



XTO Energy Inc.  
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November 17, 2016

Synthetic Minor Limit Application - Update  
Jicarilla Compressor Station  
Jicarilla Apache Nation  
Rio Arriba County, NM

Via USPS CMRRR: 7016 0750 0000 2628 3294  
and e-mail to [Braganza.Bonnie@epa.gov](mailto:Braganza.Bonnie@epa.gov)

Bonnie Braganza  
US EPA Region 6  
Air Permits Section  
1445 Ross Avenue, Suite 1200  
Dallas, Texas 75202-2733

Ms. Braganza:

Per your request, XTO Energy, Inc. (XTO) submits the attached update to information regarding the Synthetic Minor Limit application dated February 15, 2012 for the Jicarilla Compressor Station (the Station) located southwest of Aztec in Rio Arriba County, New Mexico. A list of updated information and a description of the updates is included with this submittal.

This application update includes the following attachments:

- Attachment 1 – Description of Updates to the Original Application
- Attachment 2 – Updated Process/ Project Description
- Attachment 3 – Updated EPA Forms;
- Attachment 4 – Updated Site Data;
- Attachment 5 - Updated Emission Rate Calculations;
- Attachment 6 – Updated SCREEN3 Modeling Information;
- Attachment 7 – Updated ESA and NHPA study;
- Attachment 7.A – EPA ESA / NHPA Evaluation;
- Attachment 7.B – Jicarilla Apache 14G – ESA/NHPA Supporting Documentation; and
- Attachment 7.C – Jicarilla Apache 16F – ESA/NHPA Supporting Documentation.

Please feel free to contact me at 817-885-2672 or via e-mail at [craig\\_allison@xtoenergy.com](mailto:craig_allison@xtoenergy.com) if you have any questions or comments.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Craig Allison'.

Craig Allison  
EH&S Advisor  
XTO Energy Inc.

WCA/encl

**ATTACHMENT 1**  
**Description of Updates to the Original Application –November 2016**

The following information is being submitted to update the Synthetic Minor air permit application dated February 15, 2012 for the XTO Jicarilla Compressor Station (the Station) located southwest of Aztec in Rio Arriba County, New Mexico:

- The original application included two (2) Caterpillar 3512 Compressor Engines. The revised application reflects the permanent removal of one of these engines (E2).
  - An updated process description for this project is included in Attachment 2.
  - The updated EPA Form 5900-248 is included in Attachment 3.
  - Attachment 4 includes an updated process flow diagram for the Jicarilla Compressor Station that reflects the engine removal and the addition of the aggregated wellsites.
  - Attachment 5 provides updated emissions calculations and supporting information for the engine removal.
  - In addition, this update reflects a reduction in potential emissions for GHG emissions and the NO<sub>x</sub> SCREEN 3 modeling results from the original application submitted in 2012. Attachments 5 and 6 provide revisions to the data impacted by these updates.
- The original application did not include the wellsites that are located within ¼ mile of the permitted source. These sites and associated equipment are detailed in Attachment 4.
  - This updated application reflects the addition of the following aggregated wellsites and associated equipment:
    - Jicarilla Apache 14
    - Jicarilla Apache 14G
    - Jicarilla Apache 16F
  - Please note that the Jicarilla Apache 14E wellsite was not included with the aggregated wellsites because the GPS coordinates (latitude and longitude) were incorrect in the original application. The correct GPS coordinates for all locations, as well as an updated area map showing wells within a ¼ mile radius are included as Attachment 4.B.
  - Updated emissions calculations for this project are included in Attachment 5 and also provide details for the equipment and emissions associated with the aggregated wellsites.
- This update includes additional data related to the ESA / NHPA evaluation for the Jicarilla Compressor Station and aggregated wellsites. Attachment 7 provides a description of the additional ESA / NHPA data, as well as the related supporting documents.

This application update includes the following attachments:

- Attachment 1 – Description of Updates to the Original Application;
- Attachment 2 – Updated Process/ Project Description
- Attachment 3 – Updated EPA Form 5900-248.
- Attachment 4 – Updated Site Data;
  - Attachment 4.A – Jicarilla Compressor Station Updated Process Flow Diagram
  - Attachment 4.B – Updated Aggregated Wellsite Coordinates and Area Map.
  - Attachment 4.C –Plot Plans for the Jicarilla Apache 14, 14G, and 16F Wellsites
- Attachment 5 - Updated Emission Rate Calculations;
- Attachment 6 – Updated SCREEN3 Modeling Information;
- Attachment 7 – Updated ESA and NHPA study;
  - Attachment 7.A – EPA ESA / NHPA Evaluation;
  - Attachment 7.B – Jicarilla Apache 14G – ESA/NHPA Supporting Documentation; and
  - Attachment 7.C – Jicarilla Apache 16F – ESA/NHPA Supporting Documentation.

**ATTACHMENT 2**  
**PROCESS/PROJECT DESCRIPTION – UPDATED November 2016**

Jicarilla Compressor Station - Process Description

XTO Energy, Inc. is submitting this Synthetic Minor Limit application for the Jicarilla Compressor Station (the Station) located southeast of Aztec in Rio Arriba County, New Mexico.

The Station is comprised of **one (1) compressor engine** and associated blowdowns, one (1) glycol dehydration unit, two (2) condensate tanks, four (4) produced water tanks, four (4) heaters, truck loading rack, and piping components.

Sweet natural gas enters the Station via a pressurized inlet separator. Due to pressure drop, the liquefiable portion of the stream drops out in the separator and is routed to the four (4) atmospheric storage tanks [referred to as “condensate” tanks, (FINs) TK1 & TK2 and “produced water” tanks, (FINs) TK3 & TK4]. The produced water tanks also receive scrubber dumps off the engines. Liquids from these tanks are periodically collected by tank truck and sent offsite. The inlet gas and condensate compositions are found in the Site Data table in Attachment 7.

The gaseous stream from the inlet separator is routed to **one (1) reciprocating internal combustion engine-driven compressor [(FINs) E1]** and is compressed prior to the dehydration process.

After dehydrating [(FIN) DEHY-1] the gas stream, rich glycol (water saturated) is routed to the flash tank, where flashed vapors are sent to the reboiler as fuel. The remaining rich glycol is routed into the glycol regenerator column where the entrained water and other constituents are removed, and lean glycol is circulated back into the dehydration column. The regenerator overhead vent is routed to the flare with a 98% control efficiency. The condensable liquids are routed to the two (2) produced water tanks, [(FINs) TK5 & TK6]. The dehydrated pipeline quality natural gas exits the Station via a pipeline.

Heaters are used for the separator, tanks, and dehydration reboiler, [(FINs) H1-H4]. The Station operates 8760 hrs per year.

**In addition to the equipment and operations located on-site at the Jicarilla Compressor Station, current U.S. EPA Source Aggregation regulations require that XTO operated equipment located within ¼-mile of the permitted source is to be included in this application. A list of the wellsites aggregated with the Jicarilla Compressor Station and their associated equipment is included in the tables below.**

Please see the following tables describing the existing emission units:

**Compressor Station Reciprocating Internal Combustion Engine-Driven Compressors\***

Engine No.	Description	Mfg./ Construction Date	Fuel Fired	Rated Capacity (hp)	Max Firing Rate			Manufacturer	Serial#
					MMBTU/yr	MMBTU/day	MMBTU/hr		
E1	Caterpillar 3512	5/16/2002	Fuel Gas	1004	62,371	171	7.12	Caterpillar	SN 7NJ00895

**\*NOTE: Removed Engine E2 from the application.**

**Compressor Station Dehydration Unit**

Unit No.	Description	Construction Date	Max Throughput (MMSCF/D)	Manufacturer	Control Equipment
DEHY-1	TEG Dehydrator	Pre 7/2002	4.5	Pesco	Flare

**Compressor Station Tanks**

Unit ID	Description	Content	Construction Date	Design Capacity (BBL)	Max Throughput		
					BBL/yr	BBL/day	BBL/hr
TK1	Condensate Tank	Condensate from inlet Separator	Pre 7/2002	400	1460	4	0.17
TK2	Condensate Tank	Condensate from inlet Separator	Pre 7/2002	400	1460	4	0.17
TK3	Produced Water	Produced Water from Inlet Separator & Engine Scrubber	Pre 7/2002	100	1460	4	0.17
TK4	Produced Water	Produced Water from Inlet Separator & Engine Scrubber	Pre 7/2002	100	1460	4	0.17
TK5	Produced Water	Produced Water from Dehy	Pre 7/2002	30	365	1	0.04
TK6	Produced Water	Produced Water from Dehy	Pre 7/2002	30	365	1	0.04

**Compressor Station Heaters**

Heater No.	Description	Construction Date	Fuel Fired	Design Heat Capacity based on LHV		
				MMBTU/yr	MMBTU/day	MMBTU/hr
H1	Tank Heater	Pre 7/2002	Fuel Gas	4,380.00	12	0.5
H2	Tank Heater	Pre 7/2003	Fuel Gas	4,380.00	12	0.5
H3	Separator Heater	Pre 7/2004	Fuel Gas	4,380.00	12	0.5
H4	Dehy Heater	Pre 7/2005	Fuel Gas	8760.00	24	1.0

**Aggregated Nearby Wellsites – within ¼ mile of the Jicarilla Compressor Station**

Unit No.	Description	Completion Date	Max Oil Throughput (bbl/yr)	Max Oil Throughput (bbl/day)
JA-14*	Jicarilla Apache 14 Wellsite	12/1/2006	547.5	1.5
JA-14G*	Jicarilla Apache 14G Wellsite	12/1/2006	547.5	1.5
JA-16F*	Jicarilla Apache 16F Wellsite	12/1/2006	547.5	1.5

**\*NOTE: Emissions from these sources are collectively reported as EPN: WS-1 and FIN: WS-1.**

Aggregated Nearby Wellsite Equipment – within ¼ mile of the Jicarilla Compressor Station

Unit No.	Description	Wellsite Production Tanks (300-bbl capacity)	Wellsite Combustion Engines	Tank or Process Heaters	Wellsite Emissions Controls
JA-14	Jicarilla Apache 14 Wellsite	2	One (1) Arrow C-96	NONE	NONE
JA-14G	Jicarilla Apache 14G Wellsite	1	NONE	NONE	NONE
JA-16F	Jicarilla Apache 16F Wellsite	1	NONE	NONE	NONE

Attachment 4.A is a process flow diagram of the Station showing emission points for the Compressor Station. In addition, Attachment 4.C are individual plot plan drawings for each of the wellsites aggregated with the Jicarilla Compressor Station.

