Form 3160-3
(June 2015)

HOBBS OCD
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FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM086168

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
SEVERUS 31-5 FEDERAL COM
10H (325914)

2. Name of Operator
XTO ENERGY INCORPORATED (5380)

9. API Well No.
30-025-46375

3a. Address
2277 Springwoods Village Parkway Spring TX 77389

3b. Phone No. *(include area code)*
(432)620-6700

10. Field and Pool, or Exploratory
WILDCAT BONE SPRING (97895)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SWSE / 80 FSL / 2262 FEL / LAT 32.537095 / LONG -103.598359
At proposed prod. zone LOT 6 / 2401 FNL / 1650 FWL / LAT 32.515734 / LONG -103.597846

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 30 / T20S / R34E / NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
80 feet	240.12	240
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. in file**
30 feet	10665 feet / 18285 feet	FED: UTB000138
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3698 feet	06/01/2019	90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Stephanie Rabadue / Ph: (432)620-6714	02/08/2019
Title		
Regulatory Coordinator		
Approved by *(Signature)*	**Name *(Printed/Typed)***	**Date**
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	09/04/2019
Title	**Office**	
Assistant Field Manager Lands & Minerals	CARLSBAD	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GCP Rec 09/18/19

APPROVED WITH CONDITIONS

KZ 09/25/19

GL

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 09/04/2019

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

1. SHL: SWSE / 80 FSL / 2262 FEL / TWSP: 20S / RANGE: 34E / SECTION: 30 / LAT: 32.537095 / LONG: -103.598359 (TVD: 0 feet, MD: 0 feet)
   PPP: NWNE / 330 FNL / 2107 FEL / TWSP: 20S / RANGE: 34E / SECTION: 31 / LAT: 32.535969 / LONG: -103.597855 (TVD: 10665 feet, MD: 10921 feet)
   BHL: LOT 6 / 2401 FNL / 1650 FWL / TWSP: 21S / RANGE: 33E / SECTION: 5 / LAT: 32.515734 / LONG: -103.597846 (TVD: 10665 feet, MD: 18285 feet)

BLM Point of Contact

Name: Candy Vigil
Title: Admin Support Assistant
Phone: 5752345982
Email: cvigil@blm.gov

Approval Date: 09/04/2019

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT DRILLING
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**XTO Energy, Inc.**
LEASE NO.:	**NMNM-086168**
WELL NAME & NO.:	**Severus 31-5 Federal Com 10H**
SURFACE HOLE FOOTAGE:	**0080' FSL & 2262' FEL**
BOTTOM HOLE FOOTAGE	**2401' FNL & 1650' FWL Sec. 05, T. 21 S., R 33 E.**
LOCATION:	**Section 30, T. 20 S., R 34 E., NMPM**
COUNTY:	**County, New Mexico**

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☐ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 3933612

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe.** A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Yates** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Potash Areas:

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

R-111-P Potash
Capitan Reef
Possibility of water flows in the Artesia Group, Salado, and Capitan Reef.
Possibility of lost circulation in the Rustler, Red Beds, Artesia Group, Capitan Reef, and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **1670** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight

necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

Special Capitan Reef requirements:

If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:

- **Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.**

- **Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.**

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Operator has proposed DV tool at depth of 1770', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:___

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☐ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Potash and Capitan Reef.**

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

☐ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 23% - Additional cement may be required.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with

a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

4. The appropriate BLM office shall be notified a minimum of hours in advance for a representative to witness the tests.

    a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 081619

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL
TABLE OF CONTENTS

XTO Energy, Inc

Severus 31 Federal Com (Topaz) Drill Island MW

Severus 31-5 Federal Com 5H:
Surface Hole Location: 130' FSL & 2162' FEL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 2103' FWL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 6H:
Surface Hole Location: 130' FSL & 2312' FEL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 2103' FWL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 9H:
Surface Hole Location: 80' FSL & 2212' FEL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 2304' FEL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 10H:
Surface Hole Location: 80' FSL & 2262' FEL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 1650' FWL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 13H:
Surface Hole Location: 80' FSL & 2162' FEL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 1980' FEL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 14H:
Surface Hole Location: 80' FSL & 2312' FEL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 1980' FWL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 7H:
Surface Hole Location: 387' FSL & 1800' FWL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 770' FWL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 11H:
Surface Hole Location: 337' FSL & 1750' FWL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FNL & 3350' FWL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 15H:
Surface Hole Location: 337' FSL & 1800' FWL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 2401' FSL & 660' FWL, Section 5, T. 21 S., R. 33 E.

Severus 31-5 Federal Com 8H:
Surface Hole Location: 240' FSL & 947' FWL, Section 30, T. 20 S., R. 34 E.

Bottom Hole Location: 200' FSL & 883' FWL, Section 31, T. 20 S., R. 34 E.

Severus 31-5 Federal Com 12H:
Surface Hole Location: 190' FSL & 897' FWL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 200' FSL & 540' FWL, Section 31, T. 20 S., R. 34 E.

Severus 31-5 Federal Com 16H:
Surface Hole Location: 190' FSL & 947' FWL, Section 30, T. 20 S., R. 34 E.
Bottom Hole Location: 200' FSL & 889' FWL, Section 31, T. 20 S., R. 34 E.

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☐ **Special Requirements**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Hydrology
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult

with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Hydrology:
The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil

due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the .

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which

creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

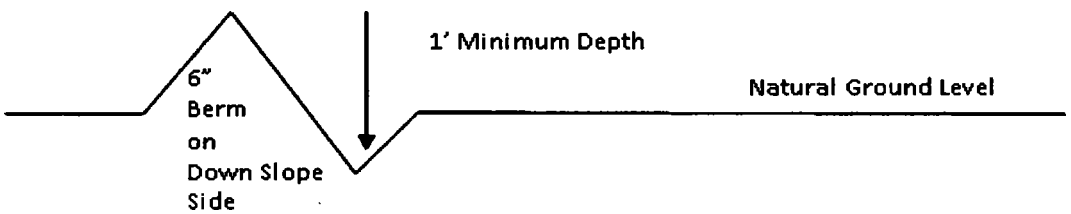
Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, leadoff ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps 1. Salvage topsoil 2. Construct road 3. Redistribute topsoil 4. Revegetate slopes

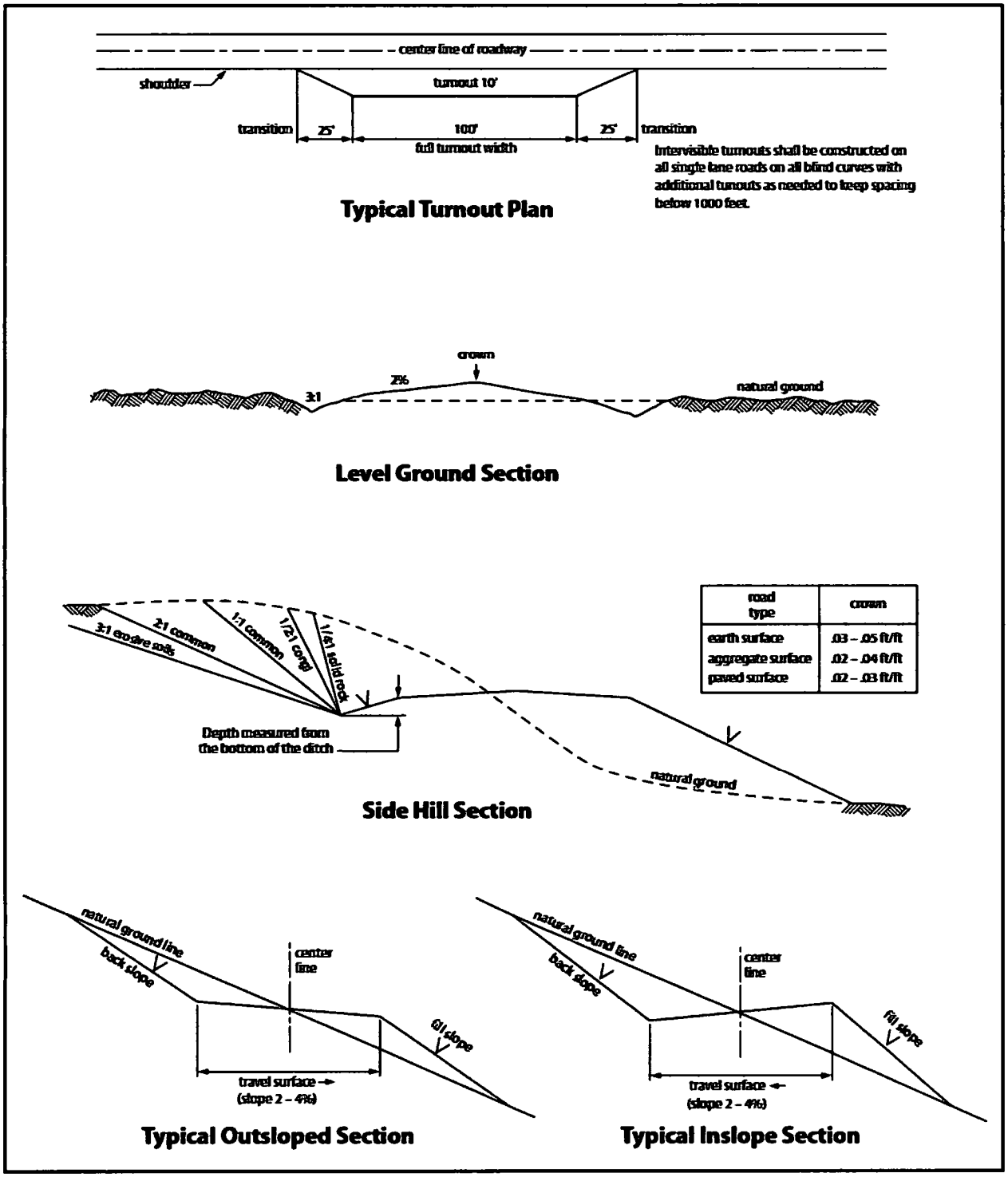


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. **PIPELINES**
STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the

activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately

adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

18. Special Stipulations:

a. **Lesser Prairie-Chicken:** Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted.

