Rec'd 05/26/2020 - NMOCD

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.
NMNM136870

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.
CORRAL CANYON 9-4 FEDERAL
161H

2. Name of Operator
XTO ENERGY INCORPORATED

9. API Well No.
30 015 47115

3a. Address
22777 Springwoods Village Parkway, Spring, TX 77389

3b. Phone No. *(include area code)*
(432) 620-6700

10. Field and Pool, or Exploratory
WELCH/null

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWSW / 2021 FSL / 365 FWL / LAT 32.142877 / LONG -103.996877
At proposed prod. zone LOT 4 / 200 FNL / 330 FWL / LAT 32.165927 / LONG -103.997007

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 9/T25S/R29E/NMP

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

12. County or Parish
EDDY

13. State
NM

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

16. No of acres in lease
1280

17. Spacing Unit dedicated to this well
480.0

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

19. Proposed Depth
10847 feet / 18674 feet

20. BLM/BIA Bond No. in file
FED: UTB000138

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3006 feet

22. Approximate date work will start*
04/01/2019

23. Estimated duration
90 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Stephanie Rabadue / Ph: (432) 620-6700	12/30/2019

Title
Regulatory Coordinator

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575) 234-5959	05/18/2020

Title	Office
Assistant Field Manager Lands & Minerals	Carlsbad Field Office

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: 05/18/2020

Entered 05/26/2020 - KMS NMOCD

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015- 47115	98220	Purple Sage; Wolfcamp

[4] Property Code	[5] Property Name	[6] Well Number
328244	CORRAL CANYON 9-4 FED	161H

[7] OGRID No.	[8] Operator Name	[9] Elevation
005380	XTO ENERGY, INC.	3,006'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	9	25 S	29 E		2,021	SOUTH	365	WEST	EDDY

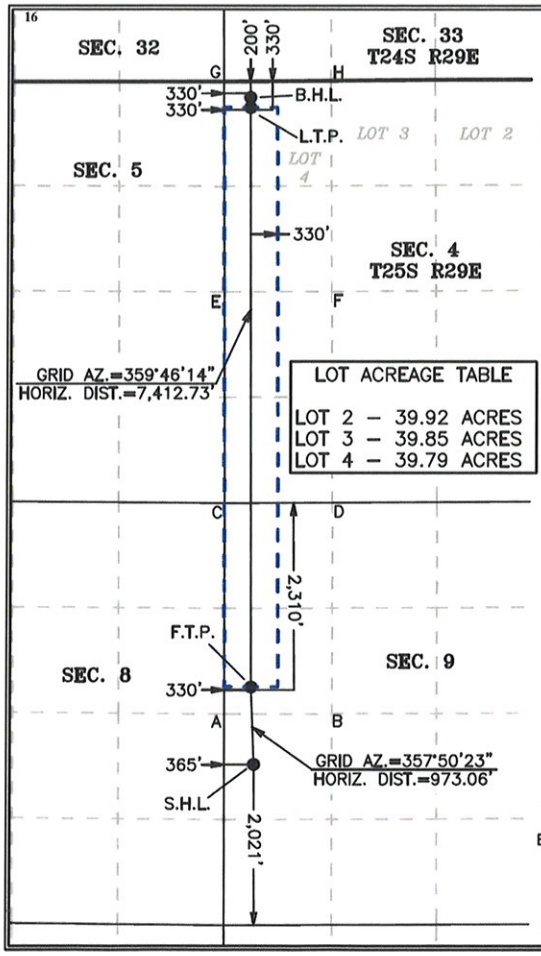
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L4	4	25 S	29 E		200	NORTH	330	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
480			

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

16



LOT ACREAGE TABLE

LOT 2	39.92 ACRES
LOT 3	39.85 ACRES
LOT 4	39.79 ACRES

GEODETIC COORDINATES NAD 27 NME
SURFACE LOCATION
Y= 415,818.3
X= 604,289.0
LAT.= 32.142753°N
LONG.= 103.996389°W

GEODETIC COORDINATES NAD 83 NME
SURFACE LOCATION
Y= 415,876.8
X= 645,473.2
LAT.= 32.142877°N
LONG.= 103.996877°W

FIRST TAKE POINT NAD 27 NME
Y= 416,790.6
X= 604,252.3
LAT.= 32.145426°N
LONG.= 103.996498°W

FIRST TAKE POINT NAD 83 NME
Y= 416,849.1
X= 645,436.5
LAT.= 32.145550°N
LONG.= 103.996986°W

CORNER COORDINATES TABLE NAD 27 NME

A	Y= 416,448.1 N,	X= 603,922.8 E
B	Y= 416,453.5 N,	X= 605,250.9 E
C	Y= 419,098.9 N,	X= 603,919.2 E
D	Y= 419,106.1 N,	X= 605,247.1 E
E	Y= 421,752.6 N,	X= 603,906.0 E
F	Y= 421,759.8 N,	X= 605,230.4 E
G	Y= 424,400.2 N,	X= 603,891.7 E
H	Y= 424,412.4 N,	X= 605,213.3 E

CORNER COORDINATES TABLE NAD 83 NME

A	Y= 416,506.6 N,	X= 645,107.0 E
B	Y= 416,512.0 N,	X= 646,435.1 E
C	Y= 419,157.4 N,	X= 645,103.3 E
D	Y= 419,164.6 N,	X= 646,431.2 E
E	Y= 421,811.2 N,	X= 645,090.1 E
F	Y= 421,818.4 N,	X= 646,414.5 E
G	Y= 424,458.8 N,	X= 645,075.7 E
H	Y= 424,471.0 N,	X= 646,397.3 E

LAST TAKE POINT NAD 27 NME
Y= 424,073.2
X= 604,223.5
LAT.= 32.165446°N
LONG.= 103.996517°W

LAST TAKE POINT NAD 83 NME
Y= 424,131.8
X= 645,407.5
LAT.= 32.165569°N
LONG.= 103.997006°W

BOTTOM HOLE LOCATION NAD 27 NME
Y= 424,203.2
X= 604,222.8
LAT.= 32.165803°N
LONG.= 103.996518°W

BOTTOM HOLE LOCATION NAD 83 NME
Y= 424,261.8
X= 645,406.8
LAT.= 32.165927°N
LONG.= 103.997007°W

[17] OPERATOR CERTIFICATION

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

Stephanie Rabadue 11/22/2019
Signature Date

Stephanie Rabadue
Printed Name

stephanie_rabadue@xtoenergy.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

11-21-2019
Date of Survey

Signatue and Seal of Professional Surveyor:

MARK DILLON HARP NEW MEXICO 23786 PROFESSIONAL SURVEYOR

MARK DILLON HARP 23786
Certificate Number AW 2018010261

P:\PROJECTS\2018\2018010261-XTO-CORRAL_CANYON_9-4_FEDERAL_161H-EDDY\DWG\2018010261-XTO-CORRAL_CANYON_9-4_FEDERAL_161H_C-102.dwg

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
XTO ENERGY INC	CORRAL CANYON 9-4 FEDERAL	161H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
L	9	25S	29E		2021	SOUTH	365	WEST	EDDY

Latitude	Longitude	NAD
32.142877	-103.996877	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
E	9	25S	29E		2310	NORTH	330	WEST	EDDY

Latitude	Longitude	NAD
32.145550	-103.996986	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	4	25S	29E	4	330	NORTH	330	WEST	EDDY

Latitude	Longitude	NAD
32.165569	-103.997006	83

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

Is this well an infill well? [Y]

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

API #

Operator Name:	Property Name:	Well Number
XTO ENERGY INC	CORRAL CANYON 9-4 FEDERAL	162H

KZ 06/29/2018

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME: XTO Energy Incorporated
LEASE NO.: NMNM136870
LOCATION: Section 9, T.25 S., R.29 E., NMPM
COUNTY: Eddy County, New Mexico

Corral Canyon 9-4 Fed 102H
Surface Hole Location: 2112' FSL & 362' FWL, Section 9, T. 25 S., R. 29 E.
Bottom Hole Location: 200' FNL & 750' FWL, Section 4, T. 25 S, R 30 E.

Corral Canyon 9-4 Fed 121H
Surface Hole Location: 2081' FSL & 363' FWL, Section 9, T. 25 S., R. 29 E.
Bottom Hole Location: 200' FNL & 750' FWL, Section 4, T. 25 S, R 30 E.