Project Description

XTO Energy, Inc. is submitting this Synthetic Minor Limit application to authorize the operations of the Jicarilla Compressor Station. The Station’s dehydration unit [Facility Identification Number (FIN) DEHY-1] is subject to 40 CFR §63, Subpart HH. The Station’s dehydration regeneration still vent gas emission rates are controlled by a flare. The site emissions are below major source thresholds after dehydration unit controls.

The Station’s Compressor Engine, [Facility Identification Number (FIN) E1], is subject to 40 CFR §63, Subpart ZZZZ, area source provisions.

Attachment 5 contains emission rate calculations and summarizes the Station’s potential emission rates.

**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**  
Attachment 3 – Updated EPA Form 5900-248

	<b>United States Environmental Protection Agency</b> <b>Program</b> <b>Address</b> <b>Phone</b> <b>Fax</b> <b>Web address</b>	<b>US EPA Region 6</b> <b>Air Permits Section</b> 1445 Ross Avenue, Suite 1200 Dallas, Texas 75202-2733 Phone: 214 -665-7340 Fax: 214-665-6762
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**FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY**

**Application for New Construction**  
(Form NEW)

**Please check all that apply to show how you are using this form:**

- Proposed Construction of a New Source
- Proposed Construction of New Equipment at an Existing Source
- Proposed Modification of an Existing Source
- Other – Please Explain

XTO Energy, Inc. acquired this existing site, Jicarilla Compressor Station, and is requesting a New Source Review Synthetic Minor Limit in accordance with 40 CFR Part 49 Review of New Sources and Modifications in Indian Country.

**Please submit information to:**

US EPA Region 6  
Air Permits Section  
1445 Ross Avenue, Suite 1200  
Dallas, Texas 75202-2733  
Phone: 214 -665-7340  
Fax: 214-665-6762

**A. GENERAL SOURCE INFORMATION**

1. (a) <b>Company Name</b> XTO Energy, Inc.  (b) <b>Operator Name</b>		2. <b>Source Name</b> Jicarilla Compressor Station	
3. <b>Type of Operation</b> Oil and Gas Facility		4. <b>Portable Source?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 5. <b>Temporary Source?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6. <b>NAICS Code</b> 211111		7. <b>SIC Code</b> 1311	
8. <b>Physical Address (home base for portable sources)</b> At the intersection of US-550N and NM-537, turn right (north) onto NM-537 for 28 miles. Turn left (west) onto BIA-J6 for 8.4 miles. Turn right (north) onto unpaved road for 2.4 miles, site on left.			
9. <b>Reservation*</b> Jicarilla Apache Nation	10. <b>County*</b> Rio Arriba	11a. <b>Latitude*</b> 36.43905	11b. <b>Longitude*</b> -107.34797
12a. <b>Quarter Quarter Section*</b> SE1/4,SW1/4	12b. <b>Section*</b> S34	12c. <b>Township*</b> T26N	12d. <b>Range*</b> R5W

\*Provide all proposed locations of operation for portable sources

**B. PREVIOUS PERMIT ACTIONS** (Provide information in this format for each permit that has been issued to this source. Provide as an attachment if additional space is necessary)

Source Name on the Permit
Permit Number (xx-xxx-xxxxx-xxxx.xx)
Date of the Permit Action

Source Name on the Permit
Permit Number (xx-xxx-xxxxx-xxxx.xx)
Date of the Permit Action

Source Name on the Permit
Permit Number (xx-xxx-xxxxx-xxxx.xx)
Date of the Permit Action

Source Name on the Permit
Permit Number (xx-xxx-xxxxx-xxxx.xx)
Date of the Permit Action

Source Name on the Permit
Permit Number (xx-xxx-xxxxx-xxxx.xx)
Date of the Permit Action

**C. CONTACT INFORMATION**

<b>Company Contact</b> <del>Clare Hoang</del> <b>Craig Allison</b>		Title <b>EHS Advisor</b> <del>Environmental Engineer</del>
Mailing Address 810 W Houston Street, Fort Worth, TX 76102		
Email Address <del>clare_hoang@xtoenergy.com</del> <b>craig_allison@xtoenergy.com</b>		
Telephone Number <del>817-885-2845</del> <b>817-885-2672</b>	Facsimile Number <del>817-885-2379</del> <b>817-885-1847</b>	
<b>Operator Contact</b> (if different from company contact) Wes Tucker		Title Area Superintendent
Mailing Address 382 Road 3100, Aztec, NM 87410		
Email Address wes_tucker@xtoenergy.com		
Telephone Number 505-333-3520	Facsimile Number 505-333-3521	
<b>Source Contact</b> Wes Tucker		Title
Mailing Address same as above		
Email Address		
Telephone Number	Facsimile Number	
<b>Compliance Contact</b> <del>Clare Hoang</del> <b>Craig Allison</b>		Title
Mailing Address same as above		
Email Address		
Telephone Number	Facsimile Number	

**D. ATTACHMENTS** Please see the following page for attachment location comments

**Include all of the following information** (see the attached instructions)

- FORM SYNMIN** - New Source Review Synthetic Minor Limit Request Form, if synthetic minor limits are being requested.
- Narrative description of the proposed production processes. This description should follow the flow of the process flow diagram to be submitted with this application.
- Process flow chart identifying all proposed processing, combustion, handling, storage, and emission control equipment.
- A list and descriptions of all proposed emission units and air pollution-generating activities.
- Type and quantity of fuels, including sulfur content of fuels, proposed to be used on a daily, annual and maximum hourly basis.
- Type and quantity of raw materials used or final product produced proposed to be used on a daily, annual and maximum hourly basis.
- Proposed operating schedule, including number of hours per day, number of days per week and number of weeks per year.
- A list and description of all proposed emission controls, control efficiencies, emission limits, and monitoring for each emission unit and air pollution generating activity.
- Criteria Pollutant Emissions** - Estimates of Current Actual Emissions, Current Allowable Emissions, Post-Change Uncontrolled Emissions, and Post-Change Allowable Emissions for the following air pollutants: particulate matter, PM<sub>10</sub>, PM<sub>2.5</sub>, sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compound (VOC), lead (Pb) and lead compounds, fluorides (gaseous and particulate), sulfuric acid mist (H<sub>2</sub>SO<sub>4</sub>), hydrogen sulfide (H<sub>2</sub>S), total reduced sulfur (TRS) and reduced sulfur compounds, including all calculations for the estimates.  
  
These estimates are to be made for each emission unit, emission generating activity, and the project/source in total.
- Modeling – Air Quality Impact Analysis (AQIA)**
- ESA (Endangered Species Act)**
- NHPA (National Historic Preservation Act)**

**E. TABLE OF ESTIMATED EMISSIONS**

The following tables provide the total emissions in tons/year for all pollutants from the calculations required in Section D of this form, as appropriate for the use specified at the top of the form.

**E(i) – Proposed New Source**

Pollutant	Potential Emissions (tpy)	Proposed Allowable Emissions (tpy)	
PM	0.7	0.7	PM - Particulate Matter PM <sub>10</sub> - Particulate Matter less than 10 microns in size PM <sub>2.5</sub> - Particulate Matter less than 2.5 microns in size SO <sub>x</sub> - Sulfur Oxides NO <sub>x</sub> - Nitrogen Oxides CO - Carbon Monoxide VOC - Volatile Organic Compound Pb - Lead and lead compounds Fluorides - Gaseous and particulates H <sub>2</sub> SO <sub>4</sub> - Sulfuric Acid Mist H <sub>2</sub> S - Hydrogen Sulfide TRS - Total Reduced Sulfur RSC - Reduced Sulfur Compounds
PM <sub>10</sub>	0.7	0.7	
PM <sub>2.5</sub>	0.7	0.7	
SO <sub>x</sub>	<0.1	<0.1	
NO <sub>x</sub>	<del>37.1</del> 24.4	<del>37.1</del> 24.4	
CO	<del>49.1</del> 28.9	<del>49.1</del> 28.9	
VOC	<del>39.4</del> 45.7	<del>39.4</del> 45.7	
Pb	--	--	
Fluorides	--	--	
H <sub>2</sub> SO <sub>4</sub>	--	--	
H <sub>2</sub> S	--	--	
TRS	--	--	
RSC	--	--	

Emissions calculations must include fugitive emissions if the source is one the following listed sources, pursuant to CAA Section 302(j):

- (a) Coal cleaning plants (with thermal dryers);
- (b) Kraft pulp mills;
- (c) Portland cement plants;
- (d) Primary zinc smelters;
- (e) Iron and steel mills;
- (f) Primary aluminum ore reduction plants;
- (g) Primary copper smelters;
- (h) Municipal incinerators capable of charging more than 250 tons of refuse per day;
- (i) Hydrofluoric, sulfuric, or nitric acid plants;
- (j) Petroleum refineries;
- (k) Lime plants;
- (l) Phosphate rock processing plants;
- (m) Coke oven batteries;
- (n) Sulfur recovery plants;
- (o) Carbon black plants (furnace process);
- (p) Primary lead smelters;
- (q) Fuel conversion plants;
- (r) Sintering plants;
- (s) Secondary metal production plants;
- (t) Chemical process plants
- (u) Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- (v) Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- (w) Taconite ore processing plants;
- (x) Glass fiber processing plants;
- (y) Charcoal production plants;
- (z) Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, and
- (aa) Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

