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Form 3160-3  
(June 2015)

FEB 17 2020

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

EMNRD-OCD ARTESIA

## APPLICATION FOR PERMIT TO DRILL OR REENTER

Lease Serial No.  
NMNM0002952C

6. If Indian, Allottee or Tribe Name

327167

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

JAMES RANCH / NMNM070965X

8. Lease Name and Well No.

JAMES RANCH UNIT DI 8 BS3-1W  
275H

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

2. Name of Operator  
XTO PERMIAN OPERATING LLC

9. API Well No.

30 019 46753

3a. Address  
6401 Holiday Hill Road, Bldg 5 Midland TX 797073b. Phone No. (include area code)  
(432)682-887310. Field and Pool, or Exploratory  
GATUNA CANYON; BONE SPRING

4. Location of Well (Report location clearly and in accordance with any State requirements. \*)

At surface SENW / 2072 FNL / 1837 FWL / LAT 32.350147 / LONG -103.836978

At proposed prod. zone NWNE / 333 FNL / 2440 FEL / LAT 32.355021 / LONG -103.885527

11. Sec., T. R. M. or Blk. and Survey or Area  
SEC 36 / T22S / R30E / NMP

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

12. County or Parish  
EDDY13. State  
NM15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any)

333 feet

16. No of acres in lease  
16017. Spacing Unit dedicated to this well  
48018. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft.

250 feet

19. Proposed Depth  
10850 feet / 26952 feet20. BLM/BIA Bond No. in file  
FED: COB00005021. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3317 feet22. Approximate date work will start\*  
01/01/201923. Estimated duration  
90 days

## 24. Attachments

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

1. Well plat certified by a registered surveyor.

2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).

5. Operator certification.

6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature  
(Electronic Submission)Name (Printed/Typed)  
Kelly Kardos / Ph: (432)620-4374Date  
08/15/2018Title  
Regulatory CoordinatorApproved by (Signature)  
(Electronic Submission)Name (Printed/Typed)  
Cody Layton / Ph: (575)234-5959Date  
02/11/2020Title  
Assistant Field Manager Lands & MineralsOffice  
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: 02/11/2020

KS 2-19-20



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

## Application Data Report

02/12/2020

APD ID: 10400033081

Submission Date: 08/15/2018

Highlighted data  
reflects the most  
recent changes

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - General

APD ID: 10400033081

Tie to previous NOS? N

Submission Date: 08/15/2018

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: NMNM0002952C

Lease Acres: 160

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: XTO PERMIAN OPERATING LLC

Operator letter of designation:

### Operator Info

Operator Organization Name: XTO PERMIAN OPERATING LLC

Operator Address: 6401 Holiday Hill Road, Bldg 5

Operator PO Box:

Zip: 79707

Operator City: Midland

State: TX

Operator Phone: (432)682-8873

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 8 BS3-1W

Well Number: 275H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: GATUNA CANYON; Pool Name:  
BONE SPRING

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

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL,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 Number: 8

Well Class: HORIZONTAL

RANCH UNIT DI  
Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town:

Distance to nearest well: 250 FT

Distance to lease line: 333 FT

Reservoir well spacing assigned acres Measurement: 480 Acres

**Well plat:** JRU\_DI\_8\_275H\_C102\_20181017115854.pdf

Well work start Date: 01/01/2019

Duration: 90 DAYS

### Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum:

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	207 2	FNL	183 7	FW L	22S	30E	36	Aliquot SENW	32.35014 7	- 103.8369 78	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	331 7	0	0	
KOP Leg #1	207 2	FNL	183 7	FW L	22S	30E	36	Aliquot SENW	32.35014 7	- 103.8369 78	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	131 7	200 0	200 0	
PPP Leg #1-1	330	FNL	660	FW L	22S	30E	34	Aliquot NENE	32.35407 5	- 103.8624 78	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000295 2A	- 756 4	195 00	108 81	

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

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	333	FNL	1980	FWL	22S	30E	35	Aliquot NENW	32.354058	-103.853792	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000295 2B	-7576	16700	10893	
PPP Leg #1-3	333	FNL	660	FEL	22S	30E	35	Aliquot NENE	32.35404	-103.845092	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000295 2C	-7587	14200	10904	
PPP Leg #1-4	333	FNL	2310	FWL	22S	30E	36	Aliquot NENW	32.354925	-103.835433	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	-7598	11500	10915	
EXIT Leg #1	333	FNL	2310	FEL	22S	30E	33	Aliquot NWNE	32.35502	-103.885106	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000295 2	-7533	26822	10850	
BHL Leg #1	333	FNL	2440	FEL	22S	30E	33	Aliquot NWNE	32.355021	-103.885527	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 000295 2	-7533	26952	10850	



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

## Drilling Plan Data Report

02/12/2020

APD ID: 10400033081

Submission Date: 08/15/2018

Highlighted data  
reflects the most  
recent changes

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
286186	---	3317	0	0	ALLUVIUM, OTHER : Quaternary	NONE	N
286177	RUSTLER	3030	287	287	SANDSTONE	USEABLE WATER	N
286178	TOP SALT	2730	587	587	SALT	POTASH	N
286179	BASE OF SALT	-270	3587	3587	SALT	POTASH	N
286181	DELAWARE	-510	3827	3827	MARL, SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
286175	BONE SPRING 1ST	-5411	8728	8728	SANDSTONE	NATURAL GAS, OTHER, POTASH : Produced Water	Y
286176	BONE SPRING 2ND	-6249	9566	9566	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	Y
286189	BONE SPRING 3RD	-7219	10536	10536		NATURAL GAS, OIL, OTHER : Produced Water	Y

### Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 562

Equipment: The blow out preventer equipment (BOP) on surface casing temporary wellhead will consist of a 21-1/4" minimum 2M Hydril.

Requesting Variance? YES

Variance request: A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

Testing Procedure: All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 21-1/4", 2M bradenhead and flange, the BOP test will be limited to 2000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 2M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day. Once the permanent WH is installed on the 11-3/4" casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP.

**Choke Diagram Attachment:**

JRU\_DI\_8\_2MCM\_20190525071224.pdf

**BOP Diagram Attachment:**

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

JRU\_DI\_8\_2MCM\_20190525071224.pdf

JRU\_DI\_8\_2MBOP\_20190525071233.pdf

Pressure Rating (PSI): 5M

Rating Depth: 10850

Equipment: The blow out preventer equipment (BOP) for the permanent wellhead consists of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 3388 psi.

Requesting Variance? YES

Variance request: A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors. Wellhead: Temporary Wellhead · 18-5/8" SOW bottom x 21-1/4" 2M top flange. · 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. · Operator will test the 9-5/8" casing per BLM Onshore Order 2 · Wellhead Manufacturer representative will not be present for BOP test plug installation

Testing Procedure: All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 11-3/4", 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nipping up on the 8-5/8", 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.

