Wortman, Eric

From: Wortman, Eric
Sent: Friday, September 22, 2017 9:56 AM
To: '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: https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8.

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(l). 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
To: 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: https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8.

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: wortman.eric@epa.gov

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

River Bend Dehydration Site:
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?

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: http://www.epa.gov/caa-permitting/caa-permit-public-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.

What happens next?

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 e-mail, 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/caa-permitting/caa-permit-public-comment-opportunities-

Smith, Claudia

From: Wortman, Eric
Sent: Friday, August 18, 2017 5:12 AM
To: 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 Air Program (8P-AR) 1595 Wynkoop St. Denver, CO 80202	Uintah & Ouray Indian Tribe Energy and Minerals Department Office 988 South 7500 East, Annex Building Fort Duchesne, UT 84026	Uintah County Clerk 147 E. Main St., #6 Vernal, UT 84078

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

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

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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,

Eric Wortman

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

AUG 14 2017

Ref: 8P-AR

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: https://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8, 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 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. Facility Information

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
minnieg@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 $\leq$ 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.

Table 1 – Emission Units and Emission Generating Activities*

Unit I.D.	Description	Control Equipment
RBD-1	45 MMscfd TEG Dehydration Unit (River Bend) Serial #: 8156 Installed: 1/17/2010	Thermal Oxidizer
RBT-1	400-bbl Condensate Storage Tank (River Bend) Serial #: 1764 Installed: 12/15/2009	None
RBT-2	400-bbl Condensate Storage Tank (River Bend) 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) 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 (not enforceable)
T1C-2	Caterpillar 3516 LE; 1,340 hp (Tap-1) 4-Stroke Lean-Burn Reciprocating Internal Combustion Engines Natural Gas-Fired Serial No. 4EK03582 Installed: 7/18/2013 Mfg: 8/12/2001	Oxidation Catalyst (not enforceable)

Unit I.D.	Description	Control Equipment
T1T-1	300-bbl* Condensate Storage Tank (Tap-1) Serial #: 2024 Installed: 6/18/2012	None
T1T-2	300-bbl* Condensate Storage Tank (Tap-1) 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 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 if 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."[1]

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.

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

Regulated Air Pollutants (tpy)											
Unit ID	**NO_X***	**CO***	**VOC***	**PM***	**SO_2***	**CH_2O***	**Total HAP***	**CO_2***	**CH_4* (as CO_2e)**	**N_2O* (as CO_2e)**	**CO_2e***
RBD-1 w/Thermal 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 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 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-1	0.6	2.9	14.6	0.1	0.0	0.0	10.9	962.8	6.3	0.0	6.3
RBU 11-15E 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 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 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

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

Regulated Air Pollutants (tpy)											
Unit ID	**NO_X***	**CO***	**VOC***	**PM***	**SO_2***	**CH_2O***	**Total HAP***	**CO_2***	**CH_4* (as CO_2e)**	**N_2O* (as CO_2e)**	**CO_2e***
T1P-1 and 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_X = nitrogen oxide; CO = carbon monoxide; VOC = volatile organic compound; PM = particulate matter; SO_2 = sulfur dioxide; CH_2O = formaldehyde; HAP = hazardous air pollutant; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = equivalent CO_2; 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_2 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_2 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_2 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[2] 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:

[2] 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) Large pollutant-specific emissions units. 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) Other pollutant-specific emissions units. 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. EPA Authority

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. Use of All Credible Evidence

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. Public Participation

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 https://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8, 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 https://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8 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 mwilkins@co.uintah.ut.us

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 minnieg@utetribe.com

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 wortman.eric@epa.gov

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: https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8. 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

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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 Action	Description of Action
TBD	V-UO-000026-2011.00	Initial Permit	N/A

Table of Contents

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
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

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 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 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 ≤ 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

Table 2 - Emission Units and Emission Generating Activities*

Unit I.D.	Description	Control Equipment
RBD-1	45 MMscfd TEG Dehydration Unit (River Bend) Serial #: 8156 Installed: 1/17/2010	Thermal Oxidizer
RBT-1	400 bbl Condensate Storage Tank (River Bend) Serial #: 1764 Installed: 12/15/2009	None
RBT-2	400 bbl Condensate Storage Tank (River Bend) 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) 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 (not enforceable)
T1C-2	Caterpillar 3516 LE; 1,340 hp (Tap-1) 4-Stroke Lean-Burn Reciprocating Internal Combustion Engines Natural Gas-Fired Serial No. 4EK03582 Installed: 7/18/2013 Mfg: 8/12/2001	Oxidation Catalyst (not enforceable)

Unit I.D.	Description	Control Equipment
T1T-1	300 bbl Condensate Storage Tank (Tap-1) Serial #: 2024 Installed: 6/18/2012	None
T1T-2	300 bbl Condensate Storage Tank (Tap-1) 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. National Emission Standards for Hazardous Air Pollutants from Oil and Natural 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 ZZZZ

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 non-emergency 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) four-stroke 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 1st and October 1st of each year. The report due on April 1st shall cover the 6-month period ending on the last day of December before the report is due. The report due on October 1st 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: https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits]

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 r8airreportenforcement@epa.gov 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: https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits]

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 1st. 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 non-U.S. Postal Service express Mail** (FedEx, Airborne, DHL, and UPS)
U.S. Environmental Protection Agency FOIA and Miscellaneous Payments Cincinnati Finance Center P.O. Box 979078 St. Louis, MO 63197-9000	U.S. Bank Government Lockbox 979078 U.S. EPA FOIA & Misc. Payments 1005 Convention Plaza 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: https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits*]*

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, in-place 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)(ii).

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 1st.

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 1st, 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: https://www.epa.gov/title-v-operating-permits/epa-issued-operating-permits*]*

(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 emissions-related 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

EPA United States Environmental Protection Agency

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) **Hermann** (First) **Timothy** (MI) **L**

Title **XTO Energy Inc. - Manager of MSO Western Division Operations**

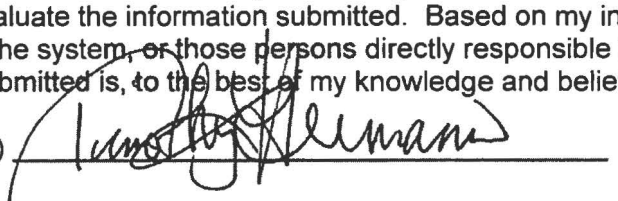
Street or P.O. Box **810 Houston St.**

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** Date: 7/26/**2017**

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.**

C. Please provide the following information by March 8th:
   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.**

XTO Energy Inc.

Riverbend Dehydrator Site Uncontrolled PTE Table. July-2017-v4

RBU Dehy Site PTE	ID	Emissions Units	NO_X*	CO*	VOC*	PM*	SO_2*	Total HAPs*	CO_2*	CH_4* (as CO_2e)	N_2O* (as CO_2e)	CO_2e*
Emission Units	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	0.0	0.0	10.9	0.0	6.3	0.0	6.3
	RBF-1	Fugitive Emissions	0.0	0.0	5.7	0.0	0.0	0.1	0.15	333.9	0.0	334.0
	RBT-1	400-bbl slop tank #1	0.0	0.0	4.3	0.0	0.0	0.2	0.03	31.4	0.0	31.4
	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 6-15E D-1~~	~~RBU 6-15E Wellsite 0.20 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	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	RBU 6-15E Wellsite Pneumatic Pump Emissions	0.0	0.0	5.1	0.0	0.0	0.1	0.4	1057.4	0.0	1057.8
	~~RBU 7-15E D-1~~	~~RBU 7-15E Wellsite 0.20 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 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-1	RBU 11-15E Wellsite 0.20 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-1	RBU 11-15E Wellsite Fugitive Emissions	0.0	0.0	3.9	0.0	0.0	0.1	0.1	214.0	0.0	214.1
	RBU 11-15E P-1	RBU 11-15E Wellsite Pneumatic Pump Emissions	0.0	0.0	5.1	0.0	0.0	0.1	0.4	1057.4	0.0	1057.8
	T1C-1	Tap-1 Caterpillar 3516 TALE Compressor Engine #1	19.4	32.3	4.9	0.01	0.0	4.4	4968.0	1411.4	0.0	6379.3
	T1C-2	Tap-1 Caterpillar 3516 TALE Compressor Engine #2	16.7	29.4	4.7	0.00	0.0	3.8	4197.1	958.2	0.0	5155.3
	T1T-1	Tap-1 - 300-bbl Condensate Tank #1	0.0	0.0	2.2	0.0	0.0	0.13	0.03	24.0	0.0	24.0
	T1T-2	Tap-1 - 300-bbl Condensate Tank #2	0.0	0.0	2.2	0.0	0.0	0.13	0.03	24.0	0.0	24.0
	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	2160.0
	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
Insignificant Emission Units	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 IEU	Capstone Model C65NG Standard MicroTurbine (65kW)	0.1	1.7	0.0	0.0	0.0	0.0	80.2	0.0	0.0	80.2
	RBU Dehy Site IEU	1.0 MMBtu/hr Dehy Reboiler for RBD-1	0.5	0.5	0.1	0.0	0.0	0.0	512.0	0.2	0.3	639.5
	RBU Dehy Site IEU	250 Mbtu/hr heater for slop 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 IEU	250 Mbtu/hr heater for slop 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 Wellsite IEU	250 Mbtu/hr heater for slop tank #1	0.1	0.1	0.0	0.0	0.0	0.0	128.0	0.1	0.1	128.1
	RBU 6-15E 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 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 7-15E P-1	RBU 7-15E Wellsite Pneumatic Pump Emissions	0.0	0.0	0.8	0.0	0.0	0.1	0.1	169.2	0.0	169.2
	~~RBU 7-15E Wellsite IEU~~	~~250 Mbtu/hr Dehydrator 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	128.1
	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 Wellsite IEU	175 Mbtu/hr Dehydrator 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	128.1
	RBU 11-15E Wellsite IEU	250 Mbtu/hr separator heater	0.1	0.1	0.01	0.0	0.0	0.0	128.0	0.1	0.1	128.1
	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
	RBU 11-15E 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
	Tap-1 Site IEU	Standard MicroTurbine (65kW)	0.1	1.7	0.0	0.0	0.0	0.0	80.2	0.0	0.0	80.2
	T1-Heaters IEU	Tap-1 - Three (3) 250 Mbtu/hr Heaters	0.40	0.34	0.04	0.03	0.0	0.0	384.0	0.2	0.2	384.4
	T1-TL IEU	Tap-1 Truck Loading	0.0	0.0	0.3	0.0	0.0	0.002	0.0	0.0	0.0	0.0
	Tap 1 IEU	Tap-1 Comp Blowdowns	0.0	0.0	1.9	0.0	0.0	0.01	0.1	256.5	0.0	256.6
Facility-Wide PTE (uncontrolled)			**38.8**	**69.7**	**104.7**	**0.3**	**0.0**	**24.3**	**12120.7**	**8335.4**	**0.9**	**20585.0**

XTO ENERGY INC. - UINTAH COUNTY, UTAH

RIVERBEND DEHYDRATOR SITE - SOURCE REGULATORY APPLICABILTY TABLE - JULY 2017, v4

Equipment ID	Emissions Units	Equipment Type	Equipment Construction / Manufacture Date	Equipment Install Date	Uncontrolled VOC Emissions rate (TPY)	Potential Applicable Regulation	Regulatory Applicability (Yes / No)	Comments
RBD-1	45 MMscfd TEG Dehydrator	Natural Gas 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 OOOO	NO	Tank S/N 1764 - Pre-Aug 2011 Const Date / BELOW 6 TPY VOC
RBT-2	400-bbl slop tank #2	Storage Tank	2009	12/15/2009	4.31	NSPS OOOO	NO	Tank S/N 1765 - Pre-Aug 2011 Const Date / BELOW 6 TPY VOC
RBU Pneumatic Controllers	RBU Pneumatic Controllers	Pneumatic Controllers	Pre-2010	1/17/2010	N/A	NSPS OOOO	NO	Controllers operate On Plant Instrument Air
~~RBU 6-15E D-1~~	~~RBU 6-15E Wellsite 0.20 MMscfd TEG Dehydrator~~	~~Natural Gas Dehydrator~~	~~Pre-2010~~	~~1/18/2010~~	~~0.00~~	~~MACT HH~~	~~NO~~	Dehy Unit removed on July 28, 2017
RBU 6-15E P-1	RBU 6-15E Wellsite Pneumatic Pump Emissions	Pneumatic Pump	Pre-2010	1/18/2010	N/A	NSPS OOOOa	NO	
RBU 6-15E Pneumatic Controllers	RBU 6-15E Pneumatic Controllers	Pneumatic Controllers	Pre-2010	Pre-2010	N/A	NSPS OOOO	NO	Operate On Plant Instrument Air
~~RBU 7-15E D-1~~	~~RBU 7-15E Wellsite 0.20 MMscfd glycol dehydrator~~	~~Natural Gas Dehydrator~~	~~Pre-2012~~	~~3/2/2012~~	~~0.00~~	~~MACT HH~~	~~NO~~	Dehy Unit removed on July 28, 2017
RBU 7-15E P-1	RBU 7-15E Wellsite Pneumatic Pump Emissions	Pneumatic Pump	Pre-2012	3/2/2012	N/A	NSPS OOOOa	NO	
RBU 7-15E Pneumatic Controllers	RBU 7-15E Pneumatic Controllers	Pneumatic Controllers	Pre-2010	Pre-2010	N/A	NSPS OOOO	NO	
RBU 11-15E D-1	RBU 11-15E Wellsite 0.20 MMscfd glycol dehydrator	Natural Gas Dehydrator	Pre-2010	Pre-2010	10.54	MACT HH	NO	Area Source - Unit is less than 3.0 mmscfd actual flowrate
RBU 11-15E P-1	RBU 11-15E Wellsite Pneumatic Pump Emissions	Pneumatic Pump	Pre-2012	Pre-2012	N/A	NSPS OOOOa	NO	
RBU 11-15E Pneumatic Controllers	RBU 11-15E Pneumatic Controllers	Pneumatic Controllers	Pre-2010	Pre-2010	N/A	NSPS OOOO	NO	
T1C-1	Tap-1 Caterpillar 3516 TALE 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 Compressor #1	Reciprocating Compressor	Pre-2010	7/1/2013	N/A	NSPS OOOO	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 ZZZZ	YES	REMOTE AREA - S/N 4EK03582
T1C-2	Tap-1 Caterpillar 3516 TALE Compressor Engine #2	RICE	8/12/2001	7/18/2013	N/A	NSPS JJJJ	NO	S/N 4EK03582
T1C-2	Tap-1 Caterpillar 3516 TALE Compressor #2	Reciprocating Compressor	Pre-2010	7/18/2013	N/A	NSPS OOOO	NO	Pre-Aug 2011 Construction date
T1T-1	Tap-1 - 300-bbl Condensate Tank #1	Storage Tank	6/16/2010	6/18/2012	2.19	NSPS OOOO	NO	Tank 1350 / S/N 2024 - Pre-Aug 2011 Const Date / BELOW 6 TPY VOC
T1T-2	Tap-1 - 300-bbl Condensate Tank #2	Storage Tank	9/12/2001	6/18/2012	2.19	NSPS OOOO	NO	Tank 78938/ S/N 8S06401-02 - Pre-Aug 2011 Const Date / BELOW 6 TPY VOC
T1P-1 / T1P-2	Tap-1 Heat Trace Pumps (2)	Pneumatic Pump	Pre-2014	Pre-2014	N/A	NSPS OOOOa	NO	Pre- 2015 Install date
RBU 6-15E Wellsite IEU	400-bbl slop tank	Storage Tank	11/1/2012	11/21/2012	1.85	NSPS OOOO	YES	Tank E1427 / S/N 2802 - BELOW 6 TPY VOC
RBU 7-15E Wellsite IEU	400-bbl slop tank	Storage Tank	7/1/2012	8/24/2012	1.85	NSPS OOOO	YES	Tank E1414 / S/N 2678 - BELOW 6 TPY VOC
RBU 11-15E Wellsite IEU	300-bbl slop tank	Storage Tank	3/1/2008	5/9/2012	1.42	NSPS OOOO	NO	Tank E1391/ S/N 0800 - Pre-2011 and BELOW 6 TPY VOC
RBU 6-15E Wellsite	Well Completion	Natural Gas Well	N/A	1/22/2004	N/A	NSPS OOOOa	NO	
RBU 7-15E Wellsite	Well Completion	Natural Gas Well	N/A	Initial - 4/3/1992 & Recompletion - 1/3/2013	N/A	NSPS OOOOa	NO	
RBU 11-15E Wellsite	Well Completion	Natural Gas Well	N/A	11/2/1991	N/A	NSPS OOOOa	NO	

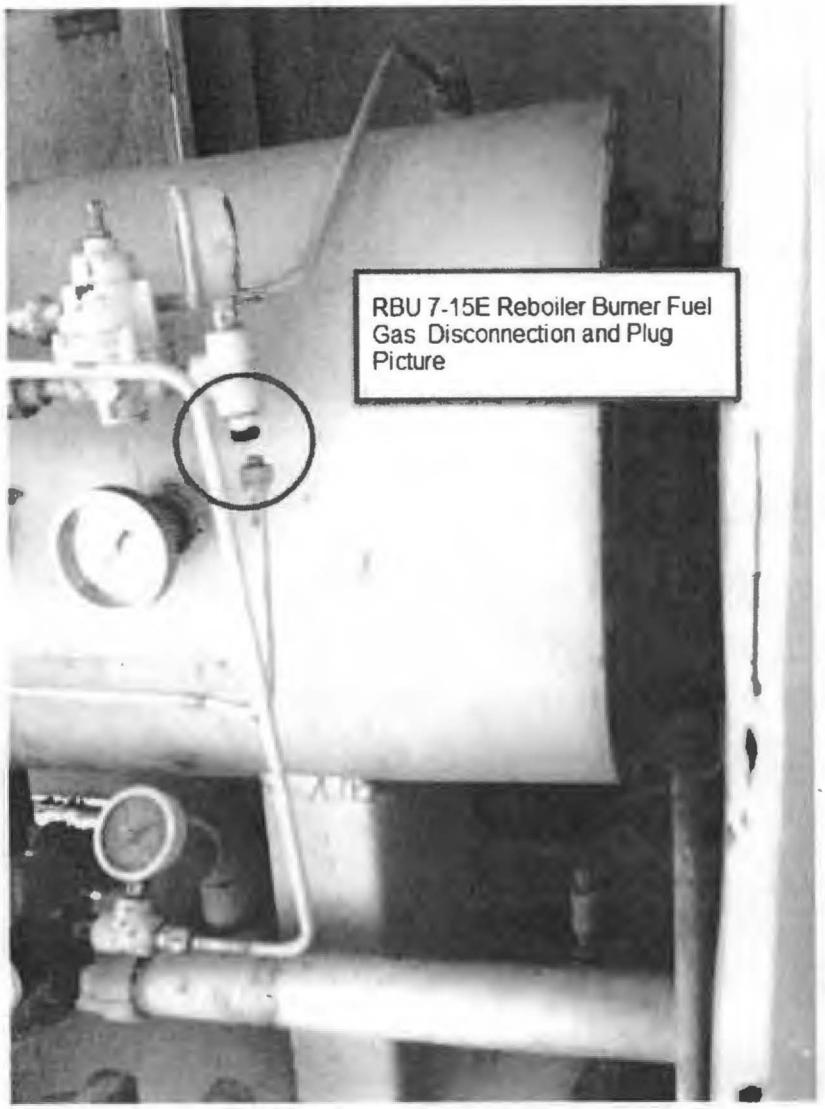
XTO ENERGY INC. – RIVERBEND DEHYDRATION SITE
DESCRIPTION OF RELEVANT APPLICATION MODIFICATIONS

- 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:
  - Tap-1 Compressor Station
  - 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).
-

-


RBU 6-15E Reboiler Burner Fuel Gas Disconnection and Plug Picture


RBU 7-15E Kimray Glycol
Pump Removal Picture


RBU 7-15E Reboiler Burner Fuel Gas Disconnection and Plug Picture

Work Request

Date: 7/25/17

Run 203

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

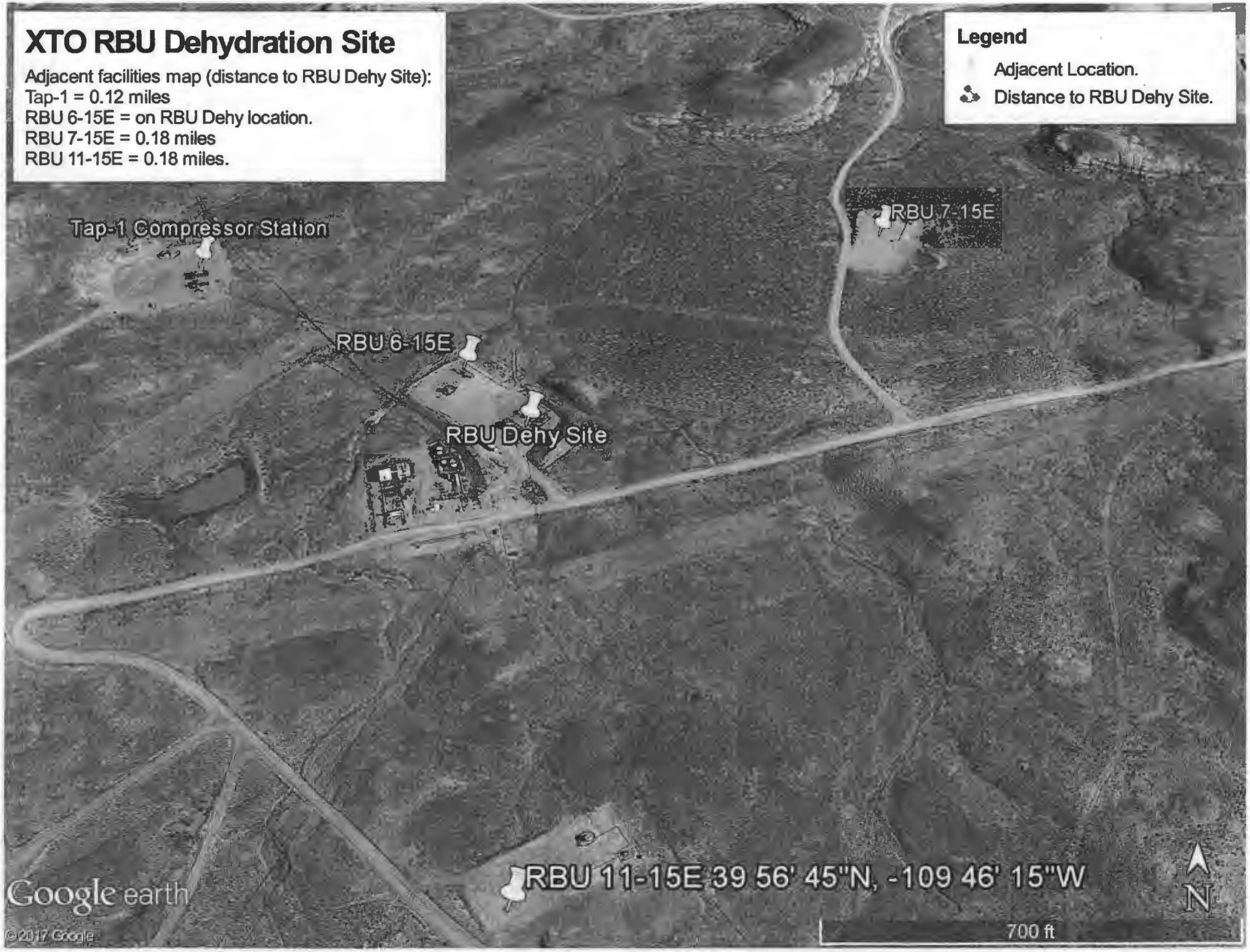
Work Order: Remove Kimray glycol circulating pump from Dehy side of production unit, Plug any open ended lines. Disconnect, Block, Blind flange or thread plug Absorber tower inlet & outlet lines from any service or gas flow. Disconnect, Block or thread plug fuel supply to the Dehy fire box.

Contractor/Department: Production Dept.

Contacts: [redacted]

Lease Operator: [redacted]

Foreman: [redacted]
Phone#: [redacted]


XTO RBU Dehydration Site
Adjacent facilities map (distance to RBU Dehy Site):
Tap-1 = 0.12 miles
RBU 6-15E = on RBU Dehy location.
RBU 7-15E = 0.18 miles
RBU 11-15E = 0.18 miles.
Legend
Adjacent Location.
Distance to RBU Dehy Site.
Tap-1 Compressor Station
RBU 7-15E
RBU 6-15E
RBU Dehy Site
RBU 11-15E 39 56' 45"N, -109 46' 15"W
Google earth
© 2017 Google
N
700 ft

EPA 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 name __Riverbend Dehydration Site_____

Mailing address: Street or P.O. Box ____810 Houston Street, Petro-4_____

City ____Fort Worth_____ State ___TX__ ZIP __76102__-_____

Contact person: ____Craig Allison_____ Title ____EHS Advisor_____

Telephone (817) __885__ - __2672_____ Ext. _____

Facsimile (817) ___885__ - __1847_____

B. Facility Location

Temporary source? ___Yes _X_No Plant site location ___39.9750760, -109.6360850_____

_____

City ____Roosevelt_____ State_UT__ County___Uintah____ EPA Region_8__

Is the facility located within:

Indian lands? _X – Indian Airshed___YES ___ NO 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_ YES __ NO If yes, What State(s)? __Colorado__

C. Owner

Name ____XTO Energy, Inc._____ Street/P.O. Box ____810 Houston Street, Petro-4_____

City _____Fort Worth_____ State__TX__ ZIP___76102_ - _____

Telephone (_817_) __885____ - ___2672_____ Ext_____

D. Operator

Name __XTO Energy, Inc._____ Street/P.O. Box _810 Houston Street, Petro-4_____

City _____Fort Worth_____ State __TX__ ZIP _76102___ - _____

Telephone (__817___) __885____ - ____2672_____ 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? _____ /__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 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 _X_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

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
T1C-1	Tap-1 Caterpillar G3516 TALE Compressor Engine Controlled By Oxidation Catalyst
T1C-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 VOC ___104.7____ tons/yr SO2 ___0.1____ tons/yr

PM-10 __0.3_____ tons/yr CO __69.7____ tons/yr Lead _____0.0___ tons/yr

Total HAP ____24.3____ 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 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

EPA United States Environmental Protection Agency

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

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 use __Compressor Engine_____ Temporary Source ___Yes _X__No

Manufacturer ___Caterpillar_____ Model No. _____G3516 TALE_____

Serial Number ___4EK03995_____ Installation Date__7_/_1_/_2013__

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) _____Natural-Gas Compressor Engine_____

Engine horsepower rating____1340_____ Boiler steam flow (lb/hr)_____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input __10.311____MM BTU/hr Max. Design Heat Input ___10.311___MM 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 Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1,044 BTU/scf

D. Fuel Usage Rates

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

E. Associated Air Pollution Control Equipment

Emissions unit ID___T1C-1_____ Device type_____

Air pollutant(s) Controlled___NONE_____ 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._____

EPA United States Environmental Protection Agency

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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
NOx		4.43	19.41	
CO		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

United States Environmental Protection Agency

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

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 use __Compressor Engine_____ Temporary Source ___Yes _X__No

Manufacturer ___Caterpillar_____ Model No. _____G3516 TALE_____

Serial Number ___4EK03582_____ Installation Date__7_/_18_/_2013__

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) _____Natural-Gas Compressor Engine_____

Engine horsepower rating____1150_____ Boiler steam flow (lb/hr)_____

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input __8.711____MM BTU/hr Max. Design Heat Input ___8.711___MM 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 Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1,044 BTU/scf

D. Fuel Usage Rates

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

E. Associated Air Pollution Control Equipment

Emissions unit ID___T1C-2_____ Device type_____

Air pollutant(s) Controlled___NONE_____ 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._____

United States Environmental Protection Agency

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-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			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
NOx		3.80	16.7	
CO		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

EPA United States Environmental Protection Agency

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			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
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

EPA United States Environmental Protection Agency

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

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _T1T-1_____ Description ___300-barrel condensate storage tank

SIC Code (4-digit) __1311_____ SCC Code __31000212_____

B. Emissions Unit Description

Equipment type __Storage Tank_____ Temporary source: ___Yes _X__No

Manufacturer__Benchmark_____ Model No. ___Verical Fixed Roof_____

Serial No. ___2024_____ Installation date__6__/_18___/_2012_

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 Type____NONE_____

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 Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Condensate		Condensate	191,625	525	191,625	0.05

EPA United States Environmental Protection Agency

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

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_____ Description ___300-barrel condensate storage tank

SIC Code (4-digit) __1311_____ SCC Code __31000212_____

B. Emissions Unit Description

Equipment type __Storage Tank_____ Temporary source: ___Yes _X__No

Manufacturer__NATCO_____ Model No. ___Verical Fixed Roof_____

Serial No. ___8S06401-02_____ Installation date__6__/_18___/_2012_

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 Type____NONE_____

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 Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Condensate		Condensate	191,625	525	191,625	0.05

EPA United States Environmental Protection Agency

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

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _RBT-1_____ Description ___400-barrel condensate storage tank

SIC Code (4-digit) __1311_____ SCC Code __31000212_____

B. Emissions Unit Description

Equipment type __Storage Tank_____ Temporary source: ___Yes _X__No

Manufacturer__Benchmark_____ Model No. ___Verical Fixed Roof_____

Serial No. ___1764_____ Installation date__12__/_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 Type____NONE_____

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) _____.____

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 Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Condensate		Condensate	245,280	672	245,280	0.04

United States Environmental Protection Agency

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

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _RBT-2_____ Description ___400-barrel condensate storage tank

SIC Code (4-digit) __1311_____ SCC Code __31000212_____

B. Emissions Unit Description

Equipment type __Storage Tank_____ Temporary source: ___Yes _X__No

Manufacturer__Benchmark_____ Model No. ___Verical Fixed Roof_____

Serial No. ___1765_____ Installation date__12__/_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 Type____NONE_____

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) _____.____

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 Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Condensate		Condensate	245,280	672	245,280	0.04

United States Environmental Protection Agency

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

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 type _____Natural Gas Dehydration_____

Manufacturer ____Sivalls_____ Model No. _____

Serial No. _____ Installation date _____/_____/__2007___

Raw materials _____Wet Natural Gas_____

Finished products ____Dry Natural Gas_____

Temporary source: _X__No ___Yes

C. Activity or Production Rates

Activity or 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 Type_____NONE_____

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.

