

AUG 02 2018

RECEIVED

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

5. Lease Serial No. NMNM0006764	
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No. <b>322180</b> BUTTERCUP 27-34 FEDERAL 1H	
9. API Well No. <b>30-015-45133</b>	
10. Field and Pool, or Exploratory HACKBERRY; BONE SPRING, NW / HA	11. Sec., T. R. M. or Blk. and Survey or Area SEC 22 / T19S / R30E / NMP
12. County or Parish EDDY	13. State NM
14. Distance in miles and direction from nearest town or post office*	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 4022 feet	16. No. of acres in lease 280
17. Spacing Unit dedicated to this well 240	18. Distance from proposed location* to nearest well, drilling, completed, 50 feet applied for, on this lease, ft. 50 feet
19. Proposed Depth 8504 feet / 18367 feet	20. BLM/BIA Bond No. on file FED: UTB000138
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3296 feet	22. Approximate date work will start* 12/01/2017
	23. Estimated duration 90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- |  |   |
|--|---|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification   |
| 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). | 6. Such other site specific information and/or plans as may be required by the BLM.             |

25. Signature (Electronic Submission)	Name (Printed/Typed) Stephanie Rabadue / Ph: (432)620-6714	Date 05/29/2017
Title Regulatory Compliance Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 07/16/2018
Title Assistant Field Manager Lands & Minerals		

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.

(Continued on page 2)

\*(Instructions on page 2)

**APPROVED WITH CONDITIONS**  
Approval Date: 07/16/2018

Ref 8-2-18

## 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 1:** 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 well, 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 directionally 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.

## 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 well 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 will 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 collects this information to allow 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 Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

---

(Continued on page 3)

(Form 3160-3, page 2)

**Approval Date: 07/16/2018**

## **Additional Operator Remarks**

### **Location of Well**

- I. SHL: NWSE / 1382 FSL / 2365 FEL / TWSP: 19S / RANGE: 30E / SECTION: 22 / LAT: 32.642412 / LONG: -103.958918 ( TVD: 0 feet, MD: 0 feet )
- PPP: NENW / 1 FNL / 2000 FWL / TWSP: 19S / RANGE: 30E / SECTION: 27 / LAT: 32.63805 / LONG: -103.96111 ( TVD: 5109 feet, MD: 5250 feet )
- PPP: NWSW / 2310 FNL / 400 FWL / TWSP: 19S / RANGE: 30E / SECTION: 27 / LAT: 32.5630463 / LONG: -103.967103 ( TVD: 8549 feet, MD: 11400 feet )
- BHL: SWSW / 200 FSL / 400 FWL / TWSP: 19S / RANGE: 30E / SECTION: 34 / LAT: 32.610158 / LONG: -103.967107 ( TVD: 8504 feet, MD: 18367 feet )

## **BLM Point of Contact**

Name: Deborah Ham

Title: Legal Landlaw Examiner

Phone: 5752345965

Email: dham@blm.gov

## **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 OPERATIONS  
CONDITIONS OF APPROVAL**

**NM OIL CONSERVATION  
ARTESIA DISTRICT  
AUG 02 2018  
RECEIVED**

<b>OPERATOR'S NAME:</b>	<b>XTO Energy</b>
<b>LEASE NO.:</b>	<b>NMNM-0006764</b>
<b>WELL NAME &amp; NO.:</b>	<b>Buttercup 27-34 Federal 2H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>1382' FSL &amp; 2365' FEL</b>
<b>BOTTOM HOLE FOOTAGE</b>	<b>0200' FSL &amp; 0400' FWL Sec. 34, T. 19 S., R 30 E.</b>
<b>LOCATION:</b>	<b>Section 22, T. 19 S., R 30 E., NMPM</b>
<b>COUNTY:</b>	<b>County, New Mexico</b>

**Operator will need to submit a sundry to add "COM" to the well name.**

**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.

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)

**Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

**A. Hydrogen Sulfide**

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, 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.**

**Capitan Reef**

**R-111-P-Potash**

**Possibility of water in the Artesia Group and Salado.**

**Possibility of lost circulation in the Artesia Group, Rustler, Capitan Reef, and Delaware.**

1. The 18-5/8 inch surface casing shall be set at approximately 390 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. Excess calculates to negative 26% - Additional cement will be required.**
  - 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.
2. The minimum required fill of cement behind the 13-3/8 inch 1<sup>st</sup> intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

**9-5/8 2<sup>nd</sup> Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.**

3. The minimum required fill of cement behind the 9-5/8 inch 2<sup>nd</sup> intermediate casing is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef and potash.**

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

4. 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 6% - Additional cement may be required.**

5. 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.

6. 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. **A variance is granted for the use of a diverter on the 21-1/4" surface casing.**
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8 1st intermediate casing shoe shall be psi.
5. 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.

**JAM052418**

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

**NM OIL CONSERVATION  
ARTESIA DISTRICT**

**AUG 02 2018**

**RECEIVED**

OPERATOR'S NAME:	XTO ENERGY INCORPORATED
LEASE NO.:	NMNM06764
WELL NAME & NO.:	1H - BUTTERCUP 27-34 FEDERAL
SURFACE HOLE FOOTAGE:	1382'S & 2365'E
BOTTOM HOLE FOOTAGE	200'S & 400'W
LOCATION:	Section 22 T.19 S., R.30 E., NMP
COUNTY:	EDDY County, New Mexico

**TABLE OF CONTENTS**

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**
  - Cave/Karst
  - Hydrology
  - Recreation
  - Potash
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Production (Post Drilling)**
  - Pipelines
  - Electric Lines
- Interim Reclamation**
- Final Abandonment & Reclamation**

**Approval Date: 07/16/2018**

## **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)

### **Cave and Karst Conditions of Approval for APDs**

\*\* Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

#### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production:

##### **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

##### **No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

##### **Pad Berming:**

- The entire perimeter of the well pad 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 high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- 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.
- 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 access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

**Tank Battery Liners and Berms:**

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

**Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

**Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

**Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

**Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**

Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**Pressure Testing:**

The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

**ROADS**

- Roads will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction and no further construction will be done until clearance has been issued by the Authorized Officer.
- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to increase or decrease the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

**BURIED PIPELINES and/or CABLES**

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.

- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method 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.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

### **FLOWLINES (SURFACE):**

- Flowlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize the possibility of leaks and spills from entering karst systems.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

### **POWERLINES:**

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction.

- No further construction will be done until clearance has been issued by the Authorized Officer.
- Special restoration stipulations or realignment may be required.

#### **Hackberry Lake Special Recreation Management Area – Off Highway Vehicles:**

Pipelines (including surface lines) shall be buried 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. Power poles and associated ground structures (poles, guy wires) will not be placed within 20 feet of recreation trails. Guy wires must be equipped with a sleeve, tape or other industry approved apparatus that is highly visible during the day and reflective at night. Appropriate safety signage will be in place during all phases of the project. No open trenches will be left open overnight across trails without proper berming, signage or other safety measures placed at approved distances. Construction materials will not be stacked or stored within 20 feet of recreation trails. Upon completion of construction, roads and trails will be returned to pre-construction condition with no bumps or dips. All vehicle and equipment operators will observe speed limits and practice responsible defensive driving habits. Notify Outdoor Recreation Planner five business days prior to start of construction to avoid conflict with planned Recreation Events – Desert 100 Race.

The company will remove the southeast corner of pad 1 to remain at a minimum distance of 100 feet from existing Hackberry trail, or contact BLM Recreation Planner for procedure to relocate trails at company’s expense.

#### **Hydrology**

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. 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 berm shall be maintained through the life of the well and 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.

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.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting 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.

## **Potash**

Lessees must comply with the 2012 Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Mojo Jojo Drill Island (See Potash Memo and Map in attached file for Drill Island description).

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 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 Carlsbad Field Office at (575) 234-5972.

### **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**

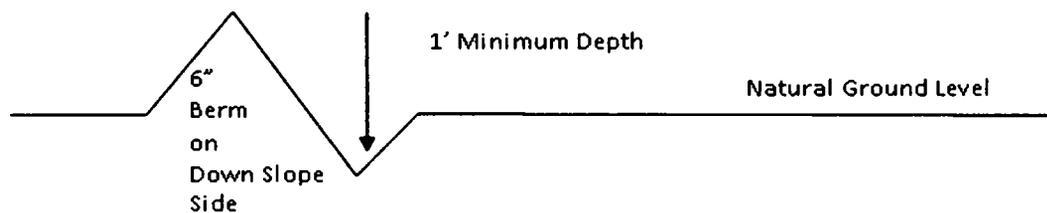
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out sloping and insloping, lead-off 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.

### Cross Section of a Typical 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 %);

### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### 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

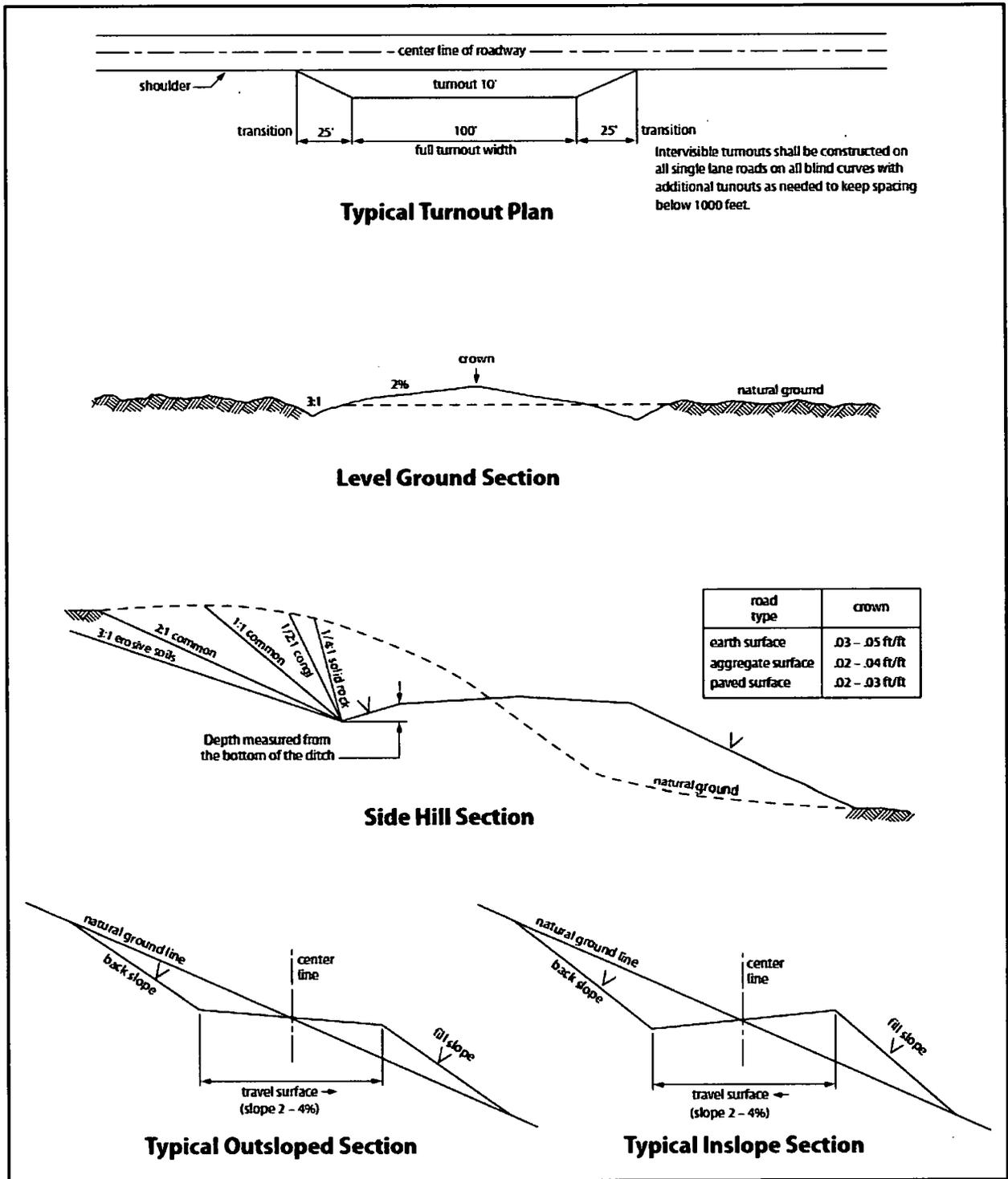


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **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

**Approval Date: 07/16/2018**

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 or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than 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 requirements 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.

#### **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

**Approval Date: 07/16/2018**

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.*)

**Approval Date: 07/16/2018**

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.

- |  |  |
|--|--|
| <input type="checkbox"/> seed mixture 1                | <input type="checkbox"/> seed mixture 3          |
| <input type="checkbox"/> seed mixture 2                | <input type="checkbox"/> seed mixture 4          |
| <input checked="" type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> 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.

## **C. ELECTRIC LINES**

## STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

**A copy of the grant 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 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. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-

**Approval Date: 07/16/2018**

of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. 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 the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. 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 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.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

**Approval Date: 07/16/2018**

## **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:

<u>Species</u>	<u>lb/acre</u>
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



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

# Operator Certification Data Report

07/17/2018

## 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:** 05/29/2017

**Title:** Regulatory Compliance Analyst

**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:**



APD ID: 10400014645

Submission Date: 05/29/2017

Highlighted data  
reflects the most  
recent changes

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

Show Final Text

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - General

APD ID: 10400014645

Tie to previous NOS?

Submission Date: 05/29/2017

BLM Office: CARLSBAD

User: Stephanie Rabadue

Title: Regulatory Compliance Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM0006764

Lease Acres: 280

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: Buttercup\_Fed\_Op\_Rights\_05-29-2017.pdf

### Operator Info

Operator Organization Name: XTO ENERGY INCORPORATED

Operator Address: 810 Houston St.

Zip: 76102

Operator PO Box:

Operator City: Ft. Worth

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: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: HACKBERRY;  
BONE SPRING, NW

Pool Name: HACKBERRY;  
BONE SPRING, NW

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

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

Describe other minerals:

Is the proposed well in a Helium production area? N Use Existing Well Pad? YES New surface disturbance? Y

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 1

Well Class: HORIZONTAL

BUTTERCUP

Number of Legs:

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: CONFIRMATION

Describe sub-type:

Distance to town:

Distance to nearest well: 50 FT

Distance to lease line: 4022 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Buttercup\_Fed\_1H\_C102\_Rev\_20170925074402.pdf

Well work start Date: 12/01/2017

Duration: 90 DAYS

### Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

	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	138 2	FSL	236 5	FEL	19S	30E	22	Aliquot NWSE	32.64241 2	- 103.9589 18	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000676 4	329 6	0	0
KOP Leg #1	138 2	FSL	236 5	FEL	19S	30E	22	Aliquot NWSE	32.64241 2	- 103.9589 18	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000676 4	- 181 3	525 0	510 9
PPP Leg #1	231 0	FNL	400	FWL	19S	30E	27	Aliquot NWS W	32.56304 63	- 103.9671 03	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 030272 0	- 525 3	114 00	854 9

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

	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
PPP Leg #1	1	FNL	200 0	FWL	19S	30E	27	Aliquot NENW	32.63805	- 103.9611 1	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000676 9A	- 181 3	525 0	510 9
EXIT Leg #1	330	FSL	400	FEL	19S	30E	34	Aliquot SWS W	32.61051 6	- 103.9671 07	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 029855 4	- 520 9	182 00	850 5
BHL Leg #1	200	FSL	400	FWL	19S	30E	34	Aliquot SWS W	32.61015 8	- 103.9671 07	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 029855 4	- 520 8	183 67	850 4



APD ID: 10400014645

Submission Date: 05/29/2017

Highlighted data  
reflects the most  
recent changes

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

Show Final Text

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	3293	0	0	ALLUVIUM,OTHER : Quaternary	NONE	No
2	RUSTLER	3062	231	231	SANDSTONE	USEABLE WATER	No
3	TOP SALT	2807	486	486	SALT	NONE	No
4	BASE OF SALT	1807	1486	1486	SALT	NONE	No
5	YATES	1622	1671	1671	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
6	CAPITAN REEF	992	2301	2301	LIMESTONE	USEABLE WATER	No
7	CHERRY CANYON	-703	3996	3996	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
8	BRUSHY CANYON	-1303	4596	4596	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
9	BONE SPRING	-2813	6106	6106	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
10	BONE SPRING 1ST	-4281	7574	7574	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
11	BONE SPRING 2ND	-5105	8398	8398	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	Yes

### Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 450

**Equipment:** The blow out preventer equipment (BOP) for the temporary wellhead consists of a 21-1/4" minimum 2M Hydril. MASP should not exceed 466 psi. 2M diagram attached.

**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:** All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure.

**Choke Diagram Attachment:**

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

Buttercup\_Fed\_1H\_CM\_05-29-2017.pdf

**BOP Diagram Attachment:**

Buttercup\_Fed\_1H\_2MBOP\_05-29-2017.pdf

**Pressure Rating (PSI): 3M**

**Rating Depth: 7636**

**Equipment:** The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 3M 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:** All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-5/8" 3M bradenhead and flange, the BOP test will be limited to 3000psi. When nipping up on the 9-5/8", the BOP will be tested to a minimum of 3000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagram is attached. Blind rams will be function tested each trip, pipe rams will be function tested each day.