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil

conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
() seed mixture 2	( ) seed mixture 4
(X) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A

Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

09/05/2019

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Stephanie Rabadue **Signed on:** 05/17/2018

Title: Regulatory Coordinator

Street Address: 500 W. Illinois St, Ste 100

City: Midland **State:** TX **Zip:** 79701

Phone: (432)620-6714

Email address: stephanie_rabadue@xtoenergy.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Application Data Report

09/05/2019

APD ID: 10400038879 **Submission Date:** 02/08/2019

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Well Type: OIL WELL **Well Work Type:** Drill

[redacted]

Show Final Text

Section 1 - General

APD ID: 10400038879 **Tie to previous NOS?** **Submission Date:** 02/08/2019

BLM Office: CARLSBAD **User:** Stephanie Rabadue **Title:** Regulatory Coordinator

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM086168 **Lease Acres:** 240.12

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO **APD Operator:** XTO ENERGY INCORPORATED

Operator letter of designation:

Operator Info

Operator Organization Name: XTO ENERGY INCORPORATED

Operator Address: 2277 Springwoods Village Parkway **Zip:** 77389

Operator PO Box:

Operator City: Spring **State:** TX

Operator Phone: (432)620-6700

Operator Internet Address: Richard_redus@xtoenergy.com

Section 2 - Well Information

Well in Master Development Plan? NO **Master Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H **Well API Number:**

Field/Pool or Exploratory? Field and Pool [redacted] **Pool Name:**

Is the proposed well in an area containing other mineral resources? POTASH

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Is the proposed well in an area containing other mineral resources? POTASH

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** SEVERUS **Number:** 2

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town: **Distance to nearest well:** 30 FT **Distance to lease line:** 80 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Severus_Fed_10H_C102_20190206120709.pdf

Well work start Date: 06/01/2019 **Duration:** 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:**

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	80	FSL	2262	FEL	20S	34E	30	Aliquot SWSE	32.537095	-103.598359	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 086168	3698	0	0
KOP Leg #1	80	FSL	2262	FEL	20S	34E	30	Aliquot SWSE	32.537095	-103.598359	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 086168	1698	2000	2000
PPP Leg #1	330	FNL	2107	FEL	20S	34E	31	Aliquot NWNE	32.535969	-103.597855	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 041769	-6967	10921	10665

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	2271	FNL	1650	FWL	21S	33E	5	Lot 6	32.516091	-103.597846	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-6967	18100	10665
BHL Leg #1	2401	FNL	1650	FWL	21S	33E	5	Lot 6	32.515734	-103.597846	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-6967	18285	10665

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Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	PERMIAN	3698	0	0	OTHER : Quaternary	NONE	N
2	RUSTLER	2135	1564	1564	SILTSTONE	USEABLE WATER	N
3	TOP SALT	1784	1915	1915	SALT	POTASH	N
4	BASE OF SALT	540	3159	3159	SALT	POTASH	N
5	DELAWARE	-1935	5634	5634	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced Water	N
6	BONE SPRING	-4973	8672	8672	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced Water	N
7	BONE SPRING 1ST	-5967	9666	9666	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced Water	N
8	WOLFCAMP	-6583	10282	10282	LIMESTONE	USEABLE WATER,OTHER,NATURAL GAS,OIL : Produced	N
9	BONE SPRING 2ND	-6797	10496	10496	SANDSTONE	OTHER,NATURAL GAS,OIL : Produced Water	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 10665

Equipment: The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP.
Requesting Variance? YES

Variance request: A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.
Testing Procedure: Once the permanent WH is installed on the 13-3/8 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M 3-Ram BOP. MASP should not exceed 3914 psi. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M). All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. Since a multibowl system will be used, subsequent BOP pressure tests will be performed as necessary based on required testing schedule (i.e., at least every 30 days). All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Choke Diagram Attachment:

Severus_Fed_5MCM_20190104073746.pdf

BOP Diagram Attachment:

Severus_Fed_5MBOP_20190104073801.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1670	0	1670			1670	J-55	54.5	ST&C	1.48	1.59	DRY	6.41	DRY	6.41
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5540	0	5540			5540	J-55	36	LT&C	1.16	1.01	DRY	2.27	DRY	2.27
3	PRODUCTION	8.75	5.5	NEW	API	N	0	18406	0	10665			18406	P-110	17	BUTT	1.46	1.12	DRY	2.36	DRY	2.36

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Severus_Fed_10H_Csg_20190206122715.pdf

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Severus_Fed_10H_Csg_20190206122726.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Severus_Fed_10H_Csg_20190206122738.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead	[redacted]	[redacted]	[redacted]	[redacted]	1.87	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
SURFACE	Tail		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
INTERMEDIATE	Lead	[redacted]	[redacted]	[redacted]	[redacted]	1.88	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
INTERMEDIATE	Tail		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
INTERMEDIATE	Lead	[redacted]	[redacted]	[redacted]	[redacted]	1.88	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail										
PRODUCTION	Lead					2.69					
PRODUCTION	Tail										

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: The necessary mud products for weight addition a fluid loss control will be on location at all times.

Describe the mud monitoring system utilized: A Pason or Totco will be used to detect changes in loss or gain of mud volume.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
5540	10665	OTHER : FW/Cut Brine/Polymer	9.8	10.1							A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.
0	1670	OTHER : FW/Native	8.4	8.8							A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hrs to determine: density,

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
											viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.
1670	5540	OTHER : Brine/Gel Sweeps	9.8	10.2							A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Mud Logger: Mud Logging Unit (2 man) below intermediate casing. Open hole logging will include quad combo.

List of open and cased hole logs run in the well:

CBL,DS,GR,MUDLOG

Coring operation description for the well:

No coring will take place on this well.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5102 **Anticipated Surface Pressure:** 2755.7

Anticipated Bottom Hole Temperature(F): 150

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Severus_Fed_H2S_Plan_20190104075831.pdf
Severus_Fed_H2S_Dia_P2_20190104075940.pdf
Severus_Fed_H2S_Dia_P1_20190104075931.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Severus_Fed_10H_DD_20190206122923.pdf

Other proposed operations facets description:

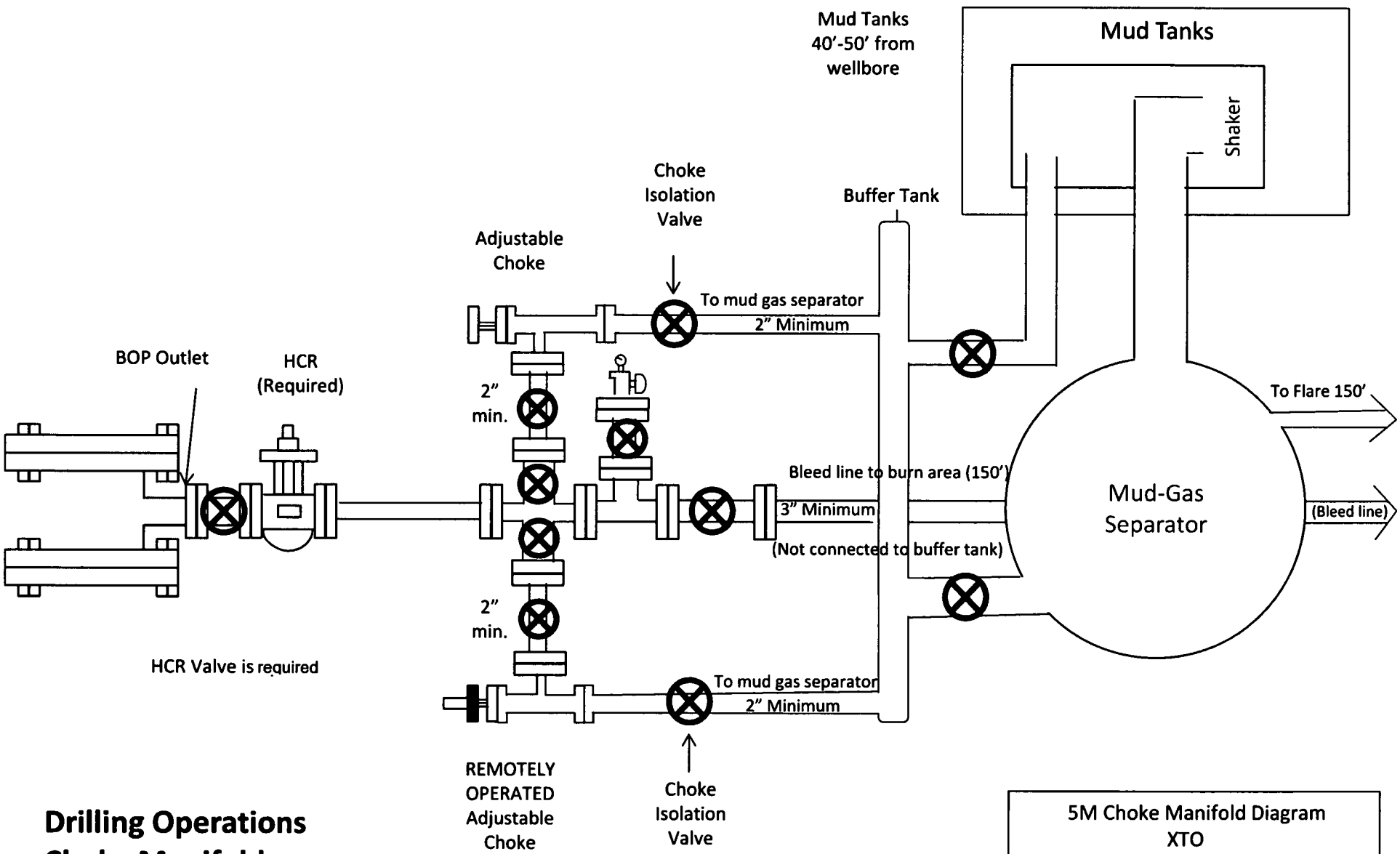
XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.