Corral Canyon 9-4 Fed 122H
Surface Hole Location: 2051' FSL & 364' FWL, Section 9, T. 25 S., R. 29 E.
Bottom Hole Location: 200' FNL & 750' FWL, Section 4, T. 25 S, R 30 E.

Corral Canyon 9-4 Fed 161H
Surface Hole Location: 2021' FSL & 365' FWL, Section 9, T. 25 S., R. 29 E.
Bottom Hole Location: 200' FNL & 330' FWL, Section 4, T. 25 S, R 30 E.

Corral Canyon 9-4 Fed 162H
Surface Hole Location: 1991' FSL & 366' FWL, Section 9, T. 25 S., R. 29 E.
Bottom Hole Location: 200' FNL & 990' FWL, Section 4, T. 25 S, R 30 E.

TABLE OF CONTENTS

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

Topsoil
Closed Loop System
Federal Mineral Material Pits
Well Pads
Roads

☐ **Road Section Diagram**
☐ **Production (Post Drilling)**
Well Structures & Facilities
☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

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.

I. 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.)

II. 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.

III. 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.

IV. SPECIAL REQUIREMENT(S)

Wildlife:

Oil and Gas Zone D - CCA Boundary requirements.

- Implement erosion control measures in accordance with the Reasonable and Prudent Practices for Stabilization ("RAPPS")
- Comply with SPCC requirements in accordance with 40 CFR Part 112;
- Comply with the United States Army Corp of Engineers (USACE) Nationwide 12 General Permit, where applicable;
- Utilize technologies (like underground borings for pipelines), where feasible;
- Educate personnel, agents, contractors, and subcontractors about the requirements of conservation measures, COAs, Stips and provide direction in accordance with the Permit.

Hydrology:

The entire well pad(s) 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 with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The 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 water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. 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 berm would be maintained through the life of the wells and after interim reclamation has been completed.

Cave/Karst Surface Mitigation

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

Construction:

General Construction:

- No blasting
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no additional construction shall occur until clearance has been issued by the Authorized Officer.
- All linear surface disturbance activities will avoid sinkholes and other karst features to lessen the possibility of encountering near surface voids during construction, minimize changes to runoff, and prevent untimely leaks and spills from entering the karst drainage system.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

Pad Construction:

- The pad will be constructed and leveled by adding the necessary fill and caliche – no blasting.
- 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 (i.e. an access road crossing the berm cannot be lower than the berm height).
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Construction:

- The pad will be constructed and leveled by adding the necessary fill and caliche – no blasting.
- All tank battery locations and facilities will be lined and bermed.
- The liner should be at least 20 mil in thickness and installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures.

- Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Road Construction:

- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to alter the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required if subsurface features are discovered during construction.

Powerline Construction:

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- Special restoration stipulations or realignment may be required if subsurface voids are encountered.

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.
- A leak detection plan will be submitted to BLM that incorporates an automatic shut off system (see below) to minimize the effects of an undesirable event that could negatively sensitive cave/karst resources.
- Well heads, pipelines (surface and buried), storage tanks, and all supporting equipment should be monitored regularly after installation to promptly identify and fix leaks.

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 groundwater concerns:

Closed Loop System:

- A closed loop system using steel tanks will be utilized during drilling – no pits
- All fluids and cuttings will be hauled off-site and disposed of properly at an authorized site

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:

- The kick off point 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 between surface and the base of the cave occurrence zone will be logged and reported in the drilling report.
- If a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, regardless of the type of drilling machinery used, 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:

- Additional plugging conditions of approval may be required upon well abandonment in high and medium karst potential occurrence zones.
- The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

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

V. 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.

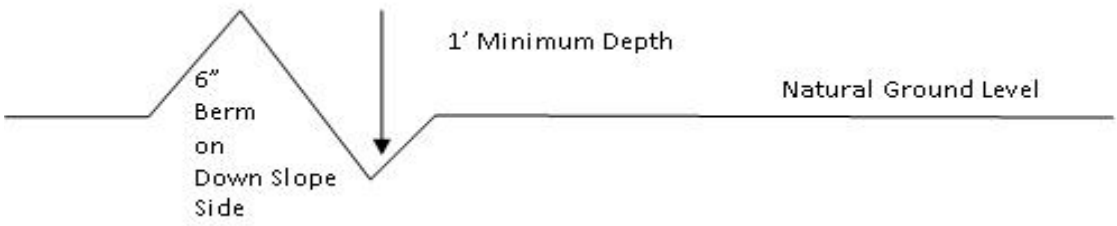
Ditching
Ditching shall be required on both sides of the road.

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:

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

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

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

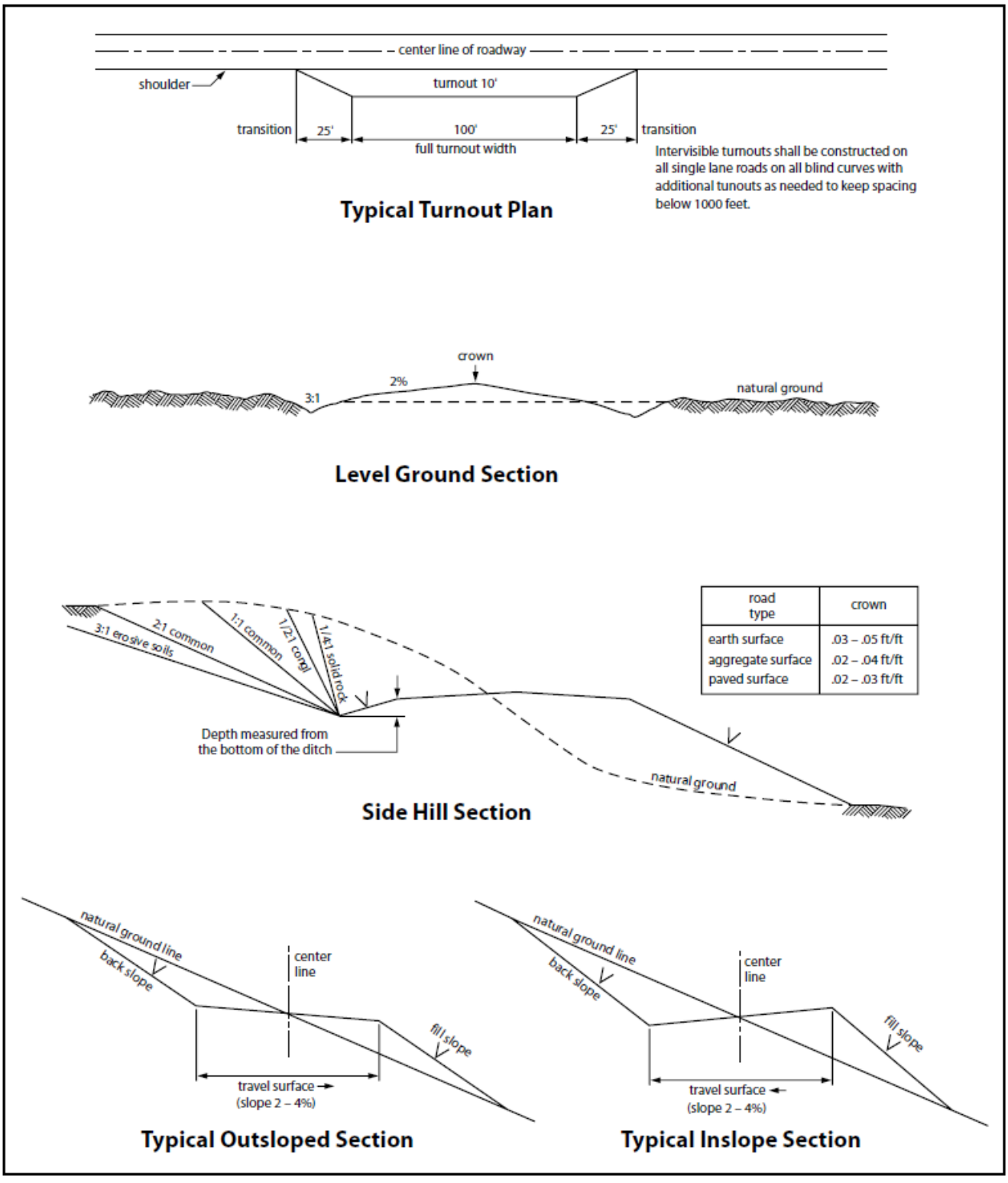


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VI. 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).

