------|----------------|--------------------------------|-----|----|

| Future-Effective Requirement | Do you expect to meet this on a timely | y basis?Yes | No |
|------------------------------|----------------------------------------|-------------|----|
|------------------------------|----------------------------------------|-------------|----|

Emission Unit ID(s):

Applicable Requirement (Description and Citation):

Compliance Methods for the Above (Description and Citation):

**Compliance Status:** 

| In Compliance: | Will you continue to | comply up to | permit issuance? | Yes | No |
|----------------|----------------------|--------------|------------------|-----|----|
|                |                      |              |                  |     |    |

| _ Not In Compliance: Will | you be in compliance at permit issuance? | Yes | No |
|---------------------------|------------------------------------------|-----|----|
|---------------------------|------------------------------------------|-----|----|

| Future-Effective Requirement: | Do you expect to meet this on a timely basis? | Yes | No |
|-------------------------------|-----------------------------------------------|-----|----|
|-------------------------------|-----------------------------------------------|-----|----|

#### **B. SCHEDULE OF COMPLIANCE**

| Complete this section if you answered "NO" to any of the questions in section A. Also complete this |
|-----------------------------------------------------------------------------------------------------|
| section if required to submit a schedule of compliance by an applicable requirement. Please attach  |
| copies of any judicial consent decrees or administrative orders for this requirement.               |

Unit(s) N/A Requirement

Reason for Noncompliance. Briefly explain reason for noncompliance at time of permit issuance or that future-effective requirement will not be met on a timely basis:

Narrative Description of how Source Compliance Will be Achieved. Briefly explain your plan for achieving compliance:

Schedule of Compliance. Provide a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance, including a date for final compliance.

| Remedial Measure or Action | Date to be<br>Achieved |
|----------------------------|------------------------|
|                            |                        |
|                            |                        |
|                            |                        |
|                            |                        |
|                            |                        |

#### C. SCHEDULE FOR SUBMISSION OF PROGRESS REPORTS

Only complete this section if you are required to submit one or more schedules of compliance in section B or if an applicable requirement requires submittal of a progress report. If a schedule of compliance is required, your progress report should start within 6 months of application submittal and subsequently, no less than every six months. One progress report may include information on multiple schedules of compliance.

| Contents of Progress Report (describe): |  |
|-----------------------------------------|--|
| First Report// Frequency of Submittal   |  |
| Contents of Progress Report (describe): |  |
| First Report / / Frequency of Submittal |  |

## D. SCHEDULE FOR SUBMISSION OF COMPLIANCE CERTIFICATIONS

This section must be completed once by every source. Indicate when you would prefer to submit compliance certifications during the term of your permit (at least once per year).

Frequency of submittal Beginning / /

EPA Form 5900-86

I-COMP

## E. COMPLIANCE WITH ENHANCED MONITORING & COMPLIANCE CERTIFICATION REQUIREMENTS

| This section must be completed once by every source. To certify compliance with these, you must be able to certify compliance for every applicable requirement related to monitoring and compliance certification at every unit. |                  |                   |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|--|
| Enhanced Monitoring Requirements:                                                                                                                                                                                                | X In Compliance  | Not In Compliance |  |
| Compliance Certification Requirements:                                                                                                                                                                                           | _X In Compliance | Not In Compliance |  |

EPA Form 5900-86

#### GEPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

## CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).

| A. Responsible Official                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name: (Last) <u>Dungey</u> (First) <u>Nick</u> (MI) <u>J</u>                                                                                                                                                                      |
| Title Chairman of the Board and President – Summit Gas Gathering, LLC                                                                                                                                                             |
| Street or P.O. Box 810 Houston St                                                                                                                                                                                                 |
| City Fort Worth State TX ZIP 76102 -                                                                                                                                                                                              |
| Telephone (817) 885-2440 Ext Facsimile (817) 870 - 8441                                                                                                                                                                           |
| <ul> <li>B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)</li> <li>I certify under penalty of Jaw, based on information and belief formed after reasonable inquiry, the</li> </ul> |
| statements and information contained in these documents are true, accurate and complete.                                                                                                                                          |
| Name (signed) Vien Act comment                                                                                                                                                                                                    |
| Name (typed) Nick Dungey Date: 3-17 / 2011                                                                                                                                                                                        |
|                                                                                                                                                                                                                                   |

# Summit Gas Gathering, LLC

810 Houston Street Ft. Worth, TX 76102-6298

Ms. Claudia Young Smith

1595 Wynkoop St. (8P-AR)

Air Program - US EPA Region 8

Title V Permit #V-40-00026-2011-00 Initial Permit (817) 870-2800 (office)

January 13, 2011

DECEIVE JAN 20 2011 **8P - AR** 

Certified Mail Return Receipt No. 7009 0080 0000 4061 9510

Denver, CO 80202-1129 RE: Summit Gas Gathering, LLC

Part 71 - Permitting, Monitoring and Modeling Unit

RE: Summit Gas Gathering, LLC River Bend Dehydrator Site & Accompanying Wellsites – Uintah County, Utah – Part 71 Permit Pending Initial Part 71 Permit Application

Dear Ms. Smith:

Summit Gas Gathering, LLC, hereby submits the Initial Title V - Part 71 Permit Application for the Summit Gas Gathering, LLC (SGG) River Bend Dehydrator Site & Accompanying Wellsites.

If you should have any questions or require additional information, please feel free to contact me via e-mail at <u>craig\_allison@xtoenergy.com</u> or at (817) 885-2672.

Sincerely, Summit Gas Gathering, LLC

I nais the

Craig Allison EH&S Advisor

WCA/Encl:River Bend Dehydrator Site & Accompanying Wellsites - Part 71 Initial Permit Application<br/>Certification of Truth, Accuracy, and Completeness (CTAC)<br/>River Bend Dehydrator Site & Accompanying Wellsites - Proof of Fee Payment<br/>River Bend Dehydrator Site & Accompanying Wellsites -Fee Calculation Worksheets

Cc: Damien Jones, Nathen Young - XTO - SGG Roosevelt NGO Office

| SEPA United States<br>Environmental Protection<br>Agency | OMB No. 2060-0336, Approval Expires 09/30/2010 |
|----------------------------------------------------------|------------------------------------------------|
| Federal Operating Permit Program (40 CFR                 |                                                |
| GENERAL INFORMATION AND SUMMAR                           |                                                |
| A. Mailing Address and Contact Information               |                                                |
| Facility nameSummit Gas Gathering – River                | Bend Dehydrator Site & Accompanying wellsites  |
| Mailing address: Street or P.O. Box810 Hous              | ton St                                         |
| CityFt. Worth                                            | StateTX ZIP76102                               |
| Contact person:Craig Allison                             | TitleEH&S Advisor                              |
| Telephone (_817)8852672 Ext.                             |                                                |
| Facsimile (817_)8852683                                  |                                                |

.

## B. Facility Location

| Temporary source?Yes _XNo Plant site location _Lat. 39.94851°N, Long. 109.77057°W |
|-----------------------------------------------------------------------------------|
| CityRoosevelt StateUT County _Uintah EPA Region8                                  |
| Is the facility located within:                                                   |
| Indian lands? _XYES NO OCS waters?YES _XNO                                        |
| Non-attainment area?YES _XNO If yes, for what air pollutants?                     |
| Within 50 miles of affected State? _X_YESNO If yes, What State(s)? _Colorado      |
|                                                                                   |
| C. Owner                                                                          |
| Name _Summit Gas Gathering Street/P.O. Box810 Houston St                          |
| CityFt. Worth State _TX ZIP _76102                                                |
| Telephone (817) _8852672 Ext                                                      |

D. Operator

| NameSummit Gas Gathering   | Street/P.O. Box810 Houston St |
|----------------------------|-------------------------------|
| CityFt. Worth              | StateTX ZIP76102              |
| Telephone (_817_) _8852672 | Ext                           |

| E. | Application Type                                                                                             |
|----|--------------------------------------------------------------------------------------------------------------|
|    | Mark only one permit application type and answer the supplementary question appropriate for the type marked. |
|    | _X_Initial Permit Renewal Significant Mod Minor Permit Mod(MPM)                                              |
|    | Group Processing, MPM Administrative Amendment                                                               |
|    | For initial permits, when did operations commence?01_/_17/2010                                               |
|    | For permit renewal, what is the expiration date of current permit?/ //                                       |
|    |                                                                                                              |

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## F. Applicable Requirement Summary

| Mark all types of applicable requirements that apply.                             |                        |                   |                    |
|-----------------------------------------------------------------------------------|------------------------|-------------------|--------------------|
| SIP                                                                               | FIP/TIP                | PSD               | Non-attainment NSR |
| Minor source NSR                                                                  | Section 111            | Phase I acid rain | Phase II acid rain |
| Stratospheric ozone                                                               | OCS regulations        | _X NESHAP         | Sec. 112(d) MACT   |
| Sec. 112(g) MACT                                                                  | Early reduction of HAP | Sec 112(j) MACT   | RMP [Sec.112(r)]   |
| Tank Vessel requirements, sec. 183(f)) Section 129 Standards/Requirement          |                        |                   |                    |
| Consumer / comm products, ' 183(e)NAAQS, increments or visibility (temp. sources) |                        |                   |                    |
| Has a risk management plan been registered? YES X_NO Regulatory agency            |                        |                   |                    |
| Phase II acid rain application submitted?YES _XNO If yes, Permitting authority    |                        |                   |                    |

## G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

#### **H. Process Description**

List processes, products, and SIC codes for the facility.

| Process                               | Products    | SIC  |
|---------------------------------------|-------------|------|
| Natural Gas Production                | Natural Gas | 1311 |
|                                       |             |      |
|                                       |             |      |
| · · · · · · · · · · · · · · · · · · · |             |      |

#### I. Emission Unit Identification

Assign an emissions unit ID and describe each emissions unit at the facility. Control equipment and/or alternative operating scenarios associated with emissions units should by listed on a separate line. Applicants may exclude from this list any insignificant emissions units or activities.

| Emissions Unit ID | Description of Unit                                          |
|-------------------|--------------------------------------------------------------|
| RBL-1             | Condensate truck loading emissions                           |
| RBTO-1            | Thermal oxidizer emissions                                   |
| RBD-1             | 45 MMscfd Glycol dehydrator controlled by a thermal oxidizer |
| RBF-1             | Fugitive Emissions                                           |
| RBT-1             | One (1) 400-bbl slop tank #1                                 |
| RBT-2             | One (1) 400-bbl slop tank #2                                 |
| RBU 6-15E D-1     | 0.18 MMscfd Glycol dehydrator with a 4015 glycol pump        |
| RBU 6-15E F-1     | Fugitive Emissions                                           |
| RBU 7-15E D-1     | 0.10 MMscfd Glycol dehydrator with a 4015 glycol pump        |
| RBU 7-15E F-1     | Fugitive Emissions                                           |
|                   |                                                              |

#### J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

| NOx1.       | 4 tons/yr          | VOC _204.0               | _ tons/yr    | SO2           | tons/yr      |
|-------------|--------------------|--------------------------|--------------|---------------|--------------|
| PM-10       | _0.08 ton          | s/yr CO4.8               | tons/yr      | Lead0.0       | tons/yr      |
| Total HAF   |                    | ons/yr                   |              |               |              |
| Single HA   | P emitted in the g | reatest amountTo         | oluene       | PTE _3        | 8.04 tons/yr |
| Total of re | gulated pollutants | (for fee calculation), S | iec. F, line | 5 of form FEE | 32.6 tons/yr |
|             |                    |                          |              |               |              |

#### K. Existing Federally-Enforceable Permits

| Permit number(s) | Permit type | Permitting authority |
|------------------|-------------|----------------------|
| Permit number(s) | Permit type | Permitting authority |

#### L. Emission Unit(s) Covered by General Permits

|    | Emission unit(s) subject to general permit                                         |
|----|------------------------------------------------------------------------------------|
|    | Check one: Application made Coverage granted                                       |
|    | General permit identifier Expiration Date//                                        |
| М. | Cross-referenced Information                                                       |
|    |                                                                                    |
|    | Does this application cross-reference information?YESNO (If yes, see instructions) |

EPICTURE

| SEPA United States<br>Environmental Protection<br>Agency OMB No. 2060-0336, Approval Expires 09/30/2010 |  |  |  |
|---------------------------------------------------------------------------------------------------------|--|--|--|
| Federal Operating Permit Program (40 CFR Part 71)                                                       |  |  |  |
| EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)                                           |  |  |  |
| A. General Information                                                                                  |  |  |  |
| Emissions unit IDRBTO-1 Description36 inch TO with TJ0200HV burner                                      |  |  |  |
| SIC Code (4-digit) _1311 SCC Code                                                                       |  |  |  |
| B. Emissions Unit Description                                                                           |  |  |  |
| Primary useCombust off-gases from dehydrator Temporary SourceYes _XNo                                   |  |  |  |
| Manufacturer Enviro-Therm Industrial Refractory Model No36-20                                           |  |  |  |
| Serial Number29086 Installation Date12/16/2009                                                          |  |  |  |
| Boiler Type: Industrial boiler Process burner Electric utility boiler                                   |  |  |  |
| Other (describe)Thermal oxidizer controlling dehydrator emissions                                       |  |  |  |
| Boiler horsepower rating Boiler steam flow (lb/hr)                                                      |  |  |  |
| Type of Fuel-Burning Equipment (coal burning only):                                                     |  |  |  |
| Hand firedSpreader stokerUnderfeed stokerOverfeed stoker                                                |  |  |  |
| Traveling grateShaking gratePulverized, wet bedPulverized, dry bed                                      |  |  |  |
| Actual Heat InputMM BTU/hr Max. Design Heat InputMM BTU/hr                                              |  |  |  |

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## C. Fuel Data

Primary fuel type(s)\_\_\_Natural Gas\_\_\_\_\_ Standby fuel type(s)\_\_\_NA\_\_\_\_\_

Describe each fuel you expected to use during the term of the permit.

| Fuel Type   | Max. Sulfur<br>Content (%) | Max. Ash<br>Content (%) | BTU Value<br>(cf, gal., or lb.) |
|-------------|----------------------------|-------------------------|---------------------------------|
| Natural Gas | 0                          | 0                       | 1106 Btu/scf                    |
|             |                            |                         |                                 |
|             |                            |                         |                                 |

## D. Fuel Usage Rates

| Fuel Type   | Annual Actual<br>Usage | Maximum Usage |        |
|-------------|------------------------|---------------|--------|
|             |                        | Hourly        | Annual |
| Natural Gas | MMscf                  | Mscf          | MMscf  |
|             |                        |               |        |
|             |                        |               |        |

## E. Associated Air Pollution Control Equipment

| Emissions unit ID Device type                           |  |
|---------------------------------------------------------|--|
| Air pollutant(s) Controlled_ Manufacturer               |  |
| Model No Serial No                                      |  |
| Installation date Control efficiency (%)                |  |
| Efficiency estimation methodManufacturer Specifications |  |
|                                                         |  |

#### F. Ambient Impact Assessment

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

| Stack height (ft)             | Inside stack diameter (ft)    |
|-------------------------------|-------------------------------|
| Stack temp(°F)                | Design stack flow rate (ACFM) |
| Actual stack flow rate (ACFM) | Velocity (ft/sec)             |

# **United States** Environmental Protection OMB No. 2060-0336, Approval Expires 09/30/2010 Agency Federal Operating Permit Program (40 CFR Part 71) EMISSION UNIT DESCRIPTION FOR PROCESS SOURCES (EUD-3) A. General Information Emissions unit ID \_\_\_\_RBD-1\_\_\_\_\_ Description \_\_\_\_45 MMscfd Glycol Dehydrator\_\_\_\_\_ SIC Code (4-digit) \_1311\_\_\_\_\_ SCC Code\_\_\_\_\_ B. Emissions Unit Description Primary use or equipment type \_\_\_Gas Dehydration\_\_\_\_\_ Manufacturer Exterran Model No. NA Serial No. \_\_\_\_8156\_\_\_\_\_ Installation date \_12\_\_/19\_\_\_/ 2009\_ Raw materials Wet Natural Gas Finished products \_\_\_\_Dry Natural Gas \_\_\_\_\_\_ Temporary source: X No Yes

#### C. Activity or Production Rates

| Activity or Production<br>Rate | Amount/Hour | Amount/Year  |
|--------------------------------|-------------|--------------|
| Actual Rate                    | 500 Mscf    | 4,417 MMscf  |
| Maximum rate                   | 1.875 MMscf | 16,425 MMscf |

#### D. Associated Air Pollution Control Equipment

| Emissions unit IDRBD-1 Device TypeThermal Oxidizer                                   |
|--------------------------------------------------------------------------------------|
| Manufacturer _Industrial Refractory Services Model No36 inch TO with TJ0200HV burner |
| Serial No29086 Installation date 12/16/2009                                          |
| Control efficiency (%)99 Capture efficiency (%)                                      |
| Air pollutant(s) controlled VOCs & HAPs Efficiency estimation methodManu. Specs      |
|                                                                                      |

## E. Ambient Impact Assessment

| assessment is an applicable requirement for this emissions unit (This is not common)) |   |
|---------------------------------------------------------------------------------------|---|
| Stack height (ft) Inside stack diameter (ft)                                          |   |
| Stack temp (F) Design stack flow rate (ACFM)                                          |   |
| Actual stack flow rate (ACFM) Velocity (ft/sec)                                       | · |

#### **SEPA** United States Environmental Protection Agency

 Agency
 OMB No. 2060-0336, Approval Expires 09/30/2010

 Federal Operating Permit Program (40 CFR Part 71)

## **EMISSION UNIT DESCRIPTION FOR PROCESS SOURCES (EUD-3)**

## A. General Information

Emissions unit ID \_\_\_\_RBU 6-15E D-1\_\_\_\_ Description \_\_\_\_0.18 MMscfd Glycol Dehydrator\_\_\_\_\_

5

SIC Code (4-digit) 1311 SCC Code

## **B. Emissions Unit Description**

| Primary use or equipment typeGas Dehydration |                                 |
|----------------------------------------------|---------------------------------|
| ManufacturerPesco                            | Model NoGCR-50-T3               |
| Serial No204671                              | Installation date _01_/21 /2004 |
| Raw materialsWet Natural Gas                 |                                 |
| Finished productsDry Natural Gas             | 3                               |
| Temporary source: _XNoYes                    |                                 |

## C. Activity or Production Rates

| Activity or Production<br>Rate | Amount/Hour | Amount/Year  |
|--------------------------------|-------------|--------------|
| Actual Rate                    | 5.625 Mscf  | 49.275 MMscf |
| Maximum rate                   | 8.33 Mscf   | 73.0 MMscf   |

## D. Associated Air Pollution Control Equipment

| Emissions unit IDNA Device TypeNA                        |  |
|----------------------------------------------------------|--|
| Manufacturer Model No<br>Serial No Installation date     |  |
| Control efficiency (%) Capture efficiency (%)            |  |
| Air pollutant(s) controlled Efficiency estimation method |  |

# E. Ambient Impact Assessment

|          | This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (This is not common)). |                            |         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------|
| Stack h  | eight (ft)                                                                                                                                                            | Inside stack diameter (ft) | ·       |
| Stack te | emp (F)                                                                                                                                                               | Design stack flow rate (AC | CFM)    |
| Actual s | tack flow rate (ACFM)                                                                                                                                                 | Velocity (                 | ft/sec) |

#### **SEPA** United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

# **EMISSION UNIT DESCRIPTION FOR PROCESS SOURCES (EUD-3)**

## A. General Information

Emissions unit ID \_\_\_RBU 7-15E D-1\_\_\_\_ Description \_\_\_0.10 MMscfd Glycol Dehydrator\_\_\_\_\_

SIC Code (4-digit) \_1311\_\_\_\_ SCC Code\_\_\_\_\_

## **B. Emissions Unit Description**

| Primary use or equipment typeGas Dehyd | ration                          |
|----------------------------------------|---------------------------------|
| ManufacturerBET                        | Model NoGCR-50-T3               |
| Serial No62029                         | Installation date _04_/22 /1992 |
| Raw materialsWet Natural Gas           |                                 |
| Finished productsDry Natural Gas       |                                 |
| Temporary source: _XNoYes              |                                 |

## C. Activity or Production Rates

| Activity or Production<br>Rate | Amount/Hour | Amount/Year |
|--------------------------------|-------------|-------------|
| Actual Rate                    | 4.20 Mscf   | 36.50 MMscf |
| Maximum rate                   | 2.71 Mscf   | 23.73 MMscf |

## D. Associated Air Pollution Control Equipment

| Emissions unit IDNA Device TypeNA                        |  |
|----------------------------------------------------------|--|
| Manufacturer Model No<br>Serial No Installation date     |  |
| Control efficiency (%) Capture efficiency (%)            |  |
| Air pollutant(s) controlled Efficiency estimation method |  |

# E. Ambient Impact Assessment

| This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (This is not common)). |                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Stack height (ft)                                                                                                                                                     | Inside stack diameter (ft)    |
| Stack temp (F)                                                                                                                                                        | Design stack flow rate (ACFM) |
| Actual stack flow rate (ACFM)                                                                                                                                         | Velocity (ft/sec)             |

| SEPA United States<br>Environmental Protection<br>Agency OMB No. 2060-0336, Approval Expires 09/30/2010                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Federal Operating Permit Program (40 CFR Part 71)                                                                                                                    |
| EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)                                                                                                          |
| A. General Information                                                                                                                                               |
| Emissions unit IDRBT-1 Description400-bbl slop storage tank<br>SIC Code (4-digit) SCC Code                                                                           |
| B. Emissions Unit Description                                                                                                                                        |
| Equipment typeStorage Tank Temporary source:Yes _X_No                                                                                                                |
| ManufacturerBenchmark Equipment Model NoNot applicable                                                                                                               |
| Serial No1764 Installation date12/22/2009                                                                                                                            |
| Articles being coated or degreasedNA                                                                                                                                 |
| Application methodNA                                                                                                                                                 |
| Overspray (surface coating) (%) NA Drying methodNA                                                                                                                   |
| No. of dryers NA Tank capacity400-bbl                                                                                                                                |
| C. Associated Air Pollution Control Equipment                                                                                                                        |
| Emissions unit IDNA Device TypeNA                                                                                                                                    |
| Manufacturer Model No                                                                                                                                                |
| Serial No Installation date//                                                                                                                                        |
| Control efficiency (%) Capture efficiency (%)                                                                                                                        |
| Air pollutant(s) controlled Efficiency estimation method                                                                                                             |
| D. Ambient Impact Assessment                                                                                                                                         |
| This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common). |
| Stack height (ft) Inside stack diameter (ft)                                                                                                                         |
| Stack temp (F) Design stack flow rate (ACFM)                                                                                                                         |
| Actual stack flow rate (ACFM) Velocity (ft/sec)                                                                                                                      |

## E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

| Substance<br>Name<br>(Chemical,<br>Brand<br>Name) | CAS<br>No. | Substance<br>Type | Actual<br>Usage<br>(gal/yr) | Max<br>Usage<br>(gal/day) | Max<br>Usage<br>(gal/year) | VOC<br>Content<br>(Ib/gal) |
|---------------------------------------------------|------------|-------------------|-----------------------------|---------------------------|----------------------------|----------------------------|
| Condensate                                        |            | Condensate        |                             | 1310.4                    | 478,296                    |                            |
| Produced<br>Water                                 |            | Produced<br>Water |                             | 210                       | 76,650                     |                            |
|                                                   |            |                   |                             |                           |                            |                            |
|                                                   |            |                   |                             | k. *                      |                            |                            |
|                                                   |            |                   |                             |                           |                            |                            |
|                                                   |            |                   |                             |                           |                            |                            |
|                                                   |            |                   |                             |                           |                            |                            |
|                                                   |            |                   |                             |                           |                            |                            |

|    | ederal Operating Permit Program (40 CFR Part 71)                                                                                                                     |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E  | MISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)                                                                                                           |
| Α. | General Information                                                                                                                                                  |
|    | Emissions unit IDRBT-2 Description400-bbl slop storage tank                                                                                                          |
|    | SIC Code (4-digit) SCC Code                                                                                                                                          |
| B. | Emissions Unit Description                                                                                                                                           |
|    | Equipment typeStorage Tank Temporary source:Yes _XNo                                                                                                                 |
|    | Manufacturer Benchmark Equipment Model No. Not Applicable                                                                                                            |
|    | Serial No1765 Installation date12/22/2009                                                                                                                            |
|    | Articles being coated or degreasedNA                                                                                                                                 |
|    | Application methodNA                                                                                                                                                 |
|    | Overspray (surface coating) (%)NA Drying methodNA                                                                                                                    |
|    | No. of dryersNA Tank capacity400-bbl                                                                                                                                 |
| C. | Associated Air Pollution Control Equipment                                                                                                                           |
|    | Emissions unit IDNA Device TypeNA                                                                                                                                    |
|    | Manufacturer Model No                                                                                                                                                |
|    | Serial No Installation date/ //                                                                                                                                      |
|    | Control efficiency (%) Capture efficiency (%)                                                                                                                        |
|    | Air pollutant(s) controlled Efficiency estimation method                                                                                                             |
| D. | Ambient Impact Assessment                                                                                                                                            |
|    | This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common). |
|    | Stack height (ft) Inside stack diameter (ft)                                                                                                                         |
|    | Stack temp (F) Design stack flow rate (ACFM)                                                                                                                         |
|    | Actual stack flow rate (ACFM) Velocity (ft/sec)                                                                                                                      |

## E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

| Substance<br>Name<br>(Chemical,<br>Brand<br>Name) | CAS<br>No. | Substance<br>Type | Actual<br>Usage<br>(gal/yr) | Max<br>Usage<br>(gal/day) | Max<br>Usage<br>(gal/year) | VOC<br>Content<br>(Ib/gal) |
|---------------------------------------------------|------------|-------------------|-----------------------------|---------------------------|----------------------------|----------------------------|
| Condensate                                        |            | Condensate        |                             | 1310.4                    | 478,296                    |                            |
| Produced<br>Water                                 |            | Produced<br>Water |                             | 210                       | 76,650                     |                            |
|                                                   |            |                   |                             |                           | 2                          |                            |
|                                                   |            |                   |                             |                           |                            |                            |
|                                                   |            |                   |                             |                           |                            |                            |
|                                                   |            |                   |                             |                           |                            |                            |
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|                                                   |            |                   |                             |                           |                            |                            |

## EPA United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

## INSIGNIFICANT EMISSIONS (IE)

List each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

| r the exempt<br>Number | Description of Activities or Emissions Units  | RAP,<br>except<br>HAP | НАР     |
|------------------------|-----------------------------------------------|-----------------------|---------|
| 1                      | 1.0 MMBtu/hr Glycol Dehydrator Reboiler       | X                     | X       |
| 1                      | 250 MBtu/hr heater for slop tank #1           | X                     | Х       |
| 1                      | 250 MBtu/hr heater for slop tank #2           | X                     | Х       |
| 1                      | Pigging Operations                            | X                     | X       |
| 1                      | Capstone Model C65NG Standard<br>MicroTurbine | Х                     | X       |
|                        |                                               |                       |         |
|                        |                                               |                       | · · · · |
|                        |                                               | 1 - 200               |         |
| 2                      |                                               |                       |         |
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Federal Operating Permit Program (40 CFR Part 71)

## INSIGNIFICANT EMISSIONS (IE) - River Bend 6-15E Wellsite

List each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

| Description of Activities or Emissions Units | RAP,<br>except<br>HAP                                                                                                                                                                    | НАР                                                                                                                                                                                                                                                                      |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100 MBtu/hr Glycol Dehydrator Reboiler       | X                                                                                                                                                                                        | X                                                                                                                                                                                                                                                                        |
| 250 MBtu/hr heater for slop tank #1          | X                                                                                                                                                                                        | Х                                                                                                                                                                                                                                                                        |
| 75 MBtu/hr separator heater                  | X                                                                                                                                                                                        | X                                                                                                                                                                                                                                                                        |
| Condensate truck loading                     | X                                                                                                                                                                                        | X                                                                                                                                                                                                                                                                        |
| One (1) 400-bbl slop storage tank            | X                                                                                                                                                                                        | Х                                                                                                                                                                                                                                                                        |
|                                              |                                                                                                                                                                                          |                                                                                                                                                                                                                                                                          |
|                                              |                                                                                                                                                                                          |                                                                                                                                                                                                                                                                          |
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|                                              |                                                                                                                                                                                          |                                                                                                                                                                                                                                                                          |
|                                              |                                                                                                                                                                                          |                                                                                                                                                                                                                                                                          |
|                                              | Description of Activities or Emissions Units<br>100 MBtu/hr Glycol Dehydrator Reboiler<br>250 MBtu/hr heater for slop tank #1<br>75 MBtu/hr separator heater<br>Condensate truck loading | Description of Activities or Emissions Units       RAP,<br>except<br>HAP         100 MBtu/hr Glycol Dehydrator Reboiler       X         250 MBtu/hr heater for slop tank #1       X         75 MBtu/hr separator heater       X         Condensate truck loading       X |

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Federal Operating Permit Program (40 CFR Part 71)

#### **INSIGNIFICANT EMISSIONS (IE) – River Bend 7-15E Wellsite**

List each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

| on.                                          | DAD    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of Activities or Emissions Units | except | HAP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 100 MBtu/hr Glycol Dehydrator Reboiler       | Х      | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 250 MBtu/hr separator heater                 | X      | X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Condensate truck loading                     | X      | Х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| One (1) 300-bbl slop storage tank            | X      | Х                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                              |        | except<br>HAP         100 MBtu/hr Glycol Dehydrator Reboiler       X         250 MBtu/hr separator heater       X         Condensate truck loading       X         One (1) 300-bbl slop storage tank       X         Image: Second structure       Image: Second structure         Image: Second structure       Image: Second structure |

#### GERA United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

# POTENTIAL TO EMIT (PTE)

For each unit with emissions that count towards applicability, list the emissions unit ID and the PTE for the air pollutants listed below and sum them up to show totals for the facility. You may find it helpful to complete form **EMISS** before completing this form. Show other pollutants not listed that are present in major amounts at the facility on attachment in a similar fashion. You may round values to the nearest tenth of a ton. Also report facility totals in section **J** of form **GIS**.

| Emissions Unit ID | Regulated Air Pollutants and Pollutants for which the Source is Major<br>(tons/yr) |        |     |      |     |      |      |
|-------------------|------------------------------------------------------------------------------------|--------|-----|------|-----|------|------|
|                   | NOx                                                                                | VOC    | SO2 | PM10 | со  | Lead | HAP  |
|                   |                                                                                    |        |     |      |     |      |      |
| RBL-1             | 0.0                                                                                | 2.4    | 0.0 | 0.0  | 0.0 | 0.0  | 0.0  |
| RBTO-1            | 0.9                                                                                | 0.0    | 0.0 | 0.0  | 4.8 | 0.0  | 0.0  |
| RBD-1             | 0.0                                                                                | 159.60 | 0.0 | 0.0  | 0.0 | 0.0  | 83.2 |
| RBF-1             | 0.0                                                                                | 5.7    | 0.0 | 0.0  | 0.0 | 0.0  | 0.1  |
| RBT-1             | 0.0                                                                                | 5.5    | 0.0 | 0.0  | 0.0 | 0.0  | 0.0  |
| RBT-2             | 0.0                                                                                | 5.5    | 0.0 | 0.0  | 0.0 | 0.0  | 0.0  |
| RBU 6-15E D-1     | 0.22                                                                               | . 10.1 | 0.0 | 0.0  | 0.0 | 0.0  | 3.9  |
| RBU 6-15E F-1     | 0.0                                                                                | 3.9    | 0.0 | 0.0  | 0.0 | 0.0  | 0.1  |
| RBU 7-15E D-1     | 0.18                                                                               | 7.8    | 0.0 | 0.0  | 0.0 | 0.0  | 2.4  |
| RBU 7-15E F-1     | 0.0                                                                                | 3.9    | 0.0 | 0.0  | 0.0 | 0.0  | 0.1  |
| FACILITY TOTALS   | 1.4                                                                                | 204.0  | 0.0 | 0.0  | 4.8 | 0.0  | 89.8 |

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## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

## A. Emissions Unit ID \_\_\_\_RBL-1\_\_\_\_\_

#### B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

|                |                                  | Emission Rate     |                     |         |
|----------------|----------------------------------|-------------------|---------------------|---------|
|                | Actual                           |                   |                     |         |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| voc            | 1.5                              | 0.5               | 2.4                 |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
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|                |                                  |                   |                     |         |

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## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

## A. Emissions Unit ID \_\_\_\_RBTO-1\_\_\_\_\_

#### B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

|                | Emission Rates                   |                   |                     |         |  |
|----------------|----------------------------------|-------------------|---------------------|---------|--|
|                | Actual                           |                   |                     |         |  |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |  |
| NOx            | 0.9                              | 0.2               | 0.9                 |         |  |
| со             | 4.6                              | 1.1               | 4.8                 |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |

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## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

## A. Emissions Unit ID \_\_\_RBD-1\_\_\_\_\_

#### **B.** Identification and Quantification of Emissions

|                              | Emission Rates                    |                   |                     |         |
|------------------------------|-----------------------------------|-------------------|---------------------|---------|
|                              | Actual                            | Potential to E    | mit                 |         |
| Air Pollutants               | Annual<br>Emissions*<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| VOC                          | 1.10                              | 36.4              | 159.6               |         |
| Benzene                      | 0.2                               | 6.4               | 27.9                | 71432   |
| Ethylbenzene                 | 0.0                               | 0.3               | 1.4                 | 100414  |
| Toluene                      | 0.3                               | 8.1               | 35.4                | 108883  |
| Xylene                       | 0.1                               | 3.5               | 15.4                | 1330207 |
| n-Hexane                     | 0.0                               | 0.7               | 3.0                 | 110543  |
| 2,2,4 Trimethylpentane (TMP) | 0.0                               | 0.1               | 0.2                 | 540841  |
| *With Controls               |                                   |                   |                     |         |
|                              |                                   |                   |                     |         |

#### **EPA** United States Environmental Protection Agency

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## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

5. Emissions Unit ID \_\_\_\_RBF-1\_\_\_\_\_

#### B. Identification and Quantification of Emissions

|                | Emission Rates                   |                   |                     |         |  |
|----------------|----------------------------------|-------------------|---------------------|---------|--|
|                | Actual                           | Potential to E    | mit                 |         |  |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |  |
| VOC            | 5.4                              | 1.3               | 5.7                 |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   | 8                   |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
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#### SEPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

20

A. Emissions Unit ID \_\_\_\_RBT-1\_\_\_\_\_

#### B. Identification and Quantification of Emissions

|                |                                  | Emission Rates    |                     |         |  |
|----------------|----------------------------------|-------------------|---------------------|---------|--|
|                | Actual                           | Potential to E    | mit                 |         |  |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(Ib/hr) | Annual<br>(tons/yr) | CAS No. |  |
| VOC            | 5.0                              | 1.3               | 5.5                 |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
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#### EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

21

## A. Emissions Unit ID \_\_\_\_RBT-2\_\_\_\_\_

#### B. Identification and Quantification of Emissions

|                |                                  | Emission Rate     |                     |         |
|----------------|----------------------------------|-------------------|---------------------|---------|
|                | Actual                           | Potential to E    | mit                 |         |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| VOC            | 4.5                              | 1.3               | 5.5                 |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
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#### SEPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID \_\_\_RBU 6-15E D-1\_\_\_\_\_

#### B. Identification and Quantification of Emissions

| Emission Rates                   |                                                                     |                                                                                                             |                                                                                                                                                 |
|----------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Actual                           | Potential to E                                                      | mit                                                                                                         |                                                                                                                                                 |
| Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr)                                                   | Annual<br>(tons/yr)                                                                                         | CAS No.                                                                                                                                         |
| 3.7                              | 2.4                                                                 | 10.1                                                                                                        |                                                                                                                                                 |
| 0.3                              | 0.2                                                                 | 0.98                                                                                                        | 71432                                                                                                                                           |
| 0.0                              | 0.0                                                                 | 0.07                                                                                                        | 100414                                                                                                                                          |
| 0.5                              | 0.4                                                                 | 1.6                                                                                                         | 108883                                                                                                                                          |
| 0.3                              | 0.2                                                                 | 0.8                                                                                                         | 1330207                                                                                                                                         |
| 0.1                              | 0.0                                                                 | 0.16                                                                                                        | 110543                                                                                                                                          |
|                                  |                                                                     |                                                                                                             |                                                                                                                                                 |
|                                  |                                                                     |                                                                                                             |                                                                                                                                                 |
|                                  |                                                                     |                                                                                                             |                                                                                                                                                 |
|                                  | Annual<br>Emissions<br>(tons/yr)<br>3.7<br>0.3<br>0.0<br>0.5<br>0.3 | Actual<br>Annual<br>Emissions<br>(tons/yr)Potential to E<br>Hourly<br>(lb/hr)3.72.40.30.20.00.00.50.40.30.2 | Actual<br>Annual<br>Emissions<br>(tons/yr)Potential to EmitHourly<br>(lb/hr)Annual<br>(tons/yr)3.72.410.10.30.20.980.00.00.070.50.41.60.30.20.8 |

#### **PERA** United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID \_\_\_\_RBU 6-15E F-1\_\_\_\_\_

#### B. Identification and Quantification of Emissions

|                | Emission Rates                   |                   |                     |         |
|----------------|----------------------------------|-------------------|---------------------|---------|
|                | Actual                           | Potential to E    | mit                 |         |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| VOC            | 3.9                              | 0.9               | 3.9                 |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
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|                |                                  |                   |                     |         |

#### EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID \_\_\_\_RBU 7-15E D-1\_\_\_\_\_

#### B. Identification and Quantification of Emissions

|                | Emission Rates                   |                   |                     |         |  |
|----------------|----------------------------------|-------------------|---------------------|---------|--|
|                | Actual                           | Potential to E    | mit                 |         |  |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |  |
| VOC            | 2.7                              | 1.8               | 7.8                 |         |  |
| Benzene        | 0.2                              | 0.2               | 0.7                 | 71432   |  |
| Toluene        | 0.3                              | 0.2               | 1.0                 | 108883  |  |
| Xylene         | 0.1                              | 0.1               | 0.5                 | 1330207 |  |
| n-Hexane       | 0.1                              | 0.0               | 0.2                 | 110543  |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |
|                |                                  |                   |                     |         |  |

#### CEPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

## **EMISSION CALCULATIONS (EMISS)**

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID \_\_\_\_RBU 7-15E F-1\_\_\_\_\_

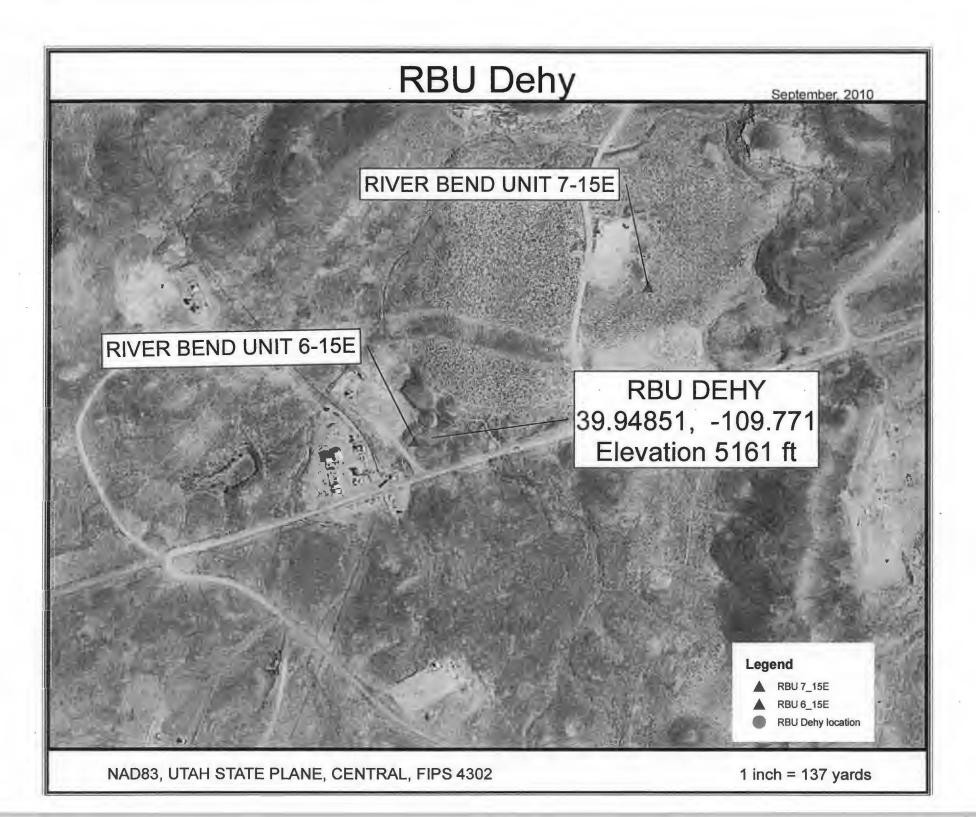
#### B. Identification and Quantification of Emissions

First, list each air pollutant that is either regulated at the unit or present in major amounts, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. You may round to the nearest tenth of a ton for yearly values or tenth of a pound for hourly values.

|                | Emission Rates                   |                   |                     |         |
|----------------|----------------------------------|-------------------|---------------------|---------|
|                | Actual                           | Potential to E    | mit                 |         |
| Air Pollutants | Annual<br>Emissions<br>(tons/yr) | Hourly<br>(lb/hr) | Annual<br>(tons/yr) | CAS No. |
| voc            | 3.9                              | 0.9               | 3.9                 |         |
|                |                                  |                   |                     |         |
| · · · · ·      |                                  |                   |                     |         |
|                |                                  |                   |                     |         |
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| <b>GERA</b> United States<br>Environmental Protection<br>Agency OMB No. 2060-0336, Approval Expires 09/30/2010<br>Federal Operating Permit Program (40 CFR Part 71)                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)                                                                                                                                                                                                                                        |
| This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).                         |
| A. Responsible Official                                                                                                                                                                                                                                                                          |
| Name: (Last)Dungey (First)Nick (MI) _J                                                                                                                                                                                                                                                           |
| TitleSenior Vice President, Natural Gas Operations                                                                                                                                                                                                                                               |
| Street or P.O. Box810 Houston St                                                                                                                                                                                                                                                                 |
| CityFt. Worth State _TX ZIP _76102                                                                                                                                                                                                                                                               |
| Telephone (817_) _8852285 Ext Facsimile (_817) _8852285                                                                                                                                                                                                                                          |
| B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)<br>I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete. |
| Name (typed)Nick Dungey Date:/ / 7 / //                                                                                                                                                                                                                                                          |



#### SGG River Bend Dehydrator Site & Accompanying Wellsite Process Description

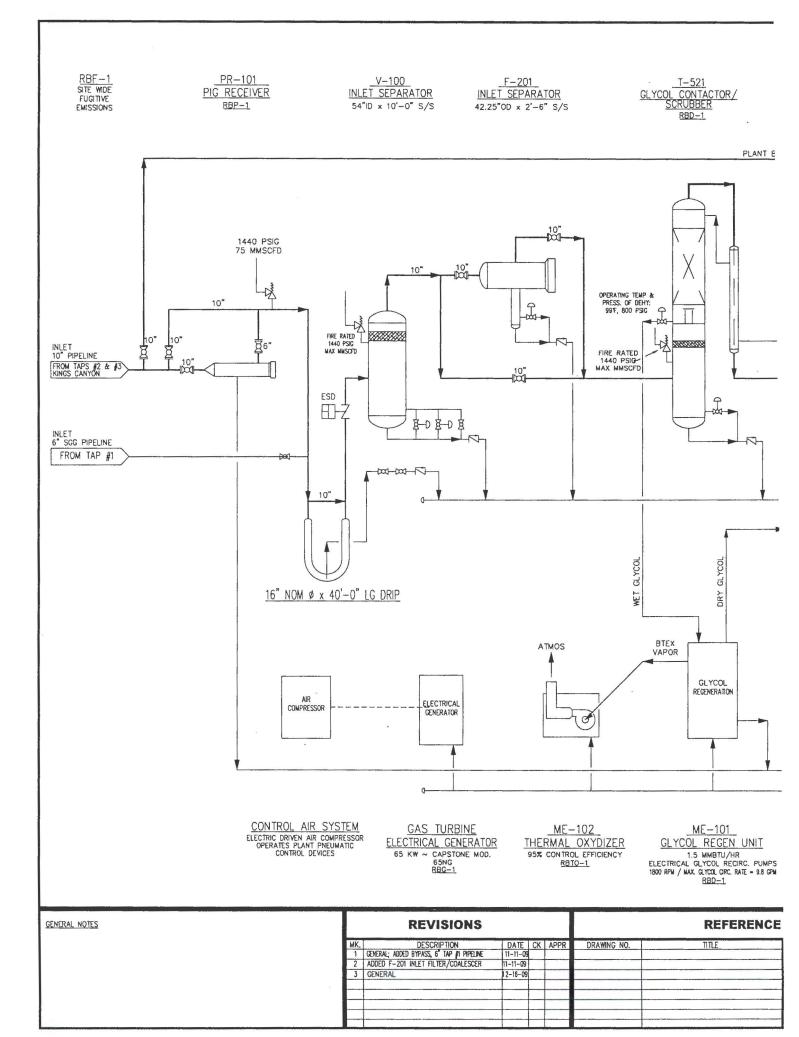
The River Bend Dehydrator Facility is a natural gas dehydrator consisting of the following equipment:

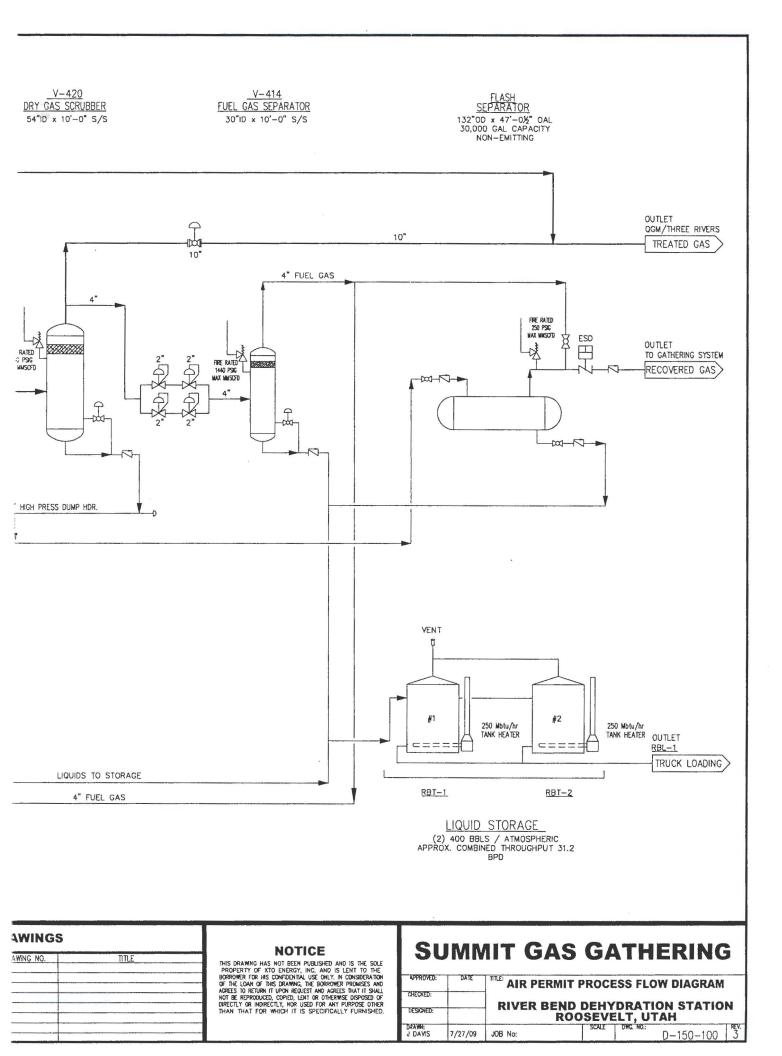
- Two (2) inlet two-phase gas scrubbers (separators) operating at an approximate line pressure of 1,000 psig.
- One (1) 65 KW Capstone natural-gas fired microturbine driven generator (RBG-1)
- One (1) air compressor used for controller operation
- Two (2) 400-barrel Water/Condensate-tanks (RBT-1 and RBT-2) each with a 0.25 mmBTU/hr tank heater,
- One (1) Horizontal Flash Separator consisting of a 30,000 gallon pressurized tank
- One (1) natural gas dehydrator with (RBD-1):
  - o A maximum natural gas process flow of 45 mmscfd natural gas, and
  - One (1) 1.5 mmBTU/hr TEG reboiler heater
  - One BTEX emissions control system consisting of a Thermal Oxidizer with a 3.0 mmBTU/hr burner.

