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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.
NMNM089052

6. If Indian, Allotee or Tribe Name
327166

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 DI 2 BS2B-4W
229H

2. Name of Operator
~~BOPCO LP~~ XTO Permian

9. API Well No.
30 015 46752

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
810 Houston Street Fort Worth TX 76102	(817)885-8200	LOS MEDANOS; BONE SPRING / LOS M

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SENW / 2630 FNL / 1880 FWL / LAT 32.36312 / LONG -103.836857
At proposed prod. zone SWNE / 2320 FNL / 2440 FEL / LAT 32.363245 / LONG -103.88552

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 25 / T22S / R30E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
	EDDY	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
1880 feet	560	400

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
30 feet	9973 feet / 23298 feet	FED: COB000050

21. Elevations (Show whether DF, KDB, RT, GL. etc.)	22. Approximate date work will start*	23. Estimated duration
3344 feet	05/01/2018	90 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Stephanie Rabadue / Ph: (432)620-6714	12/27/2017

Title
Regulatory Coordinator

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	02/20/2019

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 02/20/2019

KS 2-19-20

AFMSS

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

Application Data Report

02/12/2020

APD ID: 10400025864
Submission Date: 12/27/2017

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W
Well Number: 229H

Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400025864
Tie to previous NOS?
Submission Date: 12/27/2017

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: NMNM089052
Lease Acres: 560

Surface access agreement in place?
Allotted?
Reservation:

Agreement in place? YES
Federal or Indian agreement: FEDERAL

Agreement number: NMNM070965X

Agreement name:

Keep application confidential? NO

Permitting Agent? NO
APD Operator: BOPCO LP

Operator letter of designation: JRU_DI2_Op_Rights_20171227113045.pdf

Operator Info

Operator Organization Name: BOPCO LP

Operator Address: 810 Houston Street

Zip: 76102

Operator PO Box:

Operator City: Fort Worth
State: TX

Operator Phone: (817)885-8200

Operator Internet Address:

Section 2 - Well Information

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

Well in Master SUPO? NO
Master SUPO name:

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

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W
Well Number: 229H
Well API Number:

Field/Pool or Exploratory? Field and Pool
Field Name: LOS MEDANOS; BONE SPRING
Pool Name: LOS MEDANOS; BONE SPRING

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

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W Well Number: 229H

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

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

Type of Well Pad: MULTIPLE WELL Multiple Well Pad Name: JAMES RANCH UNIT DI Number: 2

Well Class: HORIZONTAL Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town: Distance to nearest well: 30 FT Distance to lease line: 1880 FT

Reservoir well spacing assigned acres Measurement: 400 Acres

Well plat: JRU_DI2_229H_C102_20171227124904.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: Reference Datum:

Wellbore	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	Will this well produce from this lease?
SHL Leg #1	2630	FNL	1880	FWL	22S	30E	25	Aliquot SENW	32.36312	-103.836857	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 089052	3344	0	0	
KOP Leg #1	2630	FNL	1880	FWL	22S	30E	25	Aliquot SENW	32.36312	-103.836857	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 089052	1344	2000	2000	
PPP Leg #1-1	2620	FNL	1320	FEL	22S	30E	27	Aliquot NENE	32.368585	-103.862483	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0002952A	-6629	15780	9973	

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W Well Number: 229H

Wellbore	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	Will this well produce from this lease?
PPP Leg #1-2	2620	FNL	1320	FEL	22S	30E	26	Aliquot NENW	32.368567	-103.853814	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 000295 3B	-6629	13140	9973	
PPP Leg #1-3	2620	FNL	330	FEL	25S	30E	26	Aliquot SENE	32.363158	-103.844014	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0 064827 A	-6629	10500	9973	
EXIT Leg #1	2620	FNL	2310	FEL	22S	30E	28	Aliquot SWNE	32.363244	-103.885099	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 030733 7	-6629	23100	9973	
BHL Leg #1	2320	FNL	2440	FEL	22S	30E	28	Aliquot SWNE	32.363245	-103.885532	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 030733 7	-6629	23298	9973	

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

December 1, 2017

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

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

To Whom It May Concern:

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

Sincerely,

Stephanie Rabadue

Stephanie Rabadue
Regulatory Analyst
XTO Energy, Inc

Drilling Plan Data Report
02/12/2020

APD ID: 10400025864
Submission Date: 12/27/2017
Highlighted data reflects the most recent changes
Show Final Text

Operator Name: BOPCO LP
Well Name: JAMES RANCH UNIT DI 2 BS2B-4W
Well Number: 229H
Well Type: OIL WELL
Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
161960	---	3344	0	0	ALLUVIUM, OTHER : Quaternary	NONE	N
161951	RUSTLER	2974	370	370	SANDSTONE	USEABLE WATER	N
161952	TOP SALT	2674	670	670	SALT	POTASH	N
161953	BASE OF SALT	-506	3850	3850	SALT	POTASH	N
161955	DELAWARE	-536	3880	3880	MARL, SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
161949	BONE SPRING 1ST	-4356	7700	7700	SANDSTONE	NATURAL GAS, OTHER, POTASH : Produced Water	N
161950	BONE SPRING 2ND	-6216	9560	9560	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 9973

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

Variance request: All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nippling up on the 9-5/8", the BOP will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.
Testing Procedure: All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 3000psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day. Because the 9-5/8" casing will be run with a mandrel hanger through the 13-3/8" BOP without breaking any connections, no additional pressure test would be required.

Choke Diagram Attachment:

JRU_DI2_5MCM_20171227114632.pdf

BOP Diagram Attachment:

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W Well Number: 229H

JRU_DI2_5MCM_20171227114632.pdf

JRU_DI2_5MBOP_20171227114639.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	640	0	640			640	H-40	48	ST&C	2.63	1.44	DRY	10.48	DRY	10.48
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3880	0	3880			3880	J-55	36	LT&C	1.65	1.06	DRY	3.24	DRY	3.24
3	PRODUCTION	8.75	5.5	NEW	API	N	0	23298	0	9973			23298	P-110	17	BUTT	1.12	1.3	DRY	1.85	DRY	1.85

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU_DI2_229H_Csg_20181220065512.pdf

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W Well Number: 229H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU_DI2_229H_Csg_20181220065520.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU_DI2_229H_Csg_20181220065528.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	640	250	1.87	12.9	467.5	100	EconoCem-HLTRRC	None
SURFACE	Tail				300	1.35	14.8	405	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead		0	3880	1120	1.88	12.9	2105.6	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				230	1.33	14.8	305.9	100	Halcem-C	2% CaCl
PRODUCTION	Lead		0	23298	670	2.69	10.5	1802.3	20	NeoCem	None

