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Carlsbad Field Office  
OCD Artesia

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

DISTRICT II-ARTESIA O.C.D.  
UNITED STATES

DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No <b>NMNM089052</b>
1b. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or C/A Agreement, Name and No <b>JAMES RANCH / NMNM070965X</b>
2. Name of Operator <b>BOPCO LP</b>		8. Lease Name and Well No <b>JAMES RANCH UNIT D12 BS2A-1W</b> <b>224H</b> <b>322722</b>
3a. Address <b>810 Houston Street Fort Worth TX 76102</b>		9. API Well No <b>30-015-45326</b>
3b. Phone No. (include area code) <b>(817)885-8200</b>		10. Field and Pool, or Exploratory <b>LOS MEDANOS; BONE SPRING / LOS M</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface <b>SE NW / 2600 FNL / 1850 FWL / LAT 32.363202 / LONG -103.836954</b> At proposed prod. zone <b>NWNE / 660 FNL / 2440 FEL / LAT 32.368632 / LONG -103.885511</b>		11. Sec., T, R, M, or Blk. and Survey or Area <b>SEC 25 / T22S / R30E / NMP</b>
14. Distance in miles and direction from nearest town or post office*		12. County or Parish <b>EDDY</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) <b>1850 feet</b>		13. State <b>NM</b>
16. No of acres in lease <b>560</b>		17. Spacing Unit dedicated to this well <b>400</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>12 feet</b>		20. BLM/BIA Bond No. in file <b>FED: COB000050</b>
19. Proposed Depth <b>9808 feet / 23366 feet</b>		21. Estimated duration <b>90 days</b>
22. Approximate date work will start* <b>05/01/2018</b>		23. Estimated duration <b>90 days</b>

24. Attachments

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

- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 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 requested by the BLM            |

25. Signature (Electronic Submission)	Name (Printed Typed) <b>Stephanie Rabadue / Ph: (432)620-6714</b>	Date <b>12/27/2017</b>
Title <b>Regulatory Compliance Analyst</b>		
Approved by (Signature) (Electronic Submission)	Name (Printed Typed) <b>Cody Layton / Ph: (575)234-5959</b>	Date <b>09/10/2018</b>
Title <b>Assistant Field Manager Lands &amp; Minerals</b>		
Office <b>CARLSBAD</b>		

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

**APPROVED WITH CONDITIONS**  
Approval Date: 09/10/2018

*Ruf 10-16-18.*

## 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.

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

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

**PRINCIPAL PURPOSES:** The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service 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 connects this information to a new 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## **Additional Operator Remarks**

### **Location of Well**

1. SHL: SENW / 2600 FNL / 1850 FWL / TWSP: 22S / RANGE: 30E / SECTION: 25 / LAT: 32.363202 / LONG: -103.836954 ( TVD: 0 feet, MD: 0 feet )  
PPP: NENE / 660 FNL / 1320 FEL / TWSP: 22S / RANGE: 30E / SECTION: 27 / LAT: 32.368585 / LONG: -103.862483 ( TVD: 9808 feet, MD: 15880 feet )  
PPP: NENW / 660 FNL / 1320 FEL / TWSP: 22S / RANGE: 30E / SECTION: 26 / LAT: 32.368567 / LONG: -103.853814 ( TVD: 9808 feet, MD: 13240 feet )  
PPP: NENE / 660 FNL / 330 FEL / TWSP: 25S / RANGE: 30E / SECTION: 26 / LAT: 32.368545 / LONG: -103.844037 ( TVD: 9808 feet, MD: 10600 feet )  
BHL: NWNE / 660 FNL / 2440 FEL / TWSP: 22S / RANGE: 30E / SECTION: 28 / LAT: 32.368632 / LONG: -103.885511 ( TVD: 9808 feet, MD: 23366 feet )

## **BLM Point of Contact**

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@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

OPERATOR'S NAME:	BOPCO LP
LEASE NO.:	NMNM089052
WELL NAME & NO.:	JAMES RANCH UNIT D12 BS2A 1W 224H
SURFACE HOLE FOOTAGE:	2600'/N & 1850'/W
BOTTOM HOLE FOOTAGE:	660'/N & 2440'/E
LOCATION:	SECTION 25, T22S, R30E, NMPM
COUNTY:	EDDY

H2S	Yes	No	
Potash	None	Secretary	R-111-P
Cave/Karst Potential	Low	Medium	High
Variance	None	Flex Hose	Other
Wellhead	Conventional	Multibowl	Both
Other	4 String Area	Capitan Reef	WIPP

## **Commercial Well Determination**

If the well is not in an established participating area for the proposed target formation. A commercial well determination must be submitted to the BLM Carlsbad Office, after production has been established for at least six months.

## **Unit Wells**

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

## **A. Hydrogen Sulfide**

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.

**Possibility of water flows in the Castile and Salado.**

**Possibility of lost circulation in the Red Beds, Rustler and Delaware.**

**Abnormal pressures may be encountered penetrating the 3<sup>rd</sup> Bone Springs and Wolfcamp.**

## B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately **640 feet (in a competent bed in the base of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt))** and cemented to the surface.
  - 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 will be a minimum of **24 hours** and 500 pounds compressive strength, whichever is greater. (This is to include the lead cement) **See Potash requirements below**
  - 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. 9-5/8" Intermediate is to be kept 2/3rds liquid filled while running in hole to meet BLM minimum collapse safety factor.
3. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

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  - 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.
4. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - Cement to surface (As proposed by operator). If cement does not circulate see B.1.a, c-d above. **Additional cement shall be required excess calculates to 15%.**

### C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.

## GENERAL REQUIREMENTS

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

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

☐ Eddy County

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

1. 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.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. 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 are located, this does not include the dog house or stairway area.

3. 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.

A. CASING

1. 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.
2. **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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. **Wait on cement (WOC) for Water Basin:** 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 at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. **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.**
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. **On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed.** Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. 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.

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

#### B. 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 RP 53 Sec. 17.
2. **If a variance** is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. 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.
3. **5M or higher system requires an HCR valve, remote kill line and annular to match.** The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a **multi-bowl wellhead** assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of hours in advance for a representative to witness the tests.

- a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- b. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- 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. 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.
- e. 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. This test shall be performed prior to the test at full stack pressure.
- f. **BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days.** This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

### D. 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.

### E. WIPP Requirements

**The proposed well is located over 330' but within a mile of the WIPP Land Withdrawal Area boundary. As a result, BOPCO, L.P. is requested, but not required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.**

**The Operator can email the required information to Mr. Melvin Balderrama at [Melvin.Balderama@wipp.ws](mailto:Melvin.Balderama@wipp.ws) or Mr. J. Neatherlin at [Jimmy.Neatherlin@wipp.ws](mailto:Jimmy.Neatherlin@wipp.ws) fax to his attention at 575-234-6062.**

### **Waste Minimization Plan (WMP)**

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

**EGF 050518**

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	BOPCO LP
LEASE NO.:	NMNM089052
WELL NAME & NO.:	JAMES RANCH UNIT D12 BS2A 1W 224H
SURFACE HOLE FOOTAGE:	2600'/N & 1850'/W
BOTTOM HOLE FOOTAGE	660'/N & 2440'/E
LOCATION:	SECTION 25, T22S, R30E, NMPM
COUNTY:	EDDY

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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**
  - Commercial Well Determination
  - Unit Well Sign Specs
  - Karst
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

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

## **II. PERMIT EXPIRATION**

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

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

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

## **IV. NOXIOUS WEEDS**

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

## **V. SPECIAL REQUIREMENT(S)**

### **Commercial Well Determination**

A commercial well determination shall be submitted after production has been established for at least six months.

### **Unit Wells**

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

### **Cave and Karst**

**\*\*** 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.)

**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 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, siting 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 high 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:**

Annual pressure monitoring will be performed by the operator 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.

**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**

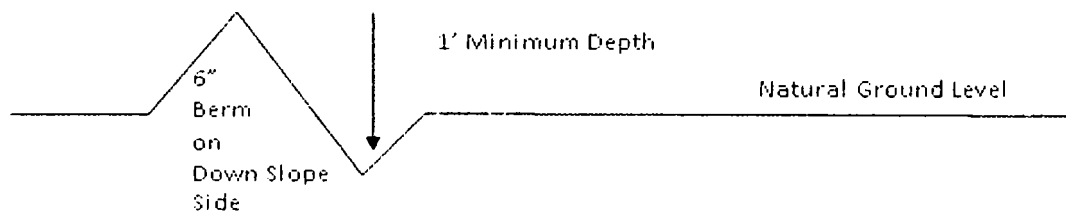
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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:

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

### **Cattleguards**

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards 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 cattleguards 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.

5

### Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

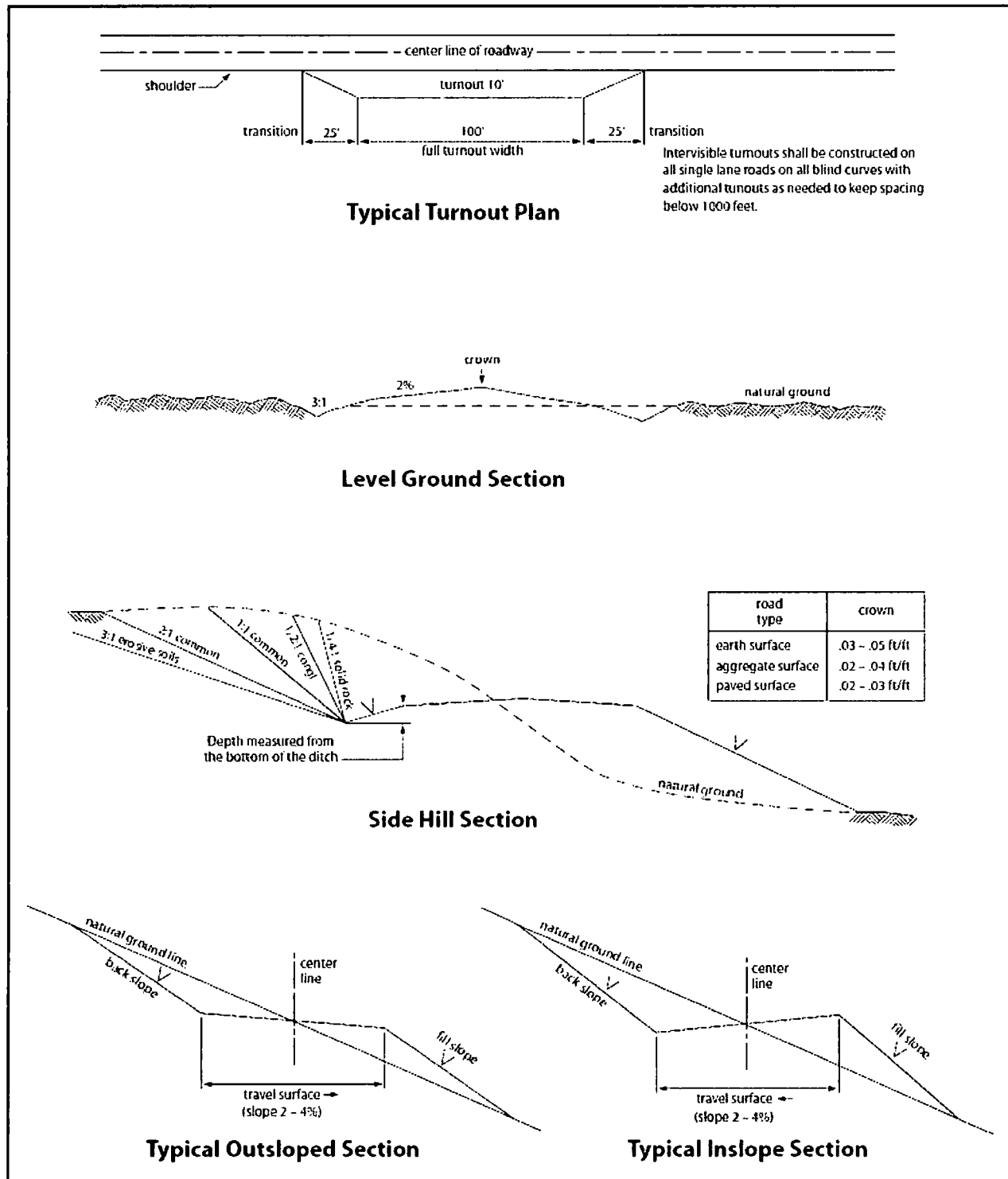


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **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**

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

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

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

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

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.

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

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

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

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

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

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

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky 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 requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

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

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

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

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

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

## **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).

## **X. 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 2, for Sandy Sites

The 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 will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will 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). The 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. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*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

09/10/2018

### 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:** 11/08/2017

**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:**



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

## Application Data Report

09/10/2018

APD ID: 10400025857

Submission Date: 12/27/2017

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI2 BS2A-1W

Well Number: 224H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data  
reflects the most  
recent changes

[Show Final Text](#)

### Section 1 - General

APD ID: 10400025857

Tie to previous NOS?

Submission Date: 12/27/2017

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: NMNM089052

Lease Acres: 560

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? YES

Federal or Indian agreement: FEDERAL

Agreement number: NMNM070965X

Agreement name:

Keep application confidential? NO

Permitting Agent? NO

APD Operator: BOPCO LP

Operator letter of designation: JRU\_DI2\_Op\_Rights\_20171227113045.pdf

### Operator Info

Operator Organization Name: BOPCO LP

Operator Address: 810 Houston Street

Zip: 76102

Operator PO Box:

Operator City: Fort Worth

State: TX

Operator Phone: (817)885-8200

Operator Internet Address:

### 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: JAMES RANCH UNIT DI2 BS2A-1W

Well Number: 224H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: LOS MEDANOS;  
BONE SPRING

Pool Name: LOS MEDANOS;  
BONE SPRING

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL,POTASH

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

**Describe other minerals:**

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

**Type of Well Pad:** MULTIPLE WELL

**Multiple Well Pad Name:**

**Number:** 2

**Well Class:** HORIZONTAL

JAMES RANCH UNIT DI

**Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** DELINEATION

**Describe sub-type:**

**Distance to town:**

**Distance to nearest well:** 12 FT

**Distance to lease line:** 1850 FT

**Reservoir well spacing assigned acres Measurement:** 400 Acres

**Well plat:** JRU\_DI2\_224H\_C102\_20171227113158.pdf

**Well work start Date:** 05/01/2018

**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	260 0	FNL	185 0	FWL	22S	30E	25	Aliquot SENW 2	32.36320 2	- 103.8369 54	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 089052	334 4	0	0
KOP Leg #1	260 0	FNL	185 0	FWL	22S	30E	25	Aliquot SENW 2	32.36320 2	- 103.8369 54	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 089052	134 4	200 0	200 0
PPP Leg #1	660	FNL	330	FEL	25S	30E	26	Aliquot NENE 5	32.36854 5	- 103.8440 37	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMLC 064827 A	- 646 4	106 00	980 8

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI2 BS2A-1W

Well Number: 224H

	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	660	FNL	132 0	FEL	22S	30E	26	Aliquot NENW	32.36856 7	- 103.8538 14	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000295 3B	- 646 4	132 40	980 8
PPP Leg #1	660	FNL	132 0	FEL	22S	30E	27	Aliquot NENE	32.36858 5	- 103.8624 83	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000295 2A	- 646 4	158 80	980 8
EXIT Leg #1	660	FNL	231 0	FEL	22S	30E	28	Aliquot NWNE	32.36863 2	- 103.8850 9	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 030733 7	- 646 4	232 00	980 8
BHL Leg #1	660	FNL	244 0	FEL	22S	30E	28	Aliquot NWNE	32.36863 2	- 103.8855 11	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 030733 7	- 646 4	233 66	980 8





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

## Drilling Plan Data Report

09/10/2018

APD ID: 10400025857

Submission Date: 12/27/2017

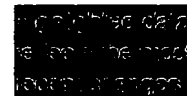
Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI2 BS2A-1W

Well Number: 224H

Well Type: OIL WELL

Well Work Type: Drill



[Show Final Text](#)

### Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	3344	0	0	ALLUVIUM, OTHER : Quaternary	NONE	No
2	RUSTLER	2974	370	370	SANDSTONE	USEABLE WATER	No
3	TOP SALT	2674	670	670	SALT	POTASH	No
4	BASE OF SALT	-506	3850	3850	SALT	POTASH	No
5	DELAWARE	-536	3880	3880	SANDSTONE, MARL	NATURAL GAS, OIL, OTHER : Produced Water	No
6	BONE SPRING 1ST	-4356	7700	7700	SANDSTONE	NATURAL GAS, POTASH, OTHER : Produced Water	No
7	BONE SPRING 2ND	-6216	9560	9560	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	Yes

### Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 9808

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

**Requesting Variance?** YES

**Variance request:** 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" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nipping up on the 9-5/8", the BOP will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

**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" 5M bradenhead and flange, the BOP test will be limited to 3000psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day. Because the 9-5/8" casing will be run with a mandrel hanger through the 13-3/8" BOP without breaking any connections, no additional pressure test would be required.

