

Well Name: CAT LANTA 16 4 FED COM	Well Location: T23S / R31E / SEC 16 / SWSW / 32.2982077 / -103.7887451	County or Parish/State: EDDY / NM
Well Number: 711H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM77046	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001555542	Operator: DEVON ENERGY PRODUCTION COMPANY LP	

Notice of Intent

Sundry ID: 2881531

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 11/05/2025

Time Sundry Submitted: 09:53

Date proposed operation will begin: 11/26/2025

Procedure Description: Devon Energy Production Company LP (Devon) respectfully requests to change the SHL location and BHL Locations. Devon is also requesting an offline cementing and bop testing variances on the subject well. Attached are the updated well plat and drilling plan. OLD SHL: SWSW Section 16-T23S-31E 360 FSL and 799 FWL New SHL: SWSW Section 16-T23S-31E 210 FSL and 959 FWL OLD BHL: Lot 4 Section 4-T23S-31E 20 FNL and 835 FWL New BHL: Lot 4 Section 4-T23S-313 20 FNL and 832 FWL

NOI Attachments

Procedure Description

Break_Test_Variance_Offline_BOP_2_3_2025_20251105095312.pdf

Offline_Cementing___Variance_Request_20251105095300.pdf

WA022380622_CAT_LANTA_16_4_FED_COM_711H_WL_R3_Signed_20251105095205.pdf

CAT_LANTA_16_4_FED_COM_711H_Directional_Plan_10_15_25_20251105095204.pdf

CAT_LANTA_16_4_FED_COM_711H_10_15_2025_20251105095205.pdf

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Operator: DEVON ENERGY PRODUCTION COMPANY LP

Conditions of Approval

Additional

Sundry_ID_2881531_20251203124405.pdf

Cat_Lanta_16_4_Fed_Com_711H_Dr_COA_20251203124405.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: LAUREN WATSON

Signed on: NOV 05, 2025 09:53 AM

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Compliance Professional

Street Address: 333 W. SHERIDAN AVE.

City: OKLAHOMA CITY State: OK

Phone: (405) 552-3379

Email address: LAUREN.WATSON@DVN.COM

Field

Representative Name:

Street Address:

City: State: Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: CWALLS@BLM.GOV

Disposition: Approved

Disposition Date: 12/03/2025

Signature: Chris Walls

Form 3160-5
(October 2024)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0220
Expires: October 31, 2027

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2		5. Lease Serial No.
1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator		7. If Unit of CA/Agreement, Name and/or No.
3a. Address	3b. Phone No. (include area code)	8. Well Name and No.
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		9. API Well No.
		10. Field and Pool or Exploratory Area
		11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)	
	Title
Signature	Date

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by		
	Title	Date
Conditions of approval, if any, are attached. Approval of this notice 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.		Office

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

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

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Information

Location of Well

0. SHL: SWSW / 360 FSL / 799 FWL / TWSP: 23S / RANGE: 31E / SECTION: 16 / LAT: 32.2982077 / LONG: -103.7887451 (TVD: 0 feet, MD: 0 feet)

PPP: SWSW / 100 FSL / 845 FWL / TWSP: 23S / RANGE: 31E / SECTION: 16 / LAT: 32.297493 / LONG: -103.7885968 (TVD: 11760 feet, MD: 11883 feet)

PPP: SWSW / 1 FSL / 845 FWL / TWSP: 23S / RANGE: 31E / SECTION: 9 / LAT: 32.3117378 / LONG: -103.7886162 (TVD: 11760 feet, MD: 11883 feet)

BHL: LOT 4 / 20 FNL / 845 FWL / TWSP: 23S / RANGE: 31E / SECTION: 4 / LAT: 32.3406956 / LONG: -103.7886313 (TVD: 12045 feet, MD: 22340 feet)

CONFIDENTIAL

Sundry ID 2881531.xlsm

Cat Lanta 16 4 Fed Com 711H

13 3/8		surface csg in a		17 1/2		inch hole.		Design Factors				Surface	
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	54.50		j 55	btc	21.96	3.39	1.23	713	9	2.06	6.40	38,859	
"B"				btc				0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500								Totals:	713			38,859	
Comparison of Proposed to Minimum Required Cement Volumes Tail Cmt does not circ to sfc.													
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg	
17 1/2	0.6946	440	634	495	28	9.00	1323	2M				1.56	