**Choke Diagram Attachment:**

Buttercup\_Fed\_1H\_CM\_05-29-2017.pdf

**BOP Diagram Attachment:**

Buttercup\_Fed\_1H\_3MBOP\_05-29-2017.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	26	18.625	NEW	API	N	0	450	0	450	-1813	-2263	450	H-40	87.5	STC	3.06	7.92	DRY	14.2	DRY	14.2
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	1500	0	1500	-1813	-3313	1500	J-55	54.5	BUTT	2.39	3.43	DRY	9.32	DRY	9.32
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4050	0	4050	-1813	-5863	4050	J-55	36	LTC	2.39	3.59	DRY	3.48	DRY	3.48
4	PRODUCTION	8.75	5.5	NEW	API	N	0	18367	0	8504	-1813	-10317	18367	P-110	17	BUTT	1.83	1.12	DRY	2.23	DRY	2.23

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**Casing Attachments**

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Buttercup\_Fed\_1H\_Csg\_Specs\_05-29-2017.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Buttercup\_Fed\_1H\_Csg\_Specs\_05-29-2017.pdf

---

**Casing ID:** 3            **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Buttercup\_Fed\_1H\_Csg\_Specs\_05-29-2017.pdf

---

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

**Casing Attachments**

Casing ID: 4                      String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Buttercup\_Fed\_1H\_Csg\_Specs\_05-29-2017.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		0	450	1197	1.35	14.8	1615.95	100	HalCem-C	+ 2% CaCl

INTERMEDIATE	Lead		0	1500	739	1.88	12.9	1389.32	100	EconoCem-HLC	+ 5% salt + 5 lbm/sk Kol-Seal
INTERMEDIATE	Tail				522	1.33	14.8	694.26	100	HalCem-C	none
INTERMEDIATE	Lead	2100	0	2100	422	1.88	12.9	793.36	100	EconoCem-HLC	+ 5% salt + 5 lbm/sk Kol-Seal
INTERMEDIATE	Tail				235	1.33	14.8	312.55	100	HalCem-C	none
INTERMEDIATE	Lead	2100	2100	4050	590	1.88	12.9	1109.2	100	EconoCem-HLC	+ 5% salt + 5 lbm/sk Kol-Seal

PRODUCTION	Lead		0	18367	1004	2.69	10.5	2700.76	30	Tuned Light	+ 0.5 lbm/sk CFR-3 + 1.5 lbm/sk salt + 0.1% HR601
PRODUCTION	Tail				1436	1.61	13.2	2311.96	30	VersaCem PBHS2	+ 0.5% LAP-1 + 0.25 lbm/sk D-air 5000 + 0.2% HR 601 + 0.4% CFR-3 + 1 pps Salt

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

### 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 and 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
0	450	OTHER : FW/Native	8.5	8.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
450	1500	SALT SATURATED	9.8	10.2							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
1500	4050	OTHER : FW/Cut Brine/Poly- Sweeps	8.5	8.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

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
											as a closed loop system
4050	1836 7	OTHER : FW/Cut Brine/Poly- Sweeps	8.6	9.2							

### Section 6 - Test, Logging, Coring

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

Mud Logger: Mud Logging Unit (2 man) on below intermediate casing.

Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from kick-off point to intermediate casing shoe.

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

CBL,CNL,DS,DLL,GR,MUDLOG

**Coring operation description for the well:**

No coring will take place on this well.

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 4091

**Anticipated Surface Pressure:** 2210.22

**Anticipated Bottom Hole Temperature(F):** 160

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** YES

**Describe:**

Potential loss of circulation through the Capitan Reef.

**Contingency Plans geohazards description:**

The necessary mud products for weight addition and fluid loss control will be on location at all times. 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 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**Hydrogen sulfide drilling operations plan:**

Buttercup\_Fed\_H2S\_Plan\_05-29-2017.pdf

Buttercup\_Fed\_1H\_H2S\_Dia\_05-29-2017.pdf

**Section 8 - Other Information**

**Proposed horizontal/directional/multi-lateral plan submission:**

Buttercup\_Fed\_1H\_Direct\_05-29-2017.pdf

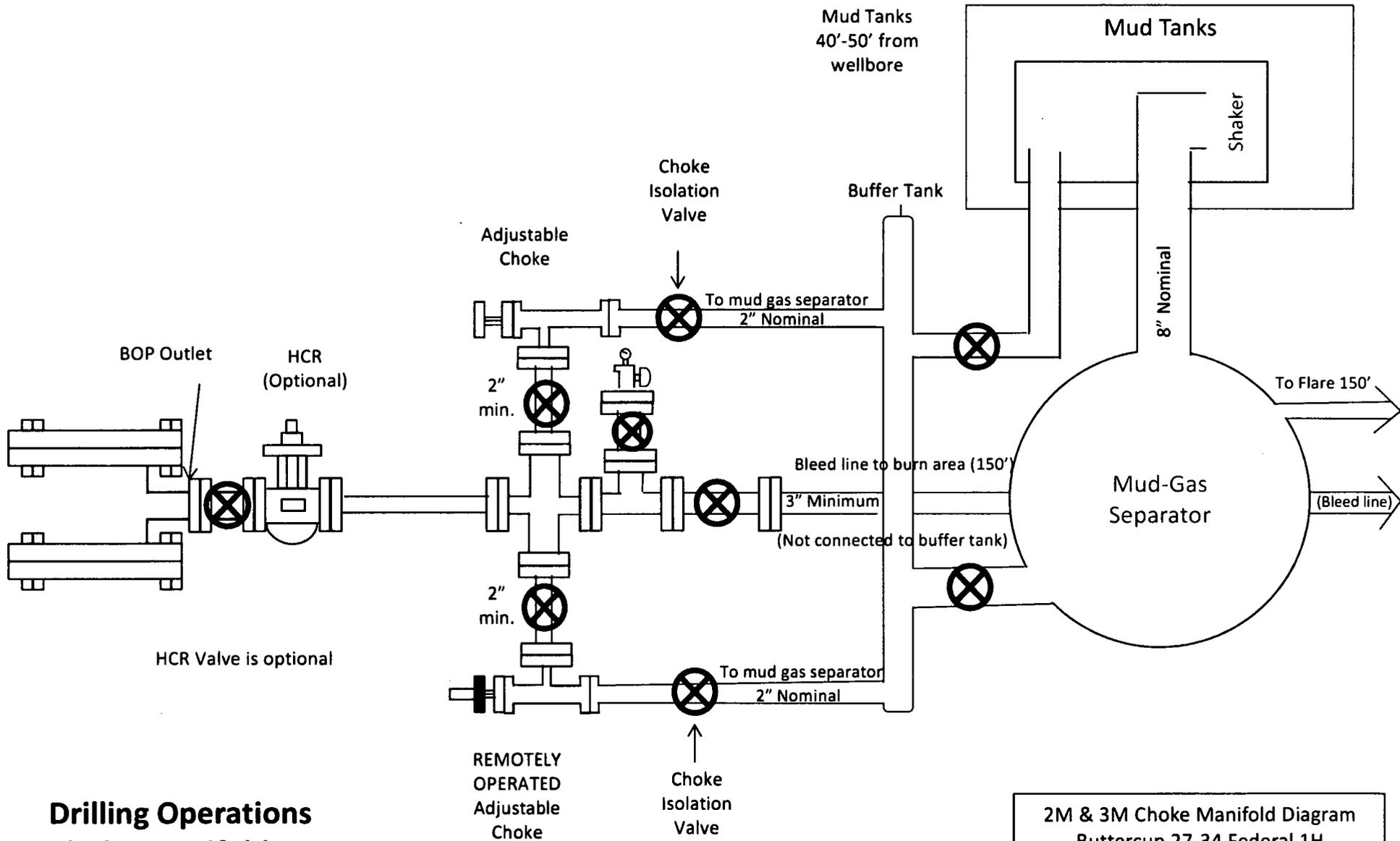
**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

Buttercup\_Fed\_1H\_GCP\_20180519203953.pdf

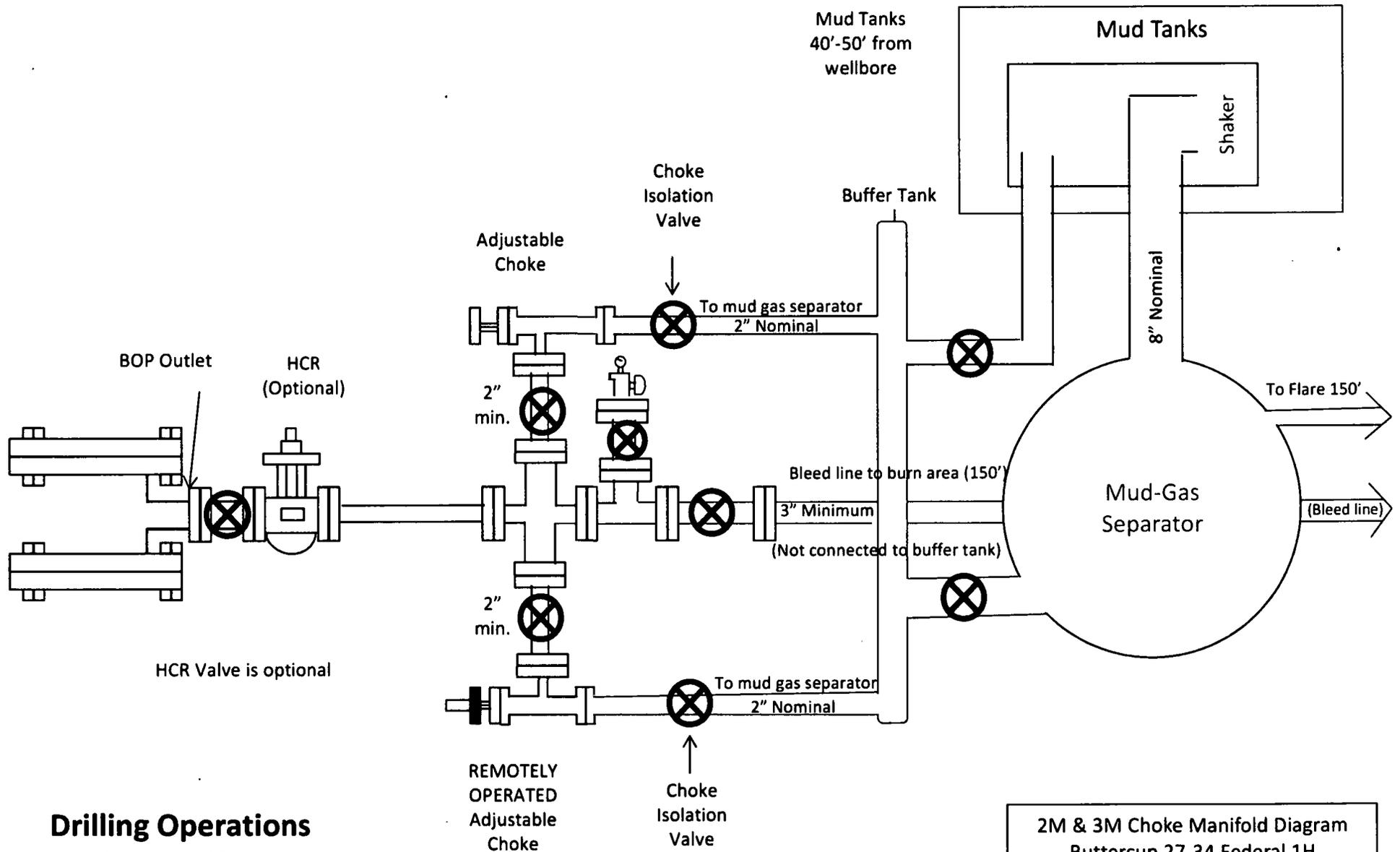
**Other Variance attachment:**

Buttercup\_Fed\_1H\_FH\_05-29-2017.pdf



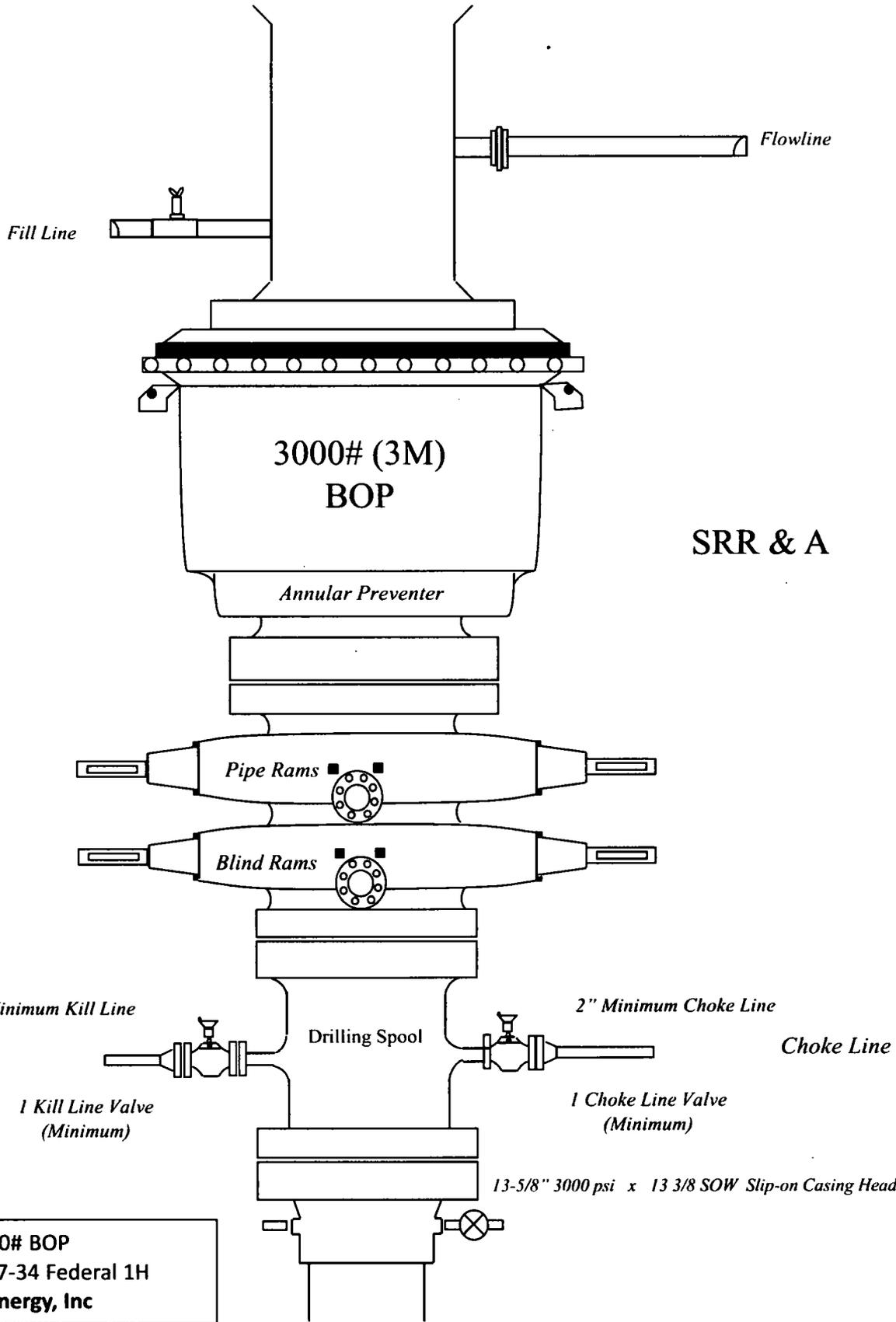
**Drilling Operations  
Choke Manifold  
2M & 3M Service**

2M & 3M Choke Manifold Diagram  
Buttercup 27-34 Federal 1H  
XTO Energy, Inc



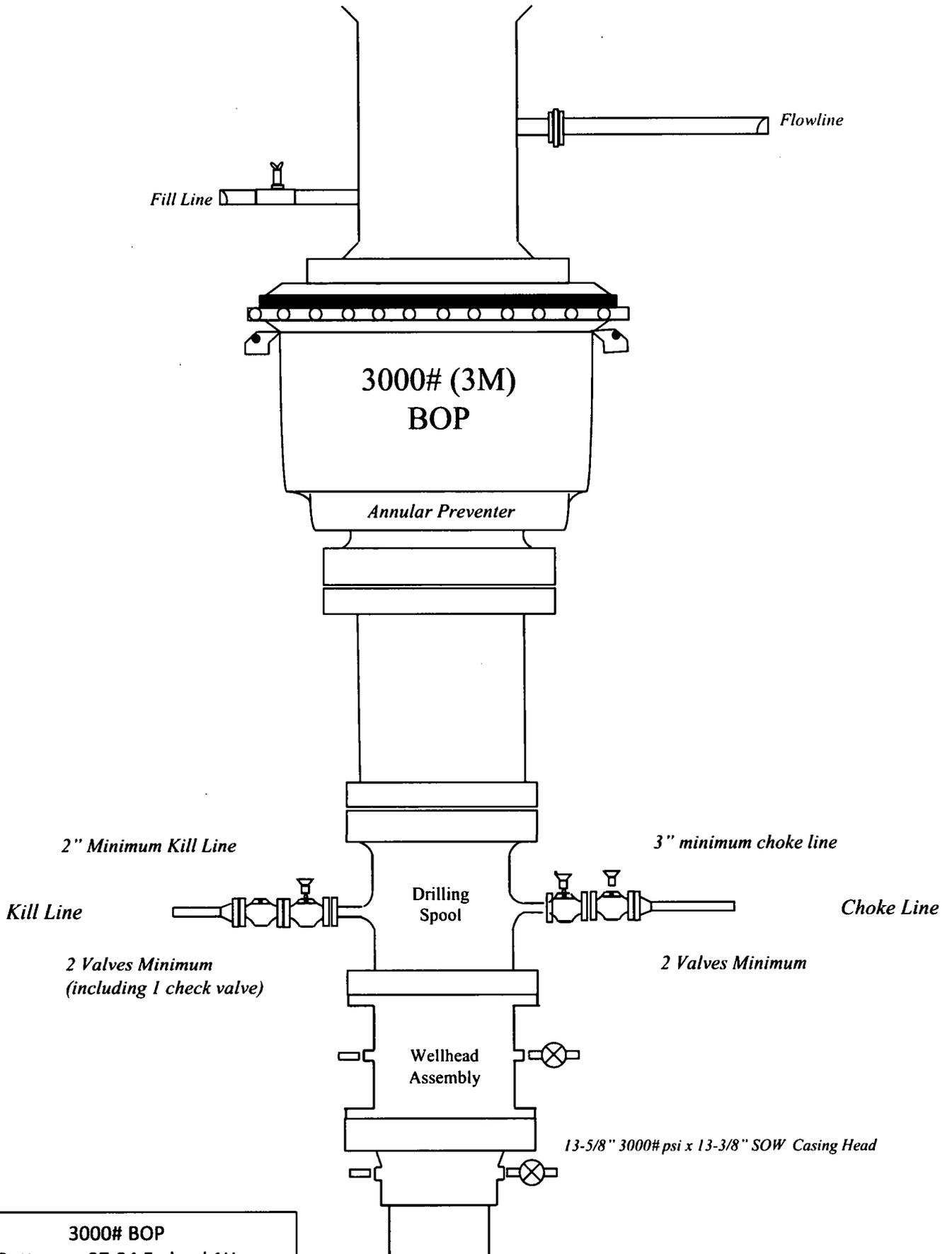
**Drilling Operations  
Choke Manifold  
2M & 3M Service**