**Choke Diagram Attachment:**

JRU\_DI2\_5MCM\_20171227114632.pdf

**BOP Diagram Attachment:**

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

JRU\_DI2\_5MCM\_20171227114632.pdf

JRU\_DI2\_5MBOP\_20171227114639.pdf

### Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	640	0	640			640	H-40	48	STC	2.63	1.44	DRY	10.48	DRY	10.48
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3880	0	3880			3880	J-55	36	LTC	1.65	1.06	DRY	3.24	DRY	3.24
3	PRODUCTION	8.75	5.5	NEW	API	N	0	23366	0	9808			23366	P-110	17	BUTT	1.12	1.3	DRY	1.85	DRY	1.85

### Casing Attachments

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

JRU\_DI2\_224H\_Csg\_20180815144707.pdf

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

#### Casing Attachments

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

JRU\_DI2\_224H\_Csg\_20180815144720.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

JRU\_DI2\_224H\_Csg\_20180815144728.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	640	250	1.87	12.9	467.5	100	EconoCem-HLTRRC	None
SURFACE	Tail				300	1.35	14.8	405	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead		0	3880	1120	1.88	12.9	2105.6	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				230	1.33	14.8	305.9	100	Halcem-C	2% CaCl
PRODUCTION	Lead		0	24034	670	2.69	10.5	1802.3	20	NeoCem	None

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI2 BS2A-1W

Well Number: 224H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail				3150	1.61	13.2	5071.5	20	VersaCem	None

## 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
3880	2336 6	OTHER : FW / Cut Brine / Polymer	9.8	10.1							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
0	640	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

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

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
640	3880	OTHER : Brine/Gel Sweeps	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

## Section 6 - Test, Logging, Coring

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

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,GR,MUDLOG

### Coring operation description for the well:

No coring will take place on this well.

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 4998

**Anticipated Surface Pressure:** 4998

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

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

### 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:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

**Hydrogen sulfide drilling operations plan:**

JRU\_DI2\_H2S\_Plan\_20171227114242.pdf

JRU\_DI2\_224H\_H2S\_Dia\_20171227114253.pdf

**Section 8 - Other Information**

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

JRU\_DI2\_224H\_DD\_20171227114303.pdf

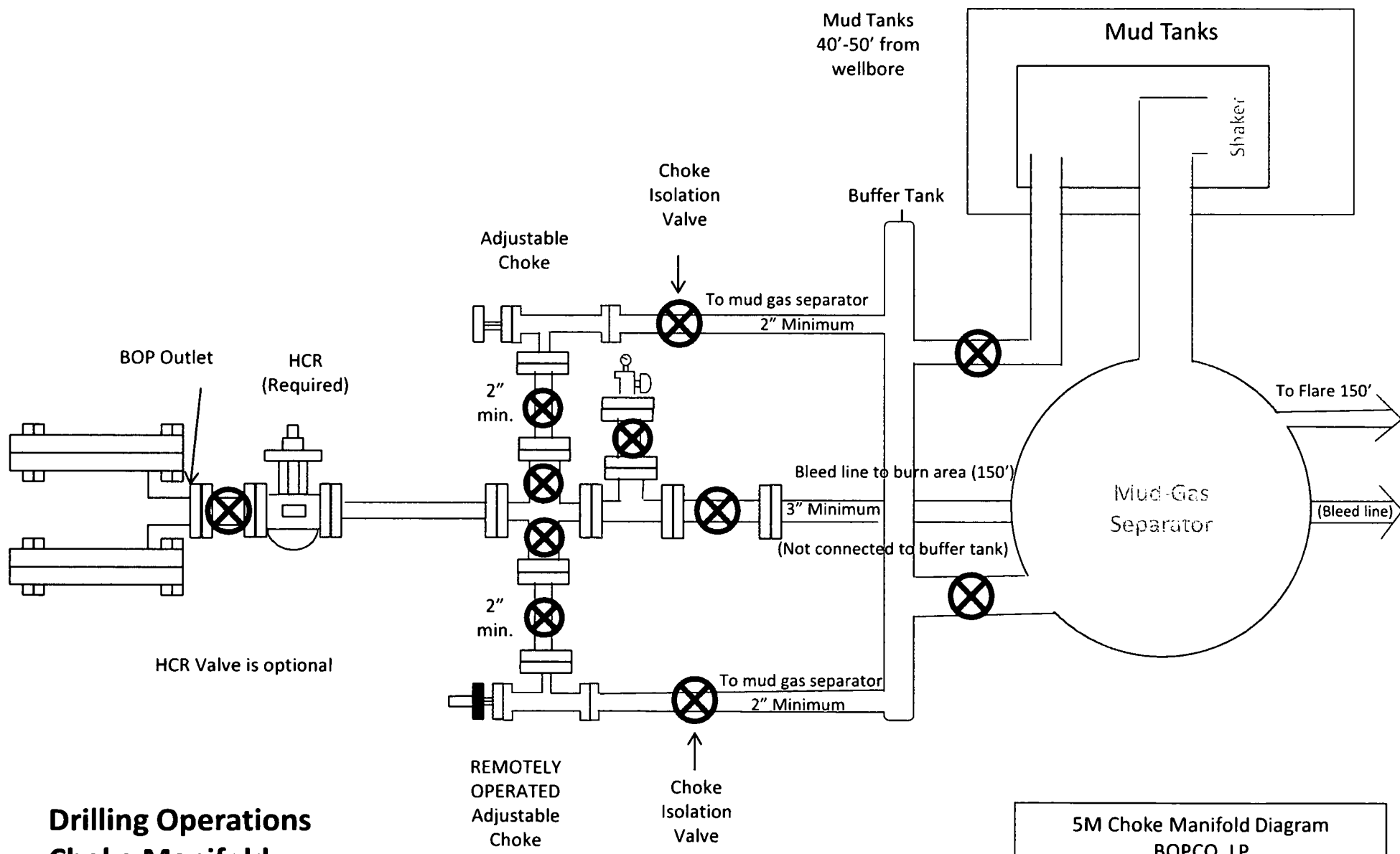
**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

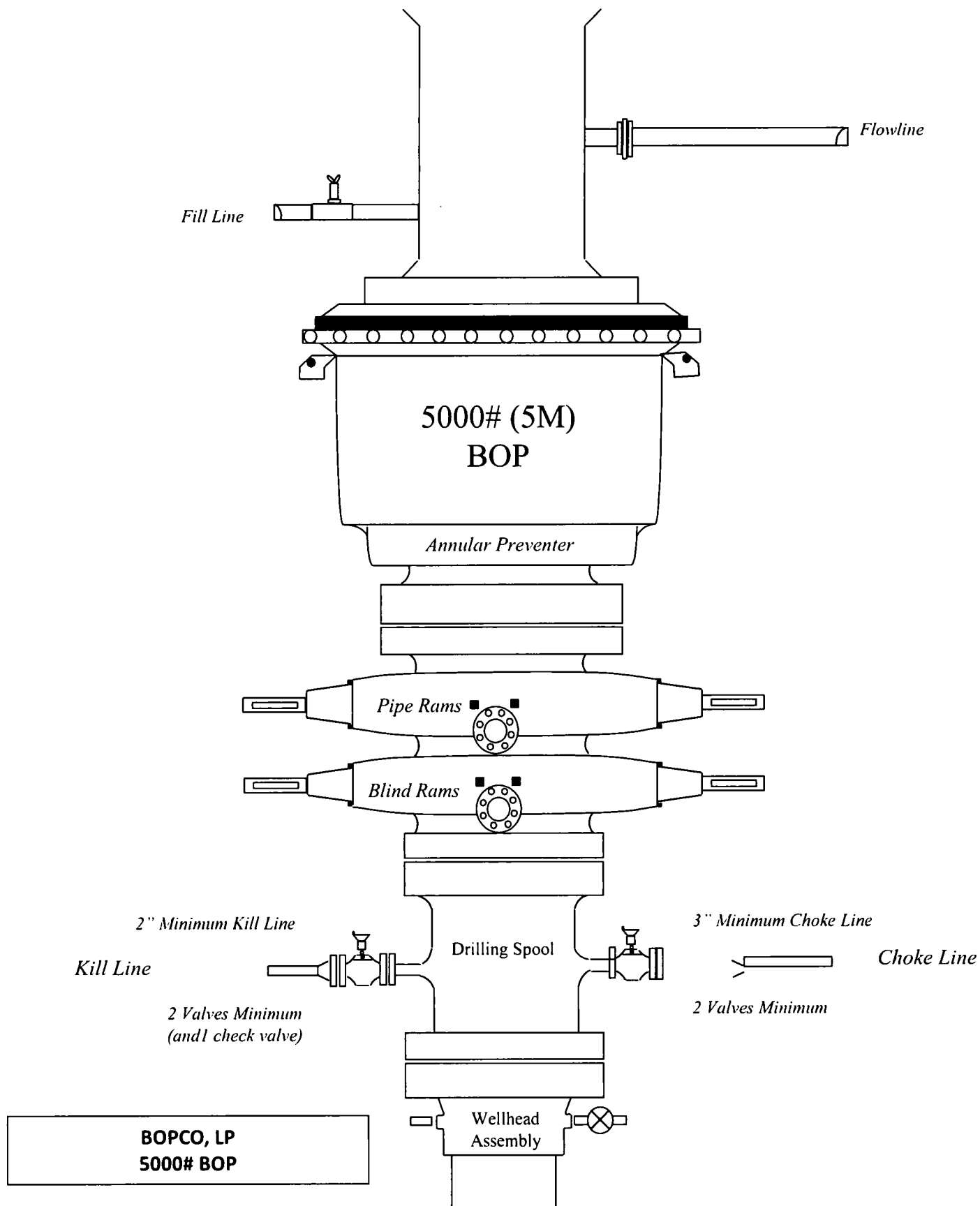
JRU\_DI2\_224H\_GCP\_20171227114310.pdf

**Other Variance attachment:**

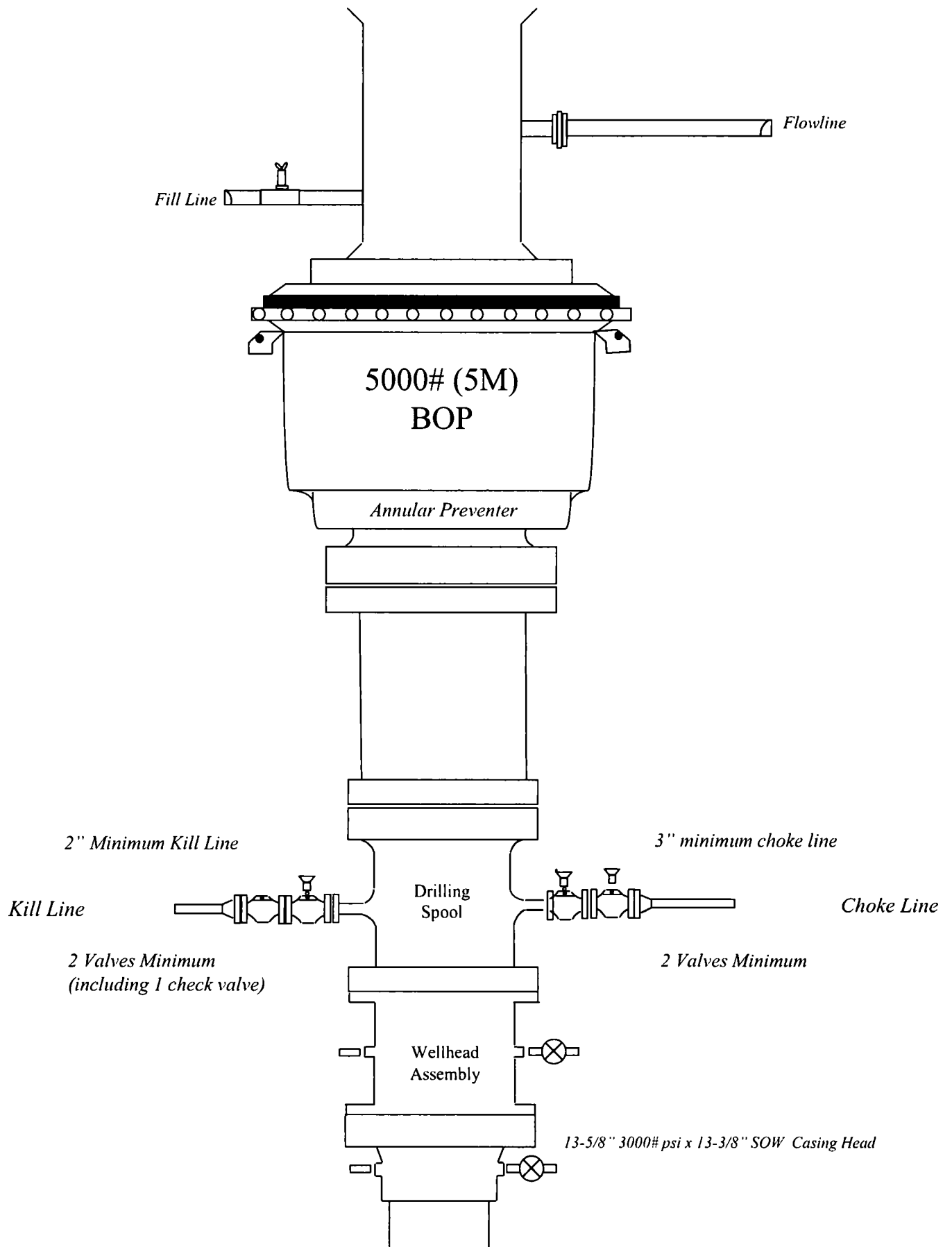
JRU\_DI2\_FH\_20171227114319.pdf



**Drilling Operations**  
**Choke Manifold**  
**5M Service**







**BOPCO, LP**  
**5000# BOP**

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

XTO Energy Inc.  
James Ranch Unit DI2 224H  
Eddy County, NM

1. **CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 640'	13-3/8"	48#	STC	H-40	New	1.44	2.63	10.48
12-1/4"	0' – 3880'	9-5/8"	36#	LTC	J-55	New	1.06	1.65	3.24
8-3/4" x 8-1/2"	0' – 18521'	5-1/2"	17#	BTC	P-110	New	1.12	1.30	1.85

- 9-5/8" collapse assumes ½ evacuation and fresh water internally.
- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35.