VII. INTERIM RECLAMATION

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

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

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

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

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

VIII. 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 3, for Shallow Sites

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

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

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

Species	lb/acre
Plains Bristlegrass (*Setaria macrostachya*)	1.0
Green Sprangletop (*Leptochloa dubia*)	2.0
Sideoats Grama (*Bouteloua curtipendula)*	5.0

*Pounds of pure live seed:

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

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Energy Incorporated
WELL NAME & NO.:	Corral Canyon 9-4 Federal 161H
LOCATION:	Sec 9-25S-29E-NMP
COUNTY:	Eddy County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☑ Unit

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.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately 530 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 **8 hours** 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

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

   Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. 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 cave/karst or potash.**

   ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

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

      - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

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. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi. Variance is approved to use a 5,000 (5M) Annular which shall be tested to 3,500 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.

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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. 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.

5. The appropriate BLM office shall be notified a minimum of 4 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).

    b. 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).

    c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for

the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. 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.

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

f. 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.

g. 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.

h. 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.

APD ID: 10400052785 **Submission Date:** 12/30/2019

Operator Name: XTO ENERGY INCORPORATED

Well Name: CORRAL CANYON 9-4 FEDERAL **Well Number:** 161H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
619373	PERMIAN	3006	0	0	OTHER : Quaternary	NONE	N
619374	RUSTLER	2684	322	322	SILTSTONE	USEABLE WATER	N
619371	TOP SALT	2290	716	716	SALT	NONE	N
619368	BASE OF SALT	225	2781	2781	SALT	NONE	N
619375	DELAWARE	36	2970	2970	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
619376	BONE SPRING	-3735	6741	6741	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
619372	BONE SPRING 1ST	-4586	7592	7592	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
619369	BONE SPRING 2ND	-4932	7938	7938	SANDSTONE	NATURAL GAS, OIL, OTHER : Produced Water	N
619378	BONE SPRING 3RD	-5731	8737	8737	SANDSTONE	NATURAL GAS, OIL, OTHER, USEABLE WATER : produced water	N
619379	WOLFCAMP	-6925	9931	9931	SHALE	NATURAL GAS, OIL, OTHER, USEABLE WATER : produced water	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 10847

Equipment: Once the permanent WH is installed on the 13-3/8 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8 minimum 5M Hydril and a 13-5/8 minimum 10M 3-Ram BOP. MASP should not exceed 5176 psi. In any instance where 10M BOP is required by BLM, XTO requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M). Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 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 · 16" SOW bottom x 16-3/4" 2M top flange. Permanent Wellhead – GE RSH Multibowl System A. Starting Head: 13-5/8" 10M top flange x 11-3/4" SOW bottom B. Tubing Head: 13-5/8" 10M bottom flange x 7-1/16" 15M 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 8-5/8" 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 nippling up on the 11-3/4", 10M bradenhead and flange, the BOP test will be limited to 10000 psi. When nippling up on the 8-5/8", the BOP will be tested to a minimum of 10000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 10M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

Choke Diagram Attachment:

CC_4_Fed_10MCM_20191226092330.pdf

BOP Diagram Attachment:

CC_4_Fed_10M5MB_20191226092338.pdf

Pressure Rating (PSI): 2M **Rating Depth:** 740

Equipment: The blow out preventer equipment (BOP) for this well consists of a 13-5/8 minimum 2M Hydril and a 13-5/8 minimum 2M Double Ram BOP.

Requesting Variance? YES

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

Testing Procedure: All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up, the BOP test will be limited to 2,000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 2M BOP diagram is attached. Blind rams will be function tested each trip, pipe rams will be function tested each day.

Choke Diagram Attachment:

CC_4_Fed_2MCM_20191226092255.pdf

BOP Diagram Attachment:

CC_4_Fed_2MBOP_20191226092305.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	18.5	16.0	NEW	API	N	0	740	0	740	3006	2266	740	J-55	75	ST&C	3.05	2.94	DRY	12.79	DRY	12.79
2	INTERMEDIATE	14.75	11.75	NEW	API	N	0	2880	0	2880		126	2880	J-55	54	ST&C	2.28	1.19	DRY	3.65	DRY	3.65

Operator Name: XTO ENERGY INCORPORATED

Well Name: CORRAL CANYON 9-4 FEDERAL **Well Number:** 161H

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
3	INTERMEDIATE	10.625	8.625	NEW	API	N	0	10000	0	10000		-6994	10000	HCL-80	32	BUTT	1.67	1.08	DRY	2.29	DRY	2.29
4	PRODUCTION	7.875	5.5	NEW	API	N	0	18764	0	10847	2969	-7841	18764	P-110	20	BUTT	1.45	1.33	DRY	2.43	DRY	2.43

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CC_4_Fed_161H_Csg_20191226092626.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CC_4_Fed_161H_Csg_20191226092655.pdf

Operator Name: XTO ENERGY INCORPORATED

Well Name: CORRAL CANYON 9-4 FEDERAL **Well Number:** 161H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CC_4_Fed_161H_Csg_20191226092717.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CC_4_Fed_161H_Csg_20191226092751.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	740	220	1.87	12.9	411.4	100	Econocem-HLTRRC	None
SURFACE	Tail				200	1.35	14.8	270	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead		0	2880	1060	1.87	12.9	1982.2	100	EconoCem-HLTRRC	None
INTERMEDIATE	Tail				370	1.35	14.8	499.5	100	Halcem-C	2% CaCl
INTERMEDIATE	Lead	2930	0	2930	540	1.88	12.9	1015.2	100	Halcem-C	2% CaCl

Operator Name: XTO ENERGY INCORPORATED

Well Name: CORRAL CANYON 9-4 FEDERAL **Well Number:** 161H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail				150	1.33	14.8	199.5	100	Halcem-C	2%CaCl
INTERMEDIATE	Lead	2701	2701	10000	1350	1.88	12.9	2538	100	Halcem-C	2% CaCl
INTERMEDIATE	Tail				310	1.33	14.8	412.3	100	Halcem-C	2% CaCl
PRODUCTION	Lead		0	18674	810	2.69	10.5	2178.9	30	NeoCem	None
PRODUCTION	Tail				1240	1.61	13.2	1996.4	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 a fluid loss control will be on location at all times.

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

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	740	OTHER : FW/Native	8.4	8.8							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 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.

Operator Name: XTO ENERGY INCORPORATED

Well Name: CORRAL CANYON 9-4 FEDERAL **Well Number:** 161H

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
740	2880	OTHER : Brine/Gel Sweeps	9.8	10.2							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 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.
10000	10847	POLYMER	13.2	13.5							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 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.
2880	10000	OTHER : FW / Cut Brine	8.7	10							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 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system.

Section 6 - Test, Logging, Coring

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

Mud logging Unit (2 man) on below intermediate casing. Catch 20' samples fr/10000' to TD

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

CEMENT BOND LOG,COMPENSATED NEUTRON LOG,DIRECTIONAL SURVEY,GAMMA RAY LOG,MUD LOG/GEOLOGIC LITHOLOGY LOG,

Coring operation description for the well:

No coring will take place on this well.