The plot (pipe rack) 3 or E1 as per D.3.1.3(D.4), not found

10 3/4		casing inside the		13 3/8		Design Factors				Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	45.50		j 55	btc scc	2.74	0.94	0.7	4,065	2	1.32	1.58	184,958
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 732								Totals:	4,065			184,958
The cement volume(s) are intended to achieve a top of 0 ft from surface or a 713 overlap.												
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
12 1/4	0.1882	369	1022	800	28	10.50	2718	3M				0.50
D V Tool(s):								sum of sx	Σ CuFt			Σ%excess
t by stage % :								#VALUE!	#VALUE!	369	1022	28
Class 'C' tail cmt yld > 1.35												
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.88, b, c, d All > 0.70, OK.												

8 5/8		casing inside the		10 3/4		Design Factors				Int 2		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	32.00		p 110	mo-flx	2.25	0.84	0.98	10,982	1	1.65	1.58	351,424
"B"								0				0
"C"								0				0
"D"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: -417								Totals:	10,982			351,424
The cement volume(s) are intended to achieve a top of 3565 ft from surface or a 500 overlap.												
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
9 7/8	0.1261	257	370	940	-61	9.00	3788	5M				0.63
Setting Depths for D V Tool(s):								sum of sx	Σ CuFt			Σ%excess
% excess cmt by stage:								0	16	715	1030	10
Class 'C' tail cmt yld > 1.35												
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.57, b, c, d < 0.70 OK												

5 1/2		casing inside the		8 5/8		Design Factors				Prod 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	20.00		p 110	cdc-htq	2.75	1.92	1.99	27,176	2	3.34	3.22	543,520
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,561								Totals:	27,176			543,520
The cement volume(s) are intended to achieve a top of 10482 ft from surface or a 500 overlap.												
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
7 7/8	0.1733	2247	3450	2894	19	10.50						0.79
Class 'H' tail cmt yld > 1.20												
Capitan Reef est top XXXX.												

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMNM77046
LOCATION:	Section 16, T.23 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico ▼

WELL NAME & NO.:	Cat Lanta 16 4 Fed Com 711H
BOTTOM HOLE FOOTAGE	
ATS/API ID:	3001555542
APD ID:	10400096848
Sundry ID:	2881531

COA

H2S	No ▼		
Potash	R-111-Q ▼	Figure D ▼	
Cave/Karst Potential	Low ▼		
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Other
Wellhead	Conventional and Multibowl ▼		
Other	<input checked="" type="checkbox"/> 4 String	Capitan Reef None ▼	<input type="checkbox"/> WIPP
Other	Pilot Hole None ▼	<input checked="" type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze None ▼	Echo-Meter Int 2 ▼	Primary Cement Squeeze None ▼
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry	Waste Prevention None ▼	
Special Requirements Variance	<input checked="" type="checkbox"/> Break Testing	<input checked="" type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

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 **43 CFR part 3170 Subpart 3176**, 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 **713 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
 - 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 **10-3/4** inch intermediate casing shall be set at approximately **4065 feet** is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

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

3. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:
 - The top of cement in the annulus between the 1st intermediate and the 2nd intermediate casing strings shall stand un-cemented at least **500 feet** below the 1st intermediate shoe. Zero percent excess shall be pumped on the production cement slurry. **(257 sxs)**
 - After hydraulic fracturing operations have been concluded and no longer than 180 days after the well is brought online, the operator shall bradenhead cement at least **500 feet** tie-back into the previous casing but not higher than USGS Marker Bed No. 126. **(Squeeze 458 sxs Class C and 85 bbls Displacement Fluid)**
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed to pump down **10-3/4" X 8-5/8"** annulus post completion. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore. Report the amount of fluid utilized to pump the cement slurry and the calculated top of cement slurry to the BLM. Operator may conduct a negative and positive pressure test during completion to remediate sustained casing pressure and ensure cement tie-back requirement.

Operator has proposed an open annulus completion in R-111-Q. Submit results to the BLM. Pressure monitoring device and Pressure Safety Valves must be installed at surface on the 10-3/4" x 8 5/8" annulus for the life of the well.

In the event of a casing failure during completion, the operator must contact the BLM at (575-