EPA United States Environmental Protection Agency

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 _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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	See attached PTE Table			
HAPs	See attached PTE Table			

United States Environmental Protection Agency

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

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 (except HAP)	HAP
	Updated July-2017 - Refer to the attached Station PTE Table	X	X

UNCONTROLLED CONDENSATE TRUCK LOADING EMISSIONS

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

AP - 42, Chapter 5.2

$$L_L = 12.46 \times S \times P \times M / T$$

Emissions = L_L * Throughput

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

L_L = 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_L				Production	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	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: River Bend Dehydration Site
Facility Location: Uintah County, Utah

Flare Heat Input Capacity	1.787	MMBtu/hr	(Dehydrator emissions only routed to 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) Emission Factor[1] (lb/MMBtu)	(B) = (A)x MMBtu/hr Potential Emission Rate (lbs/hr)	(C) = (B)xOT Potential Emission Rate (lbs/year)	(D) = (C)/2000 Potential Emission Rate (tons/year)
Particulate Matter (PM)	Negligible, Smokeless Design			
Particulate Matter (PM_{10})	Negligible, Smokeless Design			
Nitrogen Oxides (NO_x)	0.068	0.12	1064.23	0.53
Sulfur Oxides (SO_x)	None; no H_2S present in fuel gas			
Carbon Monoxide (CO)	0.37	0.66	5790.69	2.90
Volatile Organic Compounds (VOC)	--	--	--	--

[1]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: River Bend Dehydration Site
Facility Location: Uintah County, Utah

Pilot Emissions (One pilot)

Total Heat Input Capacity of Pilot[2]	0.1	MMBtu/hr
Heating Value	1106	Btu/scf
Operating Time	8760	hr/yr
Total Natural Gas Usage	0.0001	MMscf/hr

[2] Pilot light heat input based on 2Mscf/day.

Pollutant	(A) Emission Factor (lb/MMscf)	(B) = (A)x MMscf/hr Potential Emission Rate (lbs/hr)	(C) = (B)xOT Potential Emission Rate (lbs/year)	(D) = (C)/2000 Potential Emission Rate (tons/year)
Particulate Matter (PM)[3]	7.6	0.0006	5.5480	0.0028
Particulate Matter (PM_{10})[3]	7.6	0.0006	5.5480	0.0028
Nitrogen Oxides (NO_x)[4]	100	0.0083	73.0000	0.0365
Sulfur Dioxide (SO_2)[3]	0.6	0.0001	0.4380	0.0002
Carbon Monoxide (CO)[4]	84	0.0070	61.3200	0.0307
Volatile Organic Compounds (VOC)[3]	5.5	0.0005	4.0150	0.0020
HAPs[3]	0.0805	0.0000	0.0588	0.0000

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

Total Thermal Oxidizer Emissions

Pollutant	Total Potential Emission Rate (tons/year)
Particulate Matter (PM)	0.0028
Particulate Matter (PM_{10})	0.0028
Nitrogen Oxides (NO_x)	0.5686
Sulfur Dioxide (SO_2)	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 Description	Gas Flow Rate (MMscf/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (tons/yr)	CO_2 (tons/yr)	Methane (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 Description	Gas Flow Rate (MMscf/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (tons/yr)	CO_2 (tons/yr)	Methane (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 (9.5 gpm)

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES

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 2016-2017 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:

Temperature: 74.00 deg. F
Pressure: 1042.00 psig
Wet Gas Water Content: Saturated

Component	Conc. (vol %)
Carbon Dioxide	0.3517
Nitrogen	0.3686
Methane	89.6464
Ethane	6.0452
Propane	1.9291
Isobutane	0.4376
n-Butane	0.4848
Isopentane	0.2080
n-Pentane	0.1435
n-Hexane	0.0608
Cyclohexane	0.0344
Other Hexanes	0.0961
Heptanes	0.0881
Methylcyclohexane	0.0441
2,2,4-Trimethylpentane	0.0047
Benzene	0.0228
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. H2O/MMSCF

LEAN GLYCOL:

Glycol Type: TEG
Water Content: 1.5 wt% H2O
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
Destruction Efficiency:	99.0 %
Excess Oxygen:	13.8 %
Ambient Air Temperature:	52.0 deg. F

GRI-GLYCalc VERSION 4.0 - EMISSIONS SUMMARY

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 2016-2017 Questions¥RBU Dehy 2017 Updated PTE .ddf
Date: May 12, 2017

CONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	0.0114	0.274	0.0501
Ethane	0.0141	0.338	0.0617
Propane	0.0167	0.401	0.0732
Isobutane	0.0089	0.213	0.0389
n-Butane	0.0151	0.362	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 Hexanes	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
Ethane	1.4095	33.829	6.1737
Propane	1.6705	40.092	7.3168
Isobutane	0.8874	21.298	3.8869
n-Butane	1.5076	36.182	6.6033
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	12.2771
Methylcyclohexane	4.0834	98.002	17.8853
2,2,4-Trimethylpentane	0.0594	1.427	0.2604
Benzene	15.7145	377.148	68.8294
Toluene	21.5136	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

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	16.7241	401.378	73.2515
Ethane	5.5263	132.630	24.2050
Propane	3.1219	74.925	13.6738
Isobutane	1.0675	25.621	4.6758
n-Butane	1.3661	32.786	5.9835
Isopentane	0.6371	15.289	2.7903
n-Pentane	0.5055	12.132	2.2141
n-Hexane	0.2671	6.409	1.1697
Cyclohexane	0.2065	4.956	0.9045
Other Hexanes	0.3946	9.470	1.7283
Heptanes	0.4332	10.396	1.8972
Methylcyclohexane	0.2486	5.965	1.0887
2,2,4-Trimethylpentane	0.0183	0.439	0.0800
Benzene	0.1786	4.287	0.7824
Toluene	0.1512	3.629	0.6622
Ethylbenzene	0.0036	0.087	0.0158
Xylenes	0.0290	0.695	0.1269
C8+ Heavies	0.0100	0.240	0.0438
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

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 2016-2017 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	0.274	0.0501
Ethane	0.0141	0.338	0.0617
Propane	0.0167	0.401	0.0732
Isobutane	0.0089	0.213	0.0389
n-Butane	0.0151	0.362	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 Hexanes	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
Ethane	1.4095	33.829	6.1737
Propane	1.6705	40.092	7.3168
Isobutane	0.8874	21.298	3.8869
n-Butane	1.5076	36.182	6.6033

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	12.2771
Methylcyclohexane	4.0834	98.002	17.8853
2,2,4-Trimethylpentane	0.0594	1.427	0.2604
Benzene	15.7145	377.148	68.8294
Toluene	21.5136	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

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	16.7241	401.378	73.2515
Ethane	5.5263	132.630	24.2050
Propane	3.1219	74.925	13.6738
Isobutane	1.0675	25.621	4.6758
n-Butane	1.3661	32.786	5.9835
Isopentane	0.6371	15.289	2.7903
n-Pentane	0.5055	12.132	2.2141
n-Hexane	0.2671	6.409	1.1697
Cyclohexane	0.2065	4.956	0.9045
Other Hexanes	0.3946	9.470	1.7283
Heptanes	0.4332	10.396	1.8972
Methylcyclohexane	0.2486	5.965	1.0887
2,2,4-Trimethylpentane	0.0183	0.439	0.0800
Benzene	0.1786	4.287	0.7824
Toluene	0.1512	3.629	0.6622
Ethylbenzene	0.0036	0.087	0.0158
Xylenes	0.0290	0.695	0.1269
C8+ Heavies	0.0100	0.240	0.0438
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 Temperature:	52.00 deg. F
Excess Oxygen:	13.80 %
Combustion Efficiency:	99.00 %
Supplemental Fuel Requirement:	3.04e-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:	1.25
Calculated Dry Gas Dew Point:	0.98 lbs. H2O/MMSCF
Temperature:	74.0 deg. F
Pressure:	1042.0 psig
Dry Gas Flow Rate:	45.0000 MMSCF/day
Glycol Losses with Dry Gas:	0.3171 lb/hr
Wet Gas Water Content:	Saturated
Calculated Wet Gas Water Content:	25.99 lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	12.13 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
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%

FLASH TANK

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

Component	Left in Glycol	Removed in 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.

Component	Remaining in Glycol	Distilled Overhead

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. F
Pressure: 1056.70 psia
Flow Rate: 1.88e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	5.48e-002	4.88e+001
Carbon Dioxide	3.52e-001	7.65e+002
Nitrogen	3.68e-001	5.10e+002
Methane	8.96e+001	7.11e+004
Ethane	6.04e+000	8.99e+003
Propane	1.93e+000	4.21e+003
Isobutane	4.37e-001	1.26e+003
n-Butane	4.85e-001	1.39e+003
Isopentane	2.08e-001	7.42e+002
n-Pentane	1.43e-001	5.12e+002
n-Hexane	6.08e-002	2.59e+002
Cyclohexane	3.44e-002	1.43e+002
Other Hexanes	9.60e-002	4.09e+002
Heptanes	8.81e-002	4.36e+002
Methylcyclohexane	4.41e-002	2.14e+002
2,2,4-Trimethylpentane	4.70e-003	2.65e+001
Benzene	2.28e-002	8.80e+001
Toluene	1.90e-002	8.65e+001
Ethylbenzene	6.00e-004	3.15e+000
Xylenes	5.30e-003	2.78e+001

Component	Conc. (vol%)	Loading (lb/hr)
C8+ Heavies	9.19e-003	7.75e+001
Total Components	100.00	9.13e+004

DRY GAS STREAM

Temperature: 74.00 deg. F
Pressure: 1056.70 psia
Flow Rate: 1.88e+006 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	2.06e-003	1.83e+000
Carbon Dioxide	3.51e-001	7.62e+002
Nitrogen	3.69e-001	5.10e+002
Methane	8.97e+001	7.11e+004
Ethane	6.04e+000	8.98e+003
Propane	1.93e+000	4.20e+003
Isobutane	4.37e-001	1.26e+003
n-Butane	4.84e-001	1.39e+003
Isopentane	2.08e-001	7.40e+002
n-Pentane	1.43e-001	5.11e+002
n-Hexane	6.06e-002	2.58e+002
Cyclohexane	3.37e-002	1.40e+002
Other Hexanes	9.58e-002	4.08e+002
Heptanes	8.75e-002	4.33e+002
Methylcyclohexane	4.32e-002	2.10e+002
2,2,4-Trimethylpentane	4.69e-003	2.65e+001
Benzene	1.87e-002	7.22e+001
Toluene	1.43e-002	6.49e+001
Ethylbenzene	4.24e-004	2.23e+000
Xylenes	3.28e-003	1.72e+001
C8+ Heavies	9.11e-003	7.67e+001
Total Components	100.00	9.11e+004

LEAN GLYCOL STREAM

Temperature: 74.00 deg. F
Flow Rate: 9.49e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.84e+001	5.26e+003
Water	1.50e+000	8.01e+001
Carbon Dioxide	5.36e-012	2.86e-010
Nitrogen	2.86e-013	1.53e-011
Methane	1.12e-017	6.00e-016
Ethane	6.13e-008	3.27e-006
Propane	3.65e-009	1.95e-007
Isobutane	1.10e-009	5.86e-008
n-Butane	1.33e-009	7.13e-008
Isopentane	1.38e-004	7.39e-003
n-Pentane	1.25e-004	6.66e-003
n-Hexane	1.02e-004	5.42e-003
Cyclohexane	1.74e-003	9.29e-002

Other Hexanes	2.46e-004	1.31e-002
Heptanes	3.04e-004	1.63e-002
Methylcyclohexane	3.38e-003	1.80e-001
2,2,4-Trimethylpentane	2.22e-005	1.18e-003
Benzene	1.57e-002	8.36e-001
Toluene	3.48e-002	1.86e+000
Ethylbenzene	2.01e-003	1.07e-001
Xylenes	2.94e-002	1.57e+000
C8+ Heavies	2.04e-003	1.09e-001
Total Components	100.00	5.34e+003

RICH GLYCOL STREAM

Temperature: 74.00 deg. F
Pressure: 1056.70 psia
Flow Rate: 9.81e+000 gpm
NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.57e+001	5.25e+003
Water	2.32e+000	1.27e+002
Carbon Dioxide	5.22e-002	2.86e+000
Nitrogen	2.79e-003	1.53e-001
Methane	3.25e-001	1.79e+001
Ethane	1.26e-001	6.94e+000
Propane	8.73e-002	4.79e+000
Isobutane	3.56e-002	1.95e+000
n-Butane	5.23e-002	2.87e+000
Isopentane	2.69e-002	1.48e+000
n-Pentane	2.43e-002	1.33e+000
n-Hexane	1.98e-002	1.08e+000
Cyclohexane	5.29e-002	2.90e+000
Other Hexanes	2.39e-002	1.31e+000
Heptanes	5.92e-002	3.25e+000
Methylcyclohexane	8.22e-002	4.51e+000
2,2,4-Trimethylpentane	1.44e-003	7.89e-002
Benzene	3.05e-001	1.67e+001
Toluene	4.28e-001	2.35e+001
Ethylbenzene	1.88e-002	1.03e+000
Xylenes	2.22e-001	1.22e+001
C8+ Heavies	1.66e-002	9.09e-001
Total Components	100.00	5.49e+003

FLASH TANK OFF GAS STREAM

Temperature: 120.00 deg. F
Pressure: 74.70 psia
Flow Rate: 5.38e+002 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	1.26e-001	3.22e-002
Carbon Dioxide	2.49e+000	1.56e+000

Nitrogen	3.61e-001	1.44e-001
Methane	7.35e+001	1.67e+001
Ethane	1.30e+001	5.53e+000
Propane	4.99e+000	3.12e+000
Isobutane	1.29e+000	1.07e+000
n-Butane	1.66e+000	1.37e+000
Isopentane	6.22e-001	6.37e-001
n-Pentane	4.94e-001	5.06e-001
n-Hexane	2.18e-001	2.67e-001
Cyclohexane	1.73e-001	2.07e-001
Other Hexanes	3.23e-001	3.95e-001
Heptanes	3.05e-001	4.33e-001
Methylcyclohexane	1.78e-001	2.49e-001
2,2,4-Trimethylpentane	1.13e-002	1.83e-002
Benzene	1.61e-001	1.79e-001
Toluene	1.16e-001	1.51e-001
Ethylbenzene	2.40e-003	3.61e-003
Xylenes	1.92e-002	2.90e-002
C8+ Heavies	4.14e-003	1.00e-002
Total Components	100.00	3.26e+001

FLASH TANK GLYCOL STREAM

Temperature: 120.00 deg. F
Flow Rate: 9.73e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.63e+001	5.25e+003
Water	2.33e+000	1.27e+002
Carbon Dioxide	2.39e-002	1.31e+000
Nitrogen	1.79e-004	9.77e-003
Methane	2.10e-002	1.14e+000
Ethane	2.58e-002	1.41e+000
Propane	3.06e-002	1.67e+000
Isobutane	1.63e-002	8.87e-001
n-Butane	2.76e-002	1.51e+000
Isopentane	1.54e-002	8.41e-001
n-Pentane	1.52e-002	8.27e-001
n-Hexane	1.50e-002	8.18e-001
Cyclohexane	4.94e-002	2.70e+000
Other Hexanes	1.68e-002	9.19e-001
Heptanes	5.17e-002	2.82e+000
Methylcyclohexane	7.81e-002	4.26e+000
2,2,4-Trimethylpentane	1.11e-003	6.06e-002
Benzene	3.03e-001	1.66e+001
Toluene	4.28e-001	2.34e+001
Ethylbenzene	1.88e-002	1.03e+000
Xylenes	2.23e-001	1.21e+001
C8+ Heavies	1.65e-002	8.99e-001
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
Pressure: 14.70 psia
Flow Rate: 1.34e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	7.39e+001	4.69e+001
Carbon Dioxide	8.42e-001	1.31e+000
Nitrogen	9.89e-003	9.77e-003
Methane	2.02e+000	1.14e+000
Ethane	1.33e+000	1.41e+000
Propane	1.07e+000	1.67e+000
Isobutane	4.33e-001	8.87e-001
n-Butane	7.36e-001	1.51e+000
Isopentane	3.28e-001	8.34e-001
n-Pentane	3.23e-001	8.21e-001
n-Hexane	2.67e-001	8.12e-001
Cyclohexane	8.78e-001	2.60e+000
Other Hexanes	2.98e-001	9.06e-001
Heptanes	7.94e-001	2.80e+000
Methylcyclohexane	1.18e+000	4.08e+000
2,2,4-Trimethylpentane	1.48e-002	5.94e-002
Benzene	5.71e+000	1.57e+001
Toluene	6.63e+000	2.15e+001
Ethylbenzene	2.46e-001	9.20e-001
Xylenes	2.83e+000	1.06e+001
C8+ Heavies	1.32e-001	7.90e-001
Total Components	100.00	1.17e+002

COMBUSTION DEVICE OFF GAS STREAM

Temperature: 1000.00 deg. F
Pressure: 14.70 psia
Flow Rate: 3.37e+000 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Methane	8.02e+000	1.14e-002
Ethane	5.27e+000	1.41e-002
Propane	4.26e+000	1.67e-002
Isobutane	1.72e+000	8.87e-003
n-Butane	2.92e+000	1.51e-002
Isopentane	1.30e+000	8.34e-003
n-Pentane	1.28e+000	8.21e-003
n-Hexane	1.06e+000	8.12e-003
Cyclohexane	3.48e+000	2.60e-002
Other Hexanes	1.18e+000	9.06e-003

Heptanes	3.15e+000	2.80e-002
Methylcyclohexane	4.68e+000	4.08e-002
2,2,4-Trimethylpentane	5.86e-002	5.94e-004
Benzene	2.26e+001	1.57e-001
Toluene	2.63e+001	2.15e-001
Ethylbenzene	9.75e-001	9.20e-003
Xylenes	1.12e+001	1.06e-001
C8+ Heavies	5.22e-001	7.90e-003
Total Components	100.00	6.91e-001

QUESTAR APPLIED TECHNOLOGY

1210 D. Street, Rock Springs, Wyoming 82901

(307) 352-7292

Description:	River Bend Comp Pre Dehy	Company:	XTO
Field:	Turkey Track	Data File:	001798.D
Meter Number:		G.C. Method:	GAS EXTENDED.M
Analysis Date/Time:	6/15/2016, 11:43:18	GPA Method	GPA 2286
Date Sampled:	6/13/2016	Sampled By:	BC
Sample Temperature:	74	Analyst Initials:	JFL
Sample Pressure:	1042		

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	0.4571
Octanes	0.0085	0.0526	0.0238
Nonanes	0.0066	0.0389	0.0148
Decanes plus	0.0000	0.0000	0.0000
Nitrogen	0.3686	0.5597	0.2243
Carbon Dioxide	0.3517	0.8390	0.3327
Oxygen	ND	ND	ND
Hydrogen Sulfide	ND	ND	ND
Total	100.0000	100.0000	100.0000

Calculated Global Properties		**Units**
Gross BTU/Real CF	1129.5	BTU/SCF at 60°F and14.73 psia
Sat.Gross BTU/Real CF	1111.1	BTU/SCF at 60°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

H2S detection limit 100 ppm (+/-)

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 EMISSIONS

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

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	Emissions 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%	94.60800	0.04730
Pumps							
	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							
	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	0.00000086	100.00%	0.00000	0.00000
	Water/Light Oil	50	8760	0.00000620	100.00%	2.71560	0.00136
Open-ended Lines							
	Gas/Vapor	15	8760	0.00441000	10.68%	61.86620	0.03093
	Light Oil	0	8760	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
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	8760	0.00001700	100.00%	0.00000	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.*

FUGITIVE EMISSIONS

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

Total in tons/year	**5.68**
Total in Lb/hr	**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
			TOTAL Fugitive HAP's	**0.065**	**0.015**

Fugitive HAP Emissions Totals - Light Oil and Water
wt% taken from E&P Tanks v2011

	wt% in gas	Total VOC wt %	Total Fugitive VOC tpy	Total tpy for HAP	Total lb/hr for HAP
Benzene	0.0072%	100.00%	3.93	0.000	0.000
Toluene	0.0384%	100.00%	3.93	0.002	0.000
Xylene	0.0148%	100.00%	3.93	0.001	0.000
n-Hexane	0.0147%	100.00%	3.93	0.001	0.000
E-benzene	0.0059%	100.00%	3.93	0.000	0.000
			TOTAL Fugitive HAP's	**0.003**	**0.001**

FUGITIVE CO_2 EMISSIONS

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

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	Emissions metric tons/year
Valves							
	Gas/Vapor	300	8760	0.00992000	0.85%	221.61457	0.10073
	Light Oil	100	8760	0.00550000	0.00%	0.00000	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	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	50	8760	0.00000620	0.00%	0.00000	0.00000
Open-ended 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
Connectors							
	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 Components Count	Hours of Operation	Factors* lb/hr/component	%METHANE Weight	Emissions lb/year	Emissions 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	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	50	8760	0.00000620	0.00%	0.00000	0.00000
Open-ended 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
Connectors							
	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 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 Rate (Two tanks) (bbls/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	CO2 (tons/yr)	CH4 (tons/yr)	Total HAPs (tons/yr)	Total BTEX (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 DESCRIPTION	WORKING LOSSES (lbs/yr)	BREATHING LOSSES (lbs/yr)	VOC LOSSES (lbs/yr)	TOTAL LOSSES (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 Rate (bbls/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	CO2 (tons/yr)	CH4 (tons/yr)	Total HAPs (tons/yr)	Total BTEX (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 *
****

Project File : W:\EHS\Environmental\Air\Areas of Operation\Utah_MSO\RBU Dehy\Title V\EPA RBU Dehy 2016-2(
Flowsheet Selection : Oil Tank with Separator
Calculation Method : RVP Distillation
Control Efficiency : 0.00%
Known Separator Stream : Low Pressure Oil
Entering Air Composition : No
Component Group : C10+

Filed Name : RBU Dehy - PTE Calc. May 2017
Well Name : RBU 400 BBL Tank 1 - Condensate + Water
Well ID : PTE Est. Volume = 32 b/d; RBU 18-10E sample 2012
Date : 2017.05.22

****
* Data Input *
****

Separator Pressure (psia) : 40.00
Separator Temperature (F) : 80.0
C10+ SG : 0.79
C10+ MW(lb/lbmol) : 140.24

-- Low Pressure Oil ----------

No.	Component	Mole%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0140	0.0055
4	N2	0.0000	0.0000
5	C1	1.2410	0.1771
6	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	Benzene	1.0330	0.7180
18	Toluene	4.6820	3.8385
19	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

-- Sales Oil ----------
Production Rate (bbl/day) : 32.00
Days of Annual Operation : 365
API Gravity : 55.91
Reid Vapor Pressure (psia) : 6.20
Ambient Pressure (psia) : 12.10
Ambient Temperature (F) : 80.0

****
* 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

Uncontrolled Recovery Information:

Vapor(mscfd):	0.6915
HC Vapor(mscfd):	0.6885
CO2(mscfd):	0.0000
CH4(mscfd):	0.3200
GOR(SCF/STB):	21.6094

-- Emission Composition ----------

NoComponent	Uncontrolled ton
1 H2S	0.0000
2 O2	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	0.1480
18 224Trimethylp	0.0020
19 Pseudo Comp1	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

-- Stream Data ----------

NoComponent	MW lb/lbmol	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total Emission mole %
1 H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 O2	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 i-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 Comp1	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	4.0765	4.1697	4.1755	0.0067	0.0062	0.0066
23	Pseudo Comp5	167.47	1.8324	1.8744	1.8770	0.0007	0.0006	0.0007

	LP Oil	Flash Oil	Sales Oil	Flash Gas	W&S Gas	Total Emission
MW (lb/lbmol):	108.25	110.02	110.13	31.25	31.23	31.25
Stream Mole Ratio:	1.0000	0.9776	0.9762	0.0224	0.0014	0.0238
Stream Weight Ratio:	108.25	107.55	107.51	0.70	0.04	0.74
Total Emission (ton):				9.812	0.592	10.404
Heating Value (BTU/scf):				1813.71	1813.02	1813.67
Gas Gravity (Gas/Air):				1.08	1.08	1.08
Bubble Pt. @100F (psia):	51.87	14.46	12.17			
RVP @100F (psia):	14.84	7.09	6.58			
Spec. Gravity @100F:	0.73	0.73	0.73			

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

Certificate of Analysis : 12120196-003A

Company: Unitah County
Well: RBU 18-10E
Field: Unitah County
Sample of: Condensate ;Spot
Conditions: 60 F @ 190 psig
Sampled by: J.Petree
Sample date: 12/10/2012
Sample Point: Separator
Remarks:

For: Rykki Tepe

810 Houston Street
Fort Worth, Texas 76102

Report Date: 5/8/2013

Analysis: (*GPA 2103M*)	Mol. %	MW	Wt. %	Sp. Gravity	L.V. %
Nitrogen	0.000	28.013	0.000	0.8094	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	0.5629	0.613
N-butane	1.560	58.123	0.817	0.5840	1.036
Iso-pentane	1.600	72.150	1.040	0.6244	1.233
N-pentane	1.703	72.150	1.107	0.6311	1.299
i-Hexanes	0.967	86.177	0.756	0.6795	0.844
n-Hexane	1.922	86.016	1.483	0.6640	1.654
2,2,4 trimethylpentane	0.047	114.231	0.048	0.6967	0.052
Benzene	1.033	78.114	0.727	0.8846	0.608
Heptanes	10.511	95.104	9.156	0.7223	9.522
Toluene	4.682	92.141	3.886	0.8719	3.298
Octanes	27.620	109.707	28.041	0.7456	28.409
E-benzene	0.627	106.167	0.600	0.8718	0.509
M-,O-,P-xylene	1.567	106.167	1.499	0.8731	1.273
Nonanes	22.234	123.924	25.174	0.7539	25.007
Decanes Plus	19.054	140.237	24.073	0.7876	22.632
	100.000		100.000		100.000

Calculated Values	Total Sample	Decanes Plus
Specific Gravity at 60 °F	0.7405	0.7876
Api Gravity at 60 °F	59.591	48.149
Molecular Weight	110.998	140.237
Pounds per Gallon (in Vacuum)	6.174	6.567
Pounds per Gallon (in Air)	6.167	6.560
Cu. Ft. Vapor per Gallon @ 14.65 psia	21.041	17.826

Southern Petroleum Laboratories, Inc.