Operator Name: XTO ENERGY INCORPORATED

Well Name: CORRAL CANYON 9-4 FEDERAL **Well Number:** 161H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7445 **Anticipated Surface Pressure:** 5044

Anticipated Bottom Hole Temperature(F): 150

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

CC_4_Fed_H2S_D_P1_20191226093227.pdf
CC_4_Fed_H2S_Plan_20191226093238.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

CC_4_Fed_161H_DD_20191226093257.pdf

Other proposed operations facets description:

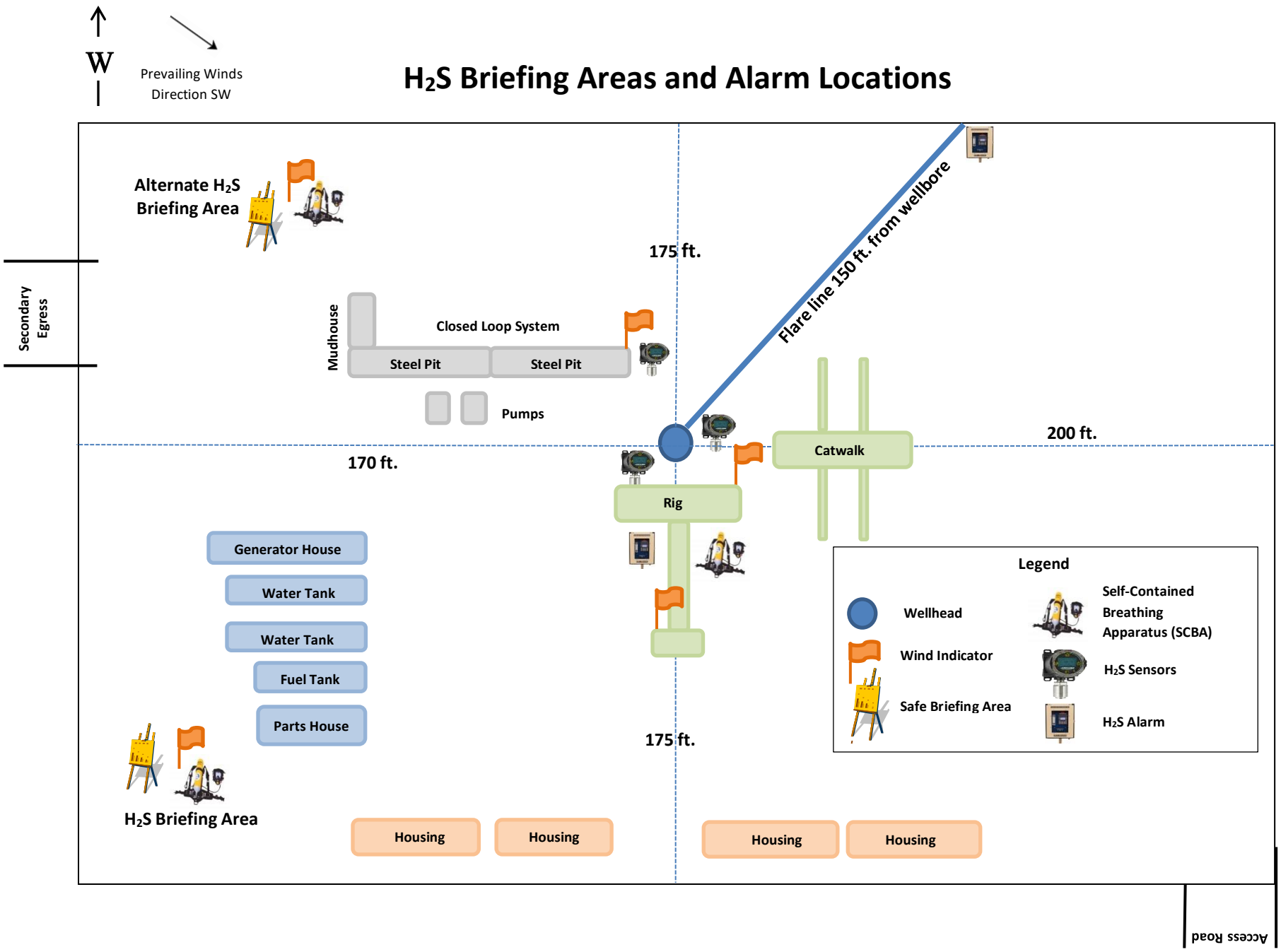
Other proposed operations facets attachment:

CC_4_Fed_GCP_20191226093307.pdf

Other Variance attachment:

CC_4_Fed_11.75x5.5MBS_20191226093323.pdf
CC_4_Fed_FH_20191226093331.pdf
CC_4_Fed_WWC_20191226103540.pdf

H_2S Briefing Areas and Alarm Locations



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
    - Detection of H_2S, and
    - Measures for protection against the gas,
    - Equipment used for protection and emergency response.

Ignition of Gas source

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

Characteristics of H_2S and SO_2

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

Contacting Authorities

All XTO location 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 PERSONNEL:

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

SHERIFF DEPARTMENTS:

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

NEW MEXICO STATE POLICE: 575-392-5588

FIRE DEPARTMENTS: 911

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

HOSPITALS: 911

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

AGENT NOTIFICATIONS:

For Lea County:

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

For Eddy County:

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

XTO Energy

Eddy County, NM (NAD-27)
Corral Canyon 9-4 Fed
#161H

OH

Plan: PERMIT

Standard Planning Report

20 November, 2019

Project: Eddy County, NM (NAD-27)
Site: Corral Canyon 9-4 Fed
Well: #161H
Wellbore: OH
Design: PERMIT

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

WELL DETAILS: #161H

Rig Name:
RKB = 31' @ 3037.00usft
Ground Level: 3006.00

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.00	0.00	415818.30	604289.00	32.1427527	-103.9963892

DESIGN TARGET DETAILS

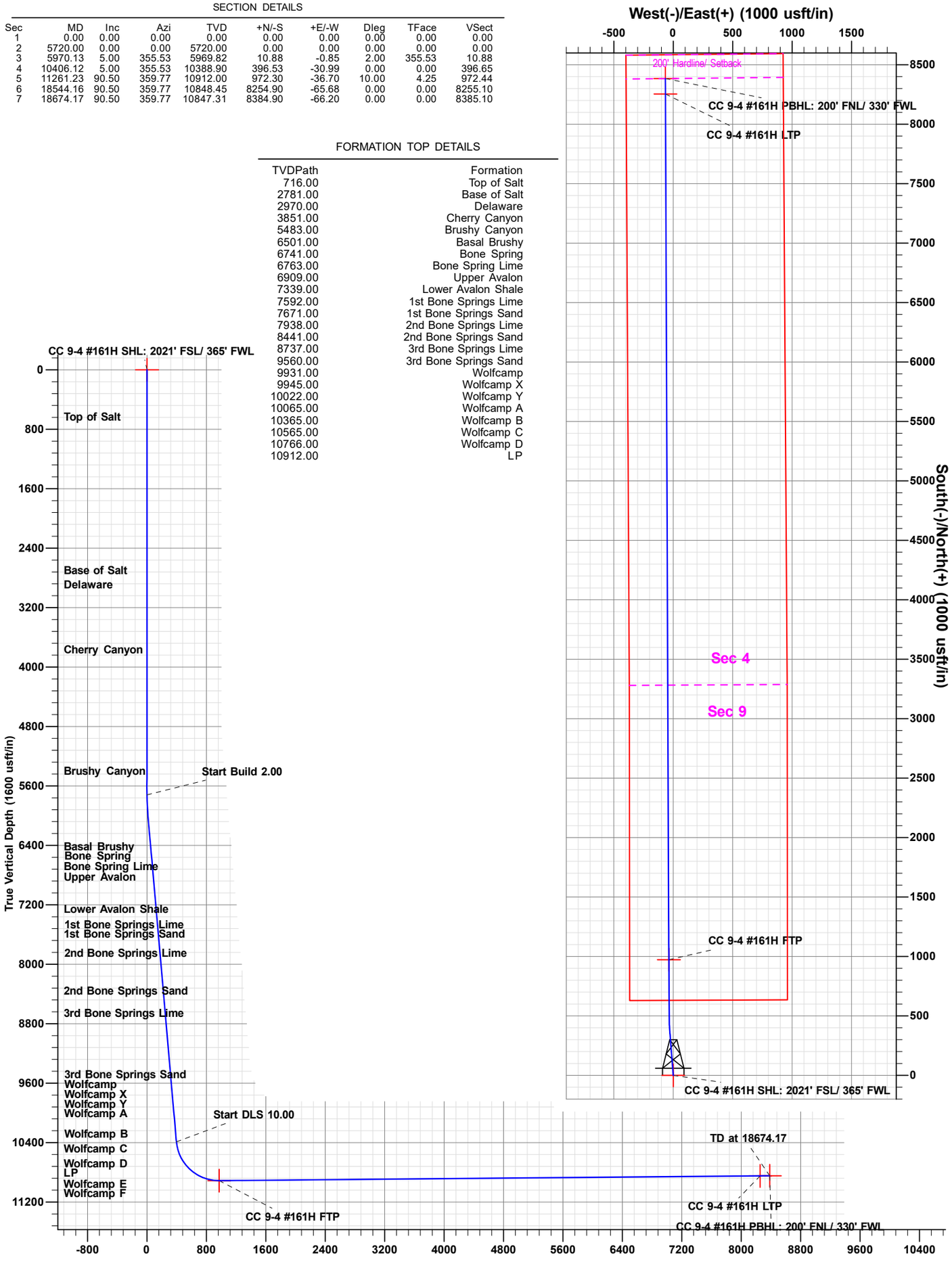
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
CC 9-4 #161H SHL: 2021' FSL/ 365' FWL	0.00	0.00	0.00	415818.30	604289.00	32.1427527	-103.9963892
CC 9-4 #161H PBHL: 200' FNL/ 330' FWL	10847.31	8384.90	-66.20	424203.20	604222.80	32.1658032	-103.9965183
CC 9-4 #161H LTP	10848.45	8254.90	-65.50	424073.20	604223.50	32.1654458	-103.9965174
CC 9-4 #161H FTP	10912.00	972.30	-36.70	416790.60	604252.30	32.1454259	-103.9964980