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W Well Number: 229H

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

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

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

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
3880	23298	OTHER : FW / Cut Brine / Polymer	9.8	10.1							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
0	640	OTHER : FW/Native	8.5	8.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system

Operator Name: BOPCO LP

Well Name: JAMES RANCH UNIT DI 2 BS2B-4W Well Number: 229H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
640	3880	OTHER : Brine/Gel Sweeps	9.8	10.2							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system

Section 6 - Test, Logging, Coring

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

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

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

CBL,CNL,DS,GR,MUDLOG

Coring operation description for the well:

No coring will take place on this well.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5082 Anticipated Surface Pressure: 2924.24

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

Hydrogen sulfide drilling operations plan:

JRU_DI2_H2S_Plan_20171227114242.pdf
JRU_DI2_229H_H2S_Dia_20171227124528.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

JRU_DI2_229H_DD_20171227124541.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

JRU_DI2_229H_GCP_20181220065557.pdf

Other Variance attachment:

JRU_DI2_FH_20171227114319.pdf

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

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

1. **CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 640'	13-3/8"	48#	STC	H-40	New	1.44	2.63	10.48
12-1/4"	0' – 3880'	9-5/8"	36#	LTC	J-55	New	1.06	1.65	3.24
8-3/4" x 8-1/2"	0' – 23366'	5-1/2"	17#	BTC	P-110	New	1.12	1.30	1.85

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

WELLHEAD:

Permanent Wellhead – GE RSH Multibowl System

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

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

XTO Energy Inc.
James Ranch Unit DI 2 BS2B-4W 229H
Eddy County, NM

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

XTO Energy Inc.
James Ranch Unit DI 2 BS2B-4W 229H
Eddy County, NM

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

XTO Energy Inc.
James Ranch Unit DI 2 BS2B-4W 229H
Eddy County, NM

CASING PROGRAM:

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Permanent Wellhead – GE RSH Multibowl System

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   - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

GENERAL OFFICES – MIDLAND, TEXAS

BOPCO, L.P.

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

HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

Emergency Procedures

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

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

Ignition of Gas source

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

Characteristics of H_2S and SO_2

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

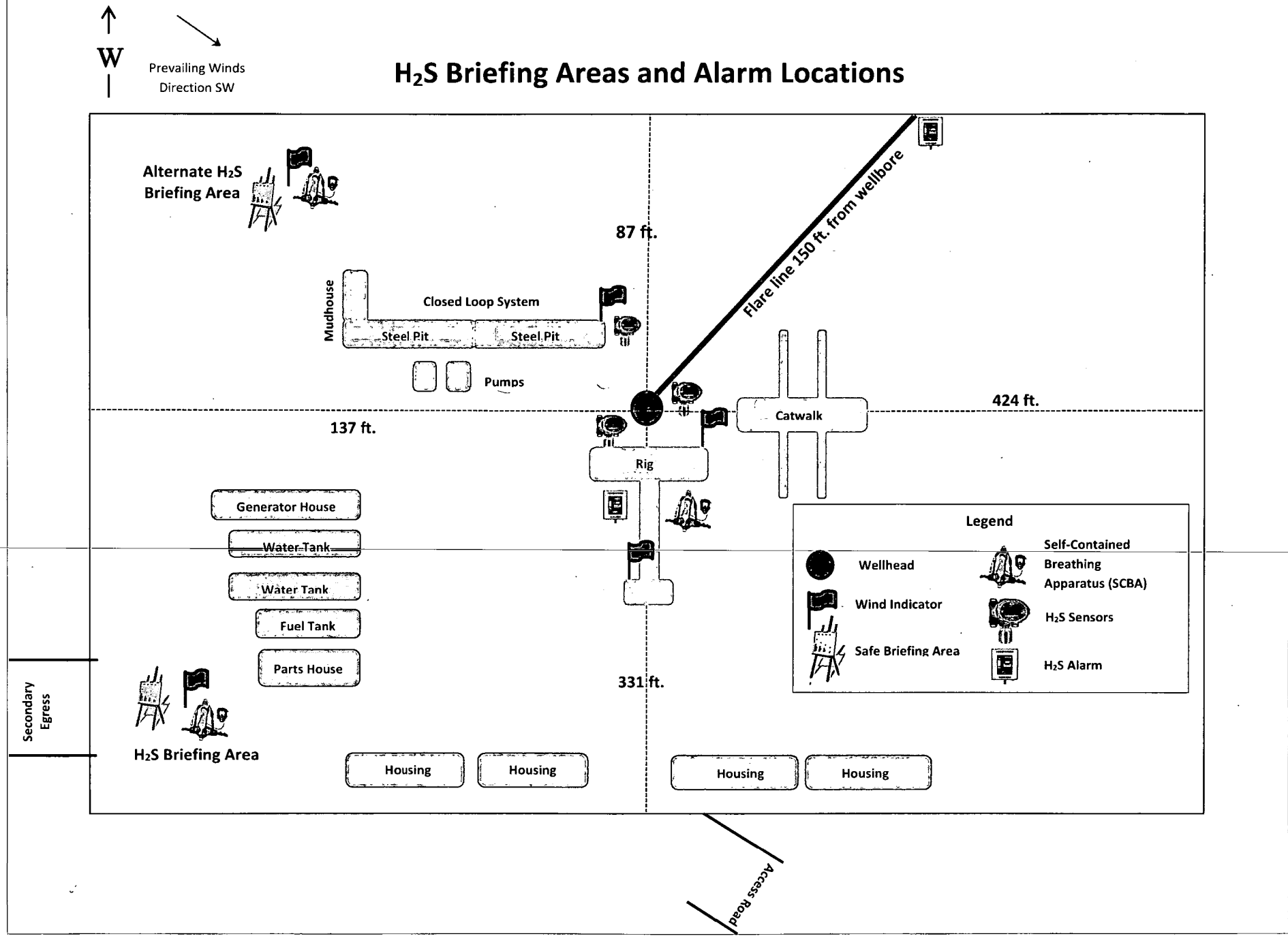
Contacting Authorities

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

H_2S Briefing Areas and Alarm Locations



XTO Energy

Eddy County, NM (NAD-27)
James Ranch Unit DI 2
JAMES RANCH UNIT DI 2 BS2B-4W 229H