Other proposed operations facets attachment:

Severus_Fed_10H_GCP_20190206122933.pdf

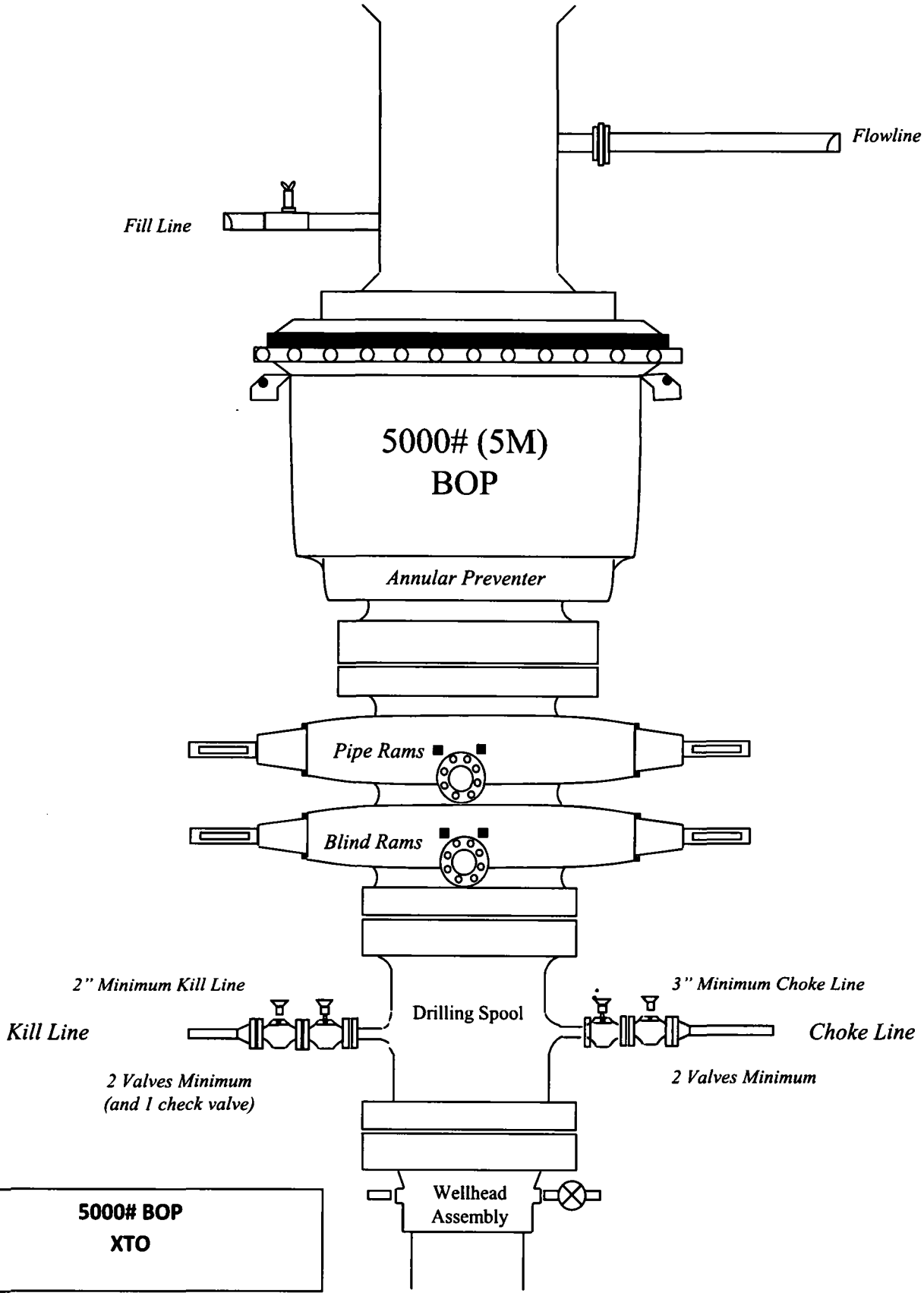
Other Variance attachment:

Severus_Fed_FH_20190104080018.pdf



Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
XTO


Flowline
Fill Line
5000# (5M)
BOP
Annular Preventer
Pipe Rams
Blind Rams
2" Minimum Kill Line
3" Minimum Choke Line
Kill Line
Drilling Spool
Choke Line
2 Valves Minimum
(and 1 check valve)
2 Valves Minimum
Wellhead
Assembly

5000# BOP
XTO

XTO Energy, Inc
Severus 31-5 Federal Com 5H
Projected TD: 19305' MD / 11434' TVD
SHL: 130' FSL & 2162.5' FEL , Section 30, T20S, R34E
BHL: 2401.3' FNL & 1836.8' FEL , Section 5, T21S, R33E
Lea County, NM

Casing Worksheet

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 1670'	13-3/8"	54.5#	STC	J-55	New	1.59	1.48	6.41
12-1/4"	0' – 5540'	9-5/8"	36#	LTC	J-55	New	1.01	1.16	2.27
8-3/4" x 8-1/2"	0' – 19305'	5-1/2"	17#	BTC	P-110	New	1.12	1.25	2.21

· XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.

Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 1670'	13-3/8"	54.5#	STC	J-55	New	1.59	1.48	6.41
12-1/4"	0' – 5540'	9-5/8"	36#	LTC	J-55	New	1.01	1.16	2.27
8-3/4"	0' – 19148'	5-1/2"	17#	BTC	P-110	New	1.12	1.25	2.24

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Manufacturer will witness installation of test plug for initial test.
- Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

Casing Design

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17-1/2"	0' – 1670'	13-3/8"	54.5#	STC	J-55	New	1.59	1.48	6.41
12-1/4"	0' – 5540'	9-5/8"	36#	LTC	J-55	New	1.26	1.16	2.27
8-3/4" x 8-1/2"	0' – 18285'	5-1/2"	17#	BTC	P-110	New	1.12	1.46	2.38

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XTO Energy, Inc
Severus 31-5 Federal Com 9H
Projected TD: 18407' MD / 10597' TVD
SHL: 80' FSL & 2212.5' FEL , Section 30, T20S, R34E
BHL: 2401.3' FNL & 2304.2' FEL , Section 5, T21S, R33E
Lea County, NM

Casing Worksheet

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HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H_2S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - Detection of H_2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = I	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = I	2 ppm	N/A	1000 ppm