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5720.00	0.00	0.00	5720.00	0.00	0.00	0.00	0.00	0.00
3	5970.13	5.00	355.53	5969.82	10.88	-0.85	2.00	355.53	10.88
4	10406.12	5.00	355.53	10388.90	396.53	-30.99	0.00	0.00	396.65
5	11261.23	90.50	359.77	10912.00	972.30	-36.70	10.00	4.25	972.44
6	18544.16	90.50	359.77	10848.45	8254.90	-65.68	0.00	0.00	8255.10
7	18674.17	90.50	359.77	10847.31	8384.90	-66.20	0.00	0.00	8385.10

FORMATION TOP DETAILS

TVDPath	Formation
716.00	Top of Salt
2781.00	Base of Salt
2970.00	Delaware
3851.00	Cherry Canyon
5483.00	Brushy Canyon
6501.00	Basal Brushy
6741.00	Bone Spring
6763.00	Bone Spring Lime
6909.00	Upper Avalon
7339.00	Lower Avalon Shale
7592.00	1st Bone Springs Lime
7671.00	1st Bone Springs Sand
7938.00	2nd Bone Springs Lime
8441.00	2nd Bone Springs Sand
8737.00	3rd Bone Springs Lime
9560.00	3rd Bone Springs Sand
9931.00	Wolfcamp
9945.00	Wolfcamp X
10022.00	Wolfcamp Y
10065.00	Wolfcamp A
10365.00	Wolfcamp B
10565.00	Wolfcamp C
10766.00	Wolfcamp D
10912.00	LP



Plan: PERMIT (#161H/OH)

Created By: Matthew May Date: 11:20, November 20 2019

Database:	EDM 5000.1.13 Single User Db	**Local Co-ordinate Reference:**	Well #161H
Company:	XTO Energy	**TVD Reference:**	RKB = 31' @ 3037.00usft
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 31' @ 3037.00usft
Site:	Corral Canyon 9-4 Fed	**North Reference:**	Grid
Well:	#161H	**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 Corral Canyon 9-4 Fed

Site Position:		**Northing:**	415,908.30 usft	**Latitude:**	32.1430002
From:	Map	**Easting:**	604,285.20 usft	**Longitude:**	-103.9964006
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.18 °

Well #161H

Well Position	**+N/-S**	-90.00 usft	**Northing:**	415,818.30 usft	**Latitude:**	32.1427527
	+E/-W	3.80 usft	**Easting:**	604,289.00 usft	**Longitude:**	-103.9963892
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,006.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/20/19	6.88	59.89	47,599

Design PERMIT

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	359.77

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	
5,720.00	0.00	0.00	5,720.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,970.13	5.00	355.53	5,969.82	10.88	-0.85	2.00	2.00	0.00	355.53	
10,406.12	5.00	355.53	10,388.90	396.53	-30.99	0.00	0.00	0.00	0.00	
11,261.23	90.50	359.77	10,912.00	972.30	-36.70	10.00	10.00	0.50	4.25	CC 9-4 #161H FTP
18,544.16	90.50	359.77	10,848.45	8,254.90	-65.68	0.00	0.00	0.00	0.00	CC 9-4 #161H LTP
18,674.17	90.50	359.77	10,847.31	8,384.90	-66.20	0.00	0.00	0.00	0.00	CC 9-4 #161H PBH

Database:	EDM 5000.1.13 Single User Db	**Local Co-ordinate Reference:**	Well #161H
Company:	XTO Energy	**TVD Reference:**	RKB = 31' @ 3037.00usft
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 31' @ 3037.00usft
Site:	Corral Canyon 9-4 Fed	**North Reference:**	Grid
Well:	#161H	**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
716.00	0.00	0.00	716.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
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	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,781.00	0.00	0.00	2,781.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,970.00	0.00	0.00	2,970.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,851.00	0.00	0.00	3,851.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00

Database:	EDM 5000.1.13 Single User Db	**Local Co-ordinate Reference:**	Well #161H
Company:	XTO Energy	**TVD Reference:**	RKB = 31' @ 3037.00usft
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 31' @ 3037.00usft
Site:	Corral Canyon 9-4 Fed	**North Reference:**	Grid
Well:	#161H	**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)
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,483.00	0.00	0.00	5,483.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,720.00	0.00	0.00	5,720.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	1.60	355.53	5,799.99	1.11	-0.09	1.11	2.00	2.00	0.00
5,900.00	3.60	355.53	5,899.88	5.64	-0.44	5.64	2.00	2.00	0.00
5,970.13	5.00	355.53	5,969.82	10.88	-0.85	10.88	2.00	2.00	0.00
6,000.00	5.00	355.53	5,999.57	13.48	-1.05	13.48	0.00	0.00	0.00
6,100.00	5.00	355.53	6,099.19	22.17	-1.73	22.18	0.00	0.00	0.00
6,200.00	5.00	355.53	6,198.81	30.86	-2.41	30.87	0.00	0.00	0.00
6,300.00	5.00	355.53	6,298.43	39.56	-3.09	39.57	0.00	0.00	0.00
6,400.00	5.00	355.53	6,398.04	48.25	-3.77	48.27	0.00	0.00	0.00
6,500.00	5.00	355.53	6,497.66	56.94	-4.45	56.96	0.00	0.00	0.00
6,503.35	5.00	355.53	6,501.00	57.24	-4.47	57.25	0.00	0.00	0.00
Basal Brushy									
6,600.00	5.00	355.53	6,597.28	65.64	-5.13	65.66	0.00	0.00	0.00
6,700.00	5.00	355.53	6,696.90	74.33	-5.81	74.36	0.00	0.00	0.00
6,744.27	5.00	355.53	6,741.00	78.18	-6.11	78.20	0.00	0.00	0.00
Bone Spring									
6,766.35	5.00	355.53	6,763.00	80.10	-6.26	80.13	0.00	0.00	0.00
Bone Spring Lime									
6,800.00	5.00	355.53	6,796.52	83.03	-6.49	83.05	0.00	0.00	0.00
6,900.00	5.00	355.53	6,896.14	91.72	-7.17	91.75	0.00	0.00	0.00
6,912.91	5.00	355.53	6,909.00	92.84	-7.26	92.87	0.00	0.00	0.00
Upper Avalon									
7,000.00	5.00	355.53	6,995.76	100.41	-7.85	100.44	0.00	0.00	0.00
7,100.00	5.00	355.53	7,095.38	109.11	-8.53	109.14	0.00	0.00	0.00
7,200.00	5.00	355.53	7,195.00	117.80	-9.21	117.84	0.00	0.00	0.00
7,300.00	5.00	355.53	7,294.62	126.49	-9.89	126.53	0.00	0.00	0.00
7,344.55	5.00	355.53	7,339.00	130.37	-10.19	130.41	0.00	0.00	0.00
Lower Avalon Shale									
7,400.00	5.00	355.53	7,394.24	135.19	-10.57	135.23	0.00	0.00	0.00
7,500.00	5.00	355.53	7,493.85	143.88	-11.25	143.93	0.00	0.00	0.00
7,598.52	5.00	355.53	7,592.00	152.45	-11.92	152.49	0.00	0.00	0.00
1st Bone Springs Lime									
7,600.00	5.00	355.53	7,593.47	152.58	-11.93	152.62	0.00	0.00	0.00
7,677.82	5.00	355.53	7,671.00	159.34	-12.45	159.39	0.00	0.00	0.00
1st Bone Springs Sand									
7,700.00	5.00	355.53	7,693.09	161.27	-12.60	161.32	0.00	0.00	0.00
7,800.00	5.00	355.53	7,792.71	169.96	-13.28	170.01	0.00	0.00	0.00
7,900.00	5.00	355.53	7,892.33	178.66	-13.96	178.71	0.00	0.00	0.00
7,945.84	5.00	355.53	7,938.00	182.64	-14.28	182.70	0.00	0.00	0.00