**WELLHEAD:**

Permanent Wellhead – GE RSH Multibowl System

- A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
- B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
- Wellhead will be installed by manufacturer's representatives.
  - Manufacturer will monitor welding process to ensure appropriate temperature of seal.
  - Manufacturer will witness installation of test plug for initial test.
  - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

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

XTO Energy Inc.  
James Ranch Unit DI2 224H  
Eddy County, NM

**1. CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 640'	13-3/8"	48#	STC	H-40	New	1.44	2.63	10.48
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- Wellhead will be installed by manufacturer's representatives.
  - Manufacturer will monitor welding process to ensure appropriate temperature of seal.
  - Manufacturer will witness installation of test plug for initial test.
  - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

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

XTO Energy Inc.  
James Ranch Unit D12 224H  
Eddy County, NM

**I. CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 640'	13-3/8"	48#	STC	H-40	New	1.44	2.63	10.48
12-1/4"	0' – 3880'	9-5/8"	36#	LTC	J-55	New	1.06	1.65	3.24
8-3/4" x 8-1/2"	0' – 18521'	5-1/2"	17#	BTC	P-110	New	1.12	1.30	1.85

- 9-5/8" collapse assumes ½ evacuation and fresh water internally.
- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35.

**WELLHEAD:**

*Permanent Wellhead – GE RSH Multibowl System*

- A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
- B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
- Wellhead will be installed by manufacturer's representatives.
  - Manufacturer will monitor welding process to ensure appropriate temperature of seal.
  - Manufacturer will witness installation of test plug for initial test.
  - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

## **BOPCO, L.P.**

6401 Holiday Hill Road  
Midland, Tx 79707  
(432) 683-2277

# **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>**

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

### **Contacting Authorities**

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

## **CARLSBAD OFFICE – EDDY & LEA COUNTIES**

3104 E. Greene St., Carlsbad, NM 88220  
Carlsbad, NM

575-887-7329

### **BOPCO, L.P. PERSONNEL:**

Kendall Decker, Drilling Manager	903-521-6477
Milton Turman, Drilling Superintendent	817-524-5107
Jeff Raines, Construction Foreman	432-557-3159
Toady Sanders, EH & S Manager	903-520-1601
Wes McSpadden, Production Foreman	575-441-1147

### **SHERIFF DEPARTMENTS:**

Eddy County	575-887-7551
Lea County	575-396-3611

### **NEW MEXICO STATE POLICE:**

575-392-5588

### **FIRE DEPARTMENTS:**

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

### **HOSPITALS:**

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

### **AGENT NOTIFICATIONS:**

#### **For Lea County:**

Bureau of Land Management – Hobbs	575-393-3612
New Mexico Oil Conservation Division – Hobbs	575-393-6161

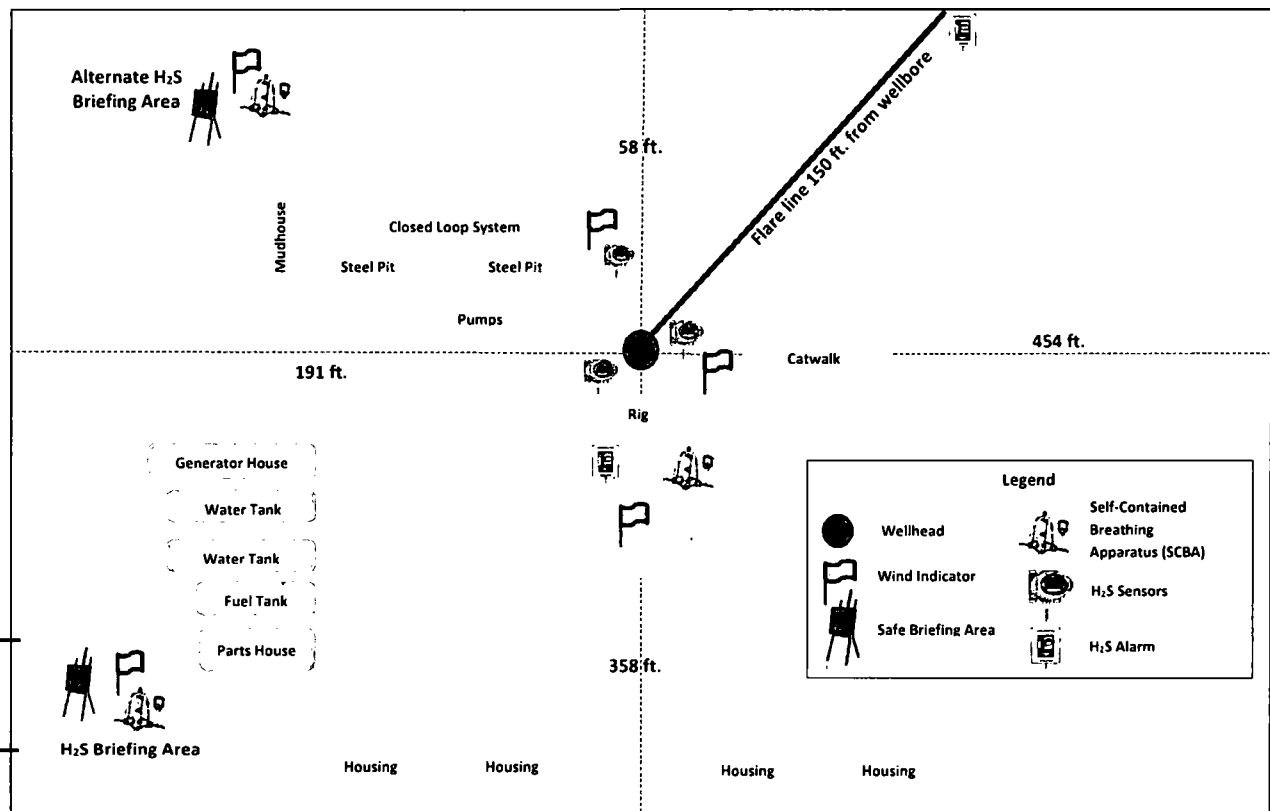
#### **For Eddy County:**

Bureau of Land Management - Carlsbad	575-234-5972
New Mexico Oil Conservation Division - Artesia	575-748-1283



Prevailing Winds  
Direction SW

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





## **XTO Energy**

**Eddy County, NM (NAD-27)**

**James Ranch Unit DI 2**

**JAMES RANCH UNIT DI 2 BS2A-1W 224H**

**OH**

**Plan: Plan #1**

## **Standard Planning Report**

**28 November, 2017**







**Database:** EDM 5000.1 Single User Db **Local Co-ordinate Reference:** Well JAMES RANCH UNIT DI 2 BS2A-1W 224H  
**Company:** XTO Energy **TVD Reference:** RKB = 25' @ 3369.00usft (Unknown)  
**Project:** Eddy County, NM (NAD-27) **MD Reference:** RKB = 25' @ 3369.00usft (Unknown)  
**Site:** James Ranch Unit DI 2 **North Reference:** Grid  
**Well:** JAMES RANCH UNIT DI 2 BS2A-1W 224H **Survey Calculation Method:** Minimum Curvature  
**Wellbore:** OH  
**Design:** Plan #1

<b>Project</b>	Eddy County, NM (NAD-27)		
<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		

**Site** James Ranch Unit DI 2

**Site Position:** **From:** Map **Northings:** 496,160.00 usft **Latitude:** 32.363080  
**Easting:** 653,418.30 usft **Longitude:** -103.836462  
**Position Uncertainty:** 0.00 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.27 °

**Well** JAMES RANCH UNIT DI 2 BS2A-1W 224H

**Well Position** **+N/-S** 0.00 usft **Northings:** 496,160.00 usft **Latitude:** 32.363080  
**+E/-W** 0.00 usft **Easting:** 653,418.30 usft **Longitude:** -103.836462  
**Position Uncertainty** 0.00 usft **Wellhead Elevation:** 0.00 usft **Ground Level:** 3,344.00 usft

**Wellbore** OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/27/2017	7.06	60.14	47,964

**Design** Plan #1

**Audit Notes:**

**Version:** **Phase:** PLAN **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.89

#### Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,979.02	19.58	318.04	2,960.08	123.19	-110.77	2.00	2.00	0.00	318.04	
9,790.86	19.58	318.04	9,377.99	1,820.73	-1,637.13	0.00	0.00	0.00	0.00	
10,561.65	90.00	269.89	9,808.00	1,933.60	-2,195.80	10.00	9.14	-6.25	-49.84	JRU DI 2 BS2A-1W
23,366.67	90.00	269.89	9,808.00	1,909.20	-15,000.80	0.00	0.00	0.00	0.00	JRU DI 2 BS2A-1W



Database: EDM 5000.1 Single User Db

Local Co-ordinate Reference: Well JAMES RANCH UNIT DI 2 BS2A-1W 224H

Company: XTO Energy

TVD Reference: RKB = 25' @ 3369.00usft (Unknown)

Project: Eddy County, NM (NAD-27)

MD Reference: RKB = 25' @ 3369.00usft (Unknown)

Site: James Ranch Unit DI 2

North Reference: Grid

Well: JAMES RANCH UNIT DI 2 BS2A-1W 224H

Survey Calculation Method: Minimum Curvature

Wellbore: OH

Design: Plan #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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	2.00	318.04	2,099.98	1.30	-1.17	1.16	2.00	2.00	0.00
2,200.00	4.00	318.04	2,199.84	5.19	-4.67	4.66	2.00	2.00	0.00
2,300.00	6.00	318.04	2,299.45	11.67	-10.49	10.47	2.00	2.00	0.00
2,400.00	8.00	318.04	2,398.70	20.73	-18.64	18.60	2.00	2.00	0.00
2,500.00	10.00	318.04	2,497.47	32.36	-29.10	29.04	2.00	2.00	0.00
2,600.00	12.00	318.04	2,595.62	46.55	-41.86	41.77	2.00	2.00	0.00
2,700.00	14.00	318.04	2,693.06	63.28	-56.90	56.78	2.00	2.00	0.00
2,800.00	16.00	318.04	2,789.64	82.52	-74.20	74.04	2.00	2.00	0.00
2,900.00	18.00	318.04	2,885.27	104.26	-93.75	93.55	2.00	2.00	0.00
2,979.02	19.58	318.04	2,960.08	123.19	-110.77	110.53	2.00	2.00	0.00
3,000.00	19.58	318.04	2,979.84	128.42	-115.47	115.22	0.00	0.00	0.00
3,100.00	19.58	318.04	3,074.06	153.34	-137.88	137.58	0.00	0.00	0.00
3,200.00	19.58	318.04	3,168.28	178.26	-160.28	159.94	0.00	0.00	0.00
3,300.00	19.58	318.04	3,262.49	203.18	-182.69	182.30	0.00	0.00	0.00
3,400.00	19.58	318.04	3,356.71	228.10	-205.10	204.66	0.00	0.00	0.00
3,500.00	19.58	318.04	3,450.93	253.02	-227.51	227.02	0.00	0.00	0.00
3,600.00	19.58	318.04	3,545.14	277.94	-249.91	249.38	0.00	0.00	0.00
3,700.00	19.58	318.04	3,639.36	302.86	-272.32	271.74	0.00	0.00	0.00
3,800.00	19.58	318.04	3,733.58	327.78	-294.73	294.10	0.00	0.00	0.00
3,900.00	19.58	318.04	3,827.80	352.70	-317.14	316.46	0.00	0.00	0.00
4,000.00	19.58	318.04	3,922.01	377.62	-339.54	338.82	0.00	0.00	0.00
4,100.00	19.58	318.04	4,016.23	402.54	-361.95	361.18	0.00	0.00	0.00
4,200.00	19.58	318.04	4,110.45	427.46	-384.36	383.54	0.00	0.00	0.00
4,300.00	19.58	318.04	4,204.66	452.38	-406.77	405.90	0.00	0.00	0.00
4,400.00	19.58	318.04	4,298.88	477.30	-429.17	428.26	0.00	0.00	0.00
4,500.00	19.58	318.04	4,393.10	502.22	-451.58	450.62	0.00	0.00	0.00
4,600.00	19.58	318.04	4,487.32	527.15	-473.99	472.98	0.00	0.00	0.00
4,700.00	19.58	318.04	4,581.53	552.07	-496.40	495.34	0.00	0.00	0.00
4,800.00	19.58	318.04	4,675.75	576.99	-518.80	517.70	0.00	0.00	0.00
4,900.00	19.58	318.04	4,769.97	601.91	-541.21	540.06	0.00	0.00	0.00
5,000.00	19.58	318.04	4,864.18	626.83	-563.62	562.41	0.00	0.00	0.00
5,100.00	19.58	318.04	4,958.40	651.75	-586.03	584.77	0.00	0.00	0.00