The basic process flow at the facility is as follows:

Natural gas produced from area wells is compressed at existing offsite locations (Tap-1, 2, 3, and Kings Canyon) up to a line pressure of 850 to 1,000 psig and then sent to the River Bend natural gas dehydrator site through 6" and 10" gathering flowlines. Once the gas enters the station, it flows through two (2) two-phase separators (scrubbers) in order to reduce water and condensable liquids content in the gas stream. prior to entry into the dehydrator. The liquid produced from the on-site, inlet scrubbers is then sent to a 30,000-gallon pressurized flash separator. The purpose of the flash separator is to flash the high-pressured liquids and pipe the flash gas back to the highpressure gathering system, thereby eliminating the flash emissions from being vented to the atmosphere. The pressurized flash separator is then set to discharge the separated liquids at a pressure of approximately 50 psig into either of the onsite 400-barrel atmospheric liquid storage tanks (RBT-1 and RBT-2). The 400-barrel on-site liquid storage tanks (RBT-1 and RBT-2) are used for temporary storage prior to the liquids being hauled offsite by tanker truck (RBL-1). Following the inlet separation, the gas is discharged into the TEG natural gas dehydrator for further water removal from the natural-gas stream. The TEG natural gas dehydrator water removal system consists of one (1) 45 mmscfd (max rate) natural gas TEG dehydrator (RBD-1) with one (1) 1.5 mmBTU/hr TEG process heater with regenerator and flash tank emissions controlled by a Thermal Oxidizer. The natural gas dehydrator utilizes a BTEX emissions control system that captures vapors from the still vent and the flash tank and sends the vapors to a Thermal Oxidizer for destruction. Following dehydration the natural gas stream leaves the station via a metered sales pipeline. The station has on-site electrical power supplied by one (1) Capstone natural-gas fired microturbine-driven generator (RBG-1). In addition, the pneumatic control devices are operated by plant air supplied by the on-site electric-driven air compressor.

Other production equipment located near the River Bend Dehydrator facility consists of two production wellsites (RBU 6-15E and 7-15E) each with a small (less than 1.5 mmscfd max) dehydrator, one (1) 400-barrel storage tank, natural gas-fired heaters less than 0.4 mmBTU/hr at each site, and minimal fugitive and truck-loading emissions. The RBU 6-15E well is located within the property boundaries of the River Bend Dehydrator site, but the River Bend 7-15E wellsite is not located on property joining the locations. These wells do not discharge directly into the River Bend Dehydrator site and produce their gas into the common field gathering system and ultimately into off-site compressor stations. The gas discharged from the off-site compressor stations at Taps 1, 2, 3 and Kings Canyon enters the River Bend Dehydrator Site.





## POTENTIALLY APPLICABLE FEDERAL REGULATIONS

A breakdown of federal regulations will be discussed, including whether or not a rule is applicable and why or why not. Henceforth, the River Bend Dehy Site, including wellsites 6-15E and 7-15E, will be referred to as either the "Site" or the "Facility" throughout this document.

### 40 CFR 52 – PREVENTION OF SIGNIFICANT DETERIORATION

Section 52.21(a)(2) defines the "Applicability procedures" for this regulation. Specifically, it states that "The requirements of this section apply to the construction of any new major stationary source (as defined in paragraph (b)(1) of this section) or any project at an existing major stationary source in an area designated as attainment or unclassifiable under sections 107(d)(1)(A)(ii) or (iii) of the Act."

Paragraph (b)(1)(i) of Section 52.21 defines a major stationary source as "(a) Any of the following stationary sources of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant: Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants (with thermal dryers), primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants (which does not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140), fossil-fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants;

(b) Notwithstanding the stationary source size specified in paragraph (b)(1)(i) of this section, any stationary source which emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant; or

(c) Any physical change that would occur at a stationary source not otherwise qualifying under paragraph (b)(1) of this section, as a major stationary source, if the changes would constitute a major stationary source by itself.

The Facility does not meet the definition or qualifications of any of the stationary sources listed under Section 52.21(b)(1)(i)(a), including "petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels." The Facility has approximately 1,500 barrels of storage capacity onsite, including two neighboring wellsites.

The Facility does not meet the criteria listed under Section 52.21(b)(1)(i)(b) as it does not have the potential to emit 250 tons per or year or more of any regulated NSR pollutant. Please see enclosed potential to emit calculations for this Site.

Finally, the Facility does not meet the criteria listed under Section 52.21(b)(1)(i)(c) as it is a new source and has not made a physical change qualifying the source as a major stationary source by itself.

Therefore 40 CFR 52 does not apply to this Site.

#### 40 CFR 60 – STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart Db – Industrial, Commercial, Institutional Steam Generating Units

Section 60.40b states "The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr))."

This Site will not have any steam generating units on-site. Therefore this regulation is not applicable to the intended Facility.

Subpart Dc - Small Industrial, Commercial, Institutional Steam Generating Units

As mentioned above, this Facility will not have any steam generating units on-site. Therefore this regulation is not applicable.

**Subpart K** – Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978

This Facility was constructed after May 19, 1978. Therefore, this regulation does not apply.

**Subpart Ka** - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

This Facility was constructed after July 23, 1984. Therefore, this regulation does not apply.

**Subpart Kb** - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Section 60.110b(d)(4) states "This subpart does not apply to Vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> (approximately 13,333.34 barrels of condensate/oil) used for petroleum or condensate stored, processed, or treated prior to custody transfer.

This Facility has two (2) 400-bbl storage tanks associated with the main Site. Wellsite RBU 6-15E has one (1) 400-bbl storage tank while wellsite RBU 7-15E has one (1) 300-bbl storage tank. Total capacity of all four (4) storage tanks is 1,500 barrels. Since the Facility has a design capacity less than the above listed threshold of 1,589.874 m<sup>3</sup>, Subpart Kb does not apply.

**Subpart KKK** – Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants

Section 60.630(3)(e) states "A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant. If the unit is not located at

the plant site, then it is exempt from the provisions of this subpart." The definition for onshore natural gas processing plant, as found under Section 60.631, is "...any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both."

This Facility does not meet the definition of an onshore natural gas processing plant as it does not extract natural gas liquids from field gas or fractionate mixed natural gas liquids to natural gas production. Therefore, Subpart KKK does not apply to this Site.

Subpart LLL – SO<sub>2</sub> Emissions from Onshore Natural Gas Processing Facilities

Section 60.640(a) states "The provisions of this subpart are applicable to the following affected facilities that process natural gas: each sweetening unit, and each sweetening unit followed by a sulfur recovery unit."

This Facility does not utilize a sweetening unit or a sulfur recovery unit. Therefore, Subpart LLL is not applicable to this Site.

Subpart IIII - Stationary Compression Ignition Internal Combustion Engines

Section 60.4200(a) states "The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator."

The Facility does not have any stationary compression ignition internal combustion engines. Therefore, Subpart IIII does not apply.

#### Subpart JJJJ - Stationary Spark Ignition Internal Combustion Engines

Section 60.4230(a) states "The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (5) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator." As an operator, Section 60.4230(a)(3) reads "Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured: (i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or (iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP)."

The Facility does not have any stationary spark ignition internal combustion engines. Therefore, Subpart JJJJ does not apply.

#### Subpart KKKK -- Stationary Combustion Turbines

According to Section 60.4300, the purpose of Subpart KKKK is to establish "emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005." Section 60.4305 states that Subpart KKKK is applicable if any stationary combustion turbine is installed after February 18, 2005 and is rated equal to or greater than 10.7 gigajoules (10 MMBtu/hr), based on the higher heating value of the fuel.

The Facility has installed a stationary combustion turbine after February 18, 2005. However, the maximum rating of the micro-turbine is 874,000 Btu/hr or 0.874 MMBtu/hr. Therefore, Subpart KKKK is not applicable to this Site.

#### 40 CFR 61 -- NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

#### **Subpart V** – Equipment Leaks (Fugitive Emission Sources)

Section 61.240(a) states "The provisions of this subpart apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this subpart." The definition listed under Section 61.241 states that "In VHAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight a volatile hazardous air pollutant (VHAP) as determined according to the provisions of §61.245(d). The provisions of §61.245(d) also specify how to determine that a piece of equipment is not in VHAP service.

The Facility's gas analysis shows that gas lines are not in VHAP service since the VHAP percentage by weight is less than 10 percent (approximately 0.89 percent). However, any liquids at the Facility will exceed 10 percent by weight for VHAPs. Therefore, the Site will comply with Subpart V when pertaining to sources of liquids. Of note, this site does not have any pumps or compressors.

#### 40 CFR 63 – NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

#### Subpart HH – Oil and Natural Gas Production

Section 63.760(a) states "this subpart applies to the owners and operators of the emission points, specified in paragraph (b) of this section that are located at oil and natural gas production facilities that meet the specified criteria in paragraphs (a)(1) and either (a)(2) or (a)(3) of this section. Section 63.760(a)(1) reads "facilities that are major or area sources of hazardous air pollutants (HAP) as defined in §63.761..." Section 63.760(a)(2) reads "facilities that process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer."

The Facility meets the criteria of a major source of HAPs as it emits more than 10 TPY of any one HAP and more than 25 TPY of any combination of HAPs (see enclosed emission calculations). Secondly, the Facility stores hydrocarbon liquids prior to the point of custody transfer. Therefore, this Site will comply with the requirements of Subpart HH.

The requirements listed under Section 63.765 (glycol dehydration unit vent standards) apply to the Facility as the exemptions based on production and benzene emissions listed in Section 63.760(e) are exceeded.

The requirements listed under Section 63.766 (storage vessel standards) do not apply to the Facility as the storage vessels do not meet the definition of "each storage vessel with the potential for flash emissions." Section 63.761 lists the definition as "storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank GOR equal to or greater than 0.31 cubic meters per liter and an API gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced." Actual annual average hydrocarbon liquid throughput is less than 79,500 liters (approximately 666 barrels) per day.

#### Subpart HHH -- Oil and Natural Gas Storage and Distribution

Section 63.1270(a) states "This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in §63.1271..."

The Facility transports natural gas prior to entering a pipeline and it is a major source of HAP emissions. However, further processing of the natural gas occurs prior to sending it to a local distribution company. Therefore, Subpart HHH is not applicable to this Site.

#### **Subpart EEEE** – Organic Liquids Distribution (non-gasoline)

According to Section 63.2330, the purpose of Subpart EEEE is to establish "...national emission limitations, operating limits, and work practice standards for organic hazardous air pollutants (HAP) emitted from organic liquids distribution (OLD) (non-gasoline) operations at major sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations, operating limits, and work practice standards." Section 63.2334(a) reads that "Except as provided for in paragraphs (b) and (c) of this section, you are subject to this subpart if you own or operate an OLD operation that is located at, or is part of, a major source of HAP emissions. An OLD operation may occupy an entire plant site or be collocated with other industrial (*e.g.*, manufacturing) operations at the same plant site."

Paragraph (c) in Section 63.2334 reads "Organic liquid distribution operations do not include the activities and equipment, including product loading racks, used to process, store, or transfer organic liquids at facilities listed in paragraph (c) (1) and (2) of this section.

(1) Oil and natural gas production field facilities, as the term "facility" is defined in §63.761 of subpart HH.

(2) Natural gas transmission and storage facilities, as the term "facility" is defined in §63.1271 of subpart HHH.

Therefore, Subpart EEEE does not apply to this Facility.

### Subpart YYYY - Stationary Combustion Turbines

According to Section 63.6080, the purpose of Subpart YYYY is to establish "...national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations." Section 63.6085 states that Subpart YYYY is applicable if a company "owns or operates a stationary combustion turbine located at a major source of HAP emissions."

Furthermore, Section 63.6090(b) reads "Subcategories with limited requirements. (1) A new or reconstructed stationary combustion turbine located at a major source which meets either of the following criteria does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6145(d)..." The exemption under Section 63.6090(b)(2) reads "an existing, new, or reconstructed stationary combustion turbine with a rated peak power output of less than 1.0 megawatt (MW) at International Organization for Standardization (ISO) standard day conditions, which is located at a major source, does not have to meet the requirements of this subpart and of subpart A of this part. This determination applies to the capacities of individual combustion turbines, whether or not an aggregated group of combustion turbines has a common add-on air pollution control device. No initial notification. For example, a 0.75 MW emergency turbine would not have to submit an initial notification."

The Facility has installed a stationary combustion turbine with a rated peak power output of less than 1.0 MW at ISO standard day conditions. Therefore, Subpart YYYY is not applicable to this Site and does not have to submit an initial notification.

Subpart ZZZZ – Reciprocating Internal Combustion Engines (RICE)

Section 63.6580 states the purpose of Subpart ZZZZ as "establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations." Section 63.6585 explains "You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand."

The Facility does not have any reciprocating internal combustion engines. Therefore, Subpart ZZZZ does not apply.

#### 40 CFR 64 – COMPLIANCE ASSURANCE MONITORING (CAM)

Section 64.2(a) states that "Except for backup utility units that are exempt under paragraph (b)(2) of this section, the requirements of this part shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:

(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;

(2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and

(3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit," as defined in §64.1, except that emission reductions achieved by the applicable control device shall not be taken into account."

The Facility meets all three of the above listed criteria and does not qualify for any of the exemptions listed under Section 64.2(b)(1). Therefore, 40 CFR 64 applies to the Site.

### 40 CFR 68 - CHEMICAL ACCIDENT PREVENTION

Section 68.1 lists the scope as setting "...forth the list of regulated substances and thresholds, the petition process for adding or deleting substances to the list of regulated substances, the requirements for owners or operators of stationary sources concerning the prevention of accidental releases, and the State accidental release prevention programs approved under section 112(r). The list of substances, threshold quantities, and accident prevention regulations promulgated under this part do not limit in any way the general duty provisions under section 112(r)(1)."

Section 68.10 determines applicability as "An owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under §68.115, shall comply with the requirements of this part..."

Section 68.115(b)(2)(iii) states "For the purposes of determining whether more than a threshold quantity of a regulated substance is present at the stationary source, the following exemption..." for "Naturally occurring hydrocarbon mixtures. Prior to entry into a natural gas processing plant or a petroleum refining process unit, regulated substances in naturally occurring hydrocarbon mixtures need not be considered when determining whether more than a threshold quantity is present at a stationary source. Naturally occurring hydrocarbon mixtures include any combination of the following: condensate, crude oil, field gas, and produced water, each as defined in Sec. 68.3 of this part."

The production tanks (including the 30,000 gallon pressurized bullet tank) operate in condensate service, which is exempt from RMP applicability.

Therefore 40 CFR 68 does not apply to this Site.

#### 40 CFR 82 – STRATOSPHERIC OZONE AND CLIMATE PROTECTION

Section 82.1(a) lists "The purpose of the regulations in this subpart is to implement the Montreal Protocol on Substances that Deplete the Ozone Layer and sections 602, 603, 604, 605, 606, 607, 614 and 616 of the Clean Air Act Amendments of 1990, Public Law 101–549. The Protocol

and section 604 impose limits on the production and consumption (defined as production plus imports minus exports, excluding transhipments and used controlled substances) of certain ozone-depleting substances, according to specified schedules. The Protocol also requires each nation that becomes a Party to the agreement to impose certain restrictions on trade in ozone-depleting substances with non-Parties."

Furthermore, Section 82.1(b) states that "This subpart applies to any person that produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product."

The definition of controlled product is found under Section 82.3 and "means a product that contains a controlled substance listed as a Class I, Group I or II substance in appendix A to this subpart. Controlled products include, but are not limited to, those products listed in appendix D to this subpart..."

The definition of controlled substance under Section 82.3 "means any substance listed in appendix A or appendix B to this subpart, whether existing alone or in a mixture, but excluding any such substance or mixture that is in a manufactured product other than a container used for the transportation or storage of the substance or mixture. Thus, any amount of a listed substance in appendix A or appendix B to this subpart that is not part of a use system containing the substance is a controlled substance. If a listed substance or mixture must first be transferred from a bulk container to another container, vessel, or piece of equipment in order to realize its intended use, the listed substance or mixture is a "controlled substance." The inadvertent or coincidental creation of insignificant guantities of a listed substance in appendix A or appendix B to this subpart; during a chemical manufacturing process, resulting from unreacted feedstock, from the listed substance's use as a process agent present as a trace quantity in the chemical substance being manufactured, or as an unintended byproduct of research and development applications, is not deemed a controlled substance. Controlled substances are divided into two classes, Class I in appendix A to this subpart, and Class II listed in appendix B to this subpart. Class I substances are further divided into eight groups, Group I, Group II, Group III, Group IV, Group V, Group VI, Group VII, and Group VIII, as set forth in appendix A to this subpart."

The Facility is not currently using any Class I or Class II substances and does not plan to utilize either type of substances in the future. Therefore, 40 CFR 82 does not apply to this Site.

## Summit Gas Gathering, LLC

810 Houston Street Ft. Worth, TX 76102-6298

January 13, 2011

COF

U.S. Environmental Protection Agency FOIA and Miscellaneous Payments Cincinnati Finance Center P.O. Box 979078 St. Louis, MO 63197-9000

#### RE: Summit Gas Gathering, LLC - 2010 Initial Part 71 Permit Fee Payments River Bend Dehydrator Site & Accompanying Wellsites

To Whom It May Concern:

XTO Energy, hereby submits the attached payment for Title V – Part 71 Initial Permit fees for 2010 for the Summit Gas Gathering, LLC (SGG) River Bend Dehydrator Site & Accompanying Wellsites located in Uintah County, Utah. Also attached is the associated U.S. EPA fee Filing Form (FF).

If you should have any questions or require additional information, please feel free to contact me at (817) 885-2672.

Sincerely,

wy a

Craig Allison EH&S Advisor

USPS Certified Mail - No. 7009 0080 0000 4061 9503

- Encl: Check # 0000003376 River Bend Dehy Site EPA Form FF - Fee Filing Forms
- Cc: Damien Jones, SGG Roosevelt NGO Office Ms. Claudia Smith, U.S. EPA Region 8

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# SUMMIT GAS GATHERING, LLC FORT WORTH, TEXAS 76102-6298 817-885-2195

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| 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.6         INTTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK         THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC         Bank of America, N.A.         Delias, Texas         810 Houston St Fort Worth, Texas 76102-6298         Y ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND         SIXTY CENTS         Y ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND         SIXTY CENTS         U.S. ENVIRONMENTAL PROTECTION         AGENCY, FOIA AND MISC, PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. 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MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -                                    |                                                  |                | 1         | 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. 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MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      | <u> </u>                                         |                |           | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. 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MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | The second second                    |                                                  | 100            |           | * <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. 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MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      | ·· )                                             |                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.6         INTERNET US BEFORE DEPOSITING CHECK         THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC         Bank of America, N.A.         Dallas, Texas         810 Houston St Fort Worth, Texas 76102-6298         Y ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND         SIXTY CENTS         Y ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND         SIXTY CENTS         U.S. ENVIRONMENTAL PROTECTION         AGENCY, FOIA AND MISC. PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. 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PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. 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Dallas, Texas       04-1276/611         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.         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MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      | 7                                                |                | 2         | *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. 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MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5.1 <sup>1</sup>                     | Ϋ́                                               | 1              |           | <u>``</u> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.6         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       Bank of America, N.A.         Delias, Texas       04-1276/611         It Houston St Fort Worth, Texas 76102-6298       Delias, Texas         It HOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       1/10/11         It HE DER OF       U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOLA AND MISC. PIMITS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       Void After 90 DAYS<br>VENDOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FLATURES VISIBLE AND INVISIBLE FIBERS. 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MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                                    | )                                                |                |           | ,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.6         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       Bank of America, N.A.         Dallas, Texas       04-1276/611         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.         It houston St Fort Worth, Texas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC<br>810 Houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.<br>Dailes, Texas<br>84-1278/811       EHECK DATE       CHECK DATE       CHECK NO.         VOID ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS       DULLARS AND       \$1,499.60         VOID AFTER 90 DAYS<br>VENDOR       \$1,499.60         U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMMTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       SECURITY FEATURES INCLUDED. DETAILS ON BACK. (?)       MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      | ~                                                | 2.00           |           | i<br>l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.6         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       Bank of America, N.A.         Dallas, Texas       04-1276/611         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.         It houston St Fort Worth, Texas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC<br>810 Houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.<br>Dailes, Texas<br>84-1278/811       EHECK DATE       CHECK DATE       CHECK NO.         VOID ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS       DULLARS AND       \$1,499.60         VOID AFTER 90 DAYS<br>VENDOR       \$1,499.60         U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMMTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       SECURITY FEATURES INCLUDED. DETAILS ON BACK. (?)       MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                                  |                | -         | 5 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.6         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       Bank of America, N.A.         Dallas, Texas       04-1276/611         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Dallas, Texas         It houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.         It houston St Fort Worth, Texas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC<br>810 Houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.<br>Dailes, Texas<br>84-1278/811       EHECK DATE       CHECK DATE       CHECK NO.         VOID ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS       DULLARS AND       \$1,499.60         VOID AFTER 90 DAYS<br>VENDOR       \$1,499.60         U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMMTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       SECURITY FEATURES INCLUDED. DETAILS ON BACK. (?)       MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | у I                                  | ·                                                |                |           | )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.6         INTERNET US BEFORE DEPOSITING CHECK         THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC         Bank of America, N.A.         Dallas, Texas         810 Houston St Fort Worth, Texas 76102-6298         Y ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND         SIXTY CENTS         Y ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND         SIXTY CENTS         U.S. ENVIRONMENTAL PROTECTION         AGENCY, FOIA AND MISC. PMNTS-         CINCINNATI FINANCE CENTER         PO BOX 979078         SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8006078       U.S. ENVIRONMENTAL PROTECTION       0000003376       1,499.60         ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK       THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC<br>810 Houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.<br>Dailes, Texas<br>84-1278/811       EHECK DATE       CHECK DATE       CHECK NO.         VOID ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS       DULLARS AND       \$1,499.60         VOID AFTER 90 DAYS<br>VENDOR       \$1,499.60         U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMMTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       SECURITY FEATURES INCLUDED. DETAILS ON BACK. (?)       MITHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                                  | -              | 1         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK         THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS, A VOID BACKGROUND, MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC<br>B10 Houston St Fort Worth, Texas 76102-6298         Bank of America, N.A.<br>Dalles, Texas<br>B4-1270/811         CHECK DATE CHECK NO.<br>1/10/11         Y         Y         Y         ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS         THE<br>DER OF         U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000         AUTHORIZED SIGNATURE         AUTHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ITTANCE ADVICE PLEASE DETACH STUB BEFORE DEPOSITING CHECK         THIS DOCUMENT FEATURES VISIBLE AND INVISIBLE FIBERS. A VOID BACKGROUND. MICROPRINTING AND A TRUE WATERMARK.         SUMMIT GAS GATHERING, LLC         Bank of America, N.A.         Dallas, Texas         810 Houston St Fort Worth, Texas 76102-6298         CHECK DATE         CHECK DATE         ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND         SIXTY CENTS         THE<br>DER OF         U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC, PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078         SAINT LOUIS, MO 63197-9000         CHECKING CENTER<br>PO BOX 979078         AUTHORIZED SIGNATURE         AUTHORIZED SIGNATURE         AUTHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | VENDOR NUMBER                        | VENDOR NAME                                      | CHEC           | CK NUMBER | CHECK TOTA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| SUMMIT GAS GATHERING, LLC<br>810 Houston St Fort Worth, Texas 76102-6298       Bank of America, N.A.<br>Delles, Texas<br>84-1278/811       CHECK DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SUMMIT GAS GATHERING, LLC       Bank of America, N.A.         Bailas, Texes       Dellas, Texes         810 Houston St Fort Worth, Texas 76102-6298       Dellas, Texes         84-1276/611       1/10/11         0 ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       1/10/11         0 ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       \$1,499.60         0 ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       \$1,499.60         0 ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       \$1,499.60         0 ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       \$1,499.60         0 ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       \$1,499.60         0 ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND       \$1,499.60         0 ONE OF       U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMINTS-<br>CINCINNANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       AUTHORIZED SKINATURE         1 SECURITY FEATURES INCLUDED DETAILS ON BACK.       1       AUTHORIZED SKINATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                      |                                                  | -              | 0003378   | 1,499.80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| SUMMIT GAS GATTERING, LLC     Dallas, Texes       810 Houston St Fort Worth, Texas 76102-6298     Ballas, Texes       84-1276/611     1/10/11       Y     ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS       THE<br>DER OF     U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SUMINIT GAS GATHERING, LLC       Dallas, Texes         810 Houston St Fort Worth, Texas 76102-6298       Ballas, Texes         810 Houston St Fort Worth, Texas 76102-6298       Ballas, Texes         64-1276/811       1/10/11         0000003376         000       AMOUNT         1/10/11       0000003376         000       AMOUNT         1/10/11       0000003376         000       VOID AFTER 90 DAYS         VENDOR       VOID AFTER 90 DAYS         VENDOR       VENDOR         00000000       VOID AFTER 90 DAYS         VENDOR       AUTHORIZED SIGNATURE         1       SECURITY FEATURES INCLUDED. DETAILS ON BACK. 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | THIS DOCUMENT                        | FEATURES VISIBLE AND INVISIBLE F                 |                |           | ND A TRUE WATERMARK.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1/10/11       000003376         AMOUNT       AMOUNT         SIXTY CENTS       \$1,499.6         THE DER OF       U.S. ENVIRONMENTAL PROTECTION AGENCY, FOIA AND MISC. PMNTS-CINCINNATI FINANCE CENTER PO BOX 979078 SAINT LOUIS, MO 63197-9000       Void After 90 DAYS         AMOUNT       State 1000000000000000000000000000000000000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1/10/11       0000003376         1/10/11       0000003376         AMOUNT       \$1,499.60         SIXTY CENTS       \$1,499.60         VOID AFTER 90 DAYS         VENDOR       VENDOR         AUTHORIZED SIGNATURE       AUTHORIZED SIGNATURE         SECURITY FEATURES INCLUDED. DETAILS ON BACK.       T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                                  | Dallas,        | Texas     | CHECK DATE CHECK NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Y       ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS       \$1,499.6         THE<br>DER OF       U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       Yuman                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Y       ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND<br>SIXTY CENTS       \$1,499.60         THE<br>DER OF       U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000       Your Control of the second of |                                      |                                                  | 64-127         | 6/811     | 1/10/11 0000003376                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SIXTY CENTS<br>THE<br>DER OF<br>U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000<br>AUTHORIZED SIGNATURE<br>AUTHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SIXTY CENTS<br>THE<br>DER OF<br>U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000<br>AUTHORIZED SIGNATURE<br>AUTHORIZED SIGNATURE<br>AUTHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                      |                                                  |                | _         | AMOUNT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| THE<br>DER OF<br>U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000<br>UNDER CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000<br>UNDER CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | THE<br>DER OF<br>U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000<br>AUTHORIZED SIGNATURE<br>AUTHORIZED SIGNATURE<br>AUTHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                      | FOUR HUNDRED NINETY-NI                           | NE DOLLARS AND |           | \$1,499.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | U.S. ENVIRONMENTAL PROTECTION<br>AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000<br>SECURITY FEATURES INCLUDED. DETAILS ON BACK.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                                  |                |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AGENCY, FOIA AND MISC. PMNTS-<br>CINCINNATI FINANCE CENTER<br>PO BOX 979078<br>SAINT LOUIS, MO 63197-9000<br>SECURITY FEATURES INCLUDED. DETAILS ON BACK.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                      | NUMERITAL PROTECTION                             | 8              |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SAINT LOUIS, MO 63197-9000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | AGENCY, FO<br>CINCINNAT<br>PO BOX 97 | DIA AND MISC. PMNTS-<br>I FINANCE CENTER<br>9078 |                | Evan M l  | an Kirk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Security FEATURES INCLUDED. DETAILS ON BACK.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SAINT LOUI                           | S, MO 63197-9000                                 | WIS RED MAG    | A         | UTHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                      |                                                  |                | 0         | UTHORIZED SIGNATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



OMB No. 2060-0336, Approval Expires 04/30/2012

Federal Operating Permit Program (40 CFR Part 71)

## FEE FILING FORM (FF)

Complete this form each time you prepare form FEE and send this form to the appropriate lockbox bank address, along with full payment. This form required at time of initial fee payment, and thereafter, when paying annual fees.

| Source or Facility NameSummit Gas Gathering - River Bend Dehydrator Site & Accompanying wellsites |
|---------------------------------------------------------------------------------------------------|
| Mailing Address:                                                                                  |
| Street/P.O. Box _810 Houston StCityFt. Worth                                                      |
| StateTX ZIP76102                                                                                  |
| Contact Person: Craig Allison Title EH&S Advisor                                                  |
| Telephone (_817)8852672 Ext                                                                       |
| Total Fee Payment Remitted: \$149960                                                              |

#### SEPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 04/30/2012

Federal Operating Permit Program (40 CFR Part 71)

## FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

#### A. General Information

| Type of fee (Check one): _XInitialAnnual                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Deadline for submitting fee calculation worksheet//                                                                                                                                                                                                                                      |
| For initial fees, emissions are based on (Check one):                                                                                                                                                                                                                                    |
| _X_ Actual emissions for the preceding calendar year. (Required in most circumstances.)                                                                                                                                                                                                  |
| Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)                                                                                                                                                    |
| Date commenced operations//                                                                                                                                                                                                                                                              |
| Estimates of actual emissions for the preceding calendar year. (Optional after a part<br>71 permit was issued to replace a part 70 permit, but only if initial fee payment is<br>due between January 1 and March 31; otherwise use actual emissions for the<br>preceding calendar year.) |
| For annual fee payment, you are required to use actual emissions for the preceding calendar year.                                                                                                                                                                                        |

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

| Source or facility name             |                       |
|-------------------------------------|-----------------------|
| Mailing address: Street or P.O. Box |                       |
| City                                | State ZIP             |
| Contact person                      | Title                 |
| Telephone ()                        | Ext Part 71 permit no |

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

| I certify under penalty of law, based on information and belief formed after reasonable inquiry, the |
|------------------------------------------------------------------------------------------------------|
| statements and information contained in this submittal (form and attachments) are true, accurate and |
| complete.                                                                                            |
| Name (signed)                                                                                        |
| Name (signed)                                                                                        |
| Name (typed) Trick T. DuNGEY Date: 1/7/11                                                            |
| Name (typed) Date Date                                                                               |

## D. Annual Emissions Report for Fee Calculation Purposes -- Non-HAP

You may use this to report actual emissions (tons per year) of regulated pollutants (for fee calculation) on a calendar-year basis for both initial and annual fee calculation purposes. Section E is designed to report HAP emissions. Quantify all actual emissions, including fugitives, but do not include insignificant emissions and certain regulated air pollutants that are not counted for fee purposes, such as CO (see instructions). You may round to the nearest tenth of a ton on this form. Sum the emissions in each column and enter a subtotal at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

| Emission Unit ID | NOx | VOC  | SO2 | PM10 | Lead     | Other |
|------------------|-----|------|-----|------|----------|-------|
| RBL-1            |     | 1.5  |     |      |          |       |
| RBTO-1           | 0.9 |      |     |      |          |       |
| RBD-1            |     | 1.1  |     |      |          |       |
| RBF-1            |     | 5.4  |     |      |          |       |
| RBT-1            |     | 5.0  |     |      |          |       |
| RBT-2            |     | 4.5  |     |      |          |       |
| RBU 7-15E D-1    |     | 2.7  |     |      |          |       |
| RBU 7-15E F-1    |     | 3.9  |     |      |          |       |
| RBU 6-15E D-1    |     | 3.7  |     |      |          |       |
| RBU 6-15E F-1    |     | 3.9  |     |      |          |       |
|                  |     |      |     |      |          |       |
|                  |     |      |     |      |          |       |
|                  |     |      |     |      |          |       |
|                  |     |      | -   |      |          |       |
|                  |     |      |     |      |          |       |
|                  |     |      |     |      |          |       |
|                  |     |      |     |      |          |       |
|                  |     |      |     |      |          |       |
| L                | 0.9 | 31.7 | 1   | 1    | <u> </u> | I     |

This data is for \_\_\_\_2010\_\_\_\_\_ (year)

SUBTOTALS

## E. Annual Emissions Report for Fee Calculation Purposes -- HAP

<u>HAP Identification</u>. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

| Name of HAP                  | CAS No  | Identifier |
|------------------------------|---------|------------|
| Benzene                      | 71432   | HAP1       |
| Ethylbenzene                 | 100414  | HAP2       |
| Toluene                      | 108883  | HAP3       |
| Xylene                       | 1330207 | HAP4       |
| n-Hexane                     | 110543  | HAP5       |
| 2,2,4 Trimethylpentane (TMP) | 540841  | HAP6       |
|                              |         |            |
|                              |         |            |

<u>HAP Emissions</u>. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. You may round to the nearest tenth of a ton. Sum the emissions in each column and enter a subtotal at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for \_\_\_\_\_2010\_\_\_\_\_ (year)

| Emissions Unit ID |      | Actual Emissions (Tons/Year) |      |      |      |      |     |     |
|-------------------|------|------------------------------|------|------|------|------|-----|-----|
|                   | HAP1 | HAP2                         | HAP3 | HAP4 | HAP5 | HAP6 | HAP | HAP |
| RBD-1             | 0.2  |                              | 0.3  | 0.1  |      |      |     |     |
| RBU 7-15E D-1     | 0.2  |                              | 0.3  | 0.1  | 0.1  |      |     |     |
| RBU 6-15E D-1     | 0.3  |                              | 0.5  | 0.3  | 0.1  |      |     |     |
|                   |      |                              |      |      |      |      |     |     |
|                   |      |                              |      |      |      |      |     |     |
|                   |      |                              |      |      |      |      |     |     |
|                   |      |                              |      |      |      |      |     |     |
|                   | 0.7  | 1                            | 1.1  | 0.5  | 0.2  |      | -   |     |
| SUBTOTALS         |      |                              |      |      |      |      |     |     |

### F. Fee Calculation Worksheet

This section is used to calculate the total fee owed for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, only complete line 1-5 and then skip down to lines 21 - 26. See instructions for more detailed explanation.

| 1. Sum the emissions from section D of this form (non-HAP) and enter the total (tons).                                                                                                                                                                                                                                           | 32.6          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 2. Sum the emissions from section E of this form (HAP) and enter the total (tons).                                                                                                                                                                                                                                               | 2.5           |
| 3. Sum lines 1 and 2.                                                                                                                                                                                                                                                                                                            | 35.1          |
| 4. Enter the emissions that were counted twice. If none, enter "0."                                                                                                                                                                                                                                                              | 2.5           |
| 5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here.                                                                                                                                                                                                                                             | 32.6          |
| RECONCILIATION<br>(WHEN INITIAL FEES WERE BASED ON ESTIMATES<br>FOR THE "CURRENT" CALENDAR YEAR)                                                                                                                                                                                                                                 |               |
| Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to lin                                                                                                                               |               |
| <ol><li>Enter the total estimated actual emissions for the year the initial fee was paid<br/>(previously reported on line 5 of the initial fee form).</li></ol>                                                                                                                                                                  |               |
| <ol> <li>If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result.<br/>Otherwise enter "0."</li> </ol>                                                                                                                                                                                                |               |
| <ol> <li>If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result.<br/>Otherwise enter "0."</li> </ol>                                                                                                                                                                                                | ······        |
| <ol> <li>If line 7 is greater than 0, multiply line 7 by last year's fee rate (\$/ton) and enter the<br/>result here. This is the underpayment. Go to line 21.</li> </ol>                                                                                                                                                        |               |
| <ol> <li>If line 8 is greater than 0, multiply line 8 by last year's fee rate (\$/ton) and enter the<br/>result here. This is the overpayment. Go to line 21.</li> </ol>                                                                                                                                                         |               |
| RECONCILIATION<br>(WHEN INITIAL FEES WERE BASED ON ESTIMATES<br>FOR THE "PRECEDING" CALENDAR YEAR)                                                                                                                                                                                                                               |               |
| Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If con section, you will also need to complete sections D and E to report actual emissions for the cale preceding initial fee payment. | npleting this |
| 11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.                                                                                                                                                                                             |               |
| <ol> <li>Sum the actual emissions from section E (HAP) for the calendar year preceding<br/>initial fee payment and enter the result here.</li> </ol>                                                                                                                                                                             |               |
| 13. Add lines 11 and 12 and enter the total here. These are total actual emissions for<br>the calendar year preceding initial fee payment.                                                                                                                                                                                       |               |
| 14. Enter double counted emission from line 13 here. If none, enter "0."                                                                                                                                                                                                                                                         |               |
| 15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.                                                                                                                                                                                                                                          |               |

|    | 111 |      |
|----|-----|------|
| -  | 1.  | L    |
| 1. | - A | 1.12 |

| 16. Enter the total estimated actual emissions previously reported on line 5 of the initial<br>fee form. These are estimated actual emissions for the calendar year preceding<br>initial fee payment.                                                           |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <ol> <li>If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result<br/>here. Otherwise enter "0."</li> </ol>                                                                                                                      |            |
| <ol> <li>If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result<br/>here. Otherwise enter "0."</li> </ol>                                                                                                                      |            |
| <ol> <li>If line 17 is greater than 0, multiply line 17 by last year's fee rate (\$/ton) and enter the<br/>result here. This is the underpayment.</li> </ol>                                                                                                    |            |
| 20. If line 18 is greater than 0, multiply line 18 by last year's fee rate (\$/ton) and enter the result on this line. This is the overpayment.                                                                                                                 |            |
| FEE CALCULATION                                                                                                                                                                                                                                                 |            |
| 21. Multiply line 5 (tons) by the current fee rate (\$46.00/ton) and enter the result here.                                                                                                                                                                     | \$1,499.60 |
| 22. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."                                                                                                                                                                                         | 0          |
| 23. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."                                                                                                                                                                                         | 0          |
| 24. If line 22 is greater than "0," add it to line 21 and enter the result here. If line 23 is greater than "0," subtract this from line 21 and enter the result here. Otherwise enter the amount on line 21 here. This is the fee adjusted for reconciliation. | \$1,499.60 |
| 25. If your account was credited for fee assessment error since the last time you paid fees, enter the amount of the credit here. Otherwise enter "0."                                                                                                          | 0          |
| 26. Subtract line 25 from line 24 and enter the result here. Stop here. This is the total fee amount that you must remit to EPA.                                                                                                                                | \$1,499.60 |

## TOTAL FACILITY EMISSION FEES

Company: Summit Gas Gathering Facility Name: All Sites Facility Location: Uintah County, Utah

|                      |       | Part 71        | 2010       |     | Total    |
|----------------------|-------|----------------|------------|-----|----------|
| Source               | E     | missions       | Chargeable | E   | missions |
|                      | Fee F | Rate (per ton) | Emissions  | Fee |          |
| River Bend Dehy Site | \$    | 46.00          | 18.40      | \$  | 846.40   |
| Wellsite 6-15E       | \$    | 46.00          | 7.60       | \$  | 349.60   |
| Wellsite 7-15E       | \$    | 46.00          | 6.60       | \$  | 303.60   |
|                      |       | TOTAL          | 32.60      | \$  | 1,499.60 |

## ACTUAL CONTROLLED 2010 EMISSIONS SUMMARY - SIGNIFICANT SOURCES ONLY

| Company:           | Summit Gas Gathering |
|--------------------|----------------------|
| Facility Name:     | All Sites            |
| Facility Location: | Uintah County, Utah  |

|                                | NOx   |        | со    |        | VOC   |        | PM10  |        | HAPs  |        |
|--------------------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| Source                         | lb/hr | ton/yr |
| River Bend Dehydration Site    | 0.20  | 0.90   | 1.10  | 4.60   | 4.30  | 17.50  | 0.00  | 0.00   | 0.20  | 0.80   |
| All RBU 6-15E Emission Sources | 0.00  | 0.00   | 0.00  | 0.00   | 2.90  | 7.60   | 0.00  | 0.00   | 0.70  | 1.30   |
| All RBU 7-15E Emission Sources | 0.00  | 0.00   | 0.00  | 0.00   | 1.50  | 6.60   | 0.00  | 0.00   | 0.20  | 0.80   |
| Totals                         | 0.20  | 0.90   | 1.10  | 4.60   | 8.70  | 31.70  | 0.00  | 0.00   | 1.10  | 2.90   |

\*When considering whether or not a source is a major source, fugitive emissions are not included per 40 CFR Section 52.21(b)(1)(iii).