Database:	EDM 5000.1.13 Single User Db	**Local Co-ordinate Reference:**	Well #161H
Company:	XTO Energy	**TVD Reference:**	RKB = 31' @ 3037.00usft
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 31' @ 3037.00usft
Site:	Corral Canyon 9-4 Fed	**North Reference:**	Grid
Well:	#161H	**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)
2nd Bone Springs Lime									
8,000.00	5.00	355.53	7,991.95	187.35	-14.64	187.41	0.00	0.00	0.00
8,100.00	5.00	355.53	8,091.57	196.04	-15.32	196.10	0.00	0.00	0.00
8,200.00	5.00	355.53	8,191.19	204.74	-16.00	204.80	0.00	0.00	0.00
8,300.00	5.00	355.53	8,290.81	213.43	-16.68	213.50	0.00	0.00	0.00
8,400.00	5.00	355.53	8,390.43	222.13	-17.36	222.19	0.00	0.00	0.00
8,450.77	5.00	355.53	8,441.00	226.54	-17.71	226.61	0.00	0.00	0.00
2nd Bone Springs Sand									
8,500.00	5.00	355.53	8,490.05	230.82	-18.04	230.89	0.00	0.00	0.00
8,600.00	5.00	355.53	8,589.66	239.51	-18.72	239.59	0.00	0.00	0.00
8,700.00	5.00	355.53	8,689.28	248.21	-19.40	248.28	0.00	0.00	0.00
8,747.90	5.00	355.53	8,737.00	252.37	-19.72	252.45	0.00	0.00	0.00
3rd Bone Springs Lime									
8,800.00	5.00	355.53	8,788.90	256.90	-20.08	256.98	0.00	0.00	0.00
8,900.00	5.00	355.53	8,888.52	265.59	-20.76	265.67	0.00	0.00	0.00
9,000.00	5.00	355.53	8,988.14	274.29	-21.44	274.37	0.00	0.00	0.00
9,100.00	5.00	355.53	9,087.76	282.98	-22.12	283.07	0.00	0.00	0.00
9,200.00	5.00	355.53	9,187.38	291.67	-22.80	291.76	0.00	0.00	0.00
9,300.00	5.00	355.53	9,287.00	300.37	-23.48	300.46	0.00	0.00	0.00
9,400.00	5.00	355.53	9,386.62	309.06	-24.16	309.16	0.00	0.00	0.00
9,500.00	5.00	355.53	9,486.24	317.76	-24.84	317.85	0.00	0.00	0.00
9,574.05	5.00	355.53	9,560.00	324.19	-25.34	324.29	0.00	0.00	0.00
3rd Bone Springs Sand									
9,600.00	5.00	355.53	9,585.86	326.45	-25.51	326.55	0.00	0.00	0.00
9,700.00	5.00	355.53	9,685.47	335.14	-26.19	335.25	0.00	0.00	0.00
9,800.00	5.00	355.53	9,785.09	343.84	-26.87	343.94	0.00	0.00	0.00
9,900.00	5.00	355.53	9,884.71	352.53	-27.55	352.64	0.00	0.00	0.00
9,946.47	5.00	355.53	9,931.00	356.57	-27.87	356.68	0.00	0.00	0.00
Wolfcamp									
9,960.52	5.00	355.53	9,945.00	357.79	-27.96	357.90	0.00	0.00	0.00
Wolfcamp X									
10,000.00	5.00	355.53	9,984.33	361.22	-28.23	361.33	0.00	0.00	0.00
10,037.81	5.00	355.53	10,022.00	364.51	-28.49	364.62	0.00	0.00	0.00
Wolfcamp Y									
10,080.98	5.00	355.53	10,065.00	368.26	-28.78	368.38	0.00	0.00	0.00
Wolfcamp A									
10,100.00	5.00	355.53	10,083.95	369.92	-28.91	370.03	0.00	0.00	0.00
10,200.00	5.00	355.53	10,183.57	378.61	-29.59	378.73	0.00	0.00	0.00
10,300.00	5.00	355.53	10,283.19	387.31	-30.27	387.42	0.00	0.00	0.00
10,382.12	5.00	355.53	10,365.00	394.45	-30.83	394.57	0.00	0.00	0.00
Wolfcamp B									
10,406.12	5.00	355.53	10,388.90	396.53	-30.99	396.65	0.00	0.00	0.00
10,450.00	9.38	357.53	10,432.43	402.02	-31.30	402.14	10.00	9.99	4.55
10,500.00	14.38	358.32	10,481.34	412.30	-31.65	412.43	10.00	9.99	1.60
10,550.00	19.38	358.72	10,529.17	426.81	-32.02	426.94	10.00	10.00	0.78
10,588.46	23.23	358.91	10,565.00	440.78	-32.31	440.91	10.00	10.00	0.49
Wolfcamp C									
10,600.00	24.38	358.95	10,575.56	445.44	-32.40	445.56	10.00	10.00	0.40
10,650.00	29.38	359.11	10,620.14	468.03	-32.78	468.16	10.00	10.00	0.32
10,700.00	34.38	359.23	10,662.58	494.43	-33.16	494.56	10.00	10.00	0.23
10,750.00	39.38	359.32	10,702.57	524.42	-33.54	524.55	10.00	10.00	0.18
10,800.00	44.38	359.39	10,739.78	557.79	-33.91	557.92	10.00	10.00	0.15