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Planning Report

Database: EDM 5000.1 Single User Db Local Co-ordinate Reference: Well JAMES RANCH UNIT DI 2 BS2A-1W 224H  
Company: XTO Energy TVD Reference: RKB = 25' @ 3369.00usft (Unknown)  
Project: Eddy County, NM (NAD-27) MD Reference: RKB = 25' @ 3369.00usft (Unknown)  
Site: James Ranch Unit DI 2 North Reference: Grid  
Well: JAMES RANCH UNIT DI 2 BS2A-1W 224H Survey Calculation Method: Minimum Curvature  
Wellbore: OH  
Design: Plan #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)
5,200.00	19.58	318.04	5,052.62	676.67	-608.43	607.13	0.00	0.00	0.00
5,300.00	19.58	318.04	5,146.84	701.59	-630.84	629.49	0.00	0.00	0.00
5,400.00	19.58	318.04	5,241.05	726.51	-653.25	651.85	0.00	0.00	0.00
5,500.00	19.58	318.04	5,335.27	751.43	-675.66	674.21	0.00	0.00	0.00
5,600.00	19.58	318.04	5,429.49	776.35	-698.06	696.57	0.00	0.00	0.00
5,700.00	19.58	318.04	5,523.70	801.27	-720.47	718.93	0.00	0.00	0.00
5,800.00	19.58	318.04	5,617.92	826.19	-742.88	741.29	0.00	0.00	0.00
5,900.00	19.58	318.04	5,712.14	851.11	-765.29	763.65	0.00	0.00	0.00
6,000.00	19.58	318.04	5,806.36	876.03	-787.70	786.01	0.00	0.00	0.00
6,100.00	19.58	318.04	5,900.57	900.95	-810.10	808.37	0.00	0.00	0.00
6,200.00	19.58	318.04	5,994.79	925.87	-832.51	830.73	0.00	0.00	0.00
6,300.00	19.58	318.04	6,089.01	950.79	-854.92	853.09	0.00	0.00	0.00
6,400.00	19.58	318.04	6,183.22	975.71	-877.33	875.45	0.00	0.00	0.00
6,500.00	19.58	318.04	6,277.44	1,000.63	-899.73	897.81	0.00	0.00	0.00
6,600.00	19.58	318.04	6,371.66	1,025.56	-922.14	920.17	0.00	0.00	0.00
6,700.00	19.58	318.04	6,465.88	1,050.48	-944.55	942.53	0.00	0.00	0.00
6,800.00	19.58	318.04	6,560.09	1,075.40	-966.96	964.89	0.00	0.00	0.00
6,900.00	19.58	318.04	6,654.31	1,100.32	-989.36	987.25	0.00	0.00	0.00
7,000.00	19.58	318.04	6,748.53	1,125.24	-1,011.77	1,009.61	0.00	0.00	0.00
7,100.00	19.58	318.04	6,842.74	1,150.16	-1,034.18	1,031.97	0.00	0.00	0.00
7,200.00	19.58	318.04	6,936.96	1,175.08	-1,056.59	1,054.33	0.00	0.00	0.00
7,300.00	19.58	318.04	7,031.18	1,200.00	-1,078.99	1,076.69	0.00	0.00	0.00
7,400.00	19.58	318.04	7,125.40	1,224.92	-1,101.40	1,099.05	0.00	0.00	0.00
7,500.00	19.58	318.04	7,219.61	1,249.84	-1,123.81	1,121.41	0.00	0.00	0.00
7,600.00	19.58	318.04	7,313.83	1,274.76	-1,146.22	1,143.77	0.00	0.00	0.00
7,700.00	19.58	318.04	7,408.05	1,299.68	-1,168.62	1,166.13	0.00	0.00	0.00
7,800.00	19.58	318.04	7,502.26	1,324.60	-1,191.03	1,188.49	0.00	0.00	0.00
7,900.00	19.58	318.04	7,596.48	1,349.52	-1,213.44	1,210.85	0.00	0.00	0.00
8,000.00	19.58	318.04	7,690.70	1,374.44	-1,235.85	1,233.21	0.00	0.00	0.00
8,100.00	19.58	318.04	7,784.92	1,399.36	-1,258.25	1,255.56	0.00	0.00	0.00
8,200.00	19.58	318.04	7,879.13	1,424.28	-1,280.66	1,277.92	0.00	0.00	0.00
8,300.00	19.58	318.04	7,973.35	1,449.20	-1,303.07	1,300.28	0.00	0.00	0.00
8,400.00	19.58	318.04	8,067.57	1,474.12	-1,325.48	1,322.64	0.00	0.00	0.00
8,500.00	19.58	318.04	8,161.78	1,499.04	-1,347.88	1,345.00	0.00	0.00	0.00
8,600.00	19.58	318.04	8,256.00	1,523.97	-1,370.29	1,367.36	0.00	0.00	0.00
8,700.00	19.58	318.04	8,350.22	1,548.89	-1,392.70	1,389.72	0.00	0.00	0.00
8,800.00	19.58	318.04	8,444.44	1,573.81	-1,415.11	1,412.08	0.00	0.00	0.00
8,900.00	19.58	318.04	8,538.65	1,598.73	-1,437.51	1,434.44	0.00	0.00	0.00
9,000.00	19.58	318.04	8,632.87	1,623.65	-1,459.92	1,456.80	0.00	0.00	0.00
9,100.00	19.58	318.04	8,727.09	1,648.57	-1,482.33	1,479.16	0.00	0.00	0.00
9,200.00	19.58	318.04	8,821.30	1,673.49	-1,504.74	1,501.52	0.00	0.00	0.00
9,300.00	19.58	318.04	8,915.52	1,698.41	-1,527.14	1,523.88	0.00	0.00	0.00
9,400.00	19.58	318.04	9,009.74	1,723.33	-1,549.55	1,546.24	0.00	0.00	0.00
9,500.00	19.58	318.04	9,103.96	1,748.25	-1,571.96	1,568.60	0.00	0.00	0.00
9,600.00	19.58	318.04	9,198.17	1,773.17	-1,594.37	1,590.96	0.00	0.00	0.00
9,700.00	19.58	318.04	9,292.39	1,798.09	-1,616.77	1,613.32	0.00	0.00	0.00
9,790.86	19.58	318.04	9,377.99	1,820.73	-1,637.13	1,633.64	0.00	0.00	0.00
9,800.00	20.18	316.01	9,386.59	1,823.01	-1,639.25	1,635.75	10.00	6.58	-22.16
9,850.00	23.81	306.79	9,432.96	1,835.26	-1,653.33	1,649.81	10.00	7.26	-18.44
9,900.00	27.85	299.99	9,477.96	1,847.15	-1,671.54	1,667.99	10.00	8.07	-13.60
9,950.00	32.14	294.84	9,521.27	1,858.59	-1,693.74	1,690.17	10.00	8.58	-10.31
10,000.00	36.59	290.80	9,562.54	1,869.47	-1,719.75	1,716.16	10.00	8.91	-8.07
10,050.00	41.15	287.54	9,601.46	1,879.73	-1,749.39	1,745.78	10.00	9.13	-6.52



**Database:** EDM 5000.1 Single User Db **Local Co-ordinate Reference:** Well JAMES RANCH UNIT DI 2 BS2A-1W 224H  
**Company:** XTO Energy **TVD Reference:** RKB = 25' @ 3369.00usft (Unknown)  
**Project:** Eddy County, NM (NAD-27) **MD Reference:** RKB = 25' @ 3369.00usft (Unknown)  
**Site:** James Ranch Unit DI 2 **North Reference:** Grid  
**Well:** JAMES RANCH UNIT DI 2 BS2A-1W 224H **Survey Calculation Method:** Minimum Curvature  
**Wellbore:** OH  
**Design:** Plan #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)
10,100.00	45.79	284.83	9,637.74	1,889.28	-1,782.42	1,778.79	10.00	9.28	-5.42
10,150.00	50.49	282.51	9,671.10	1,898.05	-1,818.59	1,814.95	10.00	9.39	-4.63
10,200.00	55.22	280.49	9,701.28	1,905.97	-1,857.64	1,853.97	10.00	9.47	-4.04
10,250.00	59.98	278.70	9,728.07	1,912.99	-1,899.25	1,895.58	10.00	9.53	-3.60
10,300.00	64.77	277.06	9,751.25	1,919.04	-1,943.12	1,939.43	10.00	9.57	-3.27
10,350.00	69.57	275.55	9,770.64	1,924.10	-1,988.91	1,985.21	10.00	9.61	-3.02
10,400.00	74.39	274.14	9,786.10	1,928.10	-2,036.27	2,032.57	10.00	9.63	-2.83
10,450.00	79.21	272.78	9,797.52	1,931.03	-2,084.85	2,081.14	10.00	9.65	-2.70
10,500.00	84.04	271.48	9,804.80	1,932.87	-2,134.27	2,130.55	10.00	9.66	-2.62
10,550.00	88.87	270.19	9,807.89	1,933.59	-2,184.15	2,180.43	10.00	9.66	-2.57
10,561.65	90.00	269.89	9,808.00	1,933.60	-2,195.80	2,192.08	10.00	9.67	-2.56
10,600.00	90.00	269.89	9,808.00	1,933.53	-2,234.15	2,230.43	0.00	0.00	0.00
10,700.00	90.00	269.89	9,808.00	1,933.34	-2,334.15	2,330.43	0.00	0.00	0.00
10,800.00	90.00	269.89	9,808.00	1,933.15	-2,434.15	2,430.43	0.00	0.00	0.00
10,900.00	90.00	269.89	9,808.00	1,932.96	-2,534.15	2,530.43	0.00	0.00	0.00
11,000.00	90.00	269.89	9,808.00	1,932.76	-2,634.15	2,630.43	0.00	0.00	0.00
11,100.00	90.00	269.89	9,808.00	1,932.57	-2,734.15	2,730.43	0.00	0.00	0.00
11,200.00	90.00	269.89	9,808.00	1,932.38	-2,834.15	2,830.43	0.00	0.00	0.00
11,300.00	90.00	269.89	9,808.00	1,932.19	-2,934.15	2,930.43	0.00	0.00	0.00
11,400.00	90.00	269.89	9,808.00	1,932.00	-3,034.15	3,030.43	0.00	0.00	0.00
11,500.00	90.00	269.89	9,808.00	1,931.81	-3,134.15	3,130.43	0.00	0.00	0.00
11,600.00	90.00	269.89	9,808.00	1,931.62	-3,234.15	3,230.43	0.00	0.00	0.00
11,700.00	90.00	269.89	9,808.00	1,931.43	-3,334.15	3,330.43	0.00	0.00	0.00
11,800.00	90.00	269.89	9,808.00	1,931.24	-3,434.15	3,430.43	0.00	0.00	0.00
11,900.00	90.00	269.89	9,808.00	1,931.05	-3,534.15	3,530.43	0.00	0.00	0.00
12,000.00	90.00	269.89	9,808.00	1,930.86	-3,634.15	3,630.43	0.00	0.00	0.00
12,100.00	90.00	269.89	9,808.00	1,930.67	-3,734.15	3,730.43	0.00	0.00	0.00
12,200.00	90.00	269.89	9,808.00	1,930.48	-3,834.15	3,830.43	0.00	0.00	0.00
12,300.00	90.00	269.89	9,808.00	1,930.29	-3,934.15	3,930.43	0.00	0.00	0.00
12,400.00	90.00	269.89	9,808.00	1,930.10	-4,034.15	4,030.43	0.00	0.00	0.00
12,500.00	90.00	269.89	9,808.00	1,929.91	-4,134.15	4,130.43	0.00	0.00	0.00
12,600.00	90.00	269.89	9,808.00	1,929.72	-4,234.15	4,230.43	0.00	0.00	0.00
12,700.00	90.00	269.89	9,808.00	1,929.53	-4,334.15	4,330.43	0.00	0.00	0.00
12,800.00	90.00	269.89	9,808.00	1,929.33	-4,434.15	4,430.43	0.00	0.00	0.00
12,900.00	90.00	269.89	9,808.00	1,929.14	-4,534.15	4,530.43	0.00	0.00	0.00
13,000.00	90.00	269.89	9,808.00	1,928.95	-4,634.14	4,630.43	0.00	0.00	0.00
13,100.00	90.00	269.89	9,808.00	1,928.76	-4,734.14	4,730.43	0.00	0.00	0.00
13,200.00	90.00	269.89	9,808.00	1,928.57	-4,834.14	4,830.43	0.00	0.00	0.00
13,300.00	90.00	269.89	9,808.00	1,928.38	-4,934.14	4,930.43	0.00	0.00	0.00
13,400.00	90.00	269.89	9,808.00	1,928.19	-5,034.14	5,030.43	0.00	0.00	0.00
13,500.00	90.00	269.89	9,808.00	1,928.00	-5,134.14	5,130.43	0.00	0.00	0.00
13,600.00	90.00	269.89	9,808.00	1,927.81	-5,234.14	5,230.43	0.00	0.00	0.00
13,700.00	90.00	269.89	9,808.00	1,927.62	-5,334.14	5,330.43	0.00	0.00	0.00
13,800.00	90.00	269.89	9,808.00	1,927.43	-5,434.14	5,430.43	0.00	0.00	0.00
13,900.00	90.00	269.89	9,808.00	1,927.24	-5,534.14	5,530.43	0.00	0.00	0.00
14,000.00	90.00	269.89	9,808.00	1,927.05	-5,634.14	5,630.43	0.00	0.00	0.00
14,100.00	90.00	269.89	9,808.00	1,926.86	-5,734.14	5,730.43	0.00	0.00	0.00
14,200.00	90.00	269.89	9,808.00	1,926.67	-5,834.14	5,830.43	0.00	0.00	0.00
14,300.00	90.00	269.89	9,808.00	1,926.48	-5,934.14	5,930.43	0.00	0.00	0.00
14,400.00	90.00	269.89	9,808.00	1,926.29	-6,034.14	6,030.43	0.00	0.00	0.00
14,500.00	90.00	269.89	9,808.00	1,926.10	-6,134.14	6,130.43	0.00	0.00	0.00
14,600.00	90.00	269.89	9,808.00	1,925.90	-6,234.14	6,230.43	0.00	0.00	0.00
14,700.00	90.00	269.89	9,808.00	1,925.71	-6,334.14	6,330.43	0.00	0.00	0.00



Database: EDM 5000.1 Single User Db

Local Co-ordinate Reference: Well JAMES RANCH UNIT DI 2 BS2A-1W  
224H

Company: XTO Energy

TVD Reference: RKB = 25' @ 3369.00usft (Unknown)

Project: Eddy County, NM (NAD-27)

MD Reference: RKB = 25' @ 3369.00usft (Unknown)

Site: James Ranch Unit DI 2

North Reference: Grid

Well: JAMES RANCH UNIT DI 2 BS2A-1W 224H

Survey Calculation Method: Minimum Curvature

Wellbore: OH

Design: Plan #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)
14,800.00	90.00	269.89	9,808.00	1,925.52	-6,434.14	6,430.43	0.00	0.00	0.00
14,900.00	90.00	269.89	9,808.00	1,925.33	-6,534.14	6,530.43	0.00	0.00	0.00
15,000.00	90.00	269.89	9,808.00	1,925.14	-6,634.14	6,630.43	0.00	0.00	0.00
15,100.00	90.00	269.89	9,808.00	1,924.95	-6,734.14	6,730.43	0.00	0.00	0.00
15,200.00	90.00	269.89	9,808.00	1,924.76	-6,834.14	6,830.43	0.00	0.00	0.00
15,300.00	90.00	269.89	9,808.00	1,924.57	-6,934.14	6,930.43	0.00	0.00	0.00
15,400.00	90.00	269.89	9,808.00	1,924.38	-7,034.14	7,030.43	0.00	0.00	0.00
15,500.00	90.00	269.89	9,808.00	1,924.19	-7,134.14	7,130.43	0.00	0.00	0.00
15,600.00	90.00	269.89	9,808.00	1,924.00	-7,234.14	7,230.43	0.00	0.00	0.00
15,700.00	90.00	269.89	9,808.00	1,923.81	-7,334.14	7,330.43	0.00	0.00	0.00
15,800.00	90.00	269.89	9,808.00	1,923.62	-7,434.14	7,430.43	0.00	0.00	0.00
15,900.00	90.00	269.89	9,808.00	1,923.43	-7,534.14	7,530.43	0.00	0.00	0.00
16,000.00	90.00	269.89	9,808.00	1,923.24	-7,634.14	7,630.43	0.00	0.00	0.00
16,100.00	90.00	269.89	9,808.00	1,923.05	-7,734.14	7,730.43	0.00	0.00	0.00
16,200.00	90.00	269.89	9,808.00	1,922.86	-7,834.14	7,830.43	0.00	0.00	0.00
16,300.00	90.00	269.89	9,808.00	1,922.67	-7,934.14	7,930.43	0.00	0.00	0.00
16,400.00	90.00	269.89	9,808.00	1,922.48	-8,034.14	8,030.43	0.00	0.00	0.00
16,500.00	90.00	269.89	9,808.00	1,922.28	-8,134.14	8,130.43	0.00	0.00	0.00
16,600.00	90.00	269.89	9,808.00	1,922.09	-8,234.14	8,230.43	0.00	0.00	0.00
16,700.00	90.00	269.89	9,808.00	1,921.90	-8,334.14	8,330.43	0.00	0.00	0.00
16,800.00	90.00	269.89	9,808.00	1,921.71	-8,434.14	8,430.43	0.00	0.00	0.00
16,900.00	90.00	269.89	9,808.00	1,921.52	-8,534.14	8,530.43	0.00	0.00	0.00
17,000.00	90.00	269.89	9,808.00	1,921.33	-8,634.14	8,630.43	0.00	0.00	0.00
17,100.00	90.00	269.89	9,808.00	1,921.14	-8,734.14	8,730.43	0.00	0.00	0.00
17,200.00	90.00	269.89	9,808.00	1,920.95	-8,834.14	8,830.43	0.00	0.00	0.00
17,300.00	90.00	269.89	9,808.00	1,920.76	-8,934.14	8,930.43	0.00	0.00	0.00
17,400.00	90.00	269.89	9,808.00	1,920.57	-9,034.14	9,030.43	0.00	0.00	0.00
17,500.00	90.00	269.89	9,808.00	1,920.38	-9,134.14	9,130.43	0.00	0.00	0.00
17,600.00	90.00	269.89	9,808.00	1,920.19	-9,234.14	9,230.43	0.00	0.00	0.00
17,700.00	90.00	269.89	9,808.00	1,920.00	-9,334.14	9,330.43	0.00	0.00	0.00
17,800.00	90.00	269.89	9,808.00	1,919.81	-9,434.14	9,430.43	0.00	0.00	0.00
17,900.00	90.00	269.89	9,808.00	1,919.62	-9,534.14	9,530.43	0.00	0.00	0.00
18,000.00	90.00	269.89	9,808.00	1,919.43	-9,634.14	9,630.43	0.00	0.00	0.00
18,100.00	90.00	269.89	9,808.00	1,919.24	-9,734.14	9,730.43	0.00	0.00	0.00
18,200.00	90.00	269.89	9,808.00	1,919.05	-9,834.14	9,830.43	0.00	0.00	0.00
18,300.00	90.00	269.89	9,808.00	1,918.85	-9,934.14	9,930.43	0.00	0.00	0.00
18,400.00	90.00	269.89	9,808.00	1,918.66	-10,034.14	10,030.43	0.00	0.00	0.00
18,500.00	90.00	269.89	9,808.00	1,918.47	-10,134.14	10,130.43	0.00	0.00	0.00
18,600.00	90.00	269.89	9,808.00	1,918.28	-10,234.13	10,230.43	0.00	0.00	0.00
18,700.00	90.00	269.89	9,808.00	1,918.09	-10,334.13	10,330.43	0.00	0.00	0.00
18,800.00	90.00	269.89	9,808.00	1,917.90	-10,434.13	10,430.43	0.00	0.00	0.00
18,900.00	90.00	269.89	9,808.00	1,917.71	-10,534.13	10,530.43	0.00	0.00	0.00
19,000.00	90.00	269.89	9,808.00	1,917.52	-10,634.13	10,630.43	0.00	0.00	0.00
19,100.00	90.00	269.89	9,808.00	1,917.33	-10,734.13	10,730.43	0.00	0.00	0.00
19,200.00	90.00	269.89	9,808.00	1,917.14	-10,834.13	10,830.43	0.00	0.00	0.00
19,300.00	90.00	269.89	9,808.00	1,916.95	-10,934.13	10,930.43	0.00	0.00	0.00
19,400.00	90.00	269.89	9,808.00	1,916.76	-11,034.13	11,030.43	0.00	0.00	0.00
19,500.00	90.00	269.89	9,808.00	1,916.57	-11,134.13	11,130.43	0.00	0.00	0.00
19,600.00	90.00	269.89	9,808.00	1,916.38	-11,234.13	11,230.43	0.00	0.00	0.00
19,700.00	90.00	269.89	9,808.00	1,916.19	-11,334.13	11,330.43	0.00	0.00	0.00
19,800.00	90.00	269.89	9,808.00	1,916.00	-11,434.13	11,430.43	0.00	0.00	0.00
19,900.00	90.00	269.89	9,808.00	1,915.81	-11,534.13	11,530.43	0.00	0.00	0.00
20,000.00	90.00	269.89	9,808.00	1,915.62	-11,634.13	11,630.43	0.00	0.00	0.00