**Choke Diagram Attachment:**

JRU\_DI\_8\_5MCM\_20180815124043.pdf

**BOP Diagram Attachment:**

JRU\_DI\_8\_5MBOP\_20180815124056.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	24	18.625	NEW	API	N	0	562	0	562			562	H-40	87.5	ST&C	2.48	1.41	DRY	11.37	DRY	11.37
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	3777	0	3777			3777	J-55	68	ST&C	1.67	1.59	DRY	2.63	DRY	2.63
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	8372	0	8372			8372	HCL-80	40	LT&C	2.42	1.71	DRY	2.17	DRY	2.17

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

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
4	PRODUCTION	8.75	5.5	NEW	API	N	0	26952	0	10850			26952	P-110	17	BUTT	1.29	1.12	DRY	1.93	DRY	1.93

### Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU\_DI\_8\_275H\_Csg\_20191209072407.pdf

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU\_DI\_8\_275H\_Csg\_20191209072358.pdf

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

#### Casing Attachments

Casing ID: 3 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU\_DI\_8\_275H\_Csg\_20191209072348.pdf

Casing ID: 4 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

JRU\_DI\_8\_275H\_Csg\_20191209072338.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	562	350	1.87	12.9	654.5	100	Econo-Cem-HLTRRC	None
SURFACE	Tail				550	1.35	14.8	742.5	100	HalCem-C	2% CaCl
INTERMEDIATE	Lead		0	3777	2580	1.87	12.9	4824.6	100	EconoCem-HLTRRC	None
INTERMEDIATE	Tail				300	1.35	14.8	405	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead	3827	0	3827	1340	1.88	12.9	2519.2	100	Halcem-C	2% CaCl



Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail				230	1.33	14.8	305.9	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead	3827	3827	8372	1100	1.88	12.9	2068	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				230	1.33	14.8	305.9	100	Halcem-C	2% CaCl
PRODUCTION	Lead		7872	2695 2	3450	1.61	13.2	5554. 5	30	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
3777	8372	OTHER : FW/Cut Brine	8.7	9.4							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: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	562	OTHER : FW/Native	8.4	8.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
562	3777	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
8372	10850	OTHER : Cut Brine/Polymer	10	10.3							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.

Operator Name: XTO PERMIAN OPERATING LLC

Well Name: JAMES RANCH UNIT DI 8 BS3-1W

Well Number: 275H

### Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5529

Anticipated Surface Pressure: 3127.7

Anticipated Bottom Hole Temperature(F): 160

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

**Describe:**

Potential loss of circulation through the Capitan Reef.

**Contingency Plans geohazards description:**

The necessary mud products for weight addition and fluid loss control will be on location at all times. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

**Contingency Plans geohazards attachment:**

Hydrogen Sulfide drilling operations plan required? YES

**Hydrogen sulfide drilling operations plan:**

JRU\_DI\_8\_275H\_H2S\_Dia\_20180815124729.pdf

JRU\_DI\_8\_H2S\_Plan\_20180815124740.pdf

### Section 8 - Other Information

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

JRU\_DI\_8\_275H\_DD\_20180815124800.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

JRU\_DI\_8\_275H\_GCP\_20180815124811.pdf

**Other Variance attachment:**

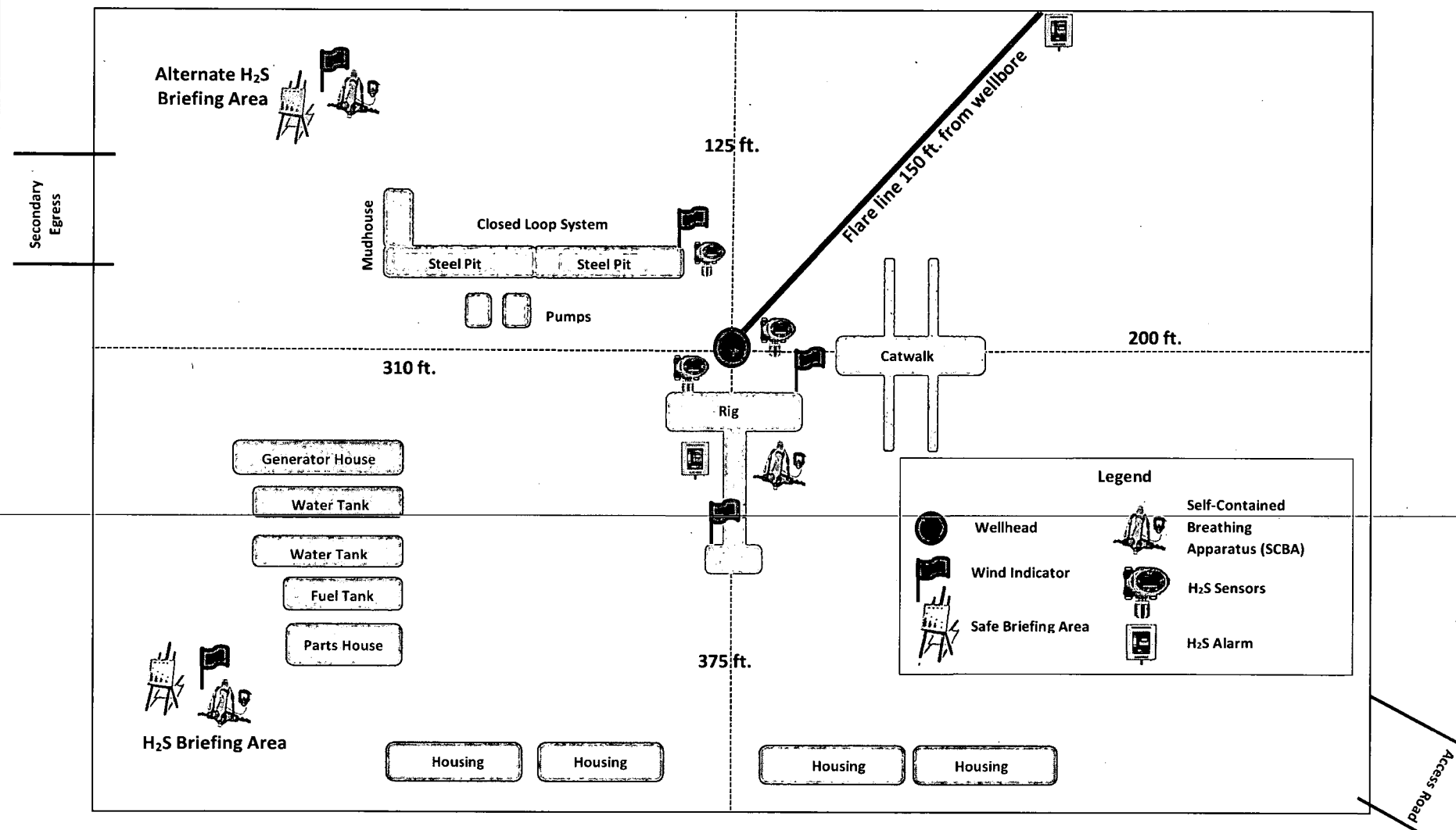
JRU\_DI\_8\_FH\_20180815124827.pdf

JRU\_DI\_8\_MBS\_20191209073026.pdf



Prevailing Winds  
Direction SW

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





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

**Assumed 100 ppm ROE = 3000'**

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

### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o Equipment used for protection and emergency response.