**2M & 3M Choke Manifold Diagram  
Buttercup 27-34 Federal 1H  
XTO Energy, Inc**

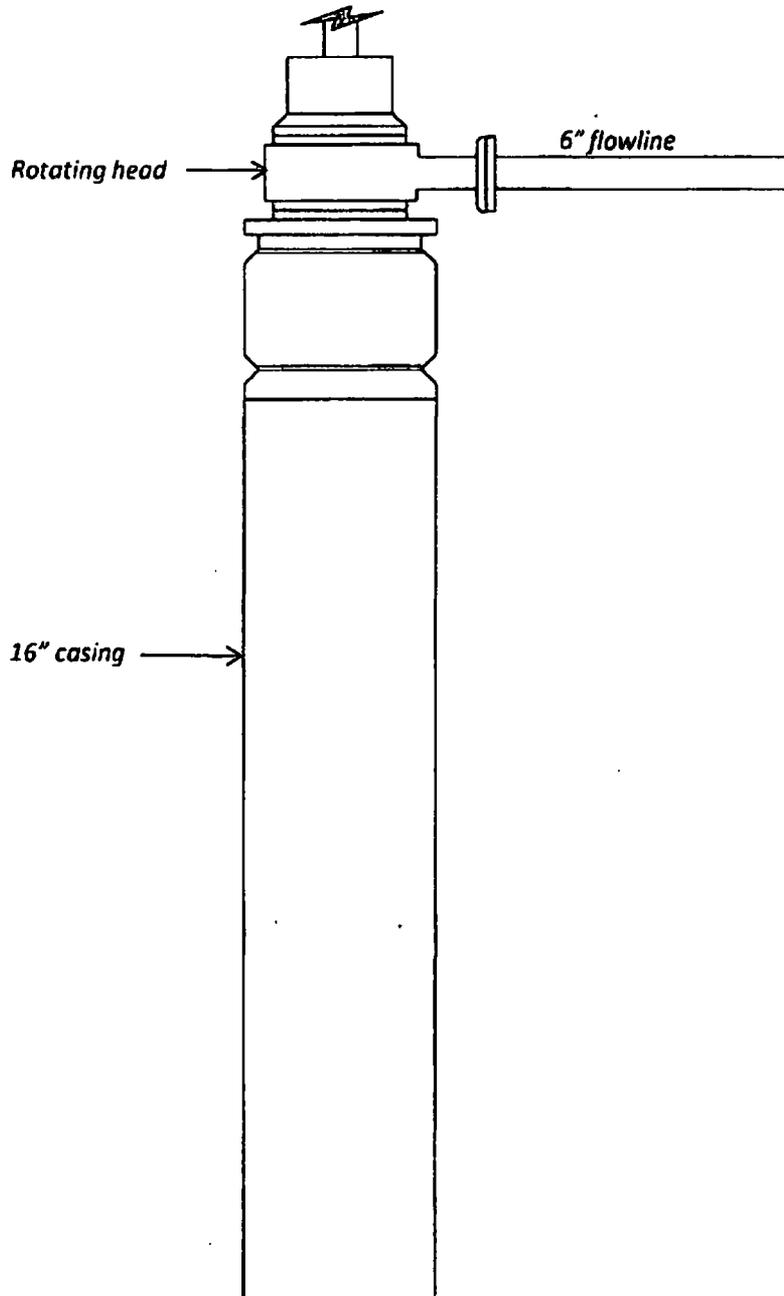


SRR & A

3000# BOP  
 Buttercup 27-34 Federal 1H  
 XTO Energy, Inc



**3000# BOP**  
**Buttercup 27-34 Federal 1H**  
**XTO Energy, Inc**



2000# BOP  
Buttercup 27-34 Federal 1H  
XTO Energy, Inc

DRILLING PLAN: BLM COMPLIANCE  
(Supplement to BLM 3160-3)

XTO Energy Inc.  
Buttercup 27-34 Federal 1H  
Projected TD: 18,367' MD / 8504' TVD  
SHL: 1382' FSL & 2365' FEL, SECTION 22, T19S, R30E  
BHL: 200' FSL & 400' FWL, SECTION 34, T19S, R30E  
Eddy County, NM

**1. CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
26"	0' - 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.20
17-1/2"	0' - 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	9.32
12-1/4"	0' - 4050'	9-5/8"	36#	LTC	J-55	New	3.59	2.06	3.48
8-3/4" x 8-1/2"	0' - 18367'	5-1/2"	17#	BTC	P-110	New	1.12	1.83	2.23

DRILLING PLAN: BLM COMPLIANCE  
(Supplement to BLM 3160-3)

XTO Energy Inc.  
Buttercup 27-34 Federal 1H  
Projected TD: 18,367' MD / 8504' TVD  
SHL: 1382' FSL & 2365' FEL, SECTION 22, T19S, R30E  
BHL: 200' FSL & 400' FWL, SECTION 34, T19S, R30E  
Eddy County, NM

**1. CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
26"	0' - 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.20
17-1/2"	0' - 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	9.32
12-1/4"	0' - 4050'	9-5/8"	36#	LTC	J-55	New	3.59	2.06	3.48
8-3/4" x 8-1/2"	0' - 18367'	5-1/2"	17#	BTC	P-110	New	1.12	1.83	2.23

DRILLING PLAN: BLM COMPLIANCE  
(Supplement to BLM 3160-3)

XTO Energy Inc.  
Buttercup 27-34 Federal 1H  
Projected TD: 18,367' MD / 8504' TVD  
SHL: 1382' FSL & 2365' FEL, SECTION 22, T19S, R30E  
BHL: 200' FSL & 400' FWL, SECTION 34, T19S, R30E  
Eddy County, NM

**1. CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
26"	0' - 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.20
17-1/2"	0' - 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	9.32
12-1/4"	0' - 4050'	9-5/8"	36#	LTC	J-55	New	3.59	2.06	3.48
8-3/4" x 8-1/2"	0' - 18367'	5-1/2"	17#	BTC	P-110	New	1.12	1.83	2.23

DRILLING PLAN: BLM COMPLIANCE  
(Supplement to BLM 3160-3)

XTO Energy Inc.  
Buttercup 27-34 Federal 1H  
Projected TD: 18,367' MD / 8504' TVD  
SHL: 1382' FSL & 2365' FEL, SECTION 22, T19S, R30E  
BHL: 200' FSL & 400' FWL, SECTION 34, T19S, R30E  
Eddy County, NM

**1. CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
26"	0' - 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.20
17-1/2"	0' - 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	9.32
12-1/4"	0' - 4050'	9-5/8"	36#	LTC	J-55	New	3.59	2.06	3.48
8-3/4" x 8-1/2"	0' - 18367'	5-1/2"	17#	BTC	P-110	New	1.12	1.83	2.23



May 1, 2017

Stephanie Rabadue  
XTO Energy Inc.  
500 W. Illinois St Ste 100  
Midland, TX 79701  
432-620-6714  
stephanie\_rabadue@xtoenergy.com

Bureau of Land Management  
620 E. Greene  
Carlsbad, NM 88220  
575-887-6544

Dear Sirs:

XTO Energy Inc. does not anticipate encountering H<sub>2</sub>S while drilling the applied for well. As a precaution, I have attached an H<sub>2</sub>S contingency plan along with a gas analysis of our well stream. If you need anything further, please contact me at the telephone number or email listed above.

Thank you,

*Stephanie Rabadue*

Stephanie Rabadue  
Regulatory Analyst



## **HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN**

**Assumed 100 ppm ROE = 3000'**

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, 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<sub>2</sub>S 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
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o 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<sub>2</sub>). 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<sub>2</sub>S and SO<sub>2</sub>**

<b>Common Name</b>	<b>Chemical Formula</b>	<b>Specific Gravity</b>	<b>Threshold Limit</b>	<b>Hazardous Limit</b>	<b>Lethal Concentration</b>
<b>Hydrogen Sulfide</b>	<b>H<sub>2</sub>S</b>	<b>1.189 Air = 1</b>	<b>10 ppm</b>	<b>100 ppm/hr</b>	<b>600 ppm</b>
<b>Sulfur Dioxide</b>	<b>SO<sub>2</sub></b>	<b>2.21 Air = 1</b>	<b>2 ppm</b>	<b>N/A</b>	<b>1000 ppm</b>

### **Contacting Authorities**

XTO Energy Inc's 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).

## EUNICE OFFICE – EDDY & LEA COUNTIES

EMSU @ Oil Center, NM, 8/10ths mile west of Hwy 8 on Hwy 175  
Eunice, NM 575-394-2089

### **XTO ENERGY INC PERSONNEL:**

Logan Farmer, Drilling Engineer	432-234-9872
Milton Turman, Drilling Superintendent	817-524-5107
Jeff Raines, Construction Foreman	432-557-3159
Dudley McMinn, EH & S Manager	432-557-7976
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:**

Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161
Mosaic Potash - Carlsbad	575-887-2871

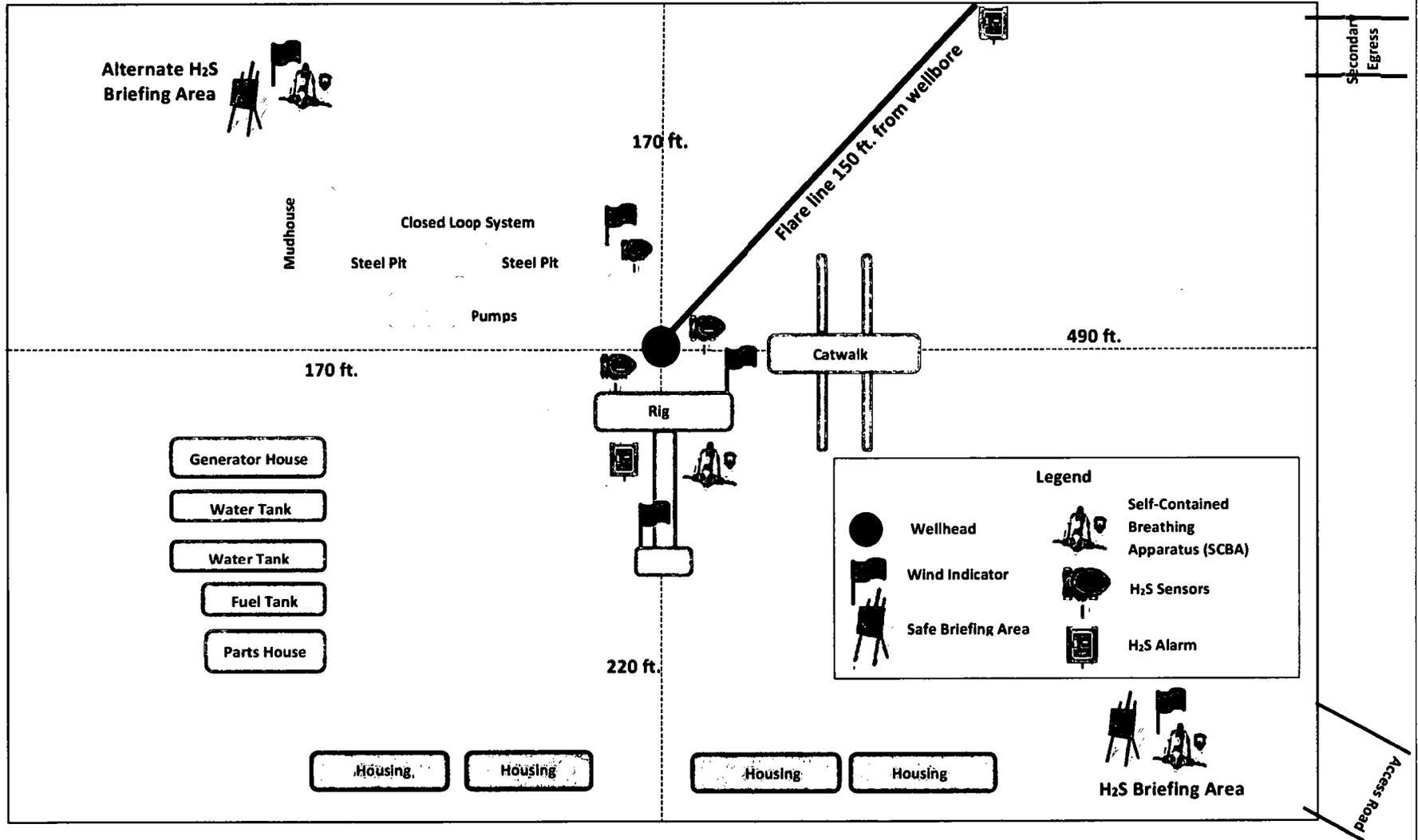
### **CONTRACTORS:**

ABC Rental – Light Towers	575-394-3155
Bulldog Services – Trucking/Forklift	575-391-8543
Champion – Chemical	575-393-7726
Indian Fire & Safety	575-393-3093
Key – Dirt Contractor	575-393-3180
Key Tools – Light Towers	575-393-2415
Sweatt – Dirt Contractor	575-397-4541
RWI – Contract Gang	575-393-5305

↑  
S  
↓

↙  
Prevailing Winds  
Direction SW

# H<sub>2</sub>S Briefing Areas and Alarm Locations





## **XTO ENERGY, INC.**

**Eddy County, NM  
Sec 22, T19S, R30E  
Buttercup 27-34 Federal #1H**

**Wellbore #1**

**Plan: Design #1**

## **QES Well Planning Report**

**18 April, 2017**





Well Planning Report



Database: EDM5002  
 Company: XTO ENERGY, INC.  
 Project: Eddy County, NM  
 Site: Sec 22, T19S, R30E  
 Well: Buttercup 27-34 Federal #1H  
 Wellbore: Wellbore #1  
 Design: Design #1

Local Co-ordinate Reference: Well Buttercup 27-34 Federal #1H  
 TVD Reference: RKB @ 3321.0usft  
 MD Reference: RKB @ 3321.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

<b>Project</b>	Eddy County, NM		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site</b>	Sec 22, T19S, R30E				
<b>Site Position:</b>		<b>Northing:</b>	597,581.00 usft	<b>Latitude:</b>	32° 38' 32.253 N
<b>From:</b>	Map	<b>Easting:</b>	615,405.80 usft	<b>Longitude:</b>	103° 57' 30.292 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.20 °

<b>Well</b>	Buttercup 27-34 Federal #1H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	597,581.00 usft	<b>Latitude:</b>	32° 38' 32.253 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	615,405.80 usft	<b>Longitude:</b>	103° 57' 30.292 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	0.0 usft	<b>Ground Level:</b>	3,296.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	4/3/2017	7.19	60.39	48,167

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	191.93	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,250.0	52.50	210.50	5,109.1	-386.3	-227.5	5.00	5.00	0.00	210.50	
10,655.9	52.50	210.50	8,400.0	-4,081.6	-2,404.3	0.00	0.00	0.00	0.00	
11,128.8	90.37	179.81	8,551.1	-4,503.9	-2,504.4	10.00	8.01	-6.49	-43.99	
18,367.5	90.37	179.81	8,504.0	-11,742.5	-2,480.7	0.00	0.00	0.00	0.00	PBHL Buttercup 27



Well Planning Report



Database: EDM5002  
 Company: XTO ENERGY, INC.  
 Project: Eddy County, NM  
 Site: Sec 22, T19S, R30E  
 Well: Buttercup 27-34 Federal #1H  
 Wellbore: Wellbore #1  
 Design: Design #1

Local Co-ordinate Reference: Well Buttercup 27-34 Federal #1H  
 TVD Reference: RKB @ 3321.0usft  
 MD Reference: RKB @ 3321.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Rustler</b>									
231.0	0.00	0.00	231.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Top Salt</b>									
486.0	0.00	0.00	486.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Base Salt</b>									
1,486.0	0.00	0.00	1,486.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Yates</b>									
1,671.0	0.00	0.00	1,671.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Capitan</b>									
2,301.0	0.00	0.00	2,301.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Delaware</b>									
3,996.0	0.00	0.00	3,996.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00



Well Planning Report



Database: EDM5002  
 Company: XTO ENERGY, INC.  
 Project: Eddy County, NM  
 Site: Sec 22, T19S, R30E  
 Well: Buttercup 27-34 Federal #1H  
 Wellbore: Wellbore #1  
 Design: Design #1