Certificate of Analysis

Number: 3040-12120196-004A

Venus Laboratory
2440 Chambers Street, Suite A
Venus, TX 76084

Rykki Tepe
810 Houston Street
Fort Worth, Texas 76102

Jan. 09, 2013

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 Limit	Lab Tech.	Analysis 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 DESCRIPTION	WORKING LOSSES (lbs/yr)	BREATHING LOSSES (lbs/yr)	VOC LOSSES (lbs/yr)	TOTAL LOSSES (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		
User Identification:	RBU Dehy Condensate Tank #1	
City:	Vernal	
State:	Utah	
Company:	XTO Energy	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	400-bbl condensate storage tank	
Tank Dimensions		
Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		10.00
Volume (gallons):		15,228.53
Turnovers:		16.11
Net Throughput(gal/yr):		245,280.00
Is Tank Heated (y/n):	Y	
Paint Characteristics		
Shell Color/Shade:	Gray/Medium	
Shell Condition	Poor	
Roof Color/Shade:	Gray/Medium	
Roof Condition:	Poor	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17
Breather Vent Settings		
Vacuum Settings (psig):		0.00
Pressure Settings (psig)		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

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg	Min	Max	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fract	Vapor Mass Fract	Mol Weight	Basis for Vapor Pressure 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 Dehy Condensate Tank #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):	519.6700
Daily Average Ambient Temp (deg. F):	51 9625
Ideal Gas Constant R (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):	0 0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3 4847
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	3 4847
Vapor Pressure at Daily Maximum Liquid 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):	1,383 8320
Vapor Molecular Weight (lb/lb-mole):	68 0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3 4847
Annual Net Throughput (gal/yr):	245,280 0000
Annual Turnovers:	16 1066
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):	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(lbs)		
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 COMPONENT (Wet Gas)	MOLECULAR WEIGHT (lb/lb-mole)	Weight Fraction	COMPONENT FLOW RATE (Mscf)	COMPONENT FLOW RATE (lb/yr)	COMPONENT FLOW RATE (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		**0.004**	**0.129**	**29.306**	**0.015**
TOTAL		**1.000**	**32.390**	**1902.326**	**0.951**

PIG SPECIFICATIONS	Receiver #1 10" P/L	Receiver #2 8" P/L (Tap-1)	[redacted]	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^3
Average Pipeline Pressure :	800	800		lb/ft^2
Pig Volume corrected for Std Conditions(14.7 psia) :	296.825	151.974		scf/event
Number of activities :	104	10		per year
Number of receivers :	1	1		
Total events :	104	10		per year
Total Annual Release Volume (per section) :	30869.769	1519.742		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: Riverbend Dehydration Site
Facility Location: Uintah County, Utah

EMISSION POINTS: Capstone Model C65NG Standard MicroTurbine

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

Pollutant	Emission Factor		Emission Rate (lb/hr)	Emission Rate (tpy)	Emission Factor 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]
CO_2*	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
lb/hr = (lb/10^6 Watts-hr)*(site Watt rating 10^3 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)

Summary		
Engines CO_2e =	0.0	tons/yr
Heaters/Boilers CO_2e =	2794.9	tons/yr
Total CO_2e =	2794.9	tons/yr
Reporting required ?	No	

CO_2e = CO_2 equivalents

Note: Reporting Threshold = 25,000 tons/yr CO_2e

Boilers/Heaters			Rating				Species			Species			
							CO_2	CH_4	N_2O	CO_2 CO_2e	CH_4 CO_2e	N_2O CO_2e	CO_2e Total
Source	Model	Fuel	(hp)	(MMbtu/hr)	Hours		metric tons			metric tons			
RBU Dehy Heater (Dehy 1)	-	Natural Gas	-	1.000	8760		511.97	0.01	0.00	511.97	0.24	0.26	512.48
RBU Dehy Thermal Oxidizer	-	Natural Gas	-	1.879	8760		961.88	0.02	0.00	961.88	0.45	0.49	962.82
RBU Dehy Tank Heater #1	-	Natural Gas	-	0.250	8760		127.99	0.00	0.00	127.99	0.06	0.07	128.12
RBU Dehy Tank Heater #2	-	Natural Gas	-	0.250	8760		127.99	0.00	0.00	127.99	0.06	0.07	128.12
~~RBU 6-15E Dehy Reboiler~~	~~-~~	~~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	128.12
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	128.12
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	-	Natural Gas	-	0.250	8760		127.99	0.00	0.00	127.99	0.06	0.07	128.12
RBU 11-15E Separator Heater	-	Natural Gas	-	0.250	8760		127.99	0.00	0.00	127.99	0.06	0.07	128.12
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	384.36
			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			
Emission Factor (CO_2) =	53.02	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-1
Emission Factor (CH_4) =	0.00100	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-2
Emission Factor (N_2O) =	0.0001	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-2
HHV (Natural Gas) =	1106	BTU/scf	

1 kg =
1 metric ton = 1000 kg = 2,200 lbs

	Global Warming Potentials	
CO_2 =	1	From 40 CFR Part 98, Subpart A, Table A-1
CH_4 =	25	From 40 CFR Part 98, Subpart A, Table A-1
N_2O =	298	From 40 CFR Part 98, Subpart A, Table A-1

[1] CO_2e Emissions (metric tons) = 0.001 (metric ton/kg) X Fuel (scf/yr) X HHV (MMBtu/scf) X Emission Factor (natural Gas) (kg CO_2/MMBtu) X Global Warming Potentials
Operational Factors from Newfield operational data

Engines Total (CO_2e) = CO_2 emissions + CH_4 (CO_2e) + N_2O (CO2e)
Heaters Total (CO_2e) = CO_2 emissions + CH_4 (CO_2e) + N_2O (CO2e)

PTE EMISSION SUMMARY

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

Proposed Emissions

Source	NOx		CO		VOC		Formaldehyde		HAPs*	
	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

Source	CH4 (CO2e)		CO2		TOTAL CO2e	
	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 Install Date: 7/1/2013
Unit #: T1C-1

Engine Make/Model	Caterpillar G3516LE #1	
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		Emission Rate (lb/hr)	Emission Rate (tpy)	Emission Factor Reference	*AP-42 Emission Factors*
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]	
PM10	0.0003	g/hp-hr	0.001	0.003	[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

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/10^6Scf)
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
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	Emission Factor		Emission Rate (lb/hr)	Emission Rate (tpy)	Emission Factor Reference	*AP-42 Emission Factors*
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	g/hp-hr	1.06	4.66	[1]	
PM10	0.00027	g/hp-hr	0.001	0.003	[2]	7.71E-05 lb/MMBtu
Hazardous Air Pollutants						
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/10^6Scf)
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

				MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE		
RATING		**NOTES**	**LOAD**	**100%**	**100%**	**75%**	**52%**
ENGINE POWER	(WITHOUT FAN)	(2)	bhp	1340	1295	972	670
INLET AIR TEMPERATURE			°F	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 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)	(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. 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							
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							
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:	58.1
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 RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE		
RATING		**NOTES**	**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)	°F	890	890	866	858
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(8)(5)	ft3/min	6664	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	0.46	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

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.

XTO Energy, Inc.
Tap-1 Compressor Station

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

2017 Update

Representative gas sample obtained 6/14/2011

Density of Air at 60 F & 14.7 psia =	0.0764	lb/scf
Specific Gravity of Gas	0.6559	
Density of Gas	0.0501	lb/scf

Annual No. of Blowdowns = 220

cubic ft / blowdown = 2500

Annual vent rate per Operations

Unit No	Annual Venting (scf)	Annual Gas Vented (lbs/yr)	Annual Gas Vented (tons/yr)
T1C-1 / T1C-2	550000	27551.090	13.78

Speciation by Pollutant

Emission Source	Speciated Pollutant	COMP1 Wt %	SSM Emissions 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%	0.755
	I-Butane	1.4962%	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 (lbs)			**20.233**
Annual Methane Emissions (tons)			**10.261**
Hourly Methane Emissions (lbs)			**1710.137**

1 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			13.8637
VOC max				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

SOURCE DESCRIPTION	HEATER SIZE (MBtu/hr)	HEATER EFFICIENCY	FUEL* HEAT VALUE (Btu/scf)	HOURS OF OPERATION (hrs/year)	FUEL USAGE (MMscf/yr)	NOx		CO	
						EF AP-42[1] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[1] lb/MMscf	EMISSIONS (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

SOURCE DESCRIPTION	TOC		VOC	PM 10		Formaldehyde	
	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EMISSIONS (tons/yr)	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[3] lb/MMscf	EMISSIONS (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[1] = 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)

$$\text{Fuel Consumption (MMscf/yr)} = \frac{\text{Heater Size (MBtu/hr)} * 1{,}000\ \text{(Btu/MBtu)} * \text{Hours of Operation (hrs/yr)}}{\text{Fuel Heat Value (Btu/scf)} * 1{,}000{,}000\ \text{(scf/MMscf)} * \text{Heater Efficiency}}$$

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

FUGITIVE VOC EMISSIONS

Company:		**XTO Energy Inc.**						
Facility Name:		**Tap-1 Compressor Station**						
Facility Location:		**Uintah County, Utah**						
		Components Count	Hours	Factors	%NMNE VOC	%Reduction	Emissions	
							lb/year	tons/year
Valves								
	Gas/Vapor	53	8760	0.00992000	13.56%	0	624.53685	0.31227
	Light Oil	26	8760	0.00550000	100.00%	0	1252.68000	0.62634
	Heavy Oil	0	8760	0.00001900	100.00%	0	0.00000	0.00000
	Water/Light Oil	6	8760	0.00021600	100.00%	0	11.35296	0.00568
Pumps								
	Gas/Vapor	2	8760	0.00529000	13.56%	0	12.56771	0.00628
	Light Oil	0	8760	0.02866000	100.00%	0	0.00000	0.00000
	Heavy Oil	0	8760	0.00113000	100.00%	0	0.00000	0.00000
	Water/Light Oil	0	8760	0.00005300	100.00%	0	0.00000	0.00000
Flanges								
	Gas/Vapor	69	8760	0.00086000	13.56%	0	70.48847	0.03524
	Light Oil	12	8760	0.00024300	100.00%	0	25.54416	0.01277
	Heavy Oil	0	8760	0.00000086	100.00%	0	0.00000	0.00000
	Water/Light Oil	2	8760	0.00000620	100.00%	0	0.10862	0.00005
Open-ended Lines								
	Gas/Vapor	0	8760	0.00441000	13.56%	0	0.00000	0.00000
	Light Oil	0	8760	0.00309000	100.00%	0	0.00000	0.00000
	Heavy Oil	0	8760	0.00030900	100.00%	0	0.00000	0.00000
	Water/Light Oil	0	8760	0.00055000	100.00%	0	0.00000	0.00000
Connectors								
	Gas/Vapor	318	8760	0.00044000	13.56%	0	166.20739	0.08310
	Light Oil	15	8760	0.00046300	100.00%	0	60.83820	0.03042
	Heavy Oil	0	8760	0.00001700	100.00%	0	0.00000	0.00000
	Water/Light Oil	26	8760	0.00024300	100.00%	0	55.34568	0.02767
Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents								
	Gas/Vapor	18	8760	0.01940000	13.56%	0	414.805745	0.207402873
	Light Oil	8	8760	0.01650000	100.00%	0	1156.32	0.57816
	Heavy Oil	0	8760	0.00006800	100.00%	0	0	0
	Water/Light Oil	4	8760	0.03090000	100.00%	0	1082.736	0.541368
						Total in tons/year		**2.467**
						Total in Lb/hr		**0.563**

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

Gas Analysis											
Conversion of Mole Percent to Weight Percent											
Tap-1 Fugitives											
Specific Gravity			Molecular Weight	18.8962	wt %						
Gross BTU	1000		NMHC	4.5104	23.8698%						
			VOCs (NMNEHC)	2.5624	13.560%						
			HAPs	0.1449	0.77%						
			Mole % *								
Component	**Mole %**	**MW**	**MW**	**Weight %**		SITEWIDE FUGITIVE VOC TOTALS	GAS VOC tpy	2.4668			
Carbon Dioxide	0.3807	44	0.1675	0.886%		TRUCKLOADING VOC	GAS VOC tpy	0.2817			
Nitrogen	0.3386	28	0.0948	0.502%		BLOWDOWN VOC	GAS VOC tpy	1.910			
Hydrogen Sulfide	0.0000	34	0.0000	0.000%							
Helium	0.0000	4	0.0000	0.000%					Fugitive	Truckloading	Comp Blowdowns
Methane	88.2714	16	14.1234	74.742%			wt%		HAP tpy - GAS	HAP tpy - GAS	HAP tpy - GAS
Ethane	6.4936	30	1.9481	10.309%		n-Hexane		0.0044	0.01080	0.00123	0.00836
Propane	2.3620	44	1.0393	5.500%		Benzene		0.0011	0.00281	0.00032	0.00218
Iso-Butane	0.4894	58	0.2839	1.502%		Toluene		0.0015	0.00369	0.00042	0.00285
N-Butane	0.5996	58	0.3479	1.841%		Ethylbenzene		0.0001	0.00015	0.00002	0.00012
Iso-Pentane	0.2534	72	0.1824	0.966%		Xylenes		0.0006	0.00147	0.00017	0.00114
N-Pentane	0.2016	72	0.1452	0.768%		TOTAL		**0.77%**	**0.01892**	**0.00216**	**0.01465**
Methylcyclopentane	0.0079	86	0.0068	0.036%							
n-Hexane	0.0982	86	0.0827	0.438%							
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%							
Benzene	0.0275	78	0.0215	0.114%							
Cyclohexane	0.0498	84	0.0418	0.221%							
n-Heptane	0.1100	100	0.1100	0.582%							
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%							
Nonanes+	0.0000	128	0.0000	0.000%							
Decanes+	0.0000	142	0.0000	0.000%							
		-			13.560%						
Total	100.0000				NMNEVOC						
					WT %'s						

8/2/2017

FUGITIVE CO_2 EMISSIONS

Company:	**XTO Energy Inc.**
Facility Name:	**Tap-1 Compressor Station**
Facility Location:	**Uintah County, Utah**

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	Emissions metric tons/year
Valves							
	Gas/Vapor	53	8760	0.00992000	0.89%	40.82753	0.01856
	Light Oil	26	8760	0.00550000	0.00%	0.00000	0.00000
	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
	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							
	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	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	2	8760	0.00000620	0.00%	0.00000	0.00000
Open-ended Lines							
	Gas/Vapor	0	8760	0.00441000	0.89%	0.00000	0.00000
	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	0	8760	0.00055000	0.00%	0.00000	0.00000
Connectors							
	Gas/Vapor	318	8760	0.00044000	0.89%	10.86539	0.00494
	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: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents							
	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 - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.*							
					Total in metric tonnes/year		**0.04**

FUGITIVE METHANE EMISSIONS

Company:	XTO Energy Inc.
Facility Name:	Tap-1 Compressor Station
Facility Location:	Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%METHANE Weight	Emissions lb/year	Emissions metric tons/year
Valves							
	Gas/Vapor	53	8760	0.00992000	74.74%	3442.37027	1.56471
	Light Oil	26	8760	0.00550000	0.00%	0.00000	0.00000
	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	74.74%	69.27168	0.03149
	Light Oil	0	8760	0.02866000	0.00%	0.00000	0.00000
	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							
	Gas/Vapor	69	8760	0.00086000	74.74%	388.52376	0.17660
	Light Oil	12	8760	0.00024300	0.00%	0.00000	0.00000
	Heavy Oil	0	8760	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	2	8760	0.00000620	0.00%	0.00000	0.00000
Open-ended Lines							
	Gas/Vapor	0	8760	0.00441000	74.74%	0.00000	0.00000
	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	0	8760	0.00055000	0.00%	0.00000	0.00000
Connectors							
	Gas/Vapor	318	8760	0.00044000	74.74%	916.11467	0.41642
	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: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents							
	Gas/Vapor	18	8760	0.01940000	74.74%	2286.35822	1.03925
	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 - emission factors based on Table 2-4 of U.S. EPA's 1995 Protocol for Equipment Leak Emission Estimates.*							
						Total in metric tonnes/year	**3.23**

VOC EMISSIONS FROM CONDENSATE TRUCK LOADING OPERATIONS

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

Tank Description	Oil Sales (bbls/day)	Oil Sales (1,000 bbls/yr)	Saturation Factor (S)	True Vapor Pressure (P) (psia)	Vapor Mole Wt. (M)	Oil Temperature (T) (Degrees R)	Loading Losses (lbs/1,000 gal)	VOC Loading Emissions (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

$$\text{Loading Losses (lbs/1,000 gal)} = \frac{12.46*S*P*M}{T} \qquad \text{(AP-42 Section 5.2, Equation 1)}$$

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

$$\text{Degrees R} = \text{Degrees F} + 460$$

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 Rate (bbls/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	CO2 (tons/yr)	CH4 (tons/yr)	Total HAPs (tons/yr)	Total BTEX (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 1
Flowsheet Selection : Oil Tank with Separator
Calculation Method : RVP Distillation
Control Efficiency : 0.00%
Known Separator Stream : Low Pressure Oil
Entering Air Composition : No
Component Group : C10+

Filed Name : XTO Energy
Well Name : TAP 1
Well ID : PTE Emissions
Date : 2017.05.09

****
* 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	Mole%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0140	0.0055
4	N2	0.0000	0.0000
5	C1	1.2410	0.1771
6	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	Benzene	1.0330	0.7180
18	Toluene	4.6820	3.8385
19	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

-- Sales Oil ----------
Production Rate (bbl/day) : 25.00
Days of Annual Operation : 365
API Gravity : 55.91
Reid Vapor Pressure (psia) : 6.20
Ambient Pressure (psia) : 12.40
Ambient 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 Recovery Information:

Vapor(mscfd):	0.5406
HC Vapor(mscfd):	0.5382
CO2(mscfd):	0.0000
CH4(mscfd):	0.2500
GOR(SCF/STB):	21.6240

-- Emission Composition

No	Component	Uncontrolled ton
1	H2S	0.0000
2	O2	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 Comp1	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

-- Stream Data

No	Component	MW lb/lbmol	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total Emission mole %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	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 Comp1	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	4.0765	4.1599	4.1816	0.0045	0.0295	0.0086
23 Pseudo Comp5	167.47	1.8324	1.8699	1.8797	0.0005	0.0038	0.0010

	LP Oil	Flash Oil	Sales Oil	Flash Gas	W&S Gas	Total Emission
MW (lb/lbmol):	108.25	109.87	110.24	29.41	42.88	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			

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

Certificate of Analysis : 12120196-003A

Company:	Unitah County	**For:**	Rykki Tepe
Well:	RBU 18-10E		
Field:	Unitah County		810 Houston Street
Sample of:	Condensate ;Spot		Fort Worth, Texas 76102
Conditions:	60 F @ 190 psig		
Sampled by:	J.Petree	**Report Date:**	5/8/2013
Sample date:	12/10/2012		
Sample Point:	Separator		
Remarks:			

Analysis: (*GPA 2103M*)	**Mol. %**	**MW**	**Wt. %**	**Sp. Gravity**	**L.V. %**
Nitrogen	0.000	28.013	0.000	0.8094	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	0.5629	0.613
N-butane	1.560	58.123	0.817	0.5840	1.036
Iso-pentane	1.600	72.150	1.040	0.6244	1.233
N-pentane	1.703	72.150	1.107	0.6311	1.299
i-Hexanes	0.967	86.177	0.756	0.6795	0.844
n-Hexane	1.922	86.016	1.483	0.6640	1.654
2,2,4 trimethylpentane	0.047	114.231	0.048	0.6967	0.052
Benzene	1.033	78.114	0.727	0.8846	0.608
Heptanes	10.511	95.104	9.156	0.7223	9.522
Toluene	4.682	92.141	3.886	0.8719	3.298
Octanes	27.620	109.707	28.041	0.7456	28.409
E-benzene	0.627	106.167	0.600	0.8718	0.509
M-,O-,P-xylene	1.567	106.167	1.499	0.8731	1.273
Nonanes	22.234	123.924	25.174	0.7539	25.007
Decanes Plus	19.054	140.237	24.073	0.7876	22.632
	100.000		100.000		100.000

Calculated Values	**Total Sample**	**Decanes Plus**
Specific Gravity at 60 °F	0.7405	0.7876
Api Gravity at 60 °F	59.591	48.149
Molecular Weight	110.998	140.237
Pounds per Gallon (in Vacuum)	6.174	6.567
Pounds per Gallon (in Air)	6.167	6.560
Cu. Ft. Vapor per Gallon @ 14.65 psia	21.041	17.826

Southern Petroleum Laboratories, Inc.

Certificate of Analysis

Number: 3040-12120196-004A

Venus Laboratory
2440 Chambers Street, Suite A
Venus, TX 76084

Rykki Tepe
810 Houston Street
Fort Worth, Texas 76102

Jan. 09, 2013

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 Limit	Lab Tech.	Analysis 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
Sandpiper Natural Gas Pumps	Fuel Usage (SCFD) - Measured	6000	6000	6000
	Fuel Usage (SCFM)	4.17	4.17	4.17
Calculation Inputs	MW Nat'l Gas (lb/lbmol)	20	20	20
	Conversion Factor (scf/lbmol)	379	379	379
	Conversion Factor (lb/ton)	2000	2000	2000
	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**

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

Gas Analysis									
Conversion of Mole Percent to Weight Percent									
PUMP Calculations									
Specific Gravity			Molecular Weight	18.8962	wt %				
Gross BTU	1000		NMHC	4.5104	23.8696%				
			VOCs (NMNEHC)	2.5624	13.560%				
			HAPs	0.1449	0.77%				
								GAS CO2 tpy	0.5122
			Mole % *					GAS CH4 tpy	43.1888
Component	**Mole %**	**MW**	**MW**	**Weight %**		SITEWIDE PUMP VOC TOTALS		GAS VOC tpy	7.8356
Carbon Dioxide	0.3807	44	0.1675	0.886%					
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	0.03431
Helium	0.0000	4	0.0000	0.000%			Benzene	0.0011	0.00893
Methane	88.2714	16	14.1234	74.742%			Toluene	0.0015	0.01171
Ethane	6.4936	30	1.9481	10.309%			Ethylbenzene	0.0001	0.00048
Propane	2.3620	44	1.0393	5.500%			Xylenes	0.0006	0.00466
Iso-Butane	0.4894	58	0.2839	1.502%			TOTAL HAPs	0.77%	0.06009
N-Butane	0.5998	58	0.3479	1.841%					
Iso-Pentane	0.2534	72	0.1824	0.966%					
N-Pentane	0.2016	72	0.1452	0.768%					
Methylcyclopentane	0.0079	86	0.0068	0.036%					
n-Hexane	0.0962	86	0.0827	0.438%					
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%					
Benzene	0.0276	78	0.0215	0.114%					
Cyclohexane	0.0498	84	0.0418	0.221%					
n-Heptane	0.1100	100	0.1100	0.582%					
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%					
Nonanes+	0.0000	128	0.0000	0.000%					
Decanes+	0.0000	142	0.0000	0.000%					
		-			13.560%				
Total	100.0000				NMNEVOC				
					WT %'s				

8/2/2017

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

SOURCE DESCRIPTION	HEATER SIZE (MBtu/hr)	HEATER EFFICIENCY	FUEL HEAT VALUE (Btu/scf)	HOURS OF OPERATION (hrs/year)	FUEL USAGE (MMscf/yr)	NOx		CO	
						EF AP-42[1] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[1] lb/MMscf	EMISSIONS (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
6-15E 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
				TOTALS	**13.116**		**0.690**		**0.580**

SOURCE DESCRIPTION	TOC		VOC	PM 10		Formaldehyde	
	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EMISSIONS (tons/yr)	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[3] lb/MMscf	EMISSIONS (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 Glycol Reboiler~~	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
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[1] = 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)

$$\text{Fuel Consumption (MMscf/yr)} = \frac{\text{Heater Size (MBtu/hr)} * 1{,}000 \text{ (Btu/MBtu)} * \text{Hours of Operation (hrs/yr)}}{\text{Fuel Heat Value (Btu/scf)} * 1{,}000{,}000 \text{ (scf/MMscf)} * \text{Heater Efficiency}}$$

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
Sandpiper Natural Gas Pumps	Fuel Usage (SCFD) - Measured	6000		6000
	Fuel Usage (SCFM)	4.17		4.17
Kold Katcher HT-48 Pumps	Fuel Usage (SCFH) - Spec		40.00	0.00
	Fuel Usage (SCFM)		0.67	0.00
Calculation Inputs	MW Nat'l Gas (lb/lbmol)	18.2	18.2	18.2
	Conversion Factor (scf/lbmol)	379	379	379
	Conversion Factor (lb/ton)	2000	2000	2000
	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**		**0.81**	**0.00**

Uintah Wellsite Heat Trace Pumps - CO2		RBU 11-15E	RBU 7-15E	RBU 6-15E
Sandpiper Natural Gas Pumps	Fuel Usage (SCFD) - Measured	6000		6000
	Fuel Usage (SCFM)	4.17		4.17
Kold Katcher HT-48 Pumps	Fuel Usage (SCFH) - Spec		40.00	0.00
	Fuel Usage (SCFM)		0.67	0.00
Calculation Inputs	MW Nat'l Gas (lb/lbmol)	18.2	18.2	18.2
	Conversion Factor (scf/lbmol)	379	379	379
	Conversion Factor (lb/ton)	2000	2000	2000
	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**		**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
Sandpiper Natural Gas Pumps	Fuel Usage (SCFD) - Measured	6000		6000
	Fuel Usage (SCFM)	4.17		4.17
Kold Katcher HT-48 Pumps	Fuel Usage (SCFH) - Spec		40.00	0.00
	Fuel Usage (SCFM)		0.67	0.00
Calculation Inputs	MW Nat'l Gas (lb/lbmol)	18.2	18.2	18.2
	Conversion Factor (scf/lbmol)	379	379	379
	Conversion Factor (lb/ton)	2000	2000	2000
	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 Description	Gas Flow Rate (MMscf/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (tons/yr)	CO_2 (MT/yr)*	Methane (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**

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 2016-2017 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	0.4117	9.880	1.8031
Ethane	0.0910	2.185	0.3987
Propane	0.0733	1.759	0.3210
Isobutane	0.0325	0.781	0.1425
n-Butane	0.0484	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:

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:	1.25	
Calculated Dry Gas Dew Point:	6.91	lbs. H2O/MMSCF
Temperature:	82.0	deg. F
Pressure:	80.0	psig
Dry Gas Flow Rate:	0.2000	MMSCF/day
Glycol Losses with Dry Gas:	0.0006	lb/hr
Wet Gas Water Content:	Saturated	
Calculated Wet Gas Water Content:	277.68	lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	18.07	gal/lb H2O

Component	Remaining in Dry Gas	Absorbed 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 in Glycol	Distilled 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%

Other Hexanes	0.96%	99.04%
Heptanes	0.49%	99.51%
Methylcyclohexane	3.98%	96.02%
2,2,4-Trimethylpentane	1.46%	98.54%
Benzene	4.99%	95.01%
Toluene	7.89%	92.11%
Ethylbenzene	10.39%	89.61%
Xylenes	12.89%	87.11%
C8+ Heavies	11.98%	88.02%

STREAM REPORTS:

WET GAS STREAM

Temperature: 82.00 deg. F
Pressure: 94.70 psia
Flow Rate: 8.39e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	5.85e-001	2.33e+000
Carbon Dioxide	3.12e-001	3.04e+000
Nitrogen	1.21e-001	7.52e-001
Methane	9.07e+001	3.22e+002
Ethane	5.23e+000	3.48e+001
Propane	1.59e+000	1.55e+001
Isobutane	3.36e-001	4.32e+000
n-Butane	3.74e-001	4.80e+000
Isopentane	1.69e-001	2.70e+000
n-Pentane	1.20e-001	1.91e+000
n-Hexane	6.00e-002	1.14e+000
Cyclohexane	3.83e-002	7.13e-001
Other Hexanes	9.28e-002	1.77e+000
Heptanes	8.54e-002	1.89e+000
Methylcyclohexane	5.62e-002	1.22e+000
2,2,4-Trimethylpentane	5.47e-003	1.38e-001
Benzene	2.30e-002	3.97e-001
Toluene	2.58e-002	5.27e-001
Ethylbenzene	7.95e-004	1.87e-002
Xylenes	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: 82.00 deg. F
Pressure: 94.70 psia
Flow Rate: 8.33e+003 scfh

Component	Conc. (vol%)	Loading (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
Total Components	100.00	3.97e+002