### **Ignition of Gas source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

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

### **Contacting Authorities**

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

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

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

575-887-7329

### **XTO Energy, Inc. PERSONNEL:**

Kendall Decker, Drilling Manager  
Milton Turman, Drilling Superintendent  
Jeff Raines, Construction Foreman  
Toady Sanders, EH & S Manager  
Wes McSpadden, Production Foreman

903-521-6477  
817-524-5107  
432-557-3159  
903-520-1601  
575-441-1147

### **SHERIFF DEPARTMENTS:**

Eddy County  
Lea County

575-887-7551  
575-396-3611

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

575-392-5588

### **FIRE DEPARTMENTS:**

Carlsbad  
Eunice  
Hobbs  
Jal  
Lovington

911  
575-885-2111  
575-394-2111  
575-397-9308  
575-395-2221  
575-396-2359

### **HOSPITALS:**

Carlsbad Medical Emergency  
Eunice Medical Emergency  
Hobbs Medical Emergency  
Jal Medical Emergency  
Lovington Medical Emergency

911  
575-885-2111  
575-394-2112  
575-397-9308  
575-395-2221  
575-396-2359

### **AGENT NOTIFICATIONS:**

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

Bureau of Land Management – Hobbs  
New Mexico Oil Conservation Division – Hobbs

575-393-3612  
575-393-6161

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

Bureau of Land Management - Carlsbad  
New Mexico Oil Conservation Division - Artesia

575-234-5972  
575-748-1283



## **XTO Energy**

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

**James Ranch Unit DI 8**

**BS3-1W 275H**

**OH**

**Plan: PERMIT**

## **Standard Planning Report**

**14 May, 2018**



Project: Eddy County, NM (NAD-27)  
Site: James Ranch Unit DI 8  
Well: BS3-1W 275H  
Wellbore: OH  
Design: PERMIT

#### WELL DETAILS: BS3-1W 275H

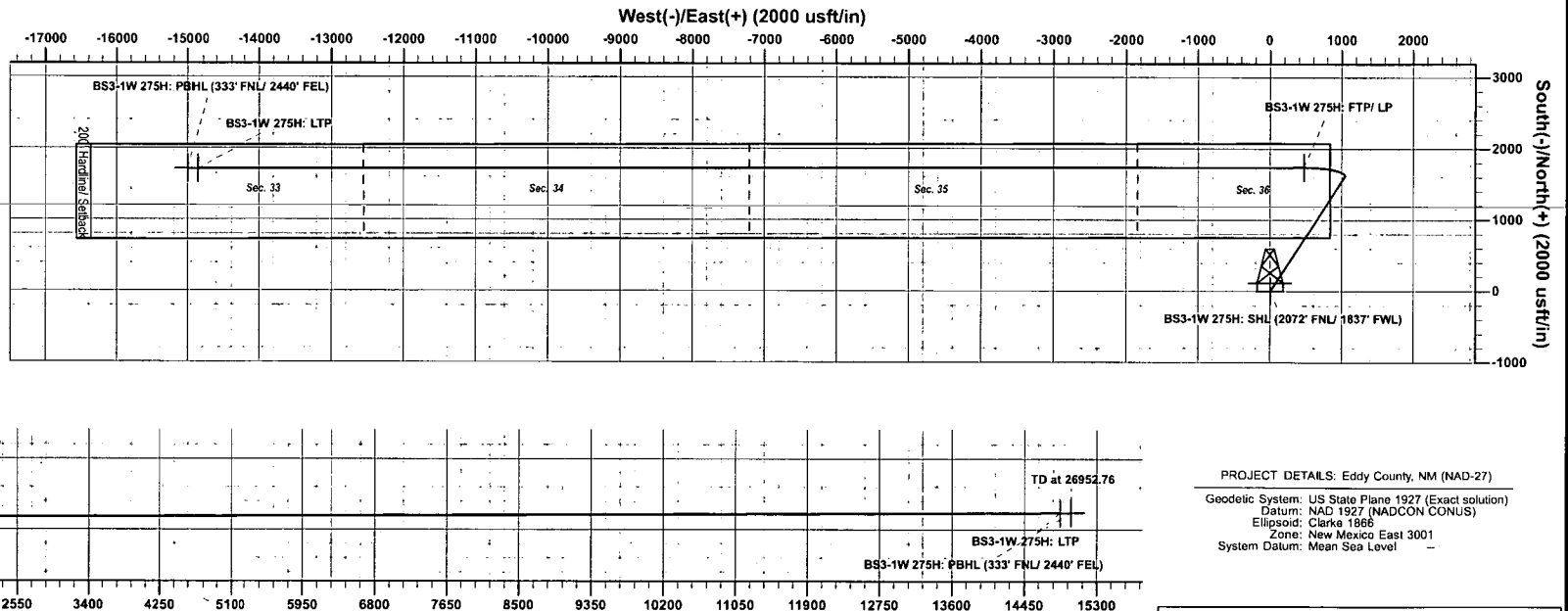
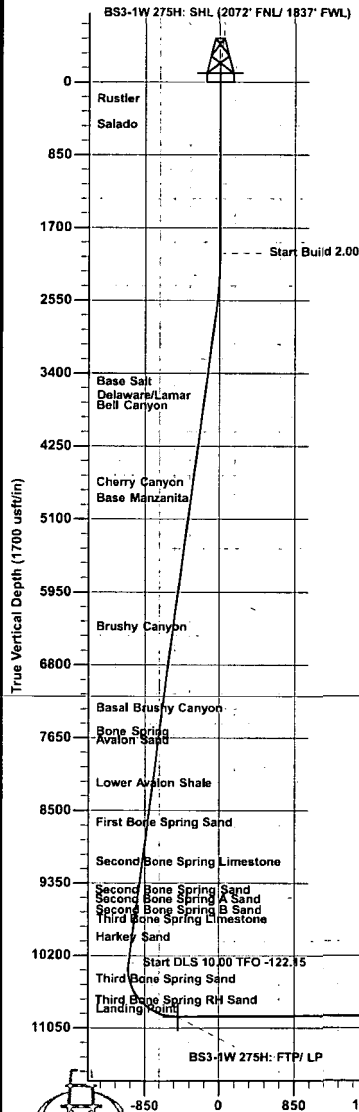
Rig Name: RKB - 25 @ 3342.00usft  
Ground Level: 3317.00  
+N/-S: 0.00 +E/-W: 0.00 Northing: 491410.50 Easting: 653432.80 Latitude: 32.350024 Longitude: -103.836486

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2679.19	13.58	32.82	2672.84	67.35	43.43	2.00	32.82	-43.57
4	10508.21	13.58	32.82	10282.87	1612.68	1039.94	0.00	0.00	-1043.31
5	11483.98	90.24	269.88	10916.00	1740.40	469.00	10.00	-122.15	-472.84
6	26822.76	90.24	269.88	10850.55	1707.38	-14869.60	0.00	0.00	14869.99
7	26952.76	90.24	269.88	10850.00	1707.10	-14999.60	0.00	0.00	14999.99

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BS3-1W 275H: SHL (2072' FNL/ 1837' FWL)	0.00	0.00	0.00	491410.50	653432.80	32.350024	-103.836486	Point
BS3-1W 275H: PBHL (333' FNL/ 2440' FEL)	10850.00	1707.10	-14999.60	493117.60	638433.20	32.354899	-103.885034	Point
BS3-1W 275H: LTP	10850.55	1707.30	-14869.60	493117.80	638563.20	32.354898	-103.884613	Point
BS3-1W 275H: FTP/ LP	10916.00	1740.40	469.00	493150.90	653901.60	32.354803	-103.834941	Point



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

Vertical Section at 269.88° (1700 usft/in)

PROJECT DETAILS: Eddy County, NM (NAD-27)  
Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: New Mexico East 3001  
System Datum: Mean Sea Level

Plan: PERMIT (BS3-1W 275H/OH)

Created By: Matthew May Date: 12:46, May 14 2018





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Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BS3-1W 275H
Company:	XTO Energy	TVD Reference:	RKB = 25 @ 3342.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 25 @ 3342.00usft
Site:	James Ranch Unit DI 8	North Reference:	Grid
Well:	BS3-1W 275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

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 8		
Site Position:		Northing:	491,410.50 usft
From:	Map	Easting:	653,432.80 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.350025
		Longitude:	-103.836487
		Grid Convergence:	0.27 °

Well	BS3-1W 275H		
Well Position	+N/-S	0.00 usft	Northing: 491,410.50 usft
	+E/-W	0.00 usft	Easting: 653,432.80 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32.350025
		Longitude:	-103.836487
		Ground Level:	3,317.00 usft

Wellbore	OH		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/14/2018	6.99	60.12	47,892

Design	PERMIT		
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Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	269.88