**Database:** EDM 5000.1 Single User Db  
**Local Co-ordinate Reference:** Well JAMES RANCH UNIT DI 2 BS2A-1W 224H  
**Company:** XTO Energy  
**TVD Reference:** RKB = 25' @ 3369.00usft (Unknown)  
**Project:** Eddy County, NM (NAD-27)  
**MD Reference:** RKB = 25' @ 3369.00usft (Unknown)  
**Site:** James Ranch Unit DI 2  
**North Reference:** Grid  
**Well:** JAMES RANCH UNIT DI 2 BS2A-1W 224H  
**Survey Calculation Method:** Minimum Curvature  
**Wellbore:** OH  
**Design:** Plan #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)
20,100.00	90.00	269.89	9,808.00	1,915.42	-11,734.13	11,730.43	0.00	0.00	0.00
20,200.00	90.00	269.89	9,808.00	1,915.23	-11,834.13	11,830.43	0.00	0.00	0.00
20,300.00	90.00	269.89	9,808.00	1,915.04	-11,934.13	11,930.43	0.00	0.00	0.00
20,400.00	90.00	269.89	9,808.00	1,914.85	-12,034.13	12,030.43	0.00	0.00	0.00
20,500.00	90.00	269.89	9,808.00	1,914.66	-12,134.13	12,130.43	0.00	0.00	0.00
20,600.00	90.00	269.89	9,808.00	1,914.47	-12,234.13	12,230.43	0.00	0.00	0.00
20,700.00	90.00	269.89	9,808.00	1,914.28	-12,334.13	12,330.43	0.00	0.00	0.00
20,800.00	90.00	269.89	9,808.00	1,914.09	-12,434.13	12,430.43	0.00	0.00	0.00
20,900.00	90.00	269.89	9,808.00	1,913.90	-12,534.13	12,530.43	0.00	0.00	0.00
21,000.00	90.00	269.89	9,808.00	1,913.71	-12,634.13	12,630.43	0.00	0.00	0.00
21,100.00	90.00	269.89	9,808.00	1,913.52	-12,734.13	12,730.43	0.00	0.00	0.00
21,200.00	90.00	269.89	9,808.00	1,913.33	-12,834.13	12,830.43	0.00	0.00	0.00
21,300.00	90.00	269.89	9,808.00	1,913.14	-12,934.13	12,930.43	0.00	0.00	0.00
21,400.00	90.00	269.89	9,808.00	1,912.95	-13,034.13	13,030.43	0.00	0.00	0.00
21,500.00	90.00	269.89	9,808.00	1,912.76	-13,134.13	13,130.43	0.00	0.00	0.00
21,600.00	90.00	269.89	9,808.00	1,912.57	-13,234.13	13,230.43	0.00	0.00	0.00
21,700.00	90.00	269.89	9,808.00	1,912.38	-13,334.13	13,330.43	0.00	0.00	0.00
21,800.00	90.00	269.89	9,808.00	1,912.19	-13,434.13	13,430.43	0.00	0.00	0.00
21,900.00	90.00	269.89	9,808.00	1,911.99	-13,534.13	13,530.43	0.00	0.00	0.00
22,000.00	90.00	269.89	9,808.00	1,911.80	-13,634.13	13,630.43	0.00	0.00	0.00
22,100.00	90.00	269.89	9,808.00	1,911.61	-13,734.13	13,730.43	0.00	0.00	0.00
22,200.00	90.00	269.89	9,808.00	1,911.42	-13,834.13	13,830.43	0.00	0.00	0.00
22,300.00	90.00	269.89	9,808.00	1,911.23	-13,934.13	13,930.43	0.00	0.00	0.00
22,400.00	90.00	269.89	9,808.00	1,911.04	-14,034.13	14,030.43	0.00	0.00	0.00
22,500.00	90.00	269.89	9,808.00	1,910.85	-14,134.13	14,130.43	0.00	0.00	0.00
22,600.00	90.00	269.89	9,808.00	1,910.66	-14,234.13	14,230.43	0.00	0.00	0.00
22,700.00	90.00	269.89	9,808.00	1,910.47	-14,334.13	14,330.43	0.00	0.00	0.00
22,800.00	90.00	269.89	9,808.00	1,910.28	-14,434.13	14,430.43	0.00	0.00	0.00
22,900.00	90.00	269.89	9,808.00	1,910.09	-14,534.13	14,530.43	0.00	0.00	0.00
23,000.00	90.00	269.89	9,808.00	1,909.90	-14,634.13	14,630.43	0.00	0.00	0.00
23,100.00	90.00	269.89	9,808.00	1,909.71	-14,734.13	14,730.43	0.00	0.00	0.00
23,200.00	90.00	269.89	9,808.00	1,909.52	-14,834.13	14,830.43	0.00	0.00	0.00
23,300.00	90.00	269.89	9,808.00	1,909.33	-14,934.13	14,930.43	0.00	0.00	0.00
23,366.67	90.00	269.89	9,808.00	1,909.20	-15,000.80	14,997.11	0.00	0.00	0.00



Database: EDM 5000.1 Single User Db

Local Co-ordinate Reference: Well JAMES RANCH UNIT DI 2 BS2A-1W 224H

Company: XTO Energy

TVD Reference: RKB = 25' @ 3369.00usft (Unknown)

Project: Eddy County, NM (NAD-27)

MD Reference: RKB = 25' @ 3369.00usft (Unknown)

Site: James Ranch Unit DI 2

North Reference: Grid

Well: JAMES RANCH UNIT DI 2 BS2A-1W 224H

Survey Calculation Method: Minimum Curvature

Wellbore: OH

Design: Plan #1

## Design Targets

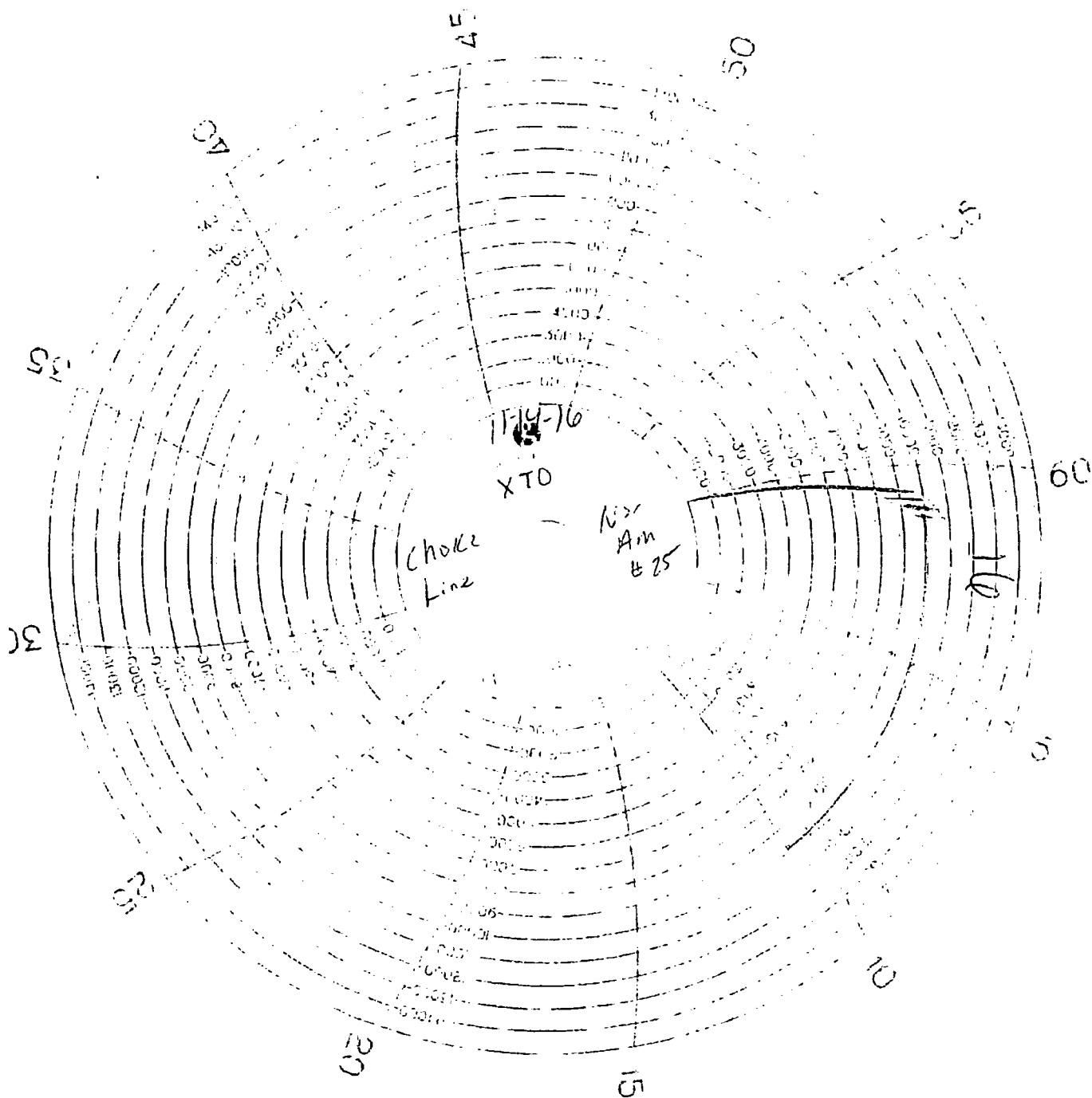
## Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
JRU DI 2 BS2A-1W 2: - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	496,160.00	653,418.30	32.363080	-103.836462
JRU DI 2 BS2A-1W 2: - plan hits target center - Point	0.00	0.00	9,808.00	1,909.20	-15,000.80	498,069.20	638,417.50	32.368510	-103.885018
JRU DI 2 BS2A-1W 2: - plan misses target center by 0.05usft at 23236.67usft MD (9808.00 TVD, 1909.45 N, -14870.80 E) - Point	0.00	0.00	9,808.00	1,909.40	-14,870.80	498,069.40	638,547.50	32.368510	-103.884597
JRU DI 2 BS2A-1W 2: - plan hits target center - Point	0.00	0.00	9,808.00	1,933.60	-2,195.80	498,093.60	651,222.50	32.368423	-103.843545

## Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
553.00	553.00	Rustler			
853.00	853.00	Salado			
3,853.52	3,784.00	Base Salt			
4,091.27	4,008.00	Delaware/Lamar			
4,133.72	4,048.00	Bell Canyon			
5,110.19	4,968.00	Cherry Canyon			
5,285.32	5,133.00	Base Manzanita			
6,787.17	6,548.00	Brushy Canyon			
7,896.31	7,593.00	Basal Brushy Canyon			
8,177.57	7,858.00	Base Brushy Canyon Sands			
8,204.10	7,883.00	Bone Spring			
8,310.24	7,983.00	Avalon Sand			
8,830.32	8,473.00	Lower Avalon Shale			
9,329.17	8,943.00	First Bone Spring Sand			
9,806.84	9,393.00	Second Bone Spring Shale/Limestone			
10,281.28	9,743.00	Second Bone Spring Sand			





1000'

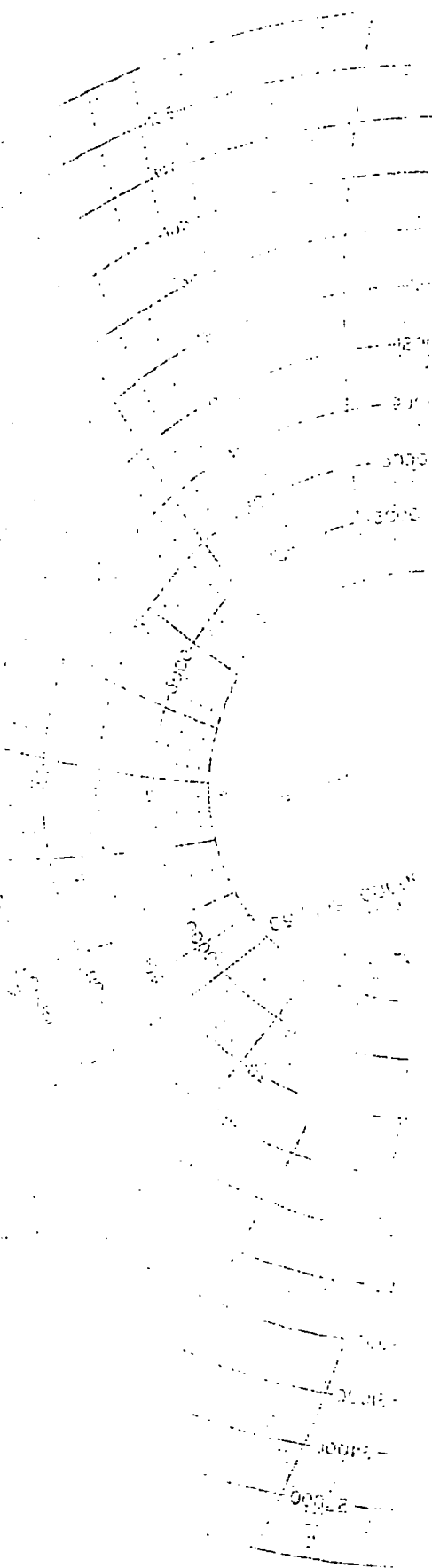
PIPE ID. 201A LENGTH 42 ft END 4 1/2" S&B 3 4 1/2" S&B 1/2"

GRADE 10 WORKING PRESSURE 5000 PSI

TEST PRESSURE 7500 PSI ASSEMBLY DATE 8-14

TEST DATE 8-14 SERIAL 6380901151 ID-0-00814-1000

NAME D-7-7-7 7500 PSI





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

## SUPO Data Report

09/10/2018

APD ID: 10400025857

Submission Date: 12/27/2017

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI2 BS2A-1W

Well Number: 224H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data  
reflects the most  
recent changes

[Show Final Text](#)

### Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

JRU\_DI2\_224H\_Road\_20171227113002.pdf

Existing Road Purpose: ACCESS, FLUID TRANSPORT

Row(s) Exist? YES

#### ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

### Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

### Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

JRU\_DI2\_1\_Mile\_20171227113228.pdf

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

**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:** No additional production facilities are necessary for the James Ranch Unit DI2 wells. Once drilled and completed, the wells will flow to the James Ranch Unit DI2 battery, directly adjacent to the James Ranch Unit DI2. No additional surface disturbance is needed. In the event the well is found productive, 4" composite 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 proposed JRU DI1A CTB where the oil, gas, and water will be metered and appropriately separated. High pressure gas lines will be buried beneath the surface flowlines per well pad within the proposed lease road corridors for gas lift. Oil will be hauled from the location by truck following existing and proposed lease roads. The distance of proposed flowlines will be approximately 800'. All flowlines will follow proposed lease road corridors. No Gas Sales line is required for this well. No additional surface disturbance is needed. Produced water will be hauled from location to a commercial disposal facility as needed. Once wells are drilled and completed, a 3160-5 sundry notification will be submitted to BLM in compliance with Onshore Order 7. No flare is required for this well. No additional surface disturbance is needed. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted earth-tone colors such as 'shale green' that reduce the visual impacts of the built environment. Containment berms 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. No additional electrical is required for this well. No additional surface disturbance is needed.

**Production Facilities map:**

JRU\_DI2\_CTB\_20171227113240.pdf

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

### **Water Source Table**

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

**Describe type:** Fresh Water; Section 21-T23S-R30E

**Source latitude:**

**Source datum:**

**Water source permit type:** PRIVATE CONTRACT

**Source land ownership:** FEDERAL

**Water source transport method:** TRUCKING

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 330000

**Source volume (gal):** 13860000

**Water source type:** OTHER

**Source longitude:**

**Source volume (acre-feet):** 42.53472

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

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

**Water source type:** OTHER

**Describe type:** Fresh Water; Section 13-T17S-R33E

**Source latitude:**

**Source longitude:**

**Source datum:**

**Water source permit type:** PRIVATE CONTRACT

**Source land ownership:** FEDERAL

**Water source transport method:** TRUCKING

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 330000

**Source volume (acre-feet):** 42.53472

**Source volume (gal):** 13860000

**Water source and transportation map:**

JRU\_DI2\_224H\_Wtr\_20171227113428.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 existing frac pit in Section 7 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 for drilling, completion and dust control will be supplied by Rockhouse Water for sale to BOPCO, L.P. from Section 13-T17S-R33E, Eddy County, New Mexico. In the event that Rockhouse Water does not have the appropriate water for BOPCO at time of drilling and completion from this location, then BOPCO water will come from with the location of the water being in Section 21-T23S-R30E, Eddy County, New Mexico. Anticipated water usage for drilling includes an estimated 35,000 barrels of water to drill a horizontal well in a combination of fresh water and brine as detailed in the mud program in the drilling plans. These volumes are calculated for ~1.5bbls per foot of hole drilled with excess to accommodate any lost circulation or wash out that may occur. Actual water volumes used during operations will depend on the depth of the well, length of horizontal sections, and the losses that may occur during the operation. Temporary water flowlines will be permitted via ROW approval letter and proper grants as-needed based on drilling and completion schedules as needed. Well completion is expected to require approximately 330,000 barrels of water per horizontal well. Actual water volumes used during operations will depend on the depth of the well and length of horizontal sections.

**New water well?** NO

**New Water Well Info**

**Well latitude:**

**Well Longitude:**

**Well datum:**

**Well target aquifer:**

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

**Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):**

**Well casing type:**

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

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

**New water well casing?**

**Used casing source:**

**Drilling method:**

**Drill material:**

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

**Grout material:**

**Grout depth:**

**Casing length (ft.):**

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

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

## Section 6 - Construction Materials

**Construction Materials description:** The drill island was constructed by BOPCO, L.P. The drill island is constructed of caliche with concrete cellars inset for drill slots. No additional caliche will be required.

**Construction Materials source location attachment:**

## Section 7 - Methods for Handling Waste

**Waste type:** GARBAGE

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

**Amount of waste:** 250 pounds

**Waste disposal frequency :** Weekly

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

**Safe containmant attachment:**

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

**Disposal type description:**

**Disposal location description:** A licensed 3rd party 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

**Disposal type description:**

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

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT D12 BS2A-1W

**Well Number:** 224H

**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.

## 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

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

**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 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:**

JRU\_DI2\_224H\_Well\_20171227113545.pdf

**Comments:** Drill island has been completed from previous APD approvals. No additional surface disturbance is necessary. Pads are already built under previous EA approvals. Approved APDs on DI: James Ranch Unit DI2: #138H, 139H, 191H, 193H, 194H, 192H.

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** No New Surface Disturbance **Multiple Well Pad Name:** JAMES RANCH UNIT DI

**Multiple Well Pad Number:** 2

**Recontouring attachment:**

**Drainage/Erosion control construction:** No surface reclamation is planned for this well. BOPCO, L.P. requests a variance to interim reclamation until all wells on the drill island have been drilled and completed, at which time, BOPCO, L.P. will contact the appropriate BLM personnel to discuss appropriate interim reclamation plans.

**Drainage/Erosion control reclamation:** No surface reclamation is planned for this well. BOPCO, L.P. requests a variance to interim reclamation until all wells on the drill island have been drilled and completed, at which time, BOPCO, L.P. will contact the appropriate BLM personnel to discuss appropriate interim reclamation plans.



**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT D12 BS2A-1W

**Well Number:** 224H

<b>Well pad proposed disturbance (acres):</b> 0	<b>Well pad interim reclamation (acres):</b>	<b>Well pad long term disturbance (acres):</b>
<b>Road proposed disturbance (acres):</b> 0	<b>Road interim reclamation (acres):</b>	<b>Road long term disturbance (acres):</b>
<b>Powerline proposed disturbance (acres):</b> 0	<b>Powerline interim reclamation (acres):</b> 0	<b>Powerline long term disturbance (acres):</b> 0
<b>Pipeline proposed disturbance (acres):</b> 0	<b>Pipeline interim reclamation (acres):</b>	<b>Pipeline long term disturbance (acres):</b>
<b>Other proposed disturbance (acres):</b> 0	<b>Other interim reclamation (acres):</b>	<b>Other long term disturbance (acres):</b>
<b>Total proposed disturbance:</b> 0	<b>Total interim reclamation:</b>	<b>Total long term disturbance:</b>

**Disturbance Comments:** No additional surface disturbance is required for this well.

**Reconstruction method:** No surface reclamation is planned for this well. BOPCO, L.P. requests a variance to interim reclamation until all wells on the drill island have been drilled and completed, at which time, BOPCO, L.P. will contact the appropriate BLM personnel to discuss appropriate interim reclamation plans.

**Topsoil redistribution:** No surface reclamation is planned for this well. BOPCO, L.P. requests a variance to interim reclamation until all wells on the drill island have been drilled and completed, at which time, BOPCO, L.P. will contact the appropriate BLM personnel to discuss appropriate interim reclamation plans.

**Soil treatment:** No surface reclamation is planned for this well. BOPCO, L.P. requests a variance to interim reclamation until all wells on the drill island have been drilled and completed, at which time, BOPCO, L.P. will contact the appropriate BLM personnel to discuss appropriate interim reclamation plans.

**Existing Vegetation at the well pad:** Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste. The current vegetative community: none. The pad is caliche. No additional disturbance is necessary.

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

**Existing Vegetation Community at the road:** Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste. The current vegetative community: none. The pad is caliche. No additional disturbance is necessary.

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

**Existing Vegetation Community at the pipeline:** Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste. The current vegetative community: none. The pad is caliche. No additional disturbance is necessary.

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

**Existing Vegetation Community at other disturbances:** Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste. The current vegetative community: none. The pad is caliche. No additional disturbance is necessary.

**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

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT D12 BS2A-1W

**Well Number:** 224H

**Seedling transplant description attachment:**

**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:**

<b>Seed Type</b>	<b>Pounds/Acre</b>
------------------	--------------------

**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:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

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

**Weed treatment plan attachment:**

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

**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:** Flowline

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**Operator Name:** BOPCO LP

**Well Name:** JAMES RANCH UNIT DI2 BS2A-1W

**Well Number:** 224H

**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?** NO

**Use APD as ROW?**

**ROW Type(s):**

### ROW Applications

**SUPO Additional Information:**

**Use a previously conducted onsite?** YES

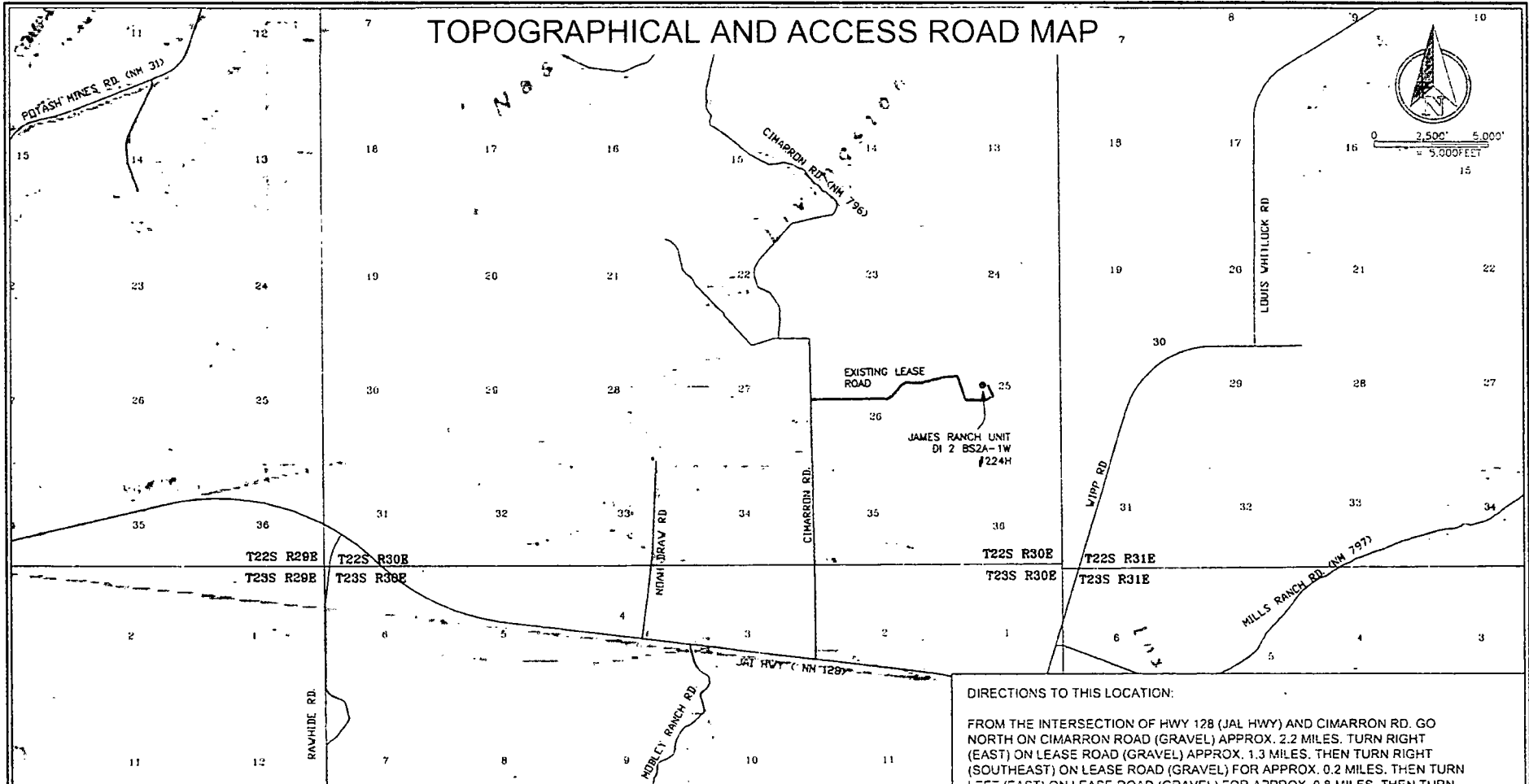
**Previous Onsite information:** Drill island has been completed from previous APD approvals. No additional surface disturbance is necessary. Pads are already built under previous EA approvals. Approved APDs on DI: James Ranch Unit DI2: #138H, 139H, 191H, 193H, 194H, 192H.

### Other SUPO Attachment

JRU\_DI2\_SUPO\_20171227113647.pdf

JRU\_DI2\_DI\_20171227113655.pdf

# TOPOGRAPHICAL AND ACCESS ROAD MAP



## DIRECTIONS TO THIS LOCATION:

FROM THE INTERSECTION OF HWY 128 (JAL HWY) AND CIMARRON RD. GO NORTH ON CIMARRON ROAD (GRAVEL) APPROX. 2.2 MILES. TURN RIGHT (EAST) ON LEASE ROAD (GRAVEL) APPROX. 1.3 MILES. THEN TURN RIGHT (SOUTHEAST) ON LEASE ROAD (GRAVEL) FOR APPROX. 0.2 MILES. THEN TURN LEFT (EAST) ON LEASE ROAD (GRAVEL) FOR APPROX. 0.8 MILES. THEN TURN LEFT (NORTH) ON LEASE ROAD (GRAVEL) FOR APPROX. 0.1 MILES UNTIL YOU ARRIVE AT PAD ON LEFT.