**E(ii) – Proposed New Construction at an Existing Source or Modification of an Existing Source**

<b>Pollutant</b>	<b>Current Actual Emissions (tpy)</b>	<b>Current Allowable Emissions (tpy)</b>	<b>Post-Change Potential Emissions (tpy)</b>	<b>Post-Change Allowable Emissions (tpy)</b>
<b>PM</b>	Not a modification			
<b>PM<sub>10</sub></b>				
<b>PM<sub>2.5</sub></b>				
<b>SO<sub>x</sub></b>				
<b>NO<sub>x</sub></b>				
<b>CO</b>				
<b>VOC</b>				
<b>Pb</b>				
<b>Fluorides</b>				
<b>H<sub>2</sub>SO<sub>4</sub></b>				
<b>H<sub>2</sub>S</b>				
<b>TRS</b>				
<b>RSC</b>				

- PM - Particulate Matter
- PM<sub>10</sub> - Particulate Matter less than 10 microns in size
- PM<sub>2.5</sub> - Particulate Matter less than 2.5 microns in size
- SO<sub>x</sub> - Sulfur Oxides
- NO<sub>x</sub> - Nitrogen Oxides
- CO - Carbon Monoxide
- VOC - Volatile Organic Compound
- Pb - Lead and lead compounds
- Fluorides - Gaseous and particulates
- H<sub>2</sub>SO<sub>4</sub> - Sulfuric Acid Mist
- H<sub>2</sub>S - Hydrogen Sulfide
- TRS - Total Reduced Sulfur
- RSC - Reduced Sulfur Compounds

[Disclaimers] The public reporting and recordkeeping burden for this collection of information is estimated to average 20 hours per response, unless a modeling analysis is required. If a modeling analysis is required, the public reporting and recordkeeping burden for this collection of information is estimated to average 60 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

	United States Environmental Protection Agency Program Address Phone Fax Web address	US EPA Region 6 Air Permits Section 1445 Ross Avenue, Suite 1200 Dallas, Texas 75202-2733 Phone: 214 -665-7340 Fax: 214-665-6762
	<b>FEDERAL MINOR NEW SOURCE REVIEW PROGRAM IN INDIAN COUNTRY</b>  <b>Application For Synthetic Minor Limit</b> (Form SYNMIN)	

Please submit information to:

US EPA Region 6  
Air Permits Section  
1445 Ross Avenue, Suite 1200  
Dallas, Texas 75202-2733  
Phone: 214 -665-7340

**A. GENERAL INFORMATION**

Company Name XTO Energy, Inc.	Source Name Jicarilla Compressor Station
Company Contact or Owner Name <del>Clare Hoang</del> <i>Craig Allison</i>	Title <i>EHS Advisor</i> <del>Environmental Engineer</del>
Mailing Address 810 W Houston Street, Fort Worth, TX 76102	
Email Address <del>clare_hoang@xtoenergy.com</del> <i>craig_allison@xtoenergy.com</i>	
Telephone Number <del>817-885-2845</del> <i>817-885-2672</i>	Facsimile Number <del>817-885-2379</del> <i>817-885-1847</i>

**B. ATTACHMENTS** Please see the following page for attachment location comments

For each criteria air pollutant, hazardous air pollutant and for all emission units and air pollutant-generating activities to be covered by a limitation, include the following:

- Item 1 - The proposed limitation and a description of its effect on current actual, allowable and the potential to emit.
- Item 2 - The proposed testing, monitoring, recordkeeping, and reporting requirements to be used to demonstrate and assure compliance with the proposed limitation.
- Item 3 - The type and quantity of fuels and/or raw materials used.
- Item 4 - A description of estimated efficiency of air pollution control equipment under present or anticipated operating conditions, including documentation of the manufacturer specifications and guarantees.
- Item 5 - Estimates of the Current Actual Emissions, Current Allowable Emissions including all calculations for the estimates, where applicable.
- Item 6 - Estimates of the Post-Change Allowable Emissions that would result from compliance with the proposed limitation, including all calculations for the estimates.
- Item 7 - Estimates of the potential emissions of Greenhouse Gas (GHG) pollutants:

**XTO Energy, Inc.**  
**Jicarilla Compressor Station**  
**Application for Synthetic Minor Limit**  
**Attachment Checklist - Rev. Nov 2016**

**Item 1** - The proposed limitation and a description of its effect on current actual, allowable and the potential to emit. **Please see Attachment 2 Project/Process Description - Rev. 11/2016**

**Item 2** - The proposed testing, monitoring, recordkeeping, and reporting requirements to be used to demonstrate and assure compliance with the proposed limitation. **Please see Attachment 4 Regulatory Applicability**

**Item 3** - The type and quantity of fuels and/or raw materials used. **Please see Attachment 7 Supporting Documentation Site Data**

**Item 4** - A description of estimated efficiency of air pollution control equipment under present or anticipated operating conditions, including documentation of the manufacturer specifications and guarantees. **Please see Attachment 2's Project/Process Description and Attachment 7 Supporting Documentation**

**Item 5** - Estimates of the Current Actual Emissions, Current Allowable Emissions including all calculations for the estimates, where applicable. **Please see Attachment 3 Calculations - Rev. 11/2016**

**Item 6** - Estimates of the Post-Change Allowable Emissions that would result from compliance with the proposed limitation, including all calculations for the estimates. **This application is for an existing site on tribal land requesting a synthetic minor permit limit. Modifications are not proposed, and the site's Current Allowable Emissions/Potential to Emit calculations are presented in Attachment 3. - Rev. 11/2016**

**Item 7** - Estimates of the potential emissions of Greenhouse Gas (GHG) pollutants: **Please see Attachment 3 Calculations - Rev. 11/2016**

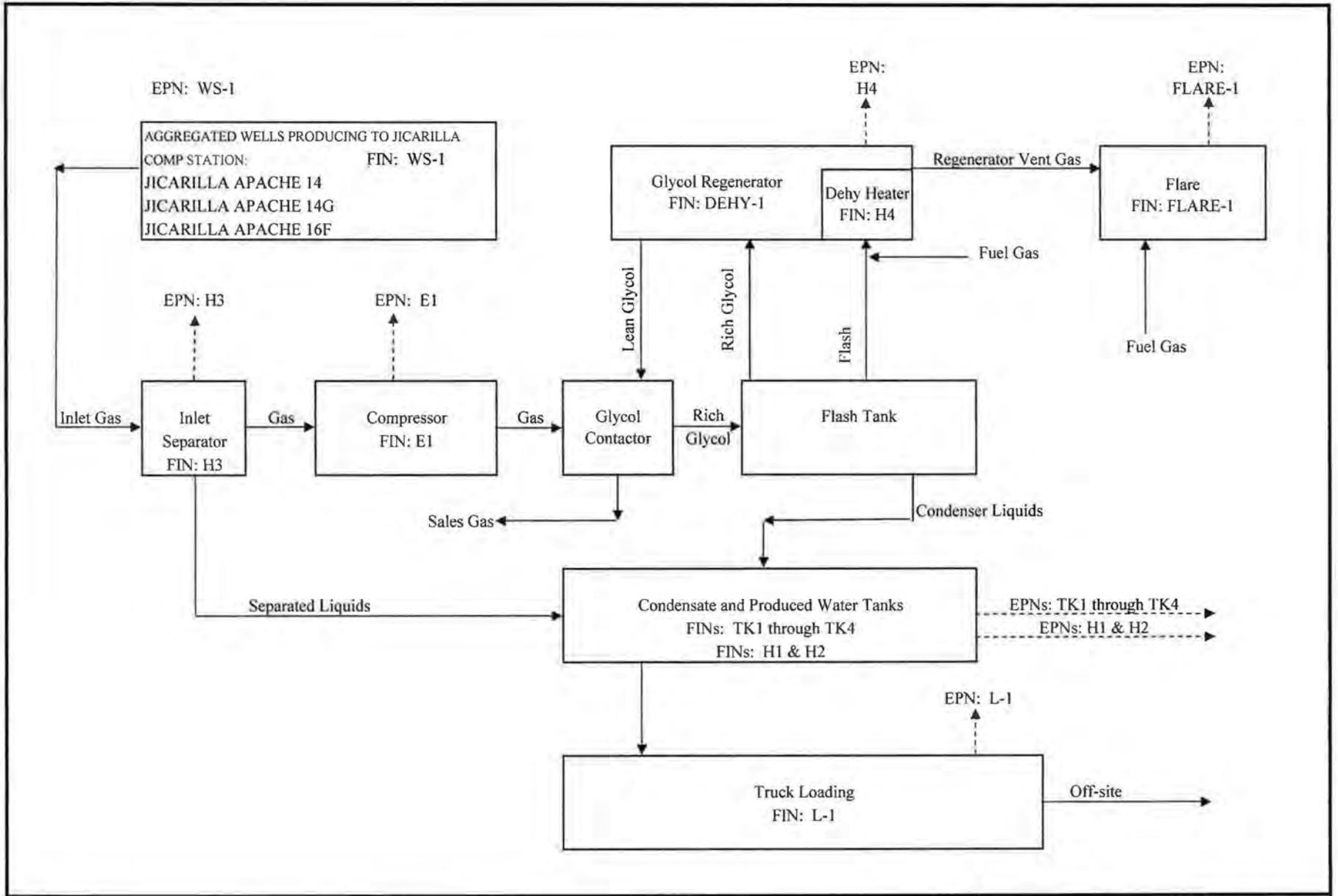
**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**

Attachment 4 – Updated Site Data:

Attachment 4.A – Jicarilla Compressor Station Updated Process Flow Diagram

Attachment 4.B – Updated Aggregated Wellsite Coordinates and Area Map

Attachment 4.C – Plot Plans for the Jicarilla Apache 14, 14G, and 16F Wellsites



Attachment 4.A  
 Process Flow Diagram - Updated Oct-2016  
 Jicarilla Compressor Station

**Attachment 4.B - XTO ENERGY - JICARILLA Compressor Station  
AGGREGATED WELLSITES - UPDATED COORDINATES - NOVEMBER 2016**

<b>API</b>	<b>Well Name</b>	<b>County</b>	<b>State</b>	<b>Latitude</b>	<b>Longitude</b>
3003920140	JICARILLA APACHE 14	RIO ARRIBA	NEW MEXICO	36.4384800	-107.3519900
3003922591	JICARILLA APACHE 14E	RIO ARRIBA	NEW MEXICO	36.4454500	-107.3493500
3003929658	JICARILLA APACHE 14G	RIO ARRIBA	NEW MEXICO	36.4420000	-107.3491100
3003929657	JICARILLA APACHE 16F	RIO ARRIBA	NEW MEXICO	36.4379700	-107.3436700

NOTE: The coordinates provided in 2013 for the Jicarilla Apache 14E Wellsite were incorrect. The accompanying map included in this attachment 4.B provides the correct locations for the wellsites that are nearest in proximity to the XTO Jicarilla Compressor Station. The updated GPS coordinates demonstrate that the Jicarilla Apache 14E wellsite is not located within the 1/4 mile radius around the Jicarilla Compressor Station.

# XTO Energy Jicarilla CDP

XTO Jicarilla Compressor Station (CDP) - Nov. 2016

## Legend

-  1/4-mile radius around Jicarilla CDP
-  Jicarilla Apache
-  Jicarilla Apache

 Jicarilla Apache 14-E 36.4454500, -107.3493500

 Jicarilla Apache 14-G 36°26'31.20"N, -107°20'56.80"W

Jicarilla Apache CDP 36°26'21.70"N, -107°20'52.65"W

 Jicarilla Apache 14 36°26'18.92"N, -107°21'7.13"W

Jicarilla Apache 16F, 36°26'16.88"N, -107°20'38.89"W 

Google earth

© 2016 Google

2000 ft

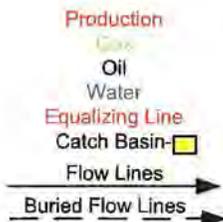
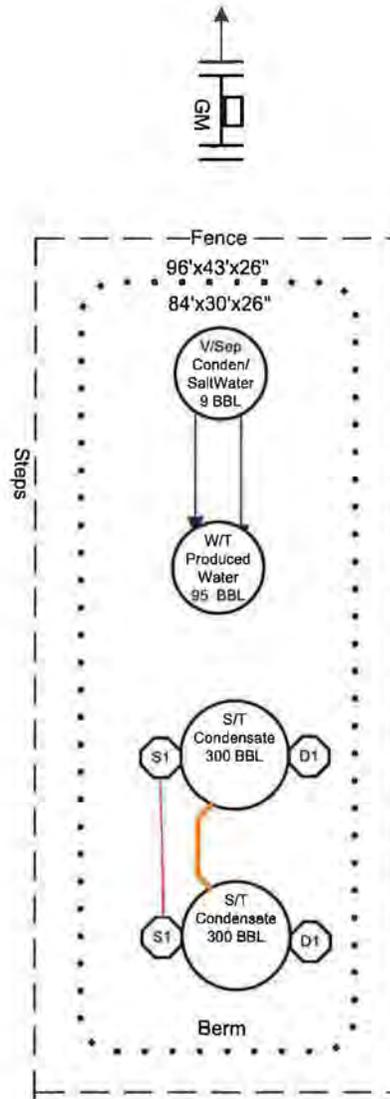


**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**  
Attachment 4.C – Plot Plans for the Jicarilla Apache 14, 14G, and 16F Wellsites

Plot Plan/Facility

Well Name: Jicarilla Apache # 14  
 Field: Rio Arriba County, NM.  
 Serial Number: Lease # JIC-154, API # 30-039-20140  
 Section: SW/SW Sec. 34 (M), T-26N, R-5W  
 Updated by: Kurt Hoekstra Date: 4-15-2015

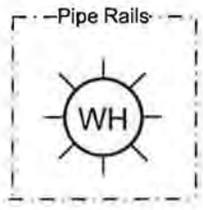
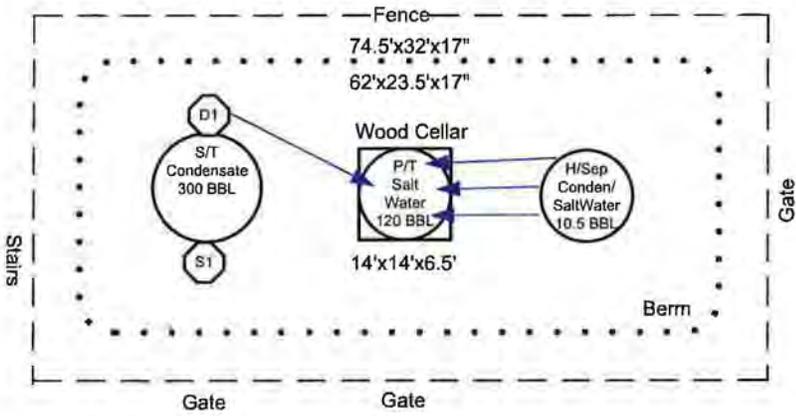
↑  
Drainage



General sealing of valves, sales by tank gauging  
 Production phase: Drain valve D1 and sales valve S1 sealed closed.  
 Sales phase: Drain valve D1 sealed closed. Sales valve S1 open.  
 Draining phase: Drain valve D1 open. Sales valve S1 closed.

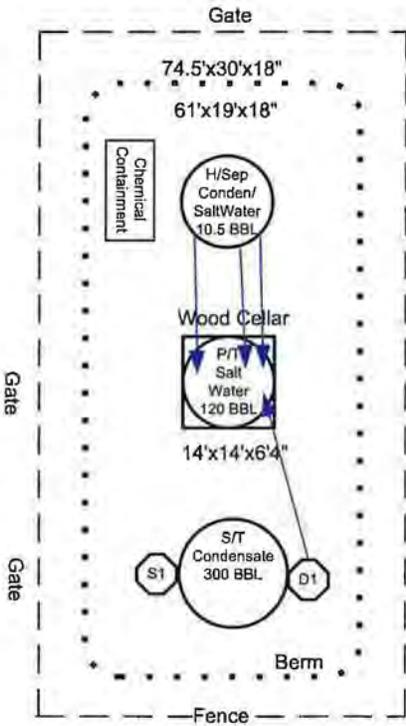
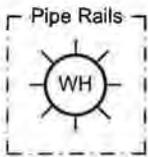
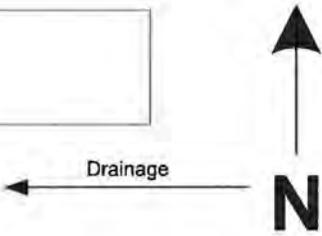
This lease is subject to the site security plan for San Juan Basin Area. The plan is located at:  
 XTO ENERGY INC.  
 382 Road 3100  
 Aztec, NM 87410

Well Name: Jicarilla Apache # 14 G  
 Field: Rio Arriba County, NM.  
 Serial Number: API # 30-039-29658  
 Section: NE/SW Sec. 34 (K), T-26N, R-5W



Production  
 Gas  
 Oil  
 Water  
 Equalizing Line  
 Catch Basin-☐

Well Name: Jicarilla Apache # 16 F  
 Field: Rio Arriba County, NM.  
 Serial Number: Lease # JIC-154, API # 30-039-29657  
 Section: SW/SE Sec. 34 (O), T-26N, R-5W



- Production
- Gas
- Oil
- Water
- Equalizing Line
- Catch Basin-

**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**  
Attachment 5 - Updated Emission Rate Calculations

**Table 3-1**  
**XTO Energy, Inc.**  
**Jicarilla Compressor Station**  
**Application for Synthetic Minor Limit**  
**Summary of Site-Wide Potential to Emit**