OH

Plan: Plan #1

Standard Planning Report

28 November, 2017

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 2 BS2B-4W 229H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Site:	James Ranch Unit DI 2	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 2 BS2B-4W 229H	**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 2				
Site Position:		**Northing:**	496,160.00 usft	**Latitude:**	32.363080
From:	Map	**Easting:**	653,418.30 usft	**Longitude:**	-103.836462
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.27 °

Well	JAMES RANCH UNIT DI 2 BS2B-4W 229H				
Well Position	**+N/-S**	-30.00 usft	**Northing:**	496,130.00 usft	**Latitude:**	32.362997
	+E/-W	30.20 usft	**Easting:**	653,448.50 usft	**Longitude:**	-103.836365
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,344.00 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	10/2/2017	7.06	60.14	47,963

Design	Plan #1			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

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

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,645.61	12.91	270.15	2,640.16	0.19	-72.44	2.00	2.00	0.00	270.15	
9,712.22	12.91	270.15	9,528.07	4.40	-1,651.53	0.00	0.00	0.00	0.00	
10,483.09	90.00	269.89	9,973.00	3.80	-2,210.00	10.00	10.00	-0.03	-0.27	JRU DI 2 BS2B-4W
23,298.62	90.00	269.89	9,973.00	-20.70	-15,025.50	0.00	0.00	0.00	0.00	JRU DI 2 BS2B-4W

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 2 BS2B-4W 229H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Site:	James Ranch Unit DI 2	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 2 BS2B-4W 229H	**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	270.15	2,099.98	0.00	-1.75	1.75	2.00	2.00	0.00
2,200.00	4.00	270.15	2,199.84	0.02	-6.98	6.98	2.00	2.00	0.00
2,300.00	6.00	270.15	2,299.45	0.04	-15.69	15.69	2.00	2.00	0.00
2,400.00	8.00	270.15	2,398.70	0.07	-27.88	27.88	2.00	2.00	0.00
2,500.00	10.00	270.15	2,497.47	0.12	-43.52	43.52	2.00	2.00	0.00
2,600.00	12.00	270.15	2,595.62	0.17	-62.60	62.60	2.00	2.00	0.00
2,645.61	12.91	270.15	2,640.16	0.19	-72.44	72.44	2.00	2.00	0.00
2,700.00	12.91	270.15	2,693.17	0.23	-84.59	84.59	0.00	0.00	0.00
2,800.00	12.91	270.15	2,790.65	0.28	-106.94	106.94	0.00	0.00	0.00
2,900.00	12.91	270.15	2,888.12	0.34	-129.29	129.28	0.00	0.00	0.00
3,000.00	12.91	270.15	2,985.59	0.40	-151.63	151.63	0.00	0.00	0.00
3,100.00	12.91	270.15	3,083.06	0.46	-173.98	173.98	0.00	0.00	0.00
3,200.00	12.91	270.15	3,180.53	0.52	-196.32	196.32	0.00	0.00	0.00
3,300.00	12.91	270.15	3,278.00	0.58	-218.67	218.67	0.00	0.00	0.00
3,400.00	12.91	270.15	3,375.47	0.64	-241.01	241.01	0.00	0.00	0.00
3,500.00	12.91	270.15	3,472.94	0.70	-263.36	263.36	0.00	0.00	0.00
3,600.00	12.91	270.15	3,570.42	0.76	-285.71	285.70	0.00	0.00	0.00
3,700.00	12.91	270.15	3,667.89	0.82	-308.05	308.05	0.00	0.00	0.00
3,800.00	12.91	270.15	3,765.36	0.88	-330.40	330.40	0.00	0.00	0.00
3,900.00	12.91	270.15	3,862.83	0.94	-352.74	352.74	0.00	0.00	0.00
4,000.00	12.91	270.15	3,960.30	1.00	-375.09	375.09	0.00	0.00	0.00
4,100.00	12.91	270.15	4,057.77	1.06	-397.44	397.43	0.00	0.00	0.00
4,200.00	12.91	270.15	4,155.24	1.12	-419.78	419.78	0.00	0.00	0.00
4,300.00	12.91	270.15	4,252.72	1.18	-442.13	442.12	0.00	0.00	0.00
4,400.00	12.91	270.15	4,350.19	1.24	-464.47	464.47	0.00	0.00	0.00
4,500.00	12.91	270.15	4,447.66	1.30	-486.82	486.82	0.00	0.00	0.00
4,600.00	12.91	270.15	4,545.13	1.36	-509.16	509.16	0.00	0.00	0.00
4,700.00	12.91	270.15	4,642.60	1.42	-531.51	531.51	0.00	0.00	0.00
4,800.00	12.91	270.15	4,740.07	1.48	-553.86	553.85	0.00	0.00	0.00
4,900.00	12.91	270.15	4,837.54	1.54	-576.20	576.20	0.00	0.00	0.00
5,000.00	12.91	270.15	4,935.01	1.59	-598.55	598.54	0.00	0.00	0.00
5,100.00	12.91	270.15	5,032.49	1.65	-620.89	620.89	0.00	0.00	0.00