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	
2,679.19	13.58	32.82	2,672.84	67.35	43.43	2.00	2.00	0.00	32.82	
10,508.21	13.58	32.82	10,282.87	1,612.68	1,039.94	0.00	0.00	0.00	0.00	
11,483.98	90.24	269.88	10,916.00	1,740.40	469.00	10.00	7.86	-12.60	-122.15	BS3-1W 275H: FTF
26,822.76	90.24	269.88	10,850.55	1,707.38	-14,869.60	0.00	0.00	0.00	0.00	BS3-1W 275H: LTF
26,952.76	90.24	269.88	10,850.00	1,707.10	-14,999.60	0.00	0.00	0.00	0.00	BS3-1W 275H: PBI



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BS3-1W 275H
Company:	XTO Energy	TVD Reference:	RKB = 25 @ 3342.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 25 @ 3342.00usft
Site:	James Ranch Unit DI 8	North Reference:	Grid
Well:	BS3-1W 275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	2.00	32.82	2,099.98	1.47	0.95	-0.95	2.00	2.00	0.00
2,200.00	4.00	32.82	2,199.84	5.86	3.78	-3.79	2.00	2.00	0.00
2,300.00	6.00	32.82	2,299.45	13.19	8.51	-8.53	2.00	2.00	0.00
2,400.00	8.00	32.82	2,398.70	23.43	15.11	-15.16	2.00	2.00	0.00
2,500.00	10.00	32.82	2,497.47	36.58	23.59	-23.66	2.00	2.00	0.00
2,600.00	12.00	32.82	2,595.62	52.61	33.93	-34.04	2.00	2.00	0.00
2,679.19	13.58	32.82	2,672.84	67.35	43.43	-43.57	2.00	2.00	0.00
2,700.00	13.58	32.82	2,693.07	71.45	46.08	-46.23	0.00	0.00	0.00
2,800.00	13.58	32.82	2,790.28	91.19	58.81	-59.00	0.00	0.00	0.00
2,900.00	13.58	32.82	2,887.48	110.93	71.53	-71.77	0.00	0.00	0.00
3,000.00	13.58	32.82	2,984.68	130.67	84.26	-84.54	0.00	0.00	0.00
3,100.00	13.58	32.82	3,081.88	150.41	96.99	-97.31	0.00	0.00	0.00
3,200.00	13.58	32.82	3,179.09	170.15	109.72	-110.08	0.00	0.00	0.00
3,300.00	13.58	32.82	3,276.29	189.89	122.45	-122.85	0.00	0.00	0.00
3,400.00	13.58	32.82	3,373.49	209.62	135.18	-135.62	0.00	0.00	0.00
3,500.00	13.58	32.82	3,470.70	229.36	147.90	-148.38	0.00	0.00	0.00
3,600.00	13.58	32.82	3,567.90	249.10	160.63	-161.15	0.00	0.00	0.00
3,700.00	13.58	32.82	3,665.10	268.84	173.36	-173.92	0.00	0.00	0.00
3,800.00	13.58	32.82	3,762.30	288.58	186.09	-186.69	0.00	0.00	0.00
3,900.00	13.58	32.82	3,859.51	308.32	198.82	-199.46	0.00	0.00	0.00
4,000.00	13.58	32.82	3,956.71	328.05	211.55	-212.23	0.00	0.00	0.00
4,100.00	13.58	32.82	4,053.91	347.79	224.28	-225.00	0.00	0.00	0.00
4,200.00	13.58	32.82	4,151.11	367.53	237.00	-237.77	0.00	0.00	0.00
4,300.00	13.58	32.82	4,248.32	387.27	249.73	-250.54	0.00	0.00	0.00
4,400.00	13.58	32.82	4,345.52	407.01	262.46	-263.31	0.00	0.00	0.00
4,500.00	13.58	32.82	4,442.72	426.75	275.19	-276.08	0.00	0.00	0.00
4,600.00	13.58	32.82	4,539.93	446.49	287.92	-288.85	0.00	0.00	0.00
4,700.00	13.58	32.82	4,637.13	466.22	300.65	-301.62	0.00	0.00	0.00
4,800.00	13.58	32.82	4,734.33	485.96	313.37	-314.39	0.00	0.00	0.00
4,900.00	13.58	32.82	4,831.53	505.70	326.10	-327.16	0.00	0.00	0.00
5,000.00	13.58	32.82	4,928.74	525.44	338.83	-339.93	0.00	0.00	0.00
5,100.00	13.58	32.82	5,025.94	545.18	351.56	-352.70	0.00	0.00	0.00
5,200.00	13.58	32.82	5,123.14	564.92	364.29	-365.47	0.00	0.00	0.00