Database:	EDM 5000.1.13 Single User Db	**Local Co-ordinate Reference:**	Well #161H
Company:	XTO Energy	**TVD Reference:**	RKB = 31' @ 3037.00usft
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 31' @ 3037.00usft
Site:	Corral Canyon 9-4 Fed	**North Reference:**	Grid
Well:	#161H	**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)
10,837.94	48.17	359.44	10,766.00	585.20	-34.19	585.33	10.00	10.00	0.12
Wolfcamp D									
10,850.00	49.38	359.45	10,773.95	594.27	-34.28	594.40	10.00	10.00	0.11
10,900.00	54.38	359.50	10,804.81	633.59	-34.64	633.72	10.00	10.00	0.10
10,950.00	59.38	359.55	10,832.12	675.45	-34.99	675.58	10.00	10.00	0.09
11,000.00	64.38	359.59	10,855.68	719.53	-35.32	719.67	10.00	10.00	0.08
11,050.00	69.38	359.63	10,875.31	765.50	-35.63	765.64	10.00	10.00	0.08
11,100.00	74.38	359.67	10,890.85	813.00	-35.92	813.14	10.00	10.00	0.07
11,150.00	79.38	359.70	10,902.20	861.68	-36.19	861.82	10.00	10.00	0.07
11,200.00	84.38	359.73	10,909.27	911.16	-36.44	911.30	10.00	10.00	0.07
11,250.00	89.38	359.76	10,911.99	961.07	-36.65	961.21	10.00	10.00	0.06
11,261.23	90.50	359.77	10,912.00	972.30	-36.70	972.44	10.00	10.00	0.06
LP									
11,300.00	90.50	359.77	10,911.66	1,011.07	-36.85	1,011.21	0.00	0.00	0.00
11,400.00	90.50	359.77	10,910.79	1,111.07	-37.25	1,111.21	0.00	0.00	0.00
11,500.00	90.50	359.77	10,909.92	1,211.06	-37.65	1,211.20	0.00	0.00	0.00
11,600.00	90.50	359.77	10,909.04	1,311.06	-38.05	1,311.20	0.00	0.00	0.00
11,700.00	90.50	359.77	10,908.17	1,411.05	-38.45	1,411.19	0.00	0.00	0.00
11,800.00	90.50	359.77	10,907.30	1,511.05	-38.84	1,511.19	0.00	0.00	0.00
11,900.00	90.50	359.77	10,906.43	1,611.04	-39.24	1,611.19	0.00	0.00	0.00
12,000.00	90.50	359.77	10,905.55	1,711.04	-39.64	1,711.18	0.00	0.00	0.00
12,100.00	90.50	359.77	10,904.68	1,811.03	-40.04	1,811.18	0.00	0.00	0.00
12,200.00	90.50	359.77	10,903.81	1,911.03	-40.44	1,911.18	0.00	0.00	0.00
12,300.00	90.50	359.77	10,902.94	2,011.02	-40.83	2,011.17	0.00	0.00	0.00
12,400.00	90.50	359.77	10,902.06	2,111.02	-41.23	2,111.17	0.00	0.00	0.00
12,500.00	90.50	359.77	10,901.19	2,211.02	-41.63	2,211.16	0.00	0.00	0.00
12,600.00	90.50	359.77	10,900.32	2,311.01	-42.03	2,311.16	0.00	0.00	0.00
12,700.00	90.50	359.77	10,899.44	2,411.01	-42.43	2,411.16	0.00	0.00	0.00
12,800.00	90.50	359.77	10,898.57	2,511.00	-42.82	2,511.15	0.00	0.00	0.00
12,900.00	90.50	359.77	10,897.70	2,611.00	-43.22	2,611.15	0.00	0.00	0.00
13,000.00	90.50	359.77	10,896.83	2,710.99	-43.62	2,711.15	0.00	0.00	0.00
13,100.00	90.50	359.77	10,895.95	2,810.99	-44.02	2,811.14	0.00	0.00	0.00
13,200.00	90.50	359.77	10,895.08	2,910.98	-44.42	2,911.14	0.00	0.00	0.00
13,300.00	90.50	359.77	10,894.21	3,010.98	-44.81	3,011.13	0.00	0.00	0.00
13,400.00	90.50	359.77	10,893.34	3,110.97	-45.21	3,111.13	0.00	0.00	0.00
13,500.00	90.50	359.77	10,892.46	3,210.97	-45.61	3,211.13	0.00	0.00	0.00
13,600.00	90.50	359.77	10,891.59	3,310.96	-46.01	3,311.12	0.00	0.00	0.00
13,700.00	90.50	359.77	10,890.72	3,410.96	-46.41	3,411.12	0.00	0.00	0.00
13,800.00	90.50	359.77	10,889.85	3,510.96	-46.80	3,511.11	0.00	0.00	0.00
13,900.00	90.50	359.77	10,888.97	3,610.95	-47.20	3,611.11	0.00	0.00	0.00
14,000.00	90.50	359.77	10,888.10	3,710.95	-47.60	3,711.11	0.00	0.00	0.00
14,100.00	90.50	359.77	10,887.23	3,810.94	-48.00	3,811.10	0.00	0.00	0.00
14,200.00	90.50	359.77	10,886.35	3,910.94	-48.39	3,911.10	0.00	0.00	0.00
14,300.00	90.50	359.77	10,885.48	4,010.93	-48.79	4,011.10	0.00	0.00	0.00
14,400.00	90.50	359.77	10,884.61	4,110.93	-49.19	4,111.09	0.00	0.00	0.00
14,500.00	90.50	359.77	10,883.74	4,210.92	-49.59	4,211.09	0.00	0.00	0.00
14,600.00	90.50	359.77	10,882.86	4,310.92	-49.99	4,311.08	0.00	0.00	0.00
14,700.00	90.50	359.77	10,881.99	4,410.91	-50.38	4,411.08	0.00	0.00	0.00
14,800.00	90.50	359.77	10,881.12	4,510.91	-50.78	4,511.08	0.00	0.00	0.00
14,900.00	90.50	359.77	10,880.25	4,610.90	-51.18	4,611.07	0.00	0.00	0.00
15,000.00	90.50	359.77	10,879.37	4,710.90	-51.58	4,711.07	0.00	0.00	0.00
15,100.00	90.50	359.77	10,878.50	4,810.90	-51.98	4,811.07	0.00	0.00	0.00
15,200.00	90.50	359.77	10,877.63	4,910.89	-52.37	4,911.06	0.00	0.00	0.00
15,300.00	90.50	359.77	10,876.76	5,010.89	-52.77	5,011.06	0.00	0.00	0.00

Database:	EDM 5000.1.13 Single User Db	**Local Co-ordinate Reference:**	Well #161H
Company:	XTO Energy	**TVD Reference:**	RKB = 31' @ 3037.00usft
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 31' @ 3037.00usft
Site:	Corral Canyon 9-4 Fed	**North Reference:**	Grid
Well:	#161H	**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)
15,400.00	90.50	359.77	10,875.88	5,110.88	-53.17	5,111.05	0.00	0.00	0.00
15,500.00	90.50	359.77	10,875.01	5,210.88	-53.57	5,211.05	0.00	0.00	0.00
15,600.00	90.50	359.77	10,874.14	5,310.87	-53.97	5,311.05	0.00	0.00	0.00
15,700.00	90.50	359.77	10,873.27	5,410.87	-54.36	5,411.04	0.00	0.00	0.00
15,800.00	90.50	359.77	10,872.39	5,510.86	-54.76	5,511.04	0.00	0.00	0.00
15,900.00	90.50	359.77	10,871.52	5,610.86	-55.16	5,611.04	0.00	0.00	0.00
16,000.00	90.50	359.77	10,870.65	5,710.85	-55.56	5,711.03	0.00	0.00	0.00
16,100.00	90.50	359.77	10,869.77	5,810.85	-55.96	5,811.03	0.00	0.00	0.00
16,200.00	90.50	359.77	10,868.90	5,910.85	-56.35	5,911.02	0.00	0.00	0.00
16,300.00	90.50	359.77	10,868.03	6,010.84	-56.75	6,011.02	0.00	0.00	0.00
16,400.00	90.50	359.77	10,867.16	6,110.84	-57.15	6,111.02	0.00	0.00	0.00
16,500.00	90.50	359.77	10,866.28	6,210.83	-57.55	6,211.01	0.00	0.00	0.00
16,600.00	90.50	359.77	10,865.41	6,310.83	-57.95	6,311.01	0.00	0.00	0.00
16,700.00	90.50	359.77	10,864.54	6,410.82	-58.34	6,411.00	0.00	0.00	0.00
16,800.00	90.50	359.77	10,863.67	6,510.82	-58.74	6,511.00	0.00	0.00	0.00
16,900.00	90.50	359.77	10,862.79	6,610.81	-59.14	6,611.00	0.00	0.00	0.00
17,000.00	90.50	359.77	10,861.92	6,710.81	-59.54	6,710.99	0.00	0.00	0.00
17,100.00	90.50	359.77	10,861.05	6,810.80	-59.94	6,810.99	0.00	0.00	0.00
17,200.00	90.50	359.77	10,860.18	6,910.80	-60.33	6,910.99	0.00	0.00	0.00
17,300.00	90.50	359.77	10,859.30	7,010.79	-60.73	7,010.98	0.00	0.00	0.00
17,400.00	90.50	359.77	10,858.43	7,110.79	-61.13	7,110.98	0.00	0.00	0.00
17,500.00	90.50	359.77	10,857.56	7,210.79	-61.53	7,210.97	0.00	0.00	0.00
17,600.00	90.50	359.77	10,856.68	7,310.78	-61.93	7,310.97	0.00	0.00	0.00
17,700.00	90.50	359.77	10,855.81	7,410.78	-62.32	7,410.97	0.00	0.00	0.00
17,800.00	90.50	359.77	10,854.94	7,510.77	-62.72	7,510.96	0.00	0.00	0.00
17,900.00	90.50	359.77	10,854.07	7,610.77	-63.12	7,610.96	0.00	0.00	0.00
18,000.00	90.50	359.77	10,853.19	7,710.76	-63.52	7,710.96	0.00	0.00	0.00
18,100.00	90.50	359.77	10,852.32	7,810.76	-63.92	7,810.95	0.00	0.00	0.00
18,200.00	90.50	359.77	10,851.45	7,910.75	-64.31	7,910.95	0.00	0.00	0.00
18,300.00	90.50	359.77	10,850.58	8,010.75	-64.71	8,010.94	0.00	0.00	0.00
18,400.00	90.50	359.77	10,849.70	8,110.74	-65.11	8,110.94	0.00	0.00	0.00
18,500.00	90.50	359.77	10,848.83	8,210.74	-65.51	8,210.94	0.00	0.00	0.00
18,544.16	90.50	359.77	10,848.45	8,254.90	-65.68	8,255.10	0.00	0.00	0.00
18,600.00	90.50	359.77	10,847.96	8,310.73	-65.90	8,310.93	0.00	0.00	0.00
18,674.17	90.50	359.77	10,847.31	8,384.90	-66.20	8,385.10	0.00	0.00	0.00