"Engine HAP emissions include Formaldehyde

\*\*\* Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                | Benzene |        | Toluene |        | Ethylbenzene |        | Xylene |        | N-Hexane |        |
|--------------------------------|---------|--------|---------|--------|--------------|--------|--------|--------|----------|--------|
| Source                         | lb/hr   | ton/yr | lb/hr   | ton/yr | lb/hr        | ton/yr | lb/hr  | ton/yr | ib/hr    | ton/yr |
| River Bend Dehydration Site    | 0.00    | 0.20   | 0.10    | 0.30   | 0.00         | 0.00   | 0.00   | 0.10   | 0.00     | 0.00   |
| All RBU 6-15E Emission Sources | 0.20    | 0.30   | 0.30    | 0.50   | 0.00         | 0.00   | 0.20   | 0.30   | 0.10     | 0.10   |
| All RBU 7-15E Emission Sources | 0.00    | 0.20   | 0.10    | 0.30   | 0.00         | 0.00   | 0.00   | 0.10   | 0.00     | 0.10   |
| Totals                         | 0.20    | 0.70   | 0.50    | 1.10   | 0.00         | 0.00   | 0.20   | 0.50   | 0.10     | 0.20   |

|                                | 2,2,4 | TMP    | Formaldehyde |        |  |
|--------------------------------|-------|--------|--------------|--------|--|
| Source                         | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| River Bend Dehydration Site    | 0.00  | 0.00   | 0.00         | 0.00   |  |
| All RBU 6-15E Emission Sources | 0.00  | 0.00   | 0.00         | 0.00   |  |
| All RBU 7-15E Emission Sources | 0.00  | 0.00   | 0.00         | 0.00   |  |
| Totals                         | 0.00  | 0.00   | 0.00         | 0.00   |  |

## **RBU 6-15E WELLSITE ACTUAL 2010 EMISSIONS SUMMARY - SIGNIFICANT SOURCES ONLY**

Company: Summit Gas Gathering Facility Name: RBU 6-15E Facility Location: Uintah County, Utah

|                                        | NC    | )x     | С     | 0      | V     | 00     | PI    | <b>M</b> <sub>10</sub> | HA    | Ps     |
|----------------------------------------|-------|--------|-------|--------|-------|--------|-------|------------------------|-------|--------|
| Source                                 | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr                 | lb/hr | ton/yr |
| 0.135 MMscfd dehydrator - RBU 6-15E D- | -     | -      | -     | -      | 2.00  | 3.70   | -     | -                      | 0.70  | 1.20   |
| Fugitive Emissions - RBU 6-15E F-1     | -     | -      | -     | -      | 0.90  | 3.90   | -     | -                      | 0.00  | 0.10   |
| Totals                                 | 0.00  | 0.00   | 0.00  | 0.00   | 2.90  | 7.60   | 0.00  | 0.00                   | 0.70  | 1.30   |

Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                        | Benz  | ene    | Tolu  | lene   | Ethylb | enzene | Xyl   | ene    | N-He  | exane  |
|----------------------------------------|-------|--------|-------|--------|--------|--------|-------|--------|-------|--------|
| Source                                 | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr  | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| 0.135 MMscfd dehydrator - RBU 6-15E D- | 0.20  | 0.30   | 0.30  | 0.50   | 0.00   | 0.00   | 0.20  | 0.30   | 0.10  | 0.10   |
| Fugitive Emissions - RBU 6-15E F-1     | 0.00  | 0.00   | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   |
| Totals                                 | 0.20  | 0.30   | 0.30  | 0.50   | 0.00   | 0.00   | 0.20  | 0.30   | 0.10  | 0.10   |

|                                        | 2,2,4 | TMP    | Formaldehyde |        |  |
|----------------------------------------|-------|--------|--------------|--------|--|
| Source                                 | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| 0.135 MMscfd dehydrator - RBU 6-15E D- | 0.00  | 0.00   | -            | -      |  |
| Fugitive Emissions - RBU 6-15E F-1     | 0.00  | 0.00   | -            | -      |  |
| Totals                                 | 0.00  | 0.00   | 0.00         | 0.00   |  |

Rounded to the closest tenth of one ton

## **RBU 7-15E WELLSITE ACTUAL 2010 EMISSIONS SUMMARY - SIGNIFICANT SOURCES ONLY**

#### Company: Summit Gas Gathering Facility Name: RBU 7-15E Facility Location: Uintah County, Utah

|                                         | NC    | Dx     | С     | 0      | V     | oc     | PI    | M <sub>10</sub> | HA    | Ps     |
|-----------------------------------------|-------|--------|-------|--------|-------|--------|-------|-----------------|-------|--------|
| Source                                  | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr          | lb/hr | ton/yr |
| 0.065 MMscfd dehydrator - RBU 7-15E D-1 | -     | -      | -     | -      | 0.60  | 2.70   | -     | -               | 0.20  | 0.70   |
| Fugitive Emissions - RBU 7-15E F-1      | -     | -      | -     | -      | 0.90  | 3.90   | -     | -               | 0.00  | 0.10   |
| Totals                                  | 0.00  | 0.00   | 0.00  | 0.00   | 1.50  | 6.60   | 0.00  | 0.00            | 0.20  | 0.80   |

<sup>\*</sup>Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                         | Benz  | zene   | Tolu  | lene   | Ethylb | enzene | Xyl   | ene    | N-He  | xane   |
|-----------------------------------------|-------|--------|-------|--------|--------|--------|-------|--------|-------|--------|
| Source                                  | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr  | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| 0.065 MMscfd dehydrator - RBU 7-15E D-1 | 0.00  | 0.20   | 0.10  | 0.30   | 0.00   | 0.00   | 0.00  | 0.10   | 0.00  | 0.10   |
| Fugitive Emissions - RBU 7-15E F-1      | 0.00  | 0.00   | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   | 0.00  | 0.00   |
| Totals                                  | 0.00  | 0.20   | 0.10  | 0.30   | 0.00   | 0.00   | 0.00  | 0.10   | 0.00  | 0.10   |

|                                         | 2,2,4 | TMP    | Formaldehyde |        |  |
|-----------------------------------------|-------|--------|--------------|--------|--|
| Source                                  | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| 0.065 MMscfd dehydrator - RBU 7-15E D-1 | 0.00  | 0.00   | -            | -      |  |
| Fugitive Emissions - RBU 7-15E F-1      | 0.00  | 0.00   | -            | -      |  |
| Totals                                  | 0.00  | 0.00   | 0.00         | 0.00   |  |

Rounded to the closest tenth of one ton

## JANUARY 2011 UNCONTROLLED POTENTIAL TO EMIT SUMMARY

| Company:           | Summit Gas Gathering |
|--------------------|----------------------|
| Facility Name:     | All Sites            |
| Facility Location: | Uintah County, Utah  |

|                                | N     | Ox     | C     | :0     | V     | 00     | P     | M <sub>10</sub> | HAP   | S '    |
|--------------------------------|-------|--------|-------|--------|-------|--------|-------|-----------------|-------|--------|
| Source                         | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr          | lb/hr | ton/yr |
| River Bend Dehydration Site    | 0.23  | 1.00   | 0.33  | 1.46   | 40.85 | 178.90 | 0.01  | 0.06            | 19.03 | 83.35  |
| All RBU 6-15E Emission Sources | 0.05  | 0.22   | 0.04  | 0.19   | 3.20  | 14.04  | 0.00  | 0.01            | 0.84  | 3.70   |
| All RBU 7-15E Emission Sources | 0.04  | 0.18   | 0.04  | 0.16   | 2.69  | 11.76  | 0.00  | 0.01            | 0.55  | 2.43   |
| Totals                         | 0.32  | 1.40   | 0.41  | 1.81   | 46.74 | 204.70 | 0.02  | 0.08            | 20.43 | 89.48  |

\*When considering whether or not a source is a major source, fugitive emissions are not included per 40 CFR Section 52.21(b)(1)(iii).

\*\*Engine HAP emissions include Formaldehyde

\*\*\* Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                | Ben   | zene   | Tol   | uene   | Ethylb | enzene | Xyl   | ene    | N-He  | exane  |
|--------------------------------|-------|--------|-------|--------|--------|--------|-------|--------|-------|--------|
| Source                         | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr  | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| River Bend Dehydration Site    | 6.38  | 27.94  | 8.08  | 35.41  | 0.31   | 1.37   | 3.51  | 15.37  | 0.70  | 3.07   |
| All RBU 6-15E Emission Sources | 0.23  | 0.99   | 0.37  | 1.61   | 0.02   | 0.07   | 0.19  | 0.81   | 0.04  | 0.20   |
| All RBU 7-15E Emission Sources | 0.16  | 0.68   | 0.23  | 1.02   | 0.01   | 0.04   | 0.11  | 0.47   | 0.04  | 0.19   |
| Totals                         | 6.76  | 29.61  | 8.68  | 38.04  | 0.34   | 1.47   | 3.80  | 16.65  | 0.79  | 3.46   |

|                                | 2,2,4 | TMP    | Formaldehyde |        |  |
|--------------------------------|-------|--------|--------------|--------|--|
| Source                         | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| River Bend Dehydration Site    | 0.05  | 0.21   | 0.00         | 0.00   |  |
| All RBU 6-15E Emission Sources | 0.00  | 0.02   | 0.00         | 0.01   |  |
| All RBU 7-15E Emission Sources | 0.00  | 0.02   | 0.00         | 0.00   |  |
| Totals                         | 0.06  | 0.25   | 0.00         | 0.01   |  |

## JANUARY 2011 CONTROLLED POTENTIAL TO EMIT SUMMARY

| Company:           | Summit Gas Gathering |
|--------------------|----------------------|
| Facility Name:     | All Sites            |
| Facility Location: | Uintah County, Utah  |

|                                | N     | Ox     | C     | :0     | V     | 00     | PI    | W10    | HAP   | S '    |
|--------------------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| Source                         | lb/hr | ton/yr |
| River Bend Dehydration Site    | 0.42  | 1.85   | 1.43  | 6.28   | 4.72  | 20.68  | 0.01  | 0.06   | 0.22  | 0.97   |
| All RBU 6-15E Emission Sources | 0.05  | 0.22   | 0.04  | 0.19   | 3.20  | 14.04  | 0.00  | 0.01   | 0.84  | 3.70   |
| All RBU 7-15E Emission Sources | 0.04  | 0.18   | 0.04  | 0.16   | 2.69  | 11.76  | 0.00  | 0.01   | 0.55  | 2.43   |
| Totals                         | 0.51  | 2.30   | 1.51  | 6.63   | 10.61 | 46.48  | 0.02  | 0.08   | 1.62  | 7.09   |

\*When considering whether or not a source is a major source, fugitive emissions are not included per 40 CFR Section 52.21(b)(1)(iii).

\*Engine HAP emissions include Formaldehyde

"Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                | Ben   | zene   | Tol   | lene   | Ethylb | enzene | Xyl   | ene    | N-He  | exane  |
|--------------------------------|-------|--------|-------|--------|--------|--------|-------|--------|-------|--------|
| Source                         | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr  | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| River Bend Dehydration Site    | 0.07  | 0.30   | 0.08  | 0.36   | 0.00   | 0.01   | 0.04  | 0.16   | 0.02  | 0.10   |
| All RBU 6-15E Emission Sources | 0.23  | 0.99   | 0.37  | 1.61   | 0.02   | 0.07   | 0.19  | 0.81   | 0.04  | 0.20   |
| All RBU 7-15E Emission Sources | 0.16  | 0.68   | 0.23  | 1.02   | 0.01   | 0.04   | 0.11  | 0.47   | 0.04  | 0.19   |
| Totals                         | 0.45  | 1.97   | 0.68  | 2.99   | 0.03   | 0.12   | 0.33  | 1.44   | 0.11  | 0.49   |

|                                | 2,2,4 | TMP    | Formaldehyde |        |  |
|--------------------------------|-------|--------|--------------|--------|--|
| Source                         | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| River Bend Dehydration Site    | 0.00  | 0.00   | 0.00         | 0.00   |  |
| All RBU 6-15E Emission Sources | 0.00  | 0.02   | 0.00         | 0.01   |  |
| All RBU 7-15E Emission Sources | 0.00  | 0.02   | 0.00         | 0.00   |  |
| Totals                         | 0.01  | 0.04   | 0.00         | 0.01   |  |

# ALL SITES GHG EMISSIONS SUMMARY

Company: Summit Gas Gathering Facility Name: All Sites Facility Location: Uintah County, Utah

#### UNCONTROLLED GHG EMISSIONS

| SOURCE<br>DESCRIPTION          | CH₄<br>MT/yr* | CO <sub>2</sub><br>MT/yr* | N₂O<br>MT/yr* | CO <sub>2</sub> Equivalents<br>MT/yr* |
|--------------------------------|---------------|---------------------------|---------------|---------------------------------------|
| River Bend Dehydration Site    | 56.10         | 703.00                    | 0.00          | 1881.43                               |
| All RBU 6-15E Emission Sources | 8.77          | 197.56                    | 0.00          | 381.75                                |
| All RBU 7-15E Emission Sources | 8.92          | 162.73                    | 0.00          | 385.09                                |
| TOTAL EMISSIONS                | 73.78         | 1063.29                   | 0.00          | 2648.28                               |

| CH₄<br>Tons/yr | CO₂<br>Tons/yr | N₂O<br>Tons/yr | CO <sub>2</sub> Equivalents<br>Tons/yr |
|----------------|----------------|----------------|----------------------------------------|
|                |                |                |                                        |
| 61.71          | 773.30         | 0.00           | 2056.22                                |
| 9.64           | 217.32         | 0.00           | 419.93                                 |
| 9.81           | 179.00         | 0.00           | 423.60                                 |
| 81.16          | 1169.61        | 0.00           | 2899.75                                |

#### CONTROLLED GHG EMISSIONS

| SOURCE<br>DESCRIPTION          | CH₄<br>MT/yr* | CO <sub>2</sub><br>MT/yr* | N₂O<br>MT/yr* | CO <sub>2</sub> Equivalents<br>MT/yr* |
|--------------------------------|---------------|---------------------------|---------------|---------------------------------------|
| River Bend Dehydration Site    | 13.73         | 2115.27                   | 0.00          | 2416.00                               |
| All RBU 6-15E Emission Sources | 8.77          | 197.56                    | 0.00          | 381.75                                |
| All RBU 7-15E Emission Sources | 8.92          | 162.73                    | 0.00          | 385.09                                |
| TOTAL EMISSIONS                | 31.42         | 2475.55                   | 0.00          | 3182.85                               |

| CH <sub>4</sub> | CO <sub>2</sub> | N <sub>2</sub> O | CO <sub>2</sub> Equivalents |
|-----------------|-----------------|------------------|-----------------------------|
| Tons/yr         | Tons/yr         | Tons/yr          | Tons/yr                     |
| 15.10           | 2326.79         | 0.00             | 2657.60                     |
| 9.64            | 217.32          | 0.00             | 419.93                      |
| 9.81            | 179.00          | 0.00             | 423.60                      |
| 34.56           | 2723.11         | 0.00             | 3501.13                     |

ND = No data available.

MT = Metric tonne

# JANUARY 2011 UNCONTROLLED POTENTIAL TO EMIT SUMMARY

| Company:           | Summit Gas Gathering               |
|--------------------|------------------------------------|
| Facility Name:     | <b>River Bend Dehydration Site</b> |
| Facility Location: | Uintah County, Utah                |

|                                      | N            | Ox     | C     | 0      | V     | oc     | Pl    | И <sub>10</sub> | HAP   | 'S '   |
|--------------------------------------|--------------|--------|-------|--------|-------|--------|-------|-----------------|-------|--------|
| Source                               | lb/hr        | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr          | lb/hr | ton/yr |
| Condensate Truck Loading - RBL-1     | -            | -      | -     | -      | 0.54  | 2.38   | -     | -               | -     | -      |
| Total heaters (tanks and dehy)       | 0.18         | 0.80   | 0.15  | 0.67   | 0.02  | 0.08   | 0.01  | 0.06            | 0.00  | 0.00   |
| Capstone Micro-Turbine               | 0.03         | 0.13   | 0.18  | 0.79   | 0.00  | 0.01   | -     | -               | -     | -      |
| 45 MMscfd dehydrator #1 - RBD-1      | -            | -      | -     | -      | 36.44 | 159.60 | -     | -               | 19.00 | 83.21  |
| Pigging Operations                   | -            | -      | -     | -      | 0.03  | 0.15   | -     | -               | 0.00  | 0.01   |
| Fugitive Emissions RBF-1             | 5 <b>-</b> 0 | -      | -     | -      | 1.30  | 5.68   | -     | -               | 0.02  | 0.10   |
| Storage Tank Emissions RBT-1 & RBT-2 | -            | -      | -     | -      | 2.51  | 11.01  | -     | -               | 0.01  | 0.04   |
| Totals                               | 0.21         | 1.00   | 0.33  | 1.46   | 40.85 | 178.90 | 0.01  | 0.06            | 19.03 | 83.35  |

\*When considering whether or not a source is a major source, fugitive emissions are not included per 40 CFR Section 52.21(b)(1)(iii).

"Engine HAP emissions include Formaldehyde "Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                      | Ben   | zene   | Toluene |        | Ethylbenzene |        | Xylene |        | N-Hexane |        |
|--------------------------------------|-------|--------|---------|--------|--------------|--------|--------|--------|----------|--------|
| Source                               | lb/hr | ton/yr | lb/hr   | ton/yr | lb/hr        | ton/yr | lb/hr  | ton/yr | lb/hr    | ton/yr |
| Condensate Truck Loading - RBL-1     | -     | -      | -       | -      | -            | -      | -      | -      | -        | -      |
| Total heaters (tanks and dehy)       |       | -      | -       | -      | -            | -      | -      | -      | -        | -      |
| Capstone Micro-Turbine               | -     | -      | -       | -      | -            | -      | -      | -      | -        | -      |
| 45 MMscfd dehydrator #1 - RBD-1      | 6.37  | 27.92  | 8.08    | 35.40  | 0.31         | 1.37   | 3.51   | 15.37  | 0.68     | 3.00   |
| Pigging Operations                   | 0.00  | 0.00   | 0.00    | 0.00   | 0.00         | 0.00   | 0.00   | 0.00   | 0.00     | 0.01   |
| Fugitive Emissions RBF-1             | 0.00  | 0.01   | 0.00    | 0.01   | 0.00         | 0.00   | 0.00   | 0.00   | 0.01     | 0.04   |
| Storage Tank Emissions RBT-1 & RBT-2 | 0.00  | 0.01   | 0.00    | 0.00   | 0.00         | 0.00   | 0.00   | 0.00   | 0.01     | 0.03   |
| Totals                               | 6.38  | 27.94  | 8.08    | 35.41  | 0.31         | 1.37   | 3.51   | 15.37  | 0.70     | 3.07   |

|                                      | 2,2,4 | TMP    | Formaldehyde |        |  |
|--------------------------------------|-------|--------|--------------|--------|--|
| Source                               | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| Condensate Truck Loading - RBL-1     | -     | -      | -            | -      |  |
| Total heaters (tanks and dehy)       | -     | -      | 0.00         | 0.00   |  |
| Capstone Micro-Turbine               | -     | -      | -            | -      |  |
| 45 MMscfd dehydrator #1 - RBD-1      | 0.05  | 0.21   | -            | -      |  |
| Pigging Operations                   | -     | -      | -            | -      |  |
| Fugitive Emissions RBF-1             | -     | -      | -            | -      |  |
| Storage Tank Emissions RBT-1 & RBT-2 | -     | -      | 0.00         | 0.00   |  |
| Totals                               | 0.05  | 0.21   | 0.00         | 0.00   |  |

## JANUARY 2011 CONTROLLED POTENTIAL TO EMIT SUMMARY\*

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| Company:           | Summit Gas Gathering        |
|--------------------|-----------------------------|
| Facility Name:     | River Bend Dehydration Site |
| Facility Location: | Uintah County, Utah         |

|                                        | N     | Ox     | 0     | :0     | V     | oc `   | Pl    | M <sub>10</sub> | HAP   | s'     |
|----------------------------------------|-------|--------|-------|--------|-------|--------|-------|-----------------|-------|--------|
| Source                                 | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr          | ib/hr | ton/yr |
| Capstone Micro-Turbine                 | 0.03  | 0.13   | 0.18  | 0.79.  | 0.00  | 0.01   | -     | -               | -     | -      |
| 45 MMscfd dehydrator #1 - RBD-1        | -     | -      | -     | -      | 0.31  | 1.38   | -     | -               | 0.19  | 0.82   |
| Total heaters (tanks and dehy)         | 0.18  | 0.80   | 0.15  | 0.67   | 0.02  | 0.08   | 0.01  | 0.06            | 0.00  | 0.00   |
| Pigging Operations                     | -     | -      | -     | -      | 0.03  | 0.15   | -     | -               | 0.00  | 0.01   |
| Condensate Truck Loading - RBL-1       | -     | -      | -     | -      | 0.54  | 2.38   | -     | -               |       | -      |
| Fugitive Emissions - RBF-1             | -     | -      | -     | -      | 1.30  | 5.68   | -     | -               | 0.02  | 0.10   |
| Thermal Oxidizer Emissions - RBTO-1    | 0.21  | 0.92   | 1.10  | 4.82   | -     | -      | 0.00  | 0.00            | -     | -      |
| Storage Tank Emissions - RBT-1 & RBT-2 | -     | -1     | -     | -      | 2.51  | 11.01  |       | -               | 0.01  | 0.04   |
| TOTAL EMISSIONS                        | 0.42  | 1.85   | 1.43  | 6.28   | 4.72  | 20.68  | 0.01  | 0.06            | 0.22  | 0.97   |

\*When considering whether or not a source is a major source, fugitive emissions are not included per 40 CFR Section 52.21(b)(1)(iii).

"Engine HAP emissions include Formaldehyde

"Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                        | Ben   | zene   | Tol   | uene   | Ethylb | enzene | Xy    | ene    | N-He  | exane  |
|----------------------------------------|-------|--------|-------|--------|--------|--------|-------|--------|-------|--------|
| Source                                 | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr  | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| Capstone Micro-Turbine                 | -     | -      | -     | -      | -      | -      | -     | -      | -     | -      |
| 45 MMscfd dehydrator #1                | 0.06  | 0.28   | 0.08  | 0.35   | 0.00   | 0.01   | 0.04  | 0.15   | 0.01  | 0.02   |
| Total heaters (tanks and dehy)         | -     | -      |       | -      | -      | -      | -     | -      | -     | -      |
| Pigging Operations                     | 0.00  | 0.00   | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   | 0.00  | 0.01   |
| Condensate Truck Loading - RBL-1       | -     | -      | -     | -      | ~      | -      | -     | -      | -     | -      |
| Fugitive Emissions - RBF-1             | 0.00  | 0.01   | 0.00  | 0.01   | 0.00   | 0.00   | 0.00  | 0.00   | 0.01  | 0.04   |
| Thermal Oxidizer Emissions - RBTO-1    | -     | -      | -     | -      | -      | -      | -     | -      | -     | -      |
| Storage Tank Emissions - RBT-1 & RBT-2 | 0.00  | 0.01   | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   | 0.01  | 0.03   |
| TOTAL EMISSIONS                        | 0.07  | 0.30   | 0.08  | 0.36   | 0.00   | 0.01   | 0.04  | 0.16   | 0.02  | 0.10   |

Thermal oxidizer has a control efficiency of 99%

|                                        | 2,2,4 | TMP    | Formaldehyde |        |  |
|----------------------------------------|-------|--------|--------------|--------|--|
| Source                                 | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| Capstone Micro-Turbine                 | -     | -      | -            | -      |  |
| 45 MMscfd dehydrator #1 - RBD-1        | 0.00  | 0.00   | -            | -      |  |
| Total heaters (tanks and dehy)         | -     | -      | 0.00         | 0.00   |  |
| Pigging Operations                     | -     | -      | -            | -      |  |
| Condensate Truck Loading - RBL-1       | -     | -      | -            | -      |  |
| Fugitive Emissions - RBF-1             | -     | -      | -            | -      |  |
| Thermal Oxidizer Emissions - RBTO-1    | -     | -      | -            | -      |  |
| Storage Tank Emissions - RBT-1 & RBT-2 | -     | -      | 0.00         | 0.00   |  |
| Totals                                 | 0.00  | 0.00   | 0.00         | 0.00   |  |

# **GHG FACILITY EMISSIONS SUMMARY**

| Company:           | Summit Gas Gathering               |
|--------------------|------------------------------------|
| Facility Name:     | <b>River Bend Dehydration Site</b> |
| Facility Location: | Uintah County, Utah                |

### UNCONTROLLED GHG EMISSIONS

| SOURCE                               | CH₄    | CO <sub>2</sub> | N <sub>2</sub> O | CO <sub>2</sub> Equivalents |
|--------------------------------------|--------|-----------------|------------------|-----------------------------|
| DESCRIPTION                          | MT/yr* | MT/yr*          | MT/yr*           | MT/yr*                      |
| Condensate Truck Loading - RBL-1     | ND     | ND              | ND               | ND                          |
| Total heaters (tanks and dehy)       | 0.01   | 630.44          | 0.00             | 631.12                      |
| Capstone Micro-Turbine               | ND     | 66.24           | ND               | 66.24                       |
| 45 MMscfd dehydrator #1 - RBD-1      | 41.86  | 6.13            | ND               | 885.09                      |
| Pigging Operations                   | 0.30   | 0.01            | ND               | 6.24                        |
| Fugitive Emissions RBF-1             | 13.35  | 0.15            | ND               | 280.59                      |
| Storage Tank Emissions RBT-1 & RBT-2 | 0.58   | 0.03            | ND               | 12.14                       |
| TOTAL EMISSIONS                      | 56.10  | 703.00          | 0.00             | 1881.43                     |

| CH <sub>4</sub> | CO2     | N <sub>2</sub> O | CO <sub>2</sub> Equivalents |
|-----------------|---------|------------------|-----------------------------|
| Tons/yr         | Tons/yr | Tons/yr          | Tons/yr                     |
| ND              | ND      | ND               | ND                          |
| 0.01            | 693.48  | 0.00             | 694.24                      |
| ND              | 72.87   | ND               | 72.87                       |
| 46.04           | 6.75    | ND               | 973.60                      |
| 0.33            | 0.01    | ND               | 6.86                        |
| 14.69           | 0.16    | ND               | 308.65                      |
| 0.63            | 0.03    | ND               | ND                          |
| 61.71           | 773.30  | 0.00             | 2056.22                     |
|                 |         |                  |                             |

### CONTROLLED GHG EMISSIONS

| SOURCE                               | CH₄    | CO <sub>2</sub> | N <sub>2</sub> O | CO <sub>2</sub> Equivalents |
|--------------------------------------|--------|-----------------|------------------|-----------------------------|
| DESCRIPTION                          | MT/yr* | MT/yr*          | MT/yr*           | MT/yr*                      |
| Condensate Truck Loading - RBL-1     | ND     | ND              | ND               | ND                          |
| Total heaters (tanks and dehy)       | 0.01   | 630.44          | 0.00             | 631.12                      |
| Capstone Micro-Turbine               | ND     | 66.24           | ND               | 66.24                       |
| 45 MMscfd dehydrator #1 - RBD-1      | 0.03   | 3.20            | ND               | 3.90                        |
| Pigging Operations                   | 0.30   | 0.01            | ND               | 6.24                        |
| Fugitive Emissions RBF-1             | 13.35  | 0.15            | ND               | 280.59                      |
| Storage Tank Emissions RBT-1 & RBT-2 | 0.01   | 0.03            | ND               | 12.14                       |
| Thermal Oxidizer Emissions - RBTO-1  | 0.03   | 1415.20         | ND               | 1415.76                     |
| TOTAL EMISSIONS                      | 13.73  | 2115.27         | 0.00             | 2416.00                     |

| CH4     | CO2     | N <sub>2</sub> O | CO <sub>2</sub> Equivalents |
|---------|---------|------------------|-----------------------------|
| Tons/yr | Tons/yr | Tons/yr          | Tons/yr                     |
| ND      | ND      | ND               | ND                          |
| 0.01    | 693.48  | 0.00             | 694.24                      |
| ND      | 72.87   | ND               | 72.87                       |
| 0.04    | 3.52    | ND               | 4.29                        |
| 0.33    | 0.01    | ND               | 6.86                        |
| 14.69   | 0.16    | ND               | 308.65                      |
| 0.01    | 0.03    | ND               | 13.36                       |
| 0.03    | 1556.72 | ND               | 1557.34                     |
| 15.10   | 2326.79 | 0.00             | 2657.60                     |

ND = No data available.

MT = Metric tonne

0

Storage Tank Emissions do not include working and breathing since TANKS 4.09D only calculates VOC emissions.

### POTENTIAL GHG EMISSIONS BASED ON 8760 HOURS FOR HEATERS, GENERATORS, ENGINES AND FLARES/THERMAL OXIDIZERS

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

GHG Mandatory Reporting Regulations, Combustion Sources (Subpart C, 40 CFR Part 98)

| Summa                       | ry     |         |
|-----------------------------|--------|---------|
| Engines CO <sub>2</sub> e = | 0.0    | tons/yr |
| Heaters/Boilers CO2e =      | 2114.0 | tons/yr |
| Total CO <sub>2</sub> e =   | 2114.0 | tons/yr |
| Reporting required ?        | No     |         |

CO2e = CO2 equivalents

Note: Reporting Threshold = 25,000 tons/yr CO2e

|        |        |        |      |            |       | _           |      |             |                  |      | Spe   | ecies            |       |
|--------|--------|--------|------|------------|-------|-------------|------|-------------|------------------|------|-------|------------------|-------|
|        |        |        |      |            |       | , I         |      | Species     |                  | CO2  | CH4   | N <sub>2</sub> O | CO2e  |
| En     | igines |        | R    | ating      |       | BFSC        | CO2  | CH4         | N <sub>2</sub> O | COze | COze  | CO2e             | Total |
| Source | Model  | Fuel   | (hp) | (MMbtu/hr) | Hours | Btu/(hp-hr) |      | metric tons |                  |      | metri | c tons           |       |
|        |        |        |      |            |       | 8240        | 0.00 | 0.00        | 0.00             | 0.00 | 0.00  | 0.00             | 0.00  |
|        |        |        |      |            |       |             | 0.00 | 0.00        | 0.00             | 0.00 | 0.00  | 0.00             | 0.00  |
|        |        | Totals | 0    | 0.00       |       | Totals      | 0.00 | 0.00        | 0.00             | 0.00 | 0.00  | 0.00             |       |

Engines GHG Emissions Total= 0.0 CO2e Total= 0.0 metric tons

CO<sub>2</sub>e

0.18

0.56

0.05 0.05

0.00

0.00

metric tons

| Species |     |                  |                   |  |  |  |  |
|---------|-----|------------------|-------------------|--|--|--|--|
| 02      | CH4 | N <sub>2</sub> O | CO <sub>2</sub> e |  |  |  |  |

metric tons

CO<sub>2</sub>e

0.27

0.83

0.07

0.07

0.00

0.00

1.23

Total

464.91

1416.59

116.23

116.23

0.00

0.00

| CO <sub>2</sub> |                  | Species     |         | Γ      |       |            |       |             |       |                  |
|-----------------|------------------|-------------|---------|--------|-------|------------|-------|-------------|-------|------------------|
| CO2e            | N <sub>2</sub> O | CH4         | CO2     | -      |       | ing        | Rat   |             | aters | Boilers/He       |
|                 |                  | metric tons |         |        | Hours | (MMbtu/hr) | (hp)  | Fuel        | Model | Source           |
| 464.46          | 0.00             | 0.01        | 464.46  |        | 8760  | 1.000      | -     | Natural Gas | -     | Heater (Dehy 1)  |
| 1415.20         | 0.00             | 0.03        | 1415.20 |        | 8760  | 3.047      | -     | Natural Gas | -     | Thermal Oxidizer |
| 116.11          | 0.00             | 0.00        | 116.11  |        | 8760  | 0.250      | -     | Natural Gas | -     | Tank Heater #1   |
| 116.11          | 0.00             | 0.00        | 116.11  |        | 8760  | 0.250      | -     | Natural Gas | -     | Tank Heater #2   |
| 0.00            | 0.00             | 0.00        | 0.00    |        |       |            | -     | Natural Gas | -     |                  |
| 0.00            | 0.00             | 0.00        | 0.00    |        |       |            |       |             |       |                  |
| 2111.88         | 0.00             | 0.04        | 2111.88 | Totals |       | 4.547      | Total |             |       |                  |

0.84 CO2e Totai= 2114.0 metric tons

Engines GHG Emissions Total= 2111.93 metric tons

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63 12

| Natural Ga                           | 5      |                           |                                           |                                    |
|--------------------------------------|--------|---------------------------|-------------------------------------------|------------------------------------|
| Emission Factor (CO <sub>2</sub> ) = | 53.02  | kg CO <sub>2</sub> /MMBtu | From 40 CFR Part 98, Subpart C, Table C-1 |                                    |
| Emission Factor (CH <sub>4</sub> ) = | 0.001  | kg CO <sub>2</sub> /MMBtu | From 40 CFR Part 98, Subpart C, Table C-2 |                                    |
| Emission Factor (N <sub>2</sub> O) = | 0.0001 | kg CO <sub>2</sub> /MMBtu | From 40 CFR Part 98, Subpart C, Table C-2 | 1 metric ton = 1000 kg = 2,200 lbs |
| HHV (Natural Gas) =                  | 1106   | BTU/scf                   |                                           |                                    |

|                    | Global Warming Potentials | ]                                         |   |
|--------------------|---------------------------|-------------------------------------------|---|
| CO2 =              | 1                         | From 40 CFR Part 98, Subpart A, Table A-1 | - |
| CH4 =              | 21                        | From 40 CFR Part 98, Subpart A, Table A-1 |   |
| N <sub>2</sub> O = | 310                       | From 40 CFR Part 98, Subpart A, Table A-1 |   |

<sup>1</sup>CO<sub>2</sub>e Emissions (metric tons) = 0.001 (metric ton/kg) X Fuel (scf/yr) X HHV (MMBtu/scf) X Emission Factor (natural Gas) (kg CO<sub>2</sub>/MMBtu) X Global Warming Potentials Operational Factors from Newfield operational data

Engines Total (CO<sub>2</sub>e) = CO<sub>2</sub> emissions + CH<sub>4</sub> (CO<sub>2</sub>e) + N<sub>2</sub>O (CO2e) Heaters Total (CO<sub>2</sub>e) = CO<sub>2</sub> emissions + CH<sub>4</sub> (CO<sub>2</sub>e) + N<sub>2</sub>O (CO2e)

# **Generator Micro-Turbine Emissions**

| Company:           | Summit Gas Gathering               |
|--------------------|------------------------------------|
| Facility Name:     | <b>River Bend Dehydration Site</b> |
| Facility Location: | Uintah County, Utah                |

EMISSION POINTS: Capstone Model C65NG Standard MicroTurbine

| Engine Make/Model | Capstone Mo | del C65NG Standard MicroTurbine |
|-------------------|-------------|---------------------------------|
| Site kWe Rating   | 65          | kWe                             |
| Heating Value     | 1106        | Btu/Scf                         |
| Operating Hours   | 8760        | hrs/yr                          |

|                   |        |                 | Emissio | on Rate | Emission<br>Factor |
|-------------------|--------|-----------------|---------|---------|--------------------|
| Poilutant         |        | Emission Factor | (lb/hr) | (tpy)   | Reference          |
| NOx               | 0.46   | Ib/MWhe         | 0.03    | 0.13    | [1]                |
| со                | 6.00   | lb/MWhe         | 0.18    | 0.79    | [1]                |
| VOC/NMHC          | 0.10   | lb/MWhe         | 0.00    | 0.01    | [1]                |
| CO <sub>2</sub> * | 610.00 | lb/MWh          | 18.30   | 72.87   | [1]                |

## [1] Capstone Mfg. Emission Factors

\*CO2 emissions are expressed in Metric tonnes per year; pounds per hour X hours/year X (1 MT/2200 pounds)

| CALCULATION FORMULAS                                                           |  |
|--------------------------------------------------------------------------------|--|
| lb/hr = (lb/10 <sup>6</sup> Watts-hr)*(site Watt rating 10 <sup>3</sup> Watts) |  |
| tons/yr= (lb/hr)*(8760 hrs/yr)* (1 ton/2000lb)                                 |  |



# **Technical Reference**

# **Capstone MicroTurbine<sup>TM</sup> Systems Emissions**

# Summary

Capstone MicroTurbine<sup>™</sup> systems are inherently clean and can meet some of the strictest emissions standards in the world. This technical reference is to provide customers with information that may be requested by local air permitting organizations or to compare air quality impacts of different technologies for a specific project. The preferred units of measure are "output based"; meaning that the quantity of a particular exhaust emission is reported relative to the useable output of the microturbine – typically in pounds per megawatt hour for electrical generating equipment. This technical reference also provides the volumetric measurement in parts per million, which is still used by many people. A conversion between several common units is also provided.

# **Maximum Exhaust Emissions at ISO Conditions**

Table 1 below summarizes the exhaust emissions at full power and ISO conditions for different Capstone microturbine models. Note that the fuel can have a significant impact on certain emissions. For example landfill and digester gas can be made up of a wide variety of fuel elements and impurities, and typically contains some percentage of carbon dioxide (CO<sub>2</sub>). This CO<sub>2</sub> dilutes the fuel, makes complete combustion more difficult, and results in higher carbon monoxide emissions (CO) than for pipeline-quality natural gas.

| Model           | Fuel                        | NOx | CO  | VOC (5) |
|-----------------|-----------------------------|-----|-----|---------|
| C30 NG          | Natural Gas <sup>(1)</sup>  | .64 | 1.7 | .22     |
| C30 MBTU        | Landfill Gas <sup>(2)</sup> | .64 | 22  | 12.4    |
| C30 MBTU        | Digester Gas <sup>(3)</sup> | .64 | 22  | 12.4    |
| C30 Liquid      | Diesel #2 <sup>(4)</sup>    | 2.6 | .41 | .23     |
| C65 NG Standard | Natural Gas <sup>(1)</sup>  | .46 | 6.0 | .10     |
| C65 NG Low NOx  | Natural Gas <sup>(1)</sup>  | .17 | 6.0 | .10     |
| C65 NG CARB     | Natural Gas <sup>(1)</sup>  | .17 | .24 | .05     |
| CR65 Landfill   | Landfill Gas <sup>(2)</sup> | .50 | 6.0 | .10     |
| CR65 Digester   | Digester Gas <sup>(3)</sup> | .50 | 6.0 | .10     |
| C200 NG         | Natural Gas <sup>(1)</sup>  | .43 | .26 | .10     |
| C200 NG CARB    | Natural Gas <sup>(1)</sup>  | .14 | .20 | .04     |
| CR200 Digester  | Digester Gas <sup>(3)</sup> | .50 | 6.0 | .10     |

| Table 1. Emission for Different Capstone Microturbine N | lodels in [ib/MWhe] |
|---------------------------------------------------------|---------------------|
|---------------------------------------------------------|---------------------|

Notes:

(1) Emissions for standard natural gas at 1,000 BTU/scf (HHV)

(2) Emissions for surrogate gas containing 42% natural gas, 39% CO2, and 19% Nitrogen

(3) Emissions for surrogate gas containing 63% natural gas and 37% CO2

(4) Emissions for Diesel #2 according to ASTM D975-07b

(5) Expressed as Hexane

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Table 2 provides the same output-based information shown in Table 1, but expressed in grams per horsepower hour (g/hp-hr).

| Model           | Fuel                        | NOx | CO  | VOC <sup>(5)</sup> |
|-----------------|-----------------------------|-----|-----|--------------------|
| C30 NG          | Natural Gas <sup>(1)</sup>  | .22 | .60 | .08                |
| C30 MBTU        | Landfill Gas <sup>(2)</sup> | .22 | 7.4 | 4.2                |
| C30 MBTU        | Digester Gas <sup>(3)</sup> | .22 | 7.4 | 4.2                |
| C30 Liquid      | Diesel #2 <sup>(4)</sup>    | .90 | .14 | .08                |
| C65 NG Standard | Natural Gas <sup>(1)</sup>  | .16 | 2.0 | .03                |
| C65 NG Low NOx  | Natural Gas <sup>(1)</sup>  | .06 | 2.0 | .03                |
| C65 NG CARB     | Natural Gas <sup>(1)</sup>  | .06 | .08 | .02                |
| CR65 Landfill   | Landfill Gas (2)            | .17 | 2.0 | .03                |
| CR65 Digester   | Digester Gas <sup>(3)</sup> | .17 | 2.0 | .03                |
| C200 NG         | Natural Gas <sup>(1)</sup>  | .15 | .09 | .03                |
| C200 NG CARB    | Natural Gas <sup>(1)</sup>  | .05 | .07 | .02                |
| CR200 Digester  | Digester Gas <sup>(3)</sup> | .17 | 2.0 | .34                |

Table 2. Emission for Different Capstone Microturbine Models in [g/hp-hr]

Notes: - same as for Table 1

Emissions may also be reported on a volumetric basis, with the most common unit of measurement being parts per million. This is typically a measurement that is corrected to specific oxygen content in the exhaust and without considering moisture content. The abbreviation for this unit of measurement is "ppmvd" (parts per million by volume, dry) and is corrected to 15% oxygen for electrical generating equipment such as microturbines. The relationship between an output based measurement like pounds per MVVh and a volumetric measurement like ppmvd depends on the characteristics of the generating equipment and the density of the criteria pollutant being measured. Table 3 expresses the emissions in ppmvd at 15% oxygen for the Capstone microturbine models shown in Table 1. Note that raw measurements expressed in ppmv will typically be lower than the corrected values shown in Table 3

The emissions stated in Tables 1, 2 and 3 are guaranteed by Capstone for new microturbines during the standard warranty period. They are also the expected emissions for a properly maintained microturbine according to manufacturer's published maintenance schedule for the useful life of the equipment.