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Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 25 @ 3342.00usft
Site:	James Ranch Unit DI 8	North Reference:	Grid
Well:	BS3-1W 275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	13.58	32.82	5,220.35	584.65	377.02	-378.24	0.00	0.00	0.00
5,400.00	13.58	32.82	5,317.55	604.39	389.74	-391.01	0.00	0.00	0.00
5,500.00	13.58	32.82	5,414.75	624.13	402.47	-403.78	0.00	0.00	0.00
5,600.00	13.58	32.82	5,511.95	643.87	415.20	-416.55	0.00	0.00	0.00
5,700.00	13.58	32.82	5,609.16	663.61	427.93	-429.32	0.00	0.00	0.00
5,800.00	13.58	32.82	5,706.36	683.35	440.66	-442.09	0.00	0.00	0.00
5,900.00	13.58	32.82	5,803.56	703.09	453.39	-454.86	0.00	0.00	0.00
6,000.00	13.58	32.82	5,900.77	722.82	466.11	-467.63	0.00	0.00	0.00
6,100.00	13.58	32.82	5,997.97	742.56	478.84	-480.40	0.00	0.00	0.00
6,200.00	13.58	32.82	6,095.17	762.30	491.57	-493.17	0.00	0.00	0.00
6,300.00	13.58	32.82	6,192.37	782.04	504.30	-505.94	0.00	0.00	0.00
6,400.00	13.58	32.82	6,289.58	801.78	517.03	-518.71	0.00	0.00	0.00
6,500.00	13.58	32.82	6,386.78	821.52	529.76	-531.48	0.00	0.00	0.00
6,600.00	13.58	32.82	6,483.98	841.25	542.49	-544.25	0.00	0.00	0.00
6,700.00	13.58	32.82	6,581.18	860.99	555.21	-557.02	0.00	0.00	0.00
6,800.00	13.58	32.82	6,678.39	880.73	567.94	-569.79	0.00	0.00	0.00
6,900.00	13.58	32.82	6,775.59	900.47	580.67	-582.56	0.00	0.00	0.00
7,000.00	13.58	32.82	6,872.79	920.21	593.40	-595.32	0.00	0.00	0.00
7,100.00	13.58	32.82	6,970.00	939.95	606.13	-608.09	0.00	0.00	0.00
7,200.00	13.58	32.82	7,067.20	959.69	618.86	-620.86	0.00	0.00	0.00
7,300.00	13.58	32.82	7,164.40	979.42	631.58	-633.63	0.00	0.00	0.00
7,400.00	13.58	32.82	7,261.60	999.16	644.31	-646.40	0.00	0.00	0.00
7,500.00	13.58	32.82	7,358.81	1,018.90	657.04	-659.17	0.00	0.00	0.00
7,600.00	13.58	32.82	7,456.01	1,038.64	669.77	-671.94	0.00	0.00	0.00
7,700.00	13.58	32.82	7,553.21	1,058.38	682.50	-684.71	0.00	0.00	0.00
7,800.00	13.58	32.82	7,650.42	1,078.12	695.23	-697.48	0.00	0.00	0.00
7,900.00	13.58	32.82	7,747.62	1,097.85	707.95	-710.25	0.00	0.00	0.00
8,000.00	13.58	32.82	7,844.82	1,117.59	720.68	-723.02	0.00	0.00	0.00
8,100.00	13.58	32.82	7,942.02	1,137.33	733.41	-735.79	0.00	0.00	0.00
8,200.00	13.58	32.82	8,039.23	1,157.07	746.14	-748.56	0.00	0.00	0.00
8,300.00	13.58	32.82	8,136.43	1,176.81	758.87	-761.33	0.00	0.00	0.00
8,400.00	13.58	32.82	8,233.63	1,196.55	771.60	-774.10	0.00	0.00	0.00
8,500.00	13.58	32.82	8,330.83	1,216.29	784.32	-786.87	0.00	0.00	0.00
8,600.00	13.58	32.82	8,428.04	1,236.02	797.05	-799.64	0.00	0.00	0.00
8,700.00	13.58	32.82	8,525.24	1,255.76	809.78	-812.41	0.00	0.00	0.00
8,800.00	13.58	32.82	8,622.44	1,275.50	822.51	-825.18	0.00	0.00	0.00
8,900.00	13.58	32.82	8,719.65	1,295.24	835.24	-837.95	0.00	0.00	0.00
9,000.00	13.58	32.82	8,816.85	1,314.98	847.97	-850.72	0.00	0.00	0.00
9,100.00	13.58	32.82	8,914.05	1,334.72	860.70	-863.49	0.00	0.00	0.00
9,200.00	13.58	32.82	9,011.25	1,354.45	873.42	-876.26	0.00	0.00	0.00
9,300.00	13.58	32.82	9,108.46	1,374.19	886.15	-889.03	0.00	0.00	0.00
9,400.00	13.58	32.82	9,205.66	1,393.93	898.88	-901.80	0.00	0.00	0.00
9,500.00	13.58	32.82	9,302.86	1,413.67	911.61	-914.57	0.00	0.00	0.00
9,600.00	13.58	32.82	9,400.07	1,433.41	924.34	-927.34	0.00	0.00	0.00
9,700.00	13.58	32.82	9,497.27	1,453.15	937.07	-940.11	0.00	0.00	0.00
9,800.00	13.58	32.82	9,594.47	1,472.89	949.79	-952.88	0.00	0.00	0.00
9,900.00	13.58	32.82	9,691.67	1,492.62	962.52	-965.65	0.00	0.00	0.00
10,000.00	13.58	32.82	9,788.88	1,512.36	975.25	-978.42	0.00	0.00	0.00
10,100.00	13.58	32.82	9,886.08	1,532.10	987.98	-991.19	0.00	0.00	0.00
10,200.00	13.58	32.82	9,983.28	1,551.84	1,000.71	-1,003.96	0.00	0.00	0.00
10,300.00	13.58	32.82	10,080.48	1,571.58	1,013.44	-1,016.73	0.00	0.00	0.00
10,400.00	13.58	32.82	10,177.69	1,591.32	1,026.16	-1,029.49	0.00	0.00	0.00
10,508.21	13.58	32.82	10,282.87	1,612.68	1,039.94	-1,043.31	0.00	0.00	0.00
10,550.00	11.89	15.39	10,323.65	1,620.95	1,043.74	-1,047.13	10.00	-4.06	-41.70



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Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 25 @ 3342.00usft
Site:	James Ranch Unit DI 8	North Reference:	Grid
Well:	BS3-1W 275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,600.00	11.62	350.69	10,372.63	1,630.89	1,044.29	-1,047.71	10.00	-0.54	-49.39
10,650.00	13.34	328.78	10,421.47	1,640.80	1,040.49	-1,043.92	10.00	3.44	-43.82
10,700.00	16.44	313.38	10,469.81	1,650.59	1,032.36	-1,035.81	10.00	6.20	-30.80
10,750.00	20.29	303.21	10,517.27	1,660.21	1,019.95	-1,023.43	10.00	7.71	-20.35
10,800.00	24.55	296.30	10,563.48	1,669.56	1,003.38	-1,006.87	10.00	8.51	-13.82
10,850.00	29.03	291.37	10,608.11	1,678.59	982.76	-986.27	10.00	8.97	-9.86
10,900.00	33.65	287.67	10,650.81	1,687.22	958.25	-961.78	10.00	9.24	-7.39
10,950.00	38.35	284.78	10,691.25	1,695.39	930.03	-933.58	10.00	9.41	-5.78
11,000.00	43.11	282.44	10,729.13	1,703.04	898.33	-901.89	10.00	9.52	-4.68
11,050.00	47.91	280.48	10,764.16	1,710.10	863.38	-866.96	10.00	9.60	-3.92
11,100.00	52.74	278.80	10,796.07	1,716.53	825.44	-829.04	10.00	9.66	-3.36
11,150.00	57.60	277.33	10,824.62	1,722.27	784.82	-788.42	10.00	9.70	-2.96
11,200.00	62.46	276.00	10,849.59	1,727.28	741.81	-745.43	10.00	9.73	-2.65
11,250.00	67.34	274.79	10,870.80	1,731.52	696.75	-700.37	10.00	9.76	-2.43
11,300.00	72.23	273.66	10,888.07	1,734.97	649.97	-653.60	10.00	9.77	-2.26
11,350.00	77.12	272.59	10,901.28	1,737.59	601.83	-605.47	10.00	9.78	-2.14
11,400.00	82.02	271.56	10,910.34	1,739.36	552.71	-556.35	10.00	9.79	-2.06
11,450.00	86.91	270.55	10,915.16	1,740.27	502.97	-506.61	10.00	9.80	-2.01
11,483.98	90.24	269.88	10,916.00	1,740.40	469.00	-472.64	10.00	9.80	-1.99
11,500.00	90.24	269.88	10,915.93	1,740.37	452.98	-456.63	0.00	0.00	0.00
11,600.00	90.24	269.88	10,915.51	1,740.15	352.98	-356.63	0.00	0.00	0.00
11,700.00	90.24	269.88	10,915.08	1,739.94	252.98	-256.63	0.00	0.00	0.00
11,800.00	90.24	269.88	10,914.65	1,739.72	152.99	-156.63	0.00	0.00	0.00
11,900.00	90.24	269.88	10,914.23	1,739.50	52.99	-56.63	0.00	0.00	0.00
12,000.00	90.24	269.88	10,913.80	1,739.29	-47.01	43.37	0.00	0.00	0.00
12,100.00	90.24	269.88	10,913.37	1,739.07	-147.01	143.37	0.00	0.00	0.00
12,200.00	90.24	269.88	10,912.95	1,738.86	-247.01	243.37	0.00	0.00	0.00
12,300.00	90.24	269.88	10,912.52	1,738.64	-347.01	343.37	0.00	0.00	0.00
12,400.00	90.24	269.88	10,912.09	1,738.43	-447.01	443.37	0.00	0.00	0.00
12,500.00	90.24	269.88	10,911.67	1,738.21	-547.01	543.37	0.00	0.00	0.00
12,600.00	90.24	269.88	10,911.24	1,738.00	-647.01	643.36	0.00	0.00	0.00
12,700.00	90.24	269.88	10,910.81	1,737.78	-747.00	743.36	0.00	0.00	0.00
12,800.00	90.24	269.88	10,910.39	1,737.57	-847.00	843.36	0.00	0.00	0.00
12,900.00	90.24	269.88	10,909.96	1,737.35	-947.00	943.36	0.00	0.00	0.00
13,000.00	90.24	269.88	10,909.53	1,737.14	-1,047.00	1,043.36	0.00	0.00	0.00
13,100.00	90.24	269.88	10,909.11	1,736.92	-1,147.00	1,143.36	0.00	0.00	0.00
13,200.00	90.24	269.88	10,908.68	1,736.71	-1,247.00	1,243.36	0.00	0.00	0.00
13,300.00	90.24	269.88	10,908.25	1,736.49	-1,347.00	1,343.36	0.00	0.00	0.00
13,400.00	90.24	269.88	10,907.83	1,736.28	-1,447.00	1,443.36	0.00	0.00	0.00
13,500.00	90.24	269.88	10,907.40	1,736.06	-1,547.00	1,543.36	0.00	0.00	0.00
13,600.00	90.24	269.88	10,906.97	1,735.84	-1,646.99	1,643.36	0.00	0.00	0.00
13,700.00	90.24	269.88	10,906.55	1,735.63	-1,746.99	1,743.35	0.00	0.00	0.00
13,800.00	90.24	269.88	10,906.12	1,735.41	-1,846.99	1,843.35	0.00	0.00	0.00
13,900.00	90.24	269.88	10,905.69	1,735.20	-1,946.99	1,943.35	0.00	0.00	0.00
14,000.00	90.24	269.88	10,905.27	1,734.98	-2,046.99	2,043.35	0.00	0.00	0.00
14,100.00	90.24	269.88	10,904.84	1,734.77	-2,146.99	2,143.35	0.00	0.00	0.00
14,200.00	90.24	269.88	10,904.41	1,734.55	-2,246.99	2,243.35	0.00	0.00	0.00
14,300.00	90.24	269.88	10,903.99	1,734.34	-2,346.99	2,343.35	0.00	0.00	0.00
14,400.00	90.24	269.88	10,903.56	1,734.12	-2,446.99	2,443.35	0.00	0.00	0.00
14,500.00	90.24	269.88	10,903.13	1,733.91	-2,546.98	2,543.35	0.00	0.00	0.00
14,600.00	90.24	269.88	10,902.71	1,733.69	-2,646.98	2,643.35	0.00	0.00	0.00
14,700.00	90.24	269.88	10,902.28	1,733.48	-2,746.98	2,743.35	0.00	0.00	0.00
14,800.00	90.24	269.88	10,901.85	1,733.26	-2,846.98	2,843.34	0.00	0.00	0.00
14,900.00	90.24	269.88	10,901.43	1,733.05	-2,946.98	2,943.34	0.00	0.00	0.00