Local Co-ordinate Reference: Well Buttercup 27-34 Federal #1H  
 TVD Reference: RKB @ 3321.0usft  
 MD Reference: RKB @ 3321.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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)	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>Build 5.00°/100'</b>										
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,300.0	5.00	210.50	4,299.9	-3.8	-2.2	4.1	5.00	5.00	0.00	
4,400.0	10.00	210.50	4,399.0	-15.0	-8.8	16.5	5.00	5.00	0.00	
4,500.0	15.00	210.50	4,496.6	-33.6	-19.8	37.0	5.00	5.00	0.00	
4,600.0	20.00	210.50	4,591.9	-59.5	-35.1	65.5	5.00	5.00	0.00	
<b>Brushy Canyon</b>										
4,604.3	20.22	210.50	4,596.0	-60.8	-35.8	66.9	5.00	5.00	0.00	
4,700.0	25.00	210.50	4,684.3	-92.5	-54.5	101.8	5.00	5.00	0.00	
4,800.0	30.00	210.50	4,773.0	-132.3	-77.9	145.5	5.00	5.00	0.00	
4,900.0	35.00	210.50	4,857.3	-178.6	-105.2	196.4	5.00	5.00	0.00	
5,000.0	40.00	210.50	4,936.6	-231.0	-136.1	254.1	5.00	5.00	0.00	
5,100.0	45.00	210.50	5,010.3	-289.2	-170.3	318.2	5.00	5.00	0.00	
5,200.0	50.00	210.50	5,077.8	-352.7	-207.8	388.0	5.00	5.00	0.00	
<b>EOB @ 52.50° Inc / 210.50° Azm</b>										
5,250.0	52.50	210.50	5,109.1	-386.3	-227.5	425.0	5.00	5.00	0.00	
5,300.0	52.50	210.50	5,139.6	-420.5	-247.7	462.6	0.00	0.00	0.00	
5,400.0	52.50	210.50	5,200.4	-488.8	-287.9	537.8	0.00	0.00	0.00	
5,500.0	52.50	210.50	5,261.3	-557.2	-328.2	613.0	0.00	0.00	0.00	
5,600.0	52.50	210.50	5,322.2	-625.5	-368.5	688.2	0.00	0.00	0.00	
5,700.0	52.50	210.50	5,383.1	-693.9	-408.7	763.4	0.00	0.00	0.00	
5,800.0	52.50	210.50	5,443.9	-762.3	-449.0	838.6	0.00	0.00	0.00	
5,900.0	52.50	210.50	5,504.8	-830.6	-489.3	913.8	0.00	0.00	0.00	
6,000.0	52.50	210.50	5,565.7	-899.0	-529.5	989.0	0.00	0.00	0.00	
6,100.0	52.50	210.50	5,626.6	-967.3	-569.8	1,064.2	0.00	0.00	0.00	
6,200.0	52.50	210.50	5,687.4	-1,035.7	-610.1	1,139.4	0.00	0.00	0.00	
6,300.0	52.50	210.50	5,748.3	-1,104.0	-650.3	1,214.6	0.00	0.00	0.00	
6,400.0	52.50	210.50	5,809.2	-1,172.4	-690.6	1,289.8	0.00	0.00	0.00	
6,500.0	52.50	210.50	5,870.1	-1,240.8	-730.9	1,365.0	0.00	0.00	0.00	
6,600.0	52.50	210.50	5,930.9	-1,309.1	-771.1	1,440.2	0.00	0.00	0.00	
6,700.0	52.50	210.50	5,991.8	-1,377.5	-811.4	1,515.4	0.00	0.00	0.00	
6,800.0	52.50	210.50	6,052.7	-1,445.8	-851.7	1,590.6	0.00	0.00	0.00	
<b>Bone Spring</b>										
6,887.6	52.50	210.50	6,106.0	-1,505.7	-886.9	1,656.5	0.00	0.00	0.00	
6,900.0	52.50	210.50	6,113.6	-1,514.2	-891.9	1,665.9	0.00	0.00	0.00	
7,000.0	52.50	210.50	6,174.4	-1,582.5	-932.2	1,741.1	0.00	0.00	0.00	
<b>Avalon Sand</b>										
7,066.6	52.50	210.50	6,215.0	-1,628.1	-959.0	1,791.2	0.00	0.00	0.00	
7,100.0	52.50	210.50	6,235.3	-1,650.9	-972.5	1,816.3	0.00	0.00	0.00	
7,200.0	52.50	210.50	6,296.2	-1,719.3	-1,012.7	1,891.5	0.00	0.00	0.00	
7,300.0	52.50	210.50	6,357.1	-1,787.6	-1,053.0	1,966.7	0.00	0.00	0.00	
7,400.0	52.50	210.50	6,418.0	-1,856.0	-1,093.3	2,041.9	0.00	0.00	0.00	
7,500.0	52.50	210.50	6,478.8	-1,924.3	-1,133.5	2,117.1	0.00	0.00	0.00	
7,600.0	52.50	210.50	6,539.7	-1,992.7	-1,173.8	2,192.3	0.00	0.00	0.00	
7,700.0	52.50	210.50	6,600.6	-2,061.1	-1,214.1	2,267.5	0.00	0.00	0.00	
7,800.0	52.50	210.50	6,661.5	-2,129.4	-1,254.3	2,342.7	0.00	0.00	0.00	
7,900.0	52.50	210.50	6,722.3	-2,197.8	-1,294.6	2,417.9	0.00	0.00	0.00	
8,000.0	52.50	210.50	6,783.2	-2,266.1	-1,334.9	2,493.1	0.00	0.00	0.00	
8,100.0	52.50	210.50	6,844.1	-2,334.5	-1,375.1	2,568.3	0.00	0.00	0.00	
8,200.0	52.50	210.50	6,905.0	-2,402.8	-1,415.4	2,643.5	0.00	0.00	0.00	
8,300.0	52.50	210.50	6,965.8	-2,471.2	-1,455.6	2,718.7	0.00	0.00	0.00	
8,400.0	52.50	210.50	7,026.7	-2,539.6	-1,495.9	2,793.9	0.00	0.00	0.00	



Well Planning Report



<b>Database:</b>	EDM5002	<b>Local Co-ordinate Reference:</b>	Well Buttercup 27-34 Federal #1H
<b>Company:</b>	XTO ENERGY, INC.	<b>TVD Reference:</b>	RKB @ 3321.0usft
<b>Project:</b>	Eddy County, NM	<b>MD Reference:</b>	RKB @ 3321.0usft
<b>Site:</b>	Sec 22, T19S, R30E	<b>North Reference:</b>	Grid
<b>Well:</b>	Buttercup 27-34 Federal #1H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

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)
8,500.0	52.50	210.50	7,087.6	-2,607.9	-1,536.2	2,869.1	0.00	0.00	0.00
8,600.0	52.50	210.50	7,148.5	-2,676.3	-1,576.4	2,944.3	0.00	0.00	0.00
8,700.0	52.50	210.50	7,209.3	-2,744.6	-1,616.7	3,019.5	0.00	0.00	0.00
8,800.0	52.50	210.50	7,270.2	-2,813.0	-1,657.0	3,094.7	0.00	0.00	0.00
8,900.0	52.50	210.50	7,331.1	-2,881.3	-1,697.2	3,169.9	0.00	0.00	0.00
9,000.0	52.50	210.50	7,392.0	-2,949.7	-1,737.5	3,245.1	0.00	0.00	0.00
9,100.0	52.50	210.50	7,452.8	-3,018.1	-1,777.8	3,320.3	0.00	0.00	0.00
9,200.0	52.50	210.50	7,513.7	-3,086.4	-1,818.0	3,395.5	0.00	0.00	0.00
<b>First Bone Spring Sand</b>									
9,299.0	52.50	210.50	7,574.0	-3,154.1	-1,857.9	3,470.0	0.00	0.00	0.00
9,300.0	52.50	210.50	7,574.6	-3,154.8	-1,858.3	3,470.8	0.00	0.00	0.00
9,400.0	52.50	210.50	7,635.5	-3,223.1	-1,898.6	3,546.0	0.00	0.00	0.00
9,500.0	52.50	210.50	7,696.4	-3,291.5	-1,938.8	3,621.2	0.00	0.00	0.00
<b>Second Bone Spring Limestone</b>									
9,570.1	52.50	210.50	7,739.0	-3,339.4	-1,967.0	3,673.8	0.00	0.00	0.00
9,600.0	52.50	210.50	7,757.2	-3,359.8	-1,979.1	3,696.4	0.00	0.00	0.00
9,700.0	52.50	210.50	7,818.1	-3,428.2	-2,019.4	3,771.6	0.00	0.00	0.00
9,800.0	52.50	210.50	7,879.0	-3,496.6	-2,059.6	3,846.8	0.00	0.00	0.00
9,900.0	52.50	210.50	7,939.9	-3,564.9	-2,099.9	3,922.0	0.00	0.00	0.00
10,000.0	52.50	210.50	8,000.7	-3,633.3	-2,140.2	3,997.2	0.00	0.00	0.00
10,100.0	52.50	210.50	8,061.6	-3,701.6	-2,180.4	4,072.4	0.00	0.00	0.00
10,200.0	52.50	210.50	8,122.5	-3,770.0	-2,220.7	4,147.6	0.00	0.00	0.00
10,300.0	52.50	210.50	8,183.4	-3,838.4	-2,261.0	4,222.8	0.00	0.00	0.00
10,400.0	52.50	210.50	8,244.2	-3,906.7	-2,301.2	4,298.0	0.00	0.00	0.00
10,500.0	52.50	210.50	8,305.1	-3,975.1	-2,341.5	4,373.2	0.00	0.00	0.00
10,600.0	52.50	210.50	8,366.0	-4,043.4	-2,381.8	4,448.4	0.00	0.00	0.00
<b>Second Bone Spring Sand</b>									
10,652.6	52.50	210.50	8,398.0	-4,079.4	-2,402.9	4,488.0	0.00	0.00	0.00
<b>Build/Turn 10.00°/100'</b>									
10,655.9	52.50	210.50	8,400.0	-4,081.6	-2,404.3	4,490.4	0.00	0.00	0.00
10,700.0	55.73	206.79	8,425.9	-4,113.0	-2,421.4	4,524.7	10.00	7.33	-8.40
10,750.0	59.52	202.93	8,452.6	-4,151.3	-2,439.1	4,565.8	10.00	7.58	-7.73
10,800.0	63.41	199.35	8,476.5	-4,192.3	-2,454.9	4,609.2	10.00	7.79	-7.15
10,850.0	67.39	196.02	8,497.3	-4,235.6	-2,468.7	4,654.4	10.00	7.95	-6.67
10,900.0	71.43	192.87	8,514.9	-4,280.9	-2,480.3	4,701.1	10.00	8.08	-6.29
10,950.0	75.52	189.87	8,529.1	-4,327.9	-2,489.8	4,749.0	10.00	8.18	-6.00
11,000.0	79.65	186.98	8,539.9	-4,376.2	-2,496.9	4,797.8	10.00	8.26	-5.78
11,050.0	83.80	184.17	8,547.1	-4,425.4	-2,501.7	4,846.9	10.00	8.31	-5.63
11,100.0	87.97	181.40	8,550.7	-4,475.2	-2,504.1	4,896.1	10.00	8.33	-5.54
<b>EOC @ 90.37° Inc / 179.81° Azm / 8551.1' TVD</b>									
11,128.8	90.37	179.81	8,551.1	-4,503.9	-2,504.4	4,924.3	10.00	8.34	-5.51
11,200.0	90.37	179.81	8,550.6	-4,575.2	-2,504.2	4,994.0	0.00	0.00	0.00
11,300.0	90.37	179.81	8,550.0	-4,675.2	-2,503.9	5,091.8	0.00	0.00	0.00
11,400.0	90.37	179.81	8,549.3	-4,775.2	-2,503.6	5,189.5	0.00	0.00	0.00
11,500.0	90.37	179.81	8,548.7	-4,875.2	-2,503.2	5,287.3	0.00	0.00	0.00
11,600.0	90.37	179.81	8,548.0	-4,975.2	-2,502.9	5,385.1	0.00	0.00	0.00
11,700.0	90.37	179.81	8,547.4	-5,075.2	-2,502.6	5,482.8	0.00	0.00	0.00
11,800.0	90.37	179.81	8,546.7	-5,175.2	-2,502.2	5,580.6	0.00	0.00	0.00
11,900.0	90.37	179.81	8,546.1	-5,275.2	-2,501.9	5,678.4	0.00	0.00	0.00
12,000.0	90.37	179.81	8,545.4	-5,375.2	-2,501.6	5,776.1	0.00	0.00	0.00
12,100.0	90.37	179.81	8,544.8	-5,475.1	-2,501.3	5,873.9	0.00	0.00	0.00
12,200.0	90.37	179.81	8,544.1	-5,575.1	-2,500.9	5,971.7	0.00	0.00	0.00
12,300.0	90.37	179.81	8,543.5	-5,675.1	-2,500.6	6,069.5	0.00	0.00	0.00
12,400.0	90.37	179.81	8,542.8	-5,775.1	-2,500.3	6,167.2	0.00	0.00	0.00



Well Planning Report



**Database:** EDM5002  
**Company:** XTO ENERGY, INC.  
**Project:** Eddy County, NM  
**Site:** Sec 22, T19S, R30E  
**Well:** Buttercup 27-34 Federal #1H  
**Wellbore:** Wellbore #1  
**Design:** Design #1

**Local Co-ordinate Reference:** Well Buttercup 27-34 Federal #1H  
**TVD Reference:** RKB @ 3321.0usft  
**MD Reference:** RKB @ 3321.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

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)
12,500.0	90.37	179.81	8,542.2	-5,875.1	-2,499.9	6,265.0	0.00	0.00	0.00
12,600.0	90.37	179.81	8,541.5	-5,975.1	-2,499.6	6,362.8	0.00	0.00	0.00
12,700.0	90.37	179.81	8,540.9	-6,075.1	-2,499.3	6,460.5	0.00	0.00	0.00
12,800.0	90.37	179.81	8,540.2	-6,175.1	-2,499.0	6,558.3	0.00	0.00	0.00
12,900.0	90.37	179.81	8,539.6	-6,275.1	-2,498.6	6,656.1	0.00	0.00	0.00
13,000.0	90.37	179.81	8,538.9	-6,375.1	-2,498.3	6,753.8	0.00	0.00	0.00
13,100.0	90.37	179.81	8,538.3	-6,475.1	-2,498.0	6,851.6	0.00	0.00	0.00
13,200.0	90.37	179.81	8,537.6	-6,575.1	-2,497.6	6,949.4	0.00	0.00	0.00
13,300.0	90.37	179.81	8,537.0	-6,675.1	-2,497.3	7,047.2	0.00	0.00	0.00
13,400.0	90.37	179.81	8,536.3	-6,775.1	-2,497.0	7,144.9	0.00	0.00	0.00
13,500.0	90.37	179.81	8,535.7	-6,875.1	-2,496.7	7,242.7	0.00	0.00	0.00
13,600.0	90.37	179.81	8,535.0	-6,975.1	-2,496.3	7,340.5	0.00	0.00	0.00
13,700.0	90.37	179.81	8,534.4	-7,075.1	-2,496.0	7,438.2	0.00	0.00	0.00
13,800.0	90.37	179.81	8,533.7	-7,175.1	-2,495.7	7,536.0	0.00	0.00	0.00
13,900.0	90.37	179.81	8,533.1	-7,275.1	-2,495.4	7,633.8	0.00	0.00	0.00
14,000.0	90.37	179.81	8,532.4	-7,375.1	-2,495.0	7,731.5	0.00	0.00	0.00
14,100.0	90.37	179.81	8,531.8	-7,475.1	-2,494.7	7,829.3	0.00	0.00	0.00
14,200.0	90.37	179.81	8,531.1	-7,575.1	-2,494.4	7,927.1	0.00	0.00	0.00
14,300.0	90.37	179.81	8,530.5	-7,675.1	-2,494.0	8,024.9	0.00	0.00	0.00
14,400.0	90.37	179.81	8,529.8	-7,775.1	-2,493.7	8,122.6	0.00	0.00	0.00
14,500.0	90.37	179.81	8,529.2	-7,875.1	-2,493.4	8,220.4	0.00	0.00	0.00
14,600.0	90.37	179.81	8,528.5	-7,975.1	-2,493.1	8,318.2	0.00	0.00	0.00
14,700.0	90.37	179.81	8,527.9	-8,075.1	-2,492.7	8,415.9	0.00	0.00	0.00
14,800.0	90.37	179.81	8,527.2	-8,175.1	-2,492.4	8,513.7	0.00	0.00	0.00
14,900.0	90.37	179.81	8,526.6	-8,275.1	-2,492.1	8,611.5	0.00	0.00	0.00
15,000.0	90.37	179.81	8,525.9	-8,375.1	-2,491.7	8,709.2	0.00	0.00	0.00
15,100.0	90.37	179.81	8,525.3	-8,475.1	-2,491.4	8,807.0	0.00	0.00	0.00
15,200.0	90.37	179.81	8,524.6	-8,575.1	-2,491.1	8,904.8	0.00	0.00	0.00
15,300.0	90.37	179.81	8,524.0	-8,675.1	-2,490.8	9,002.6	0.00	0.00	0.00
15,400.0	90.37	179.81	8,523.3	-8,775.1	-2,490.4	9,100.3	0.00	0.00	0.00
15,500.0	90.37	179.81	8,522.7	-8,875.1	-2,490.1	9,198.1	0.00	0.00	0.00
15,600.0	90.37	179.81	8,522.0	-8,975.1	-2,489.8	9,295.9	0.00	0.00	0.00
15,700.0	90.37	179.81	8,521.3	-9,075.1	-2,489.4	9,393.6	0.00	0.00	0.00
15,800.0	90.37	179.81	8,520.7	-9,175.0	-2,489.1	9,491.4	0.00	0.00	0.00
15,900.0	90.37	179.81	8,520.0	-9,275.0	-2,488.8	9,589.2	0.00	0.00	0.00
16,000.0	90.37	179.81	8,519.4	-9,375.0	-2,488.5	9,686.9	0.00	0.00	0.00
16,100.0	90.37	179.81	8,518.7	-9,475.0	-2,488.1	9,784.7	0.00	0.00	0.00
16,200.0	90.37	179.81	8,518.1	-9,575.0	-2,487.8	9,882.5	0.00	0.00	0.00
16,300.0	90.37	179.81	8,517.4	-9,675.0	-2,487.5	9,980.3	0.00	0.00	0.00
16,400.0	90.37	179.81	8,516.8	-9,775.0	-2,487.2	10,078.0	0.00	0.00	0.00
16,500.0	90.37	179.81	8,516.1	-9,875.0	-2,486.8	10,175.8	0.00	0.00	0.00
16,600.0	90.37	179.81	8,515.5	-9,975.0	-2,486.5	10,273.6	0.00	0.00	0.00
16,700.0	90.37	179.81	8,514.8	-10,075.0	-2,486.2	10,371.3	0.00	0.00	0.00
16,800.0	90.37	179.81	8,514.2	-10,175.0	-2,485.8	10,469.1	0.00	0.00	0.00
16,900.0	90.37	179.81	8,513.5	-10,275.0	-2,485.5	10,566.9	0.00	0.00	0.00
17,000.0	90.37	179.81	8,512.9	-10,375.0	-2,485.2	10,664.6	0.00	0.00	0.00
17,100.0	90.37	179.81	8,512.2	-10,475.0	-2,484.9	10,762.4	0.00	0.00	0.00
17,200.0	90.37	179.81	8,511.6	-10,575.0	-2,484.5	10,860.2	0.00	0.00	0.00
17,300.0	90.37	179.81	8,510.9	-10,675.0	-2,484.2	10,958.0	0.00	0.00	0.00
17,400.0	90.37	179.81	8,510.3	-10,775.0	-2,483.9	11,055.7	0.00	0.00	0.00
17,500.0	90.37	179.81	8,509.6	-10,875.0	-2,483.5	11,153.5	0.00	0.00	0.00
17,600.0	90.37	179.81	8,509.0	-10,975.0	-2,483.2	11,251.3	0.00	0.00	0.00
17,700.0	90.37	179.81	8,508.3	-11,075.0	-2,482.9	11,349.0	0.00	0.00	0.00
17,800.0	90.37	179.81	8,507.7	-11,175.0	-2,482.6	11,446.8	0.00	0.00	0.00



Well Planning Report



Database: EDM5002  
 Company: XTO ENERGY, INC.  
 Project: Eddy County, NM  
 Site: Sec 22, T19S, R30E  
 Well: Buttercup 27-34 Federal #1H  
 Wellbore: Wellbore #1  
 Design: Design #1