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| Model        | Fuel                        | NOx | CO  | VOC (5) |
|--------------|-----------------------------|-----|-----|---------|
| C30          | Natural Gas <sup>(1)</sup>  | 9   | 40  | 9       |
| C30          | Landfill Gas <sup>(2)</sup> | 9   | 500 | 500     |
| C30          | Digester Gas <sup>(3)</sup> | 9   | 500 | 500     |
| C30          | Diesel #2 <sup>(4)</sup>    | 35  | 9   | 9       |
| C65 Standard | Natural Gas <sup>(1)</sup>  | 9   | 190 | 6       |
| C65 Low NOx  | Natural Gas <sup>(1)</sup>  | 4   | 180 | 6       |
| C65 CARB     | Natural Gas <sup>(1)</sup>  | 4   | 8   | 3       |
| CR65         | Landfill Gas (2)            | 10  | 190 | 6       |
| CR65         | Digester Gas <sup>(3)</sup> | 10  | 190 | 6       |
| C200         | Natural Gas <sup>(1)</sup>  | 9   | 180 | 9       |
| C200 CARB    | Natural Gas <sup>(1)</sup>  | 4   | 8   | 3       |
| CR200        | Digester Gas (3)            | 10  | 190 | 6       |

| Table 3. | <b>Emission</b> | for Different | Capstone | Microturbine | Models in | [bymqq] r |
|----------|-----------------|---------------|----------|--------------|-----------|-----------|
|----------|-----------------|---------------|----------|--------------|-----------|-----------|

Notes: same as Table 1

# **Emissions at Full Power but Not at ISO Conditions**

The maximum emissions in Tables 1, 2 and 3 are at full power under ISO conditions. These levels are also the expected values at full power operation over the published allowable ambient temperature and elevation ranges.

## **Emissions at Part Power**

Capstone microturbines are designed to maintain combustion stability and low emissions over a wide operating range. Capstone microturbines utilize multiple fuel injectors, which are switched on or off depending on the power output of the turbine. All injectors are on when maximum power is demanded, regardless of the ambient temperature or elevation. As the load requirements of the microturbine are decreased, injectors will be switched off to maintain stability and low emissions. However, the emissions relative to the lower power output may increase. This effect differs for each microturbine model.

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# **Emissions Calculations for Permitting**

Air Permitting agencies are normally concerned with the maximum amount of a given pollutant being emitted per unit of time (for example pounds per day of NOx). The simplest way to make this calculation is to use the maximum microturbine full electrical power output (expressed in MW) multiplied by the emissions rate in pounds per MWhe times the number of hours per day. For example, the C65 CARB microturbine operating on natural gas would have a NOx emissions rate of:

NOx = .17 X (65/1000) X 24 = .27 pounds per day

This would be representative of operating the equipment full time, 24 hours per day, at full power output, 65 kWe.

As a general rule, if local permitting is required, use the published agency levels as the stated emissions for the permit and make sure that this permitted level is above the calculated values in this application guide.

# **Consideration of Useful Thermal Output**

Capstone microturbines are often deployed where their clean exhaust can be used to provide heating or cooling, either directly or using hot water or other heat transfer fluids. In this case, the local permitting or standards agencies will usually consider the emissions from traditional heating sources as being displaced by the useful thermal output of the microturbine exhaust energy. This accounts for the increased useful output of the microturbine, and decreases the relative emissions of the combined heat and power system. For example, the CARB version C65 ICHP system with integral heat recovery can achieve a total system efficiency of 70% or more, depending on inlet water temperatures and other installation specific characteristics. The efficiency of the CARB version C65 microturbine is 28% at ISO conditions. This means that the total NOx output based emissions, including the captured thermal value, is the electric-only emissions times the ratio of electric efficiency divided by total system efficiency:

NOx = .17 X 28/70 = .068 pounds per MWh (based on total system output)

This is typically much less than the emissions that would result from providing electric power using traditional central power plants, plus the emissions from a local hot water heater or boiler. In fact microturbine emissions are so low compared with traditional hot water heaters that installing a Capstone microturbine with heat recovery can actually decrease the local emissions of NOx and other criteria pollutants, without even considering the elimination of emissions from a remote power plant.

# **Greenhouse Gas Emissions**

Many gasses are considered "greenhouse gasses", and agencies have ranked them based on their global warming potential (GWP) in the atmosphere compared with carbon dioxide (CO<sub>2</sub>), as well as their ability to maintain this effect over time. For example, methane is a greenhouse gas with a GWP of 21. Criteria pollutants like NOx and organic compounds like methane are monitored by local air permitting authorities, and are subject to strong emissions controls. So even though some of these criteria pollutants can be even more troublesome for global warming than CO<sub>2</sub>, they are released in small quantities – especially from Capstone

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microturbines. So the major contributor of concern is carbon dioxide, or CO<sub>2</sub>. Emissions of CO<sub>2</sub> depend on two things:

- 1. Carbon content in the fuel
- 2. Efficiency of converting fuel to useful energy

It is for these reasons that many local authorities are focused on using clean fuels (for example natural gas compared with diesel fuel), achieving high efficiency using combined heat and power systems, and displacing emissions from traditional power plants using renewable fuels like waste landfill and digester gasses.

Table 5 shows the typical CO<sub>2</sub> emissions from different Capstone microturbine models at full power and ISO conditions and for different fuels. Theses values are expressed on an output basis, as is done for criteria pollutants in Table 1. The table shows the pounds per megawatt hour based on electric power output only, as well as considering total useful output in a CHP system with total 70% efficiency (LHV). As for criteria pollutants, the relative quantity of CO<sub>2</sub> released is substantially less when useful thermal output is also considered in the measurement. As a comparison, coal fired central power plants account for 50% of the electric generation in the US, with an average CO<sub>2</sub> emissions rate of 2,138 pounds per megawatt hour according to Environmental Protection Agency data. Note that any of the Capstone models noted below emit less CO<sub>2</sub>, with or without consideration for the useful thermal energy captured with a combined heat and power application.

| Model        | Fuel                        | C             | 02            |
|--------------|-----------------------------|---------------|---------------|
|              |                             | Electric Only | 70% Total CHP |
| C30          | Natural Gas <sup>(1)</sup>  | 1,645         | 610           |
| C30          | Landfill Gas (2)            | 1,645         | 610           |
| C30          | Digester Gas <sup>(3)</sup> | 1,645         | 610           |
| C30          | Diesel #2 <sup>(4)</sup>    | 2,100         | 750           |
| C65 Standard | Natural Gas <sup>(1)</sup>  | 1,475         | 610           |
| C65 Low NOx  | Natural Gas <sup>(1)</sup>  | 1,525         | 610           |
| C65 CARB     | Natural Gas <sup>(1)</sup>  | 1,525         | 610           |
| C65          | Landfill Gas (2)            | 1,475         | 610           |
| C65          | Digester Gas <sup>(3)</sup> | 1,475         | 610           |
| C200         | Natural Gas <sup>(1)</sup>  | 1,295         | 610           |
| C200 CARB    | Natural Gas <sup>(1)</sup>  | 1,295         | 610           |
| CR200        | Digester Gas <sup>(3)</sup> | 1,295         | 610           |

Table 5. CO<sub>2</sub> Emission for Capstone Microturbine Models in [lb/MWh]

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# **Useful Conversions**

The conversions shown in Table 5 can be used to obtain other units of emissions outputs. These are approximate conversions.

| From          | Multiply By | To Get        |
|---------------|-------------|---------------|
| lb/MWh        | 0.338       | g/bhp-hr      |
| g/bhp-hr      | 2.96        | lb/MWh        |
| lb            | 0.454       | kg            |
| kg            | 2.20        | lb            |
| kg            | 1,000       | g             |
| hp (electric) | 746         | W             |
| W             | 0.00134     | hp (electric) |
| MW            | 1,000,000   | W             |
| W             | 0.000001    | MW            |

# Definitions

- ISO conditions are defined as: 15 °C (59 °F), 60% relative humidity, and sea level pressure of 101.3 kPa (14.696 psia).
- HHV: Higher Heating Value
- LHV: Lower Heating Value
- kWth: Kilowatt (thermal)
- kW<sub>e</sub> : Kilowatt (electric)
- MWh: Megawatt-hour
- bhp-hr: brake horsepower-hour
- Scf: Standard cubic feet (standard references ISO temperature and pressure)
- SCFM: Standard Cubic Feet per Minute (standard references ISO temperature and pressure)

# **Capstone Contact Information**

If questions arise regarding this Application Guide, please contact Capstone Turbine Corporation for assistance and information:

# **Capstone Applications**

Toll Free Telephone: (866) 4-CAPSTONE or (866) 422-7786 Fax: (818) 734-5385 E-mail: applications@capstoneturbine.com

# **Capstone Service**

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Service Telephone: (818) 407-3700 • Fax: (818) 734-1080 E-mail: <u>servicejapan@capstoneturbine.com</u>

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# Capstone Introduces the C65 Energy Systems

C65 & C65-IC More power & C65-ICHP: Better fuel efficiency too Even lower NOx emissions Same compact dimensions

In 2006, Capstone Turbine introduces a significant improvement to the world's most popular line of microturbine energy systems. Replacing the C60 product, the new C65 offers greater electrical output, more heat energy, higher fuel efficiency, heavier-duty power electronics, and < 10-sec. fast transfer on dual-mode units, all with the same dimensions, weights and other advantages of the original:

- · Just one moving part, no gearbox, no radiator, etc.
- \* No oil, lubricants, coolants or other hazmats
- Quiet, small footprint, light weight, vibration-free
- 10% federal tax credit; other incentive programs
- · Cleaner and more fuel efficient power and heat
- · 80% CHP efficiency: measured at end-user loads
- As easy as it gets interconnect and air permitting
- Integrated synchronizing & load-sharing
- · Built-in capability to array up to 20 units as one
- · Indoor, outdoor or rooftop installation
- · Easy integration into energy management systems
- · Optional remote monitoring, dispatch, diagnostics
- · Made in USA

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# C65 & C65-ICHP MicroTurbine Performance Datasheet

| Electrical Performance             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | a de la companya de l |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| ×                                  | Grid Connect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Stand Alone                                                                                                     |
| et Power Output                    | 65 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 65 kW                                                                                                           |
| Net Electrical Efficiency          | 29% LHV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 29% LHV                                                                                                         |
| Net kVA Output                     | 65 kVA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 83 kVA max at 480V                                                                                              |
| /oltage                            | 380 to 480 VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 380 to 480 VAC                                                                                                  |
| /oltage Output Connection          | 3 phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3 phase                                                                                                         |
| requency                           | 50 or 60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10-60 Hz (programmable)                                                                                         |
| Current                            | 100A max. steady state                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 125A max. steady state*                                                                                         |
| Electrical Output Type             | Inverter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Inverter                                                                                                        |
| HD standard                        | IEEE 519 for Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | IEEE 519 for Voltage                                                                                            |
| Fuel Input Reguirements            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |
| Natural Gas                        | 875 to 1,275 BTU/scf [HI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | HV1                                                                                                             |
| Fuel Inlet Pressure                | 75 psig                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ×                                                                                                               |
| Fuel Flow at Full Power            | 765,000 BTU/hr [LHV]; 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 42,000 BTU/hr [HHV]                                                                                             |
| Net Heat Rate                      | 11,800 BTU/kWh [LHV]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                 |
| Generator Heat Rate                | 11,000 BTU/kWh [LHV]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | N                                                                                                               |
| Exhaust Output                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |
| NOx Emissions                      | <5ppmV @ 15% O2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |
| Exhaust Temperature                | 588°F (309°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Since to the                                                                                                    |
| Exhaust Mass Flow Rate             | 1.08 lbm/s (0.49 kg/s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | · · · · · · · · · · · · · · · · · · ·                                                                           |
| Exhaust Energy Output              | 561,000 BTU/hr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ×                                                                                                               |
| C65-ICHP Thermal Output***         | 20.900 Billion |                                                                                                                 |
| Copper Core Integrated Heat        | Hot Water Output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 380,000 BTU/hr (112kW                                                                                           |
| Recovery Module                    | Total System Efficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 80%                                                                                                             |
| Stainless Steel Core Integrated    | Hot Water Output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 265,000 BTU/hr (78kW)                                                                                           |
| Heat Recovery Module               | Total System Efficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 64%                                                                                                             |
| Dimensions & Weights               | Total Oystern Emolency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                 |
| Simensions & Weights               | C65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C65-ICHP                                                                                                        |
| Width x Depth x Height             | 30 x 77 x 83 inches                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 30 x 77 x 94 inches                                                                                             |
| Weight: Grid Connect Model         | 1,671 lbs (758 kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2,200 lbs (1,000 kg)                                                                                            |
| Dual Mode Model                    | 2,471 lbs (1,121 kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3,000 lbs (1,364 kg)                                                                                            |
| Certifications                     | 2,771105 (1,121 Ny)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1 0,000 lbs (1,004 kg)                                                                                          |
| Built in accordance with UL 2200 a | and LU 1744 /linking a second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                 |
| Sum of accordance with UK 7700 3   | and UL1/41 (IISting Dendi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | id), and meets statewide                                                                                        |

Models are available with optional CE Marking. Certification to California Air Resources Board Emissions requirements is in process.

\* With linear load.

\*\* Optional external fuel gas boosters are available for inlet gas pressures from 0.2 to 15.0 psig.

\*\*\* Values are for 40 gpm (2.5 l/s) water flow rate: copper core version with 140°F (60°C) inlet water; stainless steel version (primarily for chlorinated water) with 85°F (30°C) inlet water.

Specifications are not warrantied and are subject to change without notice. Warrantied specifications are documented separately.

330200-001 Rev A December, 2005

# **PIG RECEIVER EMISSIONS**

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

| GAS              | MOLECULAR    |          | COMPONENT | COMPONENT | COMPONENT |
|------------------|--------------|----------|-----------|-----------|-----------|
| COMPONENT        | WEIGHT       | Weight   | FLOW RATE | FLOW RATE | FLOW RATE |
| (Wet Gas)        | (lb/lb-mole) | Fraction | (Mscf)    | (lb/yr)   | (tons/yr) |
| Methane          | 16.043       | 0.775    | 14.037    | 593.398   | 0.297     |
| Ethane           | 30.07        | 0.103    | 1.872     | 148.356   | 0.074     |
| Propane          | 44.097       | 0.050    | 0.903     | 104.958   | 0.052     |
| i-Butane         | 58.123       | 0.013    | 0.243     | 37.232    | 0.019     |
| n-Butane         | 58.123       | 0.015    | 0.277     | 42.354    | 0.021     |
| i-Pentane        | 72.15        | 0.008    | 0.136     | 25.922    | 0.013     |
| n-Pentane        | 72.15        | 0.005    | 0.098     | 18.702    | 0.009     |
| Hexanes          | 86.177       | 0.007    | 0.128     | 29.136    | 0.015     |
| Heptanes         | 100.204      | 0.003    | 0.050     | 13.097    | 0.007     |
| Octanes          | 114.231      | 0.001    | 0.017     | 4.988     | 0.002     |
| Nonanes          | 128.258      | 0.000    | 0.007     | 2.379     | 0.001     |
| Decanes +        | 142.285      | 0.000    | 0.002     | 0.575     | 0.000     |
| Benzene          | 78.12        | 0.001    | 0.012     | 2.412     | 0.001     |
| Toluene          | 92.13        | 0.001    | 0.010     | 2.543     | 0.001     |
| Ethylbenzene     | 106.16       | 0.000    | 0.000     | 0.087     | 0.000     |
| Xylenes          | 106.16       | 0.000    | 0.003     | 0.728     | 0.000     |
| n-Hexane         | 86.177       | 0.003    | 0.047     | 10.607    | 0.005     |
| Helium           | 4.003        | 0.000    | 0.000     | 0.000     | 0.000     |
| Nitrogen         | 28.013       | 0.006    | 0.105     | 7.767     | 0.004     |
| Carbon Dioxide   | 44.01        | 0.009    | 0.154     | 17.844    | 0.009     |
| Oxygen           | 32           | 0.000    | 0.000     | 0.000     | 0.000     |
| Hydrogen Sulfide | 34.08        | 0.000    | 0.000     | 0.000     | 0.000     |
| VOC SUBTOTAL     |              | 0.107    | 1.932     | 295.720   | 0.148     |
| HAP SUBTOTAL     |              | 0.004    | 0.072     | 16.377    | 0.008     |
| TOTAL            |              | 1.000    | 18.100    | 1063.085  | 0.532     |

| PIG SPECIFICATIONS                                   | Receiver #1 | Receiver #2 | Receiver #3 |                        |
|------------------------------------------------------|-------------|-------------|-------------|------------------------|
| FIG OFECHICATIONS                                    |             |             |             | units                  |
| Pig Section Circumference :                          | 3.142       | 2.618       | 0.785       | feet                   |
| Pig Section Diameter :                               | 1.000       | 0.833       | 0.250       | feet                   |
| Pig Section Length :                                 | 6.0         | 1.302       | 2.458       | feet                   |
| Pig Section Receiver Volume :                        | 4.712       | 0.710       | 0.121       | actual ft <sup>3</sup> |
| Average Pipeline Pressure :                          | 800         | 800         | 800         | lb/ft <sup>2</sup>     |
| Pig Volume corrected for Std Conditions(14.7 psia) : | 256.457     | 38.649      | 6.567       | scf/event              |
| Number of activities :                               |             | 60          |             | per year               |
| Number of receivers :                                | 1           | 1           | 1           |                        |
| Total events :                                       | 60          | 60          | 60          | per year               |
| Total Annual Release Volume (per section) :          | 15387.393   | 2318.943    | 394.035     | scf/yr                 |
| Total Volume :                                       | 18.100      | Mscf/year   |             |                        |

Pipeline Pressure provided by client

Wet Gas composition used for calculations

Emissions (tpy) = Volume released (Mscf/yr) x Weight Fraction x 1000 (scf/Mscf) x 1/379.45 (lb-mol/scf) x MW (lb/mol) / 2000 (lb/ton)

4

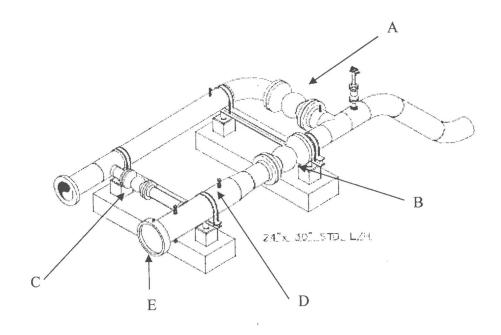
# SGG ROOSEVELT – PIPELINE PIGGING PROCEDURES

## **PIG LAUNCHING**

- 1. Close valves on launch tubes (B&C) and depressurize tube with a blowdown valve (D).
  - a. Gas within the pig launcher is emitted to the environment.
- 2. Open the pig barrel lid (E) and insert pig into launcher. Close lid (E).
  - a. Pig barrel is at atmospheric pressure.
- 3. Open equalizer valve (C) to pressure pig on the back side.
  - a. Gas is contained in the gathering system.
- 4. Close bypass valve (A) and open main valve (B) to allow pig to travel down the pipeline.
  - a. Gas is contained within the gathering system.
- 5. Once pigging is complete close equalizer valve (C) and main valve (B). Open bypass valve (A) to continue flowing gas within the gathering system.
  - a. Gas is contained within the gathering system.

## **PIG RECEIVING**

- 1. Open pig receiver main valve (B) to allow pig to enter pig receiver tube.
- 2. Open equalizer valve (C) to allow gas and fluid through the pig receiver.
- 3. Close main throughput valve (A) to divert pig into receiver.
  - a. Gas and fluid collected during the pigging operation flows through the receiver and is carried to the existing station scrubber.
  - b. Gas flows through the scrubber and remains within the gathering system.
  - c. Fluids collected during the pigging operation flow from the scrubber to the existing onsite storage tank.
- 4. Once the pig has been recovered, open the main throughput valve (A), close equalizer valve (C), and close main valve (B).
  - a. Gas is contained within the gathering system.
- 5. Blow down the pig receiver using the blowdown valve (D).
- a. Gas within the pig receiver is emitted to the environment.
- 6. Open the pig barrel lid (E) and extract pig.
  - a. Pig barrel is at atmospheric pressure.
  - b. Excess fluids left in the pig receiver barrel are recovered in a portable catch basin.



## NATURAL GAS FUELED HEATER EMISSIONS

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

|                                    | HEATER            | HEATER     | FUEL                    | HOURS OF                | FUEL                | N                                 | Ox                     | (                                 | 0                      |
|------------------------------------|-------------------|------------|-------------------------|-------------------------|---------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION              | SIZE<br>(MBtu/hr) | EFFICIENCY | HEAT VALUE<br>(Btu/scf) | OPERATION<br>(hrs/year) | USAGE<br>(MMscf/yr) | EF AP-42 <sup>1</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>1</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) |
| TEG Dehy Glycol Reboiler Heater #1 | 1000              | 0.8        | 1106                    | 8760                    | 9.899               | 100.0                             | 0.54                   | 84.0                              | 0.45                   |
| Tank Heater #1                     | 250               | 0.8        | 1106                    | 8760                    | 2.475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
| Tank Heater #2                     | 250               | 0.8        | 1106                    | 8760                    | 2.475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
|                                    |                   | 1          |                         | TOTALS                  | 14.849              |                                   | 0.800                  |                                   | 0.670                  |

|                                    | TOC                               |                        | VOC                    | PM                                | 110                    | Formaldehyde                      |                        |
|------------------------------------|-----------------------------------|------------------------|------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE                             | EF AP-42 <sup>2</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>2</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>3</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) |
| TEG Dehy Glycol Reboiler Heater #1 | 11.0                              | 0.06                   | 0.06                   | 7.6                               | 0.04                   | 7.50E-02                          | 0.0004                 |
| Tank Heater #1                     | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
| Tank Heater #2                     | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |
|                                    | TOTALS                            | 0.08                   | 0.08                   |                                   | 0.06                   |                                   | 0.00                   |

### Criteria emissions rounded to the nearest 1/100 of a ton, VOC/HAP rounded to 1/1000 of a ton.

EF AP-42<sup>1</sup> = emission factor from AP-42 Table 1.4-1, Small Boilers <100 MMbtu/hr (EPA 7/98), Standard = 1,020 Btu/scf

 $EF AP-42^2 = emission factor from AP-42 Table 1.4-2$  (EPA 7/98)

 $EF AP-42^3$  = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

Fuel Consumption (MMscf/yr) = Heater Size (MBtu/hr) \* 1,000 (Btu/MBtu) \* Hours of Operation (hrs/yr) Fuel Heat Value (Btu/scf) \* 1,000,000 (scf/MMscf) \* Heater Efficiency

NOx/CO/TOC Emissions (tons/yr) = AP-42 EF (lbs/MMscf) \* Fuel Consumption (MMscf/yr) \* (Fuel Heat Value/ Standard Fuel Heat Value) / 2,000 (lbs/ton) -Standard Fuel Heat Value, Natural Gas (AP-42, 7/98, p1.4-5) = 1,020 Btu/scf

VOC emissions assumed equal to TOC emissions

## POTENTIAL UNCONTROLLED EMISSIONS

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

> Unit: TEG Dehydrator - RBD-1 Rating: 45.0 MMscf/day total; 45015 Pump

| Unit              | Gas Flow    |           |           |           |              |           |           |           | Total     | Total     |          |          |
|-------------------|-------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|----------|----------|
| Description       | Rate        | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | HAPs      | BTEX      | CO2      | Methane  |
|                   | (MMscf/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (MT/yr)* | (MT/yr)* |
| Dehy w/45015 pump | 45.0        | 137.5587  | 27.6692   | 35.1531   | 1.3639       | 15.3322   | 2.3678    | 0.1657    | 82.0519   | 79.5184   | 3.2014   | 3.3481   |
| Flash Separator   |             | 22.0223   | 0.2460    | 0.1976    | 0.0044       | 0.0334    | 0.6294    | 0.0427    | 1.1534    | 0.4814    | 2.9306   | 38.5073  |
| TOTAL             |             | 159.581   | 27.915    | 35.351    | 1.368        | 15.366    | 2.997     | 0.208     | 83.205    | 80.000    | 6.132    | 41.855   |

## POTENTIAL CONTROLLED EMISSIONS

| Unit              | Gas Flow    |           |           |           |              |           |           |           | Total     | Total     |          |          |
|-------------------|-------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|----------|----------|
| Description       | Rate        | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | HAPs      | BTEX      | CO2      | Methane  |
|                   | (MMscf/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (MT/yr)* | (MT/yr)* |
| Dehy w/45015 pump | 45.0        | 1.3756    | 0.2767    | 0.3515    | 0.0136       | 0.1533    | 0.0237    | 0.0017    | 0.8205    | 0.7952    | 3.2014   | 0.0335   |
| Flash Separator** |             | 0.0000    | 0.0000    | 0.0000    | 0.0000       | 0.0000    | 0.0000    | 0.0000    | 0.0000    | 0.0000    | 0.0000   | 0.0000   |
| TOTAL             |             | 1.376     | 0.277     | 0.352     | 0.014        | 0.153     | 0.024     | 0.002     | 0.821     | 0.795     | 3.201    | 0.033    |

Dehydrator still vent controlled 99% through the use of a thermal oxidizer (see attached information)

\*CO<sub>2</sub> and Methane emissions are expressed in metric tons per GHG requirements.

\*\* Flash gas separator is routed to two places: any liquids go to the bullet tank onsite; gas is routed to a suction line and sent off-site to the Tap 1 Compressor Station.

Page: 1 GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES Case Name: Summit Gas Gathering - River Bend Dehy Site File Name: Y:\Utah\River Bend Dehy Site\Buys RB Dehy TV Application\River Bend Dehydrator emissions rev 1 Jan 13 2011.ddf Date: January 14, 2011 DESCRIPTION: Description: 45 MMscfd with flash tank and thermal oxidizer 45015 glycol pump (electric) PTE uncontrolled and controlled Annual Hours of Operation: 8760.0 hours/yr WET GAS: \_\_\_\_\_ Temperature: 99.00 deg. Pressure: 800.00 psig 99.00 deg. F Wet Gas Water Content: Saturated Component Conc. (vol %) Carbon Dioxide 0.3567 Nitrogen 0.3832 Methane 89.2649 Ethane 6.3525 Propane 2.0898 
 Isobutane
 0.4267

 n-Butane
 0.4854

 Isopentane
 0.1928

 n-Pentane
 0.1391

 n-Hexane
 0.0553
 Cyclohexane 0.0280 Other Hexanes 0.0910 Heptanes 0.0505 Methylcyclohexane 0.0329 2,2,4-Trimethylpentane 0.0037 Benzene 0.0153 Toluene 0.0116 Toluene Ethylbenzene 0.0003 Xylenes 0.0025 C8+ Heavies 0.0178 DRY GAS: Flow Rate: 45.0 MMSCF/day Water Content: 7.0 lbs. H2O/MMSCF

LEAN GLYCOL:

Page: 2

Glycol Type: TEG Water Content: 1.5 wt% H2O Flow Rate: 7.5 gpm

PUMP:

Glycol Pump Type: Electric/Pneumatic

FLASH TANK:

Flash Control: Recycle/recompression Temperature: 120.0 deg. F Pressure: 60.0 psig

REGENERATOR OVERHEADS CONTROL DEVICE:

| Control Device:          | Combustion Device |
|--------------------------|-------------------|
| Destruction Efficiency:  | 99.0 %            |
| Excess Oxygen:           | 13.8 %            |
| Ambient Air Temperature: | 52.0 deg. F       |

## GRI-GLYCalc VERSION 4.0 - EMISSIONS SUMMARY

Case Name: Summit Gas Gathering - River Bend Dehy Site File Name: Y:\Utah\River Bend Dehy Site\Buys RB Dehy TV Application\River Bend Dehydrator emissions\_rev 1\_Jan 13\_2011.ddf Date: January 14, 2011

CONTROLLED REGENERATOR EMISSIONS

| Component                   | lbs/hr | lbs/day | tons/yr |
|-----------------------------|--------|---------|---------|
| Methane                     | 0.0084 | 0.202   | 0.0368  |
| Ethane                      | 0.0104 | 0.250   | 0.0456  |
| Propane                     | 0.0144 | 0.345   | 0.0629  |
| Isobutane                   | 0.0067 | 0.161   | 0.0293  |
| n-Butane                    | 0.0113 | 0.272   | 0.0497  |
| Isopentane                  | 0.0060 | 0.143   | 0.0261  |
| n-Pentane                   | 0.0060 | 0.143   | 0.0261  |
| n-Hexane                    | 0.0054 | 0.130   | 0.0237  |
| Cyclohexane                 | 0.0140 | 0.336   | 0.0614  |
| Other Hexanes               | 0.0064 | 0.153   | 0.0280  |
| Heptanes                    | 0.0117 | 0.281   | 0.0512  |
| Methylcyclohexane           | 0.0213 | 0.510   | 0.0931  |
| 2,2,4-Trimethylpentane      | 0.0004 | 0.009   | 0.0017  |
| Benzene                     | 0.0632 | 1.516   | 0.2767  |
| Toluene                     | 0.0803 | 1.926   | 0.3515  |
| Ethylbenzene                | 0.0031 | 0.075   | 0.0136  |
| Xylenes                     | 0.0350 | 0.840   | 0.1533  |
| C8+ Heavies                 | 0.0291 | 0.697   | 0.1273  |
| Total Emissions             | 0.3329 | 7.989   | 1.4581  |
| Total Hydrocarbon Emissions | 0.3329 | 7.989   | 1.4581  |
| Total VOC Emissions         | 0.3141 | 7.537   | 1.3756  |
| Total HAP Emissions         | 0.1873 | 4.496   | 0.8205  |
| Total BTEX Emissions        | 0.1815 | 4.357   | 0.7952  |

### UNCONTROLLED REGENERATOR EMISSIONS

| Component              | lbs/hr | lbs/day | tons/yr |
|------------------------|--------|---------|---------|
| Methane                | 0.8408 | 20.180  | 3.6829  |
| Ethane                 | 1.0419 | 25.007  | 4.5637  |
| Propane                | 1.4362 | 34.468  | 6.2904  |
| Isobutane              | 0.6700 | 16.079  | 2.9344  |
| n-Butane               | 1.1344 | 27.227  | 4.9688  |
| Isopentane             | 0.5952 | 14.285  | 2.6070  |
| n-Pentane              | 0.5956 | 14.295  | 2.6089  |
| n-Hexane               | 0.5406 | 12.974  | 2.3678  |
| Cyclohexane            | 1.4013 | 33.631  | 6.1377  |
| Other Hexanes          | 0.6388 | 15.331  | 2.7980  |
| Heptanes               | 1.1692 | 28.062  | 5.1213  |
| Methylcyclohexane      | 2.1262 | 51.028  | 9.3126  |
| 2,2,4-Trimethylpentane | 0.0378 | 0.908   | 0.1657  |
| Benzene                | 6.3172 | 151.612 | 27.6692 |

| Toluene                     | 8.0258  | 192.620 | Page: 2<br>35.1531 |
|-----------------------------|---------|---------|--------------------|
| Ethylbenzene                | 0.3114  | 7.474   | 1.3639             |
| Xylenes                     | 3.5005  | 84.012  | 15.3322            |
| C8+ Heavies                 | 2.9058  | 69.740  | 12.7275            |
| Total Emissions             | 33.2889 | 798.933 | 145.8053           |
| Total Hydrocarbon Emissions | 33.2889 | 798.933 | 145.8053           |
| Total VOC Emissions         | 31.4061 | 753.746 | 137.5587           |
| Total HAP Emissions         | 18.7333 | 449.600 | 82.0519            |
| Total BTEX Emissions        | 18.1549 | 435.717 | 79.5184            |

FLASH GAS EMISSIONS

Note: Flash Gas Emissions are zero with the Recycle/recompression control option.

FLASH TANK OFF GAS

| Component                   | lbs/hr  | lbs/day | tons/yr |
|-----------------------------|---------|---------|---------|
| Methane                     | 9.6708  | 232.098 | 42.3580 |
| Ethane                      | 3.3775  | 81.061  | 14.7930 |
| Propane                     | 2.0640  | 49.536  | 9.0403  |
| Isobutane                   | 0.6292  | 15.101  | 2.755   |
| n-Butane                    | 0.8043  | 19.304  | 3.5230  |
| Isopentane                  | 0.3627  | 8.705   | 1.588   |
| n-Pentane                   | 0.2901  | 6.962   | 1.270   |
| n-Hexane                    | 0.1437  | 3.448   | 0.629   |
| Cyclohexane                 | 0.0951  | 2.281   | 0.416   |
| Other Hexanes               | 0.2251  | 5.403   | 0.986   |
| Heptanes                    | 0.1500  | 3.601   | 0.657   |
| Methylcyclohexane           | 0.1109  | 2.662   | 0.485   |
| 2,2,4-Trimethylpentane      | 0.0098  | 0.234   | 0.042   |
| Benzene                     | 0.0562  | 1.348   | 0.246   |
| Toluene                     | 0.0451  | 1.083   | 0.197   |
| Ethylbenzene                | 0.0010  | 0.024   | 0.004   |
| Xylenes                     | 0.0076  | 0.183   | 0.033   |
| C8+ Heavies                 | 0.0331  | 0.794   | 0.144   |
| Total Emissions             | 18.0762 | 433.829 | 79.173  |
| Total Hydrocarbon Emissions | 18.0762 | 433.829 | 79.173  |
| Total VOC Emissions         | 5.0279  | 120.670 | 22.022  |
| Total HAP Emissions         | 0.2633  | 6.320   | 1.153   |
| Total BTEX Emissions        | 0.1099  | 2.638   | 0.481   |

2

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: Summit Gas Gathering - River Bend Dehy Site File Name: Y:\Utah\River Bend Dehy Site\Buys RB Dehy TV Application\River Bend Dehydrator emissions\_rev 1\_Jan 13\_2011.ddf Date: January 14, 2011

### DESCRIPTION:

Description: 45 MMscfd with flash tank and thermal oxidizer 45015 glycol pump (electric) PTE uncontrolled and controlled

Annual Hours of Operation: 8760.0 hours/yr

#### EMISSIONS REPORTS:

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### CONTROLLED REGENERATOR EMISSIONS

| Component                   | lbs/hr | lbs/day | tons/yr |
|-----------------------------|--------|---------|---------|
| Methane                     | 0.0084 | 0.202   | 0.0368  |
| Ethane                      | 0.0104 | 0.250   | 0.0456  |
| Propane                     | 0.0144 | 0.345   | 0.0629  |
| Isobutane                   | 0.0067 | 0.161   | 0.0293  |
| n-Butane                    | 0.0113 | 0.272   | 0.0497  |
| Isopentane                  | 0.0060 | 0.143   | 0.0261  |
| n-Pentane                   | 0.0060 | 0.143   | 0.0261  |
| n-Hexane                    | 0.0054 | 0.130   | 0.0237  |
| Cyclohexane                 | 0.0140 | 0.336   | 0.0614  |
| Other Hexanes               | 0.0064 | 0.153   | 0.0280  |
| Heptanes                    | 0.0117 | 0.281   | 0.0512  |
| Methylcyclohexane           | 0.0213 | 0.510   | 0.0931  |
| 2,2,4-Trimethylpentane      | 0.0004 | 0.009   | 0.0017  |
| Benzene                     | 0.0632 | 1.516   | 0.2767  |
| Toluene                     | 0.0803 | 1.926   | 0.3515  |
| Ethylbenzene                | 0.0031 | 0.075   | 0.0136  |
| Xylenes                     | 0.0350 | 0.840   | 0.1533  |
| C8+ Heavies                 | 0.0291 | 0.697   | 0.1273  |
| Total Emissions             | 0.3329 | 7.989   | 1.4581  |
| Total Hydrocarbon Emissions | 0.3329 | 7.989   | 1.4581  |
| Total VOC Emissions         | 0.3141 | 7.537   | 1.3756  |
| Total HAP Emissions         | 0.1873 | 4.496   | 0.8205  |
| Total BTEX Emissions        | 0.1815 | 4.357   | 0.7952  |

## UNCONTROLLED REGENERATOR EMISSIONS

| Component | lbs/hr | lbs/day | tons/yr |
|-----------|--------|---------|---------|
|           |        |         |         |
| Methane   | 0.8408 | 20.180  | 3.6829  |
| Ethane    | 1,0419 | 25.007  | 4.5637  |

| Propane<br>Isobutane<br>n-Butane | 1.4362<br>0.6700<br>1.1344 | 34.468<br>16.079<br>27.227 | Page: 2<br>6.2904<br>2.9344<br>4.9688 |
|----------------------------------|----------------------------|----------------------------|---------------------------------------|
| Isopentane                       | 0.5952                     | 14.285                     | 2.6070                                |
| n-Pentane                        | 0.5956                     | 14.295                     | 2.6089                                |
| n-Hexane                         | 0.5406                     | 12.974                     | 2.3678                                |
| Cyclohexane                      | 1.4013                     | 33.631                     | 6.1377                                |
| Other Hexanes                    | 0.6388                     | 15.331                     | 2.7980                                |
| Heptanes                         | 1.1692                     | 28.062                     | 5.1213                                |
| Methylcyclohexane                | 2.1262                     | 51.028                     | 9.3126                                |
| 2,2,4-Trimethylpentane           | 0.0378                     | 0.908                      | 0.1657                                |
| Benzene                          | 6.3172                     | 151.612                    | 27.6692                               |
| Toluene                          | 8.0258                     | 192.620                    | 35.1531                               |
| Ethylbenzene                     | 0.3114                     | 7.474                      | 1.3639                                |
| Xylenes                          | 3.5005                     | 84.012                     | 15.3322                               |
| C8+ Heavies                      | 2.9058                     | 69.740                     | 12.7275                               |
| Total Emissions                  | 33.2889                    | 798.933                    | 145.8053                              |
| Total Hydrocarbon Emissions      | 33.2889                    | 798.933                    | 145.8053                              |
| Total VOC Emissions              | 31.4061                    | 753.746                    | 137.5587                              |
| Total HAP Emissions              | 18.7333                    | 449.600                    | 82.0519                               |
| Total BTEX Emissions             | 18.1549                    | 435.717                    | 79.5184                               |

FLASH GAS EMISSIONS

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Note: Flash Gas Emissions are zero with the Recycle/recompression control option.