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BS3-1W 275H
Company:	XTO Energy	TVD Reference:	RKB = 25 @ 3342.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 25 @ 3342.00usft
Site:	James Ranch Unit DI 8	North Reference:	Grid
Well:	BS3-1W 275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,000.00	90.24	269.88	10,901.00	1,732.83	-3,046.98	3,043.34	0.00	0.00	0.00
15,100.00	90.24	269.88	10,900.57	1,732.62	-3,146.98	3,143.34	0.00	0.00	0.00
15,200.00	90.24	269.88	10,900.15	1,732.40	-3,246.98	3,243.34	0.00	0.00	0.00
15,300.00	90.24	269.88	10,899.72	1,732.19	-3,346.97	3,343.34	0.00	0.00	0.00
15,400.00	90.24	269.88	10,899.29	1,731.97	-3,446.97	3,443.34	0.00	0.00	0.00
15,500.00	90.24	269.88	10,898.87	1,731.75	-3,546.97	3,543.34	0.00	0.00	0.00
15,600.00	90.24	269.88	10,898.44	1,731.54	-3,646.97	3,643.34	0.00	0.00	0.00
15,700.00	90.24	269.88	10,898.01	1,731.32	-3,746.97	3,743.34	0.00	0.00	0.00
15,800.00	90.24	269.88	10,897.59	1,731.11	-3,846.97	3,843.34	0.00	0.00	0.00
15,900.00	90.24	269.88	10,897.16	1,730.89	-3,946.97	3,943.33	0.00	0.00	0.00
16,000.00	90.24	269.88	10,896.73	1,730.68	-4,046.97	4,043.33	0.00	0.00	0.00
16,100.00	90.24	269.88	10,896.31	1,730.46	-4,146.97	4,143.33	0.00	0.00	0.00
16,200.00	90.24	269.88	10,895.88	1,730.25	-4,246.96	4,243.33	0.00	0.00	0.00
16,300.00	90.24	269.88	10,895.45	1,730.03	-4,346.96	4,343.33	0.00	0.00	0.00
16,400.00	90.24	269.88	10,895.03	1,729.82	-4,446.96	4,443.33	0.00	0.00	0.00
16,500.00	90.24	269.88	10,894.60	1,729.60	-4,546.96	4,543.33	0.00	0.00	0.00
16,600.00	90.24	269.88	10,894.17	1,729.39	-4,646.96	4,643.33	0.00	0.00	0.00
16,700.00	90.24	269.88	10,893.75	1,729.17	-4,746.96	4,743.33	0.00	0.00	0.00
16,800.00	90.24	269.88	10,893.32	1,728.96	-4,846.96	4,843.33	0.00	0.00	0.00
16,900.00	90.24	269.88	10,892.89	1,728.74	-4,946.96	4,943.33	0.00	0.00	0.00
17,000.00	90.24	269.88	10,892.47	1,728.53	-5,046.96	5,043.32	0.00	0.00	0.00
17,100.00	90.24	269.88	10,892.04	1,728.31	-5,146.95	5,143.32	0.00	0.00	0.00
17,200.00	90.24	269.88	10,891.61	1,728.10	-5,246.95	5,243.32	0.00	0.00	0.00
17,300.00	90.24	269.88	10,891.19	1,727.88	-5,346.95	5,343.32	0.00	0.00	0.00
17,400.00	90.24	269.88	10,890.76	1,727.66	-5,446.95	5,443.32	0.00	0.00	0.00
17,500.00	90.24	269.88	10,890.33	1,727.45	-5,546.95	5,543.32	0.00	0.00	0.00
17,600.00	90.24	269.88	10,889.91	1,727.23	-5,646.95	5,643.32	0.00	0.00	0.00
17,700.00	90.24	269.88	10,889.48	1,727.02	-5,746.95	5,743.32	0.00	0.00	0.00
17,800.00	90.24	269.88	10,889.05	1,726.80	-5,846.95	5,843.32	0.00	0.00	0.00
17,900.00	90.24	269.88	10,888.63	1,726.59	-5,946.95	5,943.32	0.00	0.00	0.00
18,000.00	90.24	269.88	10,888.20	1,726.37	-6,046.94	6,043.32	0.00	0.00	0.00
18,100.00	90.24	269.88	10,887.77	1,726.16	-6,146.94	6,143.31	0.00	0.00	0.00
18,200.00	90.24	269.88	10,887.35	1,725.94	-6,246.94	6,243.31	0.00	0.00	0.00
18,300.00	90.24	269.88	10,886.92	1,725.73	-6,346.94	6,343.31	0.00	0.00	0.00
18,400.00	90.24	269.88	10,886.49	1,725.51	-6,446.94	6,443.31	0.00	0.00	0.00
18,500.00	90.24	269.88	10,886.07	1,725.30	-6,546.94	6,543.31	0.00	0.00	0.00
18,600.00	90.24	269.88	10,885.64	1,725.08	-6,646.94	6,643.31	0.00	0.00	0.00
18,700.00	90.24	269.88	10,885.21	1,724.87	-6,746.94	6,743.31	0.00	0.00	0.00
18,800.00	90.24	269.88	10,884.79	1,724.65	-6,846.93	6,843.31	0.00	0.00	0.00
18,900.00	90.24	269.88	10,884.36	1,724.44	-6,946.93	6,943.31	0.00	0.00	0.00
19,000.00	90.24	269.88	10,883.93	1,724.22	-7,046.93	7,043.31	0.00	0.00	0.00
19,100.00	90.24	269.88	10,883.51	1,724.00	-7,146.93	7,143.31	0.00	0.00	0.00
19,200.00	90.24	269.88	10,883.08	1,723.79	-7,246.93	7,243.30	0.00	0.00	0.00
19,300.00	90.24	269.88	10,882.65	1,723.57	-7,346.93	7,343.30	0.00	0.00	0.00
19,400.00	90.24	269.88	10,882.23	1,723.36	-7,446.93	7,443.30	0.00	0.00	0.00
19,500.00	90.24	269.88	10,881.80	1,723.14	-7,546.93	7,543.30	0.00	0.00	0.00
19,600.00	90.24	269.88	10,881.37	1,722.93	-7,646.93	7,643.30	0.00	0.00	0.00
19,700.00	90.24	269.88	10,880.95	1,722.71	-7,746.92	7,743.30	0.00	0.00	0.00
19,800.00	90.24	269.88	10,880.52	1,722.50	-7,846.92	7,843.30	0.00	0.00	0.00
19,900.00	90.24	269.88	10,880.09	1,722.28	-7,946.92	7,943.30	0.00	0.00	0.00
20,000.00	90.24	269.88	10,879.67	1,722.07	-8,046.92	8,043.30	0.00	0.00	0.00
20,100.00	90.24	269.88	10,879.24	1,721.85	-8,146.92	8,143.30	0.00	0.00	0.00
20,200.00	90.24	269.88	10,878.81	1,721.64	-8,246.92	8,243.30	0.00	0.00	0.00
20,300.00	90.24	269.88	10,878.39	1,721.42	-8,346.92	8,343.29	0.00	0.00	0.00