Database:	EDM 5000.1.13 Single User Db	**Local Co-ordinate Reference:**	Well #161H
Company:	XTO Energy	**TVD Reference:**	RKB = 31' @ 3037.00usft
Project:	Eddy County, NM (NAD-27)	**MD Reference:**	RKB = 31' @ 3037.00usft
Site:	Corral Canyon 9-4 Fed	**North Reference:**	Grid
Well:	#161H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

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
CC 9-4 #161H SHL: 2 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	415,818.30	604,289.00	32.1427527	-103.9963892
CC 9-4 #161H PBHL: - plan hits target center - Point	0.00	0.00	10,847.31	8,384.90	-66.20	424,203.20	604,222.80	32.1658032	-103.9965183
CC 9-4 #161H LTP - plan misses target center by 0.18usft at 18544.16usft MD (10848.45 TVD, 8254.90 N, -65.68 E) - Point	0.00	0.00	10,848.45	8,254.90	-65.50	424,073.20	604,223.50	32.1654458	-103.9965174
CC 9-4 #161H FTP - plan hits target center - Point	0.00	0.00	10,912.00	972.30	-36.70	416,790.60	604,252.30	32.1454259	-103.9964979

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
716.00	716.00	Top of Salt			
2,781.00	2,781.00	Base of Salt			
2,970.00	2,970.00	Delaware			
3,851.00	3,851.00	Cherry Canyon			
5,483.00	5,483.00	Brushy Canyon			
6,503.35	6,501.00	Basal Brushy			
6,744.27	6,741.00	Bone Spring			
6,766.35	6,763.00	Bone Spring Lime			
6,912.91	6,909.00	Upper Avalon			
7,344.55	7,339.00	Lower Avalon Shale			
7,598.52	7,592.00	1st Bone Springs Lime			
7,677.82	7,671.00	1st Bone Springs Sand			
7,945.84	7,938.00	2nd Bone Springs Lime			
8,450.77	8,441.00	2nd Bone Springs Sand			
8,747.90	8,737.00	3rd Bone Springs Lime			
9,574.05	9,560.00	3rd Bone Springs Sand			
9,946.47	9,931.00	Wolfcamp			
9,960.52	9,945.00	Wolfcamp X			
10,037.81	10,022.00	Wolfcamp Y			
10,080.98	10,065.00	Wolfcamp A			
10,382.12	10,365.00	Wolfcamp B			
10,588.46	10,565.00	Wolfcamp C			
10,837.94	10,766.00	Wolfcamp D			
11,261.23	10,912.00	LP			

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 11/22/2019

☒ Original Operator & OGRID No.: XTO Energy, Inc [005380]

☐ Amended - Reason for Amendment:

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

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

Well(s)/Production Facility – Name of facility: Corral Canyon Org CTB

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Corral Canyon 9-4 Fed 102H		L-9-25S-29E	2112'FSL & 362'FWL	4500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 9-4 Fed 121H		L-9-25S-29E	2081'FSL & 363'FWL	6500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 9-4 Fed 122H		L-9-25S-29E	2051'FSL & 364'FWL	6500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 9-4 Fed 161H		L-9-25S-29E	2021'FS: & 365'FWL	8500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 9-4 Fed 162H		L-9-25S-29E	1991'FSL & 366'FWL	8500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 124H		C-9-25S-29E	145'FNL & 2130'FWL	6500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 104H		C-9-25S-29E	175'FNL & 2130'FWL	4500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 103H		C-9-25S-29E	205'FNL & 2130'FWL	4500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 164H		C-9-25S-29E	235'FNL & 2130'FWL	8500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 163H		C-9-25S-29E	265'FNL & 2130'FWL	8500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 125H		O-4-25S-29E	170'FSL & 2060'FEL	6500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 105H		O-4-25S-29E	170'FSL & 2030'FEL	4500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 126H		O-4-25S-29E	170'FSL & 1980'FEL	6500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 165H		O-4-25S-29E	70'FSL & 2030'FEL	8500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 166H		O-4-25S-29E	70'FSL & 1980'FEL	8500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 108H		P-4-25S-29E	230'FSL & 460'FEL	4500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 127H		P-4-25S-29E	200'FSL & 460'FEL	6500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 107H		P-4-25S-29E	170'FSL & 460'FEL	4500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 168H		P-4-25S-29E	140'FSL & 460'FEL	8500MCF/D	Flared/Sold	CTB Connected to PL
Corral Canyon 4 Federal 167H		P-4-25S-29E	110'FSL & 460'FEL	8500MCF/D	Flared/Sold	CTB Connected to PL

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Enlink and will be connected to Enlink low/high pressure gathering system located in Loving County, Texas. It will require 0' of pipeline to connect the facility to low/high pressure gathering system. XTO Energy, Inc. provides (periodically) to Enlink a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, XTO Energy, Inc. and Enlink have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Enlink Processing Plant located in Block 27, Section 4, Loving County, Texas. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

10,000 PSI Annular BOP Variance Request

XTO Energy/XTO Permian Op. request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOPL).

1. Component and Preventer Compatibility Tables

The tables below outline the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

8-1/2" Production Hole Section 10M psi Requirement					
Component	**OD**	**Primary Preventer**	**RWP**	**Alternate Preventer(s)**	**RWP**
Drillpipe	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
HWDP	5.000" or 4.500"	Annular	5M	Upper 3.5"-5.5" VBR Lower 3.5"-5.5" VBR	10M 10M
Jars	6.500"	Annular	5M	-	-
DCs and MWD tools	6.500"-8.000"	Annular	5M	-	-
Mud Motor	6.750"-8.000"	Annular	5M	-	-
Production Casing	5-1/2"	Annular	5M	-	-
Open-Hole	-	Blind Rams	10M	-	-

2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the XTO Energy/Permian Operating drilling supervisor's office on location and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

<u>General Procedure While Drilling</u>

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP & SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan

9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full-opening safety valve & close
3. Space out drill string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP & SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Running Production Casing

1. Sound alarm (alert crew)
2. Stab crossover and full-opening safety valve and close
3. Space out string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP & SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams (HCR & choke will already be in the closed position)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
    a. SICP
    b. Pit gain
    c. Time
6. Regroup and identify forward plan

General Procedures While Pulling BHA Through Stack

1. PRIOR to pulling last joint of drillpipe through stack:
    a. Perform flow check. If flowing, continue to (b).
    b. Sound alarm (alert crew)
    c. Stab full-opening safety valve and close
    d. Space out drill string with tool joint just beneath the upper variable bore rams
    e. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
    f. Confirm shut-in
    g. Notify toolpusher/company representative
    h. Read and record the following:
        i. SIDPP & SICP
        ii. Pit gain
        iii. Time
    i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combination immediately available:
    a. Sound alarm (alert crew)
    b. Stab crossover and full-opening safety valve and close
    c. Space out drill string with upset just beneath the upper variable bore rams
    d. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
    e. Confirm shut-in
    f. Notify toolpusher/company representative
    g. Read and record the following:
        i. SIDPP & SICP

    ii. Pit gain
    iii. Time
h. Regroup and identify forward plan

3. With BHA in the stack and NO compatible ram preventer and pipe combination immediately available:
    a. Sound alarm (alert crew)
    b. If possible, pull string clear of the stack and follow "Open Hole" procedure.
    c. If impossible to pull string clear of the stack:
    d. Stab crossover, make up one joint/stand of drillpipe and full-opening safety valve and close
    e. Space out drill string with tooljoint just beneath the upper variable bore ram
    f. Shut-in using upper variable bore ram (HCR & choke will already be in the closed position)
    g. Confirm shut-in
    h. Notify toolpusher/company representative
    i. Read and record the following:
        i. SIDPP & SICP
        ii. Pit gain
        iii. Time
    j. Regroup and identify forward plan