Local Co-ordinate Reference: Well Buttercup 27-34 Federal #1H  
 TVD Reference: RKB @ 3321.0usft  
 MD Reference: RKB @ 3321.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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)
17,900.0	90.37	179.81	8,507.0	-11,275.0	-2,482.2	11,544.6	0.00	0.00	0.00
18,000.0	90.37	179.81	8,506.4	-11,375.0	-2,481.9	11,642.4	0.00	0.00	0.00
18,100.0	90.37	179.81	8,505.7	-11,475.0	-2,481.6	11,740.1	0.00	0.00	0.00
18,200.0	90.37	179.81	8,505.1	-11,575.0	-2,481.2	11,837.9	0.00	0.00	0.00
18,300.0	90.37	179.81	8,504.4	-11,675.0	-2,480.9	11,935.7	0.00	0.00	0.00
<b>TD @ 18367.5' MD, 8504.0' TVD</b>									
18,367.5	90.37	179.81	8,504.0	-11,742.5	-2,480.7	12,001.7	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LTP Buttercup 27-34   - hit/miss target - Shape - Point	0.00	0.00	0.0	-11,612.5	-2,481.1	585,968.50	612,924.70	32° 36' 37.427 N	103° 57' 59.777 W
- plan misses target center by 8504.7usft at 18292.8usft MD (8504.5 TVD, -11667.8 N, -2480.9 E)									
2nd BS Sand - Buttercup - plan hits target center - Point	0.00	0.00	8,398.0	-4,079.4	-2,402.9	593,501.63	613,002.87	32° 37' 51.969 N	103° 57' 58.559 W
PBHL Buttercup 27-34 - plan hits target center - Point	0.00	0.00	8,504.0	-11,742.5	-2,480.7	585,838.50	612,925.10	32° 36' 36.141 N	103° 57' 59.778 W
FTP Buttercup 27-34 - plan misses target center by 16.4usft at 10983.3usft MD (8536.7 TVD, -4359.9 N, -2494.8 E) - Point	0.00	0.00	8,549.0	-4,355.7	-2,504.7	593,225.30	612,901.10	32° 37' 49.238 N	103° 57' 59.760 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
231.0	231.0	Rustler			
486.0	486.0	Top Salt			
1,486.0	1,486.0	Base Salt			
1,671.0	1,671.0	Yates			
2,301.0	2,301.0	Capitan			
3,996.0	3,996.0	Delaware			
4,604.3	4,596.0	Brushy Canyon			
6,887.6	6,106.0	Bone Spring			
7,066.6	6,215.0	Avalon Sand			
9,299.0	7,574.0	First Bone Spring Sand			
9,570.1	7,739.0	Second Bone Spring Limestone			
10,652.6	8,398.0	Second Bone Spring Sand			



Well Planning Report

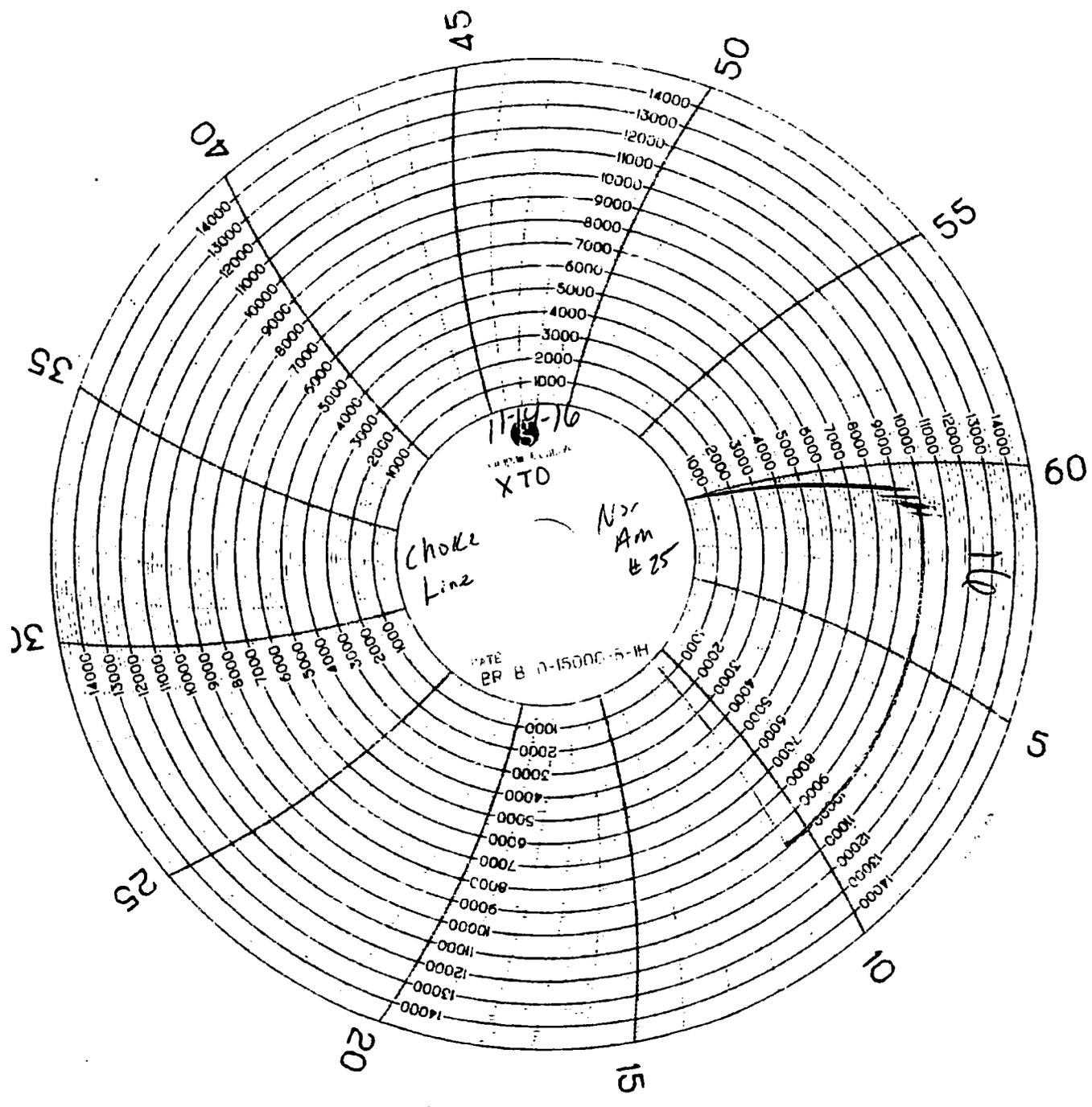


**Database:** EDM5002  
**Company:** XTO ENERGY, INC.  
**Project:** Eddy County, NM  
**Site:** Sec 22, T19S, R30E  
**Well:** Buttercup 27-34 Federal #1H  
**Wellbore:** Wellbore #1  
**Design:** Design #1

**Local Co-ordinate Reference:** Well Buttercup 27-34 Federal #1H  
**TVD Reference:** RKB @ 3321.0usft  
**MD Reference:** RKB @ 3321.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,200.0	4,200.0	0.0	0.0	Build 5.00°/100'
5,250.0	5,109.1	-386.3	-227.5	EOB @ 52.50° Inc / 210.50° Azm
10,655.9	8,400.0	-4,081.6	-2,404.3	Build/Turn 10.00°/100'
11,128.8	8,551.1	-4,503.9	-2,504.4	EOC @ 90.37° Inc / 179.81° Azm / 8551.1' TVD
18,367.5	8,504.0	-11,742.5	-2,480.7	TD @ 18367.5' MD, 8504.0' TVD



NOON

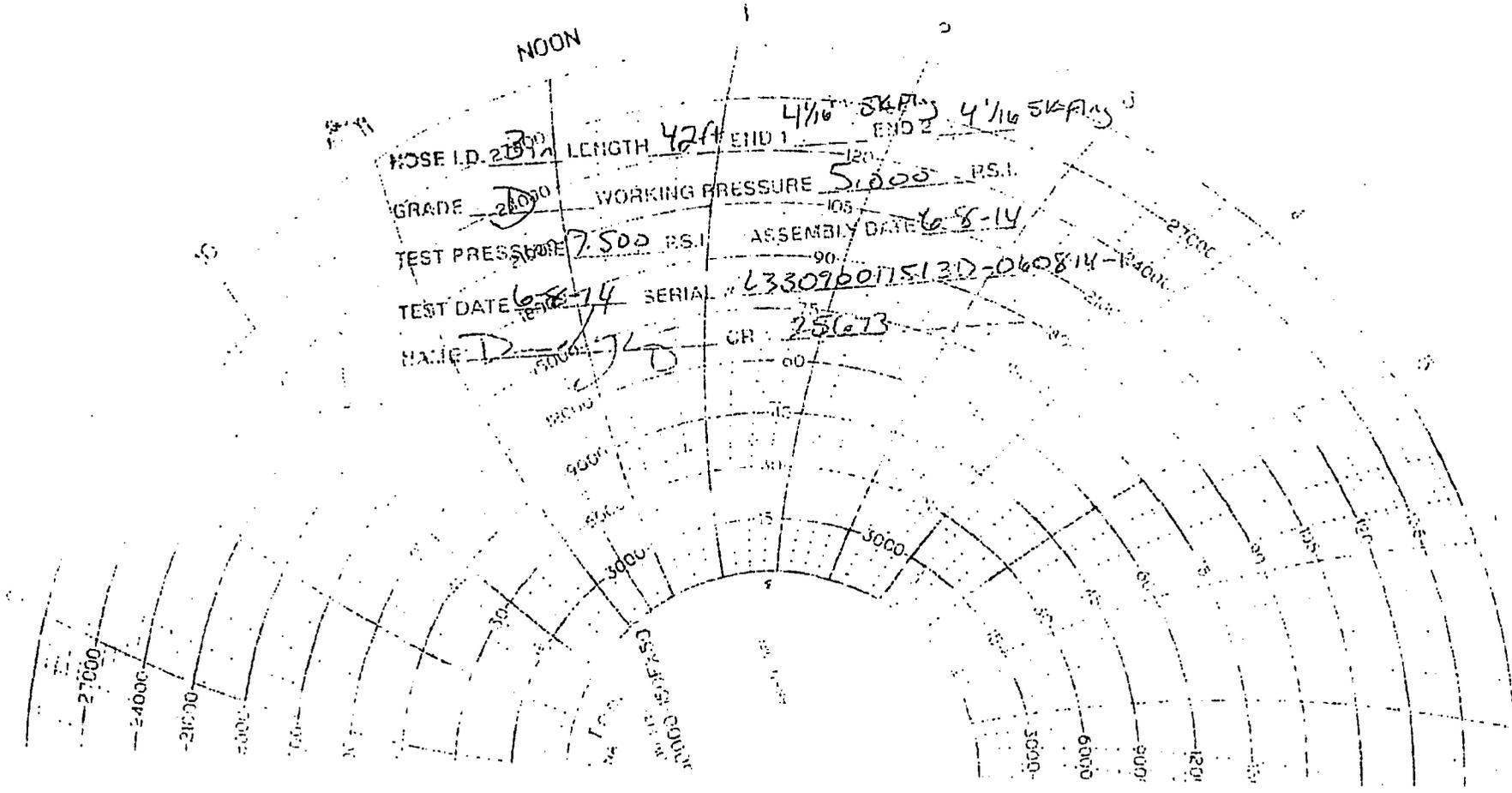
HOSE I.D. 2 1/2" LENGTH 42ft END 1 4 1/16 SKAF 4 1/16 SKAF 3  
END 2

GRADE 24000 WORKING PRESSURE 5000 P.S.I.

TEST PRESSURE 7500 P.S.I. ASSEMBLY DATE 6-8-14

TEST DATE 6-8-14 SERIAL # L33096071513D-060814-1400

NAME D-75 CR 25613





<b>APD ID:</b> 10400014645	<b>Submission Date:</b> 05/29/2017	<b>Highlighted data reflects the most recent changes</b> <a href="#">Show Final Text</a>
<b>Operator Name:</b> XTO ENERGY INCORPORATED		
<b>Well Name:</b> BUTTERCUP 27-34 FEDERAL	<b>Well Number:</b> 1H	
<b>Well Type:</b> OIL WELL	<b>Well Work Type:</b> Drill	

**Section 1 - Existing Roads**

**Will existing roads be used?** NO

**Section 2 - New or Reconstructed Access Roads**

**Will new roads be needed?** YES

**New Road Map:**

Buttercup\_Fed\_Road\_05-29-2017.pdf

**New road type:** RESOURCE

**Length:** 4089                      Feet                      **Width (ft.):** 30

**Max slope (%):** 2                      **Max grade (%):** 3

**Army Corp of Engineers (ACOE) permit required?** NO

**ACOE Permit Number(s):**

**New road travel width:** 14

**New road access erosion control:** The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along with access road route.

**New road access plan or profile prepared?** NO

**New road access plan attachment:**

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Surface material will be native caliche

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.

**Access other construction information:** Construction, reclamation, and/or routine maintenance will not be conducted during periods when the soil conditions for construction could lead to impacts to the surrounding environment, or when watershed damage is likely to occur as a result of these activities.

**Access miscellaneous information:**

**Number of access turnouts:** 1

**Access turnout map:**

### Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

**Road Drainage Control Structures (DCS) description:** No drainage control structures were identified at onsite. Drainage control structures will be applied for as-needed and be in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

**Road Drainage Control Structures (DCS) attachment:**

### Access Additional Attachments

**Additional Attachment(s):**

### Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

Buttercup\_Fed\_1\_Mile\_05-29-2017.pdf

**Existing Wells description:**

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

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** A separate 600' x 600' pad was staked with the BLM for construction and use as a Central Tank Battery (Mojo Jojo Central Tank Battery). This pad is located in the Southwest quarter of Section 22-T19S-R30E NMPM, Eddy County, New Mexico. A plat of the proposed facility area is attached. Only the area necessary to maintain facilities will be disturbed. 600'x600' location is anticipated for full area development and includes plans for 24 wells in the area. In the event the wells are found productive, 4" composite spoolable flexpipe or steel flowlines with a maximum safety pressure rating of 750psi (operating pressure: 125psi) will be laid on the surface within proposed lease road corridors from the well to the Mojo Jojo Central Tank Battery where the oil, gas, and water will be metered and appropriately separated. Oil

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

will be hauled from the location by truck following existing and proposed lease roads. The total distance of proposed oil flowline is: 2271.8' or 0.43 miles following proposed lease road surface corridors. A plat of the proposed flowline is attached. A 3rd party gas purchaser has been identified and will be building to XTO Energy, Inc's Mojo Jojo central tank battery. The 3rd party gas purchaser will be responsible for permitting their own gas lines and compressor station, where applicable, through private, state, and federal lands. Produced water will be hauled from location to a commercial disposal facility as needed. The flare stack will be 50'x50', located at the Southeastern corner of the proposed Mojo JoJo Central Tank Battery facility pad and will be sized for 10 to 15mmscf/d with 150' of distance between all facility equipment, road and well pad locations for safety purposes. 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 'desert tan' that reduce the visual impacts of the built environment. 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. All electrical poles and lines will be placed within existing and proposed lease roads corridors. The electrical provider is anticipated to be Excel Energy. All electrical lines will be primary 12,740 volt to properly run expected production equipment. Approximately 14,401.7' of electrical will be run from the anticipated tie-in point following existing and proposed road corridors with a request for 30' ROW construction and maintenance buffer; 15' on either side of the electrical centerline. This distance is a maximum approximation and may vary based on the lease road corridors, varying elevations and terrain in the area. A plat of the proposed electrical is attached.

**Production Facilities map:**

Buttercup\_Fed\_Facility\_05-29-2017.pdf

Buttercup\_Fed\_Elec\_05-29-2017.pdf

Buttercup\_Fed\_Flow\_05-29-2017.pdf

Buttercup\_Fed\_Frac\_Pond\_05-29-2017.pdf

Buttercup\_Fed\_DI\_05-29-2017.pdf

**Section 5 - Location and Types of Water Supply**

**Water Source Table**

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

**Describe type:**

**Source latitude:** 32.614117

**Source datum:** NAD83

**Water source permit type:** WATER WELL

**Source land ownership:** FEDERAL

**Water source transport method:** TRUCKING

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 40000

**Source volume (gal):** 1680000

**Water source type:** GW WELL

**Source longitude:** -104.0171

**Source volume (acre-feet):** 5.155724

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

**Describe type:**

**Source latitude:** 32.58578

**Source datum:** NAD83

**Water source permit type:** WATER WELL

**Water source type:** GW WELL

**Source longitude:** -104.03414

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**Source land ownership:** FEDERAL

**Water source transport method:** TRUCKING

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 40000

**Source volume (acre-feet):** 5.155724

**Source volume (gal):** 1680000

**Water source and transportation map:**

Buttercup\_Fed\_Lse\_05-29-2017.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 location 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: Rockhouse Water & Brine Inc 1108 West Pierce St Carlsbad, NM 88220 Water for drilling, completion and dust control will be supplied by Rockhouse Water for sale to XTO Energy, Inc from the following two sources per Rockhouse Water: 1st Well: CP745 Section 12-T20S-R29E Latitude: 32.585782 Longitude: -104.034144 2nd Well: CP742 Section 31-T19S-R30E Latitude: 32.614117 Longitude: -104.017098 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 ~1.5bbbls per foot of hole drilled with 40% 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. A water pond is anticipated and has been staked with onsite performed with BLM Natural Resource Specialist Fernando Banos on an XTO lease. This water pond is expected to cover water for drilling and completion of a minimum of 24 wells. 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 50,000 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. All water source information was provided by the anticipated contract vendor.

**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:**

**Grout material:**

**Grout depth:**

**Casing length (ft.):**

**Casing top depth (ft.):**

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**State appropriation permit:**

**Additional information attachment:**

### Section 6 - Construction Materials

**Construction Materials description:** Native caliche. Source 1: BLM Pit (35-T19S-R30E) Source 2: BLM Pit (31-T19S-R31E)

**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.

**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 of human waste.

**Waste type:** GARBAGE

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

**Amount of waste:** 250 pounds

**Waste disposal frequency :** Weekly

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**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 FACILITY

**Disposal type description:**

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

**Waste type:** DRILLING

**Waste content description:** Fluid

**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 FACILITY

**Disposal type description:**

**Disposal location description:** R360 Environmental Solutions 4507 W Carlsbad Hwy, Hobbs, NM 88240 (575) 393-1079

### 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** Cuttings. 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. Drilling Fluids. These will be contained in steel mud pits and then taken to a NMOCD approved commercial disposal facility. Produced Fluids. Water produced from the well during completion will be held temporarily in steel tanks and then taken to a

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

NMOCD approved commercial disposal facility. Oil produced during operations will be stored in tanks until sold.

**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:**

Buttercup\_Fed\_1H\_Maps\_05-29-2017.pdf

**Comments:**

### Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance

**Multiple Well Pad Name:** BUTTERCUP

**Multiple Well Pad Number:** 1

**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 gulying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.

**Wellpad long term disturbance (acres):** 2.65151

**Wellpad short term disturbance (acres):** 3.82231

**Access road long term disturbance (acres):** 2.816

**Access road short term disturbance (acres):** 2.816

**Pipeline long term disturbance (acres):** 0

**Pipeline short term disturbance (acres):** 0

**Other long term disturbance (acres):** 0

**Other short term disturbance (acres):** 0

**Total long term disturbance:** 5.46751

**Total short term disturbance:** 6.63831

**Disturbance Comments:** Flowline will be run on surface following proposed road corridors to the central tank battery. Pipeline will be buried. 30' request is for ROW for construction. After completion, all disturbed areas will be reclaimed in

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

accordance to reclamation standards set forth in this APD with disturbance occurring only for maintenance or emergency purposes.

**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) plant 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:** Soil area consist of Berino soils. These soils are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:** Soil area consist of Berino soils. These soils are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:** Soil area consist of Berino soils. These soils are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:** Soil area consist of Berino soils. These soils are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

**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: BUTTERCUP 27-34 FEDERAL

Well Number: 1H

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

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

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 system will meet the NMOCD requirements 19.15.17.

**Pit closure attachment:**

**Section 11 - Surface Ownership**

**Disturbance type:** OTHER

**Describe:** Electrical

**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:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**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:** NEW ACCESS ROAD

**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:** BUTTERCUP 27-34 FEDERAL

**Well Number:** 1H

**Disturbance type:** OTHER

**Describe:** Facility & 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:**

## 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)

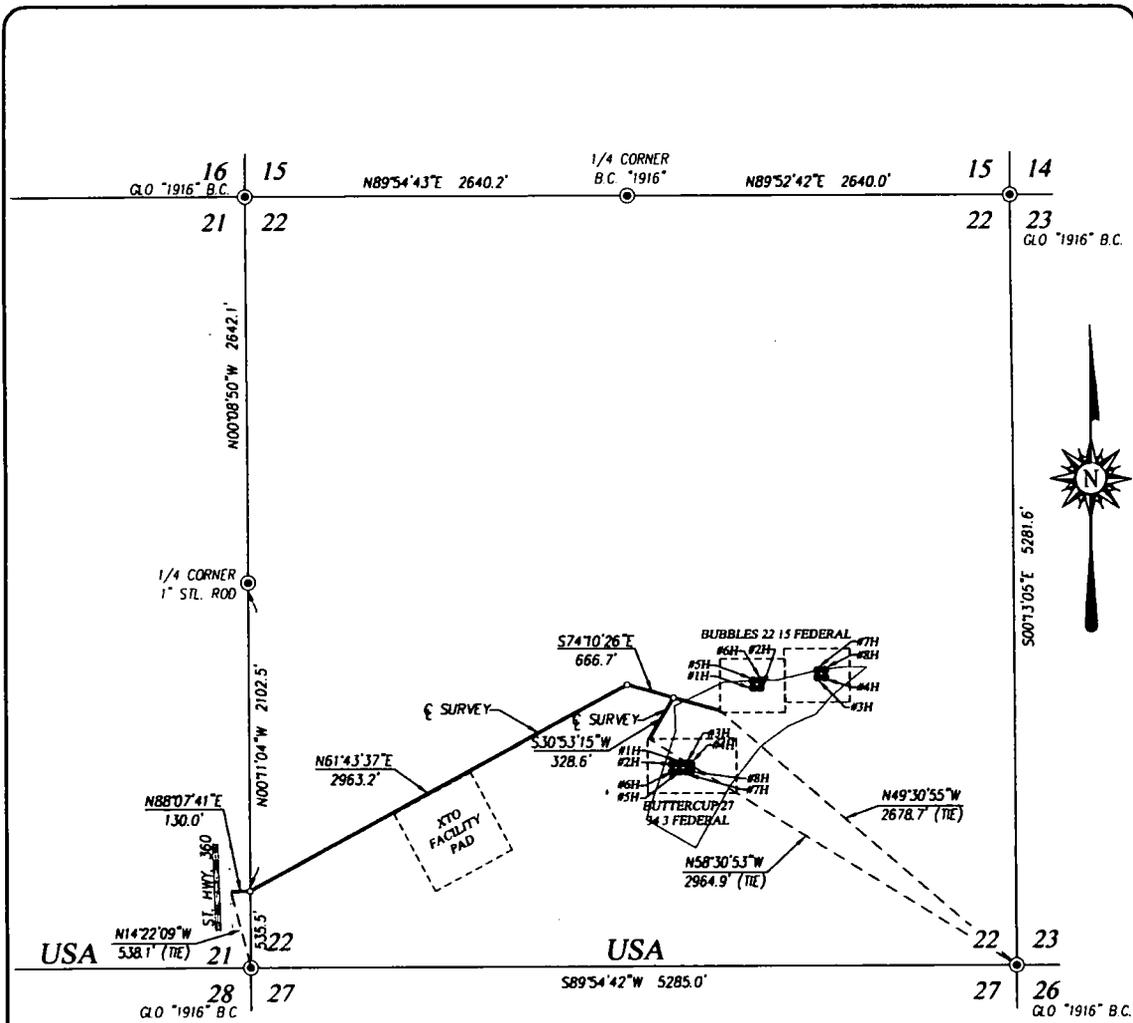
### ROW Applications

**SUPO Additional Information:** A variance to interim reclamation is being requested for 1.5 years to be able to drill and complete all 8 wells on the pad.

**Use a previously conducted onsite?** YES

**Previous Onsite information:** Fell 60ft S of P/L running E&W. Moved 110ft S. The only things we have figured out so far is the V-door (West) and Road (NW Corner 260ft of new road). Due to being in the beginning stages of construction development planning.

### Other SUPO Attachment



**DESCRIPTION**

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 4088.5 FEET OR 0.774 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 21 & 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

**NOTE**

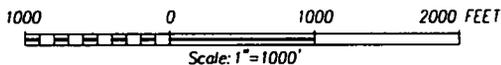
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON *Ronald J. Eidson*  
 DATE: 8/25/2016

**LEGEND**

⊙ DENOTES FOUND CORNER AS NOTED

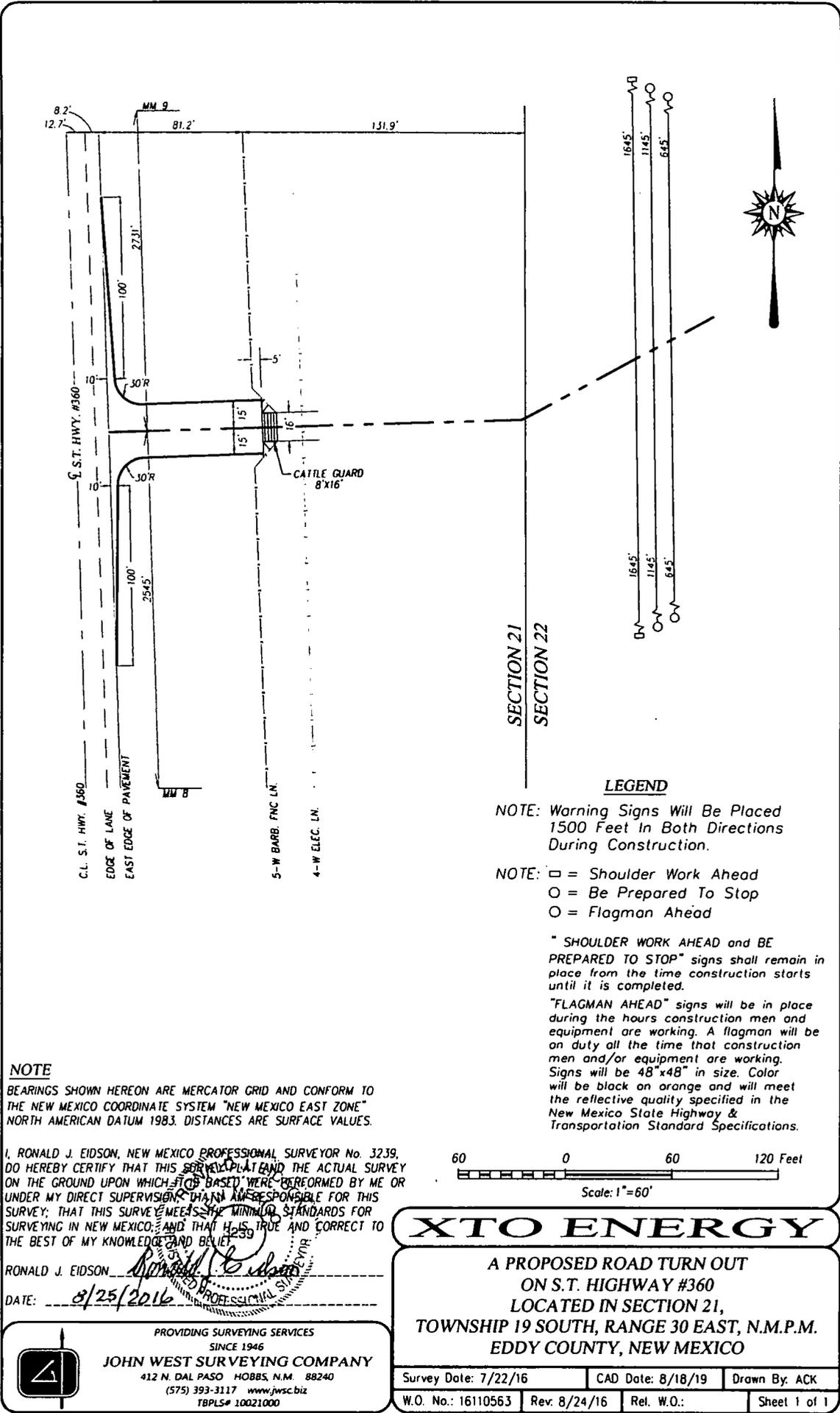


**XTO ENERGY**

SURVEY FOR AN ACCESS ROAD TO CONNECT THE BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #7H WELLS & BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS CROSSING SECTIONS 21 & 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz  
 TBPLS# 10021000

Survey Date: 7/22/16	CAD Date: 8/18/16	Drawn By: ACK
W.O. No.: 16110563	Rev: 8/24/16	Rel. W.O.:
		Sheet 1 of 1



C.L. S.T. HWY. #360  
EDGE OF LANE  
EAST EDGE OF PAVEMENT  
MM 8  
MM 9

5-W BARB. FNC LN.  
4-W ELEC. LN.

CATTLE GUARD  
8'x16'

SECTION 21  
SECTION 22

**LEGEND**

NOTE: Warning Signs Will Be Placed  
1500 Feet In Both Directions  
During Construction.

NOTE: □ = Shoulder Work Ahead  
○ = Be Prepared To Stop  
○ = Flagman Ahead

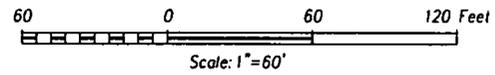
" SHOULDER WORK AHEAD and BE  
PREPARED TO STOP" signs shall remain in  
place from the time construction starts  
until it is completed.

"FLAGMAN AHEAD" signs will be in place  
during the hours construction men and  
equipment are working. A flagman will be  
on duty all the time that construction  
men and/or equipment are working.  
Signs will be 48"x48" in size. Color  
will be black on orange and will meet  
the reflective quality specified in the  
New Mexico State Highway &  
Transportation Standard Specifications.

**NOTE**  
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO  
THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE"  
NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239,  
DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY  
ON THE GROUND UPON WHICH THIS WAS BASED WERE PERFORMED BY ME OR  
UNDER MY DIRECT SUPERVISION AND I AM RESPONSIBLE FOR THIS  
SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR  
SURVEYING IN NEW MEXICO; AND THAT THIS IS TRUE AND CORRECT TO  
THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON  
DATE: 8/25/2016



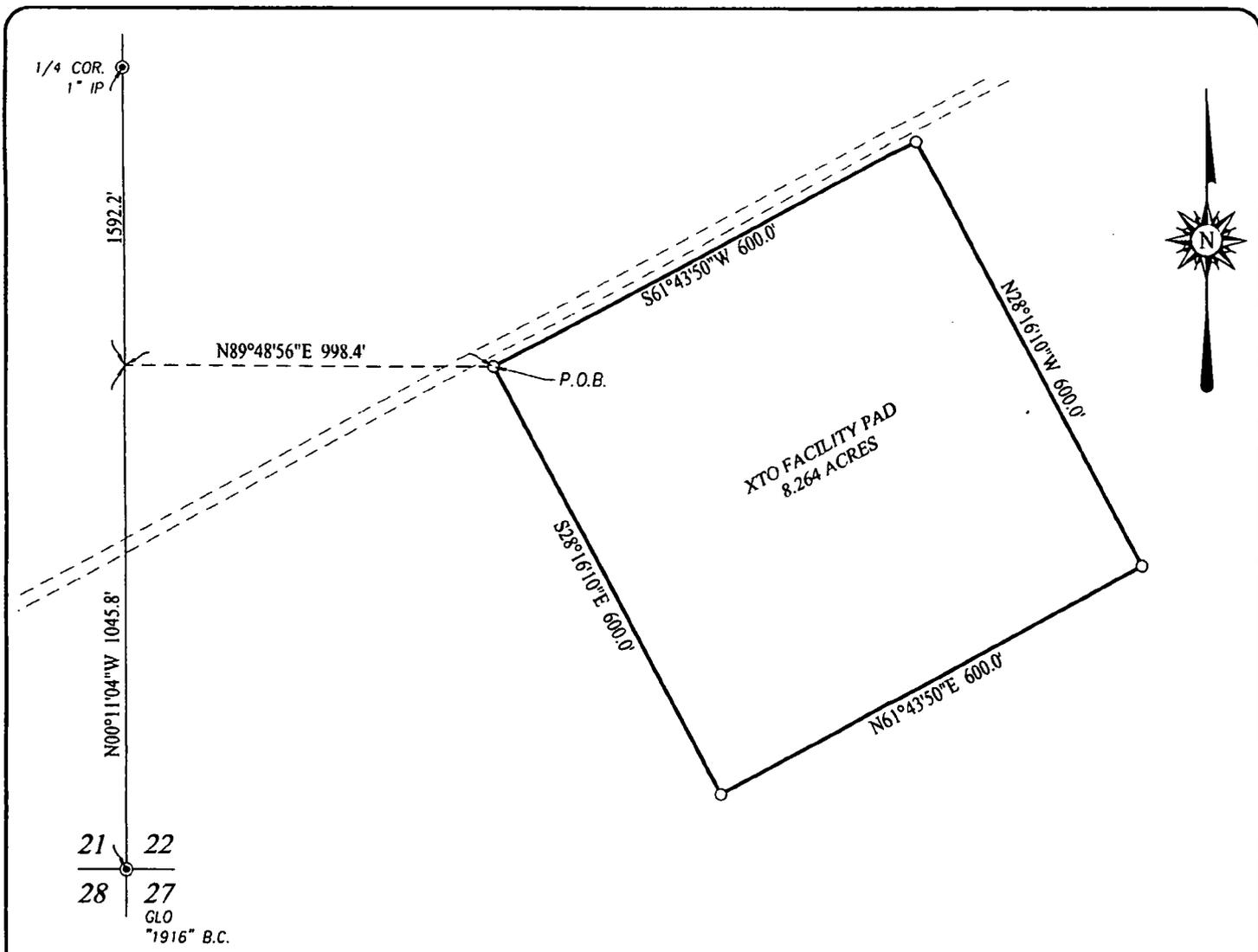
**XTO ENERGY**

A PROPOSED ROAD TURN OUT  
ON S.T. HIGHWAY #360  
LOCATED IN SECTION 21,  
TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO HOBBS, N.M. 88240  
(575) 393-3117 www.jwsc.biz  
TBPLS# 10021000

Survey Date: 7/22/16	CAD Date: 8/18/19	Drawn By: ACK
W.O. No.: 16110563	Rev: 8/24/16	Ret. W.O.:
		Sheet 1 of 1





**LEGEND**

● DENOTES FOUND CORNER AS NOTED

**NOTE**

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

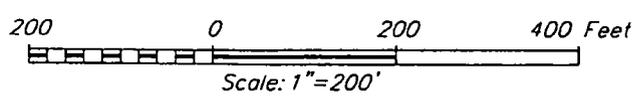
I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND FROM WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY AND THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON: *Ronald J. Eidson*  
 DATE: 8/16/2016

**DESCRIPTION:**

A PROPOSED FACILITY PAD SITUATED IN THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF THE FACILITY PAD WHICH LIES N00°11'04"W 1045.8 FEET AND N89°48'56"E 998.4 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 22; THEN S28°16'10"E 600.0 FEET; THEN N61°43'50"E 600.0 FEET; THEN N28°16'10"W 600.0 FEET; THEN S61°43'50"W 600.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 8.264 ACRES MORE OR LESS.

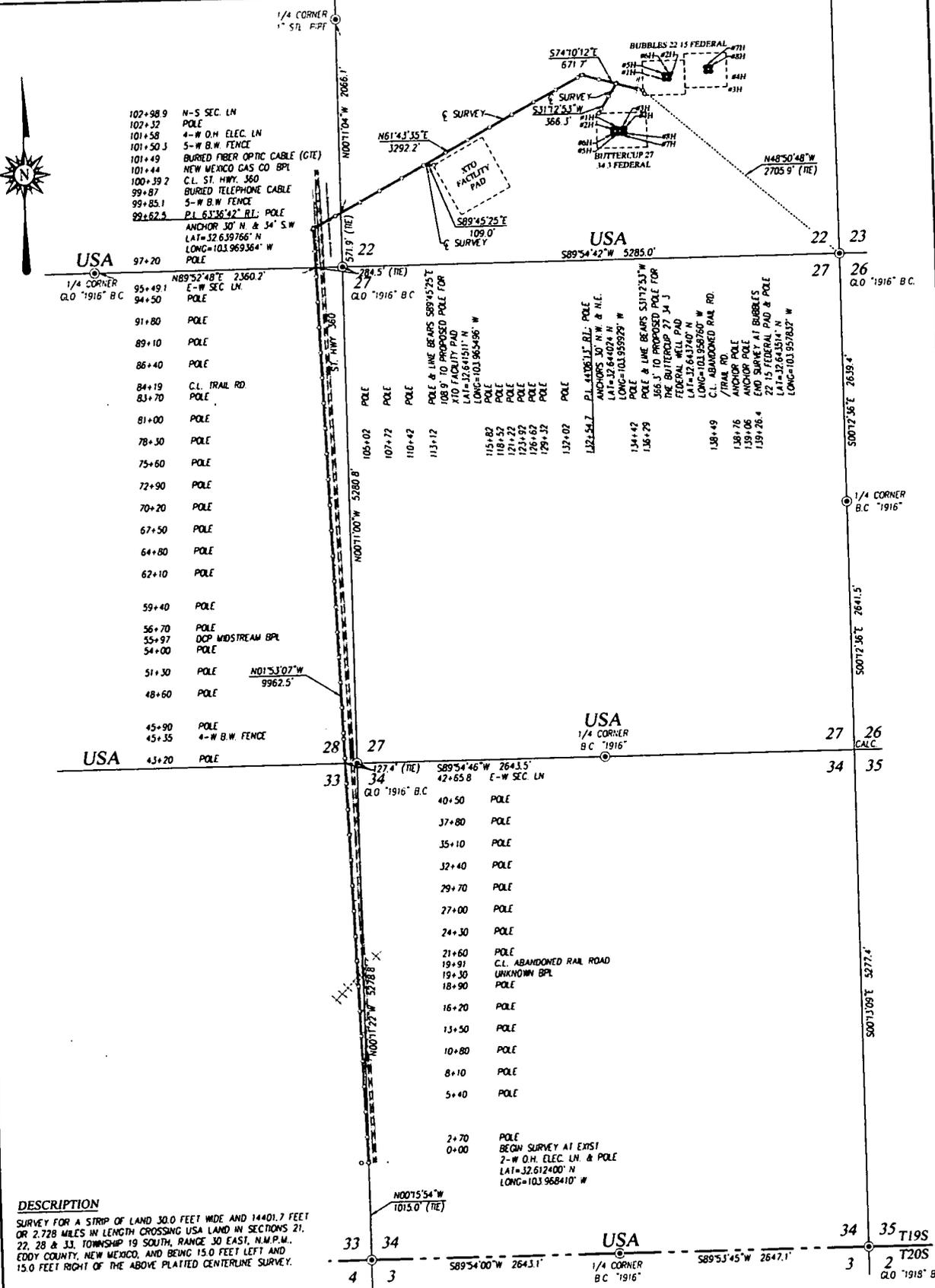


**XTO ENERGY**

SURVEY FOR A FACILITY PAD  
 SITUATED IN THE SW/4 OF SECTION 22,  
 TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M.  
 EDDY COUNTY, NEW MEXICO

Survey Date: 7/29/16	CAD Date: 8/4/16	Drawn By: LSL
W.O. No.: 16110562	Rev:	Rel. W.O.:
		Sheet 1 of 1

**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz  
 TBPLS# 10021000



**DESCRIPTION**  
 SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 14401.7 FEET OR 2.728 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 21, 22, 28 & 33, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

**LEGEND**  
 © DENOTES FOUND CORNER AS NOTED

I, RONALD J. EDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAN AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EDSON *Ronald J. Edson*  
 DATE: 8/24/2016

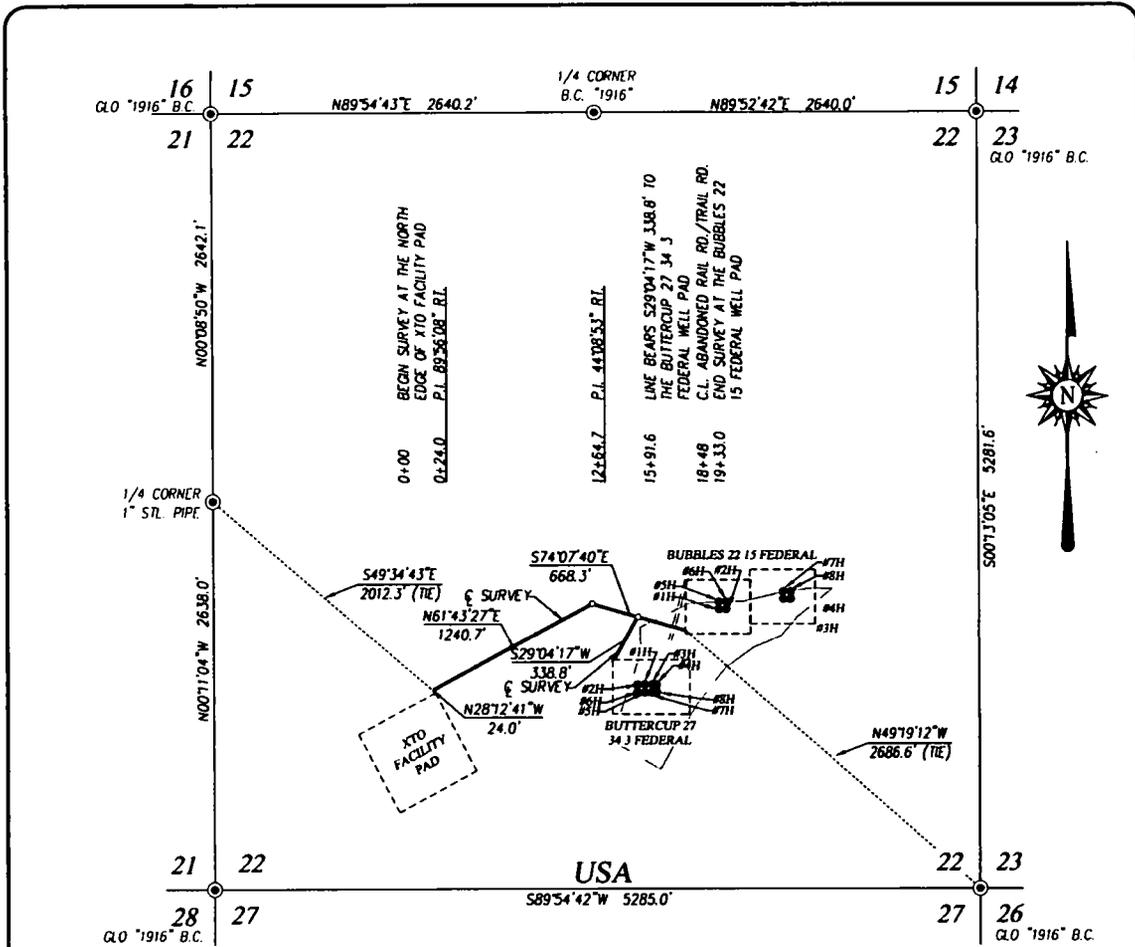
PROVIDING SURVEYING SERVICES SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO MOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz  
 TBP LSP 1.0021000

- NOTE**
- 1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.
  - 2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

**XTO ENERGY**

SURVEY FOR AN ELECTRIC LINE TO THE BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS AND BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #8H WELLS CROSSING SECTIONS 21, 22, 28 & 33, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 8/2/16 CAD Date: 8/23/16 Drawn By: ACK  
 W.O. No.: 16110564 Rev. Rel. W.O.: Sheet 1 of 1



**DESCRIPTION**

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 2271.8 FEET OR 0.430 MILES IN LENGTH CROSSING USA LAND IN SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

**NOTE**

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 8/25/2016

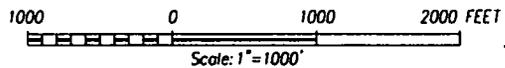
*Ronald J. Eidson*  
 PROFESSIONAL SURVEYOR  
 No. 3239



PROVIDING SURVEYING SERVICES SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz  
 TBPLS# 10021000

**LEGEND**

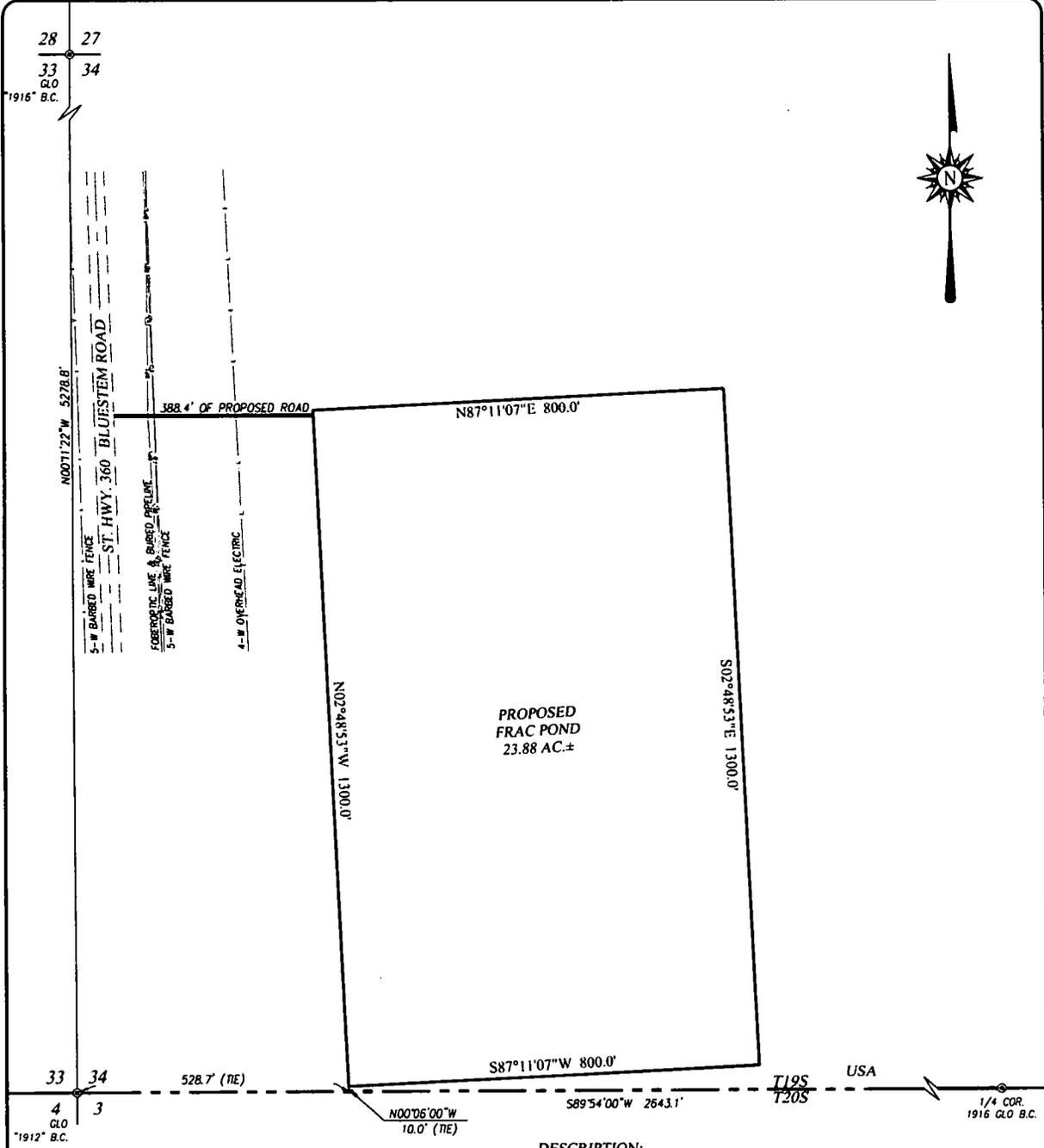
⊙ DENOTES FOUND CORNER AS NOTED



**XTO ENERGY**

SURVEY FOR A FLOW LINE TO THE BUTTERCUP 27 34 3 FEDERAL WELL PAD & BUBBLES 22 15 FEDERAL WELL PAD CROSSING SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 8/1/16	CAD Date: 8/24/16	Drawn By: ACK
W.O. No.: 16110565	Rev.:	Rel. W.O.:
		Sheet 1 of 1



28 27  
33 34  
GLO  
1916 B.C.

33 34  
4 3  
GLO  
1912 B.C.

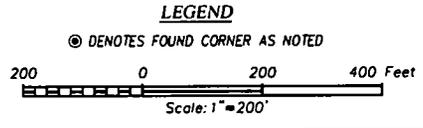
**NOTE**  
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

**DESCRIPTION:**  
A FRAC POND TRACT SITUATED IN THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER, WHICH LIES N89°54'00"E 528.7 FEET AND N00°06'00"W 10.0 FEET FROM THE SOUTHWEST CORNER; THEN N02°48'53"W 1300.0 FEET; THEN N87°11'07"E 800.0 FEET; THEN S02°48'53"E 1300.0 FEET; THEN S87°11'07"W 800.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 23.88 ACRES MORE OR LESS.

**SURVEYOR'S CERTIFICATE:**  
I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

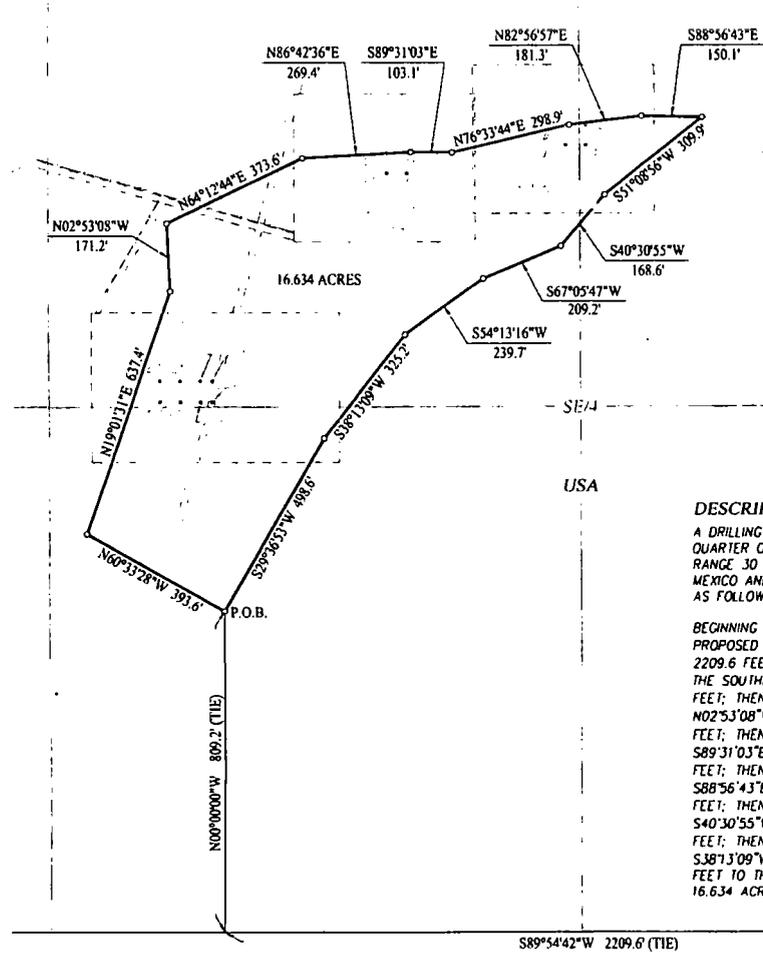
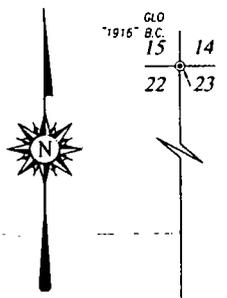
RONALD J. EIDSON  
DATE: 02/07/2017



**XTO ENERGY**  
SURVEY FOR A FRAC POND TRACT  
SITUATED IN THE SW/4 OF SECTION 34,  
TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO HOBBES, N.M. 88240  
(575) 393-3117 www.jwsc.biz  
TBPLS# 10021000

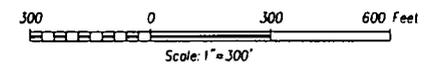
Survey Date: 1/25/17	CAD Date: 2/7/17	Rev Date:	Sheet: 1 of 1
W.O. No.: 17110050	Rel. W.O.: 16110403	Drawn By: DSS	



**DESCRIPTION:**  
 A DRILLING ISLAND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:  
 BEGINNING AT THE SOUTH CORNER OF THE PROPOSED DRILL ISLAND WHICH LIES S89°54'42\"/>

**LEGEND:**  
 ⊙ - DENOTES CORNER FOUND AS NOTED

**NOTE**  
 BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

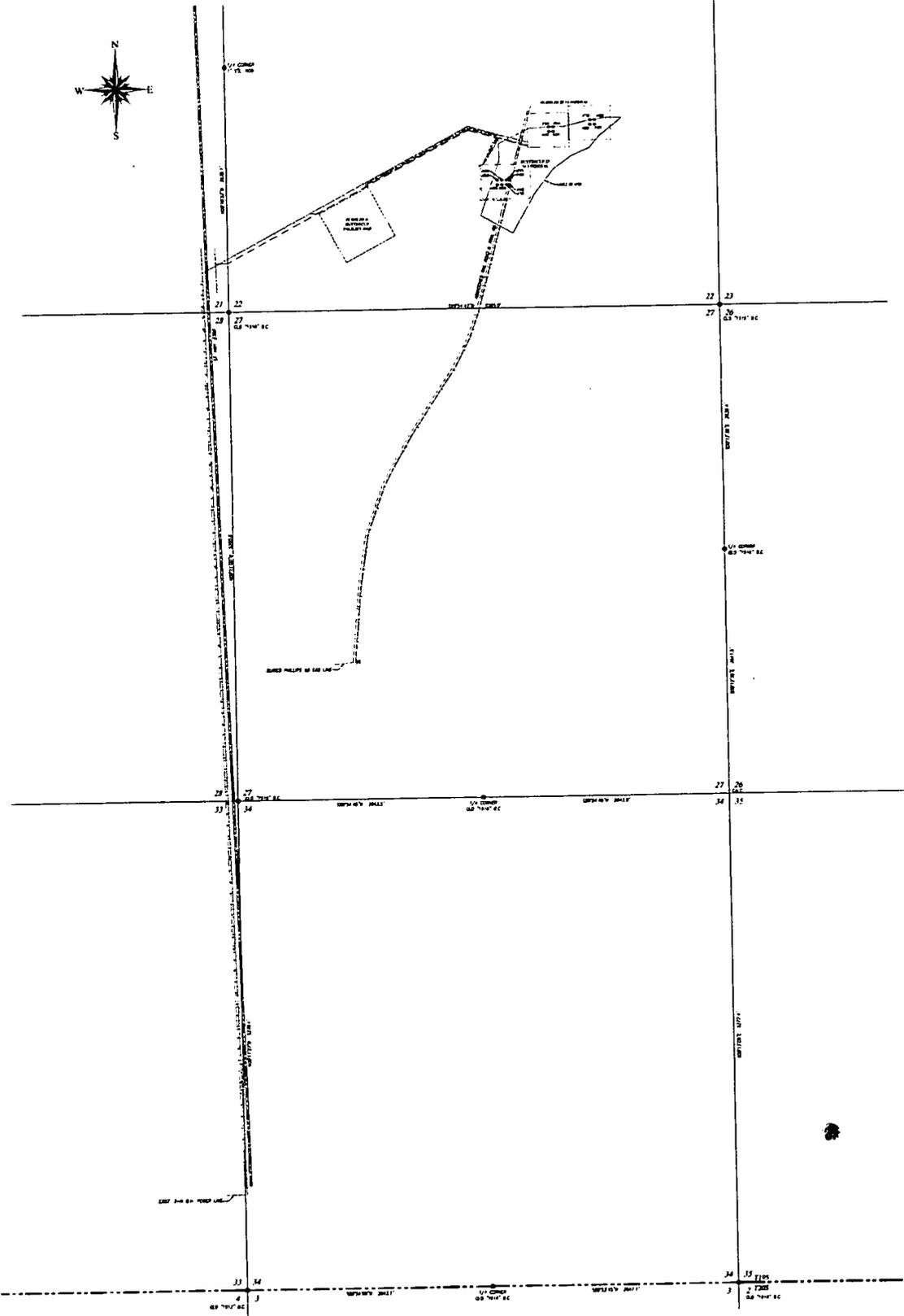


**SURVEYOR'S CERTIFICATE:**  
 I, RONALD J. EIDSON, A PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY OF THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.  
 RONALD J. EIDSON  
 DATE: 8/16/2016