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Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BS3-1W 275H
Company:	XTO Energy	TVD Reference:	RKB = 25 @ 3342.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 25 @ 3342.00usft
Site:	James Ranch Unit DI 8	North Reference:	Grid
Well:	BS3-1W 275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,400.00	90.24	269.88	10,877.96	1,721.21	-8,446.92	8,443.29	0.00	0.00	0.00
20,500.00	90.24	269.88	10,877.53	1,720.99	-8,546.92	8,543.29	0.00	0.00	0.00
20,600.00	90.24	269.88	10,877.11	1,720.78	-8,646.91	8,643.29	0.00	0.00	0.00
20,700.00	90.24	269.88	10,876.68	1,720.56	-8,746.91	8,743.29	0.00	0.00	0.00
20,800.00	90.24	269.88	10,876.25	1,720.35	-8,846.91	8,843.29	0.00	0.00	0.00
20,900.00	90.24	269.88	10,875.83	1,720.13	-8,946.91	8,943.29	0.00	0.00	0.00
21,000.00	90.24	269.88	10,875.40	1,719.91	-9,046.91	9,043.29	0.00	0.00	0.00
21,100.00	90.24	269.88	10,874.97	1,719.70	-9,146.91	9,143.29	0.00	0.00	0.00
21,200.00	90.24	269.88	10,874.55	1,719.48	-9,246.91	9,243.29	0.00	0.00	0.00
21,300.00	90.24	269.88	10,874.12	1,719.27	-9,346.91	9,343.29	0.00	0.00	0.00
21,400.00	90.24	269.88	10,873.69	1,719.05	-9,446.91	9,443.28	0.00	0.00	0.00
21,500.00	90.24	269.88	10,873.27	1,718.84	-9,546.90	9,543.28	0.00	0.00	0.00
21,600.00	90.24	269.88	10,872.84	1,718.62	-9,646.90	9,643.28	0.00	0.00	0.00
21,700.00	90.24	269.88	10,872.41	1,718.41	-9,746.90	9,743.28	0.00	0.00	0.00
21,800.00	90.24	269.88	10,871.99	1,718.19	-9,846.90	9,843.28	0.00	0.00	0.00
21,900.00	90.24	269.88	10,871.56	1,717.98	-9,946.90	9,943.28	0.00	0.00	0.00
22,000.00	90.24	269.88	10,871.13	1,717.76	-10,046.90	10,043.28	0.00	0.00	0.00
22,100.00	90.24	269.88	10,870.71	1,717.55	-10,146.90	10,143.28	0.00	0.00	0.00
22,200.00	90.24	269.88	10,870.28	1,717.33	-10,246.90	10,243.28	0.00	0.00	0.00
22,300.00	90.24	269.88	10,869.85	1,717.12	-10,346.90	10,343.28	0.00	0.00	0.00
22,400.00	90.24	269.88	10,869.43	1,716.90	-10,446.89	10,443.28	0.00	0.00	0.00
22,500.00	90.24	269.88	10,869.00	1,716.69	-10,546.89	10,543.27	0.00	0.00	0.00
22,600.00	90.24	269.88	10,868.57	1,716.47	-10,646.89	10,643.27	0.00	0.00	0.00
22,700.00	90.24	269.88	10,868.15	1,716.26	-10,746.89	10,743.27	0.00	0.00	0.00
22,800.00	90.24	269.88	10,867.72	1,716.04	-10,846.89	10,843.27	0.00	0.00	0.00
22,900.00	90.24	269.88	10,867.29	1,715.82	-10,946.89	10,943.27	0.00	0.00	0.00
23,000.00	90.24	269.88	10,866.87	1,715.61	-11,046.89	11,043.27	0.00	0.00	0.00
23,100.00	90.24	269.88	10,866.44	1,715.39	-11,146.89	11,143.27	0.00	0.00	0.00
23,200.00	90.24	269.88	10,866.01	1,715.18	-11,246.88	11,243.27	0.00	0.00	0.00
23,300.00	90.24	269.88	10,865.59	1,714.96	-11,346.88	11,343.27	0.00	0.00	0.00
23,400.00	90.24	269.88	10,865.16	1,714.75	-11,446.88	11,443.27	0.00	0.00	0.00
23,500.00	90.24	269.88	10,864.73	1,714.53	-11,546.88	11,543.27	0.00	0.00	0.00
23,600.00	90.24	269.88	10,864.31	1,714.32	-11,646.88	11,643.26	0.00	0.00	0.00
23,700.00	90.24	269.88	10,863.88	1,714.10	-11,746.88	11,743.26	0.00	0.00	0.00
23,800.00	90.24	269.88	10,863.45	1,713.89	-11,846.88	11,843.26	0.00	0.00	0.00
23,900.00	90.24	269.88	10,863.03	1,713.67	-11,946.88	11,943.26	0.00	0.00	0.00
24,000.00	90.24	269.88	10,862.60	1,713.46	-12,046.88	12,043.26	0.00	0.00	0.00
24,100.00	90.24	269.88	10,862.17	1,713.24	-12,146.87	12,143.26	0.00	0.00	0.00
24,200.00	90.24	269.88	10,861.75	1,713.03	-12,246.87	12,243.26	0.00	0.00	0.00
24,300.00	90.24	269.88	10,861.32	1,712.81	-12,346.87	12,343.26	0.00	0.00	0.00
24,400.00	90.24	269.88	10,860.89	1,712.60	-12,446.87	12,443.26	0.00	0.00	0.00
24,500.00	90.24	269.88	10,860.47	1,712.38	-12,546.87	12,543.26	0.00	0.00	0.00
24,600.00	90.24	269.88	10,860.04	1,712.16	-12,646.87	12,643.26	0.00	0.00	0.00
24,700.00	90.24	269.88	10,859.61	1,711.95	-12,746.87	12,743.25	0.00	0.00	0.00
24,800.00	90.24	269.88	10,859.19	1,711.73	-12,846.87	12,843.25	0.00	0.00	0.00
24,900.00	90.24	269.88	10,858.76	1,711.52	-12,946.87	12,943.25	0.00	0.00	0.00
25,000.00	90.24	269.88	10,858.33	1,711.30	-13,046.86	13,043.25	0.00	0.00	0.00
25,100.00	90.24	269.88	10,857.91	1,711.09	-13,146.86	13,143.25	0.00	0.00	0.00
25,200.00	90.24	269.88	10,857.48	1,710.87	-13,246.86	13,243.25	0.00	0.00	0.00
25,300.00	90.24	269.88	10,857.05	1,710.66	-13,346.86	13,343.25	0.00	0.00	0.00
25,400.00	90.24	269.88	10,856.63	1,710.44	-13,446.86	13,443.25	0.00	0.00	0.00
25,500.00	90.24	269.88	10,856.20	1,710.23	-13,546.86	13,543.25	0.00	0.00	0.00
25,600.00	90.24	269.88	10,855.77	1,710.01	-13,646.86	13,643.25	0.00	0.00	0.00
25,700.00	90.24	269.88	10,855.35	1,709.80	-13,746.86	13,743.25	0.00	0.00	0.00