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JAMES RANCH UNIT D1 2 BS2A-1W #224H  
WELL LOCATED 2,600 FEET FROM THE  
NORTH LINE AND 1,850 FEET FROM THE  
WEST LINE OF SECTION 25, TOWNSHIP 22  
SOUTH, RANGE 30 EAST, N.M.P.M. EDDY  
COUNTY, NEW MEXICO

DATE:	12-15-2017	PROJECT NO:	2017050653
DRAWN BY:	AI	SCALE:	1" = 5,000'
CHECKED BY:	DH	SHEET:	1 OF 1
FIELD CREW:	NM/JD	REVISION:	NC

# James Ranch Unit D12

## 1-Mile Radius Map

CH UNIT 12H

22S 30E

LEGG FEDERAL 1  
LEGG FEDERAL 1 RH LEGG FEDERAL 1

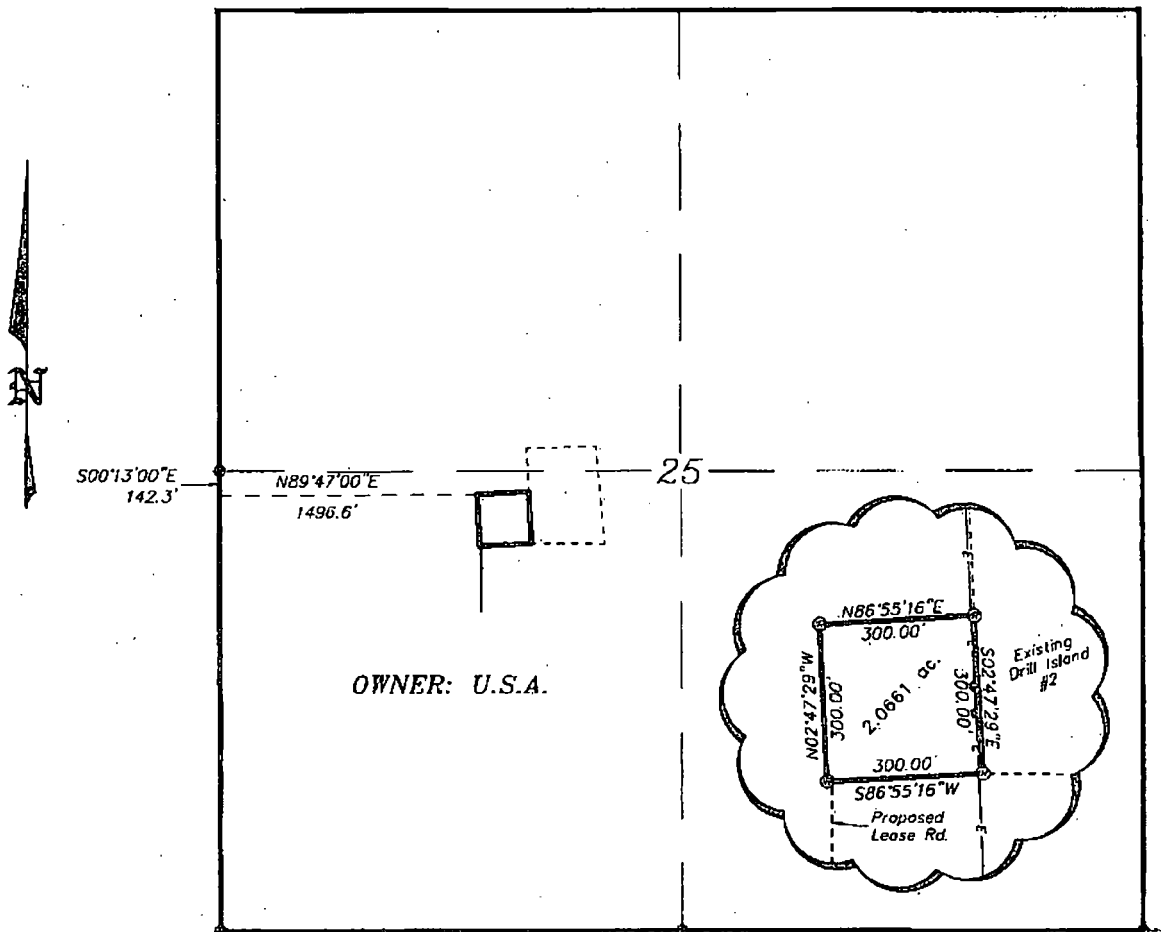
APACHE 24 FEDERAL 5  
APACHE 24 FEDERAL 24  
APACHE 24 FEDERAL 11H  
APACHE 24 FEDERAL 4  
APACHE 24 FEDERAL 10  
APACHE 24 FEDERAL 3  
APACHE 24 FEDERAL 9  
APACHE 24 FEDERAL 1  
APACHE 24 FEDERAL 2  
APACHE 24 FEDERAL 5  
APACHE 24 FEDERAL 8  
APACHE 25 FEDERAL 3  
APACHE 25 FEDERAL 14  
APACHE 25 FEDERAL 4  
APACHE 25 FEDERAL 15  
APACHE 25 FEDERAL 8  
APACHE 25 FEDERAL 8  
APACHE 25 FEDERAL 5  
APACHE 25 FEDERAL 5  
APACHE 25 FEDERAL 17H  
APACHE 25 FEDERAL 2  
APACHE 25 FEDERAL 10  
APACHE 25 FEDERAL 6  
JAMES RANCH UNIT 90  
JAMES RANCH UNIT 80  
JAMES RANCH UNIT 103H  
JAMES RANCH UNIT 125H  
JAMES RANCH UNIT 11  
JAMES RANCH UNIT 31  
JAMES RANCH UNIT 11  
JAMES RANCH UNIT 148  
JAMES RANCH UNIT 148H  
JAMES RANCH UNIT 5  
JAMES RANCH UNIT 20  
JAMES RANCH UNIT 10  
JAMES RANCH UNIT 10  
JAMES RANCH UNIT 27  
JAMES RANCH UNIT 106H  
JAMES RANCH UNIT 32  
JAMES RANCH UNIT 65  
JAMES RANCH UNIT 4  
JAMES RANCH UNIT 34  
JAMES RANCH UNIT 65  
JAMES RANCH UNIT 11  
JAMES RANCH UNIT 112H  
JAMES RANCH UNIT 63  
JAMES RANCH UNIT 35  
JAMES RANCH UNIT 26  
JAMES RANCH UNIT 79

22S 31E

GOVERNMENT

EDDY FY STATE 1

**SECTION 25, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**



**LEGAL DESCRIPTION**

A TRACT OF LAND LOCATED IN SECTION 25, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS.

BEGINNING AT A POINT WHICH LIES S.00°13'00"E., 142.3 FEET AND N.89°47'00"E., 1496.6 FEET FROM THE WEST QUARTER CORNER OF SAID SECTION 25; THENCE N.86°55'16"E., 300.00 FEET; THENCE S.02°47'29"E., 300.00 FEET; THENCE S.86°55'16"W., 300.00 FEET; THENCE N.02°47'29"W., 300.00 FEET TO THE POINT OF BEGINNING. SAID TRACT OF LAND CONTAINING 2.0661 ACRES, MORE OR LESS.

I HEREBY CERTIFY THAT THIS MAP WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. JONES, P.S. No. 7977  
No. 5074

**basin surveys**  
focused on excellence  
in the oilfield

P.O. Box 1786 (575) 393-7516 - Office  
1120 N. West County Rd. (575) 392-2208 - Fax  
Hobbs, New Mexico 88241 basin-surveys.com

1000 0 1000 2000 FEET

**BOPCO, L.P.**

REF: PROPOSED FACILITY PAD FOR THE DRILLING ISLAND #2

A TRACT OF LAND LOCATED IN  
SECTION 25, TOWNSHIP 22 SOUTH, RANGE 30 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 30799 Drawn By: K. GOAD Date: 08-11-2014 Survey Date: 08-09-2014 Sheet 1 of 1 Sheets

OWNER: U.S.A.

25

0+00 END OF SURVEY ON  
SW CORNER OF TRACT  
3+20 O-H POWER LINE  
3+52 BPL  
3+73 END OF SURVEY ON ROAD

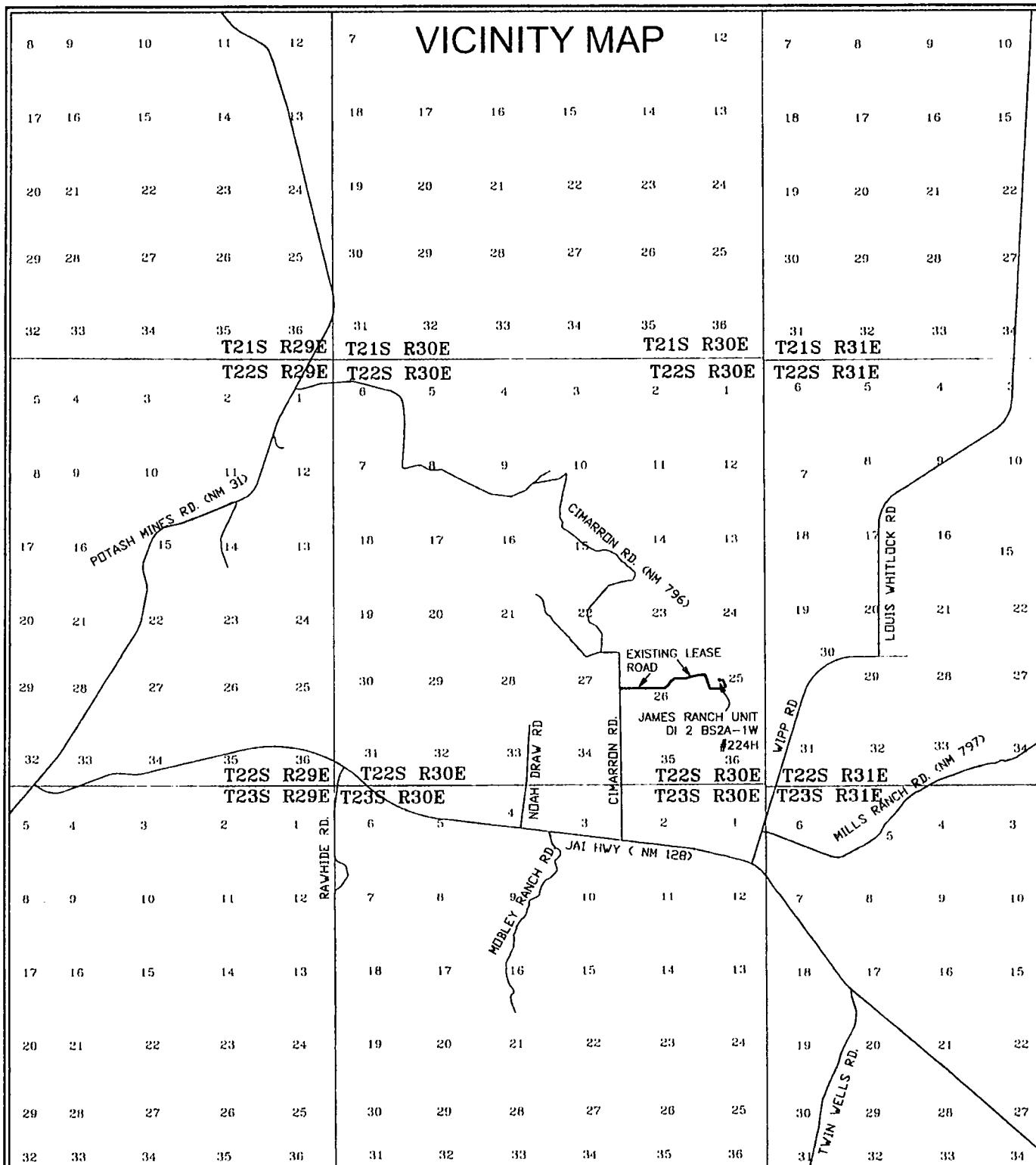
S74°00'40"E  
1583.1'

S61°59'20"E  
1721.7'

S00°16'31"W  
373.0'

W.O. Number: 30799	Drawn By: K. GOAD	Date: 08-11-2014	Survey Date: 08-09-2014	Sheet 1 of 1 Sheets
--------------------	-------------------	------------------	-------------------------	---------------------





JAMES RANCH UNIT DI 2 BS2A-1W #224H  
 WELL LOCATED 2,600 FEET FROM THE  
 NORTH LINE AND 1,850 FEET FROM THE  
 WEST LINE OF SECTION 25, TOWNSHIP 22  
 SOUTH, RANGE 30 EAST, N.M.P.M. EDDY  
 COUNTY, NEW MEXICO



0 5,000' 10,000'  
 1" = 10,000 FEET



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DATE: 12-15-2017  
 DRAWN BY: AI  
 CHECKED BY: DH  
 FIELD CREW: RE/PD  
 PROJECT NO: 2017050668  
 SCALE: 1" = 10,000'  
 SHEET: 1 OF 1  
 REVISION: NO

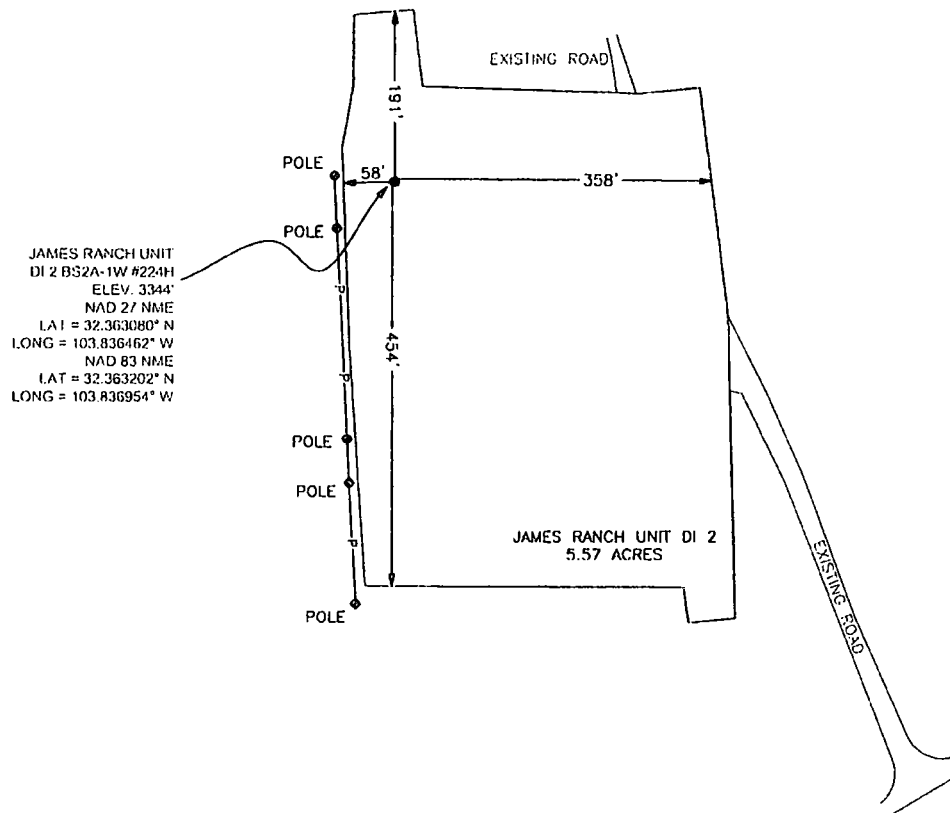
# WELL SITE PLAN

## SECTION 25

TOWNSHIP 22 SOUTH, RANGE 30 EAST  
NEW MEXICO PRIME MERIDIAN



0 100' 200'  
1" = 200 FEET



JAMES RANCH UNIT  
DI 2 BS2A-1W #224H  
ELEV. 3344'  
NAD 27 NME  
LAT = 32.363080° N  
LONG = 103.836462° W  
NAD 83 NME  
LAT = 32.363202° N  
LONG = 103.836954° W

JAMES RANCH UNIT DI 2  
5.57 ACRES

### LEGEND

INTERIOR LINES  
EXISTING OVERHEAD  
ELECTRIC

### NOTE:

- 1). SEE "TOPOGRAPHICAL AND ACCESS ROAD MAP"  
FOR PROPOSED ROAD LOCATION

### DIRECTIONS TO THIS LOCATION:

FROM THE INTERSECTION OF HWY 128 (JAL HWY) AND CIMARRON RD. GO NORTH ON CIMARRON ROAD (GRAVEL) APPROX. 2.2 MILES. TURN RIGHT (EAST) ON LEASE ROAD (GRAVEL) APPROX. 1.3 MILES. THEN TURN RIGHT (SOUTHEAST) ON LEASE ROAD (GRAVEL) FOR APPROX. 0.2 MILES. THEN TURN LEFT (EAST) ON LEASE ROAD (GRAVEL) FOR APPROX. 0.8 MILES. THEN TURN LEFT (NORTH) ON LEASE ROAD (GRAVEL) FOR APPROX. 0.1 MILES UNTIL YOU ARRIVE AT PAD ON LEFT.

*BOPCO, L.P.*

JAMES RANCH UNIT DI 2 BS2A-1W  
#224H WELL LOCATED 2,600 FEET  
FROM THE NORTH LINE AND 1,850  
FEET FROM THE WEST LINE OF  
SECTION 25, TOWNSHIP 22 SOUTH,  
RANGE 30 EAST, N.M.P.M. EDDY  
COUNTY, NEW MEXICO



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DATE	12-15-2017	PROJECT NO:	2017050668
DRAWN BY:	AI	SCALE:	1" = 200'
CHECKED BY:	DH	SHEET:	1 OF 1
FIELD CREW:	NM-JD	REVISION:	1

## Well Site Locations

---

The results of the James Ranch Unit 2 Development Program will develop economic quantities of oil and gas in the James Ranch Unit with multiple primary formations targeted. Well locations are determined based on cross-section variations and details. Locations will be selected to minimize the likelihood of encountering faults and/or drilling hazards while still targeting suitably productive zones.

