Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM0006808

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

7. If Unit or CA Agreement, Name and No.
JAMES RANCH / NMNM070965X

8. Lease Name and Well No.
JAMES RANCH UNIT DI1A BS3-7E
217H
325543

2. Name of Operator
~~BOPCO LP~~ XTO PERMIAN OPERATING, LLC

9. API Well No.
30-015-47076

3a. Address
810 Houston Street Fort Worth TX 76102

3b. Phone No. *(include area code)*
(817)885-8200

10. Field and Pool, or Exploratory
Wildcat

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SENW / 1320 FNL / 2560 FWL / LAT 32.381328 / LONG -103.886663
At proposed prod. zone SESW / 990 FSL / 2440 FWL / LAT 32.387608 / LONG -103.852339

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 21 / T22S / R30E / NMP

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

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
1320 feet

16. No of acres in lease
480

17. Spacing Unit dedicated to this well
320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
30 feet

19. Proposed Depth
10667 feet / 21407 feet

20. BLM/BIA Bond No. in file
FED: COB000050

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3156 feet

22. Approximate date work will start*
05/01/2018

23. Estimated duration
90 days

24. Attachments

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

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

25. Signature
(Electronic Submission)

Name *(Printed/Typed)*
Stephanie Rabadue / Ph: (432)620-6714

Date
12/29/2017

Title
Regulatory Coordinator

Approved by *(Signature)*
(Electronic Submission)

Name *(Printed/Typed)*
Cody Layton / Ph: (575)234-5959

Date
08/23/2018

Title
Assistant Field Manager Lands & Minerals

Office
CARLSBAD

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

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

APPROVED WITH CONDITIONS

RWP 5-5-2020

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 08/23/2018

R

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

WC G-07 S223021G

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-47076	97905	Wildcat; Bone Spring

[4] Property Code	[5] Property Name	[6] Well Number
~~XXXXXXX~~ 325543	JAMES RANCH UNIT DI1A BS3-7E	217H

[7] OGRID No.	[8] Operator Name	[9] Elevation
373075	XTO PERMIAN OPERATING, LLC	3156'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	21	22 S	30 E		1,320	NORTH	2,560	WEST	EDDY

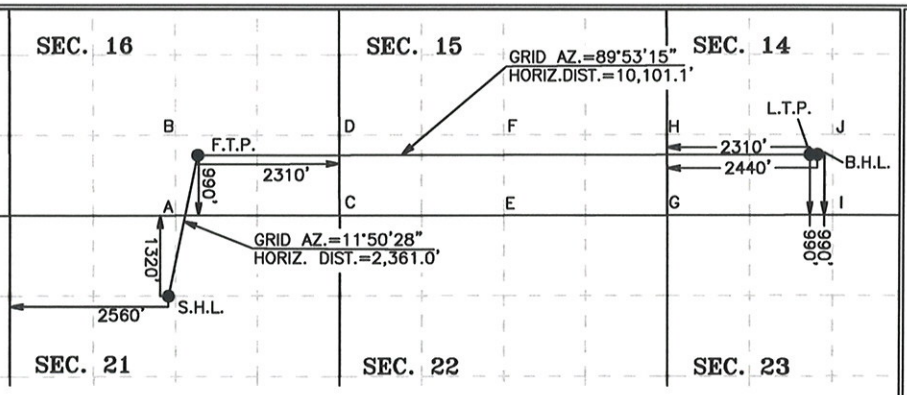
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	14	22 S	30 E		990	SOUTH	2,440	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]



SURFACE LOCATION NAD 27 NME	LAST TAKE POINT NAD 27 NME	SURFACE LOCATION NAD 83 NME	LAST TAKE POINT NAD 83 NME
Y= 502,686.1	Y= 505,016.4	Y= 502,746.4	Y= 505,016.7
X= 638,042.8	X= 648,498.5	X= 679,224.6	X= 648,498.5
LAT.= 32.381206°N	LAT.= 32.387487°N	LAT.=32.381328°N	LAT.= 32.387609°N
LONG.= 103.886168°W	LONG.= 103.852266°W	LONG.=103.886663°W	LONG.= 103.852760°W

FIRST TAKE POINT NAD 27 NME	BOTTOM HOLE LOCATION NAD 27 NME	FIRST TAKE POINT NAD 83 NME	BOTTOM HOLE LOCATION NAD 83 NME
Y= 504,996.8	Y= 505,016.7	Y= 505,057.1	Y= 505,016.7
X= 638,527.4	X= 648,628.5	X= 679,709.1	X= 648,628.5
LAT.= 32.387552°N	LAT.= 32.387486°N	LAT.= 32.387674°N	LAT.= 32.387608°N
LONG.= 103.884567°W	LONG.= 103.851845°W	LONG.= 103.885062°W	LONG.= 103.852339°W

CORNER COORDINATES TABLE NAD 27 NME

A – Y= 504,006.3 N,	X= 638,159.5 E	
B – Y= 505,325.2 N,	X= 638,154.2 E	
C – Y= 504,001.0 N,	X= 640,839.9 E	
D – Y= 505,328.5 N,	X= 640,836.5 E	
E – Y= 504,015.2 N,	X= 643,515.8 E	
F – Y= 505,334.6 N,	X= 643,511.4 E	
G – Y= 504,021.4 N,	X= 646,192.5 E	
H – Y= 505,341.4 N,	X= 646,187.1 E	
I – Y= 504,027.2 N,	X= 648,874.4 E	
J – Y= 505,347.0 N,	X= 648,867.4 E	

CORNER COORDINATES TABLE NAD 83 NME

A – Y= 504,066.6 N,	X= 679,341.2 E	
B – Y= 505,385.5 N,	X= 679,335.9 E	
C – Y= 504,070.3 N,	X= 682,021.6 E	
D – Y= 505,388.8 N,	X= 682,018.2 E	
E – Y= 504,075.5 N,	X= 684,697.5 E	
F – Y= 505,394.9 N,	X= 684,693.1 E	
G – Y= 504,081.7 N,	X= 687,374.2 E	
H – Y= 505,401.7 N,	X= 687,368.8 E	
I – Y= 504,087.5 N,	X= 690,056.2 E	
J – Y= 505,407.3 N,	X= 690,049.1 E	

[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Stephanie Rabadue 12.1.17
Signature Date

Stephanie Rabadue
Printed Name

Stephanie-rabadue@xtoenergy.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

11-28-2017
Date of Survey

Signatue and Seal of Professional Surveyor:

MARK DILLON HARP 23786
NEW MEXICO
PROFESSIONAL SURVEYOR

MARK DILLON HARP 23786
Certificate Number AI 2017050656

RWP 5-5-2020

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
XTO PERMIAN OPERATING, LLC	JAMES RANCH UNIT DI 1A BS3-7E	217H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	21	22S	30E		1320	NORTH	2560	WEST	EDDY

Latitude	Longitude	NAD
32.381328	-103.886663	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
O	16	22S	30E		990	SOUTH	2310	EAST	EDDY

Latitude	Longitude	NAD
32.387674	-103.885062	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
N	14	22S	30E		990	SOUTH	2310	WEST	EDDY

Latitude	Longitude	NAD
32.379424	-103.843238	83

Is this well the defining well for the Horizontal Spacing Unit? [Y]

Is this well an infill well? [N]

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number
XTO PERMIAN OPERATING, LLC		

KZ 06/29/2018

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

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

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

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

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

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

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SENW / 1320 FNL / 2560 FWL / TWSP: 22S / RANGE: 30E / SECTION: 21 / LAT: 32.381328 / LONG: -103.886663 (TVD: 0 feet, MD: 0 feet)

   PPP: SWSE / 990 FSL / 1980 FEL / TWSP: 22S / RANGE: 30E / SECTION: 15 / LAT: 32.386727 / LONG: -103.866746 (TVD: 10667 feet, MD: 16680 feet)

   PPP: SWSW / 990 FSL / 1320 FWL / TWSP: 22S / RANGE: 30E / SECTION: 15 / LAT: 32.386743 / LONG: -103.875414 (TVD: 10667 feet, MD: 14040 feet)

   PPP: SWSE / 990 FSL / 2310 FEL / TWSP: 22S / RANGE: 30E / SECTION: 16 / LAT: 32.387674 / LONG: -103.885062 (TVD: 10667 feet, MD: 11400 feet)

   BHL: SESW / 990 FSL / 2440 FWL / TWSP: 22S / RANGE: 30E / SECTION: 14 / LAT: 32.387608 / LONG: -103.852339 (TVD: 10667 feet, MD: 21407 feet)

BLM Point of Contact

Name: Judith Yeager

Title: Legal Instruments Examiner

Phone: 5752345936

Email: jyeager@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
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**BOPCO, L.P.**
LEASE NO.:	**NMNM-0006808**
WELL NAME & NO.:	**James Ranch Unit DI1A BS3-7E 217H**
SURFACE HOLE FOOTAGE:	**1320' FNL & 2560' FWL**
BOTTOM HOLE FOOTAGE	**0990' FSL & 2440 FWL Sec. 14, T. 22 S., R 30 E.**
LOCATION:	**Section 21, T. 22 S., R 30 E., NMPM**
COUNTY:	**County, New Mexico**

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.

A. DRILLING OPERATIONS REQUIREMENTS

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

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

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

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

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

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

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

B. **CASING**

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

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

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

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

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

R-111-P-Potash
WIPP
High Cave/Karst
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Red Beds, Rustler, and Delaware.
Abnormal pressure may be encountered within the 3rd Bone Spring Sand and all subsequent formations.

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH. IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

1. The **13-3/8** inch surface casing shall be set at approximately **520** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

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

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

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

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

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.

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

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

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

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

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

☐ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 6% - Additional cement may be required.**

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

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

C. PRESSURE CONTROL

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

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

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

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

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

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

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

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

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

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

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

F. **WIPP Requirements**

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, BOPCO, L.P. is 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.

BOPCO, L.P. can email the required information to Mr. Melvin Balderrama at Melvin.Balderama@wipp.ws or Mr. J. Neatherlin at Jimmy.Neatherlin@wipp.ws fax to his attention at 575-234-6062.