FLASH TANK OFF GAS

| Component              | lbs/hr  | lbs/day | tons/yr |
|------------------------|---------|---------|---------|
| Methane                | 9.6708  | 232.098 | 42.3580 |
| Ethane                 | 3.3775  | 81.061  | 14.7936 |
| Propane                | 2.0640  | 49.536  | 9.0403  |
| Isobutane              | 0.6292  | 15.101  | 2.7559  |
| n-Butane               | 0.8043  | 19.304  | 3.5230  |
| Isopentane             | 0.3627  | 8.705   | 1.5887  |
| n-Pentane              | 0.2901  | 6.962   | 1.2706  |
| n-Hexane               | 0.1437  | 3.448   | 0.6294  |
| Cyclohexane            | 0.0951  | 2.281   | 0.4163  |
| Other Hexanes          | 0.2251  | 5.403   | 0.9860  |
| Heptanes               | 0.1500  | 3.601   | 0.6571  |
| Methylcyclohexane      | 0.1109  | 2.662   | 0.4858  |
| 2,2,4-Trimethylpentane | 0.0098  | 0.234   | 0.0427  |
| Benzene                | 0.0562  | 1.348   | 0.2460  |
| Toluene                | 0.0451  | 1.083   | 0.1976  |
| Ethylbenzene           | 0.0010  | 0.024   | 0.0044  |
| Xylenes                | 0.0076  | 0.183   | 0.0334  |
| C8+ Heavies            | 0.0331  | 0.794   | 0.1449  |
| Total Emissions        | 18.0762 | 433.829 | 79.1739 |

Page: 3

| Total Hydrocarbon | Emissions | 18.0762 | 433.829 | 79.1739 |
|-------------------|-----------|---------|---------|---------|
| Total VOC         | Emissions | 5.0279  | 120.670 | 22.0223 |
| Total HAP         | Emissions | 0.2633  | 6.320   | 1.1534  |
| Total BTEX        | Emissions | 0.1099  | 2.638   | 0.4814  |

EQUIPMENT REPORTS:

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## COMBUSTION DEVICE

| Ambient | Temperature: | 52.00 deg. | F |
|---------|--------------|------------|---|

|              |          | -    |          |           |     |        |
|--------------|----------|------|----------|-----------|-----|--------|
|              | Exce     | ess  | Oxygen:  | 13.80     | 00  |        |
| Comb         | ustion H | Effi | iciency: | 99.00     | 010 |        |
| Supplemental | Fuel Re  | equi | irement: | 1.86e-001 | MM  | BTU/hr |

| Component              | Emitted | Destroyed |
|------------------------|---------|-----------|
| Methane                | 1.00%   | 99.00%    |
| Ethane                 | 1.00%   | 99.00%    |
| Propane                | 1.00%   | 99.00%    |
| Isobutane              | 1.00%   | 99.00%    |
| n-Butane               | 1.00%   | 99.00%    |
| Isopentane             | 1.00%   | 99.00%    |
| n-Pentane              | 1.00%   | 99.00%    |
| n-Hexane               | 1.00%   | 99.00%    |
| Cyclohexane            | 1.00%   | 99.00%    |
| Other Hexanes          | 1.00%   | 99.00%    |
| Heptanes               | 1.00%   | 99.00%    |
| Methylcyclohexane      | 1.00%   | 99.00%    |
| 2,2,4-Trimethylpentane | 1.00%   | 99.00%    |
| Benzene                | 1.00%   | 99.00%    |
| Toluene                | 1.00%   | 99.00%    |
| Ethylbenzene           | 1.00%   | 99.00%    |
| Xylenes                | 1.00%   | 99.00%    |
| C8+ Heavies            | 1.00%   | 99.00%    |

### ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

| Calculated Absorber Stages:<br>Calculated Dry Gas Dew Point:                                             | 1.25<br>4.21               | lbs. H2O/MMSCF |
|----------------------------------------------------------------------------------------------------------|----------------------------|----------------|
| Temperature:<br>Pressure:<br>Dry Gas Flow Rate:<br>Glycol Losses with Dry Gas:<br>Wet Gas Water Content: | 800.0<br>45.0000<br>0.4848 | MMSCF/day      |

Page: 4 Calculated Wet Gas Water Content: 66.86 lbs. H2O/MMSCF Calculated Lean Glycol Recirc. Ratio: 3.83 gal/lb H2O

| Component              | Remaining<br>in Dry Gas | Absorbed<br>in Glycol |
|------------------------|-------------------------|-----------------------|
| Water                  | 6.28%                   | 93.728                |
| Carbon Dioxide         | 99.80%                  | 0.208                 |
| Nitrogen               | 99.98%                  | 0.028                 |
| Methane                | 99.99%                  | 0.018                 |
| Ethane                 | 99.95%                  | 0.058                 |
| Propane                | 99.92%                  | 0.08%                 |
| Isobutane              | 99.89%                  | 0.11%                 |
| n-Butane               | 99.86%                  | 0.14%                 |
| Isopentane             | 99.86%                  | 0.14%                 |
| n-Pentane              | 99.82%                  | 0.18%                 |
| n-Hexane               | 99.718                  | 0.29%                 |
| Cyclohexane            | 98.728                  | 1.28%                 |
| Other Hexanes          | 99.788                  | 0.22%                 |
| Heptanes               | 99.478                  | 0.53%                 |
| Methylcyclohexane      | 98.608                  | 1.40%                 |
| 2,2,4-Trimethylpentane | 99.77%                  | 0.23%                 |
| Benzene                | 89.21%                  | 10.79%                |
| Toluene                | 84.72%                  | 15.28%                |
| Ethylbenzene           | 80.16%                  | 19.84%                |
| Xylenes                | 73.25%                  | 26.75%                |
| C8+ Heavies            | 98.04%                  | 1.96%                 |

FLASH TANK

| Flash Contr<br>Flash Temperatu<br>Flash Pressu                            | ire: 120                                       |                            |
|---------------------------------------------------------------------------|------------------------------------------------|----------------------------|
| Component                                                                 |                                                | Removed in<br>Flash Gas    |
| Carbon Dioxide<br>Nitrogen<br>Methane                                     | 99.98%<br>52.21%<br>7.72%<br>8.00%<br>23.58%   | 47.79%<br>92.28%<br>92.00% |
| n-Butane<br>Isopentane                                                    | 41.03%<br>51.57%<br>58.51%<br>62.32%<br>67.41% | 48.43%<br>41.49%<br>37.68% |
| n-Hexane<br>Cyclohexane<br>Other Hexanes<br>Heptanes<br>Methylcyclohexane | 79.118<br>93.858<br>74.208<br>88.688<br>95.248 | 25.80%                     |
| 2,2,4-Trimethylpentane<br>Benzene                                         | 79.81%<br>99.16%                               | 20.19%<br>0.84%            |

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|              |        | Page: | 5 |
|--------------|--------|-------|---|
| Toluene      | 99.49% | 0.51% |   |
| Ethylbenzene | 99.71% | 0.298 |   |
| Xylenes      | 99.81% | 0.19% |   |
| C8+ Heavies  | 99.01% | 0.99% |   |

### REGENERATOR

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No Stripping Gas used in regenerator.

| Component              | Remaining<br>in Glycol | Distilled<br>Overhead |
|------------------------|------------------------|-----------------------|
| Water                  | 34.98%                 | 65.02%                |
| Carbon Dioxide         | 0.00%                  | 100.00%               |
| Nitrogen               | 0.00%                  | 100.00%               |
| Methane                | 0.00%                  | 100.00%               |
| Ethane                 | 0.00%                  | 100.00%               |
| Propane                | 0.00%                  | 100.00%               |
| Isobutane              | 0.00%                  | 100.00%               |
| n-Butane               | 0.00%                  | 100.00%               |
| Isopentane             | 0.80%                  | 99.20%                |
| n-Pentane              | 0.74%                  | 99.26%                |
| n-Hexane               | 0.63%                  | 99.37%                |
| Cyclohexane            | 3.41%                  | 96.59%                |
| Other Hexanes          | 1.35%                  | 98.65%                |
| Heptanes               | 0.56%                  | 99.44%                |
| Methylcyclohexane      | 4.20%                  | 95.80%                |
| 2,2,4-Trimethylpentane | 1.88%                  | 98.12%                |
| Benzene                | 5.04%                  | 94.96%                |
| Toluene                | 7.94%                  | 92.06%                |
| Ethylbenzene           | 10.44%                 | 89.56%                |
| Xylenes                | 12.94%                 | 87.06%                |
| C8+ Heavies            | 12.14%                 | 87.86%                |

### STREAM REPORTS:

WET GAS STREAM

Temperature: 99.00 deg. F Pressure: 814.70 psia Flow Rate: 1.88e+006 scfh Component Conc. Loading (vol%) (lb/hr) Water 1.41e-001 1.26e+002 Carbon Dioxide 3.56e-001 7.76e+002 Nitrogen 3.83e-001 5.31e+002 Methane 8.91e+001 7.08e+004 Ethane 6.34e+000 9.44e+003

Propane 2.09e+000 4.56e+003 Isobutane 4.26e-001 1.23e+003 n-Butane 4.85e-001 1.39e+003 Isopentane 1.93e-001 6.88e+002 n-Pentane 1.39e-001 4.96e+002 n-Hexane 5.52e-002 2.36e+002 Cyclohexane 2.80e-002 1.16e+002 Other Hexanes 9.09e-002 3.88e+002 Heptanes 5.04e-002 2.50e+002 Methylcyclohexane 3.29e-002 1.60e+002 2,2,4-Trimethylpentane 3.69e-003 2.09e+001 Benzene 1.53e-002 5.91e+001 Toluene 1.16e-002 5.28e+001 Ethylbenzene 3.00e-004 1.57e+000 Xylenes 2.50e-003 1.31e+001 C8+ Heavies 1.78e-002 1.50e+002 Total Components 100.00 9.15e+004

DRY GAS STREAM

Temperature: 99.00 deg. F Pressure: 814.70 psia Flow Rate: 1.88e+006 scfh Conc. Loading (vol%) (lb/hr) Component Water 8.86e-003 7.89e+000 Carbon Dioxide 3.56e-001 7.74e+002 Nitrogen 3.83e-001 5.30e+002 Methane 8.93e+001 7.08e+004 Ethane 6.35e+000 9.44e+003 Propane 2.09e+000 4.55e+003 Isobutane 4.26e-001 1.22e+003 n-Butane 4.85e-001 1.39e+003 Isopentane 1.93e-001 6.87e+002 n-Pentane 1.39e-001 4.95e+002 n-Hexane 5.51e-002 2.35e+002 Cyclohexane 2.76e-002 1.15e+002 Other Hexanes 9.08e-002 3.87e+002 Heptanes 5.02e-002 2.49e+002 Methylcyclohexane 3.24e-002 1.57e+002 2,2,4-Trimethylpentane 3.69e-003 2.08e+001 Benzene 1.37e-002 5.27e+001 Toluene 9.83e-003 4.48e+001 Ethylbenzene 2.41e-004 1.26e+000 Xylenes 1.83e-003 9.61e+000 C8+ Heavies 1.75e-002 1.47e+002 \_\_\_\_\_\_ Total Components 100.00 9.13e+004

LEAN GLYCOL STREAM

\_\_\_\_\_ Temperature: 99.00 deg. F Flow Rate: 7.49e+000 gpm Component Conc. Loading (wt%) (lb/hr) TEG 9.84e+001 4.15e+003 Water 1.50e+000 6.33e+001 Carbon Dioxide 3.65e-012 1.54e-010 Nitrogen 2.06e-013 8.70e-012 Methane 8.37e-018 3.53e-016 Ethane 4.94e-008 2.09e-006 Propane 3.38e-009 1.42e-007 Isobutane 9.24e-010 3.90e-008 n-Butane 1.14e-009 4.81e-008 Isopentane 1.14e-004 4.81e-003 n-Pentane 1.05e-004 4.45e-003 n-Hexane 8.15e-005 3.44e-003 Cyclohexane 1.17e-003 4.95e-002 Other Hexanes 2.07e-004 8.73e-003 Heptanes 1.57e-004 6.63e-003 Methylcyclohexane 2.21e-003 9.32e-002 2,2,4-Trimethylpentane 1.72e-005 7.24e-004 Benzene 7.95e-003 3.35e-001 Toluene 1.64e-002 6.93e-001 Ethylbenzene 8.60e-004 3.63e-002 Xylenes 1.23e-002 5.21e-001 C8+ Heavies 9.51e-003 4.01e-001 \_\_\_\_\_\_ Total Components 100.00 4.22e+003 RICH GLYCOL STREAM \_\_\_\_\_ Temperature: 99.00 deg. F Pressure: 814.70 psia Flow Rate: 7.84e+000 gpm NOTE: Stream has more than one phase. Conc. Loading (wt%) (lb/hr) Component TEG 9.46e+001 4.15e+003 Water 4.12e+000 1.81e+002 Carbon Dioxide 3.51e-002 1.54e+000 Nitrogen 1.98e-003 8.71e-002 Methane 2.40e-001 1.05e+001 Ethane 1.01e-001 4.42e+000 Propane 7.98e-002 3.50e+000 Isobutane 2.96e-002 1.30e+000 n-Butane 4.42e-002 1.94e+000 Isopentane 2.19e-002 9.63e-001

> n-Pentane 2.03e-002 8.90e-001 n-Hexane 1.57e-002 6.88e-001 Cyclohexane 3.52e-002 1.55e+000

Heptanes 1.67e-001 1.17e+000 Methylcyclohexane 3.09e-001 2.13e+000 2,2,4-Trimethylpentane 4.73e-003 3.78e-002 Benzene 1.15e+000 6.32e+000 Toluene 1.24e+000 8.03e+000 Ethylbenzene 4.19e-002 3.11e-001 Xylenes 4.71e-001 3.50e+000 C8+ Heavies 2.44e-001 2.91e+000 Total Components 100.00 1.52e+002

## COMBUSTION DEVICE OFF GAS STREAM

| Temperature: 1000.00 deg. F<br>Pressure: 14.70 psia<br>Flow Rate: 1.72e+000 scfh |                                                               | ¥                                   |
|----------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------|
| Component                                                                        |                                                               | Loading<br>(lb/hr)                  |
| Ethane<br>Propane<br>Isobutane                                                   | 1.16e+001<br>7.66e+000<br>7.20e+000<br>2.55e+000<br>4.32e+000 | 1.04e-002<br>1.44e-002<br>6.70e-003 |
|                                                                                  | 1.83e+000<br>1.39e+000<br>3.68e+000                           | 5.96e-003<br>5.41e-003<br>1.40e-002 |
| Methylcyclohexane<br>2,2,4-Trimethylpentane<br>Benzene                           |                                                               | 2.13e-002<br>3.78e-004<br>6.32e-002 |
| Ethylbenzene<br>Xylenes<br>C8+ Heavies                                           | 7.29e+000                                                     | 3.50e-002                           |
| Total Components                                                                 | 100.00                                                        | 3.33e-001                           |

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## QUESTAR APPLIED TECHNOLOGY

### 1210 D. Street, Rock Springs, Wyoming 82901 (307) 352-7292

LIMS ID: N/A Description: River Bend Dehy Inlet Analysis Date/Time: 6/27/2010 7:41 AM Field: **River Bend** Analyst Initials: PRP ML#: **XTO /Summit Gas** Instrument ID: Instrument 1 GC Method: Quesbtex Data File: QPC32.D Date Sampled: 6/22/2010 Mol% Wt% LV% Component Methane 89.2649 77.5483 83,8190 Ethane 6.3525 10.344 9.4371 3.1919 Propane 2.0898 4.9901 Isobutane 0.4267 1.343 0.7737 n-Butane 0.4854 1.5276 0.8482 Neopentane 0.0072 0.028 0.0152 0.3766 Isopentane 0.1856 0.7252 n-Pentane 0.5433 0.2792 0.1391 0.0364 0.0180 2,2-Dimethylbutane 0.0078 2,3-Dimethylbutane 0.0146 0.0682 0.0332 2-Methylpentane 0.0440 0.2055 0.1013 3-Methylpentane 0.0246 0.1147 0.0556 0.258 0.1260 n-Hexane 0.0553 Heptanes 0.1420 0.7061 0.2982 0.0383 Octanes 0.0139 0.0857 Nonanes 0.0056 0.0359 0.0149 Decanes plus 0.0011 0.0087 0.0038 Nitrogen 0.3832 0.5813 0.2329 **Carbon Dioxide** 0.3567 0.85 0.3369 Oxygen 0.0000 0 0.0000 0 0.0000 Hydrogen Sulfide 0.0000 Total 100.0000 100.0000 100.0000 Clobal Properties Units Gross BTU/Real CF 1130.4 BTU/SCF at 60°F and 14.73 psia Sat.Gross BTU/Real CF BTU/SCF at 60°F and 14.73 psia 1111.9 Gas Compressibility (Z) 0.9973 Specific Gravity 0.6393 air=1 Avg Molecular Weight 18.467 gm/mole Propane GPM 0.572736 gal/MCF **Butane GPM** 0.291913 gal/MCF Gasoline GPM 0.234014 gal/MCF 26# Gasoline GPM 0.387450 gal/MCF **Total GPM** 1.099463 gal/MCF Base Mol% 100.182 %v/v °F Sample Temperature: 99 Sample Pressure: 1000 psig

**Reviewed By:** 

| Component              | Mol%           | Wt%     | LV%    |
|------------------------|----------------|---------|--------|
| Benzene                | 0.0153         | 0.0649  | 0.0238 |
| Toluene                | 0.0116         | 0.0578  | 0.0215 |
| Ethylbenzene           | 0.0003         | 0.0015  | 0.0006 |
| M&P Xylene             | 0.0022         | 0.0128  | 0.0048 |
| O-Xylene               | 0.0003         | 0.0018  | 0.0006 |
| 2,2,4-Trimethylpentane | 0.0037         | 0.0229  | 0.0103 |
| Cyclopentane           | 0.0000         | 0       | 0.0000 |
| Cyclohexane            | 0.0280         | 0.1277  | 0.0528 |
| Methylcyclohexane      | 0.0329         | 0.1748  | 0.0732 |
| Description:           | River Bend Deh | y Inlet |        |

## GRI GlyCalc Information

| Component              | Mol%     | Wt%      | LV%      |                       |
|------------------------|----------|----------|----------|-----------------------|
| Carbon Dioxide         | 0.3567   | 0.85     | 0.3369   | a farfafarfini yn sen |
| Hydrogen Sulfide       | 0.0000   | 0        | 0.0000   |                       |
| Nitrogen               | 0.3832   | 0.5813   | 0.2329   |                       |
| Methane                | 89.2649  | 77.5483  | 83.8190  |                       |
| Ethane                 | 6.3525   | 10.344   | 9.4371   |                       |
| Propane                | 2.0898   | 4.9901   | 3.1919   |                       |
| Isobutane              | 0.4267   | 1.343    | 0.7737   |                       |
| n-Butane               | 0.4854   | 1.5276   | 0.8482   |                       |
| Isopentane             | 0.1928   | 0.7532   | 0.3918   |                       |
| n-Pentane              | 0.1391   | 0.5433   | 0.2792   |                       |
| Cyclopentane           | 0.0000   | 0        | 0.0000   |                       |
| n-Hexane               | 0.0553   | 0.258    | 0.1260   |                       |
| Cyclohexane            | 0.0280   | 0.1277   | 0.0528   |                       |
| Other Hexanes          | 0.0910   | 0.4248   | 0.2081   |                       |
| Heptanes               | 0.0505   | 0.2580   | 0.1166   |                       |
| Methylcyclohexane      | 0.0329   | 0.1748   | 0.0732   |                       |
| 2,2,4 Trimethylpentane | 0.0037   | 0.0229   | 0.0103   |                       |
| Benzene                | 0.0153   | 0.0649   | 0.0238   |                       |
| Toluene                | 0.0116   | 0.0578   | 0.0215   |                       |
| Ethylbenzene           | 0.0003   | 0.0015   | 0.0006   |                       |
| Xylenes                | 0.0025   | 0.0146   | 0.0054   |                       |
| C8+ Heavies            | 0.0178   | 0.1142   | 0.0510   |                       |
| Subtotal               | 100.0000 | 100.0000 | 100.0000 |                       |
| Oxygen                 | 0.0000   | 0        | 0.0000   |                       |
| Total                  | 100.0000 | 100.0000 | 100.0000 |                       |

## FLASH TANK EMISSIONS

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

GAS MOLECULAR MOLE RELATIVE WEIGHT COMPONENT COMPONENT COMPONENT COMPONENT WEIGHT PERCENT MOLE WEIGHT PERCENT FLOW RATE FLOW RATE FLOW RATE (lb/lb-mole) (lb/lb-mole) (Mscf/day) (lb/hr) Methane 16.043 30.4601 4.886713843 0.08224227 14.19581873 0.144866876 17.83491405 Ethane 30.07 20,4171 6.13942197 0.05512617 0.182003471 44.097 Propane 19.045 8.39827365 24.39683889 0.0514215 0.248967242 i-Butane 58.123 5.6218 3.267558814 9.492201527 0.01517886 0.096866944 3.735274595 n-Butane 58.123 6.4265 10.85090774 0.01735155 0.110732402 72.15 2.3103 1.66688145 4.842261623 0.00623781 0.049414784 i-Pentane n-Pentane 72.15 1.5685 1,13167275 3.287489657 0.00423495 0.033548495 86.177 0.5429 0.467854933 1.359110444 0.00146583 0.013869583 Hexanes Heptanes 100.204 0.6502 0.651526408 1.892672884 0.00175554 0.019314533 114.231 Octanes 0 0 0 0 128.258 0.0172 0.022060376 0.064085009 0.00004644 0.000653981 Nonanes Decanes + 142.285 0.1261 0.179421385 0.521216003 0.00034047 0.005318956 Benzene 78.12 0.1217 0.09507204 0.276182623 0.00032859 0.002818415 Toluene 92.13 0 0 0 0 0 0 Ethylbenzene 106.16 0 0 0 0 **Xylenes** 106.16 0 0 0 0 0 n-Hexane 86.177 0.2414 0.208031278 0.604327245 0.00065178 0.006167098 4.003 Helium 0 0 0 0 0 Nitrogen 28.013 11.9137 3.337384781 9.695044747 0.03216699 0.098936938 Carbon Dioxide 44.01 0.5373 0.23646573 0.686928833 0.00145071 0.007010038 32 Oxygen 0 0 0 0 0 Hydrogen Sulfide 34.08 0 0 0 0 0 VOC SUBTOTAL 36.6716 19.82362768 57.58729364 0.09901332 0.587672432

0.303103318

34.423614

Gas Vented: Days of Operation:

HAP SUBTOTAL

TOTAL

0.27 Mscf/day 365 days/year

0.3631

99.9998

31.2 barrels of Oil

0.00098037

0.26999946

0.880509867

100

8.6 Gas to Oil Ratio in Cubic Feet Gas to Barrel of Oil/Water

0.008985513

1.020489756

(tons/yr)

0.634516916

0.797175202

1.090476519

0.424277216

0.48500792

0.216436753

0.146942409

0.060748773

0.084597654

0.002864437

0.023297027

0.012344659

0.027011888

0.433343791

0.030703968

2.574005254

0.039356547 4.469745132

0

0

0

0

0

0

See attached flash gas analysis, including API Gravity and Reid Vapor Pressure

# MITCHELL ANALYTICAL LABORATORY

2638 Faudree Odessa, Texas 79765-8538 561-5579

Gas Analysis

| Company     | Hy-Bon         | Sample Press   | 60.0       |
|-------------|----------------|----------------|------------|
| Producer    |                | Sample Temp    | 0.0        |
| Lease       | RIVERBEND DEHY | Date Sampled   | 11/04/2010 |
| Station #   | N/A            | Sampled by     | RF         |
| Cylinder #. |                | Field Gravity. | 0.0000     |
| Date Run    | 11/09/2010     | Analyzed by    | DAVID      |
| Lab Ref #   | 10-NOV-61433   | Field H2S      | 0.0000     |
|             |                |                |            |

Physical Constants per GPA 2145-09 Calculations per GPA 2172-86 @ 14.65 psia & 60.0 Deg. F.

|                     | MOL %        | GPM<br>(Ideal)                        | BTU<br>(Ideal Dry) |
|---------------------|--------------|---------------------------------------|--------------------|
| Nitrogen            | 11,914       | 0.000                                 | (ideal Diy)<br>0.0 |
| Methane             | 30.460       | 0.000                                 | 307.6              |
| CO2                 | 0.537        | 0.000                                 | 0.0                |
| Ethane              | 20.417       | 5.446                                 | 361.3              |
| H2S                 | 0.000        | 0.000                                 | 0.0                |
| Propane             | 19.045       | 5.233                                 | 479.2              |
| Iso-Butane          | 5.622        | 1,835                                 | 182.8              |
| N-Butane            | 6.427        | 2.021                                 | 209.7              |
| Iso-Pentane         | 2.310        | 0.843                                 | 92.4               |
| N-Pentane           | 1.568        | 0.567                                 | 62.9               |
| 2,2-DMB             | 0.000        | 0.000                                 | 0.0                |
| 2-Me-C5             | 0.000        | 0.000                                 | 0.0                |
| 3-Me-C5             | 0.000        | 0.000                                 | 0.0                |
| Hexanes +           | 1.700        | 0.752                                 | 89.7               |
|                     |              | and the particular methods are served |                    |
| TOTALS              | 100.000      | 16.697                                | 1780.1             |
| GROSS HEATING VALUE | @ 14.65 PSIA | GASOLINE                              | CONTENT (GPM/Real) |

| Dry    | Wet    |                  |         | Ethane & Heavier  | 16.851 |
|--------|--------|------------------|---------|-------------------|--------|
| 1796   | 1767   | BTU/Real Cu.Ft.  |         | Propane & Heavier | 11.355 |
| 1.1993 | 1.1903 | Specific Gravity | (Real)  | Butane & Heavier  | 6.073  |
| 1780   | 1750   | BTU/Ideal Cu.Ft. |         | Pentane & Heavier | 2.182  |
| 1.1888 | 1.1788 | Specific Gravity | (Ideal) |                   |        |

Z Factor : 0.9909

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# MITCHELL ANALYTICAL LABORATORY

2638 Faudree Odessa, Texas 79765-8538 561-5579

# Extended Gas Analysis

|           |                | A01 844 9739   |            |
|-----------|----------------|----------------|------------|
| Company   | Hy-Bon         | Sample Press   | 60.0       |
| Producer  |                | Sample Temp    |            |
| Lease     | RIVERBEND DEHY | Date Sampled   | 11/04/2010 |
| Station # | N/A            | Sampled by     | RF         |
|           |                | Field Gravity. | 0.0000     |
| Date Run  | 11/09/2010     | Analyzed by    | DAVID      |
| Lab Ref # | 10-NOV-61433   | Field H2S      | 0.0000     |

Physical Constants per GPA 2145-09 Calculations per GPA 2172-86 @ 14.65 psia & 60.0 Deg. F.

|                       |            | Mole %  | Weight % |
|-----------------------|------------|---------|----------|
| Nitrogen              |            | 11.9137 | 9.7400   |
| Methane               | C-1        | 30.4601 | 14.2617  |
| Carbon Dioxide        |            | 0.5373  | 0.6901   |
| Ethane                | C-2        | 20.4171 | 17.9177  |
| Hydrogensulfide       |            | 0.0000  | 0.0000   |
| Propane               | C-3        | 19.0450 | 24.5102  |
| Iso-Butane            |            | 5.6218  | 9.5364   |
| n-Butane              | C-4        | 6.4265  | 10.9014  |
| Isopentane            | A States   | 2.3103  | 4.8649   |
| n-Pentane             | C-5        | 1.5685  | 3.3027   |
| Neo-Hexane            |            | 0.0515  | 0.1213   |
| Cyclopentane          | CP         | 0.1222  | 0.2341   |
| 2-Methylpentane       | 2-MP       | 0.2365  | 0.5568   |
| 3-Methylpentane       | 3-MP       | 0.1327  | 0.3124   |
| n-Hexane              | C-6        | 0.2414  | 0.5683   |
| Methylcyclopentane    | MCP        | 0.1270  | 0.2920   |
| Benzene               |            | 0.1217  | 0.2596   |
| Cyclohexane           | CH         | 0.1771  | 0.4072   |
| 2-Methylhexane        |            | 0.0360  | 0.0985   |
| 3-Methylhexane        |            | 0.0323  | 0.0885   |
| Dimethylcyclopentanes | DMCP       | 0.0448  | 0.1203   |
| Heptanes              |            | 0.0342  | 0.0936   |
| n-Heptane             | C-7        | 0.0466  | 0.1276   |
| Methylcyclohexane     | MCH        | 0.1522  | 0.4083   |
| Toluene               |            | 0.0000  | 0.0000   |
| Octanes               |            | 0.0000  | 0.0000   |
| n-Octane              | C-8        | 0.0000  | 0.0000   |
| Ethylbenzene          |            | 0.0000  | 0.0000   |
| P-M-Xylene            |            | 0.0000  | 0.0000   |
| O-Xylene              |            | 0.0000  | 0.0000   |
| Nonanes               | <b>a</b> 0 | 0.0151  | 0.0531   |
| n-Nonane              | C-9        | 0.0021  | 0.0074   |

Continues....

Hy-Bon

# MITCHELL ANALYTICAL LABORATORY 2638 Faudree

2638 Faudree Odessa, Texas 79765-8538 561-5579

# Extended Gas Analysis (Page 2)

|                                |      | Mole %                     | Weight %                   |
|--------------------------------|------|----------------------------|----------------------------|
| Decanes<br>n-Decane<br>Decane+ | C-10 | 0.0167<br>0.0168<br>0.0926 | 0.0649<br>0.0655<br>0.3953 |
| TOTALS                         |      | 100.0000                   | 100.0000                   |

| Dry  | Wet  |           |        |
|------|------|-----------|--------|
| 1796 | 1772 | BTU/Real  | Cu.Ft. |
| 1780 | 1750 | BTU/Ideal | Cu.Ft. |

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Specific Gravity (Real) : 1.1993

Lab Ref #.. 10-NOV-61433

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# CAPROCK LABORATORIES, INC. 3312 BANKHEAD HIGHWAY MIDLAND, TEXAS 79701 432.689.7252 CAPROCKLAB.COM

### CHROMATOGRAPHIC ANALYSIS

1010042 COMPANY: HYBON JOB #: SAMPLE ID: FLASH GAS SAMPLE #: 1010042HYB07 20101005 DATE ON: SAMPLE TYPE: SPOT 20101005 RIVER BEND DEHY DATE OFF: STATION: BASE PRESSURE, PSIA: TIME ON: 14.650 TIME OFF: RANAREX GRAVITY: CLIENT SAMPLE PRESS., psig: SAMPLED BY: 000001 GAS TEMP. F: CYLINDER #: SAMPLE USE \*: A ANALYSIS DATE: 20101012 ANALYSIS COMMENTS: CYLINDER FULL OF WATER, NO LIQUID HYDROCARBONS COMPONENT MOLE % GPM

| HYDROGEN SULFIDE | 0.0000   |        |
|------------------|----------|--------|
| NITROGEN         | 1.4476   |        |
| OXYGEN           | 0.1967   |        |
| METHANE          | 86.8542  |        |
| CARBON DIOXIDE   | 0.4523   |        |
| ETHANE           | 6.3659   | 1.6932 |
| PROPANE          | 2.2056   | 0.6044 |
| ISO-BUTANE       | 0.5277   | 0.1717 |
| N-BUTANE         | 0.6320   | 0.1982 |
| ISO-PENTANE      | 0.2952   | 0.1074 |
| N-PENTANE        | 0.2447   | 0.0881 |
| HEXANES          | 0.2945   | 0.1205 |
| HEPTANES +       | 0.4836   | 0.2219 |
|                  |          |        |
| TOTAL            | 100.0000 | 3.2054 |

| HEATING VALUE<br>BTU DRY<br>BTU SATURATED | 1141.5<br>1121.7 | 9   |
|-------------------------------------------|------------------|-----|
| COMPRESSIBILITY, Z                        | 0.9971           |     |
| RELATIVE DENSITY                          | 0.6660           |     |
| AVE. MOLE WEIGHT                          | 19.2903          |     |
| H2S, TUTWEILER, GR./100 C                 | CUBIC FEET       | 0.0 |
|                                           |                  |     |

BASE CONDITIONS, 14.65 PSIA @ 60 DEGREES FAHRENHEIT

2.2106

\* A = ACCOUNTABLE, O = OPERATIONAL

26 # GASOLINE

# CAPROCK LABORATORIES, INC. 3312 BANKHEAD HIGHWAY MIDLAND, TEXAS 79701 432.689.7252 CAPROCKLAB.COM

### CHROMATOGRAPHIC ANALYSIS

| COMPANY:<br>SAMPLE ID:<br>SAMPLE TYPE:<br>STATION:<br>BASE PRESSURE,PSIA:<br>RANAREX GRAVITY:<br>SAMPLE PRESS.,psig:<br>GAS TEMP. F:<br>ANALYSIS DATE:<br>ANALYSIS COMMENTS:     |                                                                                                                                 |                                                                                        | JOB #:<br>SAMPLE #:<br>DATE ON:<br>DATE OFF:<br>TIME ON:<br>TIME OFF:<br>SAMPLED BY:<br>CYLINDER #:<br>SAMPLE USE * :<br>LIQUID HYDROCA | A |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---|
| COMPONENT                                                                                                                                                                        | MOLE %                                                                                                                          | GPM                                                                                    |                                                                                                                                         |   |
| HYDROGEN SULFIDE<br>NITROGEN<br>OXYGEN<br>METHANE<br>CARBON DIOXIDE<br>ETHANE<br>PROPANE<br>ISO-BUTANE<br>N-BUTANE<br>ISO-PENTANE<br>N-PENTANE<br>HEXANES<br>HEPTANES +<br>TOTAL | 0.0000<br>0.7210<br>0.0000<br>87.6696<br>0.4566<br>6.4256<br>2.2263<br>0.5326<br>0.6379<br>0.2980<br>0.2470<br>0.2973<br>0.4881 | 1.7091<br>0.6101<br>0.1733<br>0.2000<br>0.1084<br>0.0890<br>0.1216<br>0.2239<br>3.2354 | 4                                                                                                                                       |   |
| HEATING VALUE<br>BTU DRY<br>BTU SATURATED                                                                                                                                        | 1152.2<br>1132.2                                                                                                                |                                                                                        |                                                                                                                                         |   |
| COMPRESSIBILITY, Z                                                                                                                                                               | 0.9970                                                                                                                          |                                                                                        |                                                                                                                                         |   |
| RELATIVE DENSITY                                                                                                                                                                 | 0.6629                                                                                                                          |                                                                                        |                                                                                                                                         |   |
| AVE. MOLE WEIGHT                                                                                                                                                                 | 19.2005                                                                                                                         |                                                                                        |                                                                                                                                         |   |
| H2S, TUTWEILER, GR./10                                                                                                                                                           | 0 CUBIC FEET                                                                                                                    | 0.0                                                                                    |                                                                                                                                         |   |
| 26 # GASOLINE                                                                                                                                                                    | 2.2232                                                                                                                          |                                                                                        |                                                                                                                                         |   |

BASE CONDITIONS, 14.65 PSIA @ 60 DEGREES FAHRENHEIT

\* A = ACCOUNTABLE, O = OPERATIONAL

# CAPROCK LABORATORIES, INC. 3312 BANKHEAD HIGHWAY MIDLAND, TEXAS 79701 (432)689-7252, CAPROCKLAB.COM

| COMPANY:<br>SAMPLE ID:<br>SAMPLE TYPE: | HYBON<br>FLASH GAS<br>SPOT |                  | JOB #:<br>SAMPLE #:<br>DATE ON: | 1010042<br>1010042HYB07EA<br>20101005 |
|----------------------------------------|----------------------------|------------------|---------------------------------|---------------------------------------|
| STATION:<br>SAMPLE PRESS.,psig:        | RIVER BEND                 | DEHY             | TIME ON:<br>SAMPLED BY:         | CLIENT                                |
| GAS TEMP. F:                           |                            |                  | CYLINDER #:                     | N/A                                   |
| ANALYSIS DATE:                         | 20101012                   |                  | OTENDER.                        |                                       |
| ANALYSIS COMMENTS:                     |                            |                  |                                 |                                       |
|                                        | MPOSITIONAL                | ANALYSIS OF      | NATURAL GAS                     |                                       |
| COMPONENT                              | MOLE %                     | WEIGHT %         | CALCULATED PARAM                | ETERS                                 |
|                                        |                            |                  |                                 |                                       |
| HYDROGEN SULFIDE                       | 0.0000                     | 0.0000           | TOTAL ANALYSI                   | S SUMMARY                             |
| NITROGEN                               | 0.7210                     | 1.0416           |                                 |                                       |
| OXYGEN                                 | 0.0000                     | 0.0000           | AVE MOLE WT                     | 19.3899                               |
| METHANE                                | 87.6696                    | 72.5323          | SP GRAV, 60F/60                 | 0.3227                                |
| CARBON DIOXIDE                         | 0.4566                     | 1.0364           | API GRAVITY                     | 307.0                                 |
| ETHANE                                 | 6.4256                     | 9.9645           | REL DENS, AIR=1                 | 0.6695                                |
| PROPANE                                | 2.2263                     | 5.0630           | VAPOR PRESS PSIA                | 4439.90                               |
| ISO-BUTANE                             | 0.5326                     | 1.5965           |                                 |                                       |
| N-BUTANE                               | 0.6379                     | 1.9121           | C6+ SUMMARY                     |                                       |
| ISO-PENTANE                            | 0.2980                     | 1.1088           |                                 |                                       |
| N-PENTANE (C-5)                        | 0.2470                     | 0.9191           | AVE MOLE WT                     | 119.1347                              |
| 2,2 DIMETHYL BUTANE                    | 0.0021                     | 0.0093           | SP GRAV, 60F/60                 | 0.7401                                |
| CYCLOPENTANE                           | 0.0260                     | 0.0940           | API GRAVITY                     | 59.7                                  |
| 2-METHYLPENTANE                        | 0.0356                     | 0.1582           | LBS/GAL                         | 5.921                                 |
| 3-METHYLPENTANE                        | 0.0294                     | 0.1307           | REL DENS, AIR=1                 | 4.1133                                |
| N-HEXANE (C-6)                         | 0.0520                     | 0.2311           | VAPOR PRESS PSIA                | 2.38                                  |
| METHYLCYCLOPENTANES                    | 0.0816                     | 0.3542           |                                 |                                       |
| BENZENE                                | 0.0080                     | 0.0322           | BTEX SUMMARY                    |                                       |
| CYCLOHEXANE                            | 0.0625                     | 0.2713           |                                 |                                       |
| 2-METHYLHEXANE                         | 0.0055                     | 0.0284           | WT % BENZENE                    | 0.0322                                |
| 3-METHYLHEXANE                         | 0.0089                     | 0.0460           | WT % TOLUENE                    | 0.0413                                |
| DIMETHYLCYCLOPENTANES                  |                            | 0.1874           | WT % E BENZENE                  | 0.0170                                |
| HEPTANES                               | 0.0066                     | 0.0341           | WT % XYLENES                    | 0.0454                                |
| N-HEPTANE (C-7)                        | 0.0172                     | 0.0889           |                                 |                                       |
| METHYLCYCLOHEXANE                      | 0.0399                     | 0.1979           |                                 |                                       |
| TOLUENE                                | 0.0087                     | 0.0413           |                                 |                                       |
| 2,2,4 TRIMETHYLPENTANE                 | 0.0006                     | 0.0035           | $\bigcirc$                      | 0                                     |
| OCTANES                                | 0.0614                     | 0.3617           |                                 | JV.+1 /1                              |
| N-OCTANE (C-8)                         | 0.0174                     | 0.1025           | ANALYST                         | r fullebat                            |
| ETHYL BENZENE                          | 0.0031                     | 0.0170           |                                 | PRITCHARD                             |
| P-M-XYLENE                             | 0.0059                     | 0.0323           |                                 | IANAGER                               |
| O-XYLENE                               | 0.0024                     | 0.0131           |                                 |                                       |
| NONANES                                | 0.0529                     | 0.3499           |                                 |                                       |
| N-NONANE (C-9)                         | 0.0091                     | 0.0602           |                                 | $\mathbb{E}$                          |
| DECANES                                | 0.0460                     | 0.3375           |                                 |                                       |
| N-DECANE (C-10)<br>UNDECANES           | 0.0081                     | 0.0594           |                                 |                                       |
| N-UNDECANES                            | 0.0339<br>0.0075           | 0.2733           |                                 |                                       |
| DODECANE PLUS                          | 0.0075                     | 0.0605<br>1.2498 |                                 |                                       |
| DODEONIE I LOO                         | 0.1101                     | 1.2430           |                                 |                                       |
| TOTAL                                  | 100.0000                   | 100.0000         |                                 |                                       |

TOTAL

100.0000

100.0000

100

# CAPROCK LABORATORIES, INC.

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COMPANY: HYBON SAMPLE ID.: AS NOTED JOB NUMBER:1010042DATE RECEIVED:October 08, 2010DATE REPORTED:October 20, 2010REPORTED TO:Butch Gidney

# SUMMARY OF STOCK TANK OIL ANALYSIS

| SAMPLE IDENTIFICATION | LAB NUMBER | GRAVITY,<br>API @ 60 F | REID VAPOR<br>PRESSURE, PSIG |
|-----------------------|------------|------------------------|------------------------------|
| Riverbend Dehy, G-62  | 10042-01   | 59.7                   | 7.75                         |

Methods: API Gravity - ASTM D287 Reid Vapor Pressure - ASTM D323 Sample: Stock Tank Oil

Analyst:

James L. Pritchard, Lab Manager

# **STOCK TANK WORKING AND BREATHING EMISSIONS**

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

| TANK<br>DESCRIPTION     | WORKING<br>LOSSES | BREATHING<br>LOSSES | VOC<br>LOSSES | TOTAL<br>LOSSES |
|-------------------------|-------------------|---------------------|---------------|-----------------|
|                         | (lbs/yr)          | (lbs/yr)            | (lbs/yr)      | (tons/yr)       |
| 400-bbl storage tank #1 | 1293.12           | 7138.83             | 8431.95       | 4.22            |
| 400-bbl storage tank #2 | 1293.12           | 7138.83             | 8431.95       | 4.22            |
| TOTAL                   | 2586.24           | 14277.66            | 16863.9       | 8.43            |

EPA TANKS 4.09D used to calculate emissions; please see attached documentation.

## TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

### Summit Gas Gathering - River Bend Site - Vertical Fixed Roof Tank

| Annual Emission Calcaulations                                                      |                       |
|------------------------------------------------------------------------------------|-----------------------|
| Standing Losses (Ib):                                                              | 7,138 8284            |
| Vapor Space Volume (cu ft):                                                        | 1,149.8229            |
| Vapor Density (Ib/cu ft):                                                          | 0.0414                |
| Vapor Space Expansion Factor:                                                      | 1.1513                |
| Vented Vapor Seturation Factor.                                                    | 0.3572                |
| Tank Vapor Space Volume:                                                           |                       |
| Vapor Space Volume (cu ft):                                                        | 1,149 8229            |
| Tank Diameter (ft).                                                                | 12.0000               |
| Vapor Space Outage (ft):                                                           | 10.1667               |
| Tank Shell Height (ft)                                                             | 20 0000               |
| Average Liquid Height (ft):                                                        | 10.0000               |
| Roof Outage (ft):                                                                  | 0.1667                |
| Roof Outage (Cone Roof)                                                            | 0.4007                |
| Roof Outage (ft):                                                                  | 0.1667                |
| Roof Height (ft):                                                                  | 0.5000                |
| Roof Slope (ft/ft):<br>Shell Radius (ft):                                          | 6.0000                |
| Vapor Density                                                                      |                       |
| Vapor Density (Ib/cu ft):                                                          | 0.0414                |
| Vapor Molecular Weight (Ib/Ib-mole).                                               | 68.0000               |
| Vapor Pressure at Daily Average Liquid                                             | 3 3397                |
| Surface Temperature (psia):                                                        | 511 6700              |
| Daily Avg. Liquid Surface Temp (deg. R):<br>Daily Average Ambient Temp. (deg. F):  | 52 9333               |
| Ideal Gas Constant R                                                               |                       |
| (psia cuft / (lb-mol-deg R)):                                                      | 10.731                |
| Liquid Bulk Temperature (deg R):                                                   | 511 6700              |
| Tank Paint Solar Absorptance (Shell):                                              | 0.5400                |
| Tank Paint Solar Absorptance (Roof)                                                | 0.5400                |
| Daily Total Solar Insulation<br>Factor (Btu/soft day):                             | 1,578 3125            |
| Vapor Space Expansion Factor                                                       |                       |
| Vapor Space Expansion Factor.                                                      | 1.1513                |
| Daily Vapor Temperature Range (deg R):                                             | 80 0000               |
| Daily Vapor Pressure Range (psia)                                                  | 8 9835                |
| Breather Vent Press Setting Range(psia):<br>Vapor Pressure at Daily Average Liquid | 0.0000                |
| Surface Temperature (psia):                                                        | 3.3397                |
| Vapor Pressure at Daily Minimum Liquid                                             | 3.3357                |
| Surface Temperature (psia):                                                        | 2.5895                |
| Vapor Pressure at Daily Maximum Liquid                                             | 2.3033                |
| Surface Temperature (psia):                                                        | 11,5730               |
| Daily Avg. Liquid Surface Temp. (deg R).                                           | 511.6700              |
| Daily Min. Liquid Surface Temp. (deg R).                                           | 499 6700              |
| Daily Max. Liquid Surface Temp. (deg R):                                           | 579.6700              |
| Daily Ambient Temp. Range (deg R).                                                 | 25 6333               |
| Vented Vapor Saturation Factor                                                     | S. Andrews            |
| Vented Vapor Saturation Factor:                                                    | 0.3572                |
| Vapor Pressure at Daily Average Liquid                                             | _ 9.5015              |
| Surface Temperature (psia):<br>Vapor Space Outage (ft):                            | 3 3397<br>10.1667     |
|                                                                                    |                       |
| Working Losses (Ib):                                                               | 1,293.1219<br>68.0000 |
| Vapor Molecular Weight (Ib/Ib-mole):<br>Vapor Pressure at Daily Average Liquid     | 00.0000               |
| Surface Temperature (psia):                                                        | 3.3397                |
| Annual Net Throughput (gal/yr ):                                                   | 239,148.0000          |
| Annual Tumovers:                                                                   | 14.4959               |
| Turnover Factor                                                                    | 1,0000                |
| Maximum Liquid Volume (gal):                                                       | 16,497.5776           |
| Maximum Liquid Height (ft):                                                        | 19.5000               |
| Tank Diameter (R):                                                                 | 12 0000               |
| Working Loss Product Factor:                                                       | 1 0000                |
|                                                                                    |                       |
| Total Losses (lb).                                                                 | 8,431.9503            |

## TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

# **Emissions Report for: Annual**

Summit Gas Gathering - River Bend Site - Vertical Fixed Roof Tank

|                    | Losses(lbs)  |                |                 |
|--------------------|--------------|----------------|-----------------|
| Components         | Working Loss | Breathing Loss | Total Emissions |
| Gasoline (RVP 7.8) | 1,293.12     | 7,138.83       | 8,431.95        |

# UNCONTROLLED CONDENSATE TRUCK LOADING EMISSIONS

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

AP - 42, Chapter 5.2

# $L_L$ = 12.46 x S x P x M / T Emissions = $L_L$ \* Throughput

TABLE 1. Emission factors are calculated utilizing AP-42 equations and data from EPA TANKS 4.09 LL is converted to tpy VOC emissions per barrel of production per

L<sub>L</sub> = Loading Loss Emission Factor (lbs VOC/1000 gal Loaded)

S = Saturation Factor (0.6 For Submerged Loading - Dedicated Service)

P = True Vapor Pressure of the Loaded Liquid (psi)

M = Vapor Molecular Weight of the Loaded Liquid (lbs/lbmol)

T = Temperature of Loaded Liquid (°R)

|               |             |       |            |            |        |        |             |           |                         |                              | V/e/c,       |
|---------------|-------------|-------|------------|------------|--------|--------|-------------|-----------|-------------------------|------------------------------|--------------|
| LOCATO        | (A) (A) (A) | 5 - C | TEVE (CSI) | 2. de 2. 1 |        |        | L. A. Maine | ا تارەق ا | Liew Welley Stole 101-1 | المعالية والمعالية والمعالية | 1.01/J * *** |
| Truck Loading | 12.46       | 0.6   | 10         | 68         | 511.68 | 9.9353 | 0.0099      | 0.4173    | 7.62E-02                | 31.20                        | 2.3760       |

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# NATURAL GAS COMPOSITION

#### Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

| Fuel Type:        | Natural Gas | 1       |
|-------------------|-------------|---------|
| Heat Value (wet): | 1106        | Btu/scf |

C1-C2 Wt. Fraction: 0.878923596 VOC Wt. Fraction: 0.106762688 Non-HC Wt. Fraction: 0.014313716 Total: 1

| COMPONENT        | MOLE     | COMPONENT    | NET          | WEIGHT      | GROSS     | NET DRY     | LOWER     | NET LOW    |
|------------------|----------|--------------|--------------|-------------|-----------|-------------|-----------|------------|
|                  | PERCENT  | MOLE         | MOLE         | FRACTION    | HEATING   | HEATING     | HEATING   | HEATING    |
| 8                |          | WEIGHT       | WEIGHT       |             | VALUE     | VALUE       | VALUE     | VALUE      |
|                  |          | (lb/lb-mole) | (lb/lb-mole) |             | (BTU/scf) | (BTU/scf)   | (BTU/scf) | (BTU/scf)  |
| Methane          | 89.2649  | 16.043       | 14.32076791  | 0.775484458 | 1010      | 901.57549   | 910       | 812.31059  |
| Ethane           | 6.3525   | 30.07        | 1.91019675   | 0.103439138 | 1769.8    | 112.426545  | 1618      | 102.78345  |
| Propane          | 2.0898   | 44.097       | 0.921539106  | 0.0499023   | 2516.2    | 52.5835476  | 2316      | 48.399768  |
| i-Butane         | 0.4267   | 58.123       | 0.248010841  | 0.013430045 | 3252.1    | 13.8767107  | 3005      | 12.822335  |
| n-Butane         | 0.4854   | 58.123       | 0.282129042  | 0.015277581 | 3262.4    | 15.8356896  | 3013      | 14.625102  |
| i-Pentane        | 0.1928   | 72.15        | 0.1391052    | 0.007532691 | 4000.9    | 7.7137352   | 3698      | 7.129744   |
| n-Pentane        | 0.1391   | 72.15        | 0.10036065   | 0.005434633 | 4008.8    | 5.5762408   | 3708      | 5.157828   |
| Hexanes+         | 0.1519   | 86.177       | 0.130902863  | 0.007088526 | 4756.2    | 7.2246678   | 4404      | 6.689676   |
| Heptanes         | 0.0505   | 100.204      | 0.05060302   | 0.002740206 | 5502.5    | 2.7787625   | 5100      | 2.5755     |
| Octanes          | 0.0148   | 114.231      | 0.016906188  | 0.000915488 | 6249.1    | 0.9248668   |           | 0          |
| Nonanes          | 0.0056   | 128.258      | 0.007182448  | 0.000388937 | 6996.4    | 0.3917984   |           | 0          |
| Decanes          | 0.0011   | 142.285      | 0.001565135  | 8.47537E-05 | 7743.2    | 0.0851752   |           | 0          |
| Benzene          | 0.0153   | 78.12        | 0.01195236   | 0.000647233 | 3715.5    | 0.5684715   |           | 0          |
| Toluene          | 0.0116   | 92.13        | 0.01068708   | 0.000578716 | 4444.6    | 0.5155736   |           | 0          |
| Ethylbenzene     | 0.0003   | 106.16       | 0.00031848   | 1.7246E-05  | 5191.5    | 0.0155745   |           | 0          |
| Xylenes          | 0.0025   | 106.16       | 0.002654     | 0.000143717 | 5183.5    | 0.1295875   |           | 0          |
| n-Hexane         | 0.0553   | 86.177       | 0.047655881  | 0.002580615 | 4756.2    | 2.6301786   |           | 0          |
| Helium           | 0.0000   | 4.003        | 0            | 0           | 0         | 0           | 0         | 0          |
| Nitrogen         | 0.3832   | 28.013       | 0.107345816  | 0.005812887 | 0         | 0           | 0         | 0          |
| Carbon Dioxide   | 0.3567   | 44.01        | 0.15698367   | 0.008500829 | 0         | 0           | 0         | 0          |
| Oxygen           | 0.0000   | 32           | 0            | 0           | 0         | 0           | 0         | 0          |
| Hydrogen Sulfide | 0.0000   | 34.08        | 0            | 0           | 637.1     | 0           | 588       | 0          |
| TOTAL            | 100.0000 |              | 18.46686644  | 1           |           | 1124.852615 |           | 1012.49399 |

Relative Mole Weight (lb/lb-mole) = [Mole Percent \* Molecular weight (lb/bl-mole)] / 100

Weight Fraction =

Net Mole Weight / Total Mole Weight

# **FUGITIVE EMISSIONS**

# Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

Estimated Factors\* %NMNEVOC Hours of Emissions Components Count Operation lb/hr/component Weight lb/year tons/year Valves Gas/Vapor 300 8760 0.00992000 10.68% 2783.27764 1.39164 Light Oil 100 8760 4818.00000 2.40900 0.00550000 100.00% Heavy Oil 0.00000 0.00000 0 8760 0.00001900 100.00% Water/Light Oil 50 8760 100.00% 94.60800 0.04730 0.00021600 Pumps Gas/Vapor 6 8760 0.01484 0.00529000 10.68% 29.68455 Light Oil 3 0.37659 8760 753.18480 0.02866000 100.00% Heavy Oil 0 8760 100.00% 0.00000 0.00000 0.00113000 Water/Light Oil 3 8760 0.00005300 100.00% 1.39284 0.00070 Flanges Gas/Vapor 650 8760 0.00086000 10.68% 522.79980 0.26140 Light Oil 0.07983 75 8760 0.00024300 100.00% 159.65100 Heavy Oil 0 8760 0.00000 0.0000086 100.00% 0.00000 Water/Light Oil 0.00136 50 8760 0.00000620 100.00% 2.71560 **Open-ended Lines** Gas/Vapor 15 8760 0.00441000 10.68% 61.86620 0.03093 Light Oil 0.00000 0 8760 0.00309000 100.00% 0.00000 Heavy Oil 0 8760 100.00% 0.00000 0.00000 0.00030900 Water/Light Oil 5 8760 0.00055000 100.00% 24.09000 0.01205 Connectors Gas/Vapor 250 8760 0.00044000 10.68% 102.87653 0.05144 Light Oil 0 8760 0.00046300 100.00% 0.00000 0.00000 Heavy Oil 0.00000 0 8760 0.00001700 100.00% 0.00000 Water/Light Oil 50 8760 0.00024300 100.00% 106.43400 0.05322

#### Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents

| Gas/Vapor       | 30 | 8760 | 0.01940000 | 10.68%  | 544.31035  | 0.27216 |
|-----------------|----|------|------------|---------|------------|---------|
| Light Oil       | 0  | 8760 | 0.01650000 | 100.00% | 0.00000    | 0.00000 |
| Heavy Oil       | 0  | 8760 | 0.00006800 | 100.00% | 0.00000    | 0.00000 |
| Water/Light Oil | 5  | 8760 | 0.03090000 | 100.00% | 1353.42000 | 0.67671 |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

| 5.68 |
|------|
| 1.30 |
|      |

### Fugitive HAP Emissions Totals - Gas/Vapor

|           | wt% in gas | Total VOC wt % | Total Fugitive VOC tpy | Total tpy for HAP | Total lb/hr for HAP |
|-----------|------------|----------------|------------------------|-------------------|---------------------|
| Benzene   | 0.0647%    | 10.68%         | 1.75                   | 0.011             | 0.002               |
| Toluene   | 0.0579%    | 10.68%         | 1.75                   | 0.009             | 0.002               |
| Xylene    | 0.0144%    | 10.68%         | 1.75                   | 0.002             | 0.001               |
| n-Hexane  | 0.2581%    | 10.68%         | 1.75                   | 0.042             | 0.010               |
| E-benzene | 0.0017%    | 10.68%         | 1.75                   | 0.000             | 0.000               |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | and the second | A CONTRACTOR OF A CONTRACTOR O | Contraction of the local division of the loc | the state of the s |                         |
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| TOTAL Fugitive HAP's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                  | 0.065                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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                                                                                                                                                                                                                                                                                                  | No. of Concession, Name |

### Fugitive HAP Emissions Totals - Light Oil and Water

|           | wt% in gas | Total VOC wt % | Total Fugitive VOC tpy | Total tpy for HAP | Total lb/hr for HAP |
|-----------|------------|----------------|------------------------|-------------------|---------------------|
| Benzene   | 0.2762%    | 100.00%        | 3.93                   | 0.011             | 0.002               |
| Toluene   | 0.0000%    | 100.00%        | 3.93                   | 0.000             | 0.000               |
| Xylene    | 0.0000%    | 100.00%        | 3.93                   | 0.000             | 0.000               |
| n-Hexane  | 0.6043%    | 100.00%        | 3.93                   | 0.024             | 0.005               |
| E-benzene | 0.0000%    | 100.00%        | 3.93                   | 0.000             | 0.000               |

| TOTAL Fugitive HAP's | 0.035 | 0.008                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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# FUGITIVE CO<sub>2</sub> EMISSIONS

Company: Summit Gas Gathering Facility Name: River Bend Dehydration Site Facility Location: Uintah County, Utah

|          |                 | Estimated<br>Components | Hours of  | Factors*        | %NMNEVOC | Em        | issions          |
|----------|-----------------|-------------------------|-----------|-----------------|----------|-----------|------------------|
|          |                 | Count                   | Operation | lb/hr/component | Weight   | lb/year   | metric tons/year |
| Valves   |                 |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 300                     | 6760      | 0.00992000      | 0.85%    | 221.61457 | 0.10073          |
|          | Light Oil       | 100                     | 8760      | 0.00550000      | 0.00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00001900      | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00021600      | 0.00%    | 0.00000   | 0.00000          |
| Pumps    |                 |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 6                       | 8760      | 0.00529000      | 0.85%    | 2.36359   | 0.00107          |
|          | Light Oil       | 3                       | 8760      | 0.02866000      | 0.00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00113000      | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 3                       | 8760      | 0.00005300      | 0.00%    | 0.00000   | 0.00000          |
| Flanges  |                 |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 650                     | 8760      | 0.00086000      | 0.85%    | 41.62720  | 0.01892          |
|          | Light Oil       | 75                      | 8760      | 0.00024300      | 0.00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.0000086       | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.0000620       | 0.00%    | 0.00000   | 0.00000          |
| Open-end | ded Lines       |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 15                      | 8760      | 0.00441000      | 0.85%    | 4.92601   | 0.00224          |
|          | Light Oil       | 0                       | 8760      | 0.00309000      | 0.00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00030900      | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 5                       | 8760      | 0.00055000      | 0.00%    | 0.00000   | 0.00000          |
| Connecto | ors             |                         |           |                 |          |           |                  |
|          | Gas/Vapor       | 250                     | 8760      | 0.00044000      | 0.85%    | 8.19140   | 0.00372          |
|          | Light Oil       | 0                       | 6760      | 0.00046300      | 0.00%    | 0.00000   | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00001700      | 0.00%    | 0.00000   | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00024300      | 0.00%    | 0.00000   | 0.00000          |
|          |                 |                         |           |                 |          |           |                  |

#### Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents

| Gas/Vapor       | 30 | 8760 | 0.01940000 | 0.85% | 43.33995 | 0.01970 |
|-----------------|----|------|------------|-------|----------|---------|
| Light Oil       | 0  | 8760 | 0.01650000 | 0.00% | 0.00000  | 0.00000 |
| Heavy Oil       | 0  | 6760 | 0.00006800 | 0.00% | 0.00000  | 0.00000 |
| Water/Light Oil | 5  | 8760 | 0.03090000 | 0.00% | 0.00000  | 0.00000 |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

Total in metric tonnes/year

0.15

# FUGITIVE METHANE EMISSIONS

Company: Summit Gas Gathering

### Facility Name: River Bend Dehydration Site

Facility Location: Uintah County, Utah

|          |                 | Estimated<br>Components | Hours of  | Factors*        | %METHANE | Emiss       | sions            |
|----------|-----------------|-------------------------|-----------|-----------------|----------|-------------|------------------|
|          |                 | Count                   | Operation | lb/hr/component | Weight   | lb/year     | metric tons/year |
| Valves   |                 |                         |           |                 |          |             |                  |
|          | Gas/Vapor       | 300                     | 8760      | 0.00992000      | 77.55%   | 20216.69370 | 9.18941          |
|          | Light Oil       | 100                     | 8760      | 0.00550000      | 0.00%    | 0.00000     | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00001900      | 0.00%    | 0.00000     | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00021600      | 0.00%    | 0.00000     | 0.00000          |
| Pumps    |                 |                         |           |                 |          |             |                  |
|          | Gas/Vapor       | 6                       | 8760      | 0.00529000      | 77.55%   | 215.61756   | 0.09801          |
|          | Light Oil       | 3                       | 8760      | 0.02866000      | 0.00%    | 0.00000     | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00113000      | 0.00%    | 0.00000     | 0.00000          |
|          | Water/Light Oil | 3                       | 8760      | 0.00005300      | 0.00%    | 0.00000     | 0.00000          |
| Flanges  |                 |                         |           |                 |          |             |                  |
|          | Gas/Vapor       | 650                     | 8760      | 0.00086000      | 77.55%   | 3797.42331  | 1.72610          |
|          | Light Oil       | 75                      | 8760      | 0.00024300      | 0.00%    | 0.00000     | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.0000086       | 0.00%    | 0.00000     | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00000620      | 0.00%    | 0.00000     | 0.00000          |
| Open-en  | ded Lines       |                         |           |                 |          |             |                  |
|          | Gas/Vapor       | 15                      | 8760      | 0.00441000      | 77.55%   | 449.37308   | 0.20426          |
|          | Light Oil       | 0                       | 8760      | 0.00309000      | 0.00%    | 0.00000     | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00030900      | 0.00%    | 0.00000     | 0.00000          |
|          | Water/Light Oil | 5                       | 8760      | 0.00055000      | 0.00%    | 0.00000     | 0.00000          |
| Connecto | ors             |                         |           |                 |          |             |                  |
|          | Gas/Vapor       | 250                     | 8760      | 0.00044000      | 77.55%   | 747.25682   | 0.33966          |
|          | Light Oil       | 0                       | 8760      | 0.00046300      | 0.00%    | 0.00000     | 0.00000          |
|          | Heavy Oil       | 0                       | 8760      | 0.00001700      | 0.00%    | 0.00000     | 0.00000          |
|          | Water/Light Oil | 50                      | 8760      | 0.00024300      | 0.00%    | 0.00000     | 0.00000          |
|          |                 |                         |           |                 |          |             |                  |

#### Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents

| Gas/Vapor       | 30 | 8760 | 0.01940000 | 77.55% | 3953.66792 | 1.79712 |
|-----------------|----|------|------------|--------|------------|---------|
| Light Oil       | 0  | 8760 | 0.01650000 | 0.00%  | 0.00000    | 0.00000 |
| Heavy Oil       | 0  | 8760 | 0.00006800 | 0.00%  | 0.00000    | 0.00000 |
| Water/Light Oil | 5  | 8760 | 0.03090000 | 0.00%  | 0.00000    | 0.00000 |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

Total in metric tonnes/year 13.35

# **Thermal Oxidizer Emission Calculations**

| Company:           | Summit Gas Gathering        |
|--------------------|-----------------------------|
| Facility Name:     | River Bend Dehydration Site |
| Facility Location: | Uintah County, Utah         |

| Flare Heat Input Capacity |
|---------------------------|
| Flare Heat Input Capacity |
| Operating Time            |

2.955 MMBtu/hr 64.11 Mscf/day 8,760 hr/yr

(Dehydrator emissions only routed to thermal oxidizer)

| Pollutant                              | (A)<br>Emission Factor <sup>1</sup><br>(Ib/MMBtu) | (B) = (A)x<br>MMBtu/hr<br>Potential<br>Emission Rate<br>(Ibs/hr) | (C) = (B)xOT<br>Potential<br>Emission Rate<br>(Ibs/year) | (D) = (C)/2000<br>Potential<br>Emission Rate<br>(tons/year) |  |  |  |
|----------------------------------------|---------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------|--|--|--|
| Particulate Matter (PM)                | Negligible, Smokeless Design                      |                                                                  |                                                          |                                                             |  |  |  |
| Particulate Matter (PM <sub>10</sub> ) |                                                   | Negligible, Sm                                                   | okeless Design                                           |                                                             |  |  |  |
| Nitrogen Oxides (NO <sub>x</sub> )     | 0.068                                             | 0.20                                                             | 1760.13                                                  | 0.88                                                        |  |  |  |
| Sulfur Oxides (SO <sub>x</sub> )       |                                                   | None; no H <sub>2</sub> S p                                      | resent in fuel gas                                       |                                                             |  |  |  |
| Carbon Monoxide (CO)                   | 0.37                                              | 1.09                                                             | 9577.20                                                  | 4.79                                                        |  |  |  |
| Volatile Organic Compounds (VOC)       |                                                   |                                                                  |                                                          |                                                             |  |  |  |

<sup>1</sup>Emission Factors for Waste Gas from AP-42 Tables 13.5-1 and 13.5-2 (9/91) in lb/MMBtu

Buys & Associates, Inc. 300 East Mineral Ave., Ste 10 Littleton CO 80122 ph. 303-781-8211

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### Pilot Emissions (One pilot)

| Total Heat Input Capacity of Pilot <sup>2</sup> | 0.092180015 | MMBtu/hr |
|-------------------------------------------------|-------------|----------|
| Heating Value                                   | 1106        | Btu/scf  |
| Operating Time                                  | 8760        | hr/yr    |
| Total Natural Gas Usage                         | 0.0001      | MMscf/hr |
| 2                                               |             |          |

<sup>2</sup> Pilot light heat input based on 2Mscf/day based on client direction.

| Pollutant                                           | (A)<br>Emission Factor<br>(Ib/MMscf) | (B) = (A)x MMscf/hr<br>Potential<br>Emission Rate<br>(Ibs/hr) | (C) = (B)xOT<br>Potential<br>Emission Rate<br>(Ibs/year) | (D) = (C)/2000<br>Potential<br>Emission Rate<br>(tons/year) |
|-----------------------------------------------------|--------------------------------------|---------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------|
| Particulate Matter (PM) <sup>3</sup>                | 7.6                                  | 0.0006                                                        | 5.5480                                                   | 0.0028                                                      |
| Particulate Matter (PM <sub>10</sub> ) <sup>3</sup> | 7.6                                  | 0.0006                                                        | 5.5480                                                   | 0.0028                                                      |
| Nitrogen Oxides (NO <sub>x</sub> ) <sup>4</sup>     | 100                                  | 0.0083                                                        | 73.0000                                                  | 0.0365                                                      |
| Sulfur Dioxide (SO <sub>2</sub> ) <sup>3</sup>      | 0.6                                  | 0.0001                                                        | 0.4380                                                   | 0.0002                                                      |
| Carbon Monoxide (CO) <sup>4</sup>                   | 84                                   | 0.0070                                                        | 61.3200                                                  | 0.0307                                                      |
| Volatile Organic Compounds (VOC) <sup>3</sup>       | 5.5                                  | 0.0005                                                        | 4.0150                                                   | 0.0020                                                      |
| HAPs <sup>3</sup>                                   | 0.0805                               | 0.0000                                                        | 0.0588                                                   | 0.0000                                                      |

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<sup>3</sup>Emission Factors from AP-42 Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4 (7/98) and adjusted accordingly <sup>4</sup>Emission Factors from AP-42 Table 13.5-1 guidance issued in September 1991.

#### Total Thermal Oxidizer Emissions

| Pollutant                              | Total Potential<br>Emission Rate<br>(tons/year) |  |  |  |
|----------------------------------------|-------------------------------------------------|--|--|--|
| Particulate Matter (PM)                | 0.0028                                          |  |  |  |
| Particulate Matter (PM <sub>10</sub> ) | 0.0028                                          |  |  |  |
| Nitrogen Oxides (NO <sub>x</sub> )     | 0.9166                                          |  |  |  |
| Sulfur Dioxide (SO <sub>2</sub> )      | 0.0002                                          |  |  |  |
| Carbon Monoxide (CO)                   | 4.8193                                          |  |  |  |
| Volatile Organic Compounds (VOC)       | 0.0020                                          |  |  |  |

Buys & Associates, Inc. 300 East Mineral Ave., Ste 10 Littleton CO 80122 ph. 303-781-8211

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2300 South Main Street Fort Worth, Texas 76110 (817)924-9991 www.irsvc.com

January 27, 2010 Danien Jones

XTO Energy Roosevelt Field Office 133 East 1000 North Roosevelt, Utah 84066

### **Commissioning Certificate**

This certificate confirms the successful Commissioning and Operation for the Thermal Oxidizer at the location listed below.

| Location:           | Roosevelt Field, Utah |
|---------------------|-----------------------|
| Site:               | River Bend            |
| Serial Number:      | 29086                 |
| Commissioning Date: | 01/15/2010            |
| Operating Range:    | 1400 - 1800 °F        |
| Heating Set Point:  | 1450 °F               |
| Cooling Set Point:  | 1500 °F               |
| DRE %:              | ≥95.0%                |

Mike Riddell V.P. Sales Thermal Oxidizer Division

**EnviroTherm** 

2300 South Main Street Fort Worth, Texas 76110 (817)924-9991 www.irsvc.com

January 30, 2010 Craig Allison

**XTO Energy** 810 Houston Street Fort Worth, TX 76102

# **Thermal Oxidizer Design Analysis**

This certificate confirms the successful Commissioning, Operation, and Design analysis for the Thermal Oxidizer at the location listed below.

Field: Roosevelt Field, Utah

Site: River Bend

Serial Number: 29086

Commissioning Date: 01/15/10

Waste Stream: (1)

Regenerator Overhead Stream (SCFH): 4.09e+002

BTU Value (BTU/CF) (5): 905 BTU/ft

Temperature: 212 deg. F

|                | 2 33 101010 EDV 9 101 1 | CONTRACTOR AND A |
|----------------|-------------------------|------------------|
| Component      | Conc.                   | Loading          |
| (vol%)         | (lb/hr)                 | (lb/hr)          |
|                |                         |                  |
| Water          | 7.41e+001               | 1.44e+001        |
| Carbon Dioxide | 1.30e+000               | 6.19e-001        |
| Nitrogen       | 2.11e-002               | 6.36e-003        |
| Methane        | 1.99e+000               | 3.43e-001        |
| Ethane         | 1.37e+000               | 4.45e-001        |
|                |                         |                  |
| Propane        | 1.14e+000               | 5.44e-001        |
|                |                         |                  |

| Isobutane<br>n-Butane<br>Isopentane | 4.71e-001<br>8.80e-001<br>3.86e-001 | 2.95e-001<br>5.51e-001<br>3.00e-001 |
|-------------------------------------|-------------------------------------|-------------------------------------|
| n-Pentane                           | 4.22e-001                           | 3.28e-001                           |
| n-Hexane                            | 2.78e-001                           | 2.59e-001                           |
| Cyclohexane                         | 1.02e+001                           | 9.22e-001                           |
| Other Hexanes                       | 3.29e-001                           | 3.05e-001                           |
| Heptanes                            | 5.51e-001                           | 5.95e-001                           |
| Methycyclohexane                    | 9.15e-001                           | 9.69e-001                           |
| 2,2,4-Trimethylpentane              | 9.33e-003                           | 1.15e-002                           |
| Benzene                             | 8.71e+000                           | 7.33e+000                           |
| Toluene                             | 5.47e+000                           | 5.43e+000                           |
| Xylenes                             | 5.81e-001                           | 6.65e-001                           |
| C8+ Heavies                         | 3.42e-002                           | 6.28e-002                           |
| Total Components                    | 100                                 | 3.44e+001                           |

# **Combustion Chamber Design:**

Average Combustion Chamber Temperature (Deg F) (2): 1450 Minimum Combustion Chamber Temperature (Deg F) (3): 1300 Combustion Air Max Volume (SCFH) (6): 60,000 Burner Gas Average Firing Rate (SCFH) (7): 1,200 Waste Stream Volume (SCFH) (1): 409 Total Mass Volume (SCFH): 61,609 Adjusted Mass Volume to 1450F (ACFH): 221,792.4 Combustion Chamber ID (IN): 28 Combustion Chamber OD (IN): 36 Combustion Gas Velocity at Max Firing Rate (FT/SEC) (6): 28.8304 Stack Height (FT): 20 Retention Time at Max Firing Rate (SEC) (6): 0.6937 Estimated DRE (%):  $\geq$ 95.0

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# Combustion Gas Constituent Concentrations: (4)

O2(%vd): 13.8 CO2(%vd): 3.7 NOx (ppmvd): 32.6 CO (ppmvd): 0.8

### Mike Riddell

### V.P. EnviroTherm Environmental Products Division

a division of Industrial Refractory Services Inc.

- (1) Waste Steam data was provided from XTO Energy using GRI-GLYCalc Version 4.0 simulations.
- (2) Average Combustion Chamber temperature is measured one pipe dia. from the top of the stack.
- (3) The minimum combustion chamber temperature is derived from the Auto-Ignition Temperature required to ignite the constituent fuels without a spark or flame.
- (4) The combustion gas constituent concentrations are derived from actual performance test data collected from Thermal Oxidizers of the same design and similar waste gas input.
- (5) The BTU value is derived using the Mol% and the HHV of each constituent to determine the HHV of the mixture.
- (6) Max Firing Rate is achieved when the combustion air blower is running at full speed (60 Hz).
- (7) Burner Average Firing Rate is archived once the system has reached its operating temperature and the waste stream is providing BTU heat source.

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|                                                             | ECL                                              | <b>HPSE</b>                                 | 164                                         |   |
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# ALL WELLSITES JANUARY 2011 UNCONTROLLED POTENTIAL TO EMIT SUMMARY

### Company: Summit Gas Gathering Facility Name: ALL WELLSITES (RBU 6-15E and 7-15E) Facility Location: Uintah County, Utah

|                                | NOx   |        | CO VOC |        | PM <sub>10</sub> |        | HAPs  |        |       |        |
|--------------------------------|-------|--------|--------|--------|------------------|--------|-------|--------|-------|--------|
| Source                         | lb/hr | ton/yr | lb/hr  | ton/yr | lb/hr            | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr |
| All RBU 6-15E Emission Sources | 0.05  | 0.22   | 0.04   | 0.19   | 3.20             | 14.04  | 0.00  | 0.01   | 0.84  | 3.70   |
| All RBU 7-15E Emission Sources | 0.04  | 0.18   | 0.04   | 0.16   | 2.69             | 11.76  | 0.00  | 0.01   | 0.55  | 2.43   |
| Totals                         | 0.09  | 0.40   | 0.08   | 0.35   | 5.89             | 25.80  | 0.00  | 0.02   | 1.40  | 6.13   |

<sup>\*</sup> Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                | Benzene |        | Tolu  | Toluene Ethylbenzene |       | Xylene |       | N-Hexane |       |        |
|--------------------------------|---------|--------|-------|----------------------|-------|--------|-------|----------|-------|--------|
| Source                         | lb/hr   | ton/yr | lb/hr | ton/yr               | lb/hr | ton/yr | lb/hr | ton/yr   | lb/hr | ton/yr |
| All RBU 6-15E Emission Sources | 0.23    | 0.99   | 0.37  | 1.61                 | 0.02  | 0.07   | 0.19  | 0.81     | 0.04  | 0.20   |
| All RBU 7-15E Emission Sources | 0.16    | 0.68   | 0.23  | 1.02                 | 0.01  | 0.04   | 0.11  | 0.47     | 0.04  | 0.19   |
| Totals                         | 0.38    | 1.67   | 0.60  | 2.63                 | 0.02  | 0.11   | 0.29  | 1.29     | 0.09  | 0.39   |

|                                | 2,2,4 | TMP    | Formaldehyde |        |  |
|--------------------------------|-------|--------|--------------|--------|--|
| Source                         | lb/hr | ton/yr | lb/hr        | ton/yr |  |
| All RBU 6-15E Emission Sources | 0.00  | 0.02   | 0.00         | 0.01   |  |
| All RBU 7-15E Emission Sources | 0.00  | 0.02   | 0.00         | 0.00   |  |
| Totals                         | 0.01  | 0.04   | 0.00         | 0.01   |  |

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# **RBU 6-15E WELLSITE JANUARY 2011 UNCONTROLLED POTENTIAL TO EMIT SUMMARY**

| Company:           | Summit Gas Gathering |
|--------------------|----------------------|
| Facility Name:     | RBU 6-15E            |
| Facility Location: | Uintah County, Utah  |

|                                      | NC    | Dx     | С     | 0      | V     | 00     | PN    | N <sub>10</sub> | HA    | Ps     |
|--------------------------------------|-------|--------|-------|--------|-------|--------|-------|-----------------|-------|--------|
| Source                               | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr | lb/hr | ton/yr          | lb/hr | ton/yr |
| Wellsite Condensate Truck Loading    | -     | -      | _     | -      | 0.00  | 0.00   | _     | -               | -     | -      |
| Wellsite heaters                     | 0.05  | 0.22   | 0.04  | 0.19   | 0.00  | 0.02   | 0.00  | 0.01            | 0.00  | 0.00   |
| 0.18 MMscfd dehydrator - RBU 6-15E D | -     | -      | -     | -      | 2.31  | 10.11  | -     | -               | 0.83  | 3.63   |
| Fugitive Emissions - RBU 6-15E F-1   | -     | -      | -     | -      | 0.89  | 3.88   | -     | -               | 0.02  | 0.07   |
| Total Storage Tank Emissions         |       | -      | -     | -      | 0.01  | 0.03   | -     | -               | 0.00  | 0.00   |
| Totals                               | 0.05  | 0.22   | 0.04  | 0.19   | 3.20  | 14.04  | 0.00  | 0.01            | 0.84  | 3.70   |

<sup>\*</sup>Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                    | Benz  | zene   | Toluene Ethylbenzene Xylene |        | ene   | N-Hexane |       |        |       |        |
|------------------------------------|-------|--------|-----------------------------|--------|-------|----------|-------|--------|-------|--------|
| Source                             | lb/hr | ton/yr | lb/hr                       | ton/yr | lb/hr | ton/yr   | lb/hr | ton/yr | lb/hr | ton/yr |
| Wellsite Condensate Truck Loading  | -     | -      | -                           | -      | -     | -        | -     | -      | Ξ     | -      |
| Wellsite heaters                   | -     | -      | -                           | -      | -     | -        | -     | -      | -     | -      |
| 0.18 MMscfd dehydrator - RBU 6-15E | 0.22  | 0.98   | 0.36                        | 1.60   | 0.01  | 0.06     | 0.18  | 0.80   | 0.04  | 0.16   |
| Fugitive Emissions - RBU 6-15E F-1 | 0.00  | 0.01   | 0.00                        | 0.01   | 0.00  | 0.00     | 0.00  | 0.01   | 0.01  | 0.03   |
| Total Storage Tank Emissions       | 0.00  | 0.00   | 0.00                        | 0.00   | 0.00  | 0.00     | 0.00  | 0.00   | 0.00  | 0.00   |
| Totals                             | 0.23  | 0.99   | 0.37                        | 1.61   | 0.02  | 0.07     | 0.19  | 0.81   | 0.04  | 0.20   |

|                                      | 2,2,4        | TMP    | Formaldehyde |        |  |
|--------------------------------------|--------------|--------|--------------|--------|--|
| Source                               | lb/hr        | ton/yr | lb/hr        | ton/yr |  |
| Wellsite Condensate Truck Loading    | -            | - 1    | _            | -      |  |
| Wellsite heaters                     | -            | -      | 0.00         | 0.01   |  |
| 0.18 MMscfd dehydrator - RBU 6-15E D | 0.00         | 0.02   | -            | -      |  |
| Fugitive Emissions - RBU 6-15E F-1   | 0.00         | 0.00   | -            | -      |  |
| Total Storage Tank Emissions         | : <b>-</b> : | -      | -            | -      |  |
| Totals                               | 0.00         | 0.02   | 0.00         | 0.01   |  |

# **RBU 7-15E WELLSITE JANUARY 2011 UNCONTROLLED POTENTIAL TO EMIT SUMMARY**

| Company:           | Summit Gas Gathering |
|--------------------|----------------------|
| Facility Name:     | RBU 7-15E            |
| Facility Location: | Uintah County, Utah  |

|                                       | NC    | Dx     | С     | 0      | V     | 00     | PI    | W10    | HA    | \Ps <sup>`</sup> |
|---------------------------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|------------------|
| Source                                | lb/hr | ton/yr           |
| Wellsite Condensate Truck Loading     | -     | -      | -     | -      | 0.00  | 0.00   | -     | -      | -     | -                |
| Wellsite heaters                      | 0.04  | 0.18   | 0.04  | 0.16   | 0.00  | 0.02   | 0.00  | 0.01   | 0.00  | 0.00             |
| 0.10 MMscfd dehydrator - RBU 7-15E D- | -     | -      | -     | -      | 1.79  | 7.84   | -     | -      | 0.54  | 2.36             |
| Fugitive Emissions - RBU 7-15E F-1    | -     | -      | -     | -      | 0.89  | 3.88   | -     | -      | 0.02  | 0.07             |
| Total Storage Tank Emissions          | -     | -      | -     | -      | 0.01  | 0.03   | -     | -      | 0.00  | 0.00             |
| Totals                                | 0.04  | 0.18   | 0.04  | 0.16   | 2.69  | 11.76  | 0.00  | 0.01   | 0.55  | 2.43             |

<sup>•</sup> Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

|                                       | Benz  | Benzene |       | Toluene |       | Ethylbenzene |       | Xylene |       | N-Hexane |  |
|---------------------------------------|-------|---------|-------|---------|-------|--------------|-------|--------|-------|----------|--|
| Source                                | lb/hr | ton/yr  | lb/hr | ton/yr  | lb/hr | ton/yr       | lb/hr | ton/yr | lb/hr | ton/yr   |  |
| Wellsite Condensate Truck Loading     | -     | -       | -     | -       | -     | -            | -     | -      | -     | -        |  |
| Wellsite heaters                      | -     | -       | -     | -       | -     | -            | -     | -      | -     | -        |  |
| 0.10 MMscfd dehydrator - RBU 7-15E D- | 0.15  | 0.67    | 0.23  | 1.00    | 0.01  | 0.04         | 0.11  | 0.47   | 0.04  | 0.16     |  |
| Fugitive Emissions - RBU 7-15E F-1    | 0.00  | 0.01    | 0.00  | 0.01    | 0.00  | 0.00         | 0.00  | 0.01   | 0.01  | 0.03     |  |
| Total Storage Tank Emissions          | 0.00  | 0.00    | 0.00  | 0.00    | 0.00  | 0.00         | 0.00  | 0.00   | 0.00  | 0.00     |  |
| Totals                                | 0.16  | 0.68    | 0.23  | 1.02    | 0.01  | 0.04         | 0.11  | 0.47   | 0.04  | 0.19     |  |

| [                                     | 2,2,4        | TMP  | Formaldehyde |        |  |
|---------------------------------------|--------------|------|--------------|--------|--|
| Source                                | lb/hr ton/yr |      | lb/hr        | ton/yr |  |
| Wellsite Condensate Truck Loading     | -            | -    | _            | -      |  |
| Wellsite heaters                      | -            | -    | 0.00         | 0.00   |  |
| 0.10 MMscfd dehydrator - RBU 7-15E D- | 0.00         | 0.02 | -            | -      |  |
| Fugitive Emissions - RBU 7-15E F-1    | 0.00         | 0.00 | -            | -      |  |
| Total Storage Tank Emissions          | -            | -    | -            | -      |  |
| Totals                                | 0.00         | 0.02 | 0.00         | 0.00   |  |

# GHG RBU 6-15E WELLSITE EMISSIONS SUMMARY

Company: Summit Gas Gathering Facility Name: RBU 6-15E Facility Location: Uintah County, Utah

#### UNCONTROLLED GHG EMISSIONS

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| SOURCE                                | CH₄    | CO <sub>2</sub> | N <sub>2</sub> O | CO <sub>2</sub> Equivalents | [ | CH₄     | CO <sub>2</sub> | N <sub>2</sub> O | CO <sub>2</sub> Equivalents |
|---------------------------------------|--------|-----------------|------------------|-----------------------------|---|---------|-----------------|------------------|-----------------------------|
| DESCRIPTION                           | MT/yr* | MT/yr*          | MT/yr*           | MT/yr*                      |   | Tons/yr | Tons/yr         | Tons/yr          | Tons/yr                     |
| Wellsite Condensate Truck Loading     | ND     | ND              | ND               | ND                          | ľ | ND      | ND              | ND               | ND                          |
| Wellsite heaters                      | 0.00   | 197.39          | 0.00             | 197.59                      |   | 0.00    | 217.13          | 0.00             | 217.35                      |
| 0.18 MMscfd dehydrator - RBU 6-15E D- | 1.64   | 0.09            | ND               | 34.49                       |   | 1.80    | 0.10            | ND               | 37.94                       |
| Fugitive Emissions - RBU 6-15E F-1    | 7.07   | 0.08            | ND               | 148.63                      |   | 7.78    | 0.08            | ND               | 163.49                      |
| Total Storage Tank Emissions          | 0.05   | 0.00            | ND               | 1.05                        |   | 0.05    | 0.00            | ND               | 1.15                        |
| TOTAL EMISSIONS                       | 8.77   | 197.56          | 0.00             | 381.75                      |   | 9.64    | 217.32          | 0.00             | 419.93                      |

# GHG RBU 7-15E WELLSITE EMISSIONS SUMMARY

Company: Summit Gas Gathering Facility Name: RBU 7-15E Facility Location: Uintah County, Utah

#### UNCONTROLLED GHG EMISSIONS

| SOURCE                                 | CH₄    | CO <sub>2</sub> | N <sub>2</sub> O | CO <sub>2</sub> Equivalents |
|----------------------------------------|--------|-----------------|------------------|-----------------------------|
| DESCRIPTION                            | MT/yr* | MT/yr*          | MT/yr*           | MT/yr*                      |
| Wellsite Condensate Truck Loading      | ND     | ND              | ND               | ND                          |
| Wellsite heaters                       | 0.00   | 162.56          | 0.00             | 197.59                      |
| 0.10 MMscfd dehydrator - RBU 7-15E D-1 | 1.80   | 0.09            | ND               | 37.83                       |
| Fugitive Emissions - RBU 6-15E F-1     | 7.07   | 0.08            | ND               | 148.63                      |
| Total Storage Tank Emissions           | 0.05   | 0.00            | ND               | 1.05                        |
| TOTAL EMISSIONS                        | 8.92   | 162.73          | 0.00             | 385.09                      |

| CH₄     | CH <sub>4</sub> CO <sub>2</sub> |         | CO <sub>2</sub> Equivalents |
|---------|---------------------------------|---------|-----------------------------|
| Tons/yr | Tons/yr                         | Tons/yr | Tons/yr                     |
| ND      | ND                              | ND      | ND                          |
| 0.00    | 178.82                          | 0.00    | 217.35                      |
| 1.98    | 0.10                            | ND      | 41.61                       |
| 7.78    | 0.08                            | ND      | 163.49                      |
| 0.05    | 0.00                            | ND      | 1.15                        |
| 9.81    | 179.00                          | 0.00    | 423.60                      |

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### POTENTIAL GHG EMISSIONS BASED ON 8760 HOURS FOR HEATERS, GENERATORS, ENGINES AND FLARES/THERMAL OXIDIZERS

Company: Summit Gas Gathering Facility Name: RBU 6-15E Facility Location: Uintah County, Utah

GHG Mandatory Reporting Regulations, Combustion Sources (Subpart C, 40 CFR Part 98)

| Summa                       | ry    |         |
|-----------------------------|-------|---------|
| Engines CO <sub>2</sub> e = | 0.0   | tons/yr |
| Heaters/Boilers CO2e =      | 360.3 | tons/y  |
| Total CO <sub>2</sub> e =   | 360.3 | tons/y  |
| Reporting required ?        | No    |         |

Note: Reporting Threshold = 25,000 tons/yr CO2e

|         |       |        |          |            |       |                                 |                  |                   |      |                 | Spe   | ecies            |
|---------|-------|--------|----------|------------|-------|---------------------------------|------------------|-------------------|------|-----------------|-------|------------------|
|         |       |        |          |            |       |                                 |                  | Species           |      | CO <sub>2</sub> | CH4   | N <sub>2</sub> O |
| Engines |       |        | Rating   |            | BFSC  | CO <sub>2</sub> CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e | COze | COze            |       |                  |
| Source  | Model | Fuel   | (hp)     | (MMbtu/hr) | Hours | Btu/(hp-hr)                     |                  | metric tons       |      |                 | metri | ic tons          |
|         |       |        |          |            |       | 8240                            | 0.00             | 0.00              | 0.00 | 0.00            | 0.00  | 0.00             |
|         |       |        | A 445644 |            |       |                                 | 0.00             | 0.00              | 0.00 | 0.00            | 0.00  | 0.00             |
|         |       | Totals | 0        | 0.00       |       | Totals                          | 0.00             | 0.00              | 0.00 | 0.00            | 0.00  | 0.00             |

Engines GHG Emissions Total= 0.0 metric tons

CO2e Total= 0.0 metric tons

Species

|                        |       |             |       |            |       | ſ      |                  | Species           |      | CO2    | CH4    | N <sub>2</sub> O | CO2e   |
|------------------------|-------|-------------|-------|------------|-------|--------|------------------|-------------------|------|--------|--------|------------------|--------|
| Boilers/Heaters Rating |       | ing         |       | Γ          | CO2   | CH4    | N <sub>2</sub> O | CO <sub>2</sub> e | CO2e | CO2e   | Total  |                  |        |
| Source                 | Model | Fuel        | (hp)  | (MMbtu/hr) | Hours |        |                  | metric tons       |      |        | metric | c tons           |        |
| 6-15E Dehy Reboiler    | -     | Natural Gas | -     | 0.100      | 8760  |        | 46.45            | 0.00              | 0.00 | 46.45  | 0.02   | 0.03             | 46.49  |
| 7-15E Dehy Reboiler    | -     | Natural Gas | -     | 0.100      | 8760  |        | 46.45            | 0.00              | 0.00 | 46.45  | 0.02   | 0.03             | 46.49  |
| 6-15E Tank Heater      | -     | Natural Gas |       | 0.250      | 8760  |        | 116.11           | 0.00              | 0.00 | 116.11 | 0.05   | 0.07             | 116.23 |
| 6-15E Separator Heater | -     | Natural Gas | -     | 0.075      | 8760  |        | 34.83            | 0.00              | 0.00 | 34.83  | 0.01   | 0.02             | 34.87  |
| 7-15E Separator Heater | -     | Natural Gas | -     | 0.250      | 8760  |        | 116.11           | 0.00              | 0.00 | 116.11 | 0.05   | 0.07             | 116.23 |
|                        |       |             |       |            |       |        | 0.00             | 0.00              | 0.00 | 0.00   | 0.00   | 0.00             | 0.00   |
|                        |       |             | Total | 0.775      |       | Totals | 359.95           | 0.01              | 0.00 | 359.95 | 0.14   | 0.21             |        |

Engines GHG Emissions Total= 359.96 metric tons

CO2e Total= 360.3 metric tons

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CO2e Total 0.00 0.00

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| Natural Gas                          |        |                           | 7                                         |                                    |
|--------------------------------------|--------|---------------------------|-------------------------------------------|------------------------------------|
| Emission Factor (CO <sub>2</sub> ) = | 53.02  | kg CO <sub>2</sub> /MMBtu | From 40 CFR Part 98, Subpart C, Table C-1 |                                    |
| Emission Factor (CH <sub>4</sub> ) = | 0.001  | kg CO <sub>2</sub> /MMBtu | From 40 CFR Part 98, Subpart C, Table C-2 |                                    |
| Emission Factor (N <sub>2</sub> O) = | 0.0001 | kg CO <sub>2</sub> /MMBtu | From 40 CFR Part 98, Subpart C, Table C-2 | 1 metric ton = 1000 kg = 2,200 lbs |
| HHV (Natural Gas) =                  | 1095   | BTU/scf                   |                                           |                                    |

|                    | Global Warming Potentials |                                           |  |
|--------------------|---------------------------|-------------------------------------------|--|
| CO <sub>2</sub> =  | 1                         | From 40 CFR Part 98, Subpart A, Table A-1 |  |
| CH4 =              | 21                        | From 40 CFR Part 98, Subpart A, Table A-1 |  |
| N <sub>2</sub> O = | 310                       | From 40 CFR Part 98, Subpart A, Table A-1 |  |

<sup>1</sup>CO<sub>2</sub>e Emissions (metric tons) = 0.001 (metric ton/kg) X Fuel (scf/yr) X HHV (MMBtu/scf) X Emission Factor (natural Gas) (kg CO<sub>2</sub>/MMBtu) X Global Warming Potentials Operational Factors from Newfield operational data

### RBU 6-15E and 7-15E WELLSITE NATURAL GAS FUELED HEATER EMISSIONS

Company: Summit Gas Gathering Facility Name: RBU 6-15E and 7-15E Facility Location: Uintah County, Utah

|                                | HEATER            | HEATER     | FUEL                    | HOURS OF                | FUEL                | NOx                               |                        | СО                                |                        |
|--------------------------------|-------------------|------------|-------------------------|-------------------------|---------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
| SOURCE<br>DESCRIPTION          | SIZE<br>(MBtu/hr) | EFFICIENCY | HEAT VALUE<br>(Btu/scf) | OPERATION<br>(hrs/year) | USAGE<br>(MMscf/yr) | EF AP-42 <sup>1</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>1</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) |
| 6-15E TEG Dehy Glycol Reboiler | 100               | 0.8        | 1106                    | 8760                    | 0.990               | 100.0                             | 0.05                   | 84.0                              | 0.05                   |
| 7-15E TEG Dehy Glycol Reboiler | 100               | 0.8        | 1106                    | 8760                    | 0.990               | 100.0                             | 0.05                   | 84.0                              | 0.05                   |
| 6-15E Tank Heater              | 250               | 0.8        | 1106                    | 8760                    | 2.475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
| 6-15E Separator Heater         | 75                | 0.8        | 1106                    | 8760                    | 0.742               | 100.0                             | 0.04                   | 84.0                              | 0.03                   |
| 7-15E Separator Heater         | 250               | 0.8        | 1106                    | 8760                    | 2.475               | 100.0                             | 0.13                   | 84.0                              | 0.11                   |
|                                |                   |            |                         | TOTALS                  | 7.672               |                                   | 0.400                  |                                   | 0.350                  |

|                                | T                                 | 00                     | VOC                    | PM                                | 10                     | Formaldehyde                      |                        |  |
|--------------------------------|-----------------------------------|------------------------|------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|--|
| SOURCE<br>DESCRIPTION          | EF AP-42 <sup>2</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>2</sup><br>lb/MMscf | EMISSIONS<br>(tons/yr) | EF AP-42 <sup>3</sup><br>Ib/MMscf | EMISSIONS<br>(tons/yr) |  |
| 6-15E TEG Dehy Glycol Reboiler | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.00                   | 7.50E-02                          | 0.0000                 |  |
| 7-15E TEG Dehy Glycol Reboiler | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.00                   | 7.50E-02                          | 0.0000                 |  |
| 6-15E Tank Heater              | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |  |
| 6-15E Separator Heater         | 11.0                              | 0.00                   | 0.00                   | 7.6                               | 0.00                   | 7.50E-02                          | 0.0000                 |  |
| 7-15E Separator Heater         | 11.0                              | 0.01                   | 0.01                   | 7.6                               | 0.01                   | 7.50E-02                          | 0.0001                 |  |
|                                | TOTALS                            | 0.04                   | 0.04                   |                                   | 0.02                   |                                   | 0.00                   |  |

#### Criteria emissions rounded to the nearest 1/100 of a ton, VOC/HAP rounded to 1/1000 of a ton.

EF AP-42<sup>1</sup> = emission factor from AP-42 Table 1.4-1, Small Boilers <100 MMbtu/hr (EPA 7/98), Standard = 1,020 Btu/scf

 $EF AP-42^2$  = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

EF AP- $42^3$  = emission factor from AP-42 Table 1.4-2 (EPA 7/98)

Fuel Consumption (MMscf/yr) = Heater Size (MBtu/hr) \* 1,000 (Btu/MBtu) \* Hours of Operation (hrs/yr) Fuel Heat Value (Btu/scf) \* 1,000,000 (scf/MMscf) \* Heater Efficiency

NOx/CO/TOC Emissions (tons/yr) = AP-42 EF (lbs/MMscf) \* Fuel Consumption (MMscf/yr) \* (Fuel Heat Value/ Standard Fuel Heat Value) / 2,000 (lbs/ton) -Standard Fuel Heat Value, Natural Gas (AP-42, 7/98, p1.4-5) = 1,020 Btu/scf

VOC emissions assumed equal to TOC emissions

# POTENTIAL UNCONTROLLED EMISSIONS

Company: Summit Gas Gathering Facility Name: 6-15E Wellsite Facility Location: Uintah County, Utah

> Unit: TEG Dehydrator at 6-15E wellsite Rating: 0.2 MMscf/day total; 4015 Pump at maximum glycol pump rate

| Unit             | Gas Flow    |           |           |           |              |           |           |           | Total     | Total     |                 |          |
|------------------|-------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------------|----------|
| Description      | Rate        | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | HAPs      | BTEX      | CO <sub>2</sub> | Methane  |
|                  | (MMscf/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (MT/yr)*        | (MT/yr)* |
| Dehy w/4015 pump | 0.18        | 10.11     | 0.9844    | 1.5964    | 0.0647       | 0.8033    | 0.1625    | 0.0218    | 3.6331    | 3.4488    | 0.0912          | 1.6380   |
| TOTAL            |             | 10.110    | 0.984     | 1.596     | 0.065        | 0.803     | 0.163     | 0.022     | 3.633     | 3.449     | 0.091           | 1.638    |

\*CO2 and Methane emissions are expressed in metric tons per GHG requirements.

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### GRI-GLYCalc VERSION 4.0 - EMISSIONS SUMMARY

Case Name: Summit Gas Gathering - 6-15E Wellsite Dehy File Name: Y:\Utah\River Bend Dehy Site\Buys RB Dehy TV Application\6-15E Wellsite Dehydrator emissions rev 1 Jan 2011.ddf Date: January 13, 2011

#### UNCONTROLLED REGENERATOR EMISSIONS

| Component                              | lbs/hr | lbs/day                    | tons/yr                    |
|----------------------------------------|--------|----------------------------|----------------------------|
| Methane                                | 0.4114 | 9.874                      | 1.8020                     |
| Ethane                                 | 0.0911 | 2.185                      | 0.3988                     |
| Propane                                | 0.0732 | 1.758                      | 0.3208                     |
| Isobutane                              | 0.0325 | 0.780                      | 0.1424                     |
| n-Butane                               | 0.0483 | 1.160                      | 0.2117                     |
| Isopentane                             | 0.0337 | 0.810                      | 0.1478                     |
| n-Pentane                              | 0.0308 | 0.739                      | 0.1349                     |
| n-Hexane                               | 0.0371 | 0.890                      | 0.1625                     |
| Cyclohexane                            | 0.0917 | 2.201                      | 0.4016                     |
| Other Hexanes                          | 0.0422 | 1.012                      | 0.1847                     |
| Heptanes                               | 0.1410 | 3.383                      | 0.6174                     |
| Methylcyclohexane                      | 0.2119 | 5.085                      | 0.9281                     |
| 2,2,4-Trimethylpentane                 | 0.0050 | 0.120                      | 0.0218                     |
| Benzene                                | 0.2247 | 5.394                      | 0.9844                     |
| Toluene                                | 0.3645 | 8.747                      | 1.5964                     |
| Ethylbenzene<br>Xylenes<br>C8+ Heavies |        | $0.355 \\ 4.402 \\ 18.561$ | 0.0647<br>0.8033<br>3.3874 |
| Total Emissions                        | 2.8107 | 67.456                     | 12.3108                    |
| Total Hydrocarbon Emissions            | 2.8107 | 67.456                     | 12.3108                    |
| Total VOC Emissions                    | 2.3082 | 55.397                     | 10.1100                    |
| Total HAP Emissions                    | 0.8295 | 19.907                     | 3.6331                     |
| Total BTEX Emissions                   | 0.7874 | 18.898                     | 3.4488                     |

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES Case Name: Summit Gas Gathering - 6-15E Wellsite Dehy File Name: Y:\Utah\River Bend Dehy Site\Buys RB Dehy TV Application\6-15E Wellsite Dehydrator emissions rev 1 Jan 2011.ddf Date: January 13, 2011 DESCRIPTION: Description: 0.18 MMscfd Max 4015 glycol pump (electric) PTE uncontrolled Annual Hours of Operation: 8760.0 hours/yr WET GAS: Temperature: 82.00 deg. F Pressure: 80.00 psig Wet Gas Water Content: Saturated Component Conc. (vol %) Carbon Dioxide 0.3143 Nitrogen 0.1221 Methane 91.2478 Ethane 5.2642 Propane 1.5975 Isobutane 0.3382 n-Butane 0.3758 Isopentane 0.1704 n-Pentane 0.1206 n-Hexane 0.0604 Cyclohexane 0.0385 ther Hexanes 0.0933 Heptanes 0.0859 Lcyclohexane 0.0565 ethylpentane 0.0055 Other Hexanes Methylcyclohexane 0.0055 2,2,4-Trimethylpentane 
 Benzene
 0.0231

 Toluene
 0.0260

 Ibenzene
 0.0008

 Xylenes
 0.0095

 Heavies
 0.0496
 Ethylbenzene Xylenes C8+ Heavies DRY GAS: Flow Rate: 0.2 MMSCF/day Water Content: 7.0 lbs. H2O/MMSCF LEAN GLYCOL: \_\_\_\_\_

Page: 2

PUMP:

Glycol Pump Type: Gas Injection Gas Injection Pump Volume Ratio: 0.030 acfm gas/gpm glycol

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GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: Summit Gas Gathering - 6-15E Wellsite Dehy File Name: Y:\Utah\River Bend Dehy Site\Buys RB Dehy TV Application\6-15E Wellsite Dehydrator emissions rev 1 Jan 2011.ddf Date: January 13, 2011

DESCRIPTION:

Description: 0.18 MMscfd Max 4015 glycol pump (electric) PTE uncontrolled

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

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### UNCONTROLLED REGENERATOR EMISSIONS

| Component                              | lbs/hr | lbs/day                    | tons/yr                    |
|----------------------------------------|--------|----------------------------|----------------------------|
| Methane                                | 0.4114 |                            | 1.8020                     |
| Ethane                                 | 0.0911 |                            | 0.3988                     |
| Propane                                | 0.0732 |                            | 0.3208                     |
| Isobutane                              | 0.0325 |                            | 0.1424                     |
| n-Butane                               | 0.0483 |                            | 0.2117                     |
| Isopentane                             | 0.0337 | 0.810                      | 0.1478                     |
| n-Pentane                              | 0.0308 | 0.739                      | 0.1349                     |
| n-Hexane                               | 0.0371 | 0.890                      | 0.1625                     |
| Cyclohexane                            | 0.0917 | 2.201                      | 0.4016                     |
| Other Hexanes                          | 0.0422 | 1.012                      | 0.1847                     |
| Heptanes                               | 0.1410 | 3.383                      | 0.6174                     |
| Methylcyclohexane                      | 0.2119 | 5.085                      | 0.9281                     |
| 2,2,4-Trimethylpentane                 | 0.0050 | 0.120                      | 0.0218                     |
| Benzene                                | 0.2247 | 5.394                      | 0.9844                     |
| Toluene                                | 0.3645 | 8.747                      | 1.5964                     |
| Ethylbenzene<br>Xylenes<br>C8+ Heavies |        | $0.355 \\ 4.402 \\ 18.561$ | 0.0647<br>0.8033<br>3.3874 |
| Total Emissions                        | 2.8107 | 67.456                     | 12.3108                    |
| Total Hydrocarbon Emissions            | 2.8107 | 67.456                     | 12.3108                    |
| Total VOC Emissions                    | 2.3082 | 55.397                     | 10.1100                    |
| Total HAP Emissions                    | 0.8295 | 19.907                     | 3.6331                     |
| Total BTEX Emissions                   | 0.7874 | 18.898                     | 3.4488                     |

EQUIPMENT REPORTS:

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ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

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| Calculated Absorber Stages:<br>Calculated Dry Gas Dew Point: | 1.25<br>6.77 | lbs. H2O/MMSCF |
|--------------------------------------------------------------|--------------|----------------|
| Temperature:                                                 | 82.0         | deg. F         |
| Pressure:                                                    | 80.0         | psig           |
| Dry Gas Flow Rate:                                           | 0.1800       | MMSCF/day      |
| Glycol Losses with Dry Gas:                                  | 0.0006       | lb/hr          |
| Wet Gas Water Content:                                       | Saturated    |                |
|                                                              | 077 60       | 11             |

| Calculated     | Wet Gas  | Water Content: | 277.68 | lbs. H2O/MMSCF |
|----------------|----------|----------------|--------|----------------|
| Calculated Lea | n Glycol | Recirc. Ratio: | 20.07  | gal/lb H2O     |

| Component              | Remaining<br>in Dry Gas | Absorbed<br>in Glycol |
|------------------------|-------------------------|-----------------------|
| Water                  | 2.42%                   | 97.588                |
| Carbon Dioxide         | 99.26%                  | 0.748                 |
| Nitrogen               | 99.96%                  | 0.048                 |
| Methane                | 99.96%                  | 0.048                 |
| Ethane                 | 99.81%                  | 0.198                 |
| Propane                | 99.57%                  | 0.43%                 |
| Isobutane              | 99.26%                  | 0.74%                 |
| n-Butane               | 98.98%                  | 1.02%                 |
| Isopentane             | 98.71%                  | 1.29%                 |
| n-Pentane              | 98.31%                  | 1.69%                 |
| n-Hexane               | 96.50%                  | 3.50%                 |
| Cyclohexane            | 85.80%                  | 14.20%                |
| Other Hexanes          | 97.45%                  | 2.55%                 |
| Heptanes               | 91.83%                  | 8.17%                 |
| Methylcyclohexane      | 80.81%                  | 19.19%                |
| 2,2,4-Trimethylpentane | 96.09%                  | 3.91%                 |
| Benzene                | 37.18%                  | 62.82%                |
| Toluene                | 23.25%                  | 76.75%                |
| Ethylbenzene           | 12.26%                  | 87.74%                |
| Xylenes                | 8.25%                   | 91.75%                |
| C8+ Heavies            | 53.86%                  | 46.14%                |

#### REGENERATOR

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No Stripping Gas used in regenerator.

| Component                                                | Remaining<br>in Glycol                     | Distilled<br>Overhead                              |
|----------------------------------------------------------|--------------------------------------------|----------------------------------------------------|
| Water<br>Carbon Dioxide<br>Nitrogen<br>Methane<br>Ethane | 65.13%<br>0.00%<br>0.00%<br>0.00%<br>0.00% | 34.87%<br>100.00%<br>100.00%<br>100.00%<br>100.00% |
| Propane                                                  | 0.00%                                      | 100.00%                                            |

| Isobutane<br>n-Butane<br>Isopentane<br>n-Pentane                          | 0.00%<br>0.00%<br>0.46%<br>0.47%            | 99.54%           | 3 |
|---------------------------------------------------------------------------|---------------------------------------------|------------------|---|
| n-Hexane<br>Cyclohexane<br>Other Hexanes<br>Heptanes<br>Methylcyclohexane | 0.49%<br>3.18%<br>0.96%<br>0.49%<br>3.98%   | 99.04%<br>99.51% |   |
| 2,2,4-Trimethylpentane<br>Benzene<br>Toluene<br>Ethylbenzene<br>Xylenes   | 1.46%<br>4.99%<br>7.89%<br>10.39%<br>12.89% | 92.11%<br>89.61% |   |
| C8+ Heavies                                                               | 11.988                                      | 88.02%           |   |

STREAM REPORTS:

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WET GAS STREAM

| Temperature: 82.00 deg. F<br>Pressure: 94.70 psia<br>Flow Rate: 7.56e+003 scfh |                                                               |                                                  |
|--------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------|
| Component                                                                      |                                                               | Loading<br>(lb/hr)                               |
| Carbon Dioxide<br>Nitrogen<br>Methane                                          | 5.85e-001                                                     | 2.10e+000<br>2.74e+000<br>6.77e-001<br>2.90e+002 |
| Isobutane<br>n-Butane<br>Isopentane                                            | 1.59e+000<br>3.36e-001<br>3.74e-001<br>1.69e-001<br>1.20e-001 | 3.89e+000<br>4.32e+000<br>2.43e+000              |
| Cyclohexane<br>Other Hexanes                                                   | 9.28e-002<br>8.54e-002                                        | 6.42e-001<br>1.59e+000<br>1.70e+000              |
| Toluene<br>Ethylbenzene                                                        | 2.30e-002<br>2.58e-002                                        | 3.57e-001<br>4.74e-001<br>1.68e-002              |
| C8+ Heavies                                                                    | 4.93e-002                                                     | 1.67e+000                                        |
| Total Components                                                               | 100.00                                                        | 3.62e+002                                        |

DRY GAS STREAM Temperature: 82.00 deg. F Pressure: 94.70 psia Flow Rate: 7.50e+003 scfh Component Conc. Loading (vol%) (lb/hr). \_\_\_\_\_ Water 1.43e-002 5.08e-002 Carbon Dioxide 3.12e-001 2.72e+000 Nitrogen 1.22e-001 6.77e-001 Methane 9.13e+001 2.90e+002 Ethane 5.26e+000 3.13e+001 Propane 1.59e+000 1.39e+001 Isobutane 3.36e-001 3.86e+000 n-Butane 3.73e-001 4.28e+000 Isopentane 1.68e-001 2.40e+000 n-Pentane 1.19e-001 1.69e+000 n-Hexane 5.84e-002 9.94e-001 Cyclohexane 3.31e-002 5.50e-001 Other Hexanes 9.11e-002 1.55e+000 Heptanes 7.90e-002 1.56e+000 Methylcyclohexane 4.57e-002 8.88e-001 2,2,4-Trimethylpentane 5.29e-003 1.20e-001 Benzene 8.60e-003 1.33e-001 Toluene 6.06e-003 1.10e-001 Ethylbenzene 9.82e-005 2.06e-003 Xylenes 7.85e-004 1.65e-002 C8+ Heavies 2.68e-002 9.01e-001 \_\_\_\_\_ Total Components 100.00 3.57e+002

LEAN GLYCOL STREAM

Temperature: 82.00 deg. F Flow Rate: 6.80e-001 gpm Component Conc. Loading (lb/hr) (wt%) TEG 9.90e+001 3.79e+002 Water 1.00e+000 3.83e+000 Carbon Dioxide 5.28e-013 2.02e-012 Nitrogen 7.77e-015 2.98e-014 Methane 1.13e-018 4.31e-018 Ethane 7.45e-009 2.85e-008 Propane 6.34e-010 2.43e-009 Isobutane 2.25e-010 8.61e-010 n-Butane 2.86e-010 1.09e-009 Isopentane 4.12e-005 1.58e-004 n-Pentane 3.82e-005 1.46e-004 n-Hexane 4.74e-005 1.81e-004 Cyclohexane 7.86e-004 3.01e-003

Other Hexanes 1.07e-004 4.10e-004 Heptanes 1.83e-004 7.00e-004 Methylcyclohexane 2.29e-003 8.78e-003 2,2,4-Trimethylpentane 1.94e-005 7.41e-005 Benzene 3.09e-003 1.18e-002 Toluene 8.16e-003 3.12e-002 Ethylbenzene 4.47e-004 1.71e-003 Xylenes 7.09e-003 2.71e-002 C8+ Heavies 2.75e-002 1.05e-001 Total Components 100.00 3.83e+002

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RICH GLYCOL AND PUMP GAS STREAM

| Temperature: | 82.00 deg. F      |        |
|--------------|-------------------|--------|
| Pressure:    | 94.70 psia        |        |
| Flow Rate:   | 6.90e-001 gpm     |        |
| NOTE: Stream | has more than one | phase. |

Component Conc. Loading (wt%) (lb/hr) TEG 9.77e+001 3.79e+002 Water 1.52e+000 5.88e+000 Carbon Dioxide 5.90e-003 2.29e-002 Nitrogen 2.48e-004 9.60e-004 Methane 1.06e-001 4.11e-001 Ethane 2.35e-002 9.11e-002 Propane 1.89e-002 7.32e-002 Isobutane 8.39e-003 3.25e-002 n-Butane 1.25e-002 4.83e-002 Isopentane 8.75e-003 3.39e-002 n-Pentane 7.98e-003 3.09e-002 n-Hexane 9.62e-003 3.73e-002 Cyclohexane 2.44e-002 9.47e-002 Other Hexanes 1.10e-002 4.26e-002 Heptanes 3.66e-002 1.42e-001 Methylcyclohexane 5.69e-002 2.21e-001 2,2,4-Trimethylpentane 1.31e-003 5.06e-003 Benzene 6.10e-002 2.37e-001 Toluene 1.02e-001 3.96e-001 Ethylbenzene 4.25e-003 1.65e-002 Xylenes 5.43e-002 2.11e-001 C8+ Heavies 2.27e-001 8.79e-001 Total Components 100.00 3.88e+002

REGENERATOR OVERHEADS STREAM

| Temperature: | 212.00    | dea. | F | <br> |
|--------------|-----------|------|---|------|
| Pressure:    | 14.70     | -    | - |      |
| Flow Rate:   | 6.29e+001 | -    |   |      |
| rion nate.   | 0.290.001 | JOIN |   |      |
|              |           |      |   |      |

Conc. Loading

(vol%) (lb/hr) Water 6.86e+001 2.05e+000 Carbon Dioxide 3.13e-001 2.29e-002 Nitrogen 2.07e-002 9.60e-004 Methane 1.55e+001 4.11e-001 Ethane 1.83e+000 9.11e-002 Propane 1.00e+000 7.32e-002 Isobutane 3.37e-001 3.25e-002 n-Butane 5.01e-001 4.83e-002 Isopentane 2.82e-001 3.37e-002 n-Pentane 2.57e-001 3.08e-002 n-Hexane 2.60e-001 3.71e-002 Cyclohexane 6.57e-001 9.17e-002 Other Hexanes 2.95e-001 4.22e-002 Heptanes 8.48e-001 1.41e-001 Methylcyclohexane 1.30e+000 2.12e-001 2,2,4-Trimethylpentane 2.63e-002 4.99e-003 Benzene 1.74e+000 2.25e-001 Toluene 2.39e+000 3.64e-001 Ethylbenzene 8.39e-002 1.48e-002 Xylenes 1.04e+000 1.83e-001 C8+ Heavies 2.74e+000 7.73e-001 Total Components 100.00 4.88e+000

### POTENTIAL UNCONTROLLED EMISSIONS

Company: Summit Gas Gathering Facility Name: 7-15E Wellsite Facility Location: Uintah County, Utah

> Unit: TEG Dehydrator at 7-15E wellsite Rating: 0.10 MMscf/day total; 4015 Pump at maximum glycol pump rate

| Unit             | Gas Flow    |           |           |           |              |           |           |           | Total     | Total     |                 |          |
|------------------|-------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------------|----------|
| Description      | Rate        | VOCs      | Benzene   | Toluene   | Ethylbenzene | Xylenes   | N-Hexane  | 224-TMP   | HAPs      | BTEX      | CO <sub>2</sub> | Methane  |
|                  | (MMscf/day) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr)    | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (tons/yr) | (MT/yr)*        | (MT/yr)* |
| Dehy w/4015 pump | 0.100       | 7.8352    | 0.6697    | 1.0039    | 0.0383       | 0.4661    | 0.16      | 0.0215    | 2.3596    | 2.1781    | 0.0908          | 1.7970   |
| TOTAL            |             | 7.835     | 0.670     | 1.004     | 0.038        | 0.466     | 0.160     | 0.022     | 2.360     | 2.178     | 0.091           | 1.797    |

\*CO2 and Methane emissions are expressed in metric tons per GHG requirements.

20

Buys & Associates, Inc. 300 East Mineral Ave., Ste 10 Littleton CO 80122 ph. 303-781-8211 GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: Summit Gas Gathering - 7-15E Wellsite Dehy
File Name: \\10.0.1.156\clients\XTO energy - 390\390-57 Riverbend Dehy
Site\Calculations\7-15E Wellsite Dehydrator emissions.ddf
Date: January 04, 2011

#### DESCRIPTION:

Description: 0.1 MMscfd 4015 glycol pump PTE uncontrolled

Annual Hours of Operation: 8760.0 hours/yr

#### EMISSIONS REPORTS:

\_\_\_\_\_\_

#### UNCONTROLLED REGENERATOR EMISSIONS

| Component                   | lbs/hr | lbs/day | tons/yr |
|-----------------------------|--------|---------|---------|
| Methane                     | 0.4103 | 9.846   | 1.7970  |
| Ethane                      | 0.0911 | 2.185   | 0.3988  |
| Propane                     | 0.0730 | 1.752   | 0.3197  |
| Isobutane                   | 0.0324 | 0.778   | 0.1419  |
| n-Butane                    | 0.0481 | 1.155   | 0.2107  |
| Isopentane                  | 0.0335 | 0.805   | 0.1469  |
| n-Pentane                   | 0.0306 | 0.734   | 0.1340  |
| n-Hexane                    | 0.0365 | 0.877   | 0.1600  |
| Cyclohexane                 | 0.0849 | 2.037   | 0.3717  |
| Other Hexanes               | 0.0417 | 1.002   | 0.1828  |
| Heptanes                    | 0.1353 | 3.248   | 0.5928  |
| Methylcyclohexane           | 0.1898 | 4.554   | 0.8311  |
| 2,2,4-Trimethylpentane      | 0.0049 | 0.118   | 0.0215  |
| Benzene                     | 0.1529 | 3.670   | 0.6697  |
| Toluene                     | 0.2292 | 5.501   | 1.0039  |
| Ethylbenzene                | 0.0088 | 0.210   | 0.0383  |
| Xylenes                     | 0.1064 | 2.554   | 0.4661  |
| C8+ Heavies                 | 0.5808 | 13.939  | 2.5439  |
| Total Emissions             | 2.2902 | 54.965  | 10.0311 |
| Total Hydrocarbon Emissions | 2.2902 | 54.965  | 10.0311 |
| Total VOC Emissions         | 1.7889 | 42.933  | 7.8352  |
| Total HAP Emissions         | 0.5387 | 12.929  | 2.3596  |
| Total BTEX Emissions        | 0.4973 | 11.935  | 2.1781  |

EQUIPMENT REPORTS:

#### ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

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| Calculated Absorber Stages:<br>Calculated Dry Gas Dew Point:                                             | 1.25<br>6.25                          | lbs. H20/MMSCF               |
|----------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------|
| Temperature:<br>Pressure:<br>Dry Gas Flow Rate:<br>Glycol Losses with Dry Gas:<br>Wet Gas Water Content: | 80.0<br>0.1000<br>0.0003<br>Saturated | MMSCF/day<br>lb/hr           |
| Calculated Wet Gas Water Content:<br>Calculated Lean Glycol Recirc. Ratio:                               |                                       | lbs. H2O/MMSCF<br>gal/lb H2O |

| Component              | Remaining<br>in Dry Gas |        |
|------------------------|-------------------------|--------|
| Water                  | 2.23%                   | 97.77% |
| Carbon Dioxide         | 98.68%                  | 1.32%  |
| Nitrogen               | 99.92%                  | 0.08%  |
| Methane                | 99.92%                  | 0.08%  |
| Ethane                 | 99.65%                  | 0.35%  |
| Propane                | 99.23%                  | 0.77%  |
| Isobutane              | 98.68%                  | 1.32%  |
| n-Butane               | 98.17%                  | 1.83%  |
| Isopentane             | 97.70%                  | 2.30%  |
| n-Pentane              | 96.98%                  | 3.02%  |
| n-Hexane               | 93.80%                  | 6.208  |
| Cyclohexane            | 76.38%                  | 23.628 |
| Other Hexanes          | 95.46%                  | 4.548  |
| Heptanes               | 85.89%                  | 14.118 |
| Methylcyclohexane      | 69.11%                  | 30.898 |
| 2,2,4-Trimethylpentane | 93.08%                  | 6.92%  |
| Benzene                | 23.20%                  | 76.80% |
| Toluene                | 13.27%                  | 86.73% |
| Ethylbenzene           | 6.55%                   | 93.45% |
| Xylenes                | 4.33%                   | 95.67% |
| C8+ Heavies            | 37.76%                  | 62.24% |

#### REGENERATOR

\_\_\_\_\_

No Stripping Gas used in regenerator.

| Component                                                                 | Remaining<br>in Glycol                              | Distilled<br>Overhead                              |
|---------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------|
| Water<br>Carbon Dioxide<br>Nitrogen<br>Methane<br>Ethane                  | 77.028<br>0.008<br>0.008<br>0.008<br>0.008<br>0.008 | 22.98%<br>100.00%<br>100.00%<br>100.00%<br>100.00% |
| Propane<br>Isobutane<br>n-Butane<br>Isopentane<br>n-Pentane               | 0.00%<br>0.00%<br>0.46%<br>0.47%                    | 100.00%<br>100.00%<br>100.00%<br>99.54%<br>99.53%  |
| n-Hexane<br>Cyclohexane<br>Other Hexanes<br>Heptanes<br>Methylcyclohexane | 0.49%<br>3.18%<br>0.96%<br>0.49%<br>3.98%           | 99.51%<br>96.82%<br>99.04%<br>99.51%<br>96.02%     |
| 2,2,4-Trimethylpentane                                                    | 1.46%                                               | 98.54%                                             |

|              |        | Page:  | 3 |
|--------------|--------|--------|---|
| Benzene      | 4.99%  | 95.01% |   |
| Toluene      | 7.88%  | 92.12% |   |
| Ethylbenzene | 10.38% | 89.62% |   |
| Xylenes      | 12.88% | 87.12% |   |
| at 12 100 1  |        |        |   |
| C8+ Heavies  | 11.94% | 88.06% |   |

STREAM REPORTS:

WET GAS STREAM

Temperature: 82.00 deg. F Pressure: 94.70 psia Flow Rate: 4.20e+003 scfh

| Flow Rate: 4.20e+003 scfh             |                                                               |                                     |
|---------------------------------------|---------------------------------------------------------------|-------------------------------------|
| Component                             | Conc.<br>(vol%)                                               | 2                                   |
| Carbon Dioxide<br>Nitrogen<br>Methane | 5.85e-001<br>3.12e-001<br>1.21e-001<br>9.07e+001<br>5.23e+000 | 1.52e+000<br>3.77e-001<br>1.61e+002 |
| Isobutane<br>n-Butane<br>Isopentane   | 1.59e+000<br>3.36e-001<br>3.74e-001<br>1.69e-001<br>1.20e-001 | 2.16e+000<br>2.40e+000<br>1.35e+000 |
| Cyclohexane<br>Other Hexanes          | 9.28e-002<br>8.54e-002                                        | 3.57e-001<br>8.85e-001<br>9.48e-001 |
| Toluene<br>Ethylbenzene               | 2.30e-002<br>2.58e-002                                        | 1.99e-001<br>2.64e-001<br>9.35e-003 |
| C8+ Heavies                           | 4.93e-002                                                     | 9.30e-001                           |
| Total Components                      | 100.00                                                        | 2.01e+002                           |

DRY GAS STREAM

Temperature: 82.00 deg. F Pressure: 94.70 psia Flow Rate: 4.17e+003 scfh Component Conc. Loading (vol%) (lb/hr) Water 1.32e-002 2.61e-002 Carbon Dioxide 3.11e-001 1.50e+000 Nitrogen 1.22e-001 3.76e-001 Methane 9.14e+001 1.61e+002 Ethane 5.26e+000 1.74e+001 Propane 1.59e+000 7.70e+000

Page: 4

Isobutane 3.35e-001 2.14e+000 n-Butane 3.70e-001 2.36e+000 Isopentane 1.67e-001 1.32e+000 n-Pentane 1.17e-001 9.29e-001 n-Hexane 5.68e-002 5.38e-001 Cyclohexane 2.95e-002 2.72e-001 Other Hexanes 8.93e-002 8.45e-001 Heptanes 7.40e-002 8.14e-001 Methylcyclohexane 3.91e-002 4.22e-001 2,2,4-Trimethylpentane 5.13e-003 6.44e-002 Benzene 5.37e-003 4.61e-002 Toluene 3.46e-003 3.50e-002 Ethylbenzene 5.26e-005 6.13e-004 Xylenes 4.13e-004 4.81e-003 C8+ Heavies 1.88e-002 3.51e-001 \_\_\_\_\_ Total Components 100.00 1.98e+002

#### LEAN GLYCOL STREAM

\_\_\_\_\_ \_\_\_\_\_ Temperature: 82.00 deg. F Flow Rate: 6.80e-001 gpm Conc. Loading (wt%) (1b/hr) Component \_\_\_\_\_ TEG 9.90e+001 3.79e+002 Water 1.00e+000 3.83e+000 Carbon Dioxide 5.27e-013 2.02e-012 Nitrogen 7.80e-015 2.99e-014 Methane 1.12e-018 4.31e-018 Ethane 7.46e-009 2.86e-008 Propane 6.31e-010 2.42e-009 Isobutane 2.24e-010 8.59e-010 n-Butane 2.84e-010 1.09e-009 Isopentane 4.09e-005 1.57e-004 n-Pentane 3.79e-005 1.45e-004 n-Hexane 4.66e-005 1.79e-004 Cyclohexane 7.27e-004 2.78e-003 Other Hexanes 1.06e-004 4.06e-004 Heptanes 1.75e-004 6.72e-004 Methylcyclohexane 2.05e-003 7.86e-003 2,2,4-Trimethylpentane 1.90e-005 7.29e-005 Benzene 2.10e-003 8.03e-003 Toluene 5.12e-003 1.96e-002 Ethylbenzene 2.65e-004 1.01e-003 Xylenes 4.11e-003 1.57e-002 C8+ Heavies 2.06e-002 7.87e-002 Total Components 100.00 3.83e+002

RICH GLYCOL AND PUMP GAS STREAM

Temperature: 82.00 deg. F Pressure: 94.70 psia Flow Rate: 6.87e-001 gpm NOTE: Stream has more than one phase.