FIN	DEHY-1 UNCONTROLLED	DEHY-1 CONTROLLED	E1	E2	H1 - H4	TK1 & TK2	TK3 & TK4	TK5 & TK6	FUG	L1	COMP1-BD	WS-1	PTE UNCONTROLLED Emissions Total by Pollutant	PTE CONTROLLED Emissions Total by Pollutant
EPN	DEHY-1	FLARE-1	E1	E2	H1 - H4	TK1 & TK2	TK3 & TK3	TK5 & TK6	FUG	L1	COMP1-BD	WS-1		
Description	TEG Dehydrator	TEG Dehydrator	Caterpillar 3512	Caterpillar 3512	Auxiliary Heaters	Condensate Tanks	Produced Water Tanks	Produced Water Tanks	Site Fugitives	Truck Loading	Engine Blowdown	Aggregated Wellsites		
Rated Capacity (horsepower)/(bbl)	-	-	1,004	#REF!	-	(2) - 400 BBL	(2) - 100 BBL	(2) - 30 BBL	-	-	-	JA 14,14G, and 16F		
Rated Capacity (MMBtu/hr)	-	-	7.12	#REF!	2.50	See Tanks Report	See Tanks Report	See Tanks Report	-	-	-	-		
<b>Normal Operation</b>														
<b>Hourly Emission Rate (lb/hr)</b>														
NO <sub>x</sub>	----	0.1	4.1	0.0	0.2	----	----	----	----	----	----	1.2	5.5	5.6
CO	----	0.3	5.4	0.0	0.2	----	----	----	----	----	----	0.7	6.3	6.6
VOC	24.8	0.5	1.5	0.0	<0.1	15.5	<0.1	<0.1	3.3	59.3	----	2.9	107.3	83.0
SO <sub>2</sub>	----	<0.1	<0.1	0.0	<0.1	----	----	----	----	----	----	0.0	<0.1	0.01
PM/PM <sub>10</sub>	----	----	0.1	0.0	<0.1	----	----	----	----	----	----	0.0	0.1	0.1
Formaldehyde	----	----	0.5	0.0	<0.1	----	----	----	----	----	----	----	0.5	0.5
n-Hexane	0.3	<0.1	----	----	<0.1	----	----	----	----	----	----	0.0	0.3	0.05
Benzene	1.5	<0.1	<0.1	0.0	<0.1	<0.1	----	----	<0.1	0.1	----	0.0	1.7	0.2
Toluene	4.6	0.1	----	----	----	----	----	----	----	----	----	0.0	4.6	0.1
Ethylbenzene	0.4	<0.1	----	----	----	----	----	----	----	----	----	0.0	0.4	0.01
Xylene	3.8	0.1	----	----	----	----	----	----	----	----	----	0.0	3.8	0.1
<b>Annual PTE (TPY)</b>														
NO <sub>x</sub>	----	0.3	17.9	0.0	1.1	----	----	----	----	----	----	5.15	24.1	24.4
CO	----	1.3	23.5	0.0	0.9	----	----	----	----	----	----	3.28	27.6	28.9
VOC	108.5	2.2	6.4	0.0	0.1	9.4	<0.1	<0.1	14.7	0.4	----	12.63	152.0	45.7
SO <sub>2</sub>	----	<0.1	<0.1	0.0	<0.1	----	----	----	----	----	----	0.02	<0.1	0.05
PM/PM <sub>10</sub>	----	----	0.3	0.0	0.1	----	----	----	----	----	----	0.21	0.6	0.6
Formaldehyde	----	----	2.1	0.0	<0.1	----	----	----	----	----	----	----	2.1	2.1
n-Hexane	1.3	<0.1	----	----	<0.1	----	----	----	----	----	----	0.195	1.5	0.24
Benzene	6.5	0.1	<0.1	0.0	<0.1	<0.1	----	----	0.1	<0.1	----	0.030	6.7	0.3
Toluene	20.0	0.4	----	----	----	----	----	----	----	----	----	0.069	20.1	0.5
Ethylbenzene	1.6	<0.1	----	----	----	----	----	----	----	----	----	0.000	1.6	0.03
Xylene	16.8	0.3	----	----	----	----	----	----	----	----	----	0.009	16.8	0.3
CO <sub>2</sub> e	533.0	442.4	3647.3	0.0	1281.2	8.4	----	----	384.1	8.7	----	----	5862.7	5772.1
<b>Maintenance Operations</b>														
<b>Hourly Emission Rate (lb/hr)</b>														
VOC	----	----	----	----	----	----	----	----	----	----	5.8	0.0	5.8	5.8
Benzene	----	----	----	----	----	----	----	----	----	----	<0.1	0.0	<0.1	<0.1
<b>Annual PTE (TPY)</b>														
VOC	----	----	----	----	----	----	----	----	----	----	<0.1	0.0	0.0	0.0
Benzene	----	----	----	----	----	----	----	----	----	----	<0.1	0.0	<0.1	<0.1
CO <sub>2</sub> e	----	----	----	----	----	----	----	----	----	----	215.3	0.0	215.3	215.3

Updated Nov-2016

Notes:

- 1) Emissions from the condensate tanks includes flashing from both tanks.
- 2) Engines Blowdowns are included in SSM under Maintenance Operations.

**XTO Energy, Inc.**  
**Jicarilla Compressor Station**  
**Application for Synthetic Minor Limit**  
**Calculation of Greenhouse Gas Potential to Emit for Combustion Sources - Updated 11/2016**

**Combustion-Related Green House Gas Emissions**

Combustion Source EPN	HP	Btu/hp-hr	MMBtu/hr	Annual Operating Hours	Fuel Usage MMBtu/Term	CO <sub>2</sub> e <sup>a</sup> metric T/yr	CO <sub>2</sub> e <sup>a</sup> short T/yr	GHG Mass <sup>a</sup> short T/yr
H1-H4	—	—	2.00	8,760	17,520.00	929.82	1,024.94	1,023.96
FLARE-1	—	—	0.84	8,760	7,378.05	391.57	431.63	431.21
E1	927	7,676	7.12	8,760	62,346.16	3,308.84	3,647.33	3,643.83
<b>SITE TOTAL</b>			<b>9.96</b>	<b>—</b>	<b>87,244.21</b>	<b>4,630.22</b>	<b>5,103.90</b>	<b>5,099.00</b>

<sup>a</sup>Sample calculations:

REFLECTS THE REMOVAL OF ENGINE E-2 FROM THE LOCATION

Greenhouse Gas (GHG) Emission Factors from Tables C-1 and C-2 of 40 CFR 98, Subpart C, are as follows:

Carbon Dioxide Emission Factor (CO<sub>2</sub>EF) = 53.02 kg/MMBtu  
Methane Emission Factor (CH<sub>4</sub>EF) = 0.001 kg/MMBtu  
Nitrous Oxide Emission Factor = 0.0001 kg/MMBtu

An example calculation for carbon dioxide equivalent CO<sub>2</sub>e in metric T/yr for EPN E1 follows:

$$\text{CO}_2\text{e (metric T/yr)} = (0.001 \text{ metric T/kg}) * (\text{Fuel usage, MMBtu/yr}) * [(\text{CO}_2\text{EF} + 21 * \text{CH}_4\text{EF} + 310 * \text{N}_2\text{OEF}), \text{ kg/MMBtu}]$$

$$\text{CO}_2\text{e (metric T/yr)} = (0.001 \text{ metric T/kg}) * (62,346 \text{ MMBtu/yr}) * [(53.02 \text{ kg/MMBtu}) + (21 * 0.001 \text{ kg/MMBtu}) + (310 * 0.0001 \text{ kg/MMBtu})] = 3308.84 \text{ metric T/yr}$$

An example calculation for CO<sub>2</sub>e in short T/yr for EPN E1 follows:

$$\text{CO}_2\text{e (short T/yr)} = (0.001 \text{ metric T/kg}) * (\text{Fuel usage, MMBtu/yr}) * [(\text{CO}_2\text{EF} + 21 * \text{CH}_4\text{EF} + 310 * \text{N}_2\text{OEF}), \text{ kg/MMBtu}] * (2,204.6 \text{ lb/metric T}) / (2,000 \text{ lb/short T})$$

$$\text{CO}_2\text{e (short T/yr)} = (0.001 \text{ metric T/kg}) * (62,346 \text{ MMBtu/yr}) * [(53.02 \text{ kg/MMBtu}) + (21 * 0.001 \text{ kg/MMBtu}) + (310 * 0.0001 \text{ kg/MMBtu})] * (2,204.6 \text{ lb/metric T}) / (2,000 \text{ lb/short T}) = 3647.33 \text{ short T/yr}$$

An example calculation for GHG Mass in short T/yr for EPN E1 follows:

$$\text{GHG Mass (short T/yr)} = (0.001 \text{ metric T/kg}) * (\text{Fuel usage, MMBtu/yr}) * (\text{CO}_2\text{EF} + \text{CH}_4\text{EF} + \text{N}_2\text{OEF}) * (2,204.6 \text{ lb/metric T}) / (2,000 \text{ lb/short T})$$

$$\text{GHG Mass (short T/yr)} = (0.001 \text{ metric T/kg}) * (62,346 \text{ MMBtu/yr}) * [(53.02 \text{ kg/MMBtu}) + (0.001 \text{ kg/MMBtu}) + (0.0001 \text{ kg/MMBtu})] * (2,204.6 \text{ lb/metric T}) / (2,000 \text{ lb/short T}) = 3643.83 \text{ short T/yr}$$

**XTO ENERGY, INC.**  
**JICARILLA APACHE PRODUCTION LOCATIONS & CDP - EMISSION SUMMARY**  
**RIO ARRIBA COUNTY, NEW MEXICO**

WELL SITE / LOCATION	OWNERSHIP / OPERATIONAL INTEREST	SIC CODE	LATITUDE	LONGITUDE	EMISSIONS SOURCES <sup>1</sup>					EMISSION ESTIMATES - TPY					
					PUMPING UNIT	COND. TANKS	PIT TANKS	TRUCKLOADING	HEATER(S)	NO <sub>x</sub>	CO	VOC	SO <sub>x</sub>	PM <sub>10</sub>	HAP's
JICARILLA APACHE 14	XTO Energy - 100%	1311	36.43859	107.35198	PU <sub>B</sub>	TK <sub>1,5BOPD</sub>	TK <sub>PIT</sub>	TL <sub>1,5BOPD</sub>	HTR	3.40	1.81	4.30	0.01	0.08	0.10
JICARILLA APACHE 14G	XTO Energy - 100%	1311	36.4420000	107.3491111	N/A	TK <sub>1,5BOPD</sub>	TK <sub>PIT</sub>	TL <sub>1,5BOPD</sub>	HTR	0.88	0.74	4.16	0.01	0.07	0.10
JICARILLA APACHE 16F	XTO Energy - 100%	1311	36.4379722	107.3436667	N/A	TK <sub>1,5BOPD</sub>	TK <sub>PIT</sub>	TL <sub>1,5BOPD</sub>	HTR	0.88	0.74	4.16	0.01	0.07	0.10
JICARILLA APACHE CDP	XTO Energy - 100%	1311	PROVIDED IN APPLICATION SUBMITTAL					19.23	25.64	33.02	0.03	0.39	3.23		

<b>TOTAL ESTIMATED EMISSIONS - CDP + AGGREGATED WELLSITES</b>	<b>24.38</b>	<b>28.92</b>	<b>45.65</b>	<b>0.05</b>	<b>0.60</b>	<b>3.53</b>
<b>TOTAL ESTIMATED EMISSIONS - AGGREGATED WELLSITES ONLY</b>	<b>5.15</b>	<b>3.28</b>	<b>12.63</b>	<b>0.02</b>	<b>0.21</b>	<b>0.30</b>

Updated Nov. 2016

**XTO ENERGY, INC.**  
**JICARILLA PRODUCTION LOCATIONS**  
**HEATER CALCULATIONS (TANKS AND SEPARATORS)**

ID	Fuel Gas BTU/SCF	Hours	MMBTU/Hr	AP-42 Factors					LB/HR					TPY				
				LB/MMSCF					NOx	CO	VOC	SO <sub>2</sub>	PM/PM <sub>10</sub>	NOx	CO	VOC	SO <sub>2</sub>	PM/PM <sub>10</sub>
				NOx	CO	VOC	SO <sub>2</sub>	PM/PM <sub>10</sub>										
HTR	1000	8760	2	100	84	5.5	0.6	7.6	0.200	0.168	0.011	0.001	0.015	0.88	0.74	0.05	0.01	0.07

**XTO ENERGY, INC.**  
**JICARILLA PRODUCTION LOCATIONS**  
**ARROW PUMPING ENGINE CALCULATIONS**

ID	DESCRIPTION	HRS	HP	MMBTU/HP-HR	MANUFACTURER'S DATA G/BHP-HR			AP-42 FACTORS LB/MMBTU		LB/HR					TPY				
					NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub>
PU <sub>B</sub>	ARROW C-96	8760	22	0.009	11.87	5.05	0.64	0.000588	0.009910	0.58	0.24	0.03	0.00	0.00	2.52	1.07	0.14	0.00	0.01

**XTO ENERGY, INC.**  
**JICARILLA PRODUCTION LOCATIONS**  
**CONDENSATE AND PIT TANKS**

**EMISSION CALCULATION FOR SITES WITH  $\leq 1.5$  BOPD**

ID	Method of Calculation	Emissions Controlled (Yes/No)	Control Type (Flare, VRU, etc)
TK	E&P Tanks	No	None

Total Uncontrolled Emissions - Condensate Tank Emissions - TK <sub>1.5BOPD</sub>			
Uncontrolled VOC Emissions @ 1.5 BOPD		Uncontrolled HAP Emissions@ 1.5 BOPD	
0.918	lb/hr	0.023	lb/hr
4.021	tpy	0.102	tpy

Total Uncontrolled Emissions - Pit Tank Emissions - TK <sub>PIT</sub>			
Uncontrolled VOC Emissions		Uncontrolled HAP Emissions	
0.001	lb/hr	N/A	lb/hr
0.003	tpy	N/A	tpy

\*TANK EMISSIONS ARE DEPENDENT ON PRODUCTION RATE NOT TANK CAPACITY.

\*\*\*\*\*  
 \* Project Setup Information \*

Project File : W:\EHS\Environmental\Air\Areas of Operation\New Mexico\Western Division\MSO\Jicarilla\2012-  
 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 : Jicarilla Apache - Rio Arriba  
 Well Name : Jicarilla Apache Wells - 1.5 bopd  
 Date : 2016.11.11

\*\*\*\*\*  
 \* Data Input \*

Separator Pressure (psia) : 19.00  
 Separator Temperature (F) : 50.0  
 C10+ SG : 0.84  
 C10+ MW(lb/lbmol) : 171.19

-- Low Pressure Oil -----

No.	Component	Mole%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0189	0.0090
4	N2	0.0628	0.0190
5	C1	0.8773	0.1520
6	C2	0.9945	0.3230
7	C3	2.4352	1.1600
8	i-C4	13.3056	8.3530
9	n-C4	3.9393	2.4730
10	i-C5	3.6159	2.8180
11	n-C5	4.1754	3.2540
12	C6	5.4177	5.0420
13	C7	26.8695	29.0810
14	C8	12.7317	15.7090
15	C9	5.9338	8.2220
16	C10+	4.4758	8.2760
17	Benzene	0.9873	0.8330
18	Toluene	6.4363	6.4050
19	E-Benzene	0.3593	0.4120
20	Xylenes	2.6491	3.0380
21	n-C6	4.6075	4.2890
22	224Trimethylp	0.1070	0.1320

-- Sales Oil -----

Production Rate (bbl/day) : 1.50  
 Days of Annual Operation : 365  
 API Gravity : 64.02  
 Reid Vapor Pressure (psia) : 11.60  
 Ambient Pressure (psia) : 14.70  
 Ambient Temperature (F) : 70.0

\*\*\*\*\*  
 \* Calculation Results \*

-- Emission Summary -----

Uncontrolled  
 ton

Total HAPs 0.1020  
 Total HC 4.3690  
 VOCs, C2+ 4.2580  
 VOCs, C3+ 4.0210  
 CO2 0.0070  
 CH4 0.1120

Uncontrolled Recovery Information:

Vapor (mscfd): 0.1770  
 HC Vapor (mscfd): 0.1757  
 CO2 (mscfd): 0.0000  
 CH4 (mscfd): 0.0100  
 GOR (SCF/STB): 118.0267

-- Emission Composition

NoComponent	Uncontrolled ton
1 H2S	0.0000
2 O2	0.0000
3 CO2	0.0070
4 N2	0.0140
5 C1	0.1120
6 C2	0.2370
7 C3	0.6720
8 i-C4	2.2360
9 n-C4	0.4480
10 i-C5	0.1920
11 n-C5	0.1660
12 C6	0.0790
13 Benzene	0.0100
14 Toluene	0.0230
15 E-Benzene	0.0000
16 Xylenes	0.0030
17 n-C6	0.0650
18 224Trimethylp	0.0010
19 Pseudo Comp1	0.0990
20 Pseudo Comp2	0.0220
21 Pseudo Comp3	0.0040
22 Pseudo Comp4	0.0000
23 Pseudo Comp5	0.0000
24 Total	4.3900

-- 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	0.0189	0.0043	0.0000	0.3163	0.0676	0.1758
4 N2	28.01	0.0628	0.0017	0.0000	1.3084	0.0264	0.5842
5 C1	16.04	0.8773	0.0883	0.0000	16.9569	1.3865	8.1606
6 C2	30.07	0.9945	0.4278	0.0027	12.5452	6.6740	9.2283
7 C3	44.10	2.4352	1.8492	0.5755	14.3793	20.5650	17.8738
8 i-C4	58.12	13.3056	12.1010	9.4718	37.8555	50.7398	45.1344
9 n-C4	58.12	3.9393	3.7468	3.3235	7.8621	9.9680	9.0518
10 i-C5	72.15	3.6159	3.6548	3.6751	2.8234	3.3567	3.1247
11 n-C5	72.15	4.1754	4.2608	4.3537	2.4359	2.8944	2.6949
12 C6	84.00	5.4177	5.6350	5.9373	0.9895	1.1921	1.1039
13 Benzene	78.11	0.9873	1.0289	1.0875	0.1388	0.1683	0.1555
14 Toluene	92.14	6.4363	6.7397	7.1768	0.2528	0.3165	0.2888
15 E-Benzene	106.17	0.3593	0.3767	0.4019	0.0046	0.0059	0.0053
16 Xylenes	106.17	2.6491	2.7777	2.9643	0.0277	0.0356	0.0322
17 n-C6	86.18	4.6075	4.7944	5.0556	0.7983	0.9561	0.8874
18 224Trimethylp	114.23	0.1070	0.1119	0.1190	0.0066	0.0080	0.0074
19 Pseudo Comp1	96.00	26.8695	28.1362	29.9605	1.0529	1.3280	1.2083
20 Pseudo Comp2	107.00	12.7317	13.3462	14.2364	0.2088	0.2639	0.2399
21 Pseudo Comp3	121.00	5.9338	6.2233	6.6438	0.0341	0.0436	0.0395
22 Pseudo Comp4	134.00	1.2333	1.2936	1.3814	0.0027	0.0035	0.0031

23 Pseudo Comp5	185.07	3.2426	3.4016	3.6331	0.0001	0.0001	0.0001
		LP Oil	Flash Oil	Sales Oil	Flash Gas	W&S Gas	Total Emission
MW (lb/lbmol):		89.97	92.09	94.61	46.89	55.05	51.50
Stream Mole Ratio:		1.0000	0.9532	0.8925	0.0468	0.0607	0.1075
Stream Weight Ratio:		89.97	87.78	84.44	2.19	3.34	5.54
Total Emission (ton):					1.739	2.651	4.390
Heating Value (BTU/scf):					2626.73	3089.02	2887.89
Gas Gravity (Gas/Air):					1.62	1.90	1.78
Bubble Pt. @100F (psia):		60.24	22.38	12.50			
RVP @100F (psia):		26.70	17.49	11.64			
Spec. Gravity @100F:		0.71	0.71	0.72			

**XTO ENERGY, INC.**  
**JICARILLA PRODUCTION LOCATIONS**  
**TRUCKLOADING**

**TRUCKLOADING EMISSIONS**

ID	Method of Calculation	Emissions Controlled (Yes/No)	Control Type (Flare, VRU, etc)
TL	AP-42	No	None

Total Uncontrolled Truck Loading Emissions			
Uncontrolled VOC Emissions @ 2.0 BOPD			
	30.774	Ib/hr	
	0.092	tpy	

\*Truckloading Emissions are based on AP-42 Section 5.2  $[LL = 12.46 * SPM/T * (1-EFF/100)]$ , where S=0.6, P=11.6 psia, T=540 deg, M= 50, EFF=0. Number of Loads per year is estimated to be 6.

**TRUCK LOADING LOSSES : OIL/CONDENSATE TANKS**

AP-42, Section 5.2

LL =  $12.46 * SPM/T * (1-EFF/100)$ , where

S= Saturation Factor :	=	0.6
P= True Vapor Pressure of liquid loaded =		11.6 psia
T= Temperature of bulk liquid loaded in Rankin =		540.0 degrees
M= Molecular Weight =		50
EFF = Control Efficiency (98% Control * 80 % Collection)		0 %

= 8.030 lb VOC (NMNEHC) emissions per 1,000 gal. throughput

Estimated throughput	22995 gal/year	3832.5 gal/hr
	23 Mgal/year	91.25 bbl/hr

Total VOC Loading Losses	=	0.0923 tpy	Estimated Number of Loads: 6
		30,7741 lb/hr	
	=	0.09232237 VOC (NMNEHC) Tons per Year	Based on a 120-bbl tank truck.

**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**  
Attachment 6 – Updated SCREEN3 Modeling Information

**Table 5-1**  
**XTO Energy, Inc.**  
**Jicarilla Compressor Station**  
**Application for Synthetic Minor Limit**  
**Summary of Screen3 CO Modeling Results - REV NOV 2016**

FIN	EPN	Description	PTE <sub>(CO,HR)</sub> <sup>a</sup> (lb/hr)	C <sub>(CO,HR)</sub> <sup>b</sup> (µg/m <sup>3</sup> )	1-hr GLC <sub>(CO,1-HR)</sub> <sup>c</sup> (µg/m <sup>3</sup> )	8-hr GLC <sub>(CO,8-HR)</sub> <sup>d</sup> (µg/m <sup>3</sup> )
E1	E1	Compressor Engine 1	5.36	27.57	147.78	103.45
E2	E2	Compressor Engine 2	5.36	27.57	147.78	103.45
H1	H1	Heater 1	0.04	1484.00	59.36	41.55
H2	H2	Heater 2	0.04	1484.00	59.36	41.55
H3	H3	Heater 3	0.04	1484.00	59.36	41.55
H4	H4	Heater 4	0.08	903.20	72.26	50.58
FLARE 1	FLARE 1	Flare 1	0.29	190.84	55.34	38.74
<b>Total CO Concentration (µg/m<sup>3</sup>):</b>					<b>453</b>	<b>317</b>
<b>CO Significance Level (µg/m<sup>3</sup>):</b>					<b>2,000</b>	<b>500</b>

Modeling was conducted in accordance with the NMED Air Quality Bureau Air Dispersion Modeling Guidelines, dated July 29, 2011 and Screening Procedures for Estimating the Air-Quality Impact of Stationary Sources, dated October 1992.

<sup>a</sup> PTE<sub>(NO<sub>x</sub>,HR)</sub> = Hourly PTE CO.

<sup>b</sup> C<sub>(CO,HR)</sub> = Maximum hourly CO concentration predicted by SCREEN3 model, using a nominal 1 lb/hr emission rate. Complex terrain 24-hour concentrations are multiplied by 4 to obtain a 1-hour concentration. The Valley screening value is multiplied by 0.25 to obtain a 24-hr average result with the complex terrain modeling option as indicated on Page 53 of the SCREEN3 User Guide.

<sup>c</sup> GLC<sub>(CO,1-HR)</sub> = Maximum hourly ground level concentration of CO.

An example calculation for FIN E1 follows:

$$GLC_{(CO,1-HR)} = PTE_{(CO,HR)} * C_{(CO,HR)} = (5.36 \text{ lb/hr}) * (27.57 \text{ µg/m}^3 / \text{lb/hr}) = 147.78 \text{ µg/m}^3$$

<sup>d</sup> GLC<sub>(CO,8-HR)</sub> = Maximum 8-hour ground level concentration of CO.

The 8-hr screen factor is obtained from page 17 of EPA-454/R-92-019 "Screening Procedures for Estimating the Air Quality Impact of Station Sources, Revised". An example calculation for FIN E1 follows:

$$GLC_{(CO,8-HR)} = GLC_{(CO,1-HR)} * SF = 147.78 \text{ µg/m}^3 * 0.7 = 103.45 \text{ µg/m}^3$$

<sup>e</sup> The 1-hr and 8-hr CO Significance Levels are based on NMAC §20.2.72.500 Table 1 - Significant Ambient Concentrations.

**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**

Attachment 7 – Updated ESA and NHPA Evaluation Description;

Attachment 7.A – EPA ESA / NHPA Evaluation;

Attachment 7.B – Jicarilla Apache 14G – ESA/NHPA Supporting Documentation; and

Attachment 7.C – Jicarilla Apache 16F – ESA/NHPA Supporting Documentation.

**Attachment 7**  
**XTO Energy, Inc.**  
**Jicarilla Compressor Station and Aggregated Wellsites**  
**36.43905, -107.34797 (Rio Arriba County, NM)**  
**Endangered Species (ESA) / NHPA Review – Updated Nov. 2016**

In February of 2012, XTO Energy Inc. submitted a NSR Synthetic Minor Air Permit application in accordance with 40 CFR 49, Indian Country: Air Quality and Management Regulations. The application includes the XTO Jicarilla Compressor Station and the wells that became subject to source aggregation within ¼ mile of the Station due to the EPA’s Source Determination Rule. In accordance with addressing the ESA / NHPA Screening requirements, XTO is submitting the accompanying U.S. Department of the Interior – Bureau of Indian Affairs, Jicarilla Agency concurrence letters and applicable Finding of No Significant Impact (FONSI) documentation for the affected XTO Jicarilla wellsites and the associated infrastructure development.

The attached letters of concurrence from the Federal BIA – Jicarilla Agency and the associated Environmental Assessment information are included with this submittal. In addition, the EPA ESA/NHPA Evaluation is also attached (Attachment 7.A).

The following information is applicable to the evaluation attached as a part of this submittal:

LOCATION	ESA CRITERIA	NHPA CRITERIA	DOCUMENTATION INCLUDED
Jicarilla Compressor Station	Existing Site – pre-2002*	Existing Site – pre-2002*	NO
Jicarilla Apache 14 Wellsite	Existing Site – 1968**	Existing Site – 1968**	NO
Jicarilla Apache 14G Wellsite	A	No historic properties affected.	YES – Attachment 7.B
Jicarilla Apache 16F Wellsite	A	No historic properties affected.	YES – Attachment 7.C

All of the sites and associated operations related to this application were constructed and in operation prior to EPA’s promulgation of the Tribal NSR permitting process and prior to EPA’s requirement to provide detailed ESA/NHPA information. In addition, the following information applies to the Jicarilla Compressor Station and the Jicarilla Apache 14 Wellsite:

\*The Jicarilla Compressor Station was acquired by XTO from Marathon Oil in 2002. The site was already constructed and operating in its current location. Since the site construction was coordinated between the previous owner and the Jicarilla Tribe prior to being purchased by XTO, ESA/NHPA evaluations and impacts were completed prior to XTO’s involvement with the location.

\*\*The Jicarilla Apache 14 Wellsite was originally drilled and operated in 1968, prior to the Federal NEPA process. In addition, XTO acquired the site from a previous owner.

**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**  
Attachment 7.A – EPA ESA / NHPA Evaluation Form

# Summary of Evaluation of Threatened and Endangered Species and Historic Properties for New or Modified True Minor Sources in Indian Country Seeking Air Quality Permits by Rule

## Section 1: Contact Information

Business Name: <b>XTO Energy Inc.</b>	Site Address: <b>Jicarilla Apache Reservation Rio Arriba County, NM Lat. 36.43905; Long. -107.34797</b>
Send all correspondence regarding this evaluation to (mailing address): <b>Craig Allison - XTO Energy, Inc. 810 Houston Street Fort Worth, TX 76102</b>	Contact for this notification: Name: <b>Craig Allison</b> Phone: <b>817-885-2672</b> Email: <b>craig-allison@xtoenergy.com</b>

## Section 2: Evaluation of Threatened and Endangered Species and Historic Properties

### 1. Threatened or Endangered Species \* See attached detailed information.

Please indicate under which criterion in Appendix A you satisfy after evaluating the effects on threatened and endangered species as a result of your construction, modification or operation of your new or modified minor source of air pollutants. Be sure to include all documentation identified in Appendix A with this evaluation.

A  B  C  D  E

### 2. Historic Properties \* See attached detailed information.

Please indicate under which criterion in Appendix B you satisfy after evaluating the effects to historic properties as a result of your construction, modification or operation of your new or modified minor source of air pollutants? Be sure to include all documentation identified in Appendix B with this evaluation.

No historic properties affected  No adverse effects  Adverse effects

## Section 3: Signature

Name: <u></u> (Signature)	Name: <u>Craig Allison</u> (Print or Type)
Title: <u>EH &amp; S Advisor</u>	Date: <u>11/17/16</u>

**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**  
Attachment 7.B – Jicarilla Apache 14G – ESA/NHPA Supporting Documentation



IN REPLY REFER TO  
Branch of Real  
Property Management

## United States Department of the Interior

### BUREAU OF INDIAN AFFAIRS

Jicarilla Agency  
Dulce, New Mexico 87529

DEC 05 2005

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OTO FARMINGTON NM

Mr. Jim Lovato   
Bureau of Land Management  
Farmington Field Office  
1235 La Plata Highway  
Farmington, New Mexico 87401

Dear Mr. Lovato:

On June 09, 2005, nine (9) proposed well locations and their pipeline Right-of-Ways were On-Sited for XTO Energy. In correlation to the Jicarilla Apache Nation, Oil and Gas Administration letter of concurrence. This letter in conformity with the Bureau of Indian Affairs, Trust Responsibilities, to promote Self-Determination and accordance with the Code of Federal Regulations relevant to Oil and Gas is subject to 43 C.F.R. 3160 On-Shore Orders, 25 C.F.R. 169.25 Oil and Gas Pipeline Lines, 25 C.F.R. 211.7 Environmental Studies (Environmental Assessment) and 25 C.F.R. 211.55 Penalties of Non-Compliances shall and will strictly be adhere to by all Operators, Contractors and Sub-Contractors.

Therefore, this concurrence letter fully supports and ratifies the Jicarilla Apache Nation, Oil and Gas Administration letter of concurrence and stipulations, which is included. To approve all attached proposed well locations and related access roads, pipeline right-of-ways and calculated surface damage fees, location plats, and Regional Archeological Survey concurrence letter.

#### LOCATIONS ARE AS FOLLOWS:

	<u>Well Name &amp; No</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>
1.	Jicarilla Apache #16G	34	T26N	R5W
2.	Jicarilla Apache #16F	34	T26N	R5W
3.	Jicarilla Apache #14G	34	T26N	R5W
4.	Jicarilla Apache #8G	27	T26N	R5W
5.	Jicarilla Apache #9F	28	T26N	R5W
6.	Jicarilla Apache #14F	34	T26N	R5W
7.	Jicarilla Apache #12G	33	T26N	R5W
8.	Apache Federal #16	07	T24N	R5W
9.	Apache Federal #17	18	T24N	R5W

**Surfaces Damages include the Well Pad, Pipeline and Access Road:**

The total acreage encumbered for well pads = 21.42 acres x \$1,100.00 = **\$23,562.00**

The total acreage encumbered by the pipeline & access roads = 4.21 acres x  
\$1,100.00 = **\$4,631.00**

The Branch of Forestry has assessed the following amount for damages;  
Total Assessment: **\$0.00**

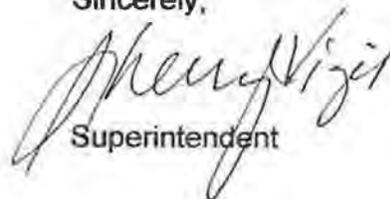
Total Assessment: **\$28,193.00**

Please make payment payable to the Jicarilla Apache Nation and remit payment to the Bureau of Indian Affairs, Jicarilla Agency, Branch of Real Property, P.O. Box 167, Dulce, New Mexico 87528.

In closing, our approval took into consideration, to address on-site participants, questions and concerns. Also, our obligation to the Jicarilla Apache Nation to implement, promote and develop the Nations natural resources and yet adequately protect valuable trust land surfaces and sub-surfaces. In regards to the Leasing and Development of natural resources within the Exteriors boundaries of the Jicarilla Apache Indian Reservation in accordance to the 25 CFR, National Environmental Policy Act (NEPA), and the 1994 Programmatic Environmental Assessment.

If you have any questions, contact Manuel Myore, Realty Officer, or George Loretto, Sr., Realty Specialist, at (505) 759-3976.

Sincerely,



Superintendent

Attachment(s)

## **FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

### **Patina San Juan Inc.**

This FONSI was completed in accordance with the National Environmental Policy Act of 1969 (NEPA), Council of Environmental Quality Regulations, Department of Interior Procedures and Bureau of Indian Affairs NEPA Manual.

#### **Proposed Action:**

**XTO Energy Inc.** proposes to drill one (9) individual well location:

The **Jicarilla Apache 16G** staked 2300 feet from the north line and 670 feet from the east line and a 444.27' access road and pipeline tie-in, in Section 34, Township 26 North, Range 5 West, **Jicarilla Apache 16F** staked 665 feet from the south line and 2000 feet from the east line with a 686.94 access road and pipeline tie-in, in Section 34, Township 34 North, Range 5 West, **Jicarilla Apache 14G** staked 2140 feet from the south line and 2135 feet from the west line 2369.98 access road and pipeline tie-in, in Section 34, Township 26 North, Range 5 West, **Jicarilla Apache 8G** staked 855 feet from the south line and 2135 feet from the west line 545.18 access road and pipeline tie-in, in Section 27, Township 26 North, Range 4 West, **Jicarilla Apache 9F** staked 1700 feet from the south line and 665 feet from the east line with a 265.72 pipeline Right-of-Way and tie-in, in Section 28, Township 26 North, Range 5 West, **Jicarilla Apache 14F** staked 950 feet from the north line and 1105 feet from the west line with a 64.59 pipeline Right-of-Way tie-in, in Section 34, Township 26 North, Range 5 West, **Jicarilla Apache 12G** staked 2000 feet from the north line and 700 feet from the east line with a 129.41 foot access road and pipeline tie-in, in Section 33, Township 26 North, Range 5 West, **Apache Federal 16** staked 1585 feet from the south line and 1435 feet from the east line with a 30 foot access road and pipeline tie-in, in Section 7, Township 24 North, Range 5 West, **Apache Federal #17** staked 1970 feet from the north line and 1790 feet from the west line with a 38.95 foot access road and pipeline Tie-in, in Section 18, Township 24 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico all encumbrances lay within the boundaries of the Jicarilla Apache Indian Reservation.

Based on the Environmental Assessment dated and October, 2005 for the above mentioned one (1) Oil & Gas Well sites and associated Pipeline and Access Roads. The Environmental Assessments were prepared by Velarde Energy Services of Dulce, New Mexico and reviewed in context with the 1994 Programmatic Environmental Assessment for Leasing Exploration and Development of Oil & Gas Resources on the Jicarilla Apache Indian Reservation, it was determined that the proposed action will not have a significant impact on the human environment, therefore an Environmental Impact Statement is not required.

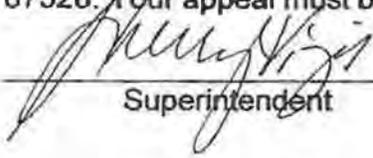
#### **This Determination is supported by the following:**

1. No significant impacts on vegetation, soil, water, resources or air quality are anticipated.

- 2. No effects to water resources, wildlife and resource-patterns in the projects expected to occur.
- 3. No effects to Federal-listed threatened and endangered species are anticipated.
- 4. No effects to cultural/archaeological resources in the project area.
- 5. Positive impacts to socio-economic and environmental justice are anticipated.

For these reasons, the Bureau of Indian Affairs, Jicarilla Agency declares a Finding of No Significant impact (FONSI) to human environment resulting from the proposed project. The Environmental Assessment for the project is on file at the Jicarilla Agency and will be made available for review upon request.

You may appeal the decision to proceed with the Bureau of Indian Affairs approval of the lease between the Jicarilla Apache Nation and Velarde Energy Services by writing to the Jicarilla Agency, Branch of Real Property, P O Box 167, Dulce, New Mexico 87528. Your appeal must be received no later than thirty (30) days of date below.

  
\_\_\_\_\_  
Superintendent

12/05/05  
\_\_\_\_\_  
Date

**XTO – Jicarilla Compressor Station – NSR Application Update – Nov. 2016**  
Attachment 7.C – Jicarilla Apache 16F – ESA/NHPA Supporting Documentation



# United States Department of the Interior

## BUREAU OF INDIAN AFFAIRS

Jicarilla Agency  
Dulce, New Mexico 87528

IN REPLY REFER TO:  
Branch of Real  
Property Management

DEC 05 2005

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070 FARMINGTON NM

*[Handwritten signature]*  
Mr. Jim Lovato  
Bureau of Land Management  
Farmington Field Office  
1235 La Plata Highway  
Farmington, New Mexico 87401

Dear Mr. Lovato:

On June 09, 2005, nine (9) proposed well locations and their pipeline Right-of-Ways were On-Sited for XTO Energy. In correlation to the Jicarilla Apache Nation, Oil and Gas Administration letter of concurrence. This letter in conformity with the Bureau of Indian Affairs, Trust Responsibilities, to promote Self-Determination and accordance with the Code of Federal Regulations relevant to Oil and Gas is subject to 43 C.F.R. 3160 On-Shore Orders, 25 C.F.R. 169.25 Oil and Gas Pipeline Lines, 25 C.F.R. 211.7 Environmental Studies (Environmental Assessment) and 25 C.F.R. 211.55 Penalties of Non-Compliances shall and will strictly be adhere to by all Operators, Contractors and Sub-Contractors.

Therefore, this concurrence letter fully supports and ratifies the Jicarilla Apache Nation, Oil and Gas Administration letter of concurrence and stipulations, which is included. To approve all attached proposed well locations and related access roads, pipeline right-of-ways and calculated surface damage fees, location plats, and Regional Archeological Survey concurrence letter.

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Total Assessment: **\$0.00**

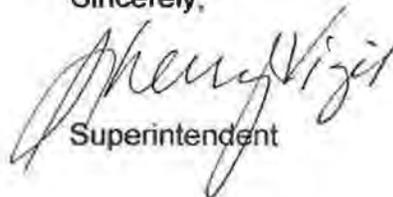
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In closing, our approval took into consideration, to address on-site participants, questions and concerns. Also, our obligation to the Jicarilla Apache Nation to implement, promote and develop the Nations natural resources and yet adequately protect valuable trust land surfaces and sub-surfaces. In regards to the Leasing and Development of natural resources within the Exteriors boundaries of the Jicarilla Apache Indian Reservation in accordance to the 25 CFR, National Environmental Policy Act (NEPA), and the 1994 Programmatic Environmental Assessment.

If you have any questions, contact Manuel Myore, Realty Officer, or George Loretto, Sr., Realty Specialist, at (505) 759-3976.

Sincerely,

  
Superintendent

Attachment(s)

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**Patina San Juan Inc.**

*NM 210-06-235*

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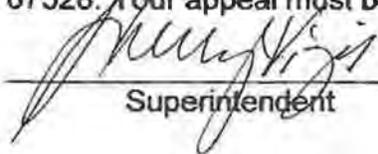
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\_\_\_\_\_  
Superintendent

12/05/05  
\_\_\_\_\_  
Date