JAM 072318

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO LP
LEASE NO.:	NMNM06808
WELL NAME & NO.:	JAMES RANCH UNIT DI1A BS3 217H
SURFACE HOLE FOOTAGE:	1320'/N & 2560'/W
BOTTOM HOLE FOOTAGE	990'/S & 2440'/W
LOCATION:	SECTION 21, T22S, R30E, NMPM
COUNTY:	EDDY

TABLE OF CONTENTS

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

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)

Visual Resource Management Class III
The proposed construction will be limited to the approved pad size.
All above ground facilities, structures, appurtenances, and pipelines will be low profile (less than 8 feet in height).
All above ground facilities, structures, appurtenances, and pipelines will be painted with the non-reflective (flat) paint color Shale Green. Munsell Soil Color No. 5Y 4/2"
Any existing tanks will be replaced with a low profile tank and painted the same color as the proposed tanks.
Upon completion of the well and installation of the production facilities (if the well is a producer) the pad will be reclaimed back to a size necessary for production operations only. The edges will be recontoured and the extra caliche and pad material will be hauled off-site. After one year, the BLM may require reclamation.
The reclaimed area will be grid rolled and reseeded.

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, situating values 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 values, 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.

Drilling:

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.

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.

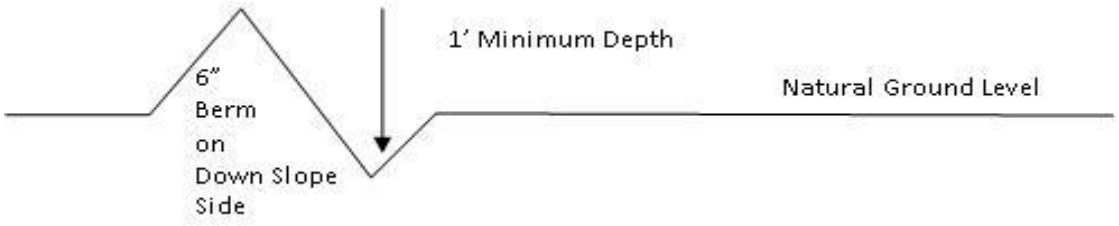
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping 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 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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.

Construction Steps

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

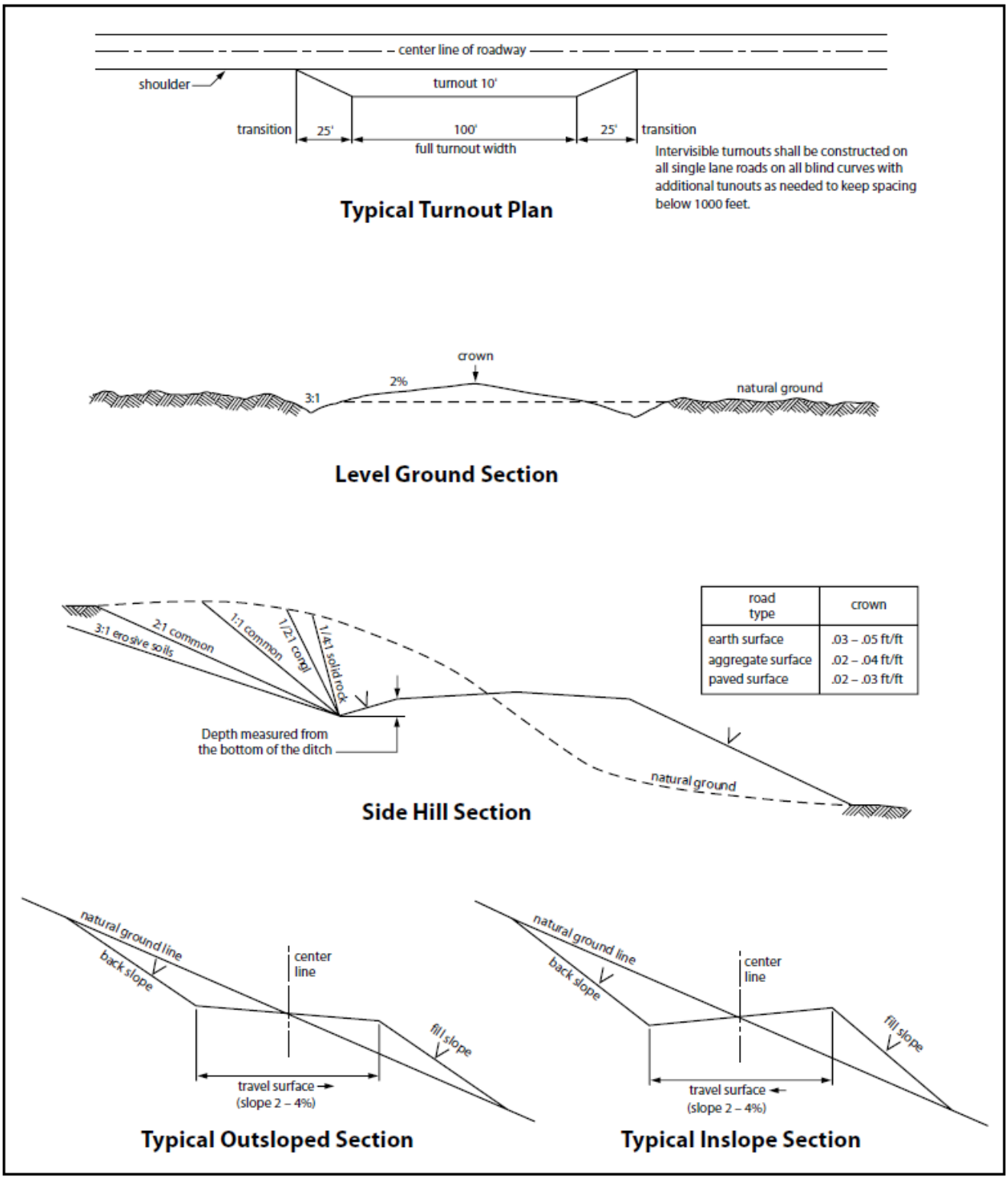


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

VRM Facility Requirement
Low-profile tanks not greater than eight-feet-high shall be used.

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

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

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

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

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

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

without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed

is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

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

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

VII. 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 Sand/Shinnery 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:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

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

AFMSS

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

Operator Certification Data Report

11/12/2018

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 Coordinator

Street Address: 500 W. Illinois St, Ste 100

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

Phone: (432)620-6714

Email address: stephanie_rabadue@xtoenergy.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

APD ID: 10400024877 **Submission Date:** 12/29/2017

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI1A BS3-7E **Well Number:** 217H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400024877 **Tie to previous NOS?** **Submission Date:** 12/29/2017

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

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

Lease number: NMNM0006808 **Lease Acres:** 480

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_DI1A_Op_Rights_20171228063348.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 **Mater 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 DI1A BS3-7E **Well Number:** 217H **Well API Number:**

Field/Pool or Exploratory? Exploratory **Field Name:** WILDCAT **Pool Name:**

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

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI1A BS3-7E **Well Number:** 217H

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:** JAMES RANCH UNIT DI **Number:** 1A

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town: **Distance to nearest well:** 30 FT **Distance to lease line:** 1320 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: JRU_DI1A_217H_C102_20171228055815.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	1320	FNL	2560	FWL	22S	30E	21	Aliquot SENW	32.381328	-103.886663	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0006808	3156	0	0
KOP Leg #1	1320	FNL	2560	FWL	22S	30E	21	Aliquot SENW	32.381328	-103.886663	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0006808	1156	2000	2000
PPP Leg #1	990	FSL	2310	FEL	22S	30E	16	Aliquot SWSE	32.387674	-103.885062	EDDY	NEW MEXICO	NEW MEXICO	S	STATE	-7511	11400	10667

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI1A BS3-7E **Well Number:** 217H

	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	990	FSL	1320	FWL	22S	30E	15	Aliquot SWSW	32.386743	-103.875414	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0002953	-7511	14040	10667
PPP Leg #1	990	FSL	1980	FEL	22S	30E	15	Aliquot SWSE	32.386727	-103.866746	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0002953B	-7511	16680	10667
EXIT Leg #1	990	FSL	2310	FWL	22S	30E	14	Aliquot SESW	32.387609	-103.85276	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0 064827A	-7511	21200	10667
BHL Leg #1	990	FSL	2440	FWL	22S	30E	14	Aliquot SESW	32.387608	-103.852339	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0 064827A	-7511	21407	10667

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 DI1A:
#217H, 218H, 219H, 220H, 221H, 222H, 223H

To Whom It May Concern:

This is to hereby certify that BOPCO, L.P./XTO Energy, Inc has operating rights over leases: NMNM0002953, NMNM0002953B, NMLC00649877A, NMNM0006808, NMNM0002953A, NMNM0000300, and NMLC0064827A through acreage trades, acquisitions and unitization.

Sincerely,

Stephanie Rabadue

Stephanie Rabadue
Regulatory Analyst
XTO Energy, Inc

APD ID: 10400024877 **Submission Date:** 12/29/2017

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI1A BS3-7E **Well Number:** 217H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	---	3174	0	0	ALLUVIUM,OTHER : Quaternary	NONE	No
2	RUSTLER	2980	194	194	SANDSTONE	USEABLE WATER	No
3	TOP SALT	2618	556	556	SALT	POTASH	No
4	BASE OF SALT	-94	3268	3268	SALT	POTASH	No
5	CHERRY CANYON	-1270	4444	4444	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
6	BRUSHY CANYON	-2844	6018	6018	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
7	BONE SPRING 1ST	-5213	8387	8387	SANDSTONE	NATURAL GAS,POTASH,OTHER : Produced Water	No
8	BONE SPRING 2ND	-5446	8620	8620	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	No
9	BONE SPRING 3RD	-6381	9555	9555	SANDSTONE	NATURAL GAS,OIL,OTHER : Produced Water	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 10667

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

Variance request: A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.
Testing Procedure: All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000psi. 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.