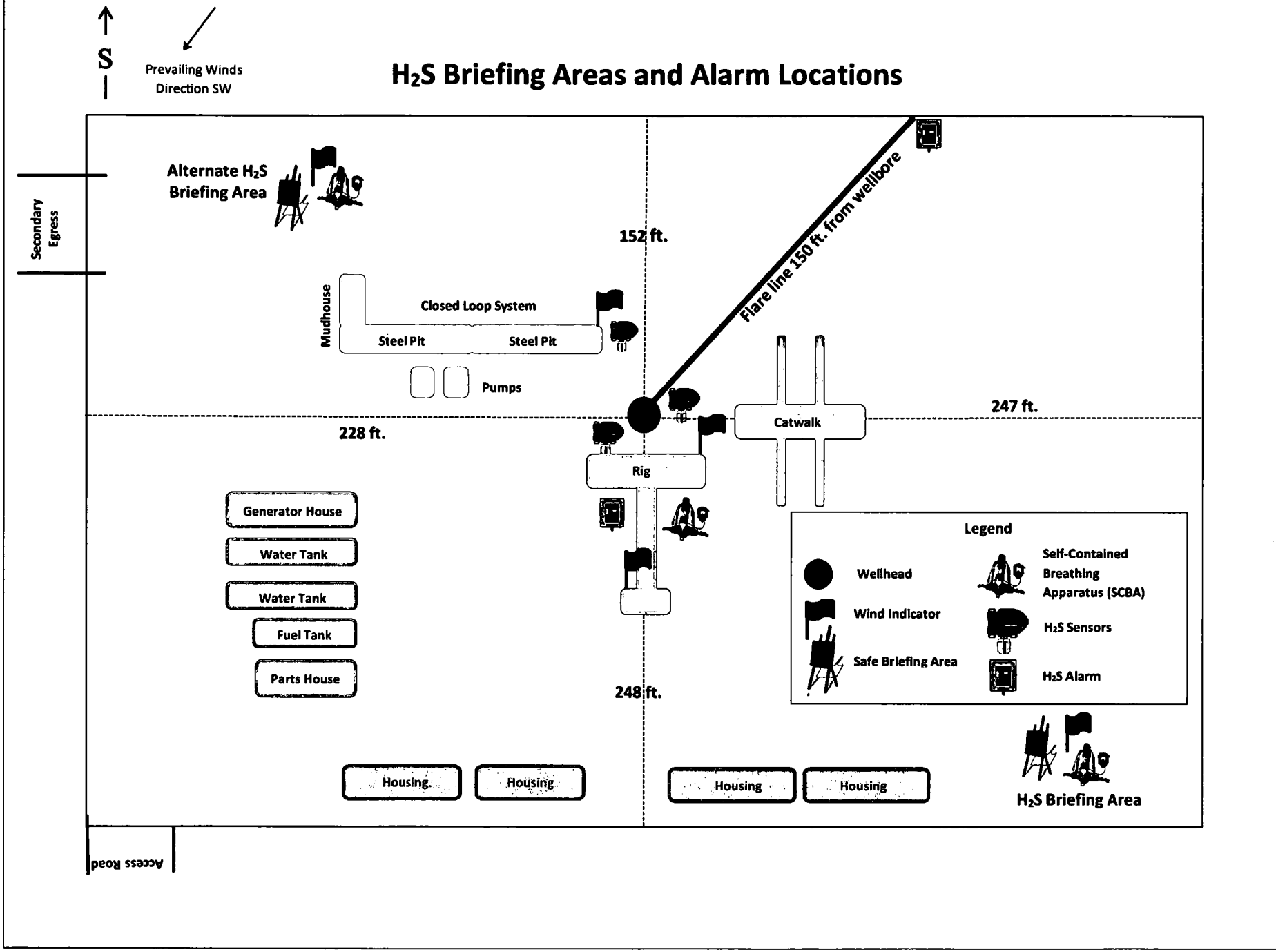
Contacting Authorities

XTO Energy, Inc. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

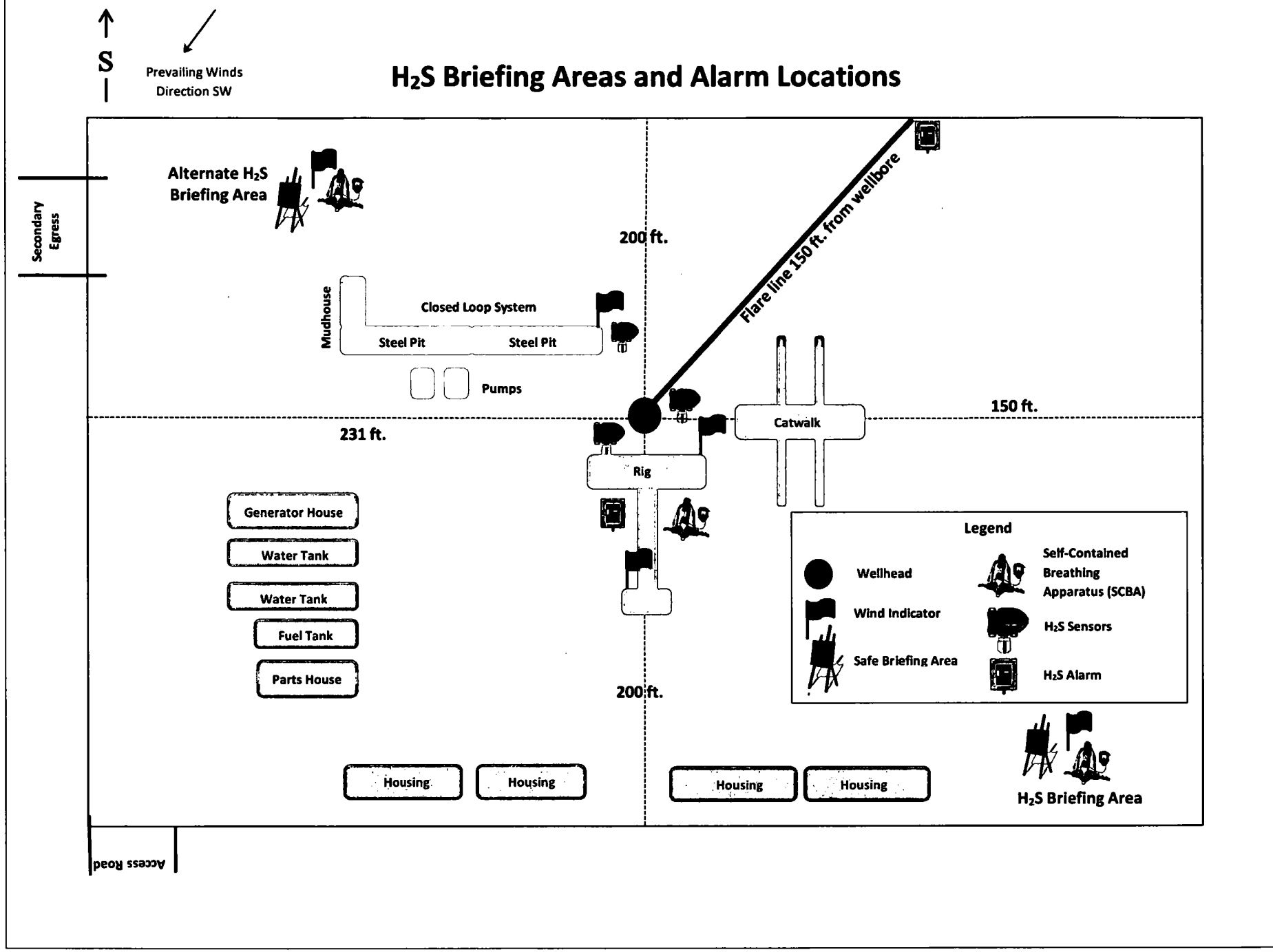
CARLSBAD OFFICE – EDDY & LEA COUNTIES

3104 E. Greene St., Carlsbad, NM 88220	
Carlsbad, NM	575-887-7329
XTO Energy, Inc. PERSONNEL:	
Kendall Decker, Drilling Manager	903-521-6477
Milton Turman, Drilling Superintendent	817-524-5107
Jeff Raines, Construction Foreman	432-557-3159
Toady Sanders, EH & S Manager	903-520-1601
Wes McSpadden, Production Foreman	575-441-1147
SHERIFF DEPARTMENTS:	
Eddy County	575-887-7551
Lea County	575-396-3611
NEW MEXICO STATE POLICE:	575-392-5588
FIRE DEPARTMENTS:	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359
HOSPITALS:	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359
AGENT NOTIFICATIONS:	
For Lea County:	
Bureau of Land Management – Hobbs	575-393-3612
New Mexico Oil Conservation Division – Hobbs	575-393-6161
For Eddy County:	
Bureau of Land Management - Carlsbad	575-234-5972
New Mexico Oil Conservation Division - Artesia	575-748-1283

H_2S Briefing Areas and Alarm Locations



H_2S Briefing Areas and Alarm Locations



XTO Energy

Lea County, NM (NAD-27)
Severus 31-5 Fed Com
#10H

OH

Plan: PERMIT

Standard Planning Report

17 October, 2017

XTO ENERGY

Project: Lea County, NM (NAD-27)
Site: Severus 31-5 Fed Com
Well: #10H
Wellbore: OH
Design: PERMIT

PROJECT DETAILS: Lea County, NM (NAD-27)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

WELL DETAILS: #10H

Rig Name: Unknown
RKB= 25' @ 3723.00usft (Unknown)
Ground Level: 3698.00

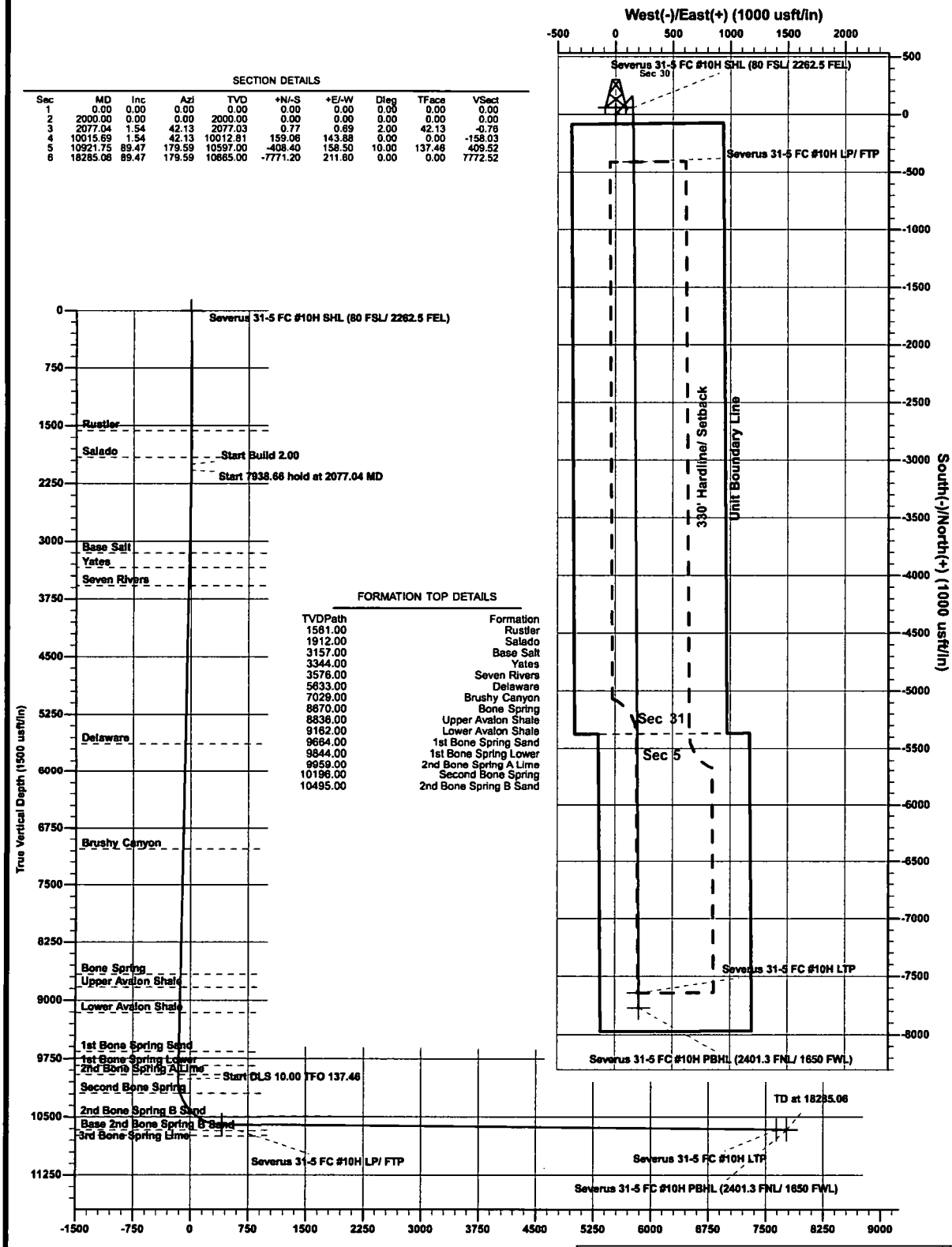
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	559845.00	726853.90	32° 32' 13.098 N	103° 35' 52.330 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Severus 31-5 FC #10H SHL (80 FSL/ 2262.5 FEL)	0.00	0.00	0.00	559845.00	726853.90	32° 32' 13.098 N	103° 35' 52.330 W	Point
Severus 31-5 FC #10H LP/ FTP	10597.00	-408.40	158.50	559438.60	726812.40	32° 32' 9.046 N	103° 35' 50.511 W	Point
Severus 31-5 FC #10H LTP	10663.80	-7641.20	210.60	552203.80	726864.50	32° 30' 57.474 N	103° 35' 50.488 W	Point
Severus 31-5 FC #10H PBHL (2401.3 FNL/ 1650 FWL)	10665.00	-7771.20	211.60	552073.80	726865.50	32° 30' 56.187 N	103° 35' 50.485 W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2077.04	1.54	42.13	2077.03	0.77	0.69	2.00	42.13	-0.76
4	10015.69	1.54	42.13	10012.81	159.06	143.88	0.00	0.00	-158.03
5	10921.75	89.47	179.59	10597.00	-408.40	158.50	10.00	137.46	409.52
6	18285.06	89.47	179.59	10665.00	-7771.20	211.60	0.00	0.00	7772.52



FORMATION TOP DETAILS

TVDPath	Formation
1581.00	Rustler
1912.00	Salado
3157.00	Base Salt
3344.00	Yates
3576.00	Seven Rivers
5833.00	Delaware
7029.00	Brushy Canyon
8870.00	Bone Spring
8836.00	Upper Avalon Shale
9162.00	Lower Avalon Shale
9664.00	1st Bone Spring Sand
9844.00	1st Bone Spring Lower
9959.00	2nd Bone Spring A Lime
10196.00	Second Bone Spring
10495.00	2nd Bone Spring B Sand

Note: All Plan details including boundary lines and offset well data is subject to customers approval.