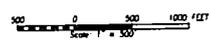
PROVIDING SURVEYING SERVICES SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz  
 TBPLS# 10021000

**XTO ENERGY**  
 SURVEY FOR A DRILLING ISLAND FOR THE BUBBLES 22 15 FEDERAL #1H- #8H AND THE BUTTERCUP 27 34 3 FEDERAL #1H- #8H IN SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 7/29/16	CAD Date: 8/15/16	Rev Date:	Sheet: 1 of 1
W.O. No.: 16110403	Rel. W.O.:	Drawn By: LSL	



- - EXISTING HOUSE CORNER OR WELL
- - EXISTING PROPOSED WELL OR ACRES
- - BOUNDARY OF ACRES
- - EXISTING PROPOSED GAS LINE
- - EXISTING PROPOSED OIL LINE
- - EXISTING PROPOSED ELECTRIC LINE
- - EXISTING PROPOSED ROAD

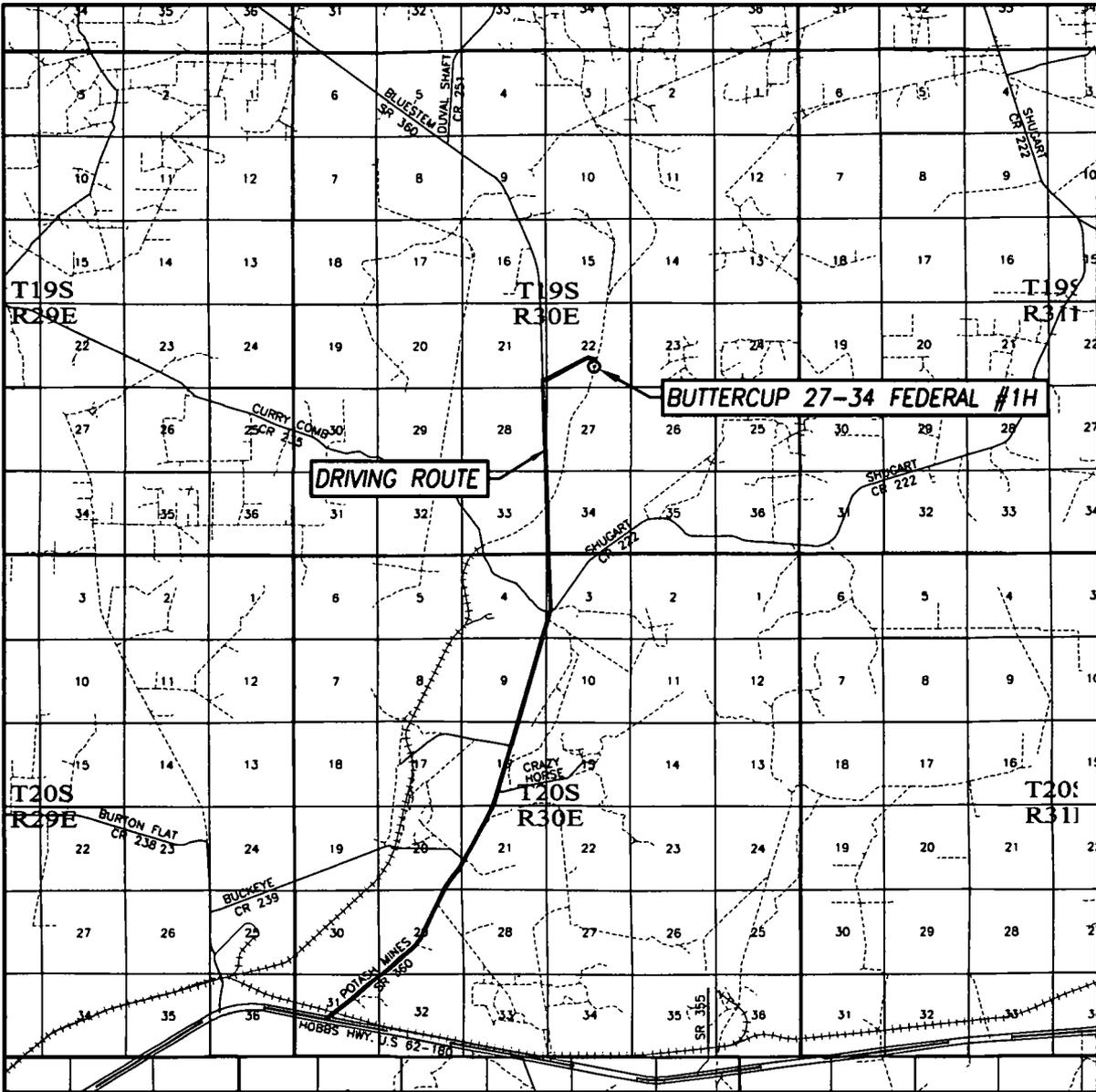


Survey Date: 6/23/14  
CAD Drafter & Date: 6/23/14  
Scale: One Inch = Five Hundred Feet

**XTO ENERGY**  
LEASE FLOW MAP FOR THE BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS  
AND BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #8H WELLS CROSSING  
SECTIONS 21, 22, 27, 28, 33 & 34, TOWNSHIP 19 SOUTH, RANGE 30 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES SINCE 1946  
JOHN WEST SURVEYING COMPANY  
412 N. DAL PASO  
HOMER, NEW MEXICO 88403  
575.753.3117 www.jwsc.com  
TRPLS# 10021000

# VICINITY MAP



SCALE: 1" = 2 MILES

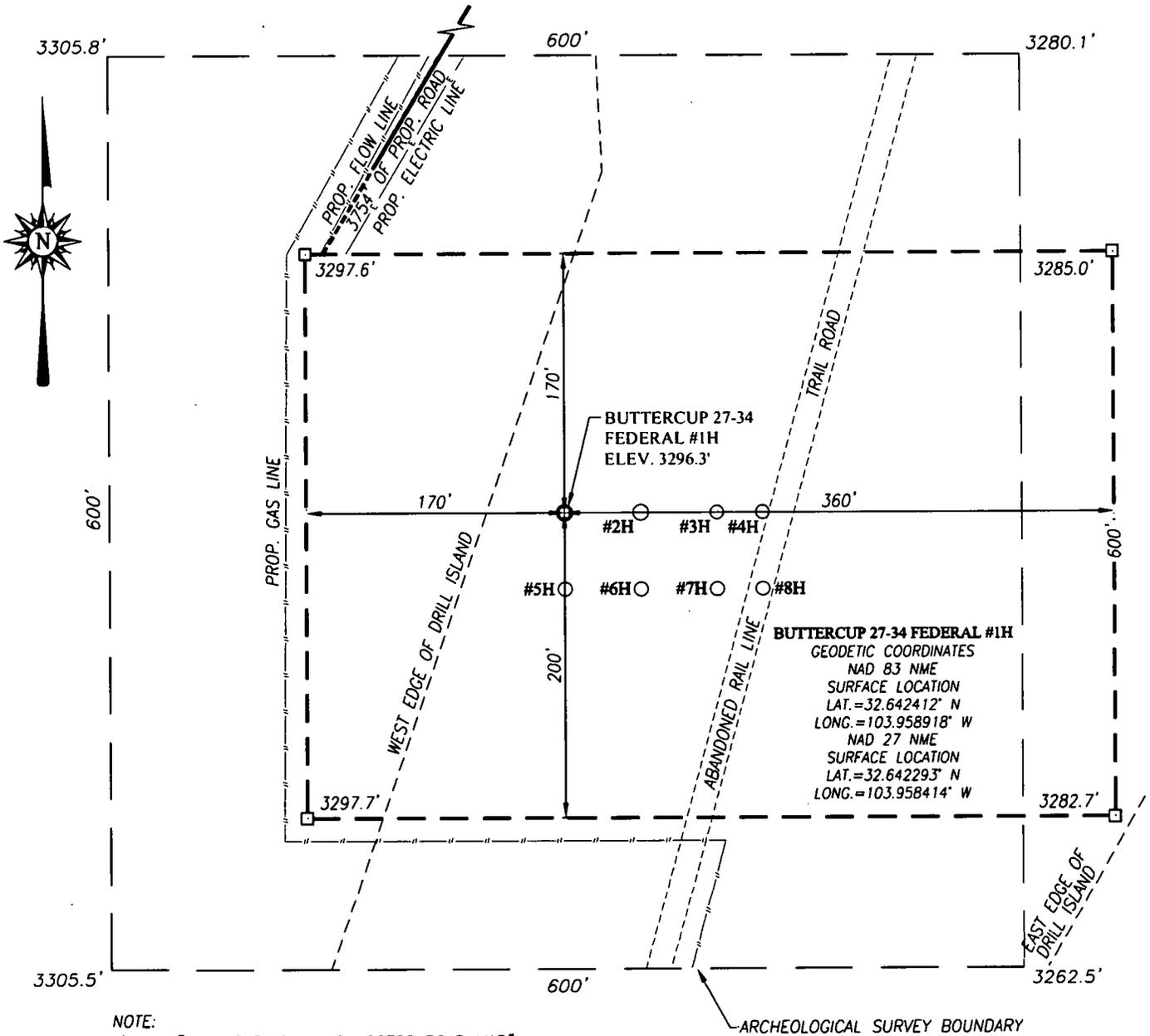
DRIVING ROUTE: SEE TOPOGRAPHICAL AND ACCESS ROAD MAP

SEC. 22 TWP. 19-S RGE. 30-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY STATE NEW MEXICO  
 DESCRIPTION 1382' FSL & 2365' FEL  
 ELEVATION 3296'  
 OPERATOR XTO ENERGY  
 LEASE BUTTERCUP 27-34 FEDERAL



PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 [www.jwsc.biz](http://www.jwsc.biz)  
 TBPLS# 10021000

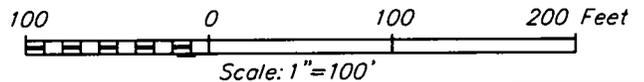
# WELL SITE PLAN



**NOTE:**  
 1) SEE "TOPOGRAPHICAL AND ACCESS ROAD MAP" FOR PROPOSED ROAD LOCATION.  
 2) PROPOSED PIPELINE AND ELECTRICAL LINE SHOWN HEREON HAVE NOT BEEN SURVEYED.

**DIRECTIONS TO LOCATION:**

FROM THE INTERSECTION OF U.S. HWY 62-180 AND ST. HWY. 360, GO NORTH ON ST. HWY. 360 APPROX. 8.45 MILES. TURN RIGHT AND FOLLOW ROAD SURVEY EAST APPROX. 0.03 OF A MILE. TURN LEFT AND GO NORTHEAST FOR APPROX. 0.56 OF A MILE. TURN RIGHT AND GO SOUTHEAST APPROX. 0.06 OF A MILE. TURN RIGHT AND GO 0.06 OF A MILE TO THE NORTHWEST CORNER OF THE WELL PAD.



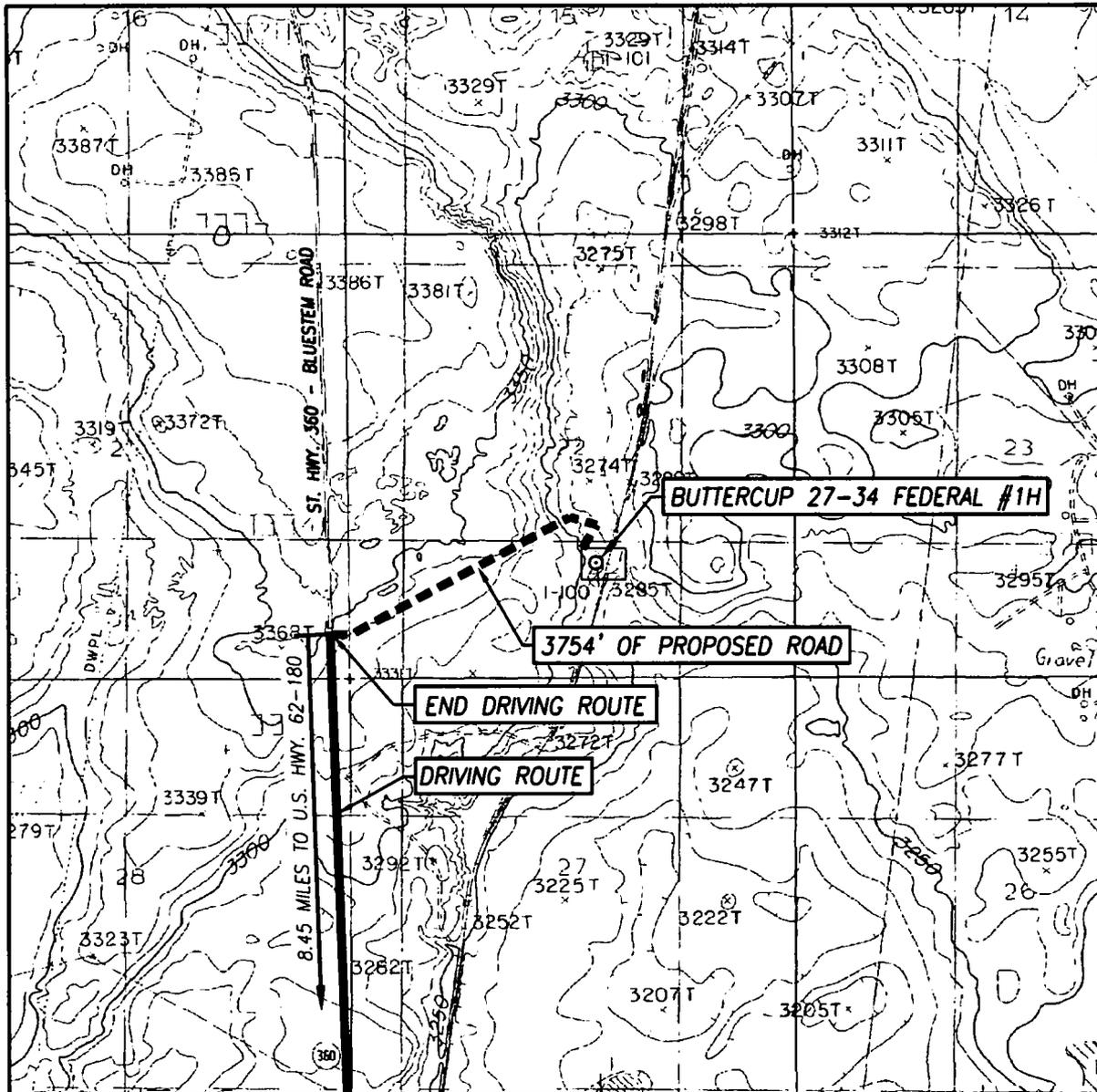
## XTO ENERGY

**BUTTERCUP 27-34 FEDERAL #1H WELL  
 LOCATED 1382 FEET FROM THE SOUTH LINE  
 AND 2365 FEET FROM THE EAST LINE OF SECTION 22,  
 TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO**

PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO HOBBS, N.M. 88240  
(575) 393-3117 www.jwsc.biz  
TBPLS# 10021000

Survey Date: 8/5/16	CAD Date: 8/24/16	Drawn By: ACK
W.O. No.: 16110405	Rev: 9/8/16	Rel. W.O.:
		Sheet 1 of 1

# TOPOGRAPHICAL AND ACCESS ROAD MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
HACKBERRY LAKE, N.M. - 10'

SEC. 22 TWP. 19-S RGE. 30-E

SURVEY \_\_\_\_\_ N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1382' FSL & 2365' FEL

ELEVATION \_\_\_\_\_ 3296'

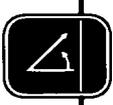
OPERATOR \_\_\_\_\_ XTO ENERGY

LEASE \_\_\_\_\_ BUTTERCUP 27-34 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
HACKBERRY LAKE, N.M.

DIRECTIONS TO LOCATION:

FROM THE INTERSECTION OF U.S. HWY 62-180 AND ST. HWY. 360, GO NORTH ON ST. HWY. 360 APPROX. 8.45 MILES. TURN RIGHT AND FOLLOW ROAD SURVEY EAST APPROX. 0.03 OF A MILE. TURN LEFT AND GO NORTHEAST FOR APPROX. 0.56 OF A MILE. TURN RIGHT AND GO SOUTHEAST APPROX. 0.06 OF A MILE. TURN RIGHT AND GO 0.06 OF A MILE TO THE NORTHWEST CORNER OF THE WELL PAD.



PROVIDING SURVEYING SERVICES  
 SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
 412 N. DAL PASO HOBBS, N.M. 88240  
 (575) 393-3117 www.jwsc.biz  
 TBPLS# 10021000



**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:

Describe 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:

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 surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe 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?

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 type:**

**Injection well number:**

**Assigned injection well API number?**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

**Injection well name:**

**Injection well API number:**

### **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):**

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**



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

**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:**