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Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Site:	James Ranch Unit DI 2	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 2 BS2B-4W 229H	**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	12.91	270.15	5,129.96	1.71	-643.24	643.23	0.00	0.00	0.00
5,300.00	12.91	270.15	5,227.43	1.77	-665.59	665.58	0.00	0.00	0.00
5,400.00	12.91	270.15	5,324.90	1.83	-687.93	687.93	0.00	0.00	0.00
5,500.00	12.91	270.15	5,422.37	1.89	-710.28	710.27	0.00	0.00	0.00
5,600.00	12.91	270.15	5,519.84	1.95	-732.62	732.62	0.00	0.00	0.00
5,700.00	12.91	270.15	5,617.31	2.01	-754.97	754.96	0.00	0.00	0.00
5,800.00	12.91	270.15	5,714.79	2.07	-777.31	777.31	0.00	0.00	0.00
5,900.00	12.91	270.15	5,812.26	2.13	-799.66	799.65	0.00	0.00	0.00
6,000.00	12.91	270.15	5,909.73	2.19	-822.01	822.00	0.00	0.00	0.00
6,100.00	12.91	270.15	6,007.20	2.25	-844.35	844.35	0.00	0.00	0.00
6,200.00	12.91	270.15	6,104.67	2.31	-866.70	866.69	0.00	0.00	0.00
6,300.00	12.91	270.15	6,202.14	2.37	-889.04	889.04	0.00	0.00	0.00
6,400.00	12.91	270.15	6,299.61	2.43	-911.39	911.38	0.00	0.00	0.00
6,500.00	12.91	270.15	6,397.08	2.49	-933.74	933.73	0.00	0.00	0.00
6,600.00	12.91	270.15	6,494.56	2.55	-956.08	956.07	0.00	0.00	0.00
6,700.00	12.91	270.15	6,592.03	2.61	-978.43	978.42	0.00	0.00	0.00
6,800.00	12.91	270.15	6,689.50	2.67	-1,000.77	1,000.77	0.00	0.00	0.00
6,900.00	12.91	270.15	6,786.97	2.73	-1,023.12	1,023.11	0.00	0.00	0.00
7,000.00	12.91	270.15	6,884.44	2.79	-1,045.46	1,045.46	0.00	0.00	0.00
7,100.00	12.91	270.15	6,981.91	2.85	-1,067.81	1,067.80	0.00	0.00	0.00
7,200.00	12.91	270.15	7,079.38	2.90	-1,090.16	1,090.15	0.00	0.00	0.00
7,300.00	12.91	270.15	7,176.86	2.96	-1,112.50	1,112.49	0.00	0.00	0.00
7,400.00	12.91	270.15	7,274.33	3.02	-1,134.85	1,134.84	0.00	0.00	0.00
7,500.00	12.91	270.15	7,371.80	3.08	-1,157.19	1,157.19	0.00	0.00	0.00
7,600.00	12.91	270.15	7,469.27	3.14	-1,179.54	1,179.53	0.00	0.00	0.00
7,700.00	12.91	270.15	7,566.74	3.20	-1,201.89	1,201.88	0.00	0.00	0.00
7,800.00	12.91	270.15	7,664.21	3.26	-1,224.23	1,224.22	0.00	0.00	0.00
7,900.00	12.91	270.15	7,761.68	3.32	-1,246.58	1,246.57	0.00	0.00	0.00
8,000.00	12.91	270.15	7,859.15	3.38	-1,268.92	1,268.91	0.00	0.00	0.00
8,100.00	12.91	270.15	7,956.63	3.44	-1,291.27	1,291.26	0.00	0.00	0.00
8,200.00	12.91	270.15	8,054.10	3.50	-1,313.61	1,313.61	0.00	0.00	0.00
8,300.00	12.91	270.15	8,151.57	3.56	-1,335.96	1,335.95	0.00	0.00	0.00
8,400.00	12.91	270.15	8,249.04	3.62	-1,358.31	1,358.30	0.00	0.00	0.00
8,500.00	12.91	270.15	8,346.51	3.68	-1,380.65	1,380.64	0.00	0.00	0.00
8,600.00	12.91	270.15	8,443.98	3.74	-1,403.00	1,402.99	0.00	0.00	0.00
8,700.00	12.91	270.15	8,541.45	3.80	-1,425.34	1,425.33	0.00	0.00	0.00
8,800.00	12.91	270.15	8,638.93	3.86	-1,447.69	1,447.68	0.00	0.00	0.00
8,900.00	12.91	270.15	8,736.40	3.92	-1,470.03	1,470.02	0.00	0.00	0.00
9,000.00	12.91	270.15	8,833.87	3.98	-1,492.38	1,492.37	0.00	0.00	0.00
9,100.00	12.91	270.15	8,931.34	4.04	-1,514.73	1,514.72	0.00	0.00	0.00
9,200.00	12.91	270.15	9,028.81	4.10	-1,537.07	1,537.06	0.00	0.00	0.00
9,300.00	12.91	270.15	9,126.28	4.16	-1,559.42	1,559.41	0.00	0.00	0.00
9,400.00	12.91	270.15	9,223.75	4.21	-1,581.76	1,581.75	0.00	0.00	0.00
9,500.00	12.91	270.15	9,321.22	4.27	-1,604.11	1,604.10	0.00	0.00	0.00
9,600.00	12.91	270.15	9,418.70	4.33	-1,626.46	1,626.44	0.00	0.00	0.00
9,700.00	12.91	270.15	9,516.17	4.39	-1,648.80	1,648.79	0.00	0.00	0.00
9,712.22	12.91	270.15	9,528.07	4.40	-1,651.53	1,651.52	0.00	0.00	0.00
9,750.00	16.69	270.09	9,564.60	4.42	-1,661.18	1,661.17	10.00	10.00	-0.16
9,800.00	21.69	270.04	9,611.80	4.44	-1,677.61	1,677.60	10.00	10.00	-0.10
9,850.00	26.69	270.01	9,657.40	4.45	-1,698.09	1,698.08	10.00	10.00	-0.06
9,900.00	31.69	269.99	9,701.04	4.45	-1,722.47	1,722.46	10.00	10.00	-0.04
9,950.00	36.69	269.97	9,742.38	4.44	-1,750.56	1,750.55	10.00	10.00	-0.03
10,000.00	41.69	269.96	9,781.12	4.42	-1,782.15	1,782.13	10.00	10.00	-0.03

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Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Site:	James Ranch Unit DI 2	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 2 BS2B-4W 229H	**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)
10,050.00	46.69	269.95	9,816.96	4.39	-1,816.99	1,816.98	10.00	10.00	-0.02
10,100.00	51.69	269.94	9,849.63	4.35	-1,854.82	1,854.81	10.00	10.00	-0.02
10,150.00	56.69	269.93	9,878.87	4.30	-1,895.36	1,895.34	10.00	10.00	-0.02
10,200.00	61.69	269.92	9,904.47	4.25	-1,938.29	1,938.27	10.00	10.00	-0.01
10,250.00	66.69	269.92	9,926.24	4.18	-1,983.28	1,983.27	10.00	10.00	-0.01
10,300.00	71.69	269.91	9,943.99	4.11	-2,030.01	2,030.00	10.00	10.00	-0.01
10,350.00	76.69	269.90	9,957.61	4.04	-2,078.10	2,078.09	10.00	10.00	-0.01
10,400.00	81.69	269.90	9,966.99	3.95	-2,127.20	2,127.19	10.00	10.00	-0.01
10,450.00	86.69	269.89	9,972.04	3.86	-2,176.92	2,176.91	10.00	10.00	-0.01
10,483.09	90.00	269.89	9,973.00	3.80	-2,210.00	2,209.99	10.00	10.00	-0.01
10,500.00	90.00	269.89	9,973.00	3.77	-2,226.91	2,226.90	0.00	0.00	0.00
10,600.00	90.00	269.89	9,973.00	3.58	-2,326.91	2,326.90	0.00	0.00	0.00
10,700.00	90.00	269.89	9,973.00	3.39	-2,426.91	2,426.90	0.00	0.00	0.00
10,800.00	90.00	269.89	9,973.00	3.19	-2,526.91	2,526.90	0.00	0.00	0.00
10,900.00	90.00	269.89	9,973.00	3.00	-2,626.91	2,626.90	0.00	0.00	0.00
11,000.00	90.00	269.89	9,973.00	2.81	-2,726.91	2,726.90	0.00	0.00	0.00
11,100.00	90.00	269.89	9,973.00	2.62	-2,826.91	2,826.90	0.00	0.00	0.00
11,200.00	90.00	269.89	9,973.00	2.43	-2,926.91	2,926.90	0.00	0.00	0.00
11,300.00	90.00	269.89	9,973.00	2.24	-3,026.91	3,026.90	0.00	0.00	0.00
11,400.00	90.00	269.89	9,973.00	2.05	-3,126.90	3,126.90	0.00	0.00	0.00
11,500.00	90.00	269.89	9,973.00	1.86	-3,226.90	3,226.90	0.00	0.00	0.00
11,600.00	90.00	269.89	9,973.00	1.66	-3,326.90	3,326.90	0.00	0.00	0.00
11,700.00	90.00	269.89	9,973.00	1.47	-3,426.90	3,426.90	0.00	0.00	0.00
11,800.00	90.00	269.89	9,973.00	1.28	-3,526.90	3,526.90	0.00	0.00	0.00
11,900.00	90.00	269.89	9,973.00	1.09	-3,626.90	3,626.90	0.00	0.00	0.00
12,000.00	90.00	269.89	9,973.00	0.90	-3,726.90	3,726.90	0.00	0.00	0.00
12,100.00	90.00	269.89	9,973.00	0.71	-3,826.90	3,826.90	0.00	0.00	0.00
12,200.00	90.00	269.89	9,973.00	0.52	-3,926.90	3,926.90	0.00	0.00	0.00
12,300.00	90.00	269.89	9,973.00	0.33	-4,026.90	4,026.90	0.00	0.00	0.00
12,400.00	90.00	269.89	9,973.00	0.14	-4,126.90	4,126.90	0.00	0.00	0.00
12,500.00	90.00	269.89	9,973.00	-0.06	-4,226.90	4,226.90	0.00	0.00	0.00
12,600.00	90.00	269.89	9,973.00	-0.25	-4,326.90	4,326.90	0.00	0.00	0.00
12,700.00	90.00	269.89	9,973.00	-0.44	-4,426.90	4,426.90	0.00	0.00	0.00
12,800.00	90.00	269.89	9,973.00	-0.63	-4,526.90	4,526.90	0.00	0.00	0.00
12,900.00	90.00	269.89	9,973.00	-0.82	-4,626.90	4,626.90	0.00	0.00	0.00
13,000.00	90.00	269.89	9,973.00	-1.01	-4,726.90	4,726.90	0.00	0.00	0.00
13,100.00	90.00	269.89	9,973.00	-1.20	-4,826.90	4,826.90	0.00	0.00	0.00
13,200.00	90.00	269.89	9,973.00	-1.39	-4,926.90	4,926.90	0.00	0.00	0.00
13,300.00	90.00	269.89	9,973.00	-1.59	-5,026.90	5,026.90	0.00	0.00	0.00
13,400.00	90.00	269.89	9,973.00	-1.78	-5,126.90	5,126.90	0.00	0.00	0.00
13,500.00	90.00	269.89	9,973.00	-1.97	-5,226.90	5,226.90	0.00	0.00	0.00
13,600.00	90.00	269.89	9,973.00	-2.16	-5,326.90	5,326.90	0.00	0.00	0.00
13,700.00	90.00	269.89	9,973.00	-2.35	-5,426.90	5,426.90	0.00	0.00	0.00
13,800.00	90.00	269.89	9,973.00	-2.54	-5,526.90	5,526.90	0.00	0.00	0.00
13,900.00	90.00	269.89	9,973.00	-2.73	-5,626.90	5,626.90	0.00	0.00	0.00
14,000.00	90.00	269.89	9,973.00	-2.92	-5,726.90	5,726.90	0.00	0.00	0.00
14,100.00	90.00	269.89	9,973.00	-3.11	-5,826.90	5,826.90	0.00	0.00	0.00
14,200.00	90.00	269.89	9,973.00	-3.31	-5,926.90	5,926.90	0.00	0.00	0.00
14,300.00	90.00	269.89	9,973.00	-3.50	-6,026.90	6,026.90	0.00	0.00	0.00
14,400.00	90.00	269.89	9,973.00	-3.69	-6,126.90	6,126.90	0.00	0.00	0.00
14,500.00	90.00	269.89	9,973.00	-3.88	-6,226.90	6,226.90	0.00	0.00	0.00
14,600.00	90.00	269.89	9,973.00	-4.07	-6,326.90	6,326.90	0.00	0.00	0.00
14,700.00	90.00	269.89	9,973.00	-4.26	-6,426.90	6,426.90	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 2 BS2B-4W 229H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Site:	James Ranch Unit DI 2	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 2 BS2B-4W 229H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,800.00	90.00	269.89	9,973.00	-4.45	-6,526.90	6,526.90	0.00	0.00	0.00
14,900.00	90.00	269.89	9,973.00	-4.64	-6,626.90	6,626.90	0.00	0.00	0.00
15,000.00	90.00	269.89	9,973.00	-4.84	-6,726.90	6,726.90	0.00	0.00	0.00
15,100.00	90.00	269.89	9,973.00	-5.03	-6,826.90	6,826.90	0.00	0.00	0.00
15,200.00	90.00	269.89	9,973.00	-5.22	-6,926.90	6,926.90	0.00	0.00	0.00
15,300.00	90.00	269.89	9,973.00	-5.41	-7,026.90	7,026.90	0.00	0.00	0.00
15,400.00	90.00	269.89	9,973.00	-5.60	-7,126.90	7,126.90	0.00	0.00	0.00
15,500.00	90.00	269.89	9,973.00	-5.79	-7,226.90	7,226.90	0.00	0.00	0.00
15,600.00	90.00	269.89	9,973.00	-5.98	-7,326.90	7,326.90	0.00	0.00	0.00
15,700.00	90.00	269.89	9,973.00	-6.17	-7,426.90	7,426.90	0.00	0.00	0.00
15,800.00	90.00	269.89	9,973.00	-6.36	-7,526.90	7,526.90	0.00	0.00	0.00
15,900.00	90.00	269.89	9,973.00	-6.56	-7,626.90	7,626.90	0.00	0.00	0.00
16,000.00	90.00	269.89	9,973.00	-6.75	-7,726.90	7,726.90	0.00	0.00	0.00
16,100.00	90.00	269.89	9,973.00	-6.94	-7,826.90	7,826.90	0.00	0.00	0.00
16,200.00	90.00	269.89	9,973.00	-7.13	-7,926.90	7,926.90	0.00	0.00	0.00
16,300.00	90.00	269.89	9,973.00	-7.32	-8,026.90	8,026.90	0.00	0.00	0.00
16,400.00	90.00	269.89	9,973.00	-7.51	-8,126.90	8,126.90	0.00	0.00	0.00
16,500.00	90.00	269.89	9,973.00	-7.70	-8,226.90	8,226.90	0.00	0.00	0.00
16,600.00	90.00	269.89	9,973.00	-7.89	-8,326.90	8,326.90	0.00	0.00	0.00
16,700.00	90.00	269.89	9,973.00	-8.09	-8,426.90	8,426.90	0.00	0.00	0.00
16,800.00	90.00	269.89	9,973.00	-8.28	-8,526.90	8,526.90	0.00	0.00	0.00
16,900.00	90.00	269.89	9,973.00	-8.47	-8,626.89	8,626.90	0.00	0.00	0.00
17,000.00	90.00	269.89	9,973.00	-8.66	-8,726.89	8,726.90	0.00	0.00	0.00
17,100.00	90.00	269.89	9,973.00	-8.85	-8,826.89	8,826.90	0.00	0.00	0.00
17,200.00	90.00	269.89	9,973.00	-9.04	-8,926.89	8,926.90	0.00	0.00	0.00
17,300.00	90.00	269.89	9,973.00	-9.23	-9,026.89	9,026.90	0.00	0.00	0.00
17,400.00	90.00	269.89	9,973.00	-9.42	-9,126.89	9,126.90	0.00	0.00	0.00
17,500.00	90.00	269.89	9,973.00	-9.61	-9,226.89	9,226.90	0.00	0.00	0.00
17,600.00	90.00	269.89	9,973.00	-9.81	-9,326.89	9,326.90	0.00	0.00	0.00
17,700.00	90.00	269.89	9,973.00	-10.00	-9,426.89	9,426.90	0.00	0.00	0.00
17,800.00	90.00	269.89	9,973.00	-10.19	-9,526.89	9,526.90	0.00	0.00	0.00
17,900.00	90.00	269.89	9,973.00	-10.38	-9,626.89	9,626.90	0.00	0.00	0.00
18,000.00	90.00	269.89	9,973.00	-10.57	-9,726.89	9,726.90	0.00	0.00	0.00
18,100.00	90.00	269.89	9,973.00	-10.76	-9,826.89	9,826.90	0.00	0.00	0.00
18,200.00	90.00	269.89	9,973.00	-10.95	-9,926.89	9,926.90	0.00	0.00	0.00
18,300.00	90.00	269.89	9,973.00	-11.14	-10,026.89	10,026.90	0.00	0.00	0.00
18,400.00	90.00	269.89	9,973.00	-11.34	-10,126.89	10,126.90	0.00	0.00	0.00
18,500.00	90.00	269.89	9,973.00	-11.53	-10,226.89	10,226.90	0.00	0.00	0.00
18,600.00	90.00	269.89	9,973.00	-11.72	-10,326.89	10,326.90	0.00	0.00	0.00
18,700.00	90.00	269.89	9,973.00	-11.91	-10,426.89	10,426.90	0.00	0.00	0.00
18,800.00	90.00	269.89	9,973.00	-12.10	-10,526.89	10,526.90	0.00	0.00	0.00
18,900.00	90.00	269.89	9,973.00	-12.29	-10,626.89	10,626.90	0.00	0.00	0.00
19,000.00	90.00	269.89	9,973.00	-12.48	-10,726.89	10,726.90	0.00	0.00	0.00
19,100.00	90.00	269.89	9,973.00	-12.67	-10,826.89	10,826.90	0.00	0.00	0.00
19,200.00	90.00	269.89	9,973.00	-12.86	-10,926.89	10,926.90	0.00	0.00	0.00
19,300.00	90.00	269.89	9,973.00	-13.06	-11,026.89	11,026.90	0.00	0.00	0.00
19,400.00	90.00	269.89	9,973.00	-13.25	-11,126.89	11,126.90	0.00	0.00	0.00
19,500.00	90.00	269.89	9,973.00	-13.44	-11,226.89	11,226.90	0.00	0.00	0.00
19,600.00	90.00	269.89	9,973.00	-13.63	-11,326.89	11,326.90	0.00	0.00	0.00
19,700.00	90.00	269.89	9,973.00	-13.82	-11,426.89	11,426.90	0.00	0.00	0.00
19,800.00	90.00	269.89	9,973.00	-14.01	-11,526.89	11,526.90	0.00	0.00	0.00
19,900.00	90.00	269.89	9,973.00	-14.20	-11,626.89	11,626.90	0.00	0.00	0.00
20,000.00	90.00	269.89	9,973.00	-14.39	-11,726.89	11,726.90	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 2 BS2B-4W 229H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Site:	James Ranch Unit DI 2	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 2 BS2B-4W 229H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,100.00	90.00	269.89	9,973.00	-14.59	-11,826.89	11,826.90	0.00	0.00	0.00
20,200.00	90.00	269.89	9,973.00	-14.78	-11,926.89	11,926.90	0.00	0.00	0.00
20,300.00	90.00	269.89	9,973.00	-14.97	-12,026.89	12,026.90	0.00	0.00	0.00
20,400.00	90.00	269.89	9,973.00	-15.16	-12,126.89	12,126.90	0.00	0.00	0.00
20,500.00	90.00	269.89	9,973.00	-15.35	-12,226.89	12,226.90	0.00	0.00	0.00
20,600.00	90.00	269.89	9,973.00	-15.54	-12,326.89	12,326.90	0.00	0.00	0.00
20,700.00	90.00	269.89	9,973.00	-15.73	-12,426.89	12,426.90	0.00	0.00	0.00
20,800.00	90.00	269.89	9,973.00	-15.92	-12,526.89	12,526.90	0.00	0.00	0.00
20,900.00	90.00	269.89	9,973.00	-16.11	-12,626.89	12,626.90	0.00	0.00	0.00
21,000.00	90.00	269.89	9,973.00	-16.31	-12,726.89	12,726.90	0.00	0.00	0.00
21,100.00	90.00	269.89	9,973.00	-16.50	-12,826.89	12,826.90	0.00	0.00	0.00
21,200.00	90.00	269.89	9,973.00	-16.69	-12,926.89	12,926.90	0.00	0.00	0.00
21,300.00	90.00	269.89	9,973.00	-16.88	-13,026.89	13,026.90	0.00	0.00	0.00
21,400.00	90.00	269.89	9,973.00	-17.07	-13,126.89	13,126.90	0.00	0.00	0.00
21,500.00	90.00	269.89	9,973.00	-17.26	-13,226.89	13,226.90	0.00	0.00	0.00
21,600.00	90.00	269.89	9,973.00	-17.45	-13,326.89	13,326.90	0.00	0.00	0.00
21,700.00	90.00	269.89	9,973.00	-17.64	-13,426.89	13,426.90	0.00	0.00	0.00
21,800.00	90.00	269.89	9,973.00	-17.84	-13,526.89	13,526.90	0.00	0.00	0.00
21,900.00	90.00	269.89	9,973.00	-18.03	-13,626.89	13,626.90	0.00	0.00	0.00
22,000.00	90.00	269.89	9,973.00	-18.22	-13,726.89	13,726.90	0.00	0.00	0.00
22,100.00	90.00	269.89	9,973.00	-18.41	-13,826.89	13,826.90	0.00	0.00	0.00
22,200.00	90.00	269.89	9,973.00	-18.60	-13,926.89	13,926.90	0.00	0.00	0.00
22,300.00	90.00	269.89	9,973.00	-18.79	-14,026.89	14,026.90	0.00	0.00	0.00
22,400.00	90.00	269.89	9,973.00	-18.98	-14,126.89	14,126.90	0.00	0.00	0.00
22,500.00	90.00	269.89	9,973.00	-19.17	-14,226.88	14,226.90	0.00	0.00	0.00
22,600.00	90.00	269.89	9,973.00	-19.36	-14,326.88	14,326.90	0.00	0.00	0.00
22,700.00	90.00	269.89	9,973.00	-19.56	-14,426.88	14,426.90	0.00	0.00	0.00
22,800.00	90.00	269.89	9,973.00	-19.75	-14,526.88	14,526.90	0.00	0.00	0.00
22,900.00	90.00	269.89	9,973.00	-19.94	-14,626.88	14,626.90	0.00	0.00	0.00
23,000.00	90.00	269.89	9,973.00	-20.13	-14,726.88	14,726.90	0.00	0.00	0.00
23,100.00	90.00	269.89	9,973.00	-20.32	-14,826.88	14,826.90	0.00	0.00	0.00
23,200.00	90.00	269.89	9,973.00	-20.51	-14,926.88	14,926.90	0.00	0.00	0.00
23,298.62	90.00	269.89	9,973.00	-20.70	-15,025.50	15,025.51	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 2 BS2B-4W 2 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	496,130.00	653,448.50	32.362997	-103.836365
JRU DI 2 BS2B-4W 2 - plan hits target center - Point	0.00	0.00	9,973.00	3.80	-2,210.00	496,133.80	651,238.50	32.363036	-103.843522
JRU DI 2 BS2B-4W 2 - plan misses target center by 0.05usft at 23168.62usft MD (9973.00 TVD, -20.45 N, -14895.50 E) - Point	0.00	0.00	9,973.00	-20.50	-14,895.50	496,109.50	638,553.00	32.363122	-103.884605
JRU DI 2 BS2B-4W 2 - plan hits target center - Point	0.00	0.00	9,973.00	-20.70	-15,025.50	496,109.30	638,423.00	32.363123	-103.885026

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well JAMES RANCH UNIT DI 2 BS2B-4W 229H
Company:	XTO Energy	**TVD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 25' @ 3369.00usft (Unknown)
Site:	James Ranch Unit DI 2	**North Reference:**	Grid
Well:	JAMES RANCH UNIT DI 2 BS2B-4W 229H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
553.00	553.00	Rustler			
853.00	853.00	Salado			
3,819.13	3,784.00	Base Salt			
4,048.94	4,008.00	Delaware/Lamar			
4,089.97	4,048.00	Bell Canyon			
5,033.84	4,968.00	Cherry Canyon			
5,203.12	5,133.00	Base Manzanita			
6,654.83	6,548.00	Brushy Canyon			
7,726.94	7,593.00	Basal Brushy Canyon			
7,998.82	7,858.00	Base Brushy Canyon Sands			
8,024.46	7,883.00	Bone Spring			
8,127.06	7,983.00	Avalon Sand			
8,629.77	8,473.00	Lower Avalon Shale			
9,111.96	8,943.00	First Bone Spring Sand			
9,573.64	9,393.00	Second Bone Spring Shale/Limestor			
9,950.77	9,743.00	Second Bone Spring Sand			
10,241.95	9,923.00	Second Bone Spring B Sand			

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO LP
LEASE NO.:	NMNM089052
WELL NAME & NO.:	JAMES RANCH UNIT DI2 BS2A 4W 229H
SURFACE HOLE FOOTAGE:	2630'/N & 1880'/W
BOTTOM HOLE FOOTAGE	2620'/N & 2440'/E
LOCATION:	SECTION 25, T22S, R30E, NMPM
COUNTY:	EDDY

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

Commercial Well Determination

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

Unit Wells

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

A. **Hydrogen Sulfide**

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

Possibility of water flows in the Castile and Salado.

Possibility of lost circulation in the Red Beds, Rustler and Delaware.
Abnormal pressures may be encountered penetrating the 3rd Bone Springs and Wolfcamp.

B. **CASING**

1. The **13-3/8** inch surface casing shall be set at approximately **640 feet (in a competent bed in the base of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**)) and cemented to the surface.

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

    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours** and 500 pounds compressive strength, whichever is greater. (This is to include the lead cement) **See Potash requirements below**

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

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

9-5/8" Intermediate is to be kept 2/3rds liquid filled while running in hole to meet BLM minimum collapse safety factor.

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 potash.

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

- Cement to surface (As proposed by operator). If cement does not circulate see B.1.a, c-d above.

C. **PRESSURE CONTROL**

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

GENERAL REQUIREMENTS

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

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
   - Notify the BLM when moving in and removing the Spudder Rig.
   - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.

- BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

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

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

A. CASING

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

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

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

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

6. **On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed.** Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

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

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. **If a variance** is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. **5M or higher system requires an HCR valve**, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a **multi-bowl wellhead** assembly in the APD. The following requirements must be met:

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

b. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

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

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

e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

f. **BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation** if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

E. **WIPP Requirements**

The proposed well is located over 330' but within a mile of the WIPP Land Withdrawal Area boundary. As a result, BOPCO, L.P. is requested, but not required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked

section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

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

Waste Minimization Plan (WMP)

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

EGF 090718

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO LP
LEASE NO.:	NMNM089052
WELL NAME & NO.:	JAMES RANCH UNIT DI2 BS2A 4W 229H
SURFACE HOLE FOOTAGE:	2630'/N & 1880'/W
BOTTOM HOLE FOOTAGE	2620'/N & 2440'/E
LOCATION:	SECTION 25, T22S, R30E, NMPM
COUNTY:	EDDY

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

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

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

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

Cave and Karst

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

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production.

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

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

Pad Berming:
The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.

- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

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

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, 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.

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

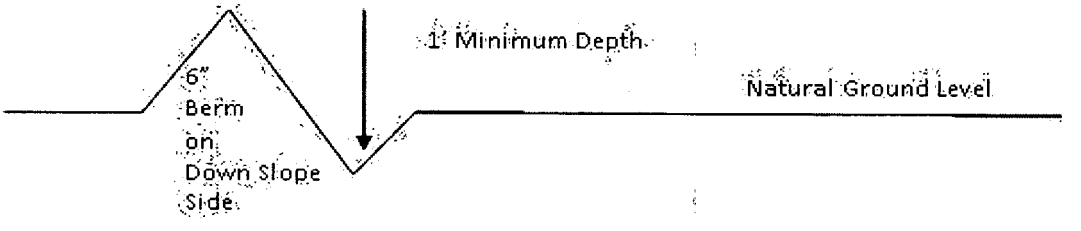
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

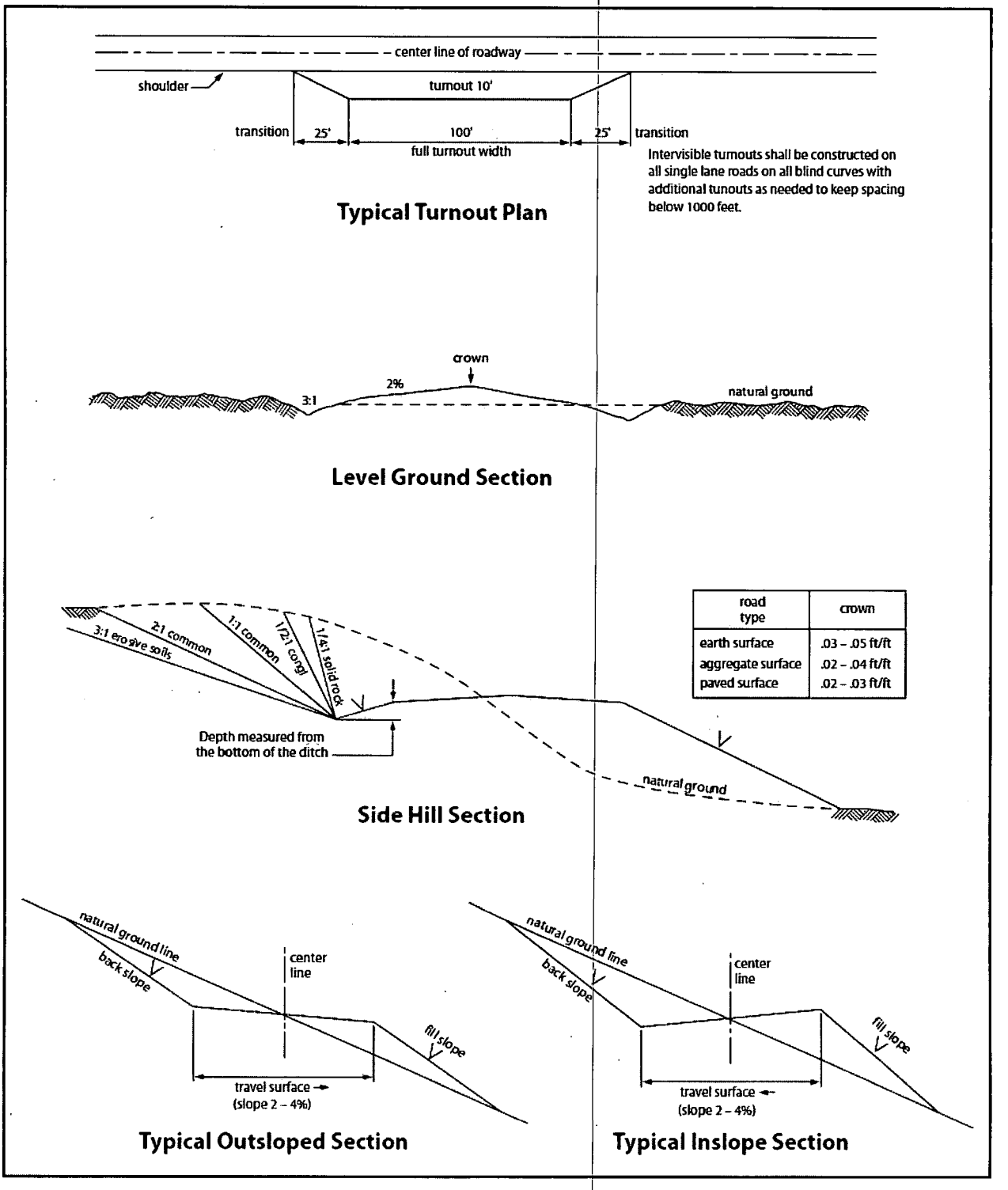


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

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

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

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

Containment Structures

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

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

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

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

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

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

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

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

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

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

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

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

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

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky 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.

VIII. INTERIM RECLAMATION

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

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

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

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

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

X. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

Seed Mixture 2, for Sandy Sites

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

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

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

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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