LEAN GLYCOL STREAM

Temperature: 82.00 deg. F
Flow Rate: 6.80e-001 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.89e+001	3.79e+002
Water	1.00e+000	3.83e+000
Carbon Dioxide	5.28e-013	2.02e-012
Nitrogen	7.77e-015	2.97e-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	8.62e-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	1.82e-004
Cyclohexane	7.93e-004	3.04e-003
Other Hexanes	1.07e-004	4.11e-004
Heptanes	1.84e-004	7.03e-004
Methylcyclohexane	2.33e-003	8.90e-003
2,2,4-Trimethylpentane	1.94e-005	7.42e-005
Benzene	3.27e-003	1.25e-002
Toluene	8.80e-003	3.37e-002
Ethylbenzene	4.89e-004	1.87e-003
Xylenes	7.79e-003	2.98e-002
C8+ Heavies	2.87e-002	1.10e-001
Total Components	100.00	3.83e+002

RICH GLYCOL AND PUMP GAS STREAM

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

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.76e+001	3.79e+002
Water	1.57e+000	6.10e+000
Carbon Dioxide	5.90e-003	2.29e-002
Nitrogen	2.48e-004	9.60e-004
Methane	1.06e-001	4.12e-001
Ethane	2.35e-002	9.10e-002
Propane	1.89e-002	7.33e-002
Isobutane	8.39e-003	3.25e-002
n-Butane	1.25e-002	4.84e-002
Isopentane	8.75e-003	3.39e-002
n-Pentane	7.98e-003	3.10e-002
n-Hexane	9.62e-003	3.73e-002
Cyclohexane	2.46e-002	9.56e-002
Other Hexanes	1.10e-002	4.26e-002
Heptanes	3.67e-002	1.42e-001
Methylcyclohexane	5.76e-002	2.24e-001
2,2,4-Trimethylpentane	1.31e-003	5.07e-003
Benzene	6.47e-002	2.51e-001
Toluene	1.10e-001	4.27e-001
Ethylbenzene	4.65e-003	1.80e-002
Xylenes	5.97e-002	2.31e-001
C8+ Heavies	2.36e-001	9.15e-001
Total Components	100.00	3.88e+002

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
Pressure: 14.70 psia
Flow Rate: 6.80e+001 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	7.05e+001	2.28e+000
Carbon Dioxide	2.90e-001	2.29e-002
Nitrogen	1.91e-002	9.60e-004
Methane	1.43e+001	4.12e-001
Ethane	1.69e+000	9.10e-002
Propane	9.27e-001	7.33e-002
Isobutane	3.12e-001	3.25e-002
n-Butane	4.64e-001	4.84e-002
Isopentane	2.61e-001	3.38e-002
n-Pentane	2.38e-001	3.08e-002
n-Hexane	2.40e-001	3.72e-002
Cyclohexane	6.13e-001	9.25e-002
Other Hexanes	2.73e-001	4.22e-002
Heptanes	7.88e-001	1.42e-001
Methylcyclohexane	1.22e+000	2.15e-001

2,2,4-Trimethylpentane	2.44e-002	4.99e-003
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 DESCRIPTION	WORKING LOSSES* (lbs/yr)	BREATHING LOSSES* (lbs/yr)	FLASH VOC LOSSES** (lbs/yr)	TOTAL VOC LOSSES (lbs/yr)	TOTAL LOSSES (tons/yr)
400-bbl 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 Rate (bbls/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	CO2 (tons/yr)	CH4 (tons/yr)	Total HAPs (tons/yr)	Total BTEX (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**

****
* 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
Component Group : C10+

Filed Name : RBU 6-15E
Well Name : Wasatch - Mesa Verde Representative Sample
Well ID : PTE for Permit
Date : 6/29/2017

****
* Data Input *
****

Separator Pressure (psia) : 190.00
Separator Temperature (F) : 60.0
C10+ SG : 0.79
C10+ MW(lb/lbmol) : 140.24

-- Low Pressure Oil ----------

No.	Component	Mole%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0140	0.0055
4	N2	0.0000	0.0000
5	C1	1.2410	0.1771
6	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	Benzene	1.0330	0.7180
18	Toluene	4.6820	3.8385
19	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

-- 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 Recovery Information:

Vapor(mscfd):	0.1194
HC Vapor(mscfd):	0.1188
CO2(mscfd):	0.0000
CH4(mscfd):	0.0600
GOR(SCF/STB):	19.9000

-- Emission Composition ----------

NoComponent	Uncontrolled ton
1 H2S	0.0000
2 O2	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	0.0000
19 Pseudo Comp1	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

-- Stream Data ----------

NoComponent	MW lb/lbmol	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total Emission mole %
1 H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2 O2	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	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	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. @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
Component Group : C10+

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 Temperature (F) : 60.0
C10+ SG : 0.79
C10+ MW(lb/lbmol) : 140.24

-- Low Pressure Oil --

No.	Component	Mole%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0140	0.0055
4	N2	0.0000	0.0000
5	C1	1.2410	0.1771
6	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	Benzene	1.0330	0.7180
18	Toluene	4.6820	3.8385
19	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

-- 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 Recovery Information:

Vapor(mscfd):	0.1194
HC Vapor(mscfd):	0.1188
CO2(mscfd):	0.0000
CH4(mscfd):	0.0600
GOR(SCF/STB):	19.9000

-- Emission Composition ----------

No	Component	Uncontrolled ton
1	H2S	0.0000
2	O2	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	0.0000
19	Pseudo Comp1	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

-- Stream Data ----------

No	Component	MW lb/lbmol	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total Emission mole %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	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	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	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. @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
Component Group           : C10+

Filed Name                : RBU 11-15E
Well Name                 : Wasatch - Mesa Verde Representative Sample
Well ID                   : RBU 11-15E PTE 4 bopd
Date                      : 2017.06.29


**********************************************************************************************
*     Data Input                                                                             *
**********************************************************************************************

Separator Pressure (psia)         : 190.00
Separator Temperature (F)         : 60.0
C10+ SG                           : 0.79
C10+ MW(lb/lbmol)                 : 140.24

-- Low Pressure Oil ------------------------------------------------------------------------
No.    Component           Mole%    Wt%
1      H2S                   0.0000   0.0000
2      O2                    0.0000   0.0000
3      CO2                   0.0140   0.0055
4      N2                    0.0000   0.0000
5      C1                    1.2410   0.1771
6      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     Benzene               1.0330   0.7180
18     Toluene               4.6820   3.8385
19     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

-- Sales Oil ------------------------------------------------------------------------------
Production Rate (bbl/day)     : 4.00
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	0.0220
Total HC	1.0680
VOCs, C2+	0.7350
VOCs, C3+	0.4670
CO2	0.0080
CH4	0.3320

Uncontrolled Recovery Information:

Vapor(mscfd):	0.0796
HC Vapor(mscfd):	0.0792
CO2(mscfd):	0.0000
CH4(mscfd):	0.0400
GOR(SCF/STB):	19.9000

-- Emission Composition ----------

No	Component	Uncontrolled ton
1	H2S	0.0000
2	O2	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 Comp1	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

-- Stream Data ----------

No	Component	MW lb/lbmol	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total Emission mole %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	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	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	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):				0.902	0.173	1.075
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			

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

Identification

User Identification:	RBU 6-15E 400 bbl
City:	Vernal
State:	Utah
Company:	XTO Energy
Type of Tank:	Vertical Fixed Roof Tank
Description:	400-bbl condensate storage tank

Tank Dimensions

Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		10.00
Volume (gallons):		15,228.53
Turnovers:		6.04
Net Throughput(gal/yr):		91,980.00
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Poor
Roof Color/Shade:	Gray/Medium
Roof Condition:	Poor

Roof Characteristics

Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	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

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. WeighL	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure 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 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):	519.6700
Daily Average Ambient Temp. (deg. F):	51.9625
Ideal Gas Constant R (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):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.4847
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	3.4847
Vapor Pressure at Daily Maximum Liquid 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 (lb/lb-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 6-15E 400 bbl - Vertical Fixed Roof Tank
Vernal, Utah

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

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

Identification

User Identification:	RBU 7-15E TK #1
City:	Vernal
State:	Utah
Company:	XTO Energy
Type of Tank:	Vertical Fixed Roof Tank
Description:	RBU 7-15E 2017 PTE - 400-bbl condensate storage tank

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	18.00
Avg. Liquid Height (ft):	10.00
Volume (gallons):	15,228.53
Turnovers:	6.04
Net Throughput(gal/yr):	91,980.00
Is Tank Heated (y/n):	Y

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Poor
Roof Color/Shade:	Gray/Medium
Roof Condition:	Poor

Roof Characteristics

Type:	Cone
Height (ft)	1.00
Slope (ft/ft) (Cone Roof)	0.17

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	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

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure 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):	519.6700
Daily Average Ambient Temp. (deg. F):	51.9625
Ideal Gas Constant R (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):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.4847
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	3.4847
Vapor Pressure at Daily Maximum Liquid 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 (lb/lb-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

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

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

Identification

User Identification:	RBU 11-15E
City:	Vernal
State:	Utah
Company:	XTO Energy
Type of Tank:	Vertical Fixed Roof Tank
Description:	RBU 11-15E - 2017 PTE 300-bbl condensate storage tank

Tank Dimensions

Shell Height (ft):		15.00
Diameter (ft):		12.00
Liquid Height (ft) :		10.00
Avg. Liquid Height (ft):		8.00
Volume (gallons):		8,460.30
Turnovers:		7.25
Net Throughput(gal/yr):		61,320.00
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Poor
Roof Color/Shade:	Gray/Medium
Roof Condition:	Poor

Roof Characteristics

Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	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

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure 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 11-15E - Vertical Fixed Roof Tank
Vernal, Utah

Annual Emission Calcaulations	
Standing Losses (lb):	1,563.0685
Vapor Space Volume (cu ft):	829.3805
Vapor Density (lb/cu ft):	0.0425
Vapor Space Expansion Factor:	0.2861
Vented Vapor Saturation Factor:	0.4247
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	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 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):	519.6700
Daily Average Ambient Temp. (deg. F):	51.9625
Ideal Gas Constant R (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):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.4847
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	3.4847
Vapor Pressure at Daily Maximum Liquid 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 (lb):	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_L is converted to tpy VOC emissions per barrel of production per

L_L = 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)

RBU 6-15E Truck Loading						L_L				Production	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						L_L				Production	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 11-15E Truck Loading						L_L				Production	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	4.00	0.1066

EACH WELLSITE FUGITIVE EMISSIONS

Company:	XTO ENERGY INC.
Facility Name:	Each Wellsite
Facility Location:	Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	Emissions 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							
	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-ended Lines							
	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
	Water/Light Oil		8760	0.00055000	100.00%	0.00000	0.00000
Connectors							
	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

EACH WELLSITE FUGITIVE EMISSIONS

Company:	**XTO ENERGY INC.**
Facility Name:	**Each Wellsite**
Facility Location:	**Uintah County, Utah**

	Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	Emissions tons/year
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	0.00006800	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 lb/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 lb/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
Xylene	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
			TOTAL Fugitive HAP's	**0.016**	**0.004**

EACH WELLSITE FUGITIVE METHANE EMISSIONS

Company:	XTO ENERGY INC.
Facility Name:	Each Wellsite
Facility Location:	Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%METHANE Weight	Emissions lb/year	Emissions metric tons/year
Valves							
	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
Pumps							
	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
Flanges							
	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
Open-ended Lines							
	Gas/Vapor		8760	0.00441000	80.65%	0.00000	0.00000
	Light Oil		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/Vapor	20	8760	0.00044000	80.65%	62.16969	0.03108
	Light Oil	20	8760	0.00046300	50.91%	41.29839	0.02065
	Heavy Oil		8760	0.00001700	0.00%	0.00000	0.00000
	Water/Light Oil	20	8760	0.00024300	50.91%	21.67496	0.01084
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	0.68528
	Light Oil	10	8760	0.01650000	50.91%	735.87844	0.36794
	Heavy Oil		8760	0.00006800	0.00%	0.00000	0.00000
	Water/Light Oil	10	8760	0.03090000	50.91%	1378.09963	0.68905

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

Methane	**Total in tons/year**	**8.56**
Methane	**Total in Lb/hr**	**1.95**

EACH WELLSITE FUGITIVE CO_2 EMISSIONS

Company:	XTO ENERGY INC.
Facility Name:	Each Wellsite
Facility Location:	Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%CO_2 Weight	Emissions lb/year	Emissions 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	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	20	8760	0.00000620	0.83%	0.00902	0.00000
Open-ended 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							
	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.*

CO_2	**Total in metric tons/year**	**0.08**
CO_2	**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.

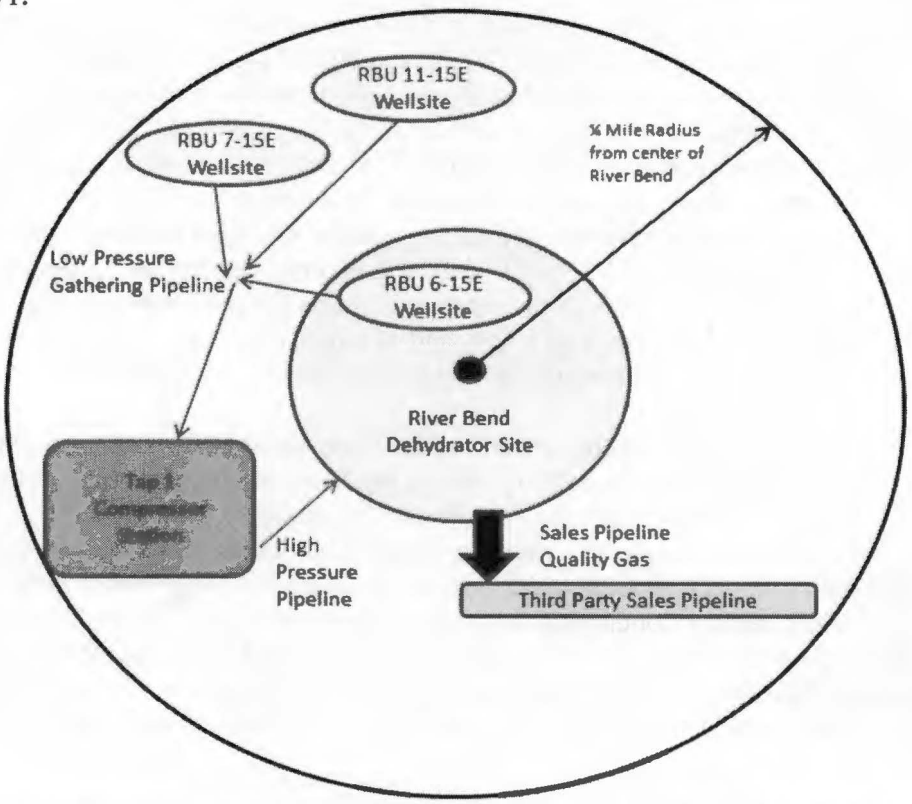


Figure 1. Flow Diagram of XTO Energy Natural Gas Production Operations – Uinta Basin, Utah
River Bend Dehydration Site, RBU 6-15E Wellsite, RBU 7-15E Wellsite, RBU 11-15E Wellsite, Tap 1 Compressor Station

Manzanares, Candice

From: Allison, Craig <Craig_Allison@xtoenergy.com>
Sent: Friday, July 7, 2017 1:34 PM
To: Wortman, Eric
Subject: RE: River Bend Dehy and Title V
Attachments: XTO Riverbend Dehy Site Reg Applicability Table-7-7-2017.pdf; Emissions - Riverbend 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 <Wortman.Eric@epa.gov>
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: https://www.epa.gov/sites/production/files/2015-08/documents/pteguid.pdf.

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: wortman.eric@epa.gov

XTO ENERGY INC. - UINTAH COUNTY, UTAH

RIVERBEND DEHYDRATOR SITE - SOURCE REGULATORY APPLICABILTY TABLE - JULY 2017, v3

Equipment ID	Emissions Units	Equipment Type	Equipment Construction / Manufacture Date	Equipment Install Date	Uncontrolled VOC Emissions rate (TPY)	Potential Applicable Regulation	Regulatory Applicability (Yes / No)	Comments
RBD-1	45 MMscfd TEG Dehydrator	Natural Gas 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 OOOO	NO	
RBT-2	400-bbl slop tank #2	Storage Tank	2009	12/15/2009	4.31	NSPS OOOO	NO	
RBU Pneumatic Controllers	RBU Pneumatic Controllers	Pneumatic Controllers	Pre-2010	1/17/2010	N/A	NSPS OOOO	NO	Controllers operate On Plant Instrument Air
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RBU 6-15E P-1	RBU 6-15E Wellsite Pneumatic Pump Emissions	Pneumatic Pump	Pre-2010	1/18/2010	N/A	NSPS OOOOa	NO	
RBU 6-15E Pneumatic Controllers	RBU 6-15E Pneumatic Controllers	Pneumatic Controllers	Pre-2010	Pre-2010	N/A	NSPS OOOO	NO	Operate On Plant Instrument Air
RBU 7-15E D-1	RBU 7-15E Wellsite 0.20 MMscfd glycol dehydrator	Natural Gas Dehydrator	Pre-2012	3/2/2012	10.54	MACT HH	NO	Area Source - Unit is less than 3.0 mmscfd actual flowrate
RBU 7-15E P-1	RBU 7-15E Wellsite Pneumatic Pump Emissions	Pneumatic Pump	Pre-2012	3/2/2012	N/A	NSPS OOOOa	NO	
RBU 7-15E Pneumatic Controllers	RBU 7-15E Pneumatic Controllers	Pneumatic Controllers	Pre-2010	Pre-2010	N/A	NSPS OOOO	NO	
RBU 11-15E D-1	RBU 11-15E Wellsite 0.20 MMscfd glycol dehydrator	Natural Gas Dehydrator	Pre-2010	Pre-2010	10.54	MACT HH	NO	Area Source - Unit is less than 3.0 mmscfd actual flowrate
RBU 11-15E P-1	RBU 11-15E Wellsite Pneumatic Pump Emissions	Pneumatic Pump	Pre-2012	Pre-2012	N/A	NSPS OOOOa	NO	
RBU 11-15E Pneumatic Controllers	RBU 11-15E Pneumatic Controllers	Pneumatic Controllers	Pre-2010	Pre-2010	N/A	NSPS OOOO	NO	
T1C-1	Tap-1 Caterpillar 3516 TALE 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 Compressor #1	Reciprocating Compressor	Pre-2010	7/1/2013	N/A	NSPS OOOO	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 ZZZZ	YES	REMOTE AREA - S/N 4EK03582
T1C-2	Tap-1 Caterpillar 3516 TALE Compressor Engine #2	RICE	8/12/2001	7/18/2013	N/A	NSPS JJJJ	NO	S/N 4EK03582
T1C-2	Tap-1 Caterpillar 3516 TALE Compressor #2	Reciprocating Compressor	Pre-2010	7/18/2013	N/A	NSPS OOOO	NO	Pre-Aug 2011 Construction date
T1T-1	Tap-1 - 300-bbl Condensate Tank #1	Storage Tank	6/16/2010	6/18/2012	2.19	NSPS OOOO	NO	Tank 1350 / S/N 2024 - Pre-Aug 2011 Const Date / BELOW 6 TPY VOC
T1T-2	Tap-1 - 300-bbl Condensate Tank #2	Storage Tank	9/12/2001	6/18/2012	2.19	NSPS OOOO	NO	Aug 2011 Const Date / BELOW 6 TPY VOC
T1P-1 / T1P-2	Tap-1 Heat Trace Pumps (2)	Pneumatic Pump	Pre-2014	Pre-2014	N/A	NSPS OOOOa	NO	Pre- 2015 Install date
RBU 6-15E Wellsite IEU	400-bbl slop tank	Storage Tank	11/1/2012	11/21/2012	1.85	NSPS OOOO	YES	Tank E1427 / S/N 2802 - BELOW 6 TPY VOC
RBU 7-15E Wellsite IEU	400-bbl slop tank	Storage Tank	7/1/2012	8/24/2012	1.85	NSPS OOOO	YES	Tank E1414 / S/N 2678 - BELOW 6 TPY VOC
RBU 11-15E Wellsite IEU	300-bbl slop tank	Storage Tank	3/1/2008	5/9/2012	1.42	NSPS OOOO	NO	Tank E1391/ S/N 0800 - Pre-2011 and BELOW 6 TPY VOC
RBU 6-15E Wellsite	Well Completion	Natural Gas Well	N/A	1/22/2004	N/A	NSPS OOOOa	NO	
RBU 7-15E Wellsite	Well Completion	Natural Gas Well	N/A	Initial - 4/3/1992 & Recompletion - 1/3/2013	N/A	NSPS OOOOa	NO	
RBU 11-15E Wellsite	Well Completion	Natural Gas Well	N/A	11/2/1991	N/A	NSPS OOOOa	NO	

XTO Energy Inc.

Riverbend Dehydrator Site Uncontrolled PTE Table. July-2017-v3

RBU Dehy Site PTE	ID	Emissions Units	NO_x*	CO*	VOC*	PM*	SO_2*	Total HAPs*	CO_2*	CH_4* (as CO_2e)	N_2O* (as CO_2e)	CO_2e*
Emission Units	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	0.5	2.9	0.0	0.0	0.0	0.0	962.8	0.02	0.002	963.8
	RBD-1	45 MMscfd TEG Dehydrator	0.0	0.0	14.6	0.0	0.0	10.9	0.0	6.3	0.0	6.3
	RBF-1	Fugitive Emissions	0.0	0.0	5.7	0.0	0.0	0.1	0.15	333.9	0.0	334.0
	RBT-1	400-bbl slop tank #1	0.0	0.0	4.3	0.0	0.0	0.2	0.03	31.4	0.0	31.4
	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 6-15E D-1~~	~~RBU 6-15E Wellsite 0.20 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	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	RBU 6-15E Wellsite Pneumatic Pump Emissions	0.0	0.0	5.1	0.0	0.0	0.1	0.4	1057.4	0.0	1057.8
	RBU 7-15E D-1	RBU 7-15E Wellsite 0.20 MMscfd glycol dehydrator	0.0	0.0	10.54	0.0	0.0	3.90	0.1	45.0	0.0	45.1
	RBU 7-15E F-1	RBU 7-15E Wellsite Fugitive 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-1	RBU 11-15E Wellsite 0.20 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-1	RBU 11-15E Wellsite Fugitive Emissions	0.0	0.0	3.9	0.0	0.0	0.1	0.1	214.0	0.0	214.1
	RBU 11-15E P-1	RBU 11-15E Wellsite Pneumatic Pump Emissions	0.0	0.0	5.1	0.0	0.0	0.1	0.4	1057.4	0.0	1057.8
	T1C-1	Tap-1 Caterpillar 3516 TALE Compressor Engine #1	19.4	32.3	4.9	0.01	0.0	4.4	4968.0	1411.4	0.0	6379.3
	T1C-2	Tap-1 Caterpillar 3516 TALE Compressor Engine #2	16.7	29.4	4.7	0.00	0.0	3.8	4197.1	958.2	0.0	5155.3
	T1T-1	Tap-1 - 300-bbl Condensate Tank #1	0.0	0.0	2.2	0.0	0.0	0.13	0.03	24.0	0.0	24.0
	T1T-2	Tap-1 - 300-bbl Condensate Tank #2	0.0	0.0	2.2	0.0	0.0	0.13	0.03	24.0	0.0	24.0
	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	2160.0
	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
Insignificant Emission Units	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 IEU	Capstone Model C65NG Standard MicroTurbine (65kW)	0.1	0.8	0.0	0.0	0.0	0.0	80.2	0.0	0.0	80.2
	RBU Dehy Site IEU	1.0 MMBtu/hr Dehy Reboiler for RBD-1	0.5	0.5	0.1	0.0	0.0	0.0	512.0	0.2	0.3	639.5
	RBU Dehy Site IEU	250 Mbtu/hr heater for slop 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 IEU	250 Mbtu/hr heater for slop 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 Wellsite IEU	250 Mbtu/hr heater for slop tank #1	0.1	0.1	0.0	0.0	0.0	0.0	128.0	0.1	0.1	128.1
	RBU 6-15E 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 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 7-15E P-1	RBU 7-15E Wellsite Pneumatic Pump Emissions	0.0	0.0	0.8	0.0	0.0	0.1	0.1	169.2	0.0	169.2
	RBU 7-15E Wellsite IEU	250 Mbtu/hr Dehydrator Reboiler	0.1	0.1	0.0	0.0	0.0	0.0	128.0	0.1	0.1	128.1
	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	128.1
	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 Wellsite IEU	175 Mbtu/hr Dehydrator 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	128.1
	RBU 11-15E Wellsite IEU	250 Mbtu/hr separator heater	0.1	0.1	0.01	0.0	0.0	0.0	128.0	0.1	0.1	128.1
	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
	RBU 11-15E 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
	Tap-1 Site IEU	Standard MicroTurbine (65kW)	0.1	0.8	0.0	0.0	0.0	0.0	80.2	0.0	0.0	80.2
	T1-Heaters IEU	Tap-1 - Three (3) 250 Mbtu/hr Heaters	0.40	0.34	0.04	0.03	0.0	0.0	384.0	0.2	0.2	384.4
	T1-TL IEU	Tap-1 Truck Loading	0.0	0.0	0.3	0.0	0.0	0.002	0.0	0.0	0.0	0.0
	Tap 1 IEU	Tap-1 Comp Blowdowns	0.0	0.0	1.9	0.0	0.0	0.01	0.1	256.5	0.0	256.6
Facility-Wide PTE (uncontrolled)			**38.9**	**67.9**	**115.3**	**0.1**	**0.0**	**28.2**	**12248.8**	**8380.5**	**1.0**	**20758.2**

Manzanares, Candice

From: Allison, Craig <Craig_Allison@xtoenergy.com>
Sent: Tuesday, March 14, 2017 3:22 PM
To: Wortman, Eric
Subject: RE: Riverbend & Accompanying Wellsites
Attachments: 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 <Wortman.Eric@epa.gov>
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 <Wortman.Eric@epa.gov>
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

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 (< 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.

C. Please provide the following information by March 8th:
   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

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

Proposed Emissions

Source	NOx		CO		VOC		Formaldehyde		HAPs*	
	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	Caterpillar 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

Pollutant	Emission Factor		Emission Rate (lb/hr)	Emission Rate (tpy)	Emission Factor Reference	*AP-42 Emission Factors*
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]	
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)
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/10^6Scf)
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	Emission Factor		Emission Rate (lb/hr)	Emission Rate (tpy)	Emission Factor Reference	*AP-42 Emission Factors*
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	g/hp-hr	1.06	4.66	[1]	
PM10	0.00027	g/hp-hr	0.00	0.0	[2]	7.71E-05 lb/MMBtu
Hazardous Air Pollutants						
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

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/10^6Scf)
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 (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

RATING		NOTES	LOAD	MAXIMUM RATING 100%	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE 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)	°F	890	890	866	858
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(8)(5)	ft3/min	6664	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	0.46	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

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 (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

				MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE		
RATING		**NOTES**	**LOAD**	**100%**	**100%**	**75%**	**52%**
ENGINE POWER	(WITHOUT FAN)	(2)	bhp	1340	1295	972	670
INLET AIR TEMPERATURE			°F	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 psia)			scfm	165	160	124	90
INLET MANIFOLD PRESSURE		(6)	in Hg(abs)	69.2	67.3	52.9	36.7
EXHAUST TEMPERATURE - ENGINE OUTLET		(7)	°F	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. 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							
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)		(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.