Plan: PERMIT (#10H/OH)
Created By: Matthew May Date: 8:39, October 17 2017

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #10H
Company:	XTO Energy	**TVD Reference:**	RKB= 25' @ 3723.00usft (Unknown)
Project:	Lea County, NM (NAD-27)	**MD Reference:**	RKB= 25' @ 3723.00usft (Unknown)
Site:	Severus 31-5 Fed Com	**North Reference:**	Grid
Well:	#10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Project	Lea County, NM (NAD-27)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Severus 31-5 Fed Com				
Site Position:		**Northing:**	559,896.00 usft	**Latitude:**	32° 32' 13.596 N
From:	Map	**Easting:**	726,753.50 usft	**Longitude:**	103° 35' 51.162 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.40 °

Well	#10H					
Well Position	**+N/-S**	-51.00 usft	**Northing:**	559,845.00 usft	**Latitude:**	32° 32' 13.098 N
	+E/-W	-99.60 usft	**Easting:**	726,653.90 usft	**Longitude:**	103° 35' 52.330 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,698.00 usft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	10/17/2017	6.95	60.34	48,085

Design	PERMIT				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	179.59	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,077.04	1.54	42.13	2,077.03	0.77	0.69	2.00	2.00	0.00	42.13	
10,015.69	1.54	42.13	10,012.81	159.06	143.88	0.00	0.00	0.00	0.00	
10,921.75	89.47	179.59	10,597.00	-408.40	158.50	10.00	9.70	15.17	137.46	Severus 31-5 FC #
18,285.06	89.47	179.59	10,665.00	-7,771.20	211.60	0.00	0.00	0.00	0.00	Severus 31-5 FC #

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Site:	Severus 31-5 Fed Com	**North Reference:**	Grid
Well:	#10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,077.04	1.54	42.13	2,077.03	0.77	0.69	-0.76	2.00	2.00	0.00
2,100.00	1.54	42.13	2,099.98	1.23	1.11	-1.22	0.00	0.00	0.00
2,200.00	1.54	42.13	2,199.95	3.22	2.91	-3.20	0.00	0.00	0.00
2,300.00	1.54	42.13	2,299.91	5.21	4.72	-5.18	0.00	0.00	0.00
2,400.00	1.54	42.13	2,399.87	7.21	6.52	-7.16	0.00	0.00	0.00
2,500.00	1.54	42.13	2,499.84	9.20	8.32	-9.14	0.00	0.00	0.00
2,600.00	1.54	42.13	2,599.80	11.20	10.13	-11.12	0.00	0.00	0.00
2,700.00	1.54	42.13	2,699.77	13.19	11.93	-13.10	0.00	0.00	0.00
2,800.00	1.54	42.13	2,799.73	15.18	13.73	-15.09	0.00	0.00	0.00
2,900.00	1.54	42.13	2,899.69	17.18	15.54	-17.07	0.00	0.00	0.00
3,000.00	1.54	42.13	2,999.66	19.17	17.34	-19.05	0.00	0.00	0.00
3,100.00	1.54	42.13	3,099.62	21.17	19.15	-21.03	0.00	0.00	0.00
3,200.00	1.54	42.13	3,199.58	23.16	20.95	-23.01	0.00	0.00	0.00
3,300.00	1.54	42.13	3,299.55	25.15	22.75	-24.99	0.00	0.00	0.00
3,400.00	1.54	42.13	3,399.51	27.15	24.56	-26.97	0.00	0.00	0.00
3,500.00	1.54	42.13	3,499.48	29.14	26.36	-28.95	0.00	0.00	0.00
3,600.00	1.54	42.13	3,599.44	31.14	28.16	-30.93	0.00	0.00	0.00
3,700.00	1.54	42.13	3,699.40	33.13	29.97	-32.91	0.00	0.00	0.00
3,800.00	1.54	42.13	3,799.37	35.12	31.77	-34.90	0.00	0.00	0.00
3,900.00	1.54	42.13	3,899.33	37.12	33.57	-36.88	0.00	0.00	0.00
4,000.00	1.54	42.13	3,999.30	39.11	35.38	-38.86	0.00	0.00	0.00
4,100.00	1.54	42.13	4,099.26	41.11	37.18	-40.84	0.00	0.00	0.00
4,200.00	1.54	42.13	4,199.22	43.10	38.99	-42.82	0.00	0.00	0.00
4,300.00	1.54	42.13	4,299.19	45.09	40.79	-44.80	0.00	0.00	0.00
4,400.00	1.54	42.13	4,399.15	47.09	42.59	-46.78	0.00	0.00	0.00
4,500.00	1.54	42.13	4,499.11	49.08	44.40	-48.76	0.00	0.00	0.00
4,600.00	1.54	42.13	4,599.08	51.08	46.20	-50.74	0.00	0.00	0.00
4,700.00	1.54	42.13	4,699.04	53.07	48.00	-52.72	0.00	0.00	0.00
4,800.00	1.54	42.13	4,799.01	55.06	49.81	-54.71	0.00	0.00	0.00
4,900.00	1.54	42.13	4,898.97	57.06	51.61	-56.69	0.00	0.00	0.00
5,000.00	1.54	42.13	4,998.93	59.05	53.41	-58.67	0.00	0.00	0.00
5,100.00	1.54	42.13	5,098.90	61.05	55.22	-60.65	0.00	0.00	0.00
5,200.00	1.54	42.13	5,198.86	63.04	57.02	-62.63	0.00	0.00	0.00

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Site:	Severus 31-5 Fed Com	**North Reference:**	Grid
Well:	#10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	1.54	42.13	5,298.83	65.03	58.83	-64.61	0.00	0.00	0.00
5,400.00	1.54	42.13	5,398.79	67.03	60.63	-66.59	0.00	0.00	0.00
5,500.00	1.54	42.13	5,498.75	69.02	62.43	-68.57	0.00	0.00	0.00
5,600.00	1.54	42.13	5,598.72	71.02	64.24	-70.55	0.00	0.00	0.00
5,700.00	1.54	42.13	5,698.68	73.01	66.04	-72.54	0.00	0.00	0.00
5,800.00	1.54	42.13	5,798.64	75.00	67.84	-74.52	0.00	0.00	0.00
5,900.00	1.54	42.13	5,898.61	77.00	69.65	-76.50	0.00	0.00	0.00
6,000.00	1.54	42.13	5,998.57	78.99	71.45	-78.48	0.00	0.00	0.00
6,100.00	1.54	42.13	6,098.54	80.99	73.25	-80.46	0.00	0.00	0.00
6,200.00	1.54	42.13	6,198.50	82.98	75.06	-82.44	0.00	0.00	0.00
6,300.00	1.54	42.13	6,298.46	84.97	76.86	-84.42	0.00	0.00	0.00
6,400.00	1.54	42.13	6,398.43	86.97	78.67	-86.40	0.00	0.00	0.00
6,500.00	1.54	42.13	6,498.39	88.96	80.47	-88.38	0.00	0.00	0.00
6,600.00	1.54	42.13	6,598.36	90.96	82.27	-90.36	0.00	0.00	0.00
6,700.00	1.54	42.13	6,698.32	92.95	84.08	-92.35	0.00	0.00	0.00
6,800.00	1.54	42.13	6,798.28	94.94	85.88	-94.33	0.00	0.00	0.00
6,900.00	1.54	42.13	6,898.25	96.94	87.68	-96.31	0.00	0.00	0.00
7,000.00	1.54	42.13	6,998.21	98.93	89.49	-98.29	0.00	0.00	0.00
7,100.00	1.54	42.13	7,098.17	100.93	91.29	-100.27	0.00	0.00	0.00
7,200.00	1.54	42.13	7,198.14	102.92	93.10	-102.25	0.00	0.00	0.00
7,300.00	1.54	42.13	7,298.10	104.91	94.90	-104.23	0.00	0.00	0.00
7,400.00	1.54	42.13	7,398.07	106.91	96.70	-106.21	0.00	0.00	0.00
7,500.00	1.54	42.13	7,498.03	108.90	98.51	-108.19	0.00	0.00	0.00
7,600.00	1.54	42.13	7,597.99	110.90	100.31	-110.17	0.00	0.00	0.00
7,700.00	1.54	42.13	7,697.96	112.89	102.11	-112.16	0.00	0.00	0.00
7,800.00	1.54	42.13	7,797.92	114.88	103.92	-114.14	0.00	0.00	0.00
7,900.00	1.54	42.13	7,897.89	116.88	105.72	-116.12	0.00	0.00	0.00
8,000.00	1.54	42.13	7,997.85	118.87	107.52	-118.10	0.00	0.00	0.00
8,100.00	1.54	42.13	8,097.81	120.87	109.33	-120.08	0.00	0.00	0.00
8,200.00	1.54	42.13	8,197.78	122.86	111.13	-122.06	0.00	0.00	0.00
8,300.00	1.54	42.13	8,297.74	124.85	112.94	-124.04	0.00	0.00	0.00
8,400.00	1.54	42.13	8,397.71	126.85	114.74	-126.02	0.00	0.00	0.00
8,500.00	1.54	42.13	8,497.67	128.84	116.54	-128.00	0.00	0.00	0.00
8,600.00	1.54	42.13	8,597.63	130.84	118.35	-129.99	0.00	0.00	0.00
8,700.00	1.54	42.13	8,697.60	132.83	120.15	-131.97	0.00	0.00	0.00
8,800.00	1.54	42.13	8,797.56	134.82	121.95	-133.95	0.00	0.00	0.00
8,900.00	1.54	42.13	8,897.52	136.82	123.76	-135.93	0.00	0.00	0.00
9,000.00	1.54	42.13	8,997.49	138.81	125.56	-137.91	0.00	0.00	0.00
9,100.00	1.54	42.13	9,097.45	140.81	127.36	-139.89	0.00	0.00	0.00
9,200.00	1.54	42.13	9,197.42	142.80	129.17	-141.87	0.00	0.00	0.00
9,300.00	1.54	42.13	9,297.38	144.79	130.97	-143.85	0.00	0.00	0.00
9,400.00	1.54	42.13	9,397.34	146.79	132.78	-145.83	0.00	0.00	0.00
9,500.00	1.54	42.13	9,497.31	148.78	134.58	-147.81	0.00	0.00	0.00
9,600.00	1.54	42.13	9,597.27	150.78	136.38	-149.80	0.00	0.00	0.00
9,700.00	1.54	42.13	9,697.24	152.77	138.19	-151.78	0.00	0.00	0.00
9,800.00	1.54	42.13	9,797.20	154.76	139.99	-153.76	0.00	0.00	0.00
9,900.00	1.54	42.13	9,897.16	156.76	141.79	-155.74	0.00	0.00	0.00
10,000.00	1.54	42.13	9,997.13	158.75	143.60	-157.72	0.00	0.00	0.00
10,015.69	1.54	42.13	10,012.81	159.06	143.88	-158.03	0.00	0.00	0.00
10,050.00	2.52	155.20	10,047.11	158.72	144.51	-157.68	10.00	2.86	329.57
10,100.00	7.37	171.51	10,096.91	154.55	145.44	-153.50	10.00	9.70	32.62
10,150.00	12.34	174.83	10,146.16	146.05	146.40	-145.00	10.00	9.94	6.63
10,200.00	17.33	176.26	10,194.48	133.29	147.37	-132.24	10.00	9.97	2.85
10,250.00	22.32	177.06	10,241.50	116.37	148.34	-115.31	10.00	9.99	1.61