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BS3-1W 275H
<b>Company:</b>	XTO Energy	<b>TVD Reference:</b>	RKB = 25 @ 3342.00usft
<b>Project:</b>	Eddy County, NM (NAD-27)	<b>MD Reference:</b>	RKB = 25 @ 3342.00usft
<b>Site:</b>	James Ranch Unit DI 8	<b>North Reference:</b>	Grid
<b>Well:</b>	BS3-1W 275H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
25,800.00	90.24	269.88	10,854.92	1,709.58	-13,846.86	13,843.24	0.00	0.00	0.00
25,900.00	90.24	269.88	10,854.49	1,709.37	-13,946.85	13,943.24	0.00	0.00	0.00
26,000.00	90.24	269.88	10,854.07	1,709.15	-14,046.85	14,043.24	0.00	0.00	0.00
26,100.00	90.24	269.88	10,853.64	1,708.94	-14,146.85	14,143.24	0.00	0.00	0.00
26,200.00	90.24	269.88	10,853.21	1,708.72	-14,246.85	14,243.24	0.00	0.00	0.00
26,300.00	90.24	269.88	10,852.79	1,708.51	-14,346.85	14,343.24	0.00	0.00	0.00
26,400.00	90.24	269.88	10,852.36	1,708.29	-14,446.85	14,443.24	0.00	0.00	0.00
26,500.00	90.24	269.88	10,851.93	1,708.07	-14,546.85	14,543.24	0.00	0.00	0.00
26,600.00	90.24	269.88	10,851.51	1,707.86	-14,646.85	14,643.24	0.00	0.00	0.00
26,700.00	90.24	269.88	10,851.08	1,707.64	-14,746.84	14,743.24	0.00	0.00	0.00
26,800.00	90.24	269.88	10,850.65	1,707.43	-14,846.84	14,843.24	0.00	0.00	0.00
26,822.76	90.24	269.88	10,850.55	1,707.38	-14,869.60	14,865.99	0.00	0.00	0.00
26,900.00	90.24	269.88	10,850.23	1,707.21	-14,946.84	14,943.23	0.00	0.00	0.00
26,952.76	90.24	269.88	10,850.00	1,707.10	-14,999.60	14,995.99	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BS3-1W 275H: SHL (: - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	491,410.50	653,432.80	32.350025	-103.836487
BS3-1W 275H: PBHL - plan hits target center - Point	0.00	0.00	10,850.00	1,707.10	-14,999.60	493,117.60	638,433.20	32.354899	-103.885034
BS3-1W 275H: LTP - plan misses target center by 0.08usft at 26822.76usft MD (10850.55 TVD, 1707.38 N, -14869.60 E) - Point	0.00	0.00	10,850.55	1,707.30	-14,869.60	493,117.80	638,563.20	32.354898	-103.884613
BS3-1W 275H: FTP/ I - plan hits target center - Point	0.00	0.00	10,916.00	1,740.40	469.00	493,150.90	653,901.80	32.354803	-103.834942



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BS3-1W 275H
Company:	XTO Energy	TVD Reference:	RKB = 25 @ 3342.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB = 25 @ 3342.00usft
Site:	James Ranch Unit DI 8	North Reference:	Grid
Well:	BS3-1W 275H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
287.00	287.00	Rustler				
587.00	587.00	Salado				
3,619.65	3,587.00	Base Salt				
3,866.56	3,827.00	Delaware/Lamar				
3,907.71	3,867.00	Bell Canyon				
4,828.46	4,762.00	Cherry Canyon				
5,018.79	4,947.00	Base Manzanita				
6,556.81	6,442.00	Brushy Canyon				
7,534.15	7,392.00	Basal Brushy Canyon				
7,791.34	7,642.00	Base Brushy Canyon Sands				
7,817.06	7,667.00	Bone Spring				
7,924.06	7,771.00	Avalon Sand				
8,435.36	8,268.00	Lower Avalon Shale				
8,908.59	8,728.00	First Bone Spring Sand				
9,383.89	9,190.00	Second Bone Spring Limestone				
9,770.71	9,566.00	Second Bone Spring Sand				
9,797.46	9,592.00	Second Bone Spring A Sand				
9,964.12	9,754.00	Second Bone Spring B Sand				
10,048.48	9,836.00	Third Bone Spring Limestone				
10,291.27	10,072.00	Harkey Sand				
10,799.47	10,563.00	Third Bone Spring Sand				
11,214.19	10,856.00	Third Bone Spring RH Sand				
11,483.98	10,916.00	Landing Point				



# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>XTO Permian Operating, LLC.</b>
<b>LEASE NO.:</b>	<b>NMNM-0002952C</b>
<b>WELL NAME &amp; NO.:</b>	<b>James Ranch Unit DI 8 BS3-1W 275H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>2072' FNL &amp; 1837' FWL</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>0333' FNL &amp; 2440' FEL Sec. 33, T.22 S., R.30 E.</b>
<b>LOCATION:</b>	<b>Section 36, T.22 S., R.30 E., NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input checked="" type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input checked="" type="checkbox"/> Unit

## A. HYDROGEN SULFIDE

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

### R-111-P-Potash/WIPP

#### Medium Cave/Karst

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

**Possibility of lost circulation in the Rustler and Delaware.**

**Abnormal pressure may be encountered within the 3<sup>rd</sup> Bone Spring Sandstone and the Wolfcamp formation.**

## **B. CASING**

1. The **18-5/8** inch surface casing shall be set at approximately **500** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and 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 in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  - 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.

**13-3/8 inch 1<sup>st</sup> Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the **13-3/8** inch 1<sup>st</sup> intermediate casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.**

**9-5/8 inch 2<sup>nd</sup> Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

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

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

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

❖ In WIPP Areas cement must come to surface on the first three casing strings.

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

- Cement should tie-back **500 feet** into the previous casing. Operator shall provide method of verification. **Excess calculates to 15% - Additional cement may be required.**

### 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 **2000 (2M)** psi.
3. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 13-3/8 inch 1<sup>st</sup> intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8 inch 1<sup>st</sup> intermediate casing shoe shall be **5000 (5M)** psi.
  - 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.

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

##### **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.

##### **Commercial Well Determination**

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

##### **WIPP Requirements**

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, XTO Permian Operating, LLC is required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

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

## 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.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. 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.
4. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
5. 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.
6. 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.
7. 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.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, 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 not a cup or J-packer.
- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- g. 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.

**JAM 010820**