PREPARED BY: William Payne, XTO Energy
Data generated by Gas Engine Rating Pro Version 6.04.00
Ref. Data Set DM5155-10-001, 4EK, Printed 14Mar2017

NATURAL GAS FUELED HEATER EMISSIONS

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

SOURCE DESCRIPTION	HEATER SIZE (MBtu/hr)	HEATER EFFICIENCY	FUEL* HEAT VALUE (Btu/scf)	HOURS OF OPERATION (hrs/year)	FUEL USAGE (MMscf/yr)	NOx		CO	
						EF AP-42[1] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[1] lb/MMscf	EMISSIONS (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**

SOURCE DESCRIPTION	TOC		VOC	PM 10		Formaldehyde	
	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EMISSIONS (tons/yr)	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[3] lb/MMscf	EMISSIONS (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[1] = 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)

$$\text{Fuel Consumption (MMscf/yr)} = \frac{\text{Heater Size (MBtu/hr)} * 1{,}000\ (\text{Btu/MBtu}) * \text{Hours of Operation (hrs/yr)}}{\text{Fuel Heat Value (Btu/scf)} * 1{,}000{,}000\ (\text{scf/MMscf}) * \text{Heater Efficiency}}$$

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

Tank Description	Oil Sales (bbls/day)	Oil Sales (1,000 bbls/yr)	Saturation Factor (S)	True Vapor Pressure (P) (psia)	Vapor Mole Wt. (M)	Oil Temperature (T) (Degrees R)	Loading Losses (lbs/1,000 gal)	VOC Loading Emissions (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

$$\text{Loading Losses (lbs/1,000 gal)} = \frac{12.46 * S * P * M}{T}$$ (AP-42 Section 5.2, Equation 1)

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

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 Rate (bbls/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (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 *
****

Project File : C:\Users\ETullos\Desktop\Work\142 - XTO\Tribal\Liquid and Gas Samples\Utah Liquids\D
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 *
****

Separator Pressure : 190.00[psig]
Separator Temperature : 76.00[F]
Ambient Pressure : 11.80[psia]
Ambient Temperature : 50.00[F]
C10+ SG : 0.8164
C10+ MW : 195.16

-- Low Pressure Oil ----------

No.	Component	mol %
1	H2S	0.0000
2	O2	0.0000
3	CO2	0.0190
4	N2	0.0050
5	C1	0.9100
6	C2	0.6050
7	C3	1.1120
8	i-C4	0.6830
9	n-C4	1.4420
10	i-C5	1.8900
11	n-C5	1.7960
12	C6	0.3550
13	C7	11.4800
14	C8	27.4050
15	C9	20.7240
16	C10+	27.5170
17	Benzene	0.6150
18	Toluene	0.7150
19	E-Benzene	0.3400
20	Xylenes	1.3530
21	n-C6	0.9880
22	224Trimethylp	0.0460

-- 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 [ton/yr]	Uncontrolled [lb/hr]
Total HAPs	0.020	0.005
Total HC	2.866	0.654

VOCs, C2+	1.829	0.418
VOCs, C3+	1.142	0.261

Uncontrolled Recovery Info.

Vapor	227.1700 x1E-3	[MSCFD]
HC Vapor	223.8600 x1E-3	[MSCFD]
GOR	15.14	[SCF/bbl]

-- Emission Composition ----------

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
1	H2S	0.000	0.000
2	O2	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	i-C4	0.137	0.031
9	n-C4	0.197	0.045
10	i-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
16	C10+	0.000	0.000
17	Benzene	0.006	0.001
18	Toluene	0.002	0.000
19	E-Benzene	0.000	0.000
20	Xylenes	0.001	0.000
21	n-C6	0.012	0.003
22	224Trimethylp	0.000	0.000
	Total	2.927	0.668

-- Stream Data ----------

No.	Component	MW	LP Oil mol %	Flash Oil mol %	Sale Oil mol %	Flash Gas mol %	W&S Gas mol %	Total Emissions mol %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	CO2	44.01	0.0190	0.0115	0.0016	0.8119	1.6316	1.1319
4	N2	28.01	0.0050	0.0006	0.0000	0.4718	0.0961	0.3252
5	C1	16.04	0.9100	0.3032	0.0010	65.0314	49.8803	59.1175
6	C2	30.07	0.6050	0.4638	0.2883	15.5221	29.2602	20.8844
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	i-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	0.3596	0.0613	0.0620	0.0616
13	C7	100.20	11.4800	11.5828	11.6497	0.6122	0.6197	0.6151
14	C8	114.23	27.4050	27.6603	27.8263	0.4266	0.4328	0.4290
15	C9	128.28	20.7240	20.9191	21.0460	0.1034	0.1123	0.1069
16	C10+	195.16	27.5170	27.7774	27.9467	0.0005	0.0005	0.0005
17	Benzene	78.11	0.6150	0.6201	0.6235	0.0731	0.0741	0.0735
18	Toluene	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 Ratio		1.0000	0.9906	0.9846	0.0094	0.0060	0.0154
	Heating Value	[BTU/SCF]				1507.44	1624.03	1552.95
	Gas Gravity	[Gas/Air]				0.89	0.98	0.92
	Bubble Pt. @ 100F	[psia]	36.99	16.88	6.34			
	RVP @ 100F	[psia]	9.90	6.65	4.78			
	Spec. Gravity @ 100F		0.707	0.708	0.708			

PUMP EMISSIONS

Gas Analysis
Conversion of Mole Percent to Weight Percent
PUMP Calculations

Specific Gravity		Molecular Weight	18.8962	wt %
Gross BTU	1000	NMHC	4.5104	23.8696%
		VOCs (NMNEHC)	2.5624	13.560%
		HAPs	0.1449	0.77%

Component	Mole %	MW	Mole % * MW	Weight %
Carbon Dioxide	0.3807	44	0.1675	0.886%
Nitrogen	0.3386	28	0.0948	0.502%
Hydrogen Sulfide	0.0000	34	0.0000	0.000%
Helium	0.0000	4	0.0000	0.000%
Methane	68.2714	16	14.1234	74.742%
Ethane	6.4936	30	1.9481	10.309%
Propane	2.3620	44	1.0393	5.500%
Iso-Butane	0.4894	58	0.2839	1.502%
N-Butane	0.5998	58	0.3479	1.841%
Iso-Pentane	0.2534	72	0.1824	0.966%
N-Pentane	0.2016	72	0.1452	0.768%
Methylcyclopentane	0.0079	86	0.0068	0.036%
n-Hexane	0.0962	86	0.0827	0.438%
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%
Benzene	0.0276	78	0.0215	0.114%
Cyclohexane	0.0498	84	0.0418	0.221%
n-Heptane	0.1100	100	0.1100	0.582%
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%
Nonanes+	0.0000	128	0.0000	0.000%
Decanes+	0.0000	142	0.0000	0.000%
Total	100.0000			13.560% NMNEVOC WT %'s

SITEWIDE PUMP VOC TOTALS — GAS VOC tpy: 11.4000

	wt%	HAP tpy - GAS
n-Hexane	0.0044	0.04991
Benzene	0.0011	0.01299
Toluene	0.0015	0.01704
Ethylbenzene	0.0001	0.00070
Xylenes	0.0006	0.00678
	0.77%	0.08742

XTO Energy, Inc.

Roosevelt Tap I Compressor Station

Heat Trace Pump Emissions

Uintah Heat Trace Pumps		
Sandpiper Natural Gas Pumps	Fuel Usage (SCFD) - Measured	6000
	Fuel Usage (SCFM)	4.17
Kold Katcher HT-48 Pumps	Fuel Usage (SCFH) - Spec	40.00
	Fuel Usage (SCFM)	0.67
Calculation Inputs	MW Nat'l Gas (lb/lbmol)	20
	Conversion Factor (scf/lbmol)	379
	Conversion Factor (lb/ton)	2000
	Operating Time (days)	180
	Operating time (min)	259.200
	Weight NMNEVOCs (%)	20
Sandpiper Natural Gas Pumps	**Total VOCs (using SCFM) TPY**	11.4
Kold Katchers H-48 Pumps	**Total VOCs (using SCFM) TPY**	N/A

* Two Sandpipers are used at this location. The Kold Katchers are not used here.

3/14/2017

Tap-1 FUGITIVE LOSSES Estimate

		Components Count	Hours	Factors	%NMVOC	%Reduction	Emissions	
							lb/year	tons/year
Valves								
	Gas/Vapor	53	8760	0.00992000	23.87%	0	1099.35179	0.54968
	Light Oil	26	8760	0.00550000	100.00%	0	1252.68000	0.62634
	Heavy Oil		8760	0.00001900	100.00%	0	0.00000	0.00000
	Water/Light Oil	6	8760	0.00021600	100.00%	0	11.35296	0.00568
Pumps								
	Gas/Vapor	2	8760	0.00529000	23.87%	0	22.12253	0.01106
	Light Oil		8760	0.02866000	100.00%	0	0.00000	0.00000
	Heavy Oil		8760	0.00113000	100.00%	0	0.00000	0.00000
	Water/Light Oil		8760	0.00005300	100.00%	0	0.00000	0.00000
Flanges								
	Gas/Vapor	69	8760	0.00086000	23.87%	0	124.07854	0.06204
	Light Oil	12	8760	0.00024300	100.00%	0	25.54416	0.01277
	Heavy Oil		8760	0.00000086	100.00%	0	0.00000	0.00000
	Water/Light Oil	2	8760	0.00000620	100.00%	0	0.10862	0.00005
Open-ended Lines								
	Gas/Vapor		8760	0.00441000	23.87%	0	0.00000	0.00000
	Light Oil		8760	0.00309000	100.00%	0	0.00000	0.00000
	Heavy Oil		8760	0.00030900	100.00%	0	0.00000	0.00000
	Water/Light Oil		8760	0.00055000	100.00%	0	0.00000	0.00000
Connectors								
	Gas/Vapor	318	8760	0.00044000	23.87%	0	292.56943	0.14628
	Light Oil	15	8760	0.00046300	100.00%	0	60.83820	0.03042
	Heavy Oil		8760	0.00001700	100.00%	0	0.00000	0.00000
	Water/Light Oil	26	8760	0.00024300	100.00%	0	55.34568	0.02767
Other: Compressors, relief valves, process drains, diaphragms, dump arms, hatches, instruments, meters, polished rods, and vents								
	Gas/Vapor	18	8760	0.01940000	23.87%	0	730.168983	0.365084492
	Light Oil	8	8760	0.01650000	100.00%	0	1156.32	0.57816
	Heavy Oil		8760	0.00006800	100.00%	0	0	0
	Water/Light Oil	4	8760	0.03090000	100.00%	0	1082.736	0.541368
						Total in tons/year		2.957
						Total in Lb/hr		0.675

FUGITIVES

Gas Analysis
Conversion of Mole Percent to Weight Percent
Tap-1 Fugitives

Specific Gravity			Molecular Weight	18.8962	wt %
Gross BTU	1000		NMHC	4.5104	23.8696%
			VOCs (NMNEHC)	2.5624	13.560%
			HAPs	0.1449	0.77%

Component	Mole %	MW	Mole % * MW	Weight %
Carbon Dioxide	0.3807	44	0.1675	0.886%
Nitrogen	0.3386	28	0.0948	0.502%
Hydrogen Sulfide	0.0000	34	0.0000	0.000%
Helium	0.0000	4	0.0000	0.000%
Methane	88.2714	16	14.1234	74.742%
Ethane	6.4936	30	1.9481	10.309%
Propane	2.3620	44	1.0393	5.500%
Iso-Butane	0.4894	58	0.2839	1.502%
N-Butane	0.5998	58	0.3479	1.841%
Iso-Pentane	0.2534	72	0.1824	0.966%
N-Pentane	0.2016	72	0.1452	0.768%
Methylcyclopentane	0.0079	86	0.0068	0.036%
n-Hexane	0.0962	86	0.0827	0.438%
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%
Benzene	0.0250	78	0.0215	0.114%
Cyclohexane	0.0498	84	0.0418	0.221%
n-Heptane	0.1100	100	0.1100	0.582%
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%
Nonanes+	0.0000	128	0.0000	0.000%
Decanes+	0.0000	142	0.0000	0.000%
		-		13.560%
Total	100.0000			NMNEVOC WT %'s

SITEWIDE FUGITIVE VOC TOTALS — GAS VOC tpy — 2.9570

	wt%	HAP tpy - GAS
n-Hexane	0.0044	0.01295
Benzene	0.0011	0.00337
Toluene	0.0015	0.00442
Ethylbenzene	0.0001	0.00018
Xylenes	0.0006	0.00176
	0.77%	0.02268

3/14/2017

QUESTAR APPLIED TECHNOLOGY

1210 D. Street, Rock Springs, Wyoming 82901

(307) 352-7292

LIMS ID:	N/A		Description:	Riverbend Tap 1
Analysis Date/Time:	6/20/2011	2:33 PM	Field:	Riverbend
Analyst Initials:	AST		ML#:	Summit Gas Gahtering
Instrument ID:	Instrument 1		GC Method:	Quesbtex
Data File:	QPC62.D			
Date Sampled:	6/14/2011			

Component	Mol%	Wt%	LV%
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
Neopentane	0.0085	0.0322	0.0178
Isopentane	0.2449	0.9328	0.4923
n-Pentane	0.2016	0.7678	0.4010
2,2-Dimethylbutane	0.0095	0.0434	0.0218
2,3-Dimethylbutane	0.0238	0.1082	0.0535
2-Methylpentane	0.0721	0.3281	0.1644
3-Methylpentane	0.0392	0.1783	0.0878
n-Hexane	0.0962	0.4374	0.2171
Heptanes	0.3009	1.4759	0.6371
Octanes	0.0440	0.2640	0.1201
Nonanes	0.0212	0.1297	0.0542
Decanes plus	0.0026	0.0199	0.0089
Nitrogen	0.3386	0.5006	0.2038
Carbon Dioxide	0.3807	0.8844	0.3563
Oxygen	0.0000	0.0000	0.0000
Hydrogen Sulfide	0.0000	0.0000	0.0000
Total	100.0000	100.0000	100.0000

Global Properties		Units
Gross BTU/Real CF	1156.1	BTU/SCF at 60°F and14.73 psia
Sat.Gross BTU/Real CF	1137.1	BTU/SCF at 60°F and14.73 psia
Gas Compressibility (Z)	0.9971	
Specific Gravity	0.6559	air=1
Avg Molecular Weight	18.945	gm/mole
Propane GPM	0.647336	gal/MCF
Butane GPM	0.348352	gal/MCF
Gasoline GPM	0.384325	gal/MCF
26# Gasoline GPM	0.575632	gal/MCF
Total GPM	1.382709	gal/MCF
Base Mol%	99.642	%v/v

Sample Temperature:	78	°F
Sample Pressure:	55	psig
H2OLength of StainTube	273.0	#/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: Simpson, Dustin <Dustin_Simpson@xtoenergy.com>
Sent: Wednesday, December 21, 2016 3:29 PM
To: Wortman, Eric
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

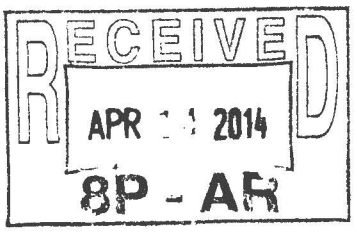
> **From:** Wortman, Eric [mailto:Wortman.Eric@epa.gov]
> **Sent:** Wednesday, December 21, 2016 4:01 PM
> **To:** Simpson, Dustin
> **Subject:** Riverbend & Accompanying Wellsites
>
> Hi Dustin,
>
> I had a question regarding the two wellsites at the Riverbend facility with regard to the revised definition 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

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 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);*
> *(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:
File Room: CO\Rio Blanco County\Agency Correspondance\2012

Wortman, Eric

From: Patefield, Scott
Sent: Thursday, March 20, 2014 9:38 AM
To: Wortman, Eric
Subject: 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" <Rykki_Tepe@xtoenergy.com>
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: Rykki_Tepe@xtoenergy.com

Wortman, Eric

From: Simpson, Dustin <Dustin_Simpson@xtoenergy.com>
Sent: Wednesday, December 21, 2016 3:29 PM
To: Wortman, Eric
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.

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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

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: wortman.eric@epa.gov

XTO ENERGY

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,

Rykki 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

EPA 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 name __River Bend Dehydrator & Accompanying Wellsites _____

Mailing address: Street or P.O. Box ____810 Houston Street, Petro-4_____

City ____Fort Worth_____ State ___TX__ ZIP __76102__-_____

Contact person: ____Rykki Tepe_____ Title ____Environmental Engineer_____

Telephone (817) __885__ - __1249_____ Ext. _____

Facsimile (817) ___885__ - __2986_____

B. Facility Location

Temporary source? ___Yes _X_No Plant site location ___39.94851, -109.77057_____

_____

City ____Roosevelt_____ State_UT__ County___Uintah____ EPA Region_8__

Is the facility located within:

Indian lands? _X – Indian Airshed___YES ___ NO 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_ YES __ NO If yes, What State(s)? __Colorado__

C. Owner

Name ____XTO Energy, Inc._____ Street/P.O. Box ____810 Houston Street, Petro-4_____

City _____Fort Worth_____ State__TX__ ZIP___76102_ - _____

Telephone (_817_) __885____ - ___1249_____ Ext_____

D. Operator

Name __XTO Energy, Inc._____ Street/P.O. Box _810 Houston Street, Petro-4_____

City _____Fort Worth_____ State __TX__ ZIP _76102___ - _____

Telephone (__817___) __885____ - ____1249_____ Ext_____

E. Application Type

Mark only one permit application type and answer the supplementary question appropriate for the type marked.

___Initial Permit ___ Renewal ___ Significant Mod ___ Minor Permit Mod(MPM)

___ Group Processing, MPM _X__ 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 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 _X_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

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
	No Changes Administrative Amendment – Owner/Operator Change

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.

No Changes Administrative Amendment - Owner/Operator Change

NOx _____ tons/yr VOC _____ tons/yr SO2 ___tons/yr

PM-10 _____ tons/yr CO _____ tons/yr Lead _____ tons/yr

Total HAP ____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) __ Permit type _Consent Decree_ Permitting authority__EPA__

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

EPA 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__

Title ____SR VP Midstream Operations

Street or P.O. Box ___810 Houston Street_____

City _____Fort Worth_____ State TX__ ZIP 76102_____ - 6298__

Telephone (__817) __885 - __1623___ Ext. _____ Facsimile (_817) _885_ - _2683_____

B. Certification of Truth, Accuracy and Completeness (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

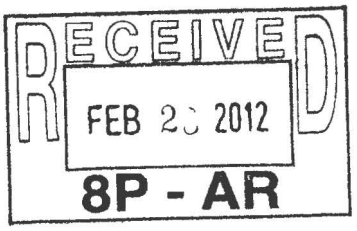
Name (typed) _____Kenneth S. Rose_____ Date: 7 / 18 / 2013

Summit Gas Gathering, LLC
810 Houston Street
Ft. Worth, TX 76102-6298

(817) 870-2800 (off)

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 March 17, 2012**

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
(817) 870-2800 (off)

(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

EPA 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) **Dungey** (First) **Nick** (MI) **J**

Title **Senior Vice President of Natural Gas Operations - XTO Energy**

Street or P.O. Box **810 Houston St.**

City **Fort Worth** State **TX** ZIP **76102** -

Telephone (817) 885-2440 Ext. _____ Facsimile (817) 870 - 8441

B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official and includes the certification language as stated in Paragraph 52 of the E.P.A. Consent Decree)

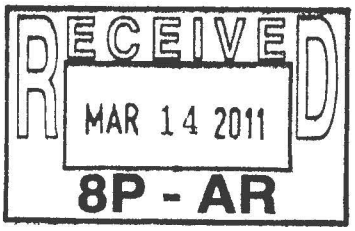
I certify under penalty of law that this document and all attachments were prepared under my supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, 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) **Nick Dungey** Date: 2 / 16 / 2012

Summit Gas Gathering, LLC
810 Houston Street
Ft. Worth, TX 76102-6298
(817) 870-2800 (office)

March 4, 2011



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

~~Certified Mail~~ Fedex
~~Return Receipt No. 7009 1680 0001 8333 2328~~
Trk# 0201 7945 1865 2127

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 craig_allison@xtoenergy.com or at (817) 885-2672.

Sincerely,
Summit Gas Gathering, LLC

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 Office,
Ms. Clare Hoang – XTO Corporate Office – Fort Worth

United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 04/30/2012

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 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 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____/____/____

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 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) **Dungey** (First) **Nick** (MI) **J**

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

B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)

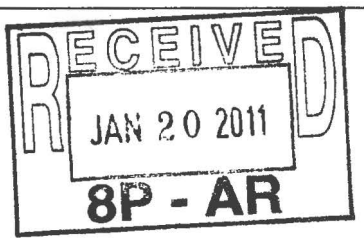
I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.

Name (signed) _____

Name (typed) **Nick Dungey** Date: 3 / 7 / **2011**

Title V Permit #V-UO-00026-2011.00
Initial Permit

Summit Gas Gathering, LLC
810 Houston Street
Ft. Worth, TX 76102-6298
(817) 870-2800 (office)



January 13, 2011

Ms. Claudia Young Smith
Air Program - US EPA Region 8
Part 71 - Permitting, Monitoring and Modeling Unit
1595 Wynkoop St. (8P-AR)
Denver, CO 80202-1129

Certified Mail
Return Receipt No. 7009 0080 0000 4061 9510

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 craig_allison@xtoenergy.com or at (817) 885-2672.

Sincerely,
Summit Gas Gathering, LLC

Craig Allison
EH&S Advisor

WCA/Encl: River Bend Dehydrator Site & Accompanying Wellsites - Part 71 Initial Permit Application
Certification of Truth, Accuracy, and Completeness (CTAC)
River Bend Dehydrator Site & Accompanying Wellsites - Proof of Fee Payment
River Bend Dehydrator Site & Accompanying Wellsites -Fee Calculation Worksheets

Cc: Damien Jones, Nathen Young - XTO – SGG Roosevelt NGO Office

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Approval Expires 09/30/2010

Federal Operating Permit Program (40 CFR Part 71)

GENERAL INFORMATION AND SUMMARY (GIS)

A. Mailing Address and Contact Information

Facility name _____Summit Gas Gathering – River Bend Dehydrator Site & Accompanying wellsites____

Mailing address: Street or P.O. Box ____810 Houston St._____

City ___Ft. Worth_____ State __TX___ ZIP __76102_____-_____

Contact person: ___Craig Allison_____ Title __EH&S Advisor_____

Telephone (_817__) __885___ - __2672_____ Ext. _____

Facsimile (__817_) __885___ - __2683_____

B. Facility Location

Temporary source? ___Yes _X__No Plant site location _Lat. 39.94851°N, Long. 109.77057°W

City ___Roosevelt_____ State__UT_ County_Uintah_____ EPA Region__8__

Is the facility located within:

Indian lands? _X__YES ___ NO OCS waters? ___YES _X__ NO

Non-attainment area? ___ YES _X__NO If yes, for what air pollutants? _____

Within 50 miles of affected State? _X_ YES __ NO If yes, What State(s)? _Colorado____

C. Owner

Name _Summit Gas Gathering_____ Street/P.O. Box __810 Houston St. _____

City ___Ft. Worth_____ State_TX___ ZIP_76102___ - _____

Telephone (__817) _885__ - _2672_____ Ext_____

D. Operator

Name ___Summit Gas Gathering_____ Street/P.O. Box ___810 Houston St._____

City _____Ft. Worth_____ State __TX__ ZIP __76102_____ - _____

Telephone (_817_) _885__ - __2672____ 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? _____/____/_____

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 _X__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

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.

NOx __1.4__ tons/yr VOC _204.0_____ tons/yr SO2 _____ tons/yr

PM-10 ___0.08_____ tons/yr CO __4.8_____ tons/yr Lead ___0.0_____ tons/yr

Total HAP ___89.8_____ tons/yr

Single HAP emitted in the greatest amount ____Toluene_____ PTE _38.04____ tons/yr

Total of regulated pollutants (for fee calculation), Sec. 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 ____/____/____

M. Cross-referenced Information

Does this application cross-reference information? ___ YES ___ NO (If yes, see instructions)

EPICTURE

United States Environmental Protection 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 ID __RBTO-1_____ Description___36 inch TO with TJ0200HV burner ____

SIC Code (4-digit) _1311_____ SCC Code_____

B. Emissions Unit Description

Primary use __Combust off-gases from dehydrator___ Temporary Source ___Yes _X__No

Manufacturer __ Enviro-Therm Industrial Refractory_____ Model No. ___36-20_____

Serial Number __29086_____ Installation Date__12/16/2009_

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 fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input _____MM BTU/hr Max. Design Heat Input _____MM BTU/hr

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 Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	0	0	1106 Btu/scf

D. Fuel Usage Rates

Fuel Type	Annual Actual 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 method___Manufacturer 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 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 __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 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 ID __RBD-1_____ Device Type____Thermal Oxidizer_____

Manufacturer _Industrial Refractory Services__ Model No__36 inch TO with TJ0200HV burner

Serial No. __29086_____ Installation date 12/16/2009

Control efficiency (%) __99_____.___ Capture efficiency (%) _____.___

Air pollutant(s) controlled VOCs & HAPs__ Efficiency estimation method __Manu. Specs. _____

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) _____._____

United States Environmental Protection 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_____

SIC Code (4-digit) _1311_____ SCC Code_____

B. Emissions Unit Description

Primary use or equipment type __Gas Dehydration_____

Manufacturer ___Pesco_____ Model No. __GCR-50-T3_____

Serial No. _____204671_____ Installation date _01_/21 /2004__

Raw materials ___Wet Natural Gas _____

Finished products __Dry Natural Gas _____

Temporary source: _X__No ___Yes

C. Activity or Production Rates

Activity or Production 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 ID __NA _____ Device Type____NA _____

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) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____._____ Velocity (ft/sec) _____._____

United States Environmental Protection 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 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 type __Gas Dehydration_____

Manufacturer ___BET_____ Model No. __GCR-50-T3_____

Serial No. _____62029_____ Installation date _04_/22 /1992__

Raw materials ___Wet Natural Gas _____

Finished products __Dry Natural Gas _____

Temporary source: _X__No ___Yes

C. Activity or Production Rates

Activity or Production 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 ID __NA _____ Device Type____NA _____

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) _____._____ Inside stack diameter (ft) _____._____

Stack temp (F) _____._____ Design stack flow rate (ACFM) _____._____

Actual stack flow rate (ACFM) _____._____ Velocity (ft/sec) _____._____

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID __RBT-1___ Description ____400-bbl slop storage tank _____

SIC Code (4-digit) _____ SCC Code _____

B. Emissions Unit Description

Equipment type ____Storage Tank_____ Temporary source: ___Yes _X__No

Manufacturer___Benchmark Equipment_____ Model No. __Not applicable_____

Serial No. __1764_____ Installation date_ 12/22/2009____

Articles being coated or degreased _____NA_____

Application method _____NA_____

Overspray (surface coating) (%) __NA____ Drying method_____NA_____

No. of dryers __NA_____ Tank capacity ____400-bbl_____

C. Associated Air Pollution Control Equipment

Emissions unit ID __NA_____ Device Type_____NA_____

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 Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Condensate		Condensate		1310.4	478,296	
Produced Water		Produced Water		210	76,650	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID __RBT-2___ Description ____400-bbl slop storage tank _____

SIC Code (4-digit) _____ SCC Code _____

B. Emissions Unit Description

Equipment type ____Storage Tank_____ Temporary source: ___Yes _X__No

Manufacturer___ Benchmark Equipment _____ Model No. Not Applicable___

Serial No. ____1765_____ Installation date __12/22/2009__

Articles being coated or degreased _____NA_____

Application method _____NA_____

Overspray (surface coating) (%) __NA____ Drying method_____NA_____

No. of dryers __NA_____ Tank capacity ____400-bbl_____

C. Associated Air Pollution Control Equipment

Emissions unit ID __NA_____ Device Type_____NA_____

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 Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Condensate		Condensate		1310.4	478,296	
Produced Water		Produced Water		210	76,650	

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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.

Number	Description of Activities or Emissions Units	RAP, except HAP	HAP
1	1.0 MMBtu/hr Glycol Dehydrator Reboiler	X	X
1	250 MBtu/hr heater for slop tank #1	X	X
1	250 MBtu/hr heater for slop tank #2	X	X
1	Pigging Operations	X	X
1	Capstone Model C65NG Standard MicroTurbine	X	X

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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.

Number	Description of Activities or Emissions Units	RAP, except HAP	HAP
1	100 MBtu/hr Glycol Dehydrator Reboiler	X	X
1	250 MBtu/hr heater for slop tank #1	X	X
1	75 MBtu/hr separator heater	X	X
1	Condensate truck loading	X	X
1	One (1) 400-bbl slop storage tank	X	X

United States Environmental Protection Agency

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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.

Number	Description of Activities or Emissions Units	RAP, except HAP	HAP
1	100 MBtu/hr Glycol Dehydrator Reboiler	X	X
1	250 MBtu/hr separator heater	X	X
1	Condensate truck loading	X	X
1	One (1) 300-bbl slop storage tank	X	X

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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 (tons/yr)						
	NOx	VOC	SO2	PM10	CO	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

United States Environmental Protection Agency

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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 __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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	1.5	0.5	2.4	

EPA United States Environmental Protection Agency

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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 __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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
NOx	0.9	0.2	0.9	
CO	4.6	1.1	4.8	

United States Environmental Protection Agency

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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

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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions* (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
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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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.