If drilling results in an unproductive well, the well will be plugged and abandoned as soon as practical after the conclusion of production testing. Productive wells may be shut-in temporarily for BLM authorization for production activities and facilities.

## Surface Use Plan

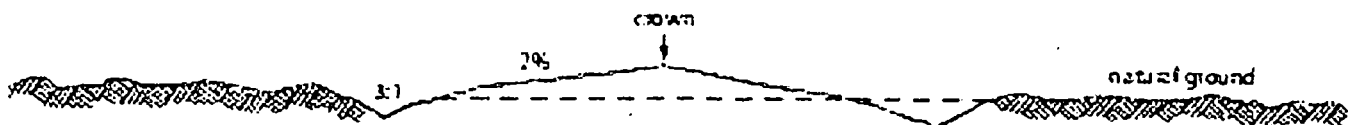
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### 1. Existing Roads

- A. The James Ranch Unit 2 is accessed from the intersection of Hwy 128 (Jal Hwy) and Cimarron rd. Go North on Cimarron Road approximately 2.2 miles. Turn right on lease road approximately 1.3 miles. Then turn right on lease road for approximately .2 miles. Then turn left on lease road for approximately 0.8 miles, then turn left on lease road for approximately .1 miles until you arrive at pad on left. Transportation Plan identifying existing roads that will be used to access the project area is included from Frank's Surveying marked as, 'Vicinity Map.'
- B. There are existing access roads to the proposed James Ranch Unit 2 well locations. All equipment and vehicles will be confined to the routes shown on the Vicinity Map as provided by Frank's Surveying. Maintenance of the access roads will continue until abandonment and reclamation of the well pads is completed.

### 2. New or Upgraded Access Roads

- A. **New Roads.** There are no new roads necessary to access the James Ranch Unit D12 location.
- B. **Well Pads.** The well pads selected for development will determine which existing roads will be upgraded and which new roads will be built. The lease flow diagram shows the location of proposed roads that will need to be constructed to access the well pads.
- C. **Anticipated Traffic.** After well completion, travel to each well site will included one lease operator truck and two oil trucks per day until the Central Tank Battery is completed. Upon completion of the Central Tank Battery, one lease operator truck will continue to travel to each well site to monitor the working order of the wells and to check well equipment for proper operation. Two oil trucks will continue to travel to the Central Tank Battery only for oil hauling. Additional traffic will include one maintenance truck periodically throughout the year for pad upkeep and weed removal. Well service trips will include only the traffic necessary to work on the wells or provide chemical treatments periodically and as needed throughout the year.
- D. **Routing.** All equipment and vehicles will be confined to the travel routes laid out in the vicinity map provided by Frank's Surveying unless otherwise approved by the BLM and applied for by BOPCO, L.P.
- E. **Road Dimensions.** The maximum width of the driving surface of new roads will be 14 feet. The roads will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.



Level Ground Section

- F. **Surface Material.** Surface material will be native caliche. The average grade of all roads will be approximately 3%.
- G. **Fence Cuts:** No.
- H. **Fences:** No.
- I. **Cattle Guards:** No.
- J. **Turnouts:** No.
- K. **Culverts:** No.
- L. **Cuts and Fills:** Not significant.
- M. **Topsoil.** 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.
- N. **Maintenance.** 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.
- O. **Drainage.** 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.

### 3. Location of Existing Wells

- A. See attached 1-mile radius well map.

### 4. Ancillary Facilities

- A. **Ancillary Facilities.** No off-pad ancillary facilities are planned during the exploration phase including, but not limited to: campsites, airstrips or staging areas.

### 5. Location of Proposed Production Facilities

- A. **Production Facilities.** No additional production facilities are necessary for the James Ranch Unit DI2 wells. Once drilled and completed, the wells will flow to the James Ranch Unit DI2 battery, directly adjacent to the James Ranch Unit DI2. No additional surface disturbance is needed.
- B. **Flowlines.** In the event the well is found productive, 4" composite 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 proposed JRU DI2 CTB where the oil, gas, and water will be metered and appropriately separated. High pressure gas lines will be buried beneath the surface flowlines per well pad within the proposed lease road corridors for gas lift. Oil will be hauled from the location by truck following existing and proposed lease roads. The distance of proposed flowlines will be approximately 800'. All flowlines will follow proposed lease road corridors.
- C. **Gas Pipeline.** No Gas Sales line is required for this well. No additional surface disturbance is needed.
- D. **Disposal Facilities.** Produced water will be hauled from location to a commercial disposal facility as needed. Once wells are drilled and completed, a 3160-5 sundry notification will be submitted to BLM in compliance with Onshore Order 7.
- E. **Flare.** No flare is required for this well. No additional surface disturbance is needed.
- F. **Aboveground Structures.** All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted earth-tone colors such as 'shale green' that reduce the visual impacts of the built environment.
- G. **Containment Berms.** Containment berms will be constructed completely around any production facilities designed to hold fluids. The containment berms will be constructed of compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas.

H. **Electrical.** No additional electrical is required for this well. No additional surface disturbance is needed.

## 6. **Location and Types of Water Supply**

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 3<sup>rd</sup> party vendor and hauled to the existing frac pit in Section 7 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

Water for drilling, completion and dust control will be supplied by Rockhouse Water for sale to BOPCO, L.P. from Section 13-T17S-R33E, Eddy County, New Mexico. In the event that Rockhouse Water does not have the appropriate water for BOPCO at time of drilling and completion from this location, then BOPCO water will come from with the location of the water being in Section 21-T23S-R30E, Eddy County, New Mexico.

Anticipated water usage for drilling includes an estimated 35,000 barrels of water to drill a horizontal well in a combination of fresh water and brine as detailed in the mud program in the drilling plans. These volumes are calculated for ~1.5bbls per foot of hole drilled with excess to accommodate any lost circulation or wash out that may occur. Actual water volumes used during operations will depend on the depth of the well, length of horizontal sections, and the losses that may occur during the operation.

Temporary water flowlines will be permitted via ROW approval letter and proper grants as-needed based on drilling and completion schedules as needed. Well completion is expected to require approximately 330,000 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.

## 7. **Construction Activities**

The drill island was constructed by BOPCO, L.P. The drill island is constructed of caliche. No additional caliche is required.

## 8. **Methods for Handling Waste**

- **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 NMOCD approved commercial disposal facility. Oil produced during operations will be stored in tanks until sold.
- **Sewage.** 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.
- **Garbage and Other Waste Materials.** 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 approved 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.
- **Debris.** Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash cage will be cleaned and removed from the well location. No potential adverse materials or substances will be left on location.
- **Hazardous Materials.**

- i. All drilling wastes identified as hazardous substances by the Comprehensive Environmental Response Compensation Liability Act (CERCLA) removed from the location and not reused at another drilling location will be disposed of at a hazardous waste facility approved by the U.S. Environmental Protection Agency (EPA).
- ii. BOPCO, L.P. and its contractors will comply with all applicable Federal, State and local laws and regulations, existing or hereafter enacted promulgated, with regard to any hazardous material, as defined in this paragraph, that will be used, produced, transported or stored on the oil and gas lease. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the CERCLA of 1980, as amended, 42 U.S.C 9601 et seq., and its regulation. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the RCRA of 1976, as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous material also includes any nuclear or nuclear by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101 (14) U.S.C. 9601 (14) nor does the term include natural gas.
- iii. No hazardous substances or wastes will be stored on the location after completion of the well.
- iv. Chemicals brought to location will be on the Toxic Substance Control Act (TSCA) approved inventory list.
- v. All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in Notice to Lessees (NTL) 3A will be reported to the BLM Carlsbad Field Office. Major events will be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days.

## 9. Well Site Layout

- A. **Rig Plat Diagrams:** No additional surface disturbance is required for these wells. The drill island is built and the pad will not fall off of the drill island boundaries. Drill island plat is attached.
- B. **Closed-Loop System:** 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.
- C. **V-Door Orientation:** No additional surface disturbance is required for these wells. The drill island is built and the pad will not fall off of the drill island boundaries. Drill island plat is attached.
- D. All equipment and vehicles will be confined to the approved disturbed areas of this APD (i.e., access road, well pad and topsoil storage areas).

## 10. Plans for Surface Reclamation:

No surface reclamation is planned for this well. BOPCO, L.P. requests a variance to interim reclamation until all wells on the drill island have been drilled and completed, at which time, BOPCO, L.P. will contact the appropriate BLM personnel to discuss appropriate interim reclamation plans. Surface Ownership.

- A. The James Ranch Unit D12 project area is 100% of the surface is under the administrative jurisdiction of the Bureau of Land Management.
- B. The surface is multiple-use with the primary uses of the region for grazing and for the production of oil and gas.

## 12. Other Information

- **Well Sites.** Well pad locations have been staked. Surveys of the proposed access roads and well pad locations have been completed by Frank Surveying, a registered professional land surveyor.
- **Cultural Resources – Archaeology:** BOPCO, L.P. previously paid into the PA for the drill island disturbance area.
- **Dwellings and Structures.** There are no dwellings or structures within 2 miles of this location.

### Soils and Vegetation

- **Environmental Setting.** Soils are classified of Reeves soils. These soils are associated with the loamy ecological site which typically supports black and blue grama and tobosa grasslands with an even distribution of yucca, mesquite, American tarbush, cholla, and cresoste. The current vegetative community: none. The pad is caliche. No additional disturbance is necessary.
- **Traffic.** No truck traffic will be operated during periods or in areas of saturated ground when surface rutting could occur. 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 the access road route.
- **Water.** There is no permanent or live water in the immediate or within the project area.

### **13. Bond Coverage**

Bond Coverage is Nationwide. Bond Number: COB000050

### **Operator's Representatives:**

The BOPCO, L.P. representatives for ensuring compliance of the surface use plan are listed below:

#### **Surface:**

Jimie Scott  
Contract Construction Lead  
XTO Energy, Incorporated  
500 W. Illinois St., Suite 100  
Midland, Texas 79701  
432-488-9955  
james\_scott@xtoenergy.com

Jeff Raines  
Construction Superintendent  
XTO Energy, Incorporated  
500 W. Illinois St., Suite 100  
Midland, Texas 79701  
432-620-4349  
jeff\_raines@xtoenergy.com

● FOUND MONUMENT AS NOTED

DESCRIPTION:

A DRILLING ISLAND SITUATION IN SECTION 25, TOWNSHIP 22 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE PROPOSED DRILL ISLAND WHICH LIES S 00°29'07" E 452.1 FEET AND N 89°30'33" E 1,813.8 FEET FROM THE WEST QUARTER CORNER OF SAID SECTION 25; THENCE N 03°56'30" W 272.09 FEET, THENCE N 02°11'01" W 221.53 FEET, THENCE N 10°23'05" E 71.02 FEET, THENCE N 00°13'33" E 78.64 FEET, THENCE N 85°16'03" E 67.33 FEET, THENCE S 07°00'30" E 86.62 FEET, THENCE S 88°11'03" E 219.52 FEET, THENCE S 88°41'12" E 22.34 FEET, THENCE N 84°27'12" E 71.22 FEET, THENCE S 07°15'41" E 257.97 FEET, THENCE S 01°33'50" E 84.28 FEET, THENCE S 01°28'14" E 255.01 FEET, THENCE S 84°25'16" W 52.98 FEET, THENCE N 08°01'59" W 40.11 FEET, THENCE N 89°50'37" W 359.35 FEET, TO THE POINT OF BEGINNING AND CONTAINING 5.57 ACRES MORE OR LESS.

GENERAL NOTES

1. BEARINGS AND COORDINATES 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 (NAD83).

I, MARK DILLON HARP, NEW MEXICO PROFESSIONAL SURVEYOR NO. 23786, 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 IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

PRELIMINARY. THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT.

MARK DILLON HARP  
REGISTERED PROFESSIONAL LAND SURVEYOR  
STATE OF NEW MEXICO NO. 23786

SURVEY FOR A DRILLING ISLAND FOR THE  
JAMES RANCH UNIT DRILLING ISLAND 2  
#192H-#194H, #224H-#231H, AND  
#271H-274H.

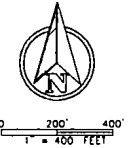
EXHIBIT OF:  
A DRILLING ISLAND FOR:  
BOPCO, L.P.

JAMES RANCH UNIT DRILLING ISLAND 2  
SITUATED IN SECTION 25, TOWNSHIP 22 SOUTH,  
RANGE 30 EAST, N.M.P.M., AND BEING LOCATED  
APPROXIMATELY 15.1 MILES NORTHEAST OF LOVING,  
IN EDDY COUNTY, NEW MEXICO.



550 Bailey Ave., 201 - Fort Worth, TX 76107  
Ph: 817.349.9800 - Fax: 972.732.5271  
TBPE Firm 17947 I TBPLs Firm 101958R7  
www.fscinc.net

DATE: 12-12-2017  
DRAWN BY: AI  
CHECKED BY: DH  
FIELD CREW: BEPD  
PROJECT NO: 2017010663  
SCALE: 1" = 400'  
SHEET: 1 OF 1  
REVISION: 1



1 1/2" IRON PIPE  
W/ BRASS CAP

LINE	BEARING	DISTANCE
L1	N 03°56'30" W	272.09
L2	N 02°11'01" W	221.53
L3	N 10°23'05" E	71.02
L4	N 00°13'33" E	78.64
L5	N 85°16'03" E	67.33
L6	S 07°00'30" E	86.62
L7	S 88°11'03" E	219.52
L8	S 88°41'12" E	22.34
L9	N 84°27'12" E	71.22
L10	S 07°15'41" E	257.97
L11	S 01°33'50" E	84.28
L12	S 01°28'14" E	255.01
L13	S 84°25'16" W	52.98
L14	N 08°01'59" W	40.11
L15	N 89°50'37" W	359.35

P.O.B.  
NAD 27 (NME)  
Y = 495,705.9  
X = 653,385.8  
NAD 83 (NME)  
Y = 495,768.0  
X = 694,567.9

SECTION 25  
TOWNSHIP 22 SOUTH, RANGE 30 EAST  
NEW MEXICO PRIME MERIDIAN

25  
1 1/2" IRON PIPE  
W/ BRASS CAP  
26  
36 | 35





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

**PWD Data Report**

09/10/2018

## 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 well type:**

**Injection well number:**

**Injection well name:**

**Assigned injection well API number?**

**Injection well API number:**

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

**Minerals protection information:**

**Mineral protection attachment:**

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

**UIC Permit attachment:**

## **Section 5 - Surface Discharge**

**Would you like to utilize Surface Discharge PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## **Section 6 - Other**

**Would you like to utilize Other PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**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 Info Data Report

09/10/2018

### Bond Information

Federal/Indian APD: FED

BLM Bond number: COB000050

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:



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

December 1, 2017

Bureau of Land Management  
Carlsbad Field Office  
620 E. Greene Street  
Carlsbad, NM 88220

RE: Operating Agreement/Rights for James Ranch Unit DI2:  
#224H, 225H, 226H, 227H, 228H, 229H, 230H, 231H, 271H, 272H, 273H, 274H

To Whom It May Concern:

This is to hereby certify that BOPCO, L.P./XTO Energy, Inc has operating rights over leases:  
NMNM089052, NMLC0064827A, NMNM02953B, NMNM0002952A, NMNM0307337, NMNM0002952B,  
NMNM0002952, NMNM0002953A, NMNM0002953, and NMNM0002953C through acreage trades,  
acquisitions and unitization.

Sincerely,

A handwritten signature in black ink that reads 'Stephanie Rabadue'.

Stephanie Rabadue  
Regulatory Analyst  
XTO Energy, Inc