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Site:	Severus 31-5 Fed Com	**North Reference:**	Grid
Well:	#10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.00	27.31	177.58	10,286.87	95.42	149.31	-94.34	10.00	9.99	1.04
10,350.00	32.31	177.95	10,330.24	70.58	150.28	-69.51	10.00	9.99	0.74
10,400.00	37.31	178.23	10,371.28	42.07	151.22	-40.98	10.00	9.99	0.56
10,450.00	42.31	178.45	10,409.67	10.08	152.15	-8.99	10.00	10.00	0.45
10,500.00	47.30	178.64	10,445.14	-25.13	153.04	26.23	10.00	10.00	0.37
10,550.00	52.30	178.79	10,477.40	-63.30	153.89	64.40	10.00	10.00	0.31
10,600.00	57.30	178.93	10,506.21	-104.14	154.71	105.24	10.00	10.00	0.27
10,650.00	62.30	179.05	10,531.35	-147.33	155.47	148.44	10.00	10.00	0.24
10,700.00	67.30	179.16	10,552.63	-192.56	156.17	193.67	10.00	10.00	0.22
10,750.00	72.30	179.26	10,569.89	-239.46	156.82	240.58	10.00	10.00	0.21
10,800.00	77.30	179.36	10,583.00	-287.69	157.40	288.81	10.00	10.00	0.20
10,850.00	82.30	179.46	10,591.85	-336.88	157.90	338.00	10.00	10.00	0.19
10,900.00	87.30	179.55	10,596.39	-386.66	158.34	387.78	10.00	10.00	0.18
10,921.75	89.47	179.59	10,597.00	-408.40	158.50	409.52	10.00	10.00	0.18
11,000.00	89.47	179.59	10,597.72	-486.64	159.06	487.77	0.00	0.00	0.00
11,100.00	89.47	179.59	10,598.65	-586.64	159.79	587.77	0.00	0.00	0.00
11,200.00	89.47	179.59	10,599.57	-686.63	160.51	687.76	0.00	0.00	0.00
11,300.00	89.47	179.59	10,600.49	-786.62	161.23	787.76	0.00	0.00	0.00
11,400.00	89.47	179.59	10,601.42	-886.62	161.95	887.75	0.00	0.00	0.00
11,500.00	89.47	179.59	10,602.34	-986.61	162.67	987.75	0.00	0.00	0.00
11,600.00	89.47	179.59	10,603.26	-1,086.60	163.39	1,087.74	0.00	0.00	0.00
11,700.00	89.47	179.59	10,604.19	-1,186.60	164.11	1,187.74	0.00	0.00	0.00
11,800.00	89.47	179.59	10,605.11	-1,286.59	164.83	1,287.74	0.00	0.00	0.00
11,900.00	89.47	179.59	10,606.03	-1,386.58	165.55	1,387.73	0.00	0.00	0.00
12,000.00	89.47	179.59	10,606.96	-1,486.57	166.28	1,487.73	0.00	0.00	0.00
12,100.00	89.47	179.59	10,607.88	-1,586.57	167.00	1,587.72	0.00	0.00	0.00
12,200.00	89.47	179.59	10,608.80	-1,686.56	167.72	1,687.72	0.00	0.00	0.00
12,300.00	89.47	179.59	10,609.73	-1,786.55	168.44	1,787.71	0.00	0.00	0.00
12,400.00	89.47	179.59	10,610.65	-1,886.55	169.16	1,887.71	0.00	0.00	0.00
12,500.00	89.47	179.59	10,611.58	-1,986.54	169.88	1,987.71	0.00	0.00	0.00
12,600.00	89.47	179.59	10,612.50	-2,086.53	170.60	2,087.70	0.00	0.00	0.00
12,700.00	89.47	179.59	10,613.42	-2,186.53	171.32	2,187.70	0.00	0.00	0.00
12,800.00	89.47	179.59	10,614.35	-2,286.52	172.04	2,287.69	0.00	0.00	0.00
12,900.00	89.47	179.59	10,615.27	-2,386.51	172.77	2,387.69	0.00	0.00	0.00
13,000.00	89.47	179.59	10,616.19	-2,486.51	173.49	2,487.68	0.00	0.00	0.00
13,100.00	89.47	179.59	10,617.12	-2,586.50	174.21	2,587.68	0.00	0.00	0.00
13,200.00	89.47	179.59	10,618.04	-2,686.49	174.93	2,687.68	0.00	0.00	0.00
13,300.00	89.47	179.59	10,618.96	-2,786.49	175.65	2,787.67	0.00	0.00	0.00
13,400.00	89.47	179.59	10,619.89	-2,886.48	176.37	2,887.67	0.00	0.00	0.00
13,500.00	89.47	179.59	10,620.81	-2,986.47	177.09	2,987.66	0.00	0.00	0.00
13,600.00	89.47	179.59	10,621.73	-3,086.47	177.81	3,087.66	0.00	0.00	0.00
13,700.00	89.47	179.59	10,622.66	-3,186.46	178.54	3,187.65	0.00	0.00	0.00
13,800.00	89.47	179.59	10,623.58	-3,286.45	179.26	3,287.65	0.00	0.00	0.00
13,900.00	89.47	179.59	10,624.50	-3,386.44	179.98	3,387.65	0.00	0.00	0.00
14,000.00	89.47	179.59	10,625.43	-3,486.44	180.70	3,487.64	0.00	0.00	0.00
14,100.00	89.47	179.59	10,626.35	-3,586.43	181.42	3,587.64	0.00	0.00	0.00
14,200.00	89.47	179.59	10,627.27	-3,686.42	182.14	3,687.63	0.00	0.00	0.00
14,300.00	89.47	179.59	10,628.20	-3,786.42	182.86	3,787.63	0.00	0.00	0.00
14,400.00	89.47	179.59	10,629.12	-3,886.41	183.58	3,887.62	0.00	0.00	0.00
14,500.00	89.47	179.59	10,630.05	-3,986.40	184.30	3,987.62	0.00	0.00	0.00
14,600.00	89.47	179.59	10,630.97	-4,086.40	185.03	4,087.62	0.00	0.00	0.00
14,700.00	89.47	179.59	10,631.89	-4,186.39	185.75	4,187.61	0.00	0.00	0.00
14,800.00	89.47	179.59	10,632.82	-4,286.38	186.47	4,287.61	0.00	0.00	0.00
14,900.00	89.47	179.59	10,633.74	-4,386.38	187.19	4,387.60	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #10H
Company:	XTO Energy	**TVD Reference:**	RKB= 25' @ 3723.00usft (Unknown)
Project:	Lea County, NM (NAD-27)	**MD Reference:**	RKB= 25' @ 3723.00usft (Unknown)
Site:	Severus 31-5 Fed Com	**North Reference:**	Grid
Well:	#10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,000.00	89.47	179.59	10,634.66	-4,486.37	187.91	4,487.60	0.00	0.00	0.00
15,100.00	89.47	179.59	10,635.59	-4,586.36	188.63	4,587.59	0.00	0.00	0.00
15,200.00	89.47	179.59	10,636.51	-4,686.36	189.35	4,687.59	0.00	0.00	0.00
15,300.00	89.47	179.59	10,637.43	-4,786.35	190.07	4,787.59	0.00	0.00	0.00
15,400.00	89.47	179.59	10,638.36	-4,886.34	190.79	4,887.58	0.00	0.00	0.00
15,500.00	89.47	179.59	10,639.28	-4,986.33	191.52	4,987.58	0.00	0.00	0.00
15,600.00	89.47	179.59	10,640.20	-5,086.33	192.24	5,087.57	0.00	0.00	0.00
15,700.00	89.47	179.59	10,641.13	-5,186.32	192.96	5,187.57	0.00	0.00	0.00
15,800.00	89.47	179.59	10,642.05	-5,286.31	193.68	5,287.56	0.00	0.00	0.00
15,900.00	89.47	179.59	10,642.97	-5,386.31	194.40	5,387.56	0.00	0.00	0.00
16,000.00	89.47	179.59	10,643.90	-5,486.30	195.12	5,487.56	0.00	0.00	0.00
16,100.00	89.47	179.59	10,644.82	-5,586.29	195.84	5,587.55	0.00	0.00	0.00
16,200.00	89.47	179.59	10,645.74	-5,686.29	196.56	5,687.55	0.00	0.00	0.00
16,300.00	89.47	179.59	10,646.67	-5,786.28	197.28	5,787.54	0.00	0.00	0.00
16,400.00	89.47	179.59	10,647.59	-5,886.27	198.01	5,887.54	0.00	0.00	0.00
16,500.00	89.47	179.59	10,648.52	-5,986.27	198.73	5,987.53	0.00	0.00	0.00
16,600.00	89.47	179.59	10,649.44	-6,086.26	199.45	6,087.53	0.00	0.00	0.00
16,700.00	89.47	179.59	10,650.36	-6,186.25	200.17	6,187.53	0.00	0.00	0.00
16,800.00	89.47	179.59	10,651.29	-6,286.25	200.89	6,287.52	0.00	0.00	0.00
16,900.00	89.47	179.59	10,652.21	-6,386.24	201.61	6,387.52	0.00	0.00	0.00
17,000.00	89.47	179.59	10,653.13	-6,486.23	202.33	6,487.51	0.00	0.00	0.00
17,100.00	89.47	179.59	10,654.06	-6,586.22	203.05	6,587.51	0.00	0.00	0.00
17,200.00	89.47	179.59	10,654.98	-6,686.22	203.78	6,687.51	0.00	0.00	0.00
17,300.00	89.47	179.59	10,655.90	-6,786.21	204.50	6,787.50	0.00	0.00	0.00
17,400.00	89.47	179.59	10,656.83	-6,886.20	205.22	6,887.50	0.00	0.00	0.00
17,500.00	89.47	179.59	10,657.75	-6,986.20	205.94	6,987.49	0.00	0.00	0.00
17,600.00	89.47	179.59	10,658.67	-7,086.19	206.66	7,087.49	0.00	0.00	0.00
17,700.00	89.47	179.59	10,659.60	-7,186.18	207.38	7,187.48	0.00	0.00	0.00
17,800.00	89.47	179.59	10,660.52	-7,286.18	208.10	7,287.48	0.00	0.00	0.00
17,900.00	89.47	179.59	10,661.44	-7,386.17	208.82	7,387.48	0.00	0.00	0.00
18,000.00	89.47	179.59	10,662.37	-7,486.16	209.54	7,487.47	0.00	0.00	0.00
18,100.00	89.47	179.59	10,663.29	-7,586.16	210.27	7,587.47	0.00	0.00	0.00
18,200.00	89.47	179.59	10,664.21	-7,686.15	210.99	7,687.46	0.00	0.00	0.00
18,285.06	89.47	179.59	10,665.00	-7,771.20	211.60	7,772.52	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #10H
Company:	XTO Energy	**TVD Reference:**	RKB= 25' @ 3723.00usft (Unknown)
Project:	Lea County, NM (NAD-27)	**MD Reference:**	RKB= 25' @ 3723.00usft (Unknown)
Site:	Severus 31-5 Fed Com	**North Reference:**	Grid
Well:	#10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Severus 31-5 FC #10I - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	559,845.00	726,653.90	32° 32' 13.098 N	103° 35' 52.330 W
Severus 31-5 FC #10I - plan hits target center - Point	0.00	0.00	10,597.00	-408.40	158.50	559,436.60	726,812.40	32° 32' 9.046 N	103° 35' 50.511 W
Severus 31-5 FC #10I - plan misses target center by 0.06usft at 18155.05usft MD (10663.80 TVD, -7641.20 N, 210.66 E) - Point	0.00	0.00	10,663.80	-7,641.20	210.60	552,203.80	726,864.50	32° 30' 57.473 N	103° 35' 50.486 W
Severus 31-5 FC #10I - plan hits target center - Point	0.00	0.00	10,665.00	-7,771.20	211.60	552,073.80	726,865.50	32° 30' 56.187 N	103° 35' 50.485 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,561.00	1,561.00	Rustler			
1,912.00	1,912.00	Salado			
3,157.40	3,157.00	Base Salt			
3,344.47	3,344.00	Yates			
3,576.55	3,576.00	Seven Rivers			
5,634.30	5,633.00	Delaware			
7,030.80	7,029.00	Brushy Canyon			
8,672.39	8,670.00	Bone Spring			
8,838.45	8,836.00	Upper Avalon Shale			
9,164.57	9,162.00	Lower Avalon Shale			
9,666.75	9,664.00	1st Bone Spring Sand			
9,846.82	9,844.00	1st Bone Spring Lower			
9,961.86	9,959.00	2nd Bone Spring A Lime			
10,201.60	10,196.00	Second Bone Spring			
10,579.80	10,495.00	2nd Bone Spring B Sand			