Choke Diagram Attachment:

JRU_DI1A_5MCM_20171228054826.pdf

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI1A BS3-7E **Well Number:** 217H

JRU_DI1A_5MCM_20171228054826.pdf

BOP Diagram Attachment:

JRU_DI1A_5MBOP_20171228054834.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	520	0	520			520	H-40	48	STC	3.24	1.69	DRY	12.9	DRY	12.9
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3300	0	3300			3300	J-55	36	LTC	1.95	1.1	DRY	3.81	DRY	3.81
3	PRODUCTION	8.75	5.5	NEW	API	N	0	21407	0	10667			21407	P-110	17	BUTT	1.35	1.12	DRY	2.26	DRY	2.26

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU_DI1A_217H_Csg_20171228054920.pdf

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI1A BS3-7E **Well Number:** 217H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU_DI1A_217H_Csg_20171228054952.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU_DI1A_217H_Csg_20171228055022.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	520	160	1.87	12.9	299.2	100	EconoCem-HLTRRC	None
SURFACE	Tail				300	1.35	14.8	405	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead		0	3300	930	1.88	12.9	1748.4	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				230	1.33	14.8	305.9	100	Halcem-C	2% CaCl
PRODUCTION	Lead		0	21407	780	2.69	10.5	2098.2	20	NeoCem	None

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI1A BS3-7E **Well Number:** 217H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail				2290	1.61	13.2	3686.9	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
3300	21407	OTHER : OBM	8.8	10.5							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	520	OTHER : FW/Native	8.4	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 DI1A BS3-7E **Well Number:** 217H

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
520	3300	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: 5380 **Anticipated Surface Pressure:** 5380

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 geoharzards 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 DI1A BS3-7E **Well Number:** 217H

Hydrogen sulfide drilling operations plan:

JRU_DI1A_217H_H2S_Dia_20171228055610.pdf

JRU_DI1A_H2S_20171228055619.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

JRU_DI1A_217H_DD_20171228055632.pdf

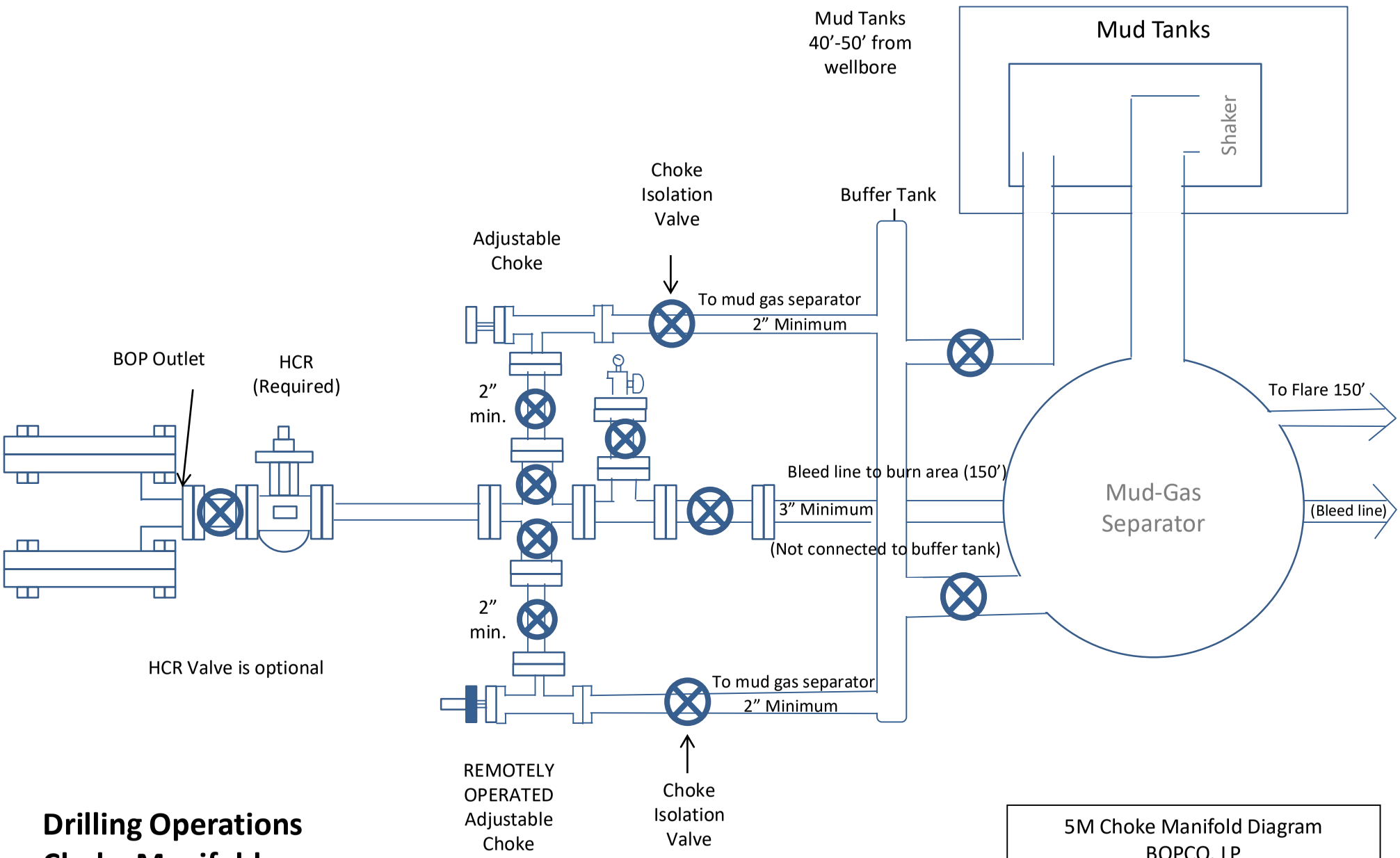
Other proposed operations facets description:

Other proposed operations facets attachment:

JRU_DI1A_217H_GCP_20171228055639.pdf

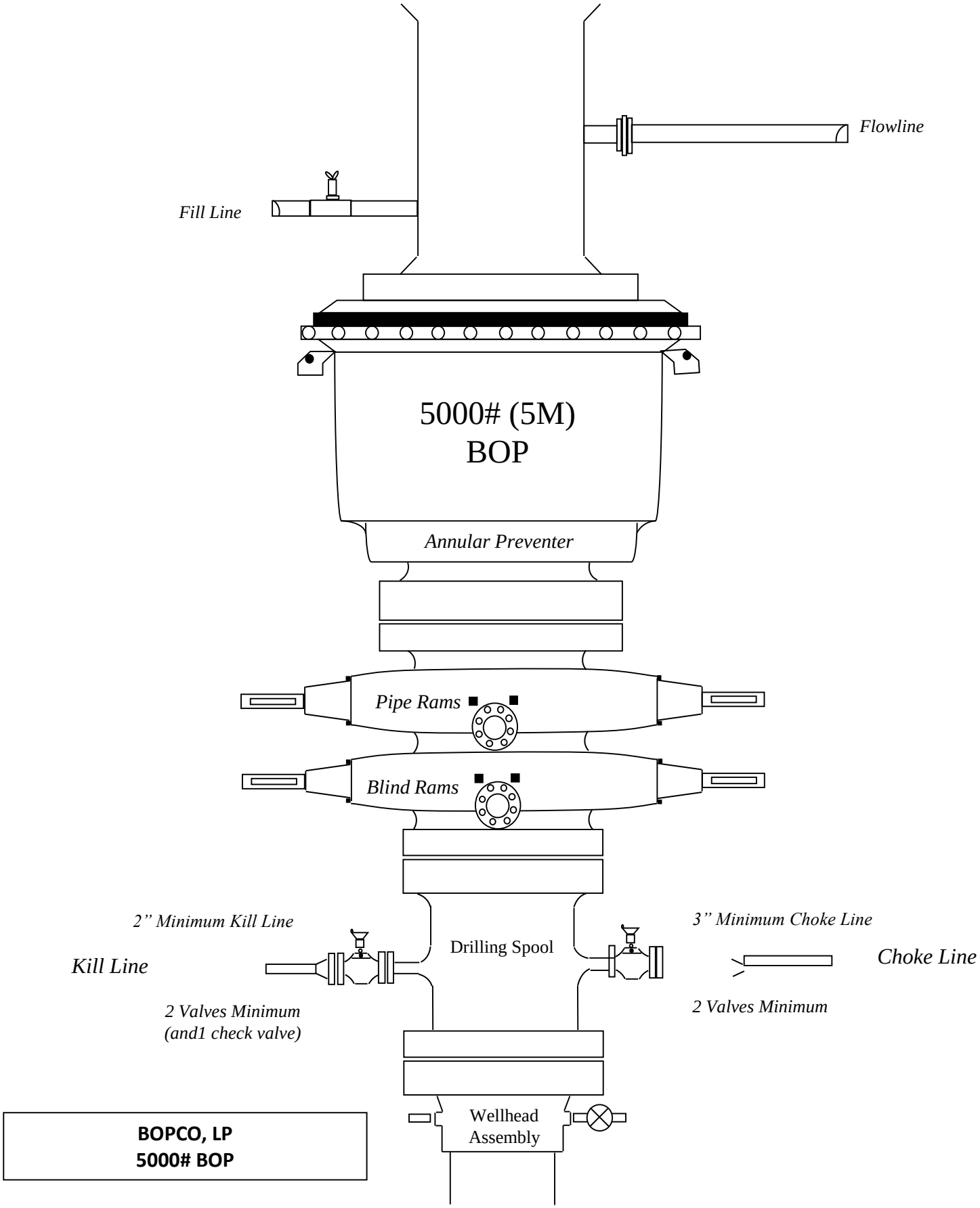
Other Variance attachment:

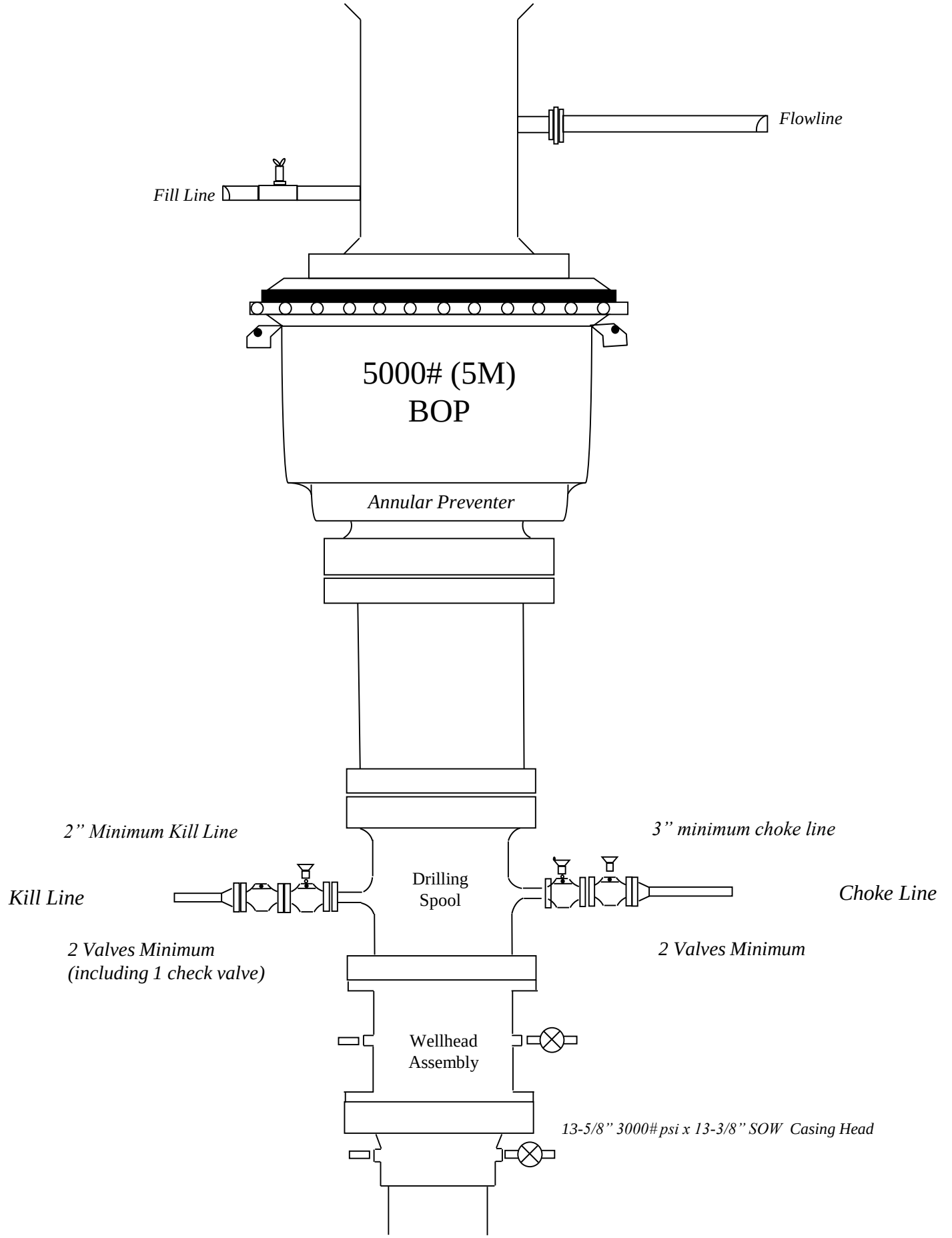
JRU_DI1A_FH_20171228055647.pdf



Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
BOPCO, LP


Flowline
Fill Line
5000# (5M)
BOP
Annular Preventer
Pipe Rams
Blind Rams
2" Minimum Kill Line
Kill Line
2 Valves Minimum
(and1 check valve)
Drilling Spool
3" Minimum Choke Line
Choke Line
2 Valves Minimum
Wellhead
Assembly
BOPCO, LP
5000# BOP



BOPCO, LP
5000# BOP

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

XTO Energy Inc.
James Ranch Unit DI1A 217H
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' – 520'	13-3/8"	48#	STC	H-40	New	1.69	3.24	12.90
12-1/4"	0' – 3300'	9-5/8"	36#	LTC	J-55	New	1.10	1.95	3.81
8-3/4" x 8-1/2"	0' – 21407'	5-1/2"	17#	BTC	P-110	New	1.12	1.35	2.26

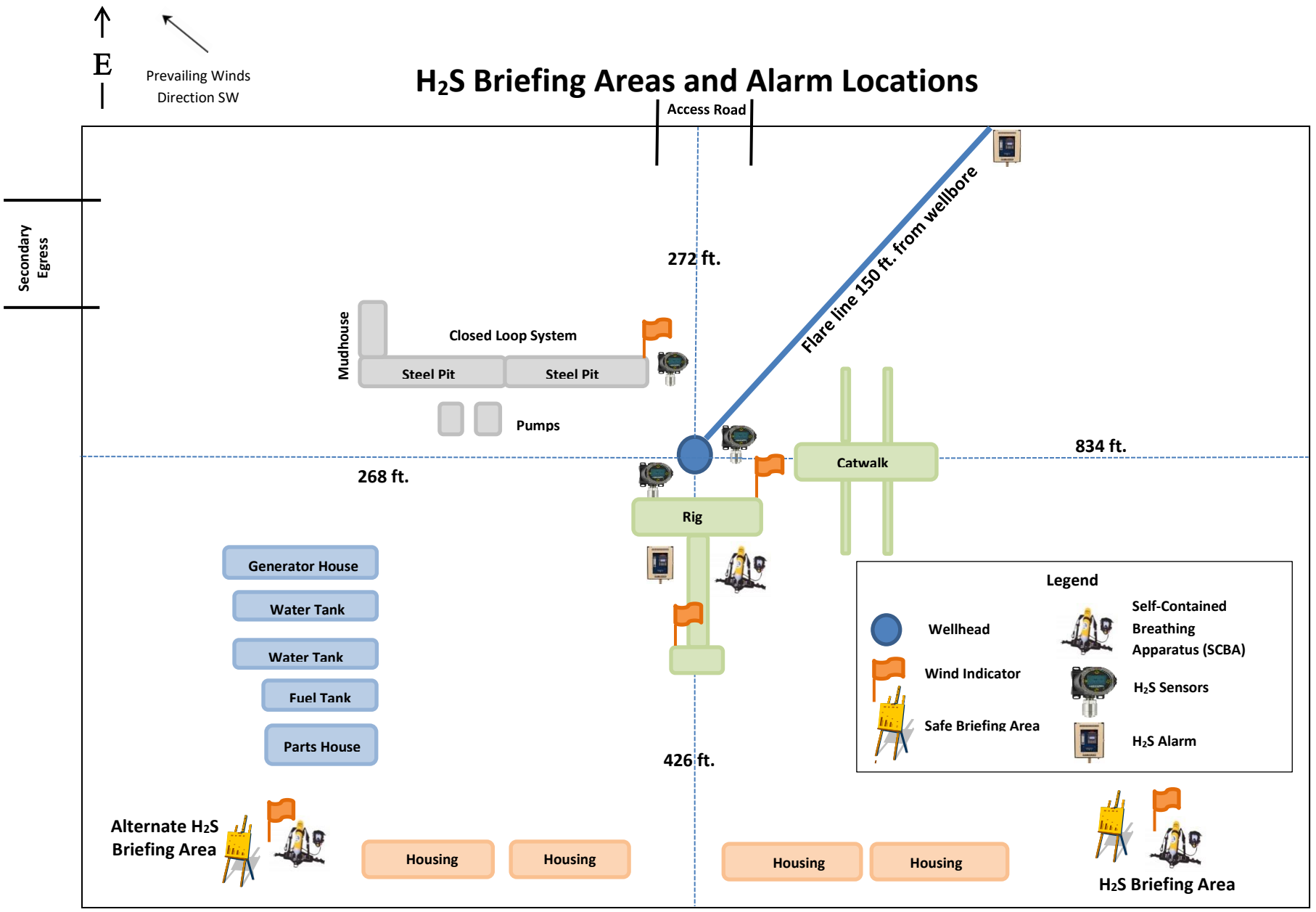
- 9-5/8" collapse assumes ½ evacuation and fresh water internally.
- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35.

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.

H_2S Briefing Areas and Alarm Locations



GENERAL OFFICES – MIDLAND, TEXAS

BOPCO, L.P.

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

HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

Emergency Procedures

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

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

Ignition of Gas source

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

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	**H_2S**	**1.189 Air = l**	**10 ppm**	**100 ppm/hr**	**600 ppm**
Sulfur Dioxide	**SO_2**	**2.21 Air = l**	**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

XTO Energy

Eddy County, NM (NAD-27)
James Ranch Unit DI 1A
JAMES RANCH UNIT DI 1A BS3-7E 217H

OH

Plan: Plan #1

Standard Planning Report

28 November, 2017

Project: Eddy County, NM (NAD-27)
Site: James Ranch Unit DI 1A
Well: JAMES RANCH UNIT DI 1A BS3-7E 217H
Wellbore: OH
Design: Plan #1

WELL DETAILS: JAMES RANCH UNIT DI 1A BS3-7E 217H

Rig Name: Unknown
RKB = 25' @ 3181.00usft (Unknown)
Ground Level: 3156.00

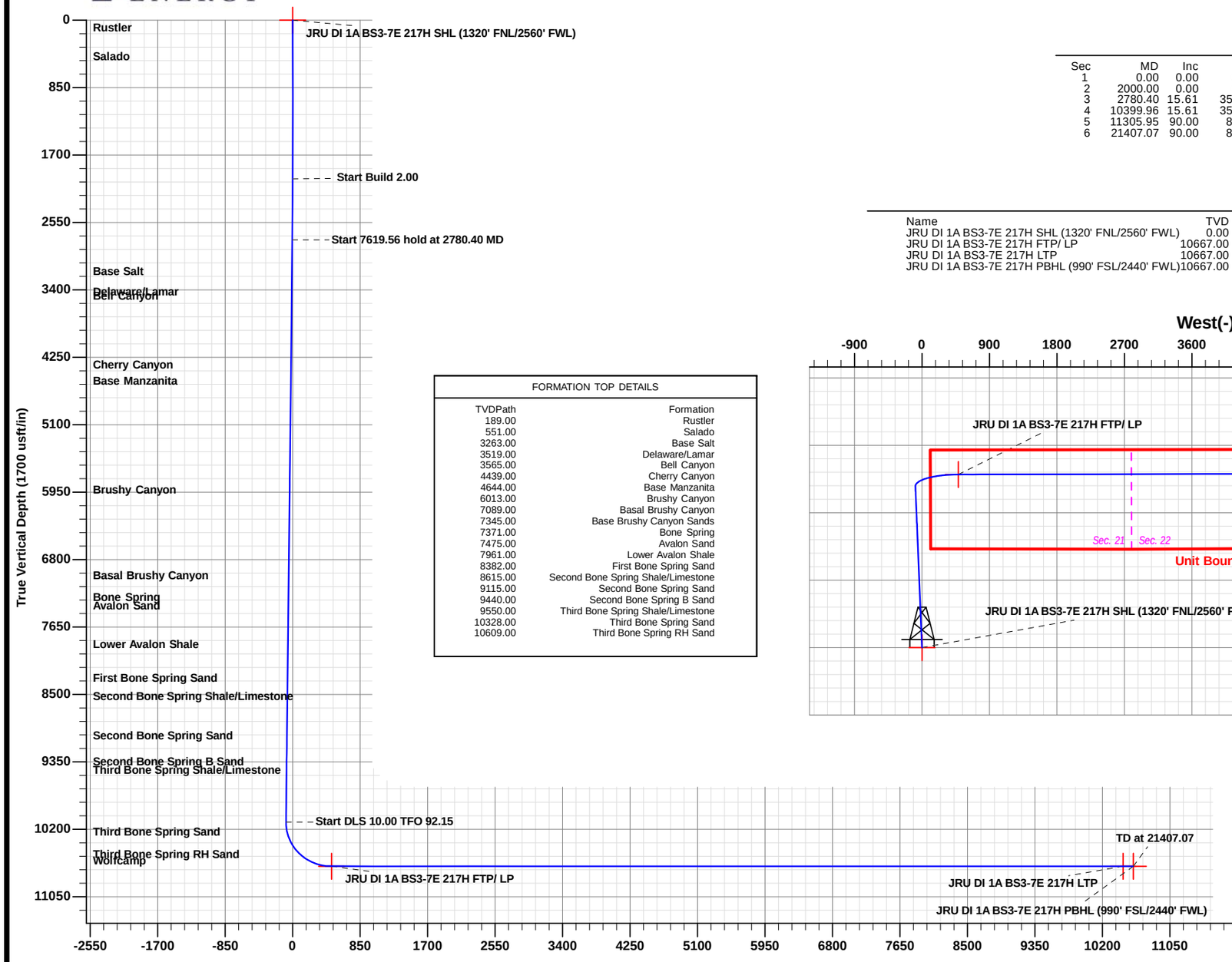
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	502686.10	638042.80	32.381206	-103.886168

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2780.40	15.61	357.66	2770.78	105.55	-4.31	2.00	357.66	-4.11
4	10399.96	15.61	357.66	10109.37	2153.91	-88.02	0.00	0.00	-83.88
5	11305.95	90.00	89.89	10667.00	2310.70	484.60	10.00	92.15	489.04
6	21407.07	90.00	89.89	10667.00	2330.60	10585.70	0.00	0.00	10590.15

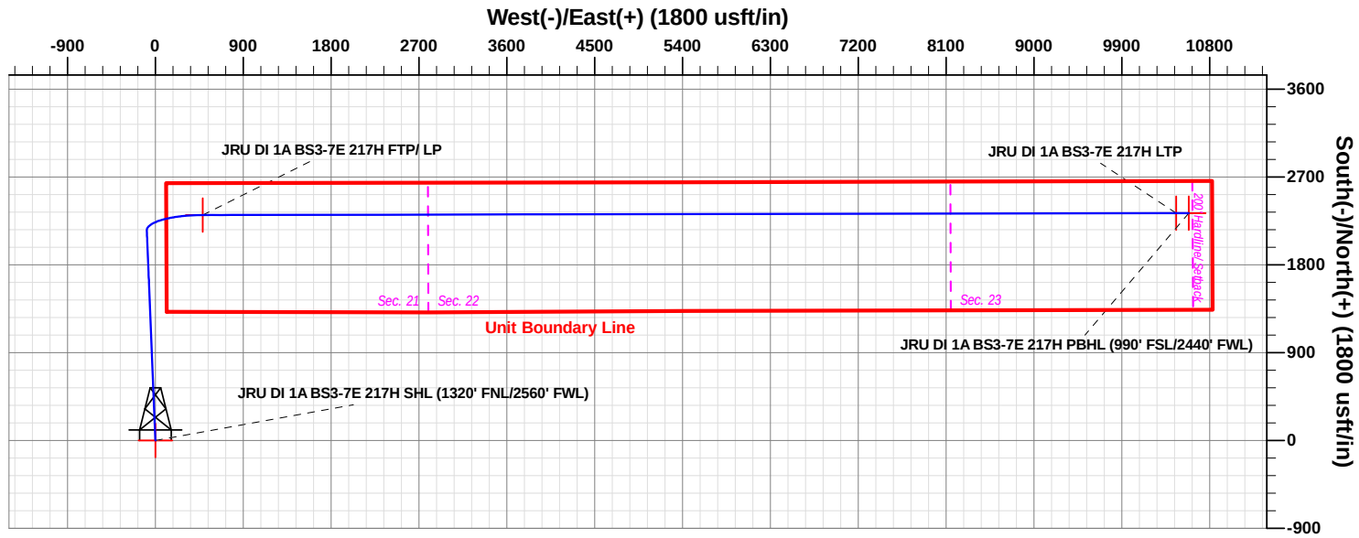
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
JRU DI 1A BS3-7E 217H SHL (1320' FNL/2560' FWL)	0.00	0.00	0.00	502686.10	638042.80	32.381206	-103.886168	Point
JRU DI 1A BS3-7E 217H FTP/ LP	10667.00	2310.70	484.60	504996.80	638527.40	32.387552	-103.884567	Point
JRU DI 1A BS3-7E 217H LTP	10667.00	2330.30	10455.70	505016.40	648498.50	32.387487	-103.852266	Point
JRU DI 1A BS3-7E 217H PBHL (990' FSL/2440' FWL)	10667.00	2330.60	10585.70	505016.70	648628.50	32.387486	-103.851845	Point



FORMATION TOP DETAILS

TVDPath	Formation
189.00	Rustler
551.00	Salado
3263.00	Base Salt
3519.00	Delaware/Lamar
3565.00	Bell Canyon
4439.00	Cherry Canyon
4644.00	Base Manzanita
6013.00	Brushy Canyon
7089.00	Basal Brushy Canyon
7345.00	Base Brushy Canyon Sands
7371.00	Bone Spring
7475.00	Avalon Sand
7961.00	Lower Avalon Shale
8382.00	First Bone Spring Sand
8615.00	Second Bone Spring Shale/Limestone
9115.00	Second Bone Spring Sand
9440.00	Second Bone Spring B Sand
9550.00	Third Bone Spring Shale/Limestone
10328.00	Third Bone Spring Sand
10609.00	Third Bone Spring RH Sand



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

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

Plan: Plan #1 (JAMES RANCH UNIT DI 1A BS3-7E 217H/OH)
Created By: Matthew May Date: 18:51, November 28 2017

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

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 1A BS3-7E 217H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Site:	James Ranch Unit DI 1A	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 1A BS3-7E 217H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project Eddy County, NM (NAD-27)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site James Ranch Unit DI 1A

Site Position:		**Northing:**	502,686.10 usft	**Latitude:**	32.381206
From:	Map	**Easting:**	638,042.80 usft	**Longitude:**	-103.886169
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.24 °

Well JAMES RANCH UNIT DI 1A BS3-7E 217H

Well Position	**+N/-S**	0.00 usft	**Northing:**	502,686.10 usft	**Latitude:**	32.381206
	+E/-W	0.00 usft	**Easting:**	638,042.80 usft	**Longitude:**	-103.886169
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,156.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/27/2017	7.08	60.15	47,971

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	89.89

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	
2,780.40	15.61	357.66	2,770.78	105.55	-4.31	2.00	2.00	0.00	357.66	
10,399.96	15.61	357.66	10,109.37	2,153.91	-88.02	0.00	0.00	0.00	0.00	
11,305.95	90.00	89.89	10,667.00	2,310.70	484.60	10.00	8.21	10.18	92.15	JRU DI 1A BS3-7E
21,407.07	90.00	89.89	10,667.00	2,330.60	10,585.70	0.00	0.00	0.00	0.00	JRU DI 1A BS3-7E

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 1A BS3-7E 217H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Site:	James Ranch Unit DI 1A	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 1A BS3-7E 217H	**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	357.66	2,099.98	1.74	-0.07	-0.07	2.00	2.00	0.00
2,200.00	4.00	357.66	2,199.84	6.97	-0.28	-0.27	2.00	2.00	0.00
2,300.00	6.00	357.66	2,299.45	15.68	-0.64	-0.61	2.00	2.00	0.00
2,400.00	8.00	357.66	2,398.70	27.86	-1.14	-1.08	2.00	2.00	0.00
2,500.00	10.00	357.66	2,497.47	43.49	-1.78	-1.69	2.00	2.00	0.00
2,600.00	12.00	357.66	2,595.62	62.55	-2.56	-2.44	2.00	2.00	0.00
2,700.00	14.00	357.66	2,693.06	85.03	-3.47	-3.31	2.00	2.00	0.00
2,780.40	15.61	357.66	2,770.78	105.55	-4.31	-4.11	2.00	2.00	0.00
2,800.00	15.61	357.66	2,789.66	110.82	-4.53	-4.32	0.00	0.00	0.00
2,900.00	15.61	357.66	2,885.97	137.70	-5.63	-5.36	0.00	0.00	0.00
3,000.00	15.61	357.66	2,982.29	164.59	-6.73	-6.41	0.00	0.00	0.00
3,100.00	15.61	357.66	3,078.60	191.47	-7.82	-7.46	0.00	0.00	0.00
3,200.00	15.61	357.66	3,174.91	218.35	-8.92	-8.50	0.00	0.00	0.00
3,300.00	15.61	357.66	3,271.22	245.23	-10.02	-9.55	0.00	0.00	0.00
3,400.00	15.61	357.66	3,367.54	272.12	-11.12	-10.60	0.00	0.00	0.00
3,500.00	15.61	357.66	3,463.85	299.00	-12.22	-11.64	0.00	0.00	0.00
3,600.00	15.61	357.66	3,560.16	325.88	-13.32	-12.69	0.00	0.00	0.00
3,700.00	15.61	357.66	3,656.47	352.77	-14.42	-13.74	0.00	0.00	0.00
3,800.00	15.61	357.66	3,752.79	379.65	-15.51	-14.79	0.00	0.00	0.00
3,900.00	15.61	357.66	3,849.10	406.53	-16.61	-15.83	0.00	0.00	0.00
4,000.00	15.61	357.66	3,945.41	433.42	-17.71	-16.88	0.00	0.00	0.00
4,100.00	15.61	357.66	4,041.72	460.30	-18.81	-17.93	0.00	0.00	0.00
4,200.00	15.61	357.66	4,138.04	487.18	-19.91	-18.97	0.00	0.00	0.00
4,300.00	15.61	357.66	4,234.35	514.06	-21.01	-20.02	0.00	0.00	0.00
4,400.00	15.61	357.66	4,330.66	540.95	-22.11	-21.07	0.00	0.00	0.00
4,500.00	15.61	357.66	4,426.97	567.83	-23.20	-22.11	0.00	0.00	0.00
4,600.00	15.61	357.66	4,523.29	594.71	-24.30	-23.16	0.00	0.00	0.00
4,700.00	15.61	357.66	4,619.60	621.60	-25.40	-24.21	0.00	0.00	0.00
4,800.00	15.61	357.66	4,715.91	648.48	-26.50	-25.25	0.00	0.00	0.00
4,900.00	15.61	357.66	4,812.22	675.36	-27.60	-26.30	0.00	0.00	0.00
5,000.00	15.61	357.66	4,908.54	702.25	-28.70	-27.35	0.00	0.00	0.00
5,100.00	15.61	357.66	5,004.85	729.13	-29.80	-28.40	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 1A BS3-7E 217H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Site:	James Ranch Unit DI 1A	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 1A BS3-7E 217H	**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	15.61	357.66	5,101.16	756.01	-30.89	-29.44	0.00	0.00	0.00
5,300.00	15.61	357.66	5,197.47	782.89	-31.99	-30.49	0.00	0.00	0.00
5,400.00	15.61	357.66	5,293.79	809.78	-33.09	-31.54	0.00	0.00	0.00
5,500.00	15.61	357.66	5,390.10	836.66	-34.19	-32.58	0.00	0.00	0.00
5,600.00	15.61	357.66	5,486.41	863.54	-35.29	-33.63	0.00	0.00	0.00
5,700.00	15.61	357.66	5,582.72	890.43	-36.39	-34.68	0.00	0.00	0.00
5,800.00	15.61	357.66	5,679.04	917.31	-37.48	-35.72	0.00	0.00	0.00
5,900.00	15.61	357.66	5,775.35	944.19	-38.58	-36.77	0.00	0.00	0.00
6,000.00	15.61	357.66	5,871.66	971.07	-39.68	-37.82	0.00	0.00	0.00
6,100.00	15.61	357.66	5,967.97	997.96	-40.78	-38.86	0.00	0.00	0.00
6,200.00	15.61	357.66	6,064.29	1,024.84	-41.88	-39.91	0.00	0.00	0.00
6,300.00	15.61	357.66	6,160.60	1,051.72	-42.98	-40.96	0.00	0.00	0.00
6,400.00	15.61	357.66	6,256.91	1,078.61	-44.08	-42.01	0.00	0.00	0.00
6,500.00	15.61	357.66	6,353.22	1,105.49	-45.17	-43.05	0.00	0.00	0.00
6,600.00	15.61	357.66	6,449.54	1,132.37	-46.27	-44.10	0.00	0.00	0.00
6,700.00	15.61	357.66	6,545.85	1,159.26	-47.37	-45.15	0.00	0.00	0.00
6,800.00	15.61	357.66	6,642.16	1,186.14	-48.47	-46.19	0.00	0.00	0.00
6,900.00	15.61	357.66	6,738.47	1,213.02	-49.57	-47.24	0.00	0.00	0.00
7,000.00	15.61	357.66	6,834.79	1,239.90	-50.67	-48.29	0.00	0.00	0.00
7,100.00	15.61	357.66	6,931.10	1,266.79	-51.77	-49.33	0.00	0.00	0.00
7,200.00	15.61	357.66	7,027.41	1,293.67	-52.86	-50.38	0.00	0.00	0.00
7,300.00	15.61	357.66	7,123.72	1,320.55	-53.96	-51.43	0.00	0.00	0.00
7,400.00	15.61	357.66	7,220.04	1,347.44	-55.06	-52.47	0.00	0.00	0.00
7,500.00	15.61	357.66	7,316.35	1,374.32	-56.16	-53.52	0.00	0.00	0.00
7,600.00	15.61	357.66	7,412.66	1,401.20	-57.26	-54.57	0.00	0.00	0.00
7,700.00	15.61	357.66	7,508.97	1,428.08	-58.36	-55.62	0.00	0.00	0.00
7,800.00	15.61	357.66	7,605.29	1,454.97	-59.46	-56.66	0.00	0.00	0.00
7,900.00	15.61	357.66	7,701.60	1,481.85	-60.55	-57.71	0.00	0.00	0.00
8,000.00	15.61	357.66	7,797.91	1,508.73	-61.65	-58.76	0.00	0.00	0.00
8,100.00	15.61	357.66	7,894.22	1,535.62	-62.75	-59.80	0.00	0.00	0.00
8,200.00	15.61	357.66	7,990.54	1,562.50	-63.85	-60.85	0.00	0.00	0.00
8,300.00	15.61	357.66	8,086.85	1,589.38	-64.95	-61.90	0.00	0.00	0.00
8,400.00	15.61	357.66	8,183.16	1,616.27	-66.05	-62.94	0.00	0.00	0.00
8,500.00	15.61	357.66	8,279.47	1,643.15	-67.15	-63.99	0.00	0.00	0.00
8,600.00	15.61	357.66	8,375.79	1,670.03	-68.24	-65.04	0.00	0.00	0.00
8,700.00	15.61	357.66	8,472.10	1,696.91	-69.34	-66.08	0.00	0.00	0.00
8,800.00	15.61	357.66	8,568.41	1,723.80	-70.44	-67.13	0.00	0.00	0.00
8,900.00	15.61	357.66	8,664.72	1,750.68	-71.54	-68.18	0.00	0.00	0.00
9,000.00	15.61	357.66	8,761.04	1,777.56	-72.64	-69.23	0.00	0.00	0.00
9,100.00	15.61	357.66	8,857.35	1,804.45	-73.74	-70.27	0.00	0.00	0.00
9,200.00	15.61	357.66	8,953.66	1,831.33	-74.84	-71.32	0.00	0.00	0.00
9,300.00	15.61	357.66	9,049.97	1,858.21	-75.93	-72.37	0.00	0.00	0.00
9,400.00	15.61	357.66	9,146.29	1,885.09	-77.03	-73.41	0.00	0.00	0.00
9,500.00	15.61	357.66	9,242.60	1,911.98	-78.13	-74.46	0.00	0.00	0.00
9,600.00	15.61	357.66	9,338.91	1,938.86	-79.23	-75.51	0.00	0.00	0.00
9,700.00	15.61	357.66	9,435.22	1,965.74	-80.33	-76.55	0.00	0.00	0.00
9,800.00	15.61	357.66	9,531.54	1,992.63	-81.43	-77.60	0.00	0.00	0.00
9,900.00	15.61	357.66	9,627.85	2,019.51	-82.53	-78.65	0.00	0.00	0.00
10,000.00	15.61	357.66	9,724.16	2,046.39	-83.62	-79.69	0.00	0.00	0.00
10,100.00	15.61	357.66	9,820.47	2,073.28	-84.72	-80.74	0.00	0.00	0.00
10,200.00	15.61	357.66	9,916.79	2,100.16	-85.82	-81.79	0.00	0.00	0.00
10,300.00	15.61	357.66	10,013.10	2,127.04	-86.92	-82.84	0.00	0.00	0.00
10,399.96	15.61	357.66	10,109.37	2,153.91	-88.02	-83.88	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 1A BS3-7E 217H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Site:	James Ranch Unit DI 1A	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 1A BS3-7E 217H	**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)
10,450.00	16.19	15.88	10,157.53	2,167.36	-86.38	-82.22	10.00	1.17	36.40
10,500.00	18.15	31.52	10,205.32	2,180.71	-80.40	-76.21	10.00	3.92	31.30
10,550.00	21.11	43.58	10,252.43	2,193.88	-70.11	-65.90	10.00	5.91	24.11
10,600.00	24.71	52.53	10,298.49	2,206.77	-55.60	-51.37	10.00	7.19	17.91
10,650.00	28.70	59.24	10,343.16	2,219.27	-36.98	-32.72	10.00	8.00	13.41
10,700.00	32.96	64.38	10,386.09	2,231.30	-14.39	-10.10	10.00	8.50	10.29
10,750.00	37.37	68.45	10,426.97	2,242.76	12.01	16.31	10.00	8.84	8.14
10,800.00	41.91	71.77	10,465.46	2,253.57	42.00	46.33	10.00	9.07	6.63
10,850.00	46.52	74.54	10,501.29	2,263.64	75.37	79.71	10.00	9.22	5.54
10,900.00	51.19	76.91	10,534.19	2,272.89	111.85	116.21	10.00	9.34	4.75
10,950.00	55.90	78.99	10,563.89	2,281.26	151.17	155.55	10.00	9.42	4.16
11,000.00	60.64	80.85	10,590.18	2,288.68	193.03	197.42	10.00	9.49	3.72
11,050.00	65.41	82.55	10,612.85	2,295.10	237.11	241.52	10.00	9.53	3.39
11,100.00	70.20	84.12	10,631.73	2,300.46	283.08	287.50	10.00	9.57	3.14
11,150.00	74.99	85.60	10,646.69	2,304.73	330.58	335.01	10.00	9.59	2.96
11,200.00	79.80	87.01	10,657.59	2,307.87	379.26	383.69	10.00	9.61	2.82
11,250.00	84.61	88.38	10,664.37	2,309.86	428.74	433.18	10.00	9.62	2.74
11,300.00	89.43	89.73	10,666.97	2,310.68	478.65	483.09	10.00	9.63	2.70
11,305.95	90.00	89.89	10,667.00	2,310.70	484.60	489.04	10.00	9.63	2.69
11,400.00	90.00	89.89	10,667.00	2,310.89	578.65	583.09	0.00	0.00	0.00
11,500.00	90.00	89.89	10,667.00	2,311.08	678.65	683.09	0.00	0.00	0.00
11,600.00	90.00	89.89	10,667.00	2,311.28	778.65	783.09	0.00	0.00	0.00
11,700.00	90.00	89.89	10,667.00	2,311.48	878.65	883.09	0.00	0.00	0.00
11,800.00	90.00	89.89	10,667.00	2,311.67	978.65	983.09	0.00	0.00	0.00
11,900.00	90.00	89.89	10,667.00	2,311.87	1,078.65	1,083.09	0.00	0.00	0.00
12,000.00	90.00	89.89	10,667.00	2,312.07	1,178.65	1,183.09	0.00	0.00	0.00
12,100.00	90.00	89.89	10,667.00	2,312.26	1,278.65	1,283.09	0.00	0.00	0.00
12,200.00	90.00	89.89	10,667.00	2,312.46	1,378.65	1,383.09	0.00	0.00	0.00
12,300.00	90.00	89.89	10,667.00	2,312.66	1,478.65	1,483.09	0.00	0.00	0.00
12,400.00	90.00	89.89	10,667.00	2,312.86	1,578.65	1,583.09	0.00	0.00	0.00
12,500.00	90.00	89.89	10,667.00	2,313.05	1,678.65	1,683.09	0.00	0.00	0.00
12,600.00	90.00	89.89	10,667.00	2,313.25	1,778.65	1,783.09	0.00	0.00	0.00
12,700.00	90.00	89.89	10,667.00	2,313.45	1,878.65	1,883.09	0.00	0.00	0.00
12,800.00	90.00	89.89	10,667.00	2,313.64	1,978.65	1,983.09	0.00	0.00	0.00
12,900.00	90.00	89.89	10,667.00	2,313.84	2,078.65	2,083.09	0.00	0.00	0.00
13,000.00	90.00	89.89	10,667.00	2,314.04	2,178.65	2,183.09	0.00	0.00	0.00
13,100.00	90.00	89.89	10,667.00	2,314.23	2,278.65	2,283.09	0.00	0.00	0.00
13,200.00	90.00	89.89	10,667.00	2,314.43	2,378.65	2,383.09	0.00	0.00	0.00
13,300.00	90.00	89.89	10,667.00	2,314.63	2,478.65	2,483.09	0.00	0.00	0.00
13,400.00	90.00	89.89	10,667.00	2,314.83	2,578.65	2,583.09	0.00	0.00	0.00
13,500.00	90.00	89.89	10,667.00	2,315.02	2,678.65	2,683.09	0.00	0.00	0.00
13,600.00	90.00	89.89	10,667.00	2,315.22	2,778.65	2,783.09	0.00	0.00	0.00
13,700.00	90.00	89.89	10,667.00	2,315.42	2,878.65	2,883.09	0.00	0.00	0.00
13,800.00	90.00	89.89	10,667.00	2,315.61	2,978.65	2,983.09	0.00	0.00	0.00
13,900.00	90.00	89.89	10,667.00	2,315.81	3,078.65	3,083.09	0.00	0.00	0.00
14,000.00	90.00	89.89	10,667.00	2,316.01	3,178.65	3,183.09	0.00	0.00	0.00
14,100.00	90.00	89.89	10,667.00	2,316.20	3,278.65	3,283.09	0.00	0.00	0.00
14,200.00	90.00	89.89	10,667.00	2,316.40	3,378.65	3,383.09	0.00	0.00	0.00
14,300.00	90.00	89.89	10,667.00	2,316.60	3,478.65	3,483.09	0.00	0.00	0.00
14,400.00	90.00	89.89	10,667.00	2,316.80	3,578.65	3,583.09	0.00	0.00	0.00
14,500.00	90.00	89.89	10,667.00	2,316.99	3,678.65	3,683.09	0.00	0.00	0.00
14,600.00	90.00	89.89	10,667.00	2,317.19	3,778.65	3,783.09	0.00	0.00	0.00
14,700.00	90.00	89.89	10,667.00	2,317.39	3,878.65	3,883.09	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 1A BS3-7E 217H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Site:	James Ranch Unit DI 1A	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 1A BS3-7E 217H	**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	89.89	10,667.00	2,317.58	3,978.65	3,983.09	0.00	0.00	0.00
14,900.00	90.00	89.89	10,667.00	2,317.78	4,078.65	4,083.09	0.00	0.00	0.00
15,000.00	90.00	89.89	10,667.00	2,317.98	4,178.65	4,183.09	0.00	0.00	0.00
15,100.00	90.00	89.89	10,667.00	2,318.17	4,278.65	4,283.09	0.00	0.00	0.00
15,200.00	90.00	89.89	10,667.00	2,318.37	4,378.65	4,383.09	0.00	0.00	0.00
15,300.00	90.00	89.89	10,667.00	2,318.57	4,478.65	4,483.09	0.00	0.00	0.00
15,400.00	90.00	89.89	10,667.00	2,318.77	4,578.65	4,583.09	0.00	0.00	0.00
15,500.00	90.00	89.89	10,667.00	2,318.96	4,678.65	4,683.09	0.00	0.00	0.00
15,600.00	90.00	89.89	10,667.00	2,319.16	4,778.65	4,783.09	0.00	0.00	0.00
15,700.00	90.00	89.89	10,667.00	2,319.36	4,878.65	4,883.09	0.00	0.00	0.00
15,800.00	90.00	89.89	10,667.00	2,319.55	4,978.65	4,983.09	0.00	0.00	0.00
15,900.00	90.00	89.89	10,667.00	2,319.75	5,078.65	5,083.09	0.00	0.00	0.00
16,000.00	90.00	89.89	10,667.00	2,319.95	5,178.64	5,183.09	0.00	0.00	0.00
16,100.00	90.00	89.89	10,667.00	2,320.14	5,278.64	5,283.09	0.00	0.00	0.00
16,200.00	90.00	89.89	10,667.00	2,320.34	5,378.64	5,383.09	0.00	0.00	0.00
16,300.00	90.00	89.89	10,667.00	2,320.54	5,478.64	5,483.09	0.00	0.00	0.00
16,400.00	90.00	89.89	10,667.00	2,320.74	5,578.64	5,583.09	0.00	0.00	0.00
16,500.00	90.00	89.89	10,667.00	2,320.93	5,678.64	5,683.09	0.00	0.00	0.00
16,600.00	90.00	89.89	10,667.00	2,321.13	5,778.64	5,783.09	0.00	0.00	0.00
16,700.00	90.00	89.89	10,667.00	2,321.33	5,878.64	5,883.09	0.00	0.00	0.00
16,800.00	90.00	89.89	10,667.00	2,321.52	5,978.64	5,983.09	0.00	0.00	0.00
16,900.00	90.00	89.89	10,667.00	2,321.72	6,078.64	6,083.09	0.00	0.00	0.00
17,000.00	90.00	89.89	10,667.00	2,321.92	6,178.64	6,183.09	0.00	0.00	0.00
17,100.00	90.00	89.89	10,667.00	2,322.11	6,278.64	6,283.09	0.00	0.00	0.00
17,200.00	90.00	89.89	10,667.00	2,322.31	6,378.64	6,383.09	0.00	0.00	0.00
17,300.00	90.00	89.89	10,667.00	2,322.51	6,478.64	6,483.09	0.00	0.00	0.00
17,400.00	90.00	89.89	10,667.00	2,322.71	6,578.64	6,583.09	0.00	0.00	0.00
17,500.00	90.00	89.89	10,667.00	2,322.90	6,678.64	6,683.09	0.00	0.00	0.00
17,600.00	90.00	89.89	10,667.00	2,323.10	6,778.64	6,783.09	0.00	0.00	0.00
17,700.00	90.00	89.89	10,667.00	2,323.30	6,878.64	6,883.09	0.00	0.00	0.00
17,800.00	90.00	89.89	10,667.00	2,323.49	6,978.64	6,983.09	0.00	0.00	0.00
17,900.00	90.00	89.89	10,667.00	2,323.69	7,078.64	7,083.09	0.00	0.00	0.00
18,000.00	90.00	89.89	10,667.00	2,323.89	7,178.64	7,183.09	0.00	0.00	0.00
18,100.00	90.00	89.89	10,667.00	2,324.08	7,278.64	7,283.09	0.00	0.00	0.00
18,200.00	90.00	89.89	10,667.00	2,324.28	7,378.64	7,383.09	0.00	0.00	0.00
18,300.00	90.00	89.89	10,667.00	2,324.48	7,478.64	7,483.09	0.00	0.00	0.00
18,400.00	90.00	89.89	10,667.00	2,324.68	7,578.64	7,583.09	0.00	0.00	0.00
18,500.00	90.00	89.89	10,667.00	2,324.87	7,678.64	7,683.09	0.00	0.00	0.00
18,600.00	90.00	89.89	10,667.00	2,325.07	7,778.64	7,783.09	0.00	0.00	0.00
18,700.00	90.00	89.89	10,667.00	2,325.27	7,878.64	7,883.09	0.00	0.00	0.00
18,800.00	90.00	89.89	10,667.00	2,325.46	7,978.64	7,983.09	0.00	0.00	0.00
18,900.00	90.00	89.89	10,667.00	2,325.66	8,078.64	8,083.09	0.00	0.00	0.00
19,000.00	90.00	89.89	10,667.00	2,325.86	8,178.64	8,183.09	0.00	0.00	0.00
19,100.00	90.00	89.89	10,667.00	2,326.05	8,278.64	8,283.09	0.00	0.00	0.00
19,200.00	90.00	89.89	10,667.00	2,326.25	8,378.64	8,383.09	0.00	0.00	0.00
19,300.00	90.00	89.89	10,667.00	2,326.45	8,478.64	8,483.09	0.00	0.00	0.00
19,400.00	90.00	89.89	10,667.00	2,326.65	8,578.64	8,583.09	0.00	0.00	0.00
19,500.00	90.00	89.89	10,667.00	2,326.84	8,678.64	8,683.09	0.00	0.00	0.00
19,600.00	90.00	89.89	10,667.00	2,327.04	8,778.64	8,783.09	0.00	0.00	0.00
19,700.00	90.00	89.89	10,667.00	2,327.24	8,878.64	8,883.09	0.00	0.00	0.00
19,800.00	90.00	89.89	10,667.00	2,327.43	8,978.64	8,983.09	0.00	0.00	0.00
19,900.00	90.00	89.89	10,667.00	2,327.63	9,078.64	9,083.09	0.00	0.00	0.00
20,000.00	90.00	89.89	10,667.00	2,327.83	9,178.64	9,183.09	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 1A BS3-7E 217H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Site:	James Ranch Unit DI 1A	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 1A BS3-7E 217H	**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	89.89	10,667.00	2,328.03	9,278.64	9,283.09	0.00	0.00	0.00
20,200.00	90.00	89.89	10,667.00	2,328.22	9,378.64	9,383.09	0.00	0.00	0.00
20,300.00	90.00	89.89	10,667.00	2,328.42	9,478.64	9,483.09	0.00	0.00	0.00
20,400.00	90.00	89.89	10,667.00	2,328.62	9,578.64	9,583.09	0.00	0.00	0.00
20,500.00	90.00	89.89	10,667.00	2,328.81	9,678.64	9,683.09	0.00	0.00	0.00
20,600.00	90.00	89.89	10,667.00	2,329.01	9,778.64	9,783.09	0.00	0.00	0.00
20,700.00	90.00	89.89	10,667.00	2,329.21	9,878.64	9,883.09	0.00	0.00	0.00
20,800.00	90.00	89.89	10,667.00	2,329.40	9,978.64	9,983.09	0.00	0.00	0.00
20,900.00	90.00	89.89	10,667.00	2,329.60	10,078.64	10,083.09	0.00	0.00	0.00
21,000.00	90.00	89.89	10,667.00	2,329.80	10,178.64	10,183.09	0.00	0.00	0.00
21,100.00	90.00	89.89	10,667.00	2,330.00	10,278.64	10,283.09	0.00	0.00	0.00
21,200.00	90.00	89.89	10,667.00	2,330.19	10,378.63	10,383.09	0.00	0.00	0.00
21,300.00	90.00	89.89	10,667.00	2,330.39	10,478.63	10,483.09	0.00	0.00	0.00
21,407.07	90.00	89.89	10,667.00	2,330.60	10,585.70	10,590.16	0.00	0.00	0.00

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 1A BS3-7E 21 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	502,686.10	638,042.80	32.381206	-103.886169
JRU DI 1A BS3-7E 21 - plan hits target center - Point	0.00	0.01	10,667.00	2,330.60	10,585.70	505,016.70	648,628.50	32.387486	-103.851845
JRU DI 1A BS3-7E 21 - plan hits target center - Point	0.00	0.01	10,667.00	2,310.70	484.60	504,996.80	638,527.40	32.387552	-103.884568
JRU DI 1A BS3-7E 21 - plan misses target center by 0.04usft at 21277.07usft MD (10667.00 TVD, 2330.34 N, 10455.70 E) - Point	0.00	0.01	10,667.00	2,330.30	10,455.70	505,016.40	648,498.50	32.387487	-103.852266

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 1A BS3-7E 217H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3181.00usft (Unknown)
Site:	James Ranch Unit DI 1A	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 1A BS3-7E 217H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
189.00	189.00	Rustler			
551.00	551.00	Salado			
3,291.46	3,263.00	Base Salt			
3,557.26	3,519.00	Delaware/Lamar			
3,605.02	3,565.00	Bell Canyon			
4,512.49	4,439.00	Cherry Canyon			
4,725.34	4,644.00	Base Manzanita			
6,146.75	6,013.00	Brushy Canyon			
7,263.95	7,089.00	Basal Brushy Canyon			
7,529.75	7,345.00	Base Brushy Canyon Sands			
7,556.74	7,371.00	Bone Spring			
7,664.73	7,475.00	Avalon Sand			
8,169.33	7,961.00	Lower Avalon Shale			
8,606.45	8,382.00	First Bone Spring Sand			
8,848.37	8,615.00	Second Bone Spring Shale/Limesto			
9,367.52	9,115.00	Second Bone Spring Sand			
9,704.96	9,440.00	Second Bone Spring B Sand			
9,819.17	9,550.00	Third Bone Spring Shale/Limestone			
10,632.83	10,328.00	Third Bone Spring Sand			
11,040.90	10,609.00	Third Bone Spring RH Sand			

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date:12/01/2017

☒ Original Operator & OGRID No.: BOPCO, L.P. [260737]

☐ Amended - Reason for Amendment:

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility: JRU DI1A Battery

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
James Ranch Unit DI 1A BS3-7E 217H		C-21-22S-30E	1320'FNL & 2560'FWL	2500 MCF/D	Flared/Sold	CTB Connected to P/L

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to ETC and will be connected to ETC low/high pressure gathering system located in Lea County, New Mexico. It will require 0' of pipeline to connect the facility to low/high pressure gathering system. BOPCO, L.P. provides (periodically) to ETC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, BOPCO, L.P. and ETC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at ETC's Processing Plant located in Sec. 33 Twn. 24S, Rng. 37E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

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

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

GRADE D PRESSURE TEST CERTIFICATE

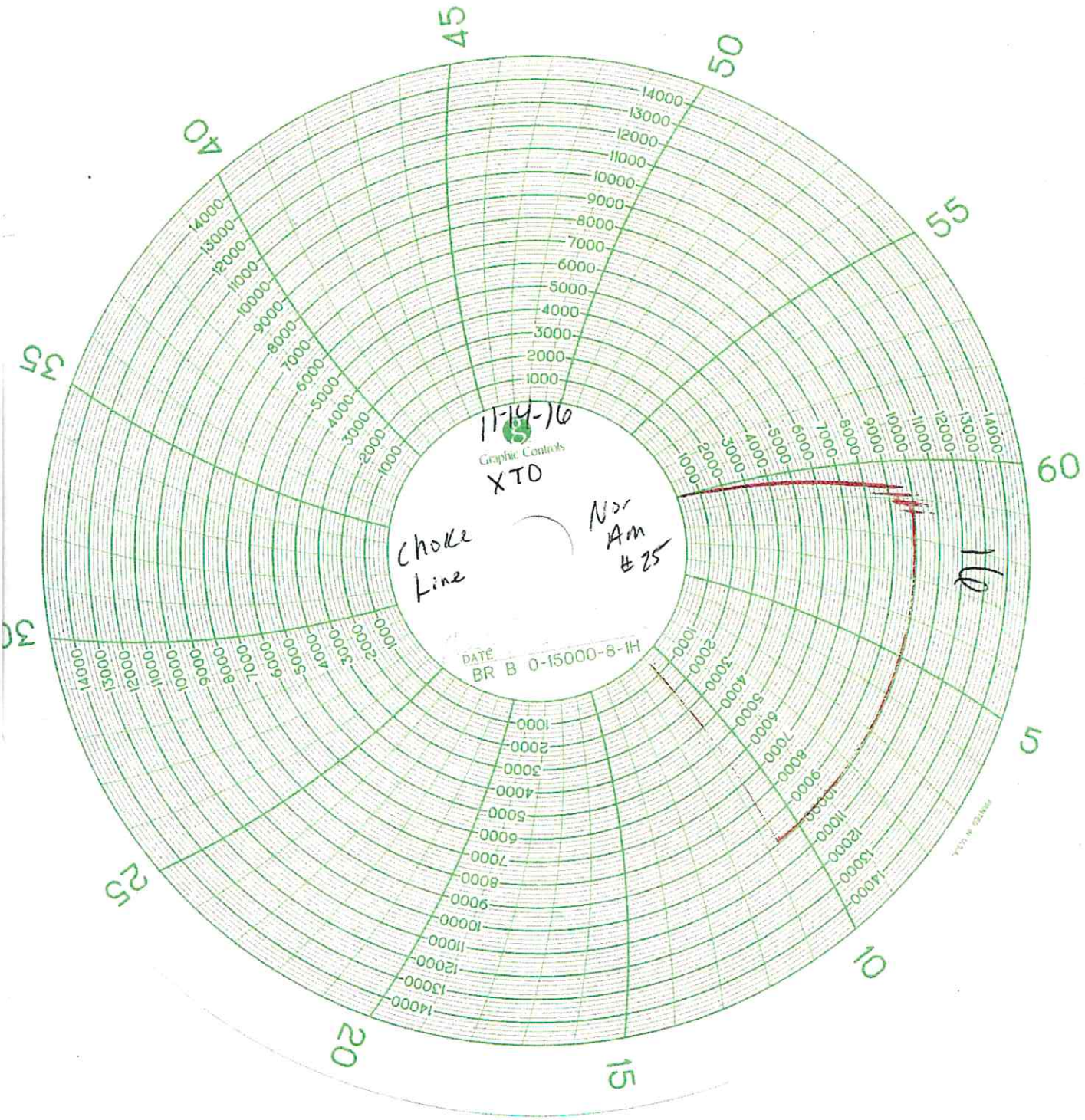
Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA

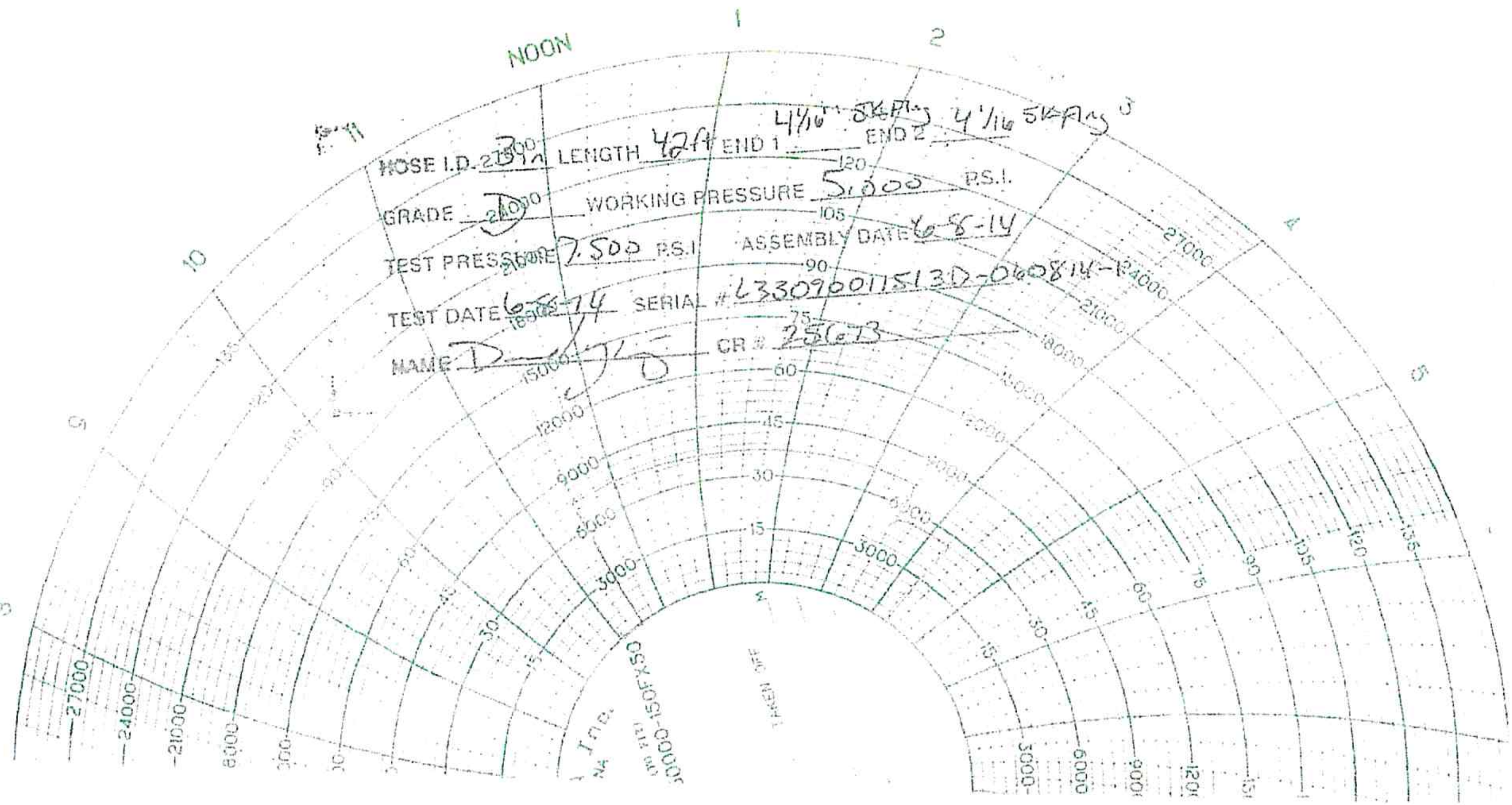
Product Description:	FD3.042.0R41/16.5KFLGE/E LE

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

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

Quality:	QUALITY	Technical Supervisor :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :		Signature :	


11-14-16
Graphic Controls
XTO
Choke Line
Nor Am #25
DATE
BR B 0-15000-8-1H
16
45
50
55
60
5
10
15
20
25
30
35
40



NOON
HOSE I.D. 3in LENGTH 42ft END 1 4 1/16" 5K Fl'g END 2 4 1/16 5K Fl'g
GRADE D WORKING PRESSURE 5,000 P.S.I.
TEST PRESSURE 7,500 P.S.I. ASSEMBLY DATE 6-8-14
TEST DATE 6-8-14 SERIAL # L330900115130-060814-1
NAME
CR # 25673
TAKEN OFF