5. **Emissions Unit ID** __RBF-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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	5.4	1.3	5.7	

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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 __RBT-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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	5.0	1.3	5.5	

United States Environmental Protection Agency

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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 __RBT-2_____

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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	4.5	1.3	5.5	

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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 __RBU 6-15E D-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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	3.7	2.4	10.1	
Benzene	0.3	0.2	0.98	71432
Ethylbenzene	0.0	0.0	0.07	100414
Toluene	0.5	0.4	1.6	108883
Xylene	0.3	0.2	0.8	1330207
n-Hexane	0.1	0.0	0.16	110543

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.

A. Emissions Unit ID __RBU 6-15E 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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	3.9	0.9	3.9	

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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

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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
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

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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.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	3.9	0.9	3.9	

EPA United States Environmental Protection Agency

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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.__

Title __Senior Vice President, Natural Gas Operations_____

Street or P.O. Box ___810 Houston St._____

City ___Ft. Worth_____ State _TX__ ZIP _76102__ - _____

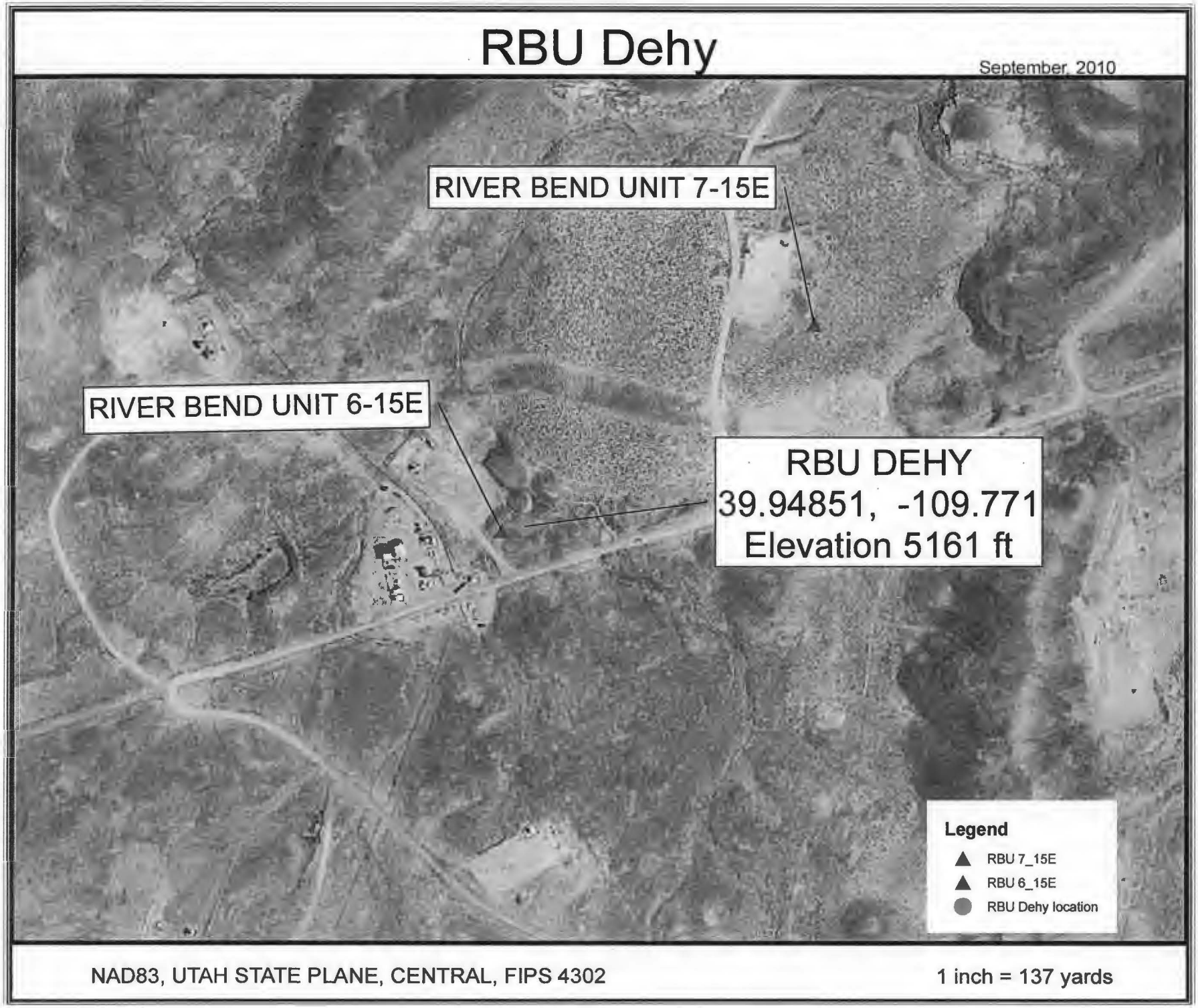
Telephone (817_) _885_ - _2285____ Ext. _____ Facsimile (_817) _885_ - _2285_____

B. Certification of Truth, Accuracy and Completeness (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) _____

Name (typed) ___Nick Dungey_____ Date: __1__/__7__/__11____


RBU Dehy
September, 2010
RIVER BEND UNIT 7-15E
RIVER BEND UNIT 6-15E
RBU DEHY
39.94851, -109.771
Elevation 5161 ft
Legend
RBU 7_15E
RBU 6_15E
RBU Dehy location
NAD83, UTAH STATE PLANE, CENTRAL, FIPS 4302
1 inch = 137 yards

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):
    - 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 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 (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.

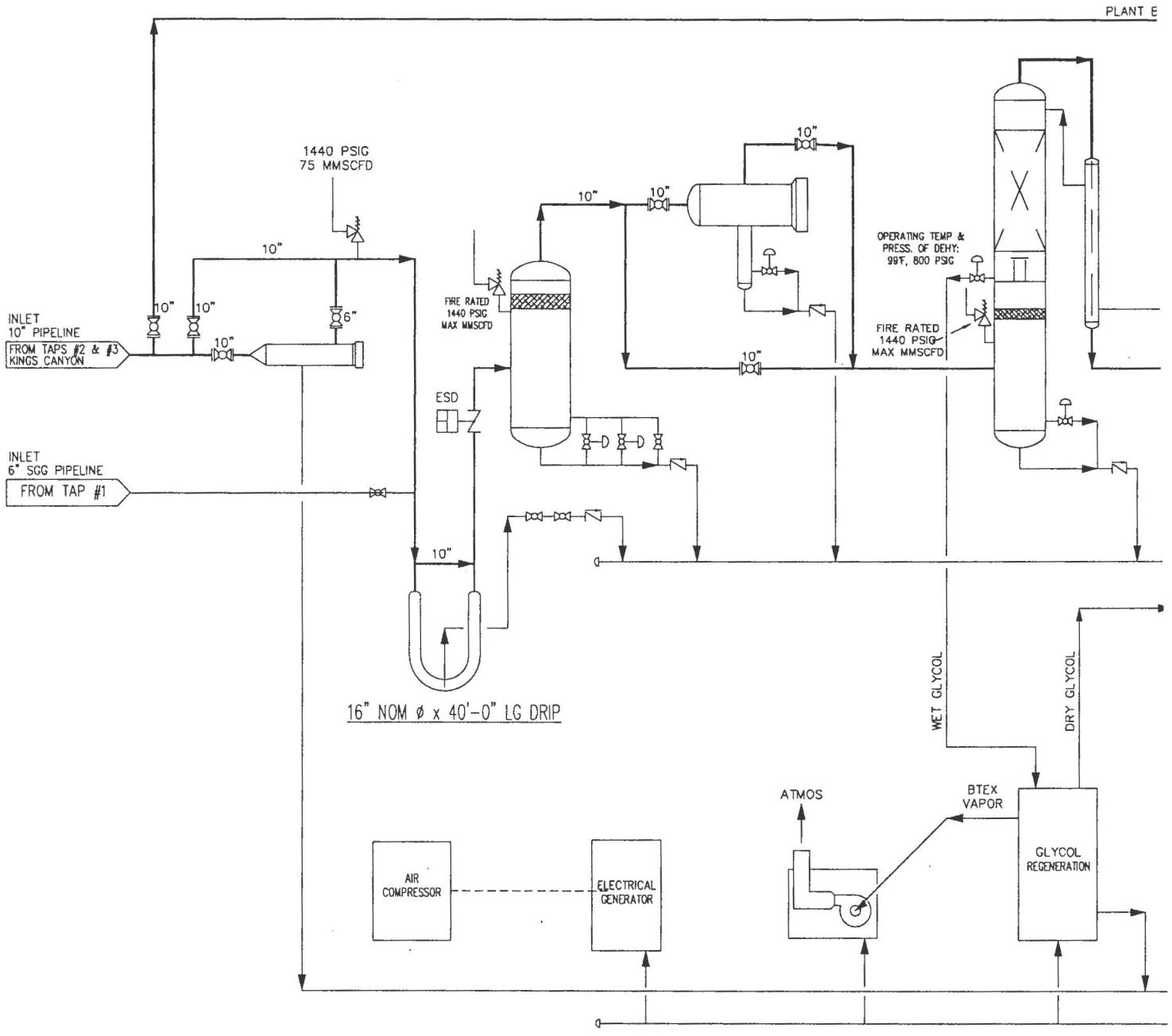
RBF-1
SITE WIDE
FUGITIVE
EMISSIONS

PR-101
PIG RECEIVER
RBP-1

V-100
INLET SEPARATOR
54"ID x 10'-0" S/S

F-201
INLET SEPARATOR
42.25"OD x 2'-6" S/S

T-521
GLYCOL CONTACTOR/
SCRUBBER
RBD-1



CONTROL AIR SYSTEM
ELECTRIC DRIVEN AIR COMPRESSOR
OPERATES PLANT PNEUMATIC
CONTROL DEVICES

GAS TURBINE
ELECTRICAL GENERATOR
65 KW ~ CAPSTONE MOD.
65NG
RBG-1

ME-102
THERMAL OXYDIZER
95% CONTROL EFFICIENCY
RBTO-1

ME-101
GLYCOL REGEN UNIT
1.5 MMBTU/HR
ELECTRICAL GLYCOL RECIRC. PUMPS
1800 RPM / MAX. GLYCOL CIRC. RATE = 9.8 GPM
RBD-1

GENERAL NOTES

REVISIONS

MK.	DESCRIPTION	DATE	CK	APPR
1	GENERAL; ADDED BYPASS, 6" TAP #1 PIPELINE	11-11-09		
2	ADDED F-201 INLET FILTER/COALESCER	11-11-09		
3	GENERAL	12-16-09		

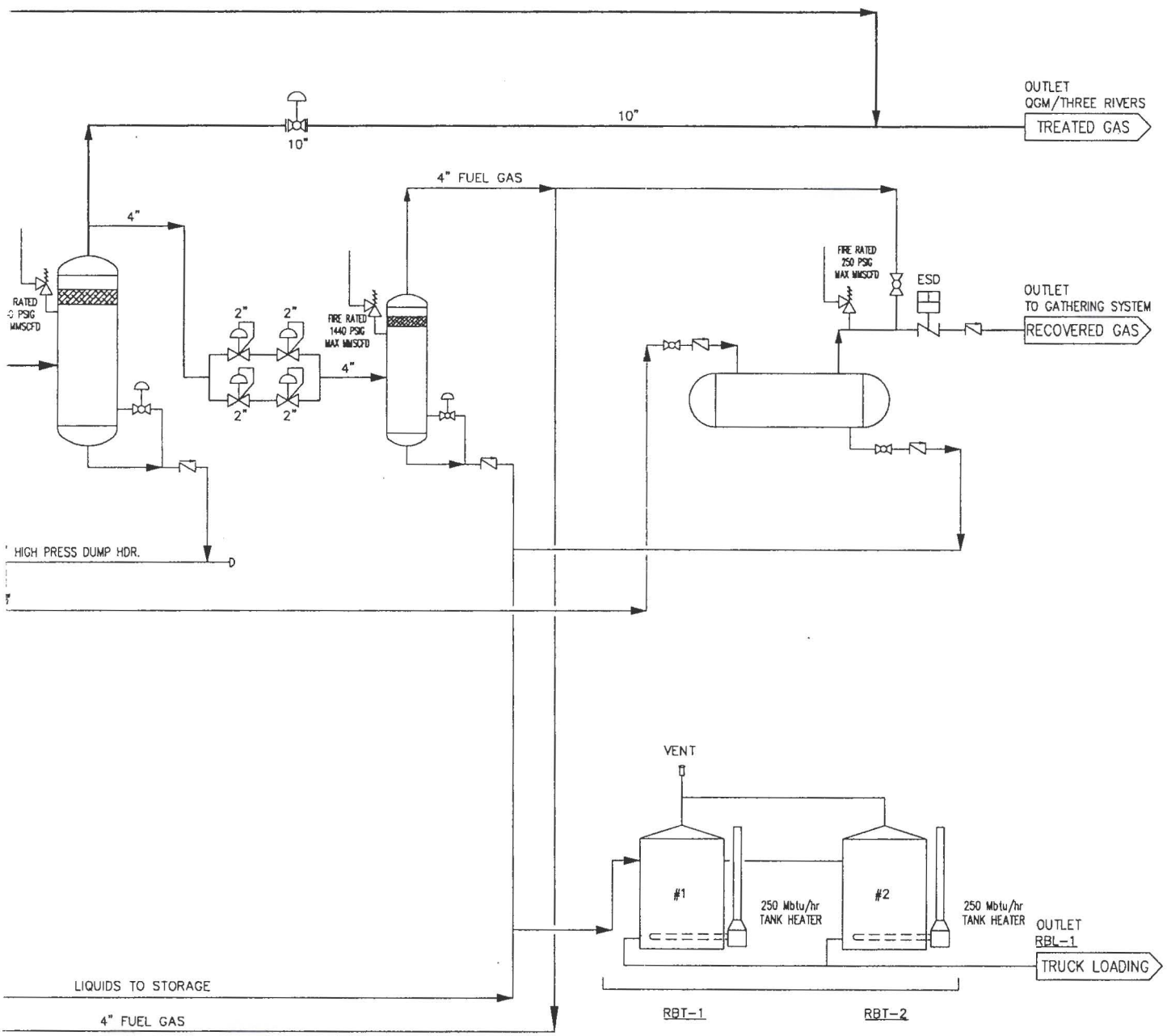
REFERENCE

DRAWING NO.	TITLE

V-420
DRY GAS SCRUBBER
54"ID x 10'-0" S/S

V-414
FUEL GAS SEPARATOR
30"ID x 10'-0" S/S

FLASH
SEPARATOR
132"OD x 47'-0½" OAL
30,000 GAL CAPACITY
NON-EMITTING



LIQUID STORAGE
(2) 400 BBLS / ATMOSPHERIC
APPROX. COMBINED THROUGHPUT 31.2
BPD

AWINGS

AWING NO.	TITLE

NOTICE

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SUMMIT GAS GATHERING

APPROVED:	DATE	TITLE: AIR PERMIT PROCESS FLOW DIAGRAM
CHECKED:		RIVER BEND DEHYDRATION STATION
DESIGNED:		ROOSEVELT, UTAH
DRAWN: J DAVIS	7/27/09	JOB No: / SCALE / DWG. NO.: D-150-100 / REV. 3

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^3 (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^3, 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_2 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 is necessary, even if the unit appears to be subject to other requirements for 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 quantities 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
(817) 870-2800 (office)

January 13, 2011

COPY

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,

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

01405119

SUMMIT GAS GATHERING, LLC FORT WORTH, TEXAS 76102-6298 817-885-2195 0000001

INVOICE NUMBER / DESCRIPTION	INVOICE DATE	INVOICE AMOUNT
01062011CA CHKREQ SGG RIVER BEND DEHY SITE INITI	1/06/2011	1,499.60

VENDOR NUMBER	VENDOR NAME	CHECK NUMBER	CHECK TOTAL
8006078	U.S. ENVIRONMENTAL PROTECTION	0000003376	1,499.60

REMITTANCE 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
810 Houston St. - Fort Worth, Texas 76102-6298

Bank of America, N.A.
Dallas, Texas
64-1276/611

CHECK DATE	CHECK NO.
1/10/11	0000003376

AMOUNT
$1,499.60

PAY ONE THOUSAND FOUR HUNDRED NINETY-NINE DOLLARS AND SIXTY CENTS

VOID AFTER 90 DAYS
VENDOR

TO THE ORDER OF

U.S. ENVIRONMENTAL PROTECTION
AGENCY, FOIA AND MISC. PMNTS-
CINCINNATI FINANCE CENTER
PO BOX 979078
SAINT LOUIS, MO 63197-9000

Evan M Van Kirk
AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

SECURITY FEATURES INCLUDED. DETAILS ON BACK.

⑈0000003376⑈ ⑆061112788⑆ ⑈3359168898⑈

45

United States Environmental Protection Agency

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 Name__Summit Gas Gathering – River Bend Dehydrator Site & Accompanying wellsites

Mailing Address:

Street/P.O. Box _810 Houston St._____City___Ft. Worth_____

State __TX____ ZIP __76102___ - _____

Contact Person:___Craig Allison_____ Title___EH&S Advisor_____

Telephone (_817__) __885___ - __2672 Ext. _____

Total Fee Payment Remitted: $ _____1499_._60____

EPA 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): _X__Initial ___Annual

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 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the 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 (typed) NICK I. DUNGEY Date: 1/7/11

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.

This data is for ___2010_____ (year)

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				
	0.9	31.7				

SUBTOTALS

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. 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

HAP Emissions. 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			
SUBTOTALS	0.7		1.1	0.5	0.2			

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
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "PRECEDING" CALENDAR YEAR)

Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.

11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for 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.	

16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/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

Source	Part 71 Emissions Fee Rate (per ton)	2010 Chargeable Emissions	Total 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

Source	NOx		CO		VOC		PM_{10}		HAPs** ***	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
River Bend Dehydration Site	0.20	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)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
River Bend Dehydration Site	0.00	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**

Source	2,2,4 TMP		Formaldehyde	
	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**

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ph. 303-781-8211

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

Source	NOx		CO		VOC		PM_{10}		HAPs*	
	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)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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**

Source	2,2,4 TMP		Formaldehyde	
	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

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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

Source	NOx		CO		VOC		PM_{10}		HAPs*	
	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**

* Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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**

Source	2,2,4 TMP		Formaldehyde	
	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

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
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ph. 303-781-8211

JANUARY 2011 UNCONTROLLED POTENTIAL TO EMIT SUMMARY

Company: Summit Gas Gathering
Facility Name: All Sites
Facility Location: Uintah County, Utah

Source	NOx		CO		VOC		PM_{10}		HAPs**, ***	
	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)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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**

Source	2,2,4 TMP		Formaldehyde	
	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**

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JANUARY 2011 CONTROLLED POTENTIAL TO EMIT SUMMARY

Company: Summit Gas Gathering
Facility Name: All Sites
Facility Location: Uintah County, Utah

Source	NOx		CO		VOC		PM_{10}		HAPs*, **	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
River Bend Dehydration Site	0.42	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)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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**

Source	2,2,4 TMP		Formaldehyde	
	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**

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ALL SITES GHG EMISSIONS SUMMARY

Company: **Summit Gas Gathering**
Facility Name: **All Sites**
Facility Location: **Uintah County, Utah**

UNCONTROLLED GHG EMISSIONS

SOURCE DESCRIPTION	CH_4 MT/yr*	CO_2 MT/yr*	N_2O MT/yr*	CO_2 Equivalents 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**

CH_4 Tons/yr	CO_2 Tons/yr	N_2O Tons/yr	CO_2 Equivalents 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 DESCRIPTION	CH_4 MT/yr*	CO_2 MT/yr*	N_2O MT/yr*	CO_2 Equivalents 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_4 Tons/yr	CO_2 Tons/yr	N_2O Tons/yr	CO_2 Equivalents 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

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JANUARY 2011 UNCONTROLLED POTENTIAL TO EMIT SUMMARY

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

Source	NOx		CO		VOC		PM_{10}		HAPs**, ***	
	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	-	-	-	-	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)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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**

Source	2,2,4 TMP		Formaldehyde	
	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**

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JANUARY 2011 CONTROLLED POTENTIAL TO EMIT SUMMARY*

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

Source	NOx		CO		VOC		PM_{10}		HAPs**,***	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/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	-	-	-	-	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)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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%

Source	2,2,4 TMP		Formaldehyde	
	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**

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GHG FACILITY EMISSIONS SUMMARY

Company: **Summit Gas Gathering**
Facility Name: **River Bend Dehydration Site**
Facility Location: **Uintah County, Utah**

UNCONTROLLED GHG EMISSIONS

SOURCE DESCRIPTION	CH_4 MT/yr*	CO_2 MT/yr*	N_2O MT/yr*	CO_2 Equivalents MT/yr*	CH_4 Tons/yr	CO_2 Tons/yr	N_2O Tons/yr	CO_2 Equivalents Tons/yr
Condensate Truck Loading - RBL-1	ND	ND	ND	ND	ND	ND	ND	ND
Total heaters (tanks and dehy)	0.01	630.44	0.00	631.12	0.01	693.48	0.00	694.24
Capstone Micro-Turbine	ND	66.24	ND	66.24	ND	72.87	ND	72.87
45 MMscfd dehydrator #1 - RBD-1	41.86	6.13	ND	885.09	46.04	6.75	ND	973.60
Pigging Operations	0.30	0.01	ND	6.24	0.33	0.01	ND	6.86
Fugitive Emissions RBF-1	13.35	0.15	ND	280.59	14.69	0.16	ND	308.65
Storage Tank Emissions RBT-1 & RBT-2	0.58	0.03	ND	12.14	0.63	0.03	ND	ND
TOTAL EMISSIONS	**56.10**	**703.00**	**0.00**	**1881.43**	**61.71**	**773.30**	**0.00**	**2056.22**

CONTROLLED GHG EMISSIONS

SOURCE DESCRIPTION	CH_4 MT/yr*	CO_2 MT/yr*	N_2O MT/yr*	CO_2 Equivalents MT/yr*	CH_4 Tons/yr	CO_2 Tons/yr	N_2O Tons/yr	CO_2 Equivalents Tons/yr
Condensate Truck Loading - RBL-1	ND	ND	ND	ND	ND	ND	ND	ND
Total heaters (tanks and dehy)	0.01	630.44	0.00	631.12	0.01	693.48	0.00	694.24
Capstone Micro-Turbine	ND	66.24	ND	66.24	ND	72.87	ND	72.87
45 MMscfd dehydrator #1 - RBD-1	0.03	3.20	ND	3.90	0.04	3.52	ND	4.29
Pigging Operations	0.30	0.01	ND	6.24	0.33	0.01	ND	6.86
Fugitive Emissions RBF-1	13.35	0.15	ND	280.59	14.69	0.16	ND	308.65
Storage Tank Emissions RBT-1 & RBT-2	0.01	0.03	ND	12.14	0.01	0.03	ND	13.36
Thermal Oxidizer Emissions - RBTO-1	0.03	1415.20	ND	1415.76	0.03	1556.72	ND	1557.34
TOTAL EMISSIONS	**13.73**	**2115.27**	**0.00**	**2416.00**	**15.10**	**2326.79**	**0.00**	**2657.60**

ND = No data available.
MT = Metric tonne
Storage Tank Emissions do not include working and breathing since TANKS 4.09D only calculates VOC emissions.

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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: River Bend Dehydration Site
Facility Location: Uintah County, Utah

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

Summary		
Engines CO_2e =	0.0	tons/yr
Heaters/Boilers CO_2e =	2114.0	tons/yr
Total CO_2e =	2114.0	tons/yr
Reporting required ?	No	

CO_2e = CO_2 equivalents

Note: Reporting Threshold = 25,000 tons/yr CO_2e

Engines			Rating				Species			Species			
							CO_2	CH_4	N_2O	CO_2 CO_2e	CH_4 CO_2e	N_2O CO_2e	CO_2e Total
Source	Model	Fuel	(hp)	(MMbtu/hr)	Hours	BFSC Btu/(hp-hr)	metric tons			metric 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 metric tons CO2e Total= 0.0 metric tons

Boilers/Heaters			Rating				Species			Species			
							CO_2	CH_4	N_2O	CO_2 CO_2e	CH_4 CO_2e	N_2O CO_2e	CO_2e Total
Source	Model	Fuel	(hp)	(MMbtu/hr)	Hours		metric tons			metric tons			
Heater (Dehy 1)	-	Natural Gas	-	1.000	8760		464.46	0.01	0.00	464.46	0.18	0.27	464.91
Thermal Oxidizer	-	Natural Gas	-	3.047	8760		1415.20	0.03	0.00	1415.20	0.56	0.83	1416.59
Tank Heater #1	-	Natural Gas	-	0.250	8760		116.11	0.00	0.00	116.11	0.05	0.07	116.23
Tank Heater #2	-	Natural Gas	-	0.250	8760		116.11	0.00	0.00	116.11	0.05	0.07	116.23
	-	Natural Gas	-				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
		Total		4.547		Totals	2111.88	0.04	0.00	2111.88	0.84	1.23	

Engines GHG Emissions Total= 2111.93 metric tons CO2e Total= 2114.0 metric tons

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Natural Gas			
Emission Factor (CO_2) =	53.02	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-1
Emission Factor (CH_4) =	0.001	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-2
Emission Factor (N_2O) =	0.0001	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-2
HHV (Natural Gas) =	1106	BTU/scf	

1 metric ton = 1000 kg = 2,200 lbs

	Global Warming Potentials	
CO_2 =	1	From 40 CFR Part 98, Subpart A, Table A-1
CH_4 =	21	From 40 CFR Part 98, Subpart A, Table A-1
N_2O =	310	From 40 CFR Part 98, Subpart A, Table A-1

[1]CO_2e Emissions (metric tons) = 0.001 (metric ton/kg) X Fuel (scf/yr) X HHV (MMBtu/scf) X Emission Factor (natural Gas) (kg CO_2/MMBtu) X Global Warming Potentials

Operational Factors from Newfield operational data

Engines Total (CO_2e) = CO_2 emissions + CH_4 (CO_2e) + N_2O (CO2e)

Heaters Total (CO_2e) = CO_2 emissions + CH_4 (CO_2e) + N_2O (CO2e)

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Generator Micro-Turbine Emissions

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

EMISSION POINTS: Capstone Model C65NG Standard MicroTurbine

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

Pollutant	Emission Factor		Emission Rate (lb/hr)	Emission Rate (tpy)	Emission Factor Reference
NOx	0.46	lb/MWhe	0.03	0.13	[1]
CO	6.00	lb/MWhe	0.18	0.79	[1]
VOC/NMHC	0.10	lb/MWhe	0.00	0.01	[1]
CO_2*	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/10^6 Watts-hr)*(site Watt rating 10^3 Watts)
tons/yr= (lb/hr)*(8760 hrs/yr)* (1 ton/2000lb)

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Technical Reference

Capstone MicroTurbine™ Systems Emissions

Summary

Capstone MicroTurbine™ 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_2). This CO_2 dilutes the fuel, makes complete combustion more difficult, and results in higher carbon monoxide emissions (CO) than for pipeline-quality natural gas.

Table 1. Emission for Different Capstone Microturbine Models in [lb/MWhe]

Model	Fuel	NOx	CO	VOC [5]
C30 NG	Natural Gas [1]	.64	1.7	.22
C30 MBTU	Landfill Gas [2]	.64	22	12.4
C30 MBTU	Digester Gas [3]	.64	22	12.4
C30 Liquid	Diesel #2 [4]	2.6	.41	.23
C65 NG Standard	Natural Gas [1]	.46	6.0	.10
C65 NG Low NOx	Natural Gas [1]	.17	6.0	.10
C65 NG CARB	Natural Gas [1]	.17	.24	.05
CR65 Landfill	Landfill Gas [2]	.50	6.0	.10
CR65 Digester	Digester Gas [3]	.50	6.0	.10
C200 NG	Natural Gas [1]	.43	.26	.10
C200 NG CARB	Natural Gas [1]	.14	.20	.04
CR200 Digester	Digester Gas [3]	.50	6.0	.10

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).

Table 2. Emission for Different Capstone Microturbine Models in [g/hp-hr]

Model	Fuel	NOx	CO	VOC [5]
C30 NG	Natural Gas [1]	.22	.60	.08
C30 MBTU	Landfill Gas [2]	.22	7.4	4.2
C30 MBTU	Digester Gas [3]	.22	7.4	4.2
C30 Liquid	Diesel #2 [4]	.90	.14	.08
C65 NG Standard	Natural Gas [1]	.16	2.0	.03
C65 NG Low NOx	Natural Gas [1]	.06	2.0	.03
C65 NG CARB	Natural Gas [1]	.06	.08	.02
CR65 Landfill	Landfill Gas [2]	.17	2.0	.03
CR65 Digester	Digester Gas [3]	.17	2.0	.03
C200 NG	Natural Gas [1]	.15	.09	.03
C200 NG CARB	Natural Gas [1]	.05	.07	.02
CR200 Digester	Digester Gas [3]	.17	2.0	.34

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 MWh 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.

Table 3. Emission for Different Capstone Microturbine Models in [ppmvd]

Model	Fuel	NOx	CO	VOC [5]
C30	Natural Gas [1]	9	40	9
C30	Landfill Gas [2]	9	500	500
C30	Digester Gas [3]	9	500	500
C30	Diesel #2 [4]	35	9	9
C65 Standard	Natural Gas [1]	9	190	6
C65 Low NOx	Natural Gas [1]	4	180	6
C65 CARB	Natural Gas [1]	4	8	3
CR65	Landfill Gas [2]	10	190	6
CR65	Digester Gas [3]	10	190	6
C200	Natural Gas [1]	9	180	9
C200 CARB	Natural Gas [1]	4	8	3
CR200	Digester Gas [3]	10	190	6

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.

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_2), 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_2, they are released in small quantities – especially from Capstone

microturbines. So the major contributor of concern is carbon dioxide, or CO_2. Emissions of CO_2 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_2 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_2 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_2 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_2, with or without consideration for the useful thermal energy captured with a combined heat and power application.

Table 5. CO_2 Emission for Capstone Microturbine Models in [lb/MWh]

Model	Fuel	CO_2	
		Electric Only	70% Total CHP
C30	Natural Gas [1]	1,645	610
C30	Landfill Gas [2]	1,645	610
C30	Digester Gas [3]	1,645	610
C30	Diesel #2 [4]	2,100	750
C65 Standard	Natural Gas [1]	1,475	610
C65 Low NOx	Natural Gas [1]	1,525	610
C65 CARB	Natural Gas [1]	1,525	610
C65	Landfill Gas [2]	1,475	610
C65	Digester Gas [3]	1,475	610
C200	Natural Gas [1]	1,295	610
C200 CARB	Natural Gas [1]	1,295	610
CR200	Digester Gas [3]	1,295	610

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
- kW_{th}: Kilowatt (thermal)
- kW_e : 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

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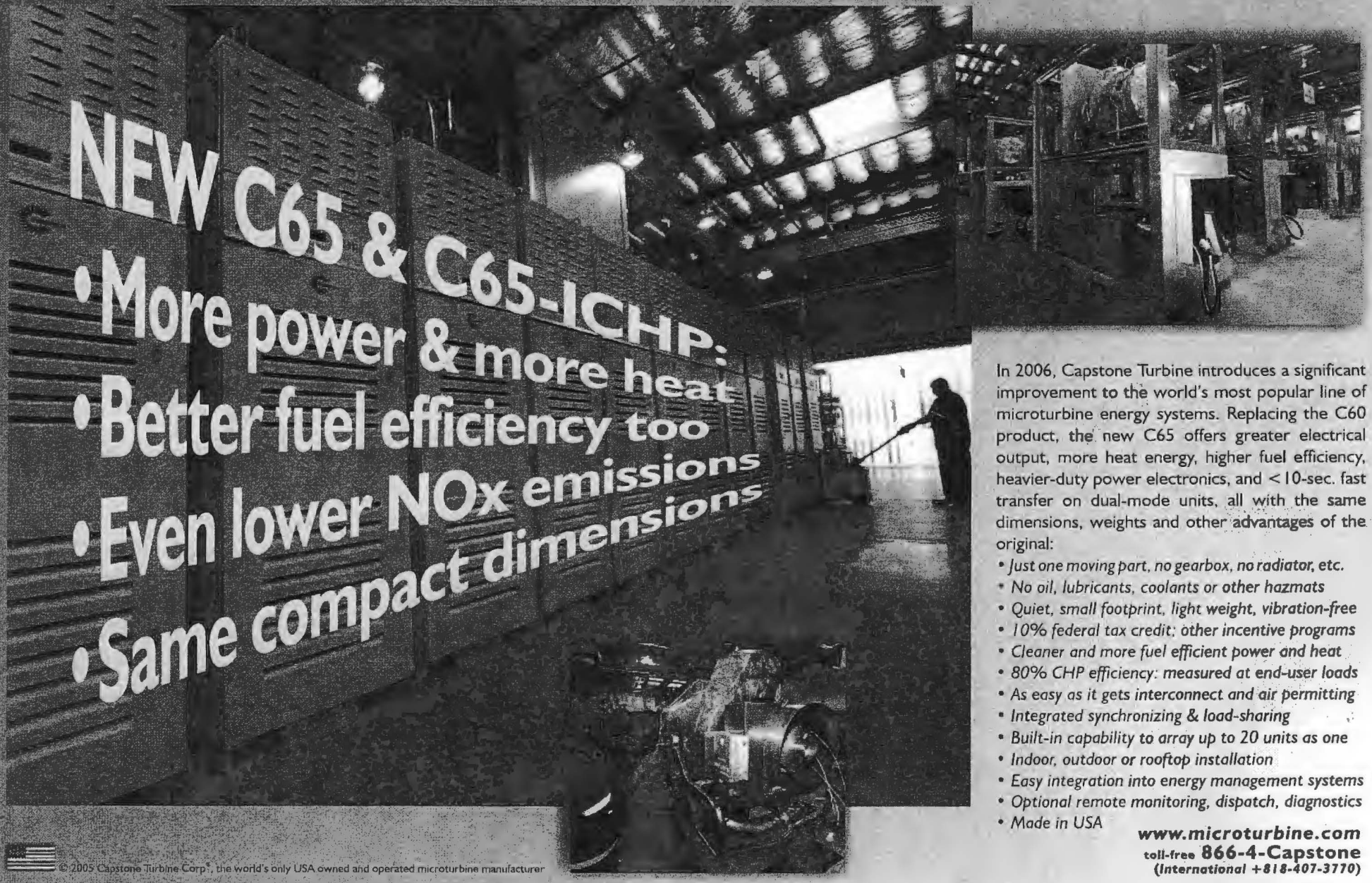
Capstone Introduces the C65 Energy Systems



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*

www.microturbine.com
toll-free **866-4-Capstone**
(International +818-407-3770)

C65 & C65-ICHP
MicroTurbine Performance Datasheet

Unless otherwise noted, values are full power nominal at ISO conditions of 59°F (15°C) at sea level.

Electrical Performance		
	Grid Connect	**Stand Alone**
Net Power Output	65 kW	65 kW
Net Electrical Efficiency	29% LHV	29% LHV
Net kVA Output	65 kVA	83 kVA max at 480V
Voltage	380 to 480 VAC	380 to 480 VAC
Voltage Output Connection	3 phase	3 phase
Frequency	50 or 60 Hz	10–60 Hz (programmable)
Current	100A max. steady state	125A max. steady state*
Electrical Output Type	Inverter	Inverter
THD standard	IEEE 519 for Current	IEEE 519 for Voltage
Fuel Input Requirements		
Natural Gas	875 to 1,275 BTU/scf [HHV]	
Fuel Inlet Pressure	75 psig**	
Fuel Flow at Full Power	765,000 BTU/hr [LHV]; 842,000 BTU/hr [HHV]	
Net Heat Rate	11,800 BTU/kWh [LHV]	
Generator Heat Rate	11,000 BTU/kWh [LHV]	
Exhaust Output		
NOx Emissions	<5ppmV @ 15% O_2	
Exhaust Temperature	588°F (309°C)	
Exhaust Mass Flow Rate	1.08 lbm/s (0.49 kg/s)	
Exhaust Energy Output	561,000 BTU/hr	
*C65-ICHP Thermal Output****		
Copper Core Integrated Heat Recovery Module	Hot Water Output	380,000 BTU/hr (112kW)
	Total System Efficiency	80%
Stainless Steel Core Integrated Heat Recovery Module	Hot Water Output	265,000 BTU/hr (78kW)
	Total System Efficiency	64%
Dimensions & 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		
Built in accordance with UL 2200 and UL1741 (listing pending), and meets statewide utility interconnection requirements of California Rule 21 and the New York State Public Utility Commission		
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 COMPONENT (Wet Gas)	MOLECULAR WEIGHT (lb/lb-mole)	Weight Fraction	COMPONENT FLOW RATE (Mscf)	COMPONENT FLOW RATE (lb/yr)	COMPONENT FLOW RATE (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	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^3
Average Pipeline Pressure :	800	800	800	lb/ft^2
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)

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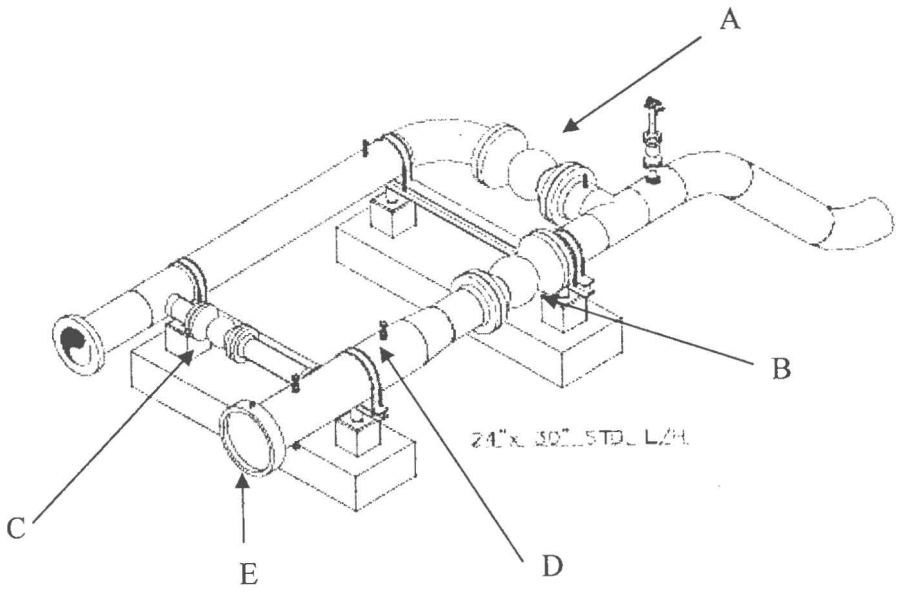
SGG ROOSEVELT – PIPELINE PIGGING PROCEDURES

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.


A
B
C
D
E

NATURAL GAS FUELED HEATER EMISSIONS

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

SOURCE DESCRIPTION	HEATER SIZE (MBtu/hr)	HEATER EFFICIENCY	FUEL HEAT VALUE (Btu/scf)	HOURS OF OPERATION (hrs/year)	FUEL USAGE (MMscf/yr)	NOx		CO	
						EF AP-42[1] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[1] lb/MMscf	EMISSIONS (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
				TOTALS	**14.849**		**0.800**		**0.670**

SOURCE DESCRIPTION	TOC		VOC	PM 10		Formaldehyde	
	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EMISSIONS (tons/yr)	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[3] lb/MMscf	EMISSIONS (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[1] = 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)

$$\text{Fuel Consumption (MMscf/yr)} = \frac{\text{Heater Size (MBtu/hr)} * 1{,}000\ \text{(Btu/MBtu)} * \text{Hours of Operation (hrs/yr)}}{\text{Fuel Heat Value (Btu/scf)} * 1{,}000{,}000\ \text{(scf/MMscf)} * \text{Heater Efficiency}}$$

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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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 Description	Gas Flow Rate (MMscf/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (tons/yr)	CO_2 (MT/yr)*	Methane (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 Description	Gas Flow Rate (MMscf/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (tons/yr)	CO_2 (MT/yr)*	Methane (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_2 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.

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ph. 303-781-8211

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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. F
Pressure: 800.00 psig
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
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:

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	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	14.7936
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
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

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:

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	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	14.7936
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

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:

COMBUSTION DEVICE

Ambient Temperature:	52.00 deg. F
Excess Oxygen:	13.80 %
Combustion Efficiency:	99.00 %
Supplemental Fuel Requirement:	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:	1.25
Calculated Dry Gas Dew Point:	4.21 lbs. H2O/MMSCF
Temperature:	99.0 deg. F
Pressure:	800.0 psig
Dry Gas Flow Rate:	45.0000 MMSCF/day
Glycol Losses with Dry Gas:	0.4848 lb/hr
Wet Gas Water Content:	Saturated

Calculated Wet Gas Water Content: 66.86 lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio: 3.83 gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	6.28%	93.72%
Carbon Dioxide	99.80%	0.20%
Nitrogen	99.98%	0.02%
Methane	99.99%	0.01%
Ethane	99.95%	0.05%
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	99.71%	0.29%
Cyclohexane	98.72%	1.28%
Other Hexanes	99.78%	0.22%
Heptanes	99.47%	0.53%
Methylcyclohexane	98.60%	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 Control: Recycle/recompression
Flash Temperature: 120.0 deg. F
Flash Pressure: 60.0 psig

Component	Left in Glycol	Removed in Flash Gas
Water	99.98%	0.02%
Carbon Dioxide	52.21%	47.79%
Nitrogen	7.72%	92.28%
Methane	8.00%	92.00%
Ethane	23.58%	76.42%
Propane	41.03%	58.97%
Isobutane	51.57%	48.43%
n-Butane	58.51%	41.49%
Isopentane	62.32%	37.68%
n-Pentane	67.41%	32.59%
n-Hexane	79.11%	20.89%
Cyclohexane	93.85%	6.15%
Other Hexanes	74.20%	25.80%
Heptanes	88.68%	11.32%
Methylcyclohexane	95.24%	4.76%
2,2,4-Trimethylpentane	79.81%	20.19%
Benzene	99.16%	0.84%

Toluene	99.49%	0.51%
Ethylbenzene	99.71%	0.29%
Xylenes	99.81%	0.19%
C8+ Heavies	99.01%	0.99%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled 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. (vol%)	Loading (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

Component	Conc. (vol%)	Loading (lb/hr)
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. (wt%)	Loading (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.

Component	Conc. (wt%)	Loading (lb/hr)
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
Pressure: 14.70 psia
Flow Rate: 1.72e+000 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Methane	1.16e+001	8.41e-003
Ethane	7.66e+000	1.04e-002
Propane	7.20e+000	1.44e-002
Isobutane	2.55e+000	6.70e-003
n-Butane	4.32e+000	1.13e-002
Isopentane	1.82e+000	5.95e-003
n-Pentane	1.83e+000	5.96e-003
n-Hexane	1.39e+000	5.41e-003
Cyclohexane	3.68e+000	1.40e-002
Other Hexanes	1.64e+000	6.39e-003
Heptanes	2.58e+000	1.17e-002
Methylcyclohexane	4.79e+000	2.13e-002
2,2,4-Trimethylpentane	7.32e-002	3.78e-004
Benzene	1.79e+001	6.32e-002
Toluene	1.93e+001	8.03e-002
Ethylbenzene	6.49e-001	3.11e-003
Xylenes	7.29e+000	3.50e-002
C8+ Heavies	3.77e+000	2.91e-002
Total Components	100.00	3.33e-001

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		

Component	Mol%	Wt%	LV%
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
Neopentane	0.0072	0.028	0.0152
Isopentane	0.1856	0.7252	0.3766
n-Pentane	0.1391	0.5433	0.2792
2,2-Dimethylbutane	0.0078	0.0364	0.0180
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
n-Hexane	0.0553	0.258	0.1260
Heptanes	0.1420	0.7061	0.2982
Octanes	0.0139	0.0857	0.0383
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
Hydrogen Sulfide	0.0000	0	0.0000
Total	100.0000	100.0000	100.0000

Global Properties		Units
Gross BTU/Real CF	1130.4	BTU/SCF at 60°F and14.73 psia
Sat.Gross BTU/Real CF	1111.9	BTU/SCF at 60°F and14.73 psia
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
Sample Temperature:	99	°F
Sample Pressure:	1000	psig

Reviewed By: _____

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
Littleton CO 80122
ph. 303-781-8211

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 Dehy Inlet		

GRI GlyCalc Information

Component	Mol%	Wt%	LV%
Carbon Dioxide	0.3567	0.85	0.3369
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

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
Littleton CO 80122
ph. 303-781-8211

FLASH TANK EMISSIONS

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

GAS COMPONENT	MOLECULAR WEIGHT (lb/lb-mole)	MOLE PERCENT	RELATIVE MOLE WEIGHT (lb/lb-mole)	WEIGHT PERCENT	COMPONENT FLOW RATE (Mscf/day)	COMPONENT FLOW RATE (lb/hr)	COMPONENT FLOW RATE (tons/yr)
Methane	16.043	30.4601	4.886713843	14.19581873	0.08224227	0.144866876	0.634516916
Ethane	30.07	20.4171	6.13942197	17.83491405	0.05512617	0.182003471	0.797175202
Propane	44.097	19.045	8.39827365	24.39683889	0.0514215	0.248967242	1.090476519
i-Butane	58.123	5.6218	3.267558814	9.492201527	0.01517886	0.096866944	0.424277216
n-Butane	58.123	6.4265	3.735274595	10.85090774	0.01735155	0.110732402	0.48500792
i-Pentane	72.15	2.3103	1.66688145	4.842261623	0.00623781	0.049414784	0.216436753
n-Pentane	72.15	1.5685	1.13167275	3.287489657	0.00423495	0.033548495	0.146942409
Hexanes	86.177	0.5429	0.467854933	1.359110444	0.00146583	0.013869583	0.060748773
Heptanes	100.204	0.6502	0.651526408	1.892672884	0.00175554	0.019314533	0.084597654
Octanes	114.231	0	0	0	0	0	0
Nonanes	128.258	0.0172	0.022060376	0.064085009	0.00004644	0.000653981	0.002864437
Decanes +	142.285	0.1261	0.179421385	0.521216003	0.00034047	0.005318956	0.023297027
Benzene	78.12	0.1217	0.09507204	0.276182623	0.00032859	0.002818415	0.012344659
Toluene	92.13	0	0	0	0	0	0
Ethylbenzene	106.16	0	0	0	0	0	0
Xylenes	106.16	0	0	0	0	0	0
n-Hexane	86.177	0.2414	0.208031278	0.604327245	0.00065178	0.006167098	0.027011888
Helium	4.003	0	0	0	0	0	0
Nitrogen	28.013	11.9137	3.337384781	9.695044747	0.03216699	0.098936938	0.433343791
Carbon Dioxide	44.01	0.5373	0.23646573	0.686928833	0.00145071	0.007010038	0.030703968
Oxygen	32	0	0	0	0	0	0
Hydrogen Sulfide	34.08	0	0	0	0	0	0
VOC SUBTOTAL		**36.6716**	**19.82362768**	**57.58729364**	**0.09901332**	**0.587672432**	**2.574005254**
HAP SUBTOTAL		**0.3631**	**0.303103318**	**0.880509867**	**0.00098037**	**0.008985513**	**0.039356547**
TOTAL		99.9998	34.423614	100	0.26999946	1.020489756	4.469745132

Gas Vented: **0.27 Mscf/day** **31.2 barrels of Oil**
Days of Operation: **365 days/year** **8.6 Gas to Oil Ratio in Cubic Feet Gas to Barrel of Oil/Water**

See attached flash gas analysis, including API Gravity and Reid Vapor Pressure

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
Littleton CO 80122
ph. 303-781-8211

MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
561-5579

Gas Analysis

Company....	Hy-Bon	Sample Press..	60.0
Producer...	XTO	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 (Ideal)	BTU (Ideal Dry)
Nitrogen	11.914	0.000	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
TOTALS	100.000	16.697	1780.1

GROSS HEATING VALUE @ 14.65 PSIA

Dry	Wet	
1796	**1767**	**BTU/Real Cu.Ft.**
1.1993	**1.1903**	**Specific Gravity (Real)**
1780	1750	BTU/Ideal Cu.Ft.
1.1888	1.1788	Specific Gravity (Ideal)

Z Factor : 0.9909

GASOLINE CONTENT (GPM/Real)

Ethane & Heavier	16.851
Propane & Heavier ...	11.355
Butane & Heavier	6.073
Pentane & Heavier ...	2.182

Hy-Bon

MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
561-5579

Extended Gas Analysis

Company....	Hy-Bon	Sample Press..	60.0
Producer...	XTO	Sample Temp...	0.0
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		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		0.0151	0.0531
n-Nonane	C-9	0.0021	0.0074

Continues....

MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
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Extended Gas Analysis (Page 2)

		Mole %	Weight %
Decanes		0.0167	0.0649
n-Decane	C-10	0.0168	0.0655
Decane+		0.0926	0.3953
TOTALS		100.0000	100.0000

Dry	Wet		
1796	**1772**	**BTU/Real**	**Cu.Ft.**
1780	1750	BTU/Ideal	Cu.Ft.

Specific Gravity (Real) : 1.1993

Lab Ref #.. 10-NOV-61433

Hy-Bon

CAPROCK LABORATORIES, INC.
3312 BANKHEAD HIGHWAY
MIDLAND, TEXAS 79701
432.689.7252 CAPROCKLAB.COM

CHROMATOGRAPHIC ANALYSIS

COMPANY:	HYBON	JOB #:	1010042
SAMPLE ID:	FLASH GAS	SAMPLE #:	1010042HYB07
SAMPLE TYPE:	SPOT	DATE ON:	20101005
STATION:	RIVER BEND DEHY	DATE OFF:	20101005
BASE PRESSURE,PSIA:	14.650	TIME ON:	
RANAREX GRAVITY:		TIME OFF:	
SAMPLE PRESS.,psig:		SAMPLED BY:	CLIENT
GAS TEMP. F:		CYLINDER #:	000001
ANALYSIS DATE:	20101012	SAMPLE USE * :	A
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	
BTU DRY	1141.5
BTU SATURATED	1121.7
COMPRESSIBILITY, Z	0.9971
RELATIVE DENSITY	0.6660
AVE. MOLE WEIGHT	19.2903
H2S, TUTWEILER, GR./100 CUBIC FEET	0.0
26 # GASOLINE	2.2106

BASE CONDITIONS, 14.65 PSIA @ 60 DEGREES FAHRENHEIT

* A = ACCOUNTABLE, O = OPERATIONAL

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MIDLAND, TEXAS 79701
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CHROMATOGRAPHIC ANALYSIS

COMPANY:	HYBON	JOB #:	1010042
SAMPLE ID:	FLASH GAS	SAMPLE #:	1010042HYB07AF
SAMPLE TYPE:	SPOT	DATE ON:	20101005
STATION:	RIVER BEND DEHY	DATE OFF:	20101005
BASE PRESSURE,PSIA:	14.650	TIME ON:	
RANAREX GRAVITY:		TIME OFF:	
SAMPLE PRESS.,psig:		SAMPLED BY:	CLIENT
GAS TEMP. F:		CYLINDER #:	000001
ANALYSIS DATE:	20101012	SAMPLE USE * :	A
ANALYSIS COMMENTS:	CYLINDER FULL OF WATER, NO LIQUID HYDROCARBONS		

COMPONENT	MOLE %	GPM
HYDROGEN SULFIDE	0.0000	
NITROGEN	0.7210	
OXYGEN	0.0000	
METHANE	87.6696	
CARBON DIOXIDE	0.4566	
ETHANE	6.4256	1.7091
PROPANE	2.2263	0.6101
ISO-BUTANE	0.5326	0.1733
N-BUTANE	0.6379	0.2000
ISO-PENTANE	0.2980	0.1084
N-PENTANE	0.2470	0.0890
HEXANES	0.2973	0.1216
HEPTANES +	0.4881	0.2239
TOTAL	100.0000	3.2354

HEATING VALUE	
BTU DRY	1152.2
BTU SATURATED	1132.2
COMPRESSIBILITY, Z	0.9970
RELATIVE DENSITY	0.6629
AVE. MOLE WEIGHT	19.2005
H2S, TUTWEILER, GR./100 CUBIC FEET	0.0
26 # GASOLINE	2.2232

BASE CONDITIONS, 14.65 PSIA @ 60 DEGREES FAHRENHEIT

* A = ACCOUNTABLE, O = OPERATIONAL

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COMPANY:	HYBON	JOB #:	1010042
SAMPLE ID:	FLASH GAS	SAMPLE #:	1010042HYB07EA
SAMPLE TYPE:	SPOT	DATE ON:	20101005
STATION:	RIVER BEND DEHY	TIME ON:	
SAMPLE PRESS.,psig:		SAMPLED BY:	CLIENT
GAS TEMP. F:		CYLINDER #:	N/A
ANALYSIS DATE:	20101012		
ANALYSIS COMMENTS:			

COMPOSITIONAL ANALYSIS OF NATURAL GAS

COMPONENT	MOLE %	WEIGHT %
HYDROGEN SULFIDE	0.0000	0.0000
NITROGEN	0.7210	1.0416
OXYGEN	0.0000	0.0000
METHANE	87.6696	72.5323
CARBON DIOXIDE	0.4566	1.0364
ETHANE	6.4256	9.9645
PROPANE	2.2263	5.0630
ISO-BUTANE	0.5326	1.5965
N-BUTANE	0.6379	1.9121
ISO-PENTANE	0.2980	1.1088
N-PENTANE (C-5)	0.2470	0.9191
2,2 DIMETHYL BUTANE	0.0021	0.0093
CYCLOPENTANE	0.0260	0.0940
2-METHYLPENTANE	0.0356	0.1582
3-METHYLPENTANE	0.0294	0.1307
N-HEXANE (C-6)	0.0520	0.2311
METHYLCYCLOPENTANES	0.0816	0.3542
BENZENE	0.0080	0.0322
CYCLOHEXANE	0.0625	0.2713
2-METHYLHEXANE	0.0055	0.0284
3-METHYLHEXANE	0.0089	0.0460
DIMETHYLCYCLOPENTANES	0.0370	0.1874
HEPTANES	0.0066	0.0341
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
OCTANES	0.0614	0.3617
N-OCTANE (C-8)	0.0174	0.1025
ETHYL BENZENE	0.0031	0.0170
P-M-XYLENE	0.0059	0.0323
O-XYLENE	0.0024	0.0131
NONANES	0.0529	0.3499
N-NONANE (C-9)	0.0091	0.0602
DECANES	0.0460	0.3375
N-DECANE (C-10)	0.0081	0.0594
UNDECANES	0.0339	0.2733
N-UNDECANE (C-11)	0.0075	0.0605
DODECANE PLUS	0.1161	1.2498
TOTAL	100.0000	100.0000

TOTAL ANALYSIS SUMMARY

AVE MOLE WT	19.3899
SP GRAV, 60F/60	0.3227
API GRAVITY	307.0
REL DENS, AIR=1	0.6695
VAPOR PRESS PSIA	4439.90

C6+ SUMMARY

AVE MOLE WT	119.1347
SP GRAV, 60F/60	0.7401
API GRAVITY	59.7
LBS/GAL	5.921
REL DENS, AIR=1	4.1133
VAPOR PRESS PSIA	2.38

BTEX SUMMARY

WT % BENZENE	0.0322
WT % TOLUENE	0.0413
WT % E BENZENE	0.0170
WT % XYLENES	0.0454

ANALYST: James L. Pritchard
JAMES L. PRITCHARD
LAB MANAGER

CAPROCK LABORATORIES, INC.

3312 BANKHEAD HIGHWAY
MIDLAND, TEXAS 79701
(432)689-7252, CAPROCKLAB.COM

COMPANY: HYBON
SAMPLE ID.: AS NOTED

JOB NUMBER: 1010042
DATE RECEIVED: October 08, 2010
DATE REPORTED: October 20, 2010
REPORTED TO: Butch Gidney

SUMMARY OF STOCK TANK OIL ANALYSIS

SAMPLE IDENTIFICATION	LAB NUMBER	GRAVITY, API @ 60 F	REID VAPOR 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

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 DESCRIPTION	WORKING LOSSES (lbs/yr)	BREATHING LOSSES (lbs/yr)	VOC LOSSES (lbs/yr)	TOTAL LOSSES (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.

Buys & Associates, Inc.
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Littleton CO 80122
ph. 303-781-8211

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

Summit Gas Gathering - River Bend Site - Vertical Fixed Roof Tank

Annual Emission Calculations	
Standing Losses (lb):	7,138.8284
Vapor Space Volume (cu ft):	1,149.8229
Vapor Density (lb/cu ft):	0.0414
Vapor Space Expansion Factor:	1.1513
Vented Vapor Saturation 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)	
Roof Outage (ft):	0.1667
Roof Height (ft):	0.5000
Roof Slope (ft/ft):	0.0800
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0414
Vapor Molecular Weight (lb/lb-mole):	68.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.3397
Daily Avg. Liquid Surface Temp. (deg. R):	511.6700
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 Factor (Btu/sqft 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):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.3397
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	2.5895
Vapor Pressure at Daily Maximum Liquid 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	
Vented Vapor Saturation Factor:	0.3572
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.3397
Vapor Space Outage (ft):	10.1667
Working Losses (lb):	1,293.1219
Vapor Molecular Weight (lb/lb-mole):	68.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.3397
Annual Net Throughput (gal/yr.):	239,148.0000
Annual Turnovers:	14.4959
Turnover 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:	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

10E

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

$$L_L = 12.46 \times S \times P \times M / T$$

Emissions = L_L * Throughput

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

L_L = 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)

										Production	VOC
Location	Factors	S	TVP (psi)	M	T (°R)	lb/1000 gal	lb/gal	lb/bbl	lbs VOC/bbl	bbl	tpy
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**
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 PERCENT	COMPONENT MOLE WEIGHT (lb/lb-mole)	NET MOLE WEIGHT (lb/lb-mole)	WEIGHT FRACTION	GROSS HEATING VALUE (BTU/scf)	NET DRY HEATING VALUE (BTU/scf)	LOWER HEATING VALUE (BTU/scf)	NET LOW HEATING VALUE (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

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FUGITIVE EMISSIONS

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	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%	94.60800	0.04730
Pumps							
	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							
	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	0.00000086	100.00%	0.00000	0.00000
	Water/Light Oil	50	8760	0.00000620	100.00%	2.71560	0.00136
Open-ended Lines							
	Gas/Vapor	15	8760	0.00441000	10.68%	61.86620	0.03093
	Light Oil	0	8760	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
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	8760	0.00001700	100.00%	0.00000	0.00000
	Water/Light Oil	50	8760	0.00024300	100.00%	106.43400	0.05322

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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.*

Total in tons/year	**5.68**
Total in Lb/hr	**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

TOTAL Fugitive HAP's	**0.065**	**0.015**

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**

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
Littleton CO 80122
ph. 303-781-8211

FUGITIVE CO_2 EMISSIONS

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	Emissions 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	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	50	8760	0.00000620	0.00%	0.00000	0.00000
Open-ended 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
Connectors							
	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

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FUGITIVE METHANE EMISSIONS

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

	Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%METHANE Weight	Emissions lb/year	Emissions 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	0.00000086	0.00%	0.00000	0.00000
Water/Light Oil	50	8760	0.00000620	0.00%	0.00000	0.00000
Open-ended 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
Connectors						
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

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Thermal Oxidizer Emission Calculations

Company: Summit Gas Gathering
Facility Name: River Bend Dehydration Site
Facility Location: Uintah County, Utah

Flare Heat Input Capacity	2.955	MMBtu/hr	
Flare Heat Input Capacity	64.11	Mscf/day	(Dehydrator emissions only routed to thermal oxidizer)
Operating Time	8,760	hr/yr	

Pollutant	(A) Emission Factor[1] (lb/MMBtu)	(B) = (A)x MMBtu/hr Potential Emission Rate (lbs/hr)	(C) = (B)xOT Potential Emission Rate (lbs/year)	(D) = (C)/2000 Potential Emission Rate (tons/year)
Particulate Matter (PM)	Negligible, Smokeless Design			
Particulate Matter (PM_{10})	Negligible, Smokeless Design			
Nitrogen Oxides (NO_x)	0.068	0.20	1760.13	0.88
Sulfur Oxides (SO_x)	None; no H_2S present in fuel gas			
Carbon Monoxide (CO)	0.37	1.09	9577.20	4.79
Volatile Organic Compounds (VOC)	--	--	--	--

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

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Pilot Emissions (One pilot)

Total Heat Input Capacity of Pilot[2]	0.092180015	MMBtu/hr
Heating Value	1106	Btu/scf
Operating Time	8760	hr/yr
Total Natural Gas Usage	0.0001	MMscf/hr

[2] Pilot light heat input based on 2Mscf/day based on client direction.

Pollutant	(A) Emission Factor (lb/MMscf)	(B) = (A)x MMscf/hr Potential Emission Rate (lbs/hr)	(C) = (B)xOT Potential Emission Rate (lbs/year)	(D) = (C)/2000 Potential Emission Rate (tons/year)
Particulate Matter (PM)[3]	7.6	0.0006	5.5480	0.0028
Particulate Matter (PM_{10})[3]	7.6	0.0006	5.5480	0.0028
Nitrogen Oxides (NO_x)[4]	100	0.0083	73.0000	0.0365
Sulfur Dioxide (SO_2)[3]	0.6	0.0001	0.4380	0.0002
Carbon Monoxide (CO)[4]	84	0.0070	61.3200	0.0307
Volatile Organic Compounds (VOC)[3]	5.5	0.0005	4.0150	0.0020
HAPs[3]	0.0805	0.0000	0.0588	0.0000

[3]Emission Factors from AP-42 Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4 (7/98) and adjusted accordingly

[4]Emission Factors from AP-42 Table 13.5-1 guidance issued in September 1991.

Total Thermal Oxidizer Emissions

Pollutant	Total Potential Emission Rate (tons/year)
Particulate Matter (PM)	0.0028
Particulate Matter (PM_{10})	0.0028
Nitrogen Oxides (NO_x)	0.9166
Sulfur Dioxide (SO_2)	0.0002
Carbon Monoxide (CO)	4.8193
Volatile Organic Compounds (VOC)	0.0020

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INDUSTRIAL
REFRACTORY SERVICES INC™

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Fort Worth, Texas 76110
(817)924-9991
www.irsvc.com

January 27, 2010

Damien 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

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
Littleton CO 80122
ph. 303-781-8211

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

Component (vol%)	Conc. (lb/hr)	Loading (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	4.71e-001	2.95e-001
n-Butane	8.80e-001	5.51e-001
Isopentane	3.86e-001	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 (%): ≥95.0

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.

ECLIPSE™

EMISSIONS DATA REQUEST (Please submit completed report to the Eclipse Engineering Help Desk)

Customer: Industrial refractory Services

Site location (required for guarantee validity): Roosevelt, UT.

Application: Thermal Oxidizer

Burner model: TJ0200HV

Fuel: Natural Gas

Process temperature: 1400 °F

Combustion air temperature entering burner: Ambient

Predominant oven, process stream temperature ahead of burner: N/A

Burner firing arrangement: Horizontal

Applicable firing rate: 2 MMBtu/hr

[X] NO_x [X] CO [ ] Other-specify

What are the required guaranteed values? (required for guarantee validity)

Permit conditions under which the equipment will operate

How should emissions be stated?

[X] ppm (parts per million) corrected to 3% O2
[ ] lb/hour
[ ] lb/million Btu
[ ] Other-specify

This is a request for...

[X] Estimate
[ ] Guarantee of performance

Requested by: Mike Riddell

Office: IRS Inc.

Date: 8/18/2008

EMISSIONS DATA (to be filled out by Eclipse Home Office)

NO_x: 60 PPM @ 3% O2

CO: <50 PPM @ 3% O2

Other: Multiplier For Medium Velocity Tube 1.2 X NOX

Based on the information submitted above, these emissions are:

[X] Estimated
[ ] Guaranteed *

By: Dave Pool

Date: 8/19/08

* For guarantees, see attached "Eclipse Combustion Emissions Guarantee" for terms.

Eclipse, Inc. 1665 Elmwood Rd. Rockford, IL 61103 USA
Tel: 815-877-3031 Fax: 815-877-3336
www.eclipsenet.com

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
Littleton CO 80122
ph. 303-781-8211

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

Source	NOx		CO		VOC		PM_{10}		HAPs*	
	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**

* Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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**

Source	2,2,4 TMP		Formaldehyde	
	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

Source	NOx		CO		VOC		PM_{10}		HAPs*	
	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**

* Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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	-	-	-	-	-	-	-	-	-	-
0.18 MMscfd dehydrator - RBU 6-15E D	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**

Source	2,2,4 TMP		Formaldehyde	
	lb/hr	ton/yr	lb/hr	ton/yr
Wellsite Condensate Truck Loading	-	-	-	-
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	-	-	-	-
Totals	**0.00**	**0.02**	**0.00**	**0.01**

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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

Source	NOx		CO		VOC		PM_{10}		HAPs*	
	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	0.04	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**

*Dehy HAP emissions include n-Hexane and 2,2,4 - Trimethylpentane (TMP)

Source	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane	
	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**

Source	2,2,4 TMP		Formaldehyde	
	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**

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GHG RBU 6-15E WELLSITE EMISSIONS SUMMARY

Company: **Summit Gas Gathering**
Facility Name: **RBU 6-15E**
Facility Location: **Uintah County, Utah**

UNCONTROLLED GHG EMISSIONS

SOURCE DESCRIPTION	CH_4 MT/yr*	CO_2 MT/yr*	N_2O MT/yr*	CO_2 Equivalents MT/yr*
Wellsite Condensate Truck Loading	ND	ND	ND	ND
Wellsite heaters	0.00	197.39	0.00	197.59
0.18 MMscfd dehydrator - RBU 6-15E D-	1.64	0.09	ND	34.49
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	**8.77**	**197.56**	**0.00**	**381.75**

CH_4 Tons/yr	CO_2 Tons/yr	N_2O Tons/yr	CO_2 Equivalents Tons/yr
ND	ND	ND	ND
0.00	217.13	0.00	217.35
1.80	0.10	ND	37.94
7.78	0.08	ND	163.49
0.05	0.00	ND	1.15
9.64	**217.32**	**0.00**	**419.93**

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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 DESCRIPTION	CH_4 MT/yr*	CO_2 MT/yr*	N_2O MT/yr*	CO_2 Equivalents 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**

CH_4 Tons/yr	CO_2 Tons/yr	N_2O Tons/yr	CO_2 Equivalents 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)

Summary		
Engines CO_2e =	0.0	tons/yr
Heaters/Boilers CO_2e =	360.3	tons/yr
Total CO_2e =	360.3	tons/yr
Reporting required ?	No	

CO_2e = CO_2 equivalents

Note: Reporting Threshold = 25,000 tons/yr CO_2e

Engines			Rating				Species			Species			
							CO_2	CH_4	N_2O	CO_2 CO_2e	CH_4 CO_2e	N_2O CO_2e	CO_2e Total
Source	Model	Fuel	(hp)	(MMbtu/hr)	Hours	BFSC Btu/(hp-hr)	metric tons			metric 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 metric tons CO2e Total= 0.0 metric tons

Boilers/Heaters			Rating				Species			Species			
							CO_2	CH_4	N_2O	CO_2 CO_2e	CH_4 CO_2e	N_2O CO_2e	CO_2e Total
Source	Model	Fuel	(hp)	(MMbtu/hr)	Hours		metric tons			metric 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	359.96	0.14	0.21	

Engines GHG Emissions Total= 359.96 metric tons CO2e Total= 360.3 metric tons

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Natural Gas			
Emission Factor (CO_2) =	53.02	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-1
Emission Factor (CH_4) =	0.001	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-2
Emission Factor (N_2O) =	0.0001	kg CO_2/MMBtu	From 40 CFR Part 98, Subpart C, Table C-2
HHV (Natural Gas) =	1095	BTU/scf	

1 metric ton = 1000 kg = 2,200 lbs

	Global Warming Potentials	
CO_2 =	1	From 40 CFR Part 98, Subpart A, Table A-1
CH_4 =	21	From 40 CFR Part 98, Subpart A, Table A-1
N_2O =	310	From 40 CFR Part 98, Subpart A, Table A-1

[1]CO_2e Emissions (metric tons) = 0.001 (metric ton/kg) X Fuel (scf/yr) X HHV (MMBtu/scf) X Emission Factor (natural Gas) (kg CO_2/MMBtu) X Global Warming Potentials

Operational Factors from Newfield operational data

Engines Total (CO_2e) = CO_2 emissions + CH_4 (CO_2e) + N_2O (CO2e)

Heaters Total (CO_2e) = CO_2 emissions + CH_4 (CO_2e) + N_2O (CO2e)

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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

SOURCE DESCRIPTION	HEATER SIZE (MBtu/hr)	HEATER EFFICIENCY	FUEL HEAT VALUE (Btu/scf)	HOURS OF OPERATION (hrs/year)	FUEL USAGE (MMscf/yr)	NOx		CO	
						EF AP-42[1] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[1] lb/MMscf	EMISSIONS (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**

SOURCE DESCRIPTION	TOC		VOC	PM 10		Formaldehyde	
	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EMISSIONS (tons/yr)	EF AP-42[2] lb/MMscf	EMISSIONS (tons/yr)	EF AP-42[3] lb/MMscf	EMISSIONS (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[1] = 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)

$$\text{Fuel Consumption (MMscf/yr)} = \frac{\text{Heater Size (MBtu/hr)} * 1{,}000\ (\text{Btu/MBtu}) * \text{Hours of Operation (hrs/yr)}}{\text{Fuel Heat Value (Btu/scf)} * 1{,}000{,}000\ (\text{scf/MMscf}) * \text{Heater Efficiency}}$$

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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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 Description	Gas Flow Rate (MMscf/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (tons/yr)	CO_2 (MT/yr)*	Methane (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**

*CO_2 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	0.0148	0.355	0.0647
Xylenes	0.1834	4.402	0.8033
C8+ Heavies	0.7734	18.561	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
Other Hexanes	0.0933
Heptanes	0.0859
Methylcyclohexane	0.0565
2,2,4-Trimethylpentane	0.0055
Benzene	0.0231
Toluene	0.0260
Ethylbenzene	0.0008
Xylenes	0.0095
C8+ Heavies	0.0496

DRY GAS:

Flow Rate: 0.2 MMSCF/day
Water Content: 7.0 lbs. H2O/MMSCF

LEAN GLYCOL:

Glycol Type: TEG

Water Content: 1.0 wt% H2O
Flow Rate: 0.7 gpm

PUMP:

Glycol Pump Type: Gas Injection
Gas Injection Pump Volume Ratio: 0.030 acfm gas/gpm glycol

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:

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	0.0148	0.355	0.0647
Xylenes	0.1834	4.402	0.8033
C8+ Heavies	0.7734	18.561	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:

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:	1.25	
Calculated Dry Gas Dew Point:	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	
Calculated Wet Gas Water Content:	277.68	lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	20.07	gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
Water	2.42%	97.58%
Carbon Dioxide	99.26%	0.74%
Nitrogen	99.96%	0.04%
Methane	99.96%	0.04%
Ethane	99.81%	0.19%
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

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	65.13%	34.87%
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%
Other Hexanes	0.96%	99.04%
Heptanes	0.49%	99.51%
Methylcyclohexane	3.98%	96.02%
2,2,4-Trimethylpentane	1.46%	98.54%
Benzene	4.99%	95.01%
Toluene	7.89%	92.11%
Ethylbenzene	10.39%	89.61%
Xylenes	12.89%	87.11%
C8+ Heavies	11.98%	88.02%

STREAM REPORTS:

WET GAS STREAM

Temperature: 82.00 deg. F
Pressure: 94.70 psia
Flow Rate: 7.56e+003 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	5.85e-001	2.10e+000
Carbon Dioxide	3.12e-001	2.74e+000
Nitrogen	1.21e-001	6.77e-001
Methane	9.07e+001	2.90e+002
Ethane	5.23e+000	3.13e+001
Propane	1.59e+000	1.39e+001
Isobutane	3.36e-001	3.89e+000
n-Butane	3.74e-001	4.32e+000
Isopentane	1.69e-001	2.43e+000
n-Pentane	1.20e-001	1.72e+000
n-Hexane	6.00e-002	1.03e+000
Cyclohexane	3.83e-002	6.42e-001
Other Hexanes	9.28e-002	1.59e+000
Heptanes	8.54e-002	1.70e+000
Methylcyclohexane	5.62e-002	1.10e+000
2,2,4-Trimethylpentane	5.47e-003	1.24e-001
Benzene	2.30e-002	3.57e-001
Toluene	2.58e-002	4.74e-001
Ethylbenzene	7.95e-004	1.68e-002
Xylenes	9.44e-003	2.00e-001
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. (vol%)	Loading (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. (wt%)	Loading (lb/hr)
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

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. (wt%)	Loading (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 deg. F
Pressure: 14.70 psia
Flow Rate: 6.29e+001 scfh

Component	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 Description	Gas Flow Rate (MMscf/day)	VOCs (tons/yr)	Benzene (tons/yr)	Toluene (tons/yr)	Ethylbenzene (tons/yr)	Xylenes (tons/yr)	N-Hexane (tons/yr)	224-TMP (tons/yr)	Total HAPs (tons/yr)	Total BTEX (tons/yr)	CO_2 (MT/yr)*	Methane (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**

*CO_2 and Methane emissions are expressed in metric tons per GHG requirements.

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.

Calculated Absorber Stages:	1.25	
Calculated Dry Gas Dew Point:	6.25	lbs. H2O/MMSCF
Temperature:	82.0	deg. F
Pressure:	80.0	psig
Dry Gas Flow Rate:	0.1000	MMSCF/day
Glycol Losses with Dry Gas:	0.0003	lb/hr
Wet Gas Water Content:	Saturated	
Calculated Wet Gas Water Content:	277.68	lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	36.07	gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol
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%	6.20%
Cyclohexane	76.38%	23.62%
Other Hexanes	95.46%	4.54%
Heptanes	85.89%	14.11%
Methylcyclohexane	69.11%	30.89%
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 in Glycol	Distilled Overhead
Water	77.02%	22.98%
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%
Other Hexanes	0.96%	99.04%
Heptanes	0.49%	99.51%
Methylcyclohexane	3.98%	96.02%
2,2,4-Trimethylpentane	1.46%	98.54%

Benzene	4.99%	95.01%
Toluene	7.88%	92.12%
Ethylbenzene	10.38%	89.62%
Xylenes	12.88%	87.12%
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

Component	Conc. (vol%)	Loading (lb/hr)
Water	5.85e-001	1.17e+000
Carbon Dioxide	3.12e-001	1.52e+000
Nitrogen	1.21e-001	3.77e-001
Methane	9.07e+001	1.61e+002
Ethane	5.23e+000	1.74e+001
Propane	1.59e+000	7.76e+000
Isobutane	3.36e-001	2.16e+000
n-Butane	3.74e-001	2.40e+000
Isopentane	1.69e-001	1.35e+000
n-Pentane	1.20e-001	9.58e-001
n-Hexane	6.00e-002	5.73e-001
Cyclohexane	3.83e-002	3.57e-001
Other Hexanes	9.28e-002	8.85e-001
Heptanes	8.54e-002	9.48e-001
Methylcyclohexane	5.62e-002	6.11e-001
2,2,4-Trimethylpentane	5.47e-003	6.92e-002
Benzene	2.30e-002	1.99e-001
Toluene	2.58e-002	2.64e-001
Ethylbenzene	7.95e-004	9.35e-003
Xylenes	9.44e-003	1.11e-001
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. (vol%)	Loading (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

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

Component	Conc. (wt%)	Loading (lb/hr)
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)
TEG	9.81e+001	3.79e+002
Water	1.29e+000	4.97e+000
Carbon Dioxide	5.91e-003	2.28e-002
Nitrogen	2.48e-004	9.57e-004
Methane	1.06e-001	4.10e-001
Ethane	2.36e-002	9.11e-002
Propane	1.89e-002	7.30e-002
Isobutane	8.39e-003	3.24e-002
n-Butane	1.24e-002	4.81e-002
Isopentane	8.72e-003	3.37e-002
n-Pentane	7.95e-003	3.07e-002
n-Hexane	9.50e-003	3.67e-002
Cyclohexane	2.27e-002	8.76e-002
Other Hexanes	1.09e-002	4.21e-002
Heptanes	3.52e-002	1.36e-001
Methylcyclohexane	5.11e-002	1.98e-001
2,2,4-Trimethylpentane	1.29e-003	4.98e-003
Benzene	4.16e-002	1.61e-001
Toluene	6.44e-002	2.49e-001
Ethylbenzene	2.53e-003	9.77e-003
Xylenes	3.16e-002	1.22e-001
C8+ Heavies	1.71e-001	6.60e-001
Total Components	100.00	3.86e+002

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
Pressure: 14.70 psia
Flow Rate: 4.20e+001 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	5.73e+001	1.14e+000
Carbon Dioxide	4.69e-001	2.28e-002
Nitrogen	3.09e-002	9.57e-004
Methane	2.31e+001	4.10e-001
Ethane	2.74e+000	9.11e-002
Propane	1.50e+000	7.30e-002
Isobutane	5.04e-001	3.24e-002
n-Butane	7.48e-001	4.81e-002
Isopentane	4.20e-001	3.35e-002
n-Pentane	3.83e-001	3.06e-002
n-Hexane	3.83e-001	3.65e-002
Cyclohexane	9.11e-001	8.49e-002
Other Hexanes	4.37e-001	4.17e-002
Heptanes	1.22e+000	1.35e-001
Methylcyclohexane	1.75e+000	1.90e-001
2,2,4-Trimethylpentane	3.88e-002	4.90e-003
Benzene	1.77e+000	1.53e-001
Toluene	2.25e+000	2.29e-001
Ethylbenzene	7.45e-002	8.75e-003
Xylenes	9.05e-001	1.06e-001
C8+ Heavies	3.08e+000	5.81e-001
Total Components	100.00	3.46e+000

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	Field:	Natural Buttes
Analyst Initials:	AST		ML#:	XTO
Instrument ID:	Instrument 1		GC Method:	Quesbtex
Data File:	QPC23.D			
Date Sampled:	7/30/2010			

Component	Mol%	Wt%	LV%
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
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

Gpm Properties		Units
Gross BTU/Real CF	1118.1	BTU/SCF at 60°F and14.73 psia
Sat.Gross BTU/Real CF	1099.7	BTU/SCF at 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	gal/MCF
Total GPM	0.929749	gal/MCF
Base Mol%	99.499	%v/v
Sample Temperature:	82	°F
Sample Pressure:	80	psig

Reviewed By: _____

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Littleton CO 80122
ph. 303-781-8211

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

Buys & Associates, Inc.
300 East Mineral Ave., Ste 10
Littleton CO 80122
ph. 303-781-8211

WELLSITE FLASH TANK EMISSIONS

Company: Summit Gas Gathering
Facility Name: Each wellsite
Facility Location: Uintah County, Utah

GAS COMPONENT	MOLECULAR WEIGHT (lb/lb-mole)	MOLE PERCENT	RELATIVE MOLE WEIGHT (lb/lb-mole)	WEIGHT PERCENT	COMPONENT FLOW RATE (Mscf/day)	COMPONENT FLOW RATE (lb/hr)	COMPONENT FLOW RATE (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	0.00000082	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	0.00000648	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: **0.01 Mscf/day** **1 barrels of Oil/Produced Water**
Days of Operation: **365 days/year** **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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Littleton CO 80122
ph. 303-781-8211

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

Identification

User Identification:	Summit Gas Gathering - 6-15E Wellsite
City:	
State:	Utah
Company:	Summit Gas Gathering
Type of Tank:	Vertical Fixed Roof Tank
Description:	400-bbl storage tank Produced water and condensate Shared Tank - 1 gallon/day condensate, 2 bpd Prod Water.

Tank Dimensions

Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		19.50
Avg. Liquid Height (ft):		10.00
Volume (gallons):		16,497.58
Turnovers:		0.02
Net Throughput(gal/yr):		365.00
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome	
Height (ft)		0.13
Radius (ft) (Dome Roof)		12.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	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 - 6-15E Wellsite - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude oil (RVP 5)	All	0.00	0.00	0.00	0.00	0.7594	0.7594	0.7594	50.0000			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 (lb):	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)	
Roof Outage (ft):	0.0625
Dome Radius (ft):	12.0000
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0077
Vapor Molecular Weight (lb/lb-mole):	50.0000
Vapor Pressure at Daily Average Liquid 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 (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):	459.6700
Daily Ambient Temp. Range (deg. R):	25.6333
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.7117
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.7594
Vapor Space Outage (ft):	10.0625
Working Losses (lb):	0.2475

Vapor Molecular Weight (lb/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
Turnover 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 (lb):	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 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Summit Gas Gathering - 7-15E Wellsite
City:	
State:	Utah
Company:	Summit Gas Gathering
Type of Tank:	Vertical Fixed Roof Tank
Description:	One 300-bbl storage tank Shares produced water and condensate 1 bpd water; 1 quart per day condensate. Uncontrolled; Actual production

Tank Dimensions

Shell Height (ft):	15.00
Diameter (ft):	12.00
Liquid Height (ft) :	14.50
Avg. Liquid Height (ft):	8.00
Volume (gallons):	12,267.43
Turnovers:	0.01
Net Throughput(gal/yr):	91.25
Is Tank Heated (y/n):	Y

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.13
Radius (ft) (Dome Roof)	12.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	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

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude oil (RVP 5)	All	0.00	0.00	0.00	0.00	0.7594	0.7594	0.7594	50.0000			207.00	Option 4: RVP=5

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 (lb):	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:	
Vapor Space Volume (cu ft):	798.7510
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	7.0625
Tank Shell Height (ft):	15.0000
Average Liquid Height (ft):	8.0000
Roof Outage (ft):	0.0625
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.0625
Dome Radius (ft):	12.0000
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0077
Vapor Molecular Weight (lb/lb-mole):	50.0000
Vapor Pressure at Daily Average Liquid 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 (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):	459.6700
Daily Ambient Temp. Range (deg. R):	25.6333
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.7787
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.7594
Vapor Space Outage (ft):	7.0625
Working Losses (lb):	0.0619

Vapor Molecular Weight (lb/lb-mole):	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7594
Annual Net Throughput (gal/yr.):	91.2500
Annual Turnovers:	0.0074
Turnover 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

Total 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

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

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

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

L_L = 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_L				Production	VOC
Location	Factors	S	P (psi)	M	T (°R)	lb/1000 gal	lb/gal	lb/bbl	tpy VOC/bpd	bpd	tpy
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: **0.893683557**
VOC Wt. Fraction: **0.09681167**
Non-HC Wt. Fraction: **0.009504773**
Total: **1**

COMPONENT	MOLE PERCENT	COMPONENT MOLE WEIGHT (lb/lb-mole)	NET MOLE WEIGHT (lb/lb-mole)	WEIGHT FRACTION	GROSS HEATING VALUE (BTU/scf)	NET DRY HEATING VALUE (BTU/scf)	LOWER HEATING VALUE (BTU/scf)	NET LOW HEATING VALUE (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 = Net Mole Weight / Total Mole Weight

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EACH WELLSITE FUGITIVE EMISSIONS

Company: Summit Gas Gathering
Facility Name: Each Wellsite
Facility Location: Uintah County, Utah

	Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%NMNEVOC Weight	Emissions lb/year	Emissions 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						
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-ended Lines						
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
Water/Light Oil		8760	0.00055000	100.00%	0.00000	0.00000
Connectors						
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	0.00006800	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 lb/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 lb/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
Xylene	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

TOTAL Fugitive HAP's	**0.016**	**0.004**

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EACH WELLSITE FUGITIVE METHANE EMISSIONS

Company: Summit Gas Gathering
Facility Name: Each Wellsite
Facility Location: Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%METHANE Weight	Emissions lb/year	Emissions metric tons/year
Valves							
	Gas/Vapor	150	8760	0.00992000	80.65%	10512.32934	4.77833
	Light Oil	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							
	Gas/Vapor	7	8760	0.00529000	80.65%	261.60723	0.11891
	Light Oil	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							
	Gas/Vapor	300	8760	0.00086000	80.65%	1822.70226	0.82850
	Light Oil	30	8760	0.00024300	50.91%	32.51245	0.01478
	Heavy Oil		8760	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	20	8760	0.00000620	50.91%	0.55302	0.00025
Open-ended Lines							
	Gas/Vapor		8760	0.00441000	80.65%	0.00000	0.00000
	Light Oil		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/Vapor	20	8760	0.00044000	80.65%	62.16969	0.02826
	Light Oil	20	8760	0.00046300	50.91%	41.29839	0.01877
	Heavy Oil		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 CO_2 EMISSIONS

Company: Summit Gas Gathering
Facility Name: Each Wellsite
Facility Location: Uintah County, Utah

		Estimated Components Count	Hours of Operation	Factors* lb/hr/component	%CO_2 Weight	Emissions lb/year	Emissions 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	0.00000086	0.00%	0.00000	0.00000
	Water/Light Oil	20	8760	0.00000620	0.83%	0.00902	0.00000
Open-ended 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							
	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.*

CO_2	**Total in metric tons/year**	**0.08**
CO_2	**Total in Lb/hr**	**0.02**

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