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Summit Midstream system at that time. Based on current information, it is XTO Energy, Inc.'s belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
    - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
    - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
    - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

GRADE D PRESSURE TEST CERTIFICATE

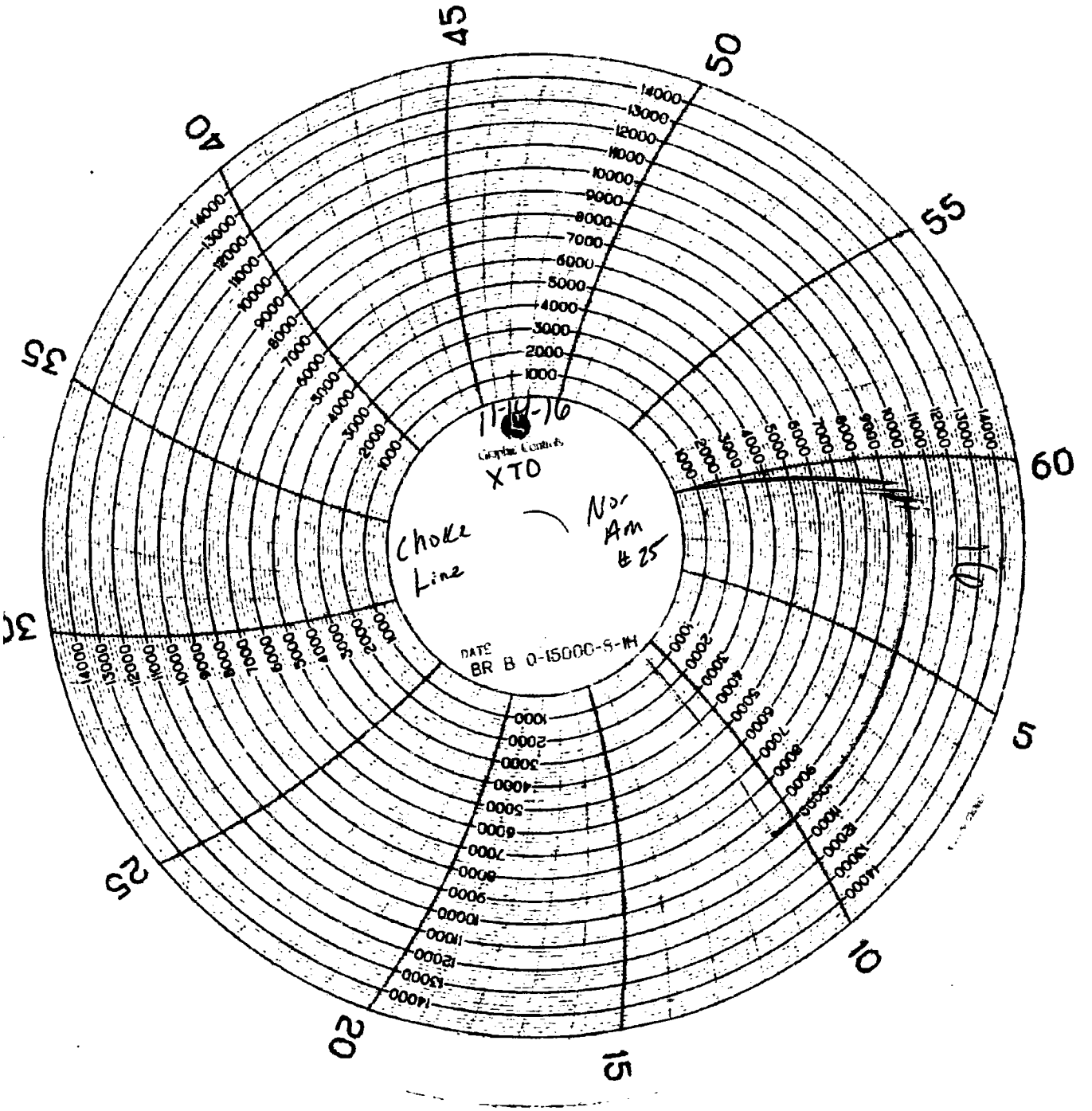
Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA

Product Description:	FD3.042.0R41/16.5KFLGE/E LE

End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011513D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality:	QUALITY	Technical Supervisor :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :		Signature :	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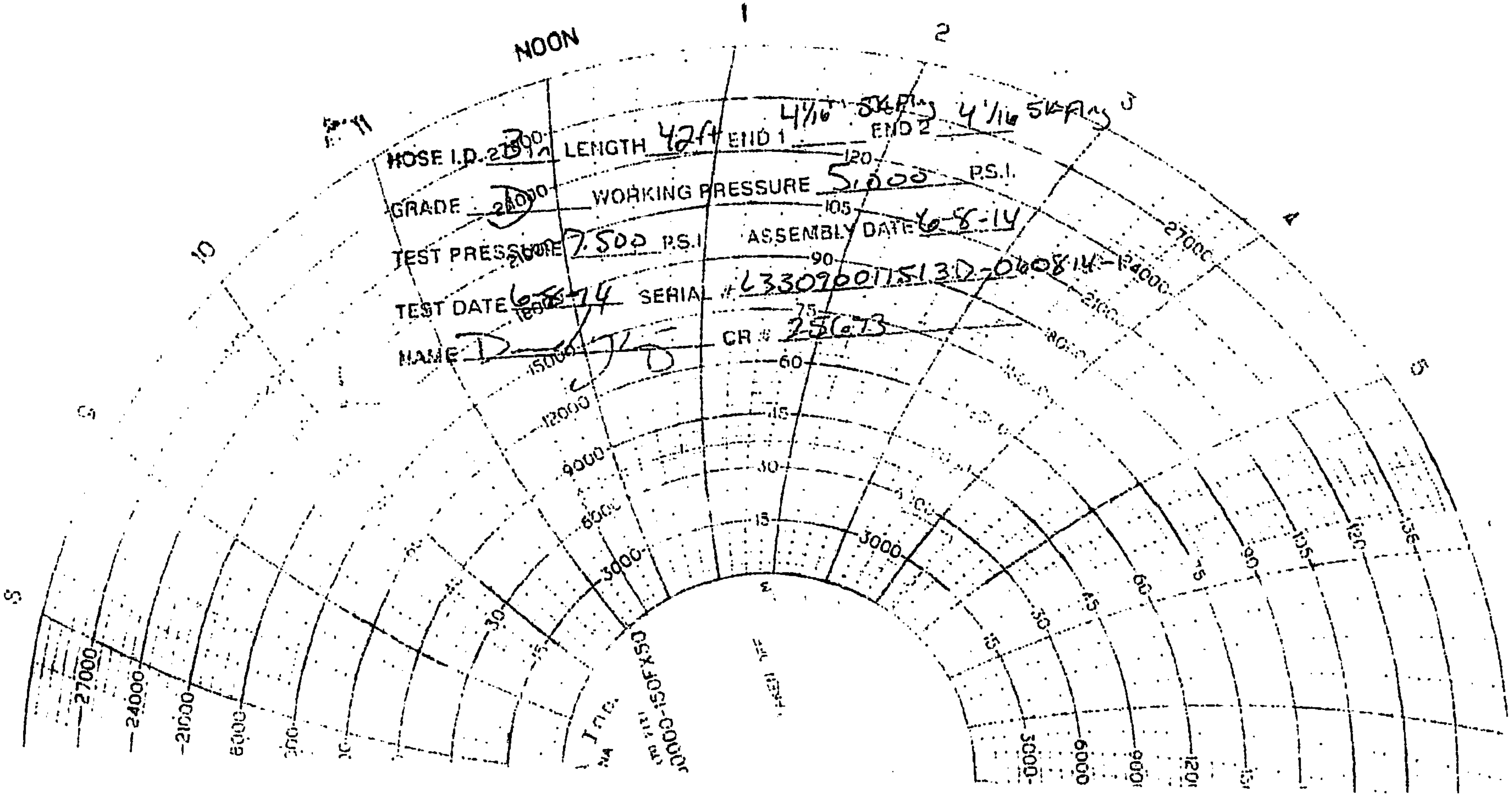
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HOSE I.D. 3in LENGTH 42ft END 1 4 1/16" 5K Flg END 2 4 1/16 5K Flg
GRADE D WORKING PRESSURE 5,000 P.S.I.
TEST PRESSURE 7,500 P.S.I ASSEMBLY DATE 6-8-14
TEST DATE 6-8-14 SERIAL # L33090011513D-060814-1
NAME
CR # 25673