Component

Conc. Loading

|                                          | (wt%)                                                         | (lb/hr)                             | Page: | 5 |
|------------------------------------------|---------------------------------------------------------------|-------------------------------------|-------|---|
| Water<br>Carbon Dioxide<br>Nitrogen      | 9.81e+001<br>1.29e+000<br>5.91e-003<br>2.48e-004<br>1.06e-001 | 4.97e+000<br>2.28e-002<br>9.57e-004 |       |   |
| Propane<br>Isobutane                     | 2.36e-002<br>1.89e-002<br>8.39e-003<br>1.24e-002<br>8.72e-003 | 7.30e-002<br>3.24e-002<br>4.81e-002 |       |   |
| n-Hexane<br>Cyclohexane<br>Other Hexanes |                                                               | 3.67e-002<br>8.76e-002<br>4.21e-002 |       |   |
|                                          | 1.29e-003<br>4.16e-002<br>6.44e-002                           | 4.98e-003<br>1.61e-001<br>2.49e-001 |       |   |
| C8+ Heavies                              |                                                               | 6.60e-001                           |       |   |
| Total Components                         | 100.00                                                        | 5.00e+00Z                           |       |   |

#### REGENERATOR OVERHEADS STREAM

| Temperature: 212.00 deg. F<br>Pressure: 14.70 psia<br>Flow Rate: 4.20e+001 scfh |                                                               |                                                  |
|---------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------|
| Component                                                                       |                                                               | Loading<br>(lb/hr)                               |
| Water<br>Carbon Dioxide<br>Nitrogen<br>Methane                                  | 5.73e+001                                                     | 1.14e+000<br>2.28e-002<br>9.57e-004<br>4.10e-001 |
| Isobutane<br>n-Butane<br>Isopentane                                             | 1.50e+000<br>5.04e-001<br>7.48e-001<br>4.20e-001<br>3.83e-001 | 3.24e-002<br>4.81e-002<br>3.35e-002              |
| Cyclohexane<br>Other Hexanes                                                    | 4.37e-001<br>1.22e+000                                        | 8.49e-002<br>4.17e-002<br>1.35e-001              |
| Toluene<br>Ethylbenzene                                                         | 1.77e+000<br>2.25e+000                                        | 1.53e-001<br>2.29e-001<br>8.75e-003              |
| C8+ Heavies<br>Total Components                                                 |                                                               |                                                  |

### QUESTAR APPLIED TECHNOLOGY

#### 1210 D. Street, Rock Springs, Wyoming 82901 (307) 352-7292

| LIMS ID:                | N/A          |          | Description: | RBU 6-18 F         |
|-------------------------|--------------|----------|--------------|--------------------|
| Analysis Date/Time:     | 8/3/2010     | 12:47 PM |              | Natural Buttes     |
| Analyst Initials:       | AST          |          | ML#:         | хто                |
| Instrument ID:          | Instrument 1 |          | GC Method:   | Quesbtex           |
| Data File:              | QPC23.D      |          |              |                    |
| Date Sampled:           | 7/30/2010    |          |              |                    |
| Component               | Mol%         |          | Wt9          | 6 LV%              |
| Methane                 | 91.2478      |          | 80.6806      | 86.3833            |
| Ethane                  | 5.2642       |          | 8.7242       | 7.8843             |
| Propane                 | 1.5975       |          | 3.8824       | 2.4600             |
| sobutane                | 0.3382       |          | 1.0833       | 0.6182             |
| n-Butane                | 0.3758       |          | 1.2040       | 0.6622             |
| Neopentane              | 0.0057       |          | 0.0228       | 0.0123             |
| Isopentane              | 0.1647       |          | 0.6550       | 0.3370             |
| n-Pentane               | 0.1206       |          | 0.4795       | 0.2440             |
| 2,2-Dimethylbutane      | 0.0078       |          | 0.0369       | 0.0181             |
| 2,3-Dimethylbutane      | 0.0152       |          | 0.0724       | 0.0349             |
| 2-Methylpentane         | 0.0440       |          | 0.2092       | 0.1021             |
| 3-Methylpentane         | 0.0263       |          | 0.1249       | 0.0600             |
| n-Hexane                | 0.0604       |          | 0.2868       | 0.1387             |
| Heptanes                | 0.2355       |          | 1.2033       | 0.5053             |
| Octanes                 | 0.0364       |          | 0.2282       | 0.1008             |
| Nonanes                 | 0.0207       |          | 0.1337       | 0.0551             |
| Decanes plus            | 0.0028       |          | 0.0220       | 0.0096             |
| Nitrogen                | 0.1221       |          | 0.1885       | 0.0748             |
| Carbon Dioxide          | 0.3143       |          | 0.7623       | 0.2993             |
| Oxygen                  | 0.0000       |          | 0.0000       | 0.0000             |
| Hydrogen Sulfide        | 0.0000       |          | 0.0000       | 0.0000             |
| Total                   | 100.0000     |          | 100.0000     | 100.0000           |
| d an a she child a sa   |              | Units    |              |                    |
| Gross BTU/Real CF       | 1118.1       |          |              | 60°F and14.73 psia |
| Sat.Gross BTU/Real CF   |              |          | BTU/SCF at 0 | 60°F and14.73 psia |
| Gas Compressibility (Z) | 0.9974       |          |              |                    |
| Specific Gravity        | 0.6281       |          | air=1        |                    |
| Avg Molecular Weight    | 18.144       |          | gm/mole      |                    |
| Propane GPM             | 0.437815     |          | gal/MCF      |                    |
| Butane GPM              | 0.228562     |          | gal/MCF      |                    |
| Gasoline GPM            | 0.262546     |          | gal/MCF      |                    |
| 26# Gasoline GPM        | 0.381545     |          | gai/MCF      |                    |
| Total GPM               | 0.929749     |          | gal/MCF      |                    |
| Base Mol%               | 99.499       |          | %v/v         |                    |
| Sample Temperature:     | 82           |          | °F           |                    |
| Sample Pressure:        | 80           |          | psig         |                    |

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14'

| Component              | Mol%       | Wt%    | LV%    |
|------------------------|------------|--------|--------|
| Benzene                | 0.0231     | 0.0993 | 0.0361 |
| Toluene                | 0.0260     | 0.1318 | 0.0486 |
| Ethylbenzene           | 0.0008     | 0.0046 | 0.0017 |
| M&P Xylene             | 0.0086     | 0.0504 | 0.0186 |
| O-Xylene               | 0.0009     | 0.0051 | 0.0019 |
| 2,2,4-Trimethylpentane | 0.0055     | 0.0348 | 0.0155 |
| Cyclopentane           | 0.0000     | 0      | 0.0000 |
| Cyclohexane            | 0.0385     | 0.1787 | 0.0733 |
| Methylcyclohexane      | 0.0565     | 0.3059 | 0.1270 |
| Description:           | RBU 6-18 F |        |        |

#### **GRI GlyCalc Information**

| Component              | Mol%     | Wt%      | LV%      |  |
|------------------------|----------|----------|----------|--|
| Carbon Dioxide         | 0.3143   | 0.7623   | 0.2993   |  |
| Hydrogen Sulfide       | 0.0000   | 0.0000   | 0.0000   |  |
| Nitrogen               | 0.1221   | 0.1885   | 0.0748   |  |
| Methane                | 91.2478  | 80.6806  | 86.3833  |  |
| Ethane                 | 5.2642   | 8.7242   | 7.8843   |  |
| Propane                | 1.5975   | 3.8824   | 2.4600   |  |
| Isobutane              | 0.3382   | 1.0833   | 0.6182   |  |
| n-Butane               | 0.3758   | 1.2040   | 0.6622   |  |
| Isopentane             | 0.1704   | 0.6778   | 0.3493   |  |
| n-Pentane              | 0.1206   | 0.4795   | 0.2440   |  |
| Cyclopentane           | 0.0000   | 0.0000   | 0.0000   |  |
| n-Hexane               | 0.0604   | 0.2868   | 0.1387   |  |
| Cyclohexane            | 0.0385   | 0.1787   | 0.0733   |  |
| Other Hexanes          | 0.0933   | 0.4434   | 0.2151   |  |
| Heptanes               | 0.0859   | 0.4528   | 0.2048   |  |
| Methylcyclohexane      | 0.0565   | 0.3059   | 0.1270   |  |
| 2,2,4 Trimethylpentane | 0.0055   | 0.0348   | 0.0155   |  |
| Benzene                | 0.0231   | 0.0993   | 0.0361   |  |
| Toluene                | 0.0260   | 0.1318   | 0.0486   |  |
| Ethylbenzene           | 0.0008   | 0.0046   | 0.0017   |  |
| Xylenes                | 0.0095   | 0.0555   | 0.0205   |  |
| C8+ Heavies            | 0.0496   | 0.3238   | 0.1433   |  |
| Subtotal               | 100.0000 | 100.0000 | 100.0000 |  |
| Oxygen                 | 0.0000   | 0.0000   | 0.0000   |  |
| Total                  | 100.0000 | 100.0000 | 100.0000 |  |

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#### WELLSITE FLASH TANK EMISSIONS

Company: Summit Gas Gathering Facility Name: Each wellsite Facility Location: Uintah County, Utah

| GAS              | MOLECULAR    | MOLE     | RELATIVE     | WEIGHT      | COMPONENT  | COMPONENT   | COMPONENT   |
|------------------|--------------|----------|--------------|-------------|------------|-------------|-------------|
| COMPONENT        | WEIGHT       | PERCENT  | MOLE WEIGHT  | PERCENT     | FLOW RATE  | FLOW RATE   | FLOW RATE   |
|                  | (lb/lb-mole) |          | (lb/lb-mole) |             | (Mscf/day) | (lb/hr)     | (tons/yr)   |
| Methane          | 16.043       | 70.9793  | 11.3872091   | 50.91175044 | 0.00709793 | 0.012502755 | 0.054762066 |
| Ethane           | 30.07        | 7.6613   | 2.30375291   | 10.29998591 | 0.00076613 | 0.00252944  | 0.011078946 |
| Propane          | 44.097       | 2.6969   | 1.189251993  | 5.317097469 | 0.00026969 | 0.001305757 | 0.005719215 |
| i-Butane         | 58.123       | 0.6654   | 0.386750442  | 1.729145554 | 0.00006654 | 0.000424638 | 0.001859916 |
| n-Butane         | 58.123       | 0.7914   | 0.459985422  | 2.056576182 | 0.00007914 | 0.000505048 | 0.002212109 |
| i-Pentane        | 72.15        | 0.3659   | 0.26399685   | 1.180319218 | 0.00003659 | 0.000289859 | 0.001269584 |
| n-Pentane        | 72.15        | 0.3261   | 0.23528115   | 1.051932487 | 0.00003261 | 0.00025833  | 0.001131487 |
| Hexanes          | 86.177       | 0.3626   | 0.312477802  | 1.39707559  | 0.00003626 | 0.00034309  | 0.001502733 |
| Heptanes         | 100.204      | 0.2103   | 0.210729012  | 0.942160873 | 0.00002103 | 0.000231373 | 0.001013414 |
| Octanes          | 114.231      | 0.2137   | 0.244111647  | 1.091413282 | 0.00002137 | 0.000268026 | 0.001173954 |
| Nonanes          | 128.258      | 0.1666   | 0.213677828  | 0.95534491  | 0.00001666 | 0.000234611 | 0.001027595 |
| Decanes +        | 142.285      | 0.569    | 0.80960165   | 3.61969617  | 0.0000569  | 0.000888914 | 0.003893444 |
| Benzene          | 78.12        | 0.01     | 0.007812     | 0.034927135 | 0.000001   | 8.5773E-06  | 3.75686E-05 |
| Toluene          | 92.13        | 0.0235   | 0.02165055   | 0.096798732 | 0.00000235 | 2.37715E-05 | 0.000104119 |
| Ethylbenzene     | 106.16       | 0.0082   | 0.00870512   | 0.038920239 | 0.0000082  | 9.55792E-06 | 4.18637E-05 |
| Xylenes          | 106.16       | 0.0222   | 0.02356752   | 0.105369427 | 0.00000222 | 2.58763E-05 | 0.000113338 |
| n-Hexane         | 86.177       | 0.0648   | 0.055842696  | 0.249670431 | 0.0000648  | 6.13133E-05 | 0.000268552 |
| Helium           | 4.003        | 0        | 0            | 0           | 0          | 0           | 0           |
| Nitrogen         | 28.013       | 14.4447  | 4.046393811  | 18.09126276 | 0.00144447 | 0.004442798 | 0.019459455 |
| Carbon Dioxide   | 44.01        | 0.4221   | 0.18576621   | 0.830553197 | 0.00004221 | 0.000203965 | 0.000893366 |
| Oxygen           | 32           | 0        | 0            | 0           | 0          | 0           | 0           |
| Hydrogen Sulfide | 34.08        | 0        | 0            | 0           | 0          | 0           | 0           |
| VOC SUBTOTAL     |              | 6.4966   | 4.443441682  | 19.8664477  | 0.00064966 | 0.004878743 | 0.021368893 |
| HAP SUBTOTAL     |              | 0.1287   | 0.117577886  | 0.525685964 | 0.00001287 | 0.000129096 | 0.000565442 |
| TOTAL            |              | 100.0040 | 22.36656371  | 100         | 0.0100004  | 0.0245577   | 0.107562726 |

Gas Vented: Days of Operation:

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0.01 Mscf/day 365 days/year 1 barrels of Oil/Produced Water 4.0553 Gas to Oil Ratio in Cubic Feet Gas to Barrel of Oil/Water

See attached flash gas analysis for nearby well RBU 2-16E, including gas to oil ratio, API Gravity and Reid Vapor Pressure

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## **TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics**

#### Identification

| User Identification:<br>City:<br>State:<br>Company:<br>Type of Tank:<br>Description:                                                                                                               | Summit Gas Gathering - 6-15E Wellsite<br>Utah<br>Summit Gas Gathering<br>Vertical Fixed Roof Tank<br>400-bbl storage tank Produced water and condensate Shared Tank - 1 gallon/day condensate, 2 bpd Prod Water. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tank Dimensions<br>Shell Height (ft):<br>Diameter (ft):<br>Liquid Height (ft) :<br>Avg. Liquid Height (ft):<br>Volume (gallons):<br>Turnovers:<br>Net Throughput(gal/yr):<br>Is Tank Heated (y/n): | 20.00<br>12.00<br>19.50<br>10.00<br>16,497.58<br>0.02<br>365.00<br>Y                                                                                                                                             |
| Paint Characteristics<br>Shell Color/Shade:<br>Shell Condition<br>Roof Color/Shade:<br>Roof Condition:                                                                                             | Gray/Light<br>Good<br>Gray/Light<br>Good                                                                                                                                                                         |
| Roof Characteristics<br>Type:<br>Height (ft)<br>Radius (ft) (Dome Roof)                                                                                                                            | Dome 0.13<br>12.00                                                                                                                                                                                               |
| Breather Vent Settings<br>Vacuum Settings (psig):<br>Pressure Settings (psig)                                                                                                                      | 0.00<br>0.00                                                                                                                                                                                                     |

Meterological Data used in Emissions Calculations: Grand Junction, Colorado (Avg Atmospheric Pressure = 12.37 psia)

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## TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

#### Summit Gas Gathering - 6-15E Wellsite - Vertical Fixed Roof Tank

| Mixture/Component | Month |      | ily Liquid S<br>perature (de<br>Min. |      | Liquid<br>Bulk<br>Temp<br>(deg F) | Vapo<br>Avg. | or Pressure<br>Min. | (psia)<br>Max. | Vapor<br>Mol.<br>Weight. | Liquid<br>Mass<br>Fract.                      | Vapor<br>Mass<br>Fract. | Moi.<br>Weight | Basis for Vapor Pressure<br>Calculations |
|-------------------|-------|------|--------------------------------------|------|-----------------------------------|--------------|---------------------|----------------|--------------------------|-----------------------------------------------|-------------------------|----------------|------------------------------------------|
| Crude oil (RVP 5) | All   | 0.00 | 0.00                                 | 0.00 | 0.00                              | 0.7594       | 0.7594              | 0.7594         | 50.0000                  | ar <del>all - Alan ang alan ang alan an</del> |                         | 207.00         | Option 4: RVP=5                          |

## TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

### Summit Gas Gathering - 6-15E Wellsite - Vertical Fixed Roof Tank

| Annual Emission Calcaulations                                     |                 |
|-------------------------------------------------------------------|-----------------|
| Standing Losses (Ib):                                             | 0.0000          |
| Vapor Space Volume (cu ft):                                       | 1,138.0430      |
| Vapor Density (lb/cu ft):                                         | 0.0077          |
| Vapor Space Expansion Factor:                                     | 0.0000          |
| Vented Vapor Saturation Factor:                                   | 0.7117          |
| Tank Vapor Space Volume:                                          |                 |
| Vapor Space Volume (cu ft):                                       | 1,138.0430      |
| Tank Diameter (ft):                                               | 12.0000         |
| Vapor Space Outage (ft):                                          | 10.0625         |
| Tank Shell Height (ft):                                           | 20.0000         |
| Average Liquid Height (ft):                                       | 10.0000         |
| Roof Outage (ft):                                                 | 0.0625          |
| Roof Outage (Dome Roof)                                           | 0.0005          |
| Roof Outage (ft):                                                 | 0.0625          |
| Dome Radius (ft):                                                 | 12.0000         |
| Shell Radius (ft):                                                | 6.0000          |
| Vapor Density                                                     | 0.0077          |
| Vapor Density (lb/cu ft):<br>Vapor Molecular Weight (lb/lb-mole): | 50.0000         |
| Vapor Pressure at Daily Average Liquid                            | 50.0000         |
| Surface Temperature (psia):                                       | 0.7594          |
| Daily Avg. Liquid Surface Temp. (deg. R):                         | 459.6700        |
| Daily Average Ambient Temp. (deg. F):                             | 52.9333         |
| Ideal Gas Constant R                                              | 01.0000         |
| (psia cuft / (lb-mol-deg R)):                                     | 10.731          |
| Liquid Bulk Temperature (deg. R):                                 | 459.6700        |
| Tank Paint Solar Absorptance (Shell):                             | 0.5400          |
| Tank Paint Solar Absorptance (Roof):                              | 0.5400          |
| Daily Total Solar Insulation                                      |                 |
| Factor (Btu/sqft day):                                            | 1,578.3125      |
| apor Space Expansion Factor                                       |                 |
| Vapor Space Expansion Factor:                                     | 0.0000          |
| Daily Vapor Temperature Range (deg. R):                           | 0.0000          |
| Daily Vapor Pressure Range (psia):                                | 0.0000          |
| Breather Vent Press. Setting Range(psia):                         | 0.0000          |
| Vapor Pressure at Daily Average Liquid                            |                 |
| Surface Temperature (psia):                                       | 0.7594          |
| Vapor Pressure at Daily Minimum Liquid                            | 12 March 1      |
| Surface Temperature (psia):                                       | 0.7594          |
| Vapor Pressure at Daily Maximum Liquid                            | 0.7604          |
| Surface Temperature (psia):                                       | 0.7594          |
| Daily Avg. Liquid Surface Temp. (deg R):                          | 459.6700        |
| Daily Min. Liquid Surface Temp. (deg R):                          | 459.6700        |
| Daily Max. Liquid Surface Temp. (deg R):                          | 459.6700        |
| Daily Ambient Temp. Range (deg. R):                               | 25.6333         |
| /ented Vapor Saturation Factor                                    | and there are a |
| Vented Vapor Saturation Factor                                    | 0.7117          |
| Vapor Pressure at Daily Average Liquid:                           |                 |
| Surface Temperature (psia):                                       | 0.7594          |
| Vapor Space Outage (ft):                                          | 10.0625         |
| Vorking Losses (Ib):                                              | 0.2475          |
| torking Loads (ID).                                               | 0.2475          |

| Vapor Molecular Weight (Ib/lb-mole):   | 50.0000     |
|----------------------------------------|-------------|
| Vapor Pressure at Daily Average Liquid |             |
| Surface Temperature (psia):            | 0.7594      |
| Annual Net Throughput (gal/yr.):       | 365.0000    |
| Annual Turnovers:                      | 0.0221      |
| Tumover Factor:                        | 1.0000      |
| Maximum Liquid Volume (gal):           | 16,497.5776 |
| Maximum Liquid Height (ft):            | 19.5000     |
| Tank Diameter (ft):                    | 12.0000     |
| Working Loss Product Factor:           | 0.7500      |
|                                        |             |
| Total Losses (Ib):                     | 0.2475      |

## TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

### **Emissions Report for: Annual**

### Summit Gas Gathering - 6-15E Wellsite - Vertical Fixed Roof Tank

|                   | Losses(lbs)  |                |                 |  |  |  |  |  |  |
|-------------------|--------------|----------------|-----------------|--|--|--|--|--|--|
| Components        | Working Loss | Breathing Loss | Total Emissions |  |  |  |  |  |  |
| Crude oil (RVP 5) | 0.25         | 0.00           | 0.25            |  |  |  |  |  |  |

TANKS 4.0 Report

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## TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identification

| User Identification:<br>City:<br>State:<br>Company:<br>Type of Tank:<br>Description:                                                                                                               | Summit Gas Gathering - 7-15E Wellsite<br>Utah<br>Summit Gas Gathering<br>Vertical Fixed Roof Tank<br>One 300-bbl storage tank Shares produced water and condensate 1 bpd water; 1 quart per day condensate. Uncontrolled;<br>Actual production |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tank Dimensions<br>Shell Height (ft):<br>Diameter (ft):<br>Liquid Height (ft) :<br>Avg. Liquid Height (ft):<br>Volume (gallons):<br>Turnovers:<br>Net Throughput(gal/yr):<br>Is Tank Heated (y/n): | 15.00<br>12.00<br>14.50<br>8.00<br>12,267.43<br>0.01<br>91.25                                                                                                                                                                                  |
| Paint Characteristics<br>Shell Color/Shade:<br>Shell Condition<br>Roof Color/Shade:<br>Roof Condition:                                                                                             | Gray/Light<br>Good<br>Gray/Light<br>Good                                                                                                                                                                                                       |
| Roof Characteristics<br>Type:<br>Height (ft)<br>Radius (ft) (Dome Roof)                                                                                                                            | Dome 0.13<br>12.00                                                                                                                                                                                                                             |
| Breather Vent Settings<br>Vacuum Settings (psig):<br>Pressure Settings (psig)                                                                                                                      | 0.00<br>0.00                                                                                                                                                                                                                                   |

Meterological Data used in Emissions Calculations: Grand Junction, Colorado (Avg Atmospheric Pressure = 12.37 psia)

## TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

#### Summit Gas Gathering - 7-15E Wellsite - Vertical Fixed Roof Tank

|                   | na na mandra na Analonna ang marang |      | ily Liquid S<br>perature (d | eg F) | Liquid<br>Bulk<br>Temp | Vapo   | r Pressure |        | Vapor<br>Mol. | Liquid<br>Mass | Vapor<br>Mass | Mol.   | Basis for Vapor Pressure |
|-------------------|-------------------------------------|------|-----------------------------|-------|------------------------|--------|------------|--------|---------------|----------------|---------------|--------|--------------------------|
| Mixture/Component | Month                               | Avg  | Min.                        | Max.  | (deg F)                | Avg.   | Min.       | Max.   | Weight.       | Fract          | Fract.        | Weight | Calculations             |
| Crude oil (RVP 5) | All                                 | 0.00 | 0.00                        | 0.00  | 0.00                   | 0.7594 | 0.7594     | 0.7594 | 50.0000       |                | 2.460 AT      | 207.00 | Option 4: RVP=5          |

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## TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

#### Summit Gas Gathering - 7-15E Wellsite - Vertical Fixed Roof Tank

| Annual Emission Calcaulations                                                   |                     |
|---------------------------------------------------------------------------------|---------------------|
| Standing Losses (Ib):                                                           | 0.0000              |
| Vapor Space Volume (cu ft):                                                     | 798.7510            |
| Vapor Density (lb/cu ft):                                                       | 0.0077              |
| Vapor Space Expansion Factor:                                                   | 0.0000              |
| Vented Vapor Saturation Factor.                                                 | 0.7787              |
| Tank Vapor Space Volume:                                                        | 700 7540            |
| Vapor Space Volume (cu ft):                                                     | 798.7510            |
| Tank Diameter (ft):                                                             | 12.0000             |
| Vapor Space Outage (ft):                                                        | 7.0625              |
| Tank Shell Height (ft):                                                         |                     |
| Average Liquid Height (ft):                                                     | 8.0000<br>0.0625    |
| Roof Outage (ft):                                                               | 0.0625              |
| Roof Outage (Dome Roof)                                                         | 0.0005              |
| Roof Outage (ft):                                                               | 0.0625              |
| Dome Radius (ft):                                                               | 6,0000              |
| Shell Radius (ft):                                                              | 0.0000              |
| Vapor Density                                                                   | 0.0077              |
| Vapor Density (lb/cu ft):<br>Vapor Molecular Weight (lb/lb-mole):               | 50,0000             |
| Vapor Pressure at Daily Average Liquid                                          | 50.0000             |
| Surface Temperature (psia):                                                     | 0.7594              |
| Daily Avg. Liquid Surface Temp. (deg. R):                                       | 459.6700            |
| Daily Average Ambient Temp. (deg. F):                                           | 52,9333             |
| Ideal Gas Constant R                                                            | 02.0000             |
| (psia cuft / (lb-mol-deg R)):                                                   | 10,731              |
| Liquid Bulk Temperature (deg. R):                                               | 459.6700            |
| Tank Paint Solar Absorptance (Shell):                                           | 0.5400              |
| Tank Paint Solar Absorptance (Roof):                                            | 0,5400              |
| Daily Total Solar Insulation                                                    |                     |
| Factor (Btu/sqft day):                                                          | 1,578.3125          |
| Vapor Space Expansion Factor                                                    |                     |
| Vapor Space Expansion Factor:                                                   | 0.0000              |
| Daily Vapor Temperature Range (deg. R):                                         | 0.0000              |
| Daily Vapor Pressure Range (psia):                                              | 0.0000              |
| Breather Vent Press. Setting Range(psia):                                       | 0.0000              |
| Vapor Pressure at Daily Average Liquid                                          |                     |
| Surface Temperature (psia):                                                     | 0.7594              |
| Vapor Pressure at Daily Minimum Liquid                                          |                     |
| Surface Temperature (psia):                                                     | 0.7594              |
| Vapor Pressure at Daily Maximum Liquid                                          |                     |
| Surface Temperature (psia):                                                     | 0.7594              |
| Daily Avg. Liquid Surface Temp. (deg R):                                        | 459.6700            |
| Daily Min. Liquid Surface Temp. (deg R):                                        | 459.6700            |
| Daily Max. Liquid Surface Temp. (deg R):<br>Daily Ambient Temp. Range (deg. R): | 459.6700<br>25.6333 |
| Vented Vapor Saturation Factor                                                  |                     |
| Vented Vapor Saturation Factor                                                  | 0.7787              |
|                                                                                 | 0.7787              |
| Vapor Pressure at Daily Average Liquid:<br>Surface Temperature (psia):          | 0,7594              |
| Surface Temperature (psia):<br>Vapor Space Outage (ff):                         | 7.0625              |
| Vapor Space Outage (ft):                                                        | 7.0025              |
| Working Losses (lb):                                                            | 0.0619              |
| · · · · · · · · · · · · · · · · · · ·                                           | 2.0010              |

| Vapor Molecular Weight (Ib/Ib-mole):   | 50.0000     |
|----------------------------------------|-------------|
| Vapor Pressure at Daily Average Liquid |             |
| Surface Temperature (psia):            | 0.7594      |
| Annual Net Throughput (gal/yr.):       | 91.2500     |
| Annual Tumovers:                       | 0.0074      |
| Tumover Factor:                        | 1.0000      |
| Maximum Liquid Volume (gal):           | 12,267,4295 |
| Maximum Liquid Height (ft):            | 14.5000     |
| Tank Diameter (ft):                    | 12.0000     |
| Working Loss Product Factor:           | 0.7500      |
|                                        |             |
| otal Losses (lb):                      | 0.0619      |

## TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

### **Emissions Report for: Annual**

### Summit Gas Gathering - 7-15E Wellsite - Vertical Fixed Roof Tank

|                   |              | Losses(lbs)    |                 |
|-------------------|--------------|----------------|-----------------|
| Components        | Working Loss | Breathing Loss | Total Emissions |
| Crude oil (RVP 5) | 0.06         | 0.00           | 0.06            |

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### WELLSITE UNCONTROLLED CONDENSATE TRUCK LOADING EMISSIONS

Company: Summit Gas Gathering Facility Name: RBU 6-15E Facility Location: Uintah County, Utah

AP - 42, Chapter 5.2

#### $L_L$ = 12.46 x S x P x M / T Emissions = $L_L$ \* Throughput

TABLE 1. Emission factors are calculated utilizing AP-42 equations and data from EPA TANKS 4.09 LL is converted to tpy VOC emissions per barrel of production per

- L<sub>L</sub> = Loading Loss Emission Factor (lbs VOC/1000 gal Loaded)
  - S = Saturation Factor (0.6 For Submerged Loading Dedicated Service)
  - P = True Vapor Pressure of the Loaded Liquid (psi)
  - M = Vapor Molecular Weight of the Loaded Liquid (lbs/lbmol)
  - T = Temperature of Loaded Liquid (°R)

|                        |              |     |              |       |              |                   |        | - 147 - S |          | $1 < 1 \frac{2}{2} \int_{\mathbb{T}^{d}} e_{i} s \left[ 1 \left( \phi_{i} \right) \right] s \right]$ | (c)(c)<br>€ |
|------------------------|--------------|-----|--------------|-------|--------------|-------------------|--------|-----------|----------|------------------------------------------------------------------------------------------------------|-------------|
| Location as a location | - Reichois - |     | STEVER (OSI) |       | <b>TRANK</b> | , lo activitient. | . eert |           |          |                                                                                                      | i di y      |
| Truck Loading          | 12.46        | 0.6 | 1.25         | 22.59 | 511.68       | 0.4126            | 0.0004 | 0.0173    | 3.16E-03 | 1.00                                                                                                 | 0.0032      |

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## WELLSITE NATURAL GAS COMPOSITION

Company: Summit Gas Gathering Facility Name: All Wellsites Facility Location: Uintah County, Utah

Fuel Type: Natural Gas Heat Value (wet): 1095 Btu/scf

C1-C2 Wt. Fraction: VOC Wt. Fraction: Non-HC Wt. Fraction: Total: 0.893683557 0.09681167 0.009504773 1

| COMPONENT        | MOLE     | COMPONENT    | NET          | WEIGHT      | GROSS     | NET DRY     | LOWER     | NET LOW    |
|------------------|----------|--------------|--------------|-------------|-----------|-------------|-----------|------------|
|                  | PERCENT  | MOLE         | MOLE         | FRACTION    | HEATING   | HEATING     | HEATING   | HEATING    |
|                  |          | WEIGHT       | WEIGHT       |             | VALUE     | VALUE       | VALUE     | VALUE      |
|                  |          | (lb/lb-mole) | (lb/lb-mole) |             | (BTU/scf) | (BTU/scf)   | (BTU/scf) | (BTU/scf)  |
| Methane          | 91.2478  | 16.043       | 14.63888455  | 0.806476879 | 1010      | 921.60278   | 910       | 830.35498  |
| Ethane           | 5.2642   | 30.07        | 1.58294494   | 0.087206678 | 1769.8    | 93.1658116  | 1618      | 85.174756  |
| Propane          | 1.5975   | 44.097       | 0.704449575  | 0.038809125 | 2516.2    | 40.196295   | 2316      | 36.9981    |
| i-Butane         | 0.3382   | 58.123       | 0.196571986  | 0.010829429 | 3252.1    | 10.9986022  | 3005      | 10.16291   |
| n-Butane         | 0.3758   | 58.123       | 0.218426234  | 0.012033411 | 3262.4    | 12.2600992  | 3013      | 11.322854  |
| i-Pentane        | 0.1704   | 72.15        | 0.1229436    | 0.006773137 | 4000.9    | 6.8175336   | 3698      | 6.301392   |
| n-Pentane        | 0.1206   | 72.15        | 0.0870129    | 0.004793664 | 4008.8    | 4.8346128   | 3708      | 4.471848   |
| Hexanes+         | 0.1318   | 86.177       | 0.113581286  | 0.006257354 | 4756.2    | 6.2686716   | 4404      | 5.804472   |
| Heptanes         | 0.1424   | 100.204      | 0.142690496  | 0.007861021 | 5502.5    | 7.83556     | 5100      | 7.2624     |
| Octanes          | 0.0316   | 114.231      | 0.036096996  | 0.001988635 | 6249.1    | 1.9747156   |           | 0          |
| Nonanes          | 0.0207   | 128.258      | 0.026549406  | 0.001462644 | 6996.4    | 1.4482548   |           | 0          |
| Decanes          | 0.0028   | 142.285      | 0.00398398   | 0.000219483 | 7743.2    | 0.2168096   |           | 0          |
| Benzene          | 0.0231   | 78.12        | 0.01804572   | 0.000994164 | 3715.5    | 0.8582805   |           | 0          |
| Toluene          | 0.026    | 92.13        | 0.0239538    | 0.001319649 | 4444.6    | 1.155596    |           | 0          |
| Ethylbenzene     | 0.0008   | 106.16       | 0.00084928   | 4.6788E-05  | 5191.5    | 0.041532    |           | 0          |
| Xylenes          | 0.0095   | 106.16       | 0.0100852    | 0.000555608 | 5183.5    | 0.4924325   |           | 0          |
| n-Hexane         | 0.0604   | 86.177       | 0.052050908  | 0.002867558 | 4756.2    | 2.8727448   |           | 0          |
| Helium           | 0.0000   | 4.003        | 0            | 0           | 0         | 0           | 0         | 0          |
| Nitrogen         | 0.1221   | 28.013       | 0.034203873  | 0.00188434  | 0         | 0           | 0         | 0          |
| Carbon Dioxide   | 0.3143   | 44.01        | 0.13832343   | 0.007620434 | 0         | 0           | 0         | 0          |
| Oxygen           | 0.0000   | 32           | 0            | 0           | 0         | 0           | 0         | 0          |
| Hydrogen Sulfide | 0.0000   | 34.08        | 0            | 0           | 637.1     | 0           | 588       | 0          |
| TOTAL            | 100.0000 |              | 18.15164816  | 1           |           | 1113.040332 |           | 997.853712 |

Relative Mole Weight (lb/lb-mole) = [Mole Percent \* Molecular weight (lb/bl-mole)] / 100

Weight Fraction =

150

Net Mole Weight / Total Mole Weight

### EACH WELLSITE FUGITIVE EMISSIONS

Company: Summit Gas Gathering Facility Name: Each Wellsite Facility Location: Uintah County, Utah

|           |                 | Estimated<br>Components | Hours of  | Factors* %NMNEVOC |         | Emissio    | ns        |
|-----------|-----------------|-------------------------|-----------|-------------------|---------|------------|-----------|
|           |                 | Count                   | Operation | lb/hr/component   | Weight  | lb/year    | tons/year |
| Valves    |                 |                         |           |                   |         |            |           |
|           | Gas/Vapor       | 150                     | 8760      | 0.00992000        | 9.68%   | 1261.92850 | 0.63096   |
|           | Light Oil       | 20                      | 8760      | 0.00550000        | 100.00% | 963.60000  | 0.48180   |
|           | Heavy Oil       |                         | 8760      | 0.00001900        | 100.00% | 0.00000    | 0.00000   |
|           | Water/Light Oil | 6                       | 8760      | 0.00021600        | 100.00% | 11.35296   | 0.00568   |
| Pumps     |                 |                         |           |                   |         |            |           |
|           | Gas/Vapor       | 7                       | 8760      | 0.00529000        | 9.68%   | 31.40404   | 0.01570   |
|           | Light Oil       | 3                       | 8760      | 0.02866000        | 100.00% | 753.18480  | 0.37659   |
|           | Heavy Oil       |                         | 8760      | 0.00113000        | 100.00% | 0.00000    | 0.00000   |
|           | Water/Light Oil |                         | 8760      | 0.00005300        | 100.00% | 0.00000    | 0.00000   |
| Flanges   |                 |                         |           |                   |         |            |           |
|           | GasNapor        | 300                     | 8760      | 0.00086000        | 9.68%   | 218.80212  | 0.10940   |
|           | Light Oil       | 30                      | 8760      | 0.00024300        | 100.00% | 63.86040   | 0.03193   |
|           | Heavy Oil       |                         | 8760      | 0.0000086         | 100.00% | 0.00000    | 0.00000   |
|           | Water/Light Oil | 20                      | 8760      | 0.00000620        | 100.00% | 1.08624    | 0.00054   |
| Open-ende | ed Lines        |                         |           |                   |         |            |           |
|           | GasNapor        |                         | 8760      | 0.00441000        | 9.68%   | 0.00000    | 0.00000   |
|           | Light Oil       |                         | 8760      | 0.00309000        | 100.00% | 0.00000    | 0.00000   |
|           | Heavy Oil       |                         | 8760      | 0.00030900        | 100.00% | 0.00000    | 0.00000   |
|           | Water/Light Oil |                         | 8760      | 0.00055000        | 100.00% | 0.00000    | 0.00000   |
| Connector | S               |                         |           |                   |         |            |           |
|           | Gas/Vapor       | 20                      | 8760      | 0.00044000        | 9.68%   | 7.46302    | 0.00373   |
|           | Light Oil       | 20                      | 8760      | 0.00046300        | 100.00% | 81.11760   | 0.04056   |
|           | Heavy Oil       |                         | 8760      | 0.00001700        | 100.00% | 0.00000    | 0.00000   |
|           | Water/Light Oil | 20                      | 8760      | 0.00024300        | 100.00% | 42.57360   | 0.02129   |

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#### Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents

| Gas/Vapor       | 10 | 8760 | 0.01940000 | 9.68%   | 164.52562  | 0.08226 |
|-----------------|----|------|------------|---------|------------|---------|
| Light Oil       | 10 | 8760 | 0.01650000 | 100.00% | 1445.40000 | 0.72270 |
| Heavy Oil       |    | 8760 | 0.0006800  | 100.00% | 0.00000    | 0.00000 |
| Water/Light Oil | 10 | 8760 | 0.03090000 | 100.00% | 2706.84000 | 1.35342 |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

| Total in tons/year | 3.88 |
|--------------------|------|
| Total in Lb/hr     | 0.89 |

#### Fugitive HAP Emissions Totals - Gas/Vapor

|           | wt% in gas | Total VOC wt % | Total Gas Fugitive VOC tpy | Total tpy for HAP | Total Ib/hr for HAP |
|-----------|------------|----------------|----------------------------|-------------------|---------------------|
| Benzene   | 0.0994%    | 9.68%          | 0.84                       | 0.009             | 0.002               |
| Toluene   | 0.1320%    | 9.68%          | 0.84                       | 0.011             | 0.003               |
| Xylene    | 0.0556%    | 9.68%          | 0.84                       | 0.005             | 0.001               |
| n-Hexane  | 0.2868%    | 9.68%          | 0.84                       | 0.025             | 0.006               |
| E-benzene | 0.0047%    | 9.68%          | 0.84                       | 0.000             | 0.000               |

| TOTAL Fugitive HAP's | 0.050 | 0.011 |
|----------------------|-------|-------|
|----------------------|-------|-------|

#### Fugitive HAP Emissions Totals - Light Oil and Water

|           | wt% in liquid | Total VOC wt % | Total Liquid Fugitive VOC tpy | Total tpy for HAP | Total Ib/hr for HAP |
|-----------|---------------|----------------|-------------------------------|-------------------|---------------------|
| Benzene   | 0.035%        | 100.00%        | 3.03                          | 0.001             | 0.000               |
| Toluene   | 0.097%        | 100.00%        | 3.03                          | 0.003             | 0.001               |
| E-benzene | 0.039%        | 100.00%        | 3.03                          | 0.001             | 0.000               |
| Kylene    | 0.1054%       | 100.00%        | 3.03                          | 0.003             | 0.001               |
| 2,2,4 TMP | 0.000%        | 100.00%        | 3.03                          | 0.000             | 0.000               |
| n-Hexane  | 0.250%        | 100.00%        | 3.03                          | 0.008             | 0.002               |

| and the second | and the second se |       |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| TOTAL Fugitive HAP's                                                                                             | 0.016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.004 |
|                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |

### EACH WELLSITE FUGITIVE METHANE EMISSIONS

Company: Summit Gas Gathering

Facility Name: Each Wellsite

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Facility Location: Uintah County, Utah

|                  | Estimated<br>Components | Hours of  | Factors*        | %METHANE | Emiss       | ions             |
|------------------|-------------------------|-----------|-----------------|----------|-------------|------------------|
|                  | Count                   | Operation | lb/hr/component | Weight   | lb/year     | metric tons/year |
| Valves           |                         |           |                 |          |             |                  |
| GasA             | apor 150                | 8760      | 0.00992000      | 80.65%   | 10512.32934 | 4.77833          |
| Light            | Dil 20                  | 8760      | 0.00550000      | 50.91%   | 490.58563   | 0.22299          |
| Heavy            | Oil                     | 8760      | 0.00001900      | 0.00%    | 0.00000     | 0.00000          |
| Water            | /Light Oil 6            | 8760      | 0.00021600      | 50.91%   | 5.77999     | 0.00263          |
| Pumps            |                         |           |                 |          |             |                  |
| GasA             |                         |           | 0.00529000      | 80.65%   | 261.60723   | - 0.11891        |
| Light            | Dil 3                   | 8760      | 0.02866000      | 50.91%   | 383.45957   | 0.17430          |
| Heavy            | Oil                     | 8760      | 0.00113000      | 0.00%    | 0.00000     | 0.00000          |
| Water            | /Light Oil              | 8760      | 0.00005300      | 50.91%   | 0.00000     | 0.00000          |
| Flanges          |                         |           |                 |          |             |                  |
| GasA             | 3 = 15140               |           | 0.00086000      | 80.65%   | 1822.70226  | 0.82850          |
| Light            | Dil 30                  | 8760      | 0.00024300      | 50.91%   | 32.51245    | 0.01478          |
| Heavy            |                         | 8760      | 0.0000086       | 0.00%    | 0.00000     | 0.00000          |
| Water            | /Light Oil 20           | 8760      | 0.00000620      | 50.91%   | 0.55302     | 0.00025          |
| Open-ended Lines |                         |           |                 |          |             |                  |
| GasA             | apor                    | 8760      | 0.00441000      | 80.65%   | 0.00000     | 0.00000          |
| Light            | Dil                     | 8760      | 0.00309000      | 50.91%   | 0.00000     | 0.00000          |
| Heavy            | Oil                     | 8760      | 0.00030900      | 0.00%    | 0.00000     | 0.00000          |
| Water            | /Light Oil              | 8760      | 0.00055000      | 50.91%   | 0.00000     | 0.00000          |
| Connectors       |                         |           |                 |          |             |                  |
| Gas∧             |                         |           | 0.00044000      | 80.65%   | 62.16969    | 0.02826          |
| Light            | Dil 20                  | 8760      | 0.00046300      | 50.91%   | 41.29839    | 0.01877          |
| Heavy            |                         | 8760      | 0.00001700      | 0.00%    | 0.00000     | 0.00000          |
| Water            | /Light Oil 20           | 8760      | 0.00024300      | 50.91%   | 21.67496    | 0.00985          |
|                  |                         |           |                 |          |             |                  |

Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents

| Gas/Vapor       | 10 | 8760 | 0.01940000 | 80.65% | 1370.55907 | 0.62298 |
|-----------------|----|------|------------|--------|------------|---------|
| Light Oil       | 10 | 8760 | 0.01650000 | 50.91% | 735.87844  | 0.33449 |
| Heavy Oil       |    | 8760 | 0.00006800 | 0.00%  | 0.00000    | 0.00000 |
| Water/Light Oil | 10 | 8760 | 0.03090000 | 50.91% | 1378.09963 | 0.62641 |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

| Methane Total in metric tons/year | 7.78 |  |  |
|-----------------------------------|------|--|--|
| Methane Total in Lb/hr            | 1.78 |  |  |

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### EACH WELLSITE FUGITIVE CO2 EMISSIONS

Company: Summit Gas Gathering Facility Name: Each Wellsite

Facility Location: Uintah County, Utah

|            | Estimated Hou<br>Components |       | Hours of  | Factors*        | %CO2   | Emissio  | Emissions        |  |
|------------|-----------------------------|-------|-----------|-----------------|--------|----------|------------------|--|
|            |                             | Count | Operation | lb/hr/component | Weight | lb/year  | metric tons/year |  |
| Valves     |                             |       |           |                 |        |          |                  |  |
|            | Gas/Vapor                   | 150   | 8760      | 0.00992000      | 0.76%  | 99.33144 | 0.04515          |  |
|            | Light Oil                   | 20    | 8760      | 0.00550000      | 0.83%  | 8.00321  | 0.00364          |  |
|            | Heavy Oil                   |       | 8760      | 0.00001900      | 0.00%  | 0.00000  | 0.00000          |  |
|            | Water/Light Oil             | 6     | 8760      | 0.00021600      | 0.83%  | 0.09429  | 0.00004          |  |
| Pumps      |                             |       |           |                 |        |          |                  |  |
|            | Gas/Vapor                   | 7     | 8760      | 0.00529000      | 0.76%  | 2.47194  | 0.00112          |  |
|            | Light Oil                   | 3     | 8760      | 0.02866000      | 0.83%  | 6.25560  | 0.00284          |  |
|            | Heavy Oil                   |       | 8760      | 0.00113000      | 0.00%  | 0.00000  | 0.00000          |  |
|            | Water/Light Oil             |       | 8760      | 0.00005300      | 0.83%  | 0.00000  | 0.00000          |  |
| Flanges    |                             |       |           |                 |        |          |                  |  |
|            | Gas/Vapor                   | 300   | 8760      | 0.00086000      | 0.76%  | 17.22279 | 0.00783          |  |
| ×          | Light Oil                   | 30    | 8760      | 0.00024300      | 0.83%  | 0.53039  | 0.00024          |  |
|            | Heavy Oil                   |       | 8760      | 0.0000086       | 0.00%  | 0.00000  | 0.00000          |  |
|            | Water/Light Oil             | 20    | 8760      | 0.0000620       | 0.83%  | 0.00902  | 0.00000          |  |
| Open-ende  | d Lines                     |       |           |                 |        |          |                  |  |
|            | Gas/Vapor                   |       | 8760      | 0.00441000      | 0.76%  | 0.00000  | 0.00000          |  |
|            | Light Oil                   |       | 8760      | 0.00309000      | 0.83%  | 0.00000  | 0.00000          |  |
|            | Heavy Oil                   |       | 8760      | 0.00030900      | 0.00%  | 0.00000  | 0.00000          |  |
|            | Water/Light Oil             |       | 8760      | 0.00055000      | 0.83%  | 0.00000  | 0.00000          |  |
| Connectors | 6                           |       |           |                 |        |          |                  |  |
|            | Gas/Vapor                   | 20    | 8760      | 0.00044000      | 0.76%  | 0.58744  | 0.00027          |  |
|            | Light Oil                   | 20    | 8760      | 0.00046300      | 0.83%  | 0.67372  | 0.00031          |  |
|            | Heavy Oil                   |       | 8760      | 0.00001700      | 0.00%  | 0.00000  | 0.00000          |  |
|            | Water/Light Oil             | 20    | 8760      | 0.00024300      | 0.83%  | 0.35360  | 0.00016          |  |
|            |                             |       |           |                 |        |          |                  |  |

Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents

| Gas/Vapor       | 10 | 8760 | 0.01940000 | 0.76% | 12.95047 | 0.00589 |
|-----------------|----|------|------------|-------|----------|---------|
| Light Oil       | 10 | 8760 | 0.01650000 | 0.83% | 12.00482 | 0.00546 |
| Heavy Oil       |    | 8760 | 0.00006800 | 0.00% | 0.00000  | 0.00000 |
| Water/Light Oil | 10 | 8760 | 0.03090000 | 0.83% | 22.48175 | 0.01022 |

\*NOTE - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.

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| CO <sub>2</sub> Total in metric tons/year | 0.08 |
|-------------------------------------------|------|
| CO <sub>2</sub> Total in Lb/hr            | 0.02 |

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