APD ID: 10400038879 **Submission Date:** 02/08/2019

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Well Type: OIL WELL **Well Work Type:** Drill

[redacted]

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Severus_Fed_10H_Road_20190206120808.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** YES

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Severus_Fed_1_mile_20190104072653.pdf

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: Production Facilities. A production facility has been located and identified. No additional CTB is required for this project. Flowlines. In the event the wells are found productive, 12-6" composite flexpipe or steel flowlines with a maximum safety pressure rating of 750psi (operating pressure: 125psi) will be buried within proposed lease road corridors carrying oil, gas, and water from the proposed wells to the existing Severus CTB. If XTO decides to run surface lines, 12-4" or less flexpipe or steel flowlines with a max. safety psi rating of 750 (op. psi: 125psi) will be laid within proposed lease road corridors from the proposed wells to the proposed CTB. An additional 12-6" high pressure gas lines will be buried within the proposed lease road corridors for gas lift, fuel gas, and water. The distance of proposed flowlines per well will be approximately 2679.01' or less per well based on the location of the well pad in conjunction with the facility location with an additional 30' corridor outside of the road. All flowlines will follow proposed lease road corridors. A plat of the proposed flowline route for the lease is attached. Gas & Oil Pipeline. A gas purchaser has been identified and is responsible for building to the existing CTB. Disposal Facilities. Produced water will be hauled from location to a commercial disposal facility as needed. Once wells are drilled and completed, a 3160-5 sundry notification will be submitted to BLM in compliance with Onshore Order 7. Flare. No additional flares are needed for this project and are not being applied for with this application. Aboveground Structures. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted earth-tone colors such as 'shale green' that reduce the visual impacts of the built environment. Containment Berms. Containment berms will be constructed completely around any production facilities designed to hold fluids. The containment berms will be constructed of compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas. Electrical. No additional OHE is required for this project and is not applied for with this application.

Production Facilities map:

Severus_Fed_FL_20190104103406.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: OTHER

Describe type: 25-19S-33E

Source longitude:

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: FEDERAL

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 35000

Source volume (acre-feet): 4.511258

Source volume (gal): 1470000

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING
Describe type: 6-25S-29E

Water source type: OTHER

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: FEDERAL

Water source transport method: TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 35000

Source volume (acre-feet): 4.511258

Source volume (gal): 1470000

Water source and transportation map:

Severus_Fed_10H_Wtr_20190206120839.pdf

Water source comments: The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from a 3rd party vendor and hauled to the anticipated pit in Section 30 by transport truck using the existing and proposed roads depicted in the attached exhibits. No water well will be drilled on the location. Water for drilling, completion and dust control will be purchased from the following company: Smith Ranch Water Station Water for drilling, completion and dust control will be supplied by Smith Ranch Water Station for sale to XTO Energy, Inc. from Section 25, 19S-33E, Lea County, New Mexico. In the event that Smith Ranch Water Station does not have the appropriate water for XTO Energy, Inc. at time of drilling and completion, then XTO water will come from Intrepid Potash Company with the location of the water being in Section 6, T25S-R29E, Eddy County, New Mexico. Anticipated water usage for drilling includes an estimated 35,000 barrels of water to drill a horizontal well in a combination of fresh water and brine as detailed in the mud program in the drilling plans. These volumes are calculated for ~1.5bbls per foot of hole drilled with excess to accommodate any lost circulation or wash out that may occur. Actual water volumes used during operations will depend on the depth of the well, length of horizontal sections, and the losses that may occur during the operation. Temporary water flowlines will be permitted via ROW approval letter and proper grants as-needed based on drilling and completion schedules as needed. Well completion is expected to require approximately 300,000 barrels of water per horizontal well. Actual water volumes used during operations will depend on the depth of the well and length of horizontal sections.
New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: a. Pit 1: Private Caliche Pit, Section 35-20S-34E b. Pit 2: Private Caliche Pit, Section 25-19S-34E

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Cuttings

Amount of waste: 2100 pounds

Waste disposal frequency : One Time Only

Safe containment description: The well will be drilled utilizing a closed-loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to a New Mexico Oil Conservation Division (NMOCD) approved disposal site.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: R360 Environmental Solutions, 4507 W Carlsbad HWY, Hobbs, NM 88240, 575-393-1079

Waste type: DRILLING

Waste content description: Fluids

Amount of waste: 500 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel mud pits

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: R360 Environmental Solutions, 4507 W Carlsbad HWY, Hobbs, NM 88240, 575-393-1079

Waste type: SEWAGE

Waste content description: Human Waste

Amount of waste: 250 gallons

Waste disposal frequency : Weekly

Safe containment description: Portable, self-contained toilets will be provided for human waste disposal. Upon completion of drilling and completion activities, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to the disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: A licensed 3rd party contractor will be used to haul and dispose human waste

Waste type: GARBAGE

Waste content description: Garbage, junk and non-flammable waste materials

Amount of waste: 250 pounds

Waste disposal frequency : Weekly

Safe containment description: All garbage, junk and non-flammable waste materials will be contained in a self-contained, portable dumpster or trash cage, to prevent scattering and will be removed and deposited in an approve sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.
Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: A licensed 3rd party contractor will be used to haul and safely dispose garbage, junk and non-flammable waste materials.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Drill cuttings will be held in roll-off style mud boxes and taken to a New Mexico Oil Conservation Division (NMOCD) approved disposal site.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Severus_Fed_10H_Well_20190206120905.pdf

Comments: Multi-Well Pad

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** SEVERUS

Multiple Well Pad Number: 2

Recontouring attachment:

Drainage/Erosion control construction: All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches.

Drainage/Erosion control reclamation: Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Well pad proposed disturbance (acres): 13.55
Road proposed disturbance (acres): 0
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 0
Total proposed disturbance: 13.55

Well pad interim reclamation (acres): 0
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 0

Well pad long term disturbance (acres): 13.55
Road long term disturbance (acres): 1.21
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0
Total long term disturbance: 14.76

Disturbance Comments:

Reconstruction method: The original stock piled topsoil will be spread over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors as close as possible to the original topography. The location will then be ripped and seeded.
Topsoil redistribution: The original stock piled topsoil will be spread over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors as close as possible to the original topography. The location will then be ripped and seeded.
Soil treatment: A self-sustaining, vigorous, diverse, native (or otherwise approved) plan community will be established on the site with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation.
Existing Vegetation at the well pad: Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste.
Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste.
Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste.
Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste.
Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Jeff **Last Name:** Raines

Phone: (432)620-4349 **Email:** jeffrey_raines@xtoenergy.com

Seedbed prep: Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.
Seed BMP: If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4-6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
Seed method: Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used. If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.
Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Weed control for all phases will be through the use of approved pesticides and herbicides according to applicable State, Federal and local laws.
Weed treatment plan attachment:

Monitoring plan description: Monitoring of invasive and noxious weeds will be visual and as-needed. If it is determined additional methods are required to monitor invasive and noxious weeds, appropriate BLM authorities will be contacted with a plan of action for approval prior to implementation.
Monitoring plan attachment:

Success standards: 100% compliance with applicable regulations.

Pit closure description: There will be no reserve pit as each well will be drilled utilizing a closed loop mud system. The closed loop mud system will meet the NMOCD requirements 19.15.17.
Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Disturbance type: OTHER

Describe: Flowline

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: OTHER

Describe: Drill Island

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline,288101 ROW – O&G Facility Sites,289001 ROW-O&G Well Pad,FLPMA (Powerline)

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: PRESENT AT ON-SITE: Fernando Banos, BLM NRS Jim Stovall, BLM District Manager Jim Rutley, BLM Geologist Jimie Scott, Construction Foreman FSC, Inc., Surveyors

Other SUPO Attachment

Severus_Fed_DID_20190104080105.pdf

Severus_Fed_DI_20190104080055.pdf

Severus_Fed_Wells_20190104073128.pdf

Severus_Fed_SUPO_20190104120244.pdf

Severus_Fed_List_20190104120252.pdf

Severus_Fed_FL_20190104103434.pdf

APD ID: 10400038879 **Submission Date:** 02/08/2019

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Well Type: OIL WELL **Well Work Type:** Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

09/05/2019

APD ID: 10400038879 **Submission Date:** 02/08/2019

Operator Name: XTO ENERGY INCORPORATED

Well Name: SEVERUS 31-5 FEDERAL COM **Well Number:** 10H

Well Type: OIL WELL **Well Work Type:** Drill

Show Final Text

Bond Information

Federal/Indian APD: FED

BLM Bond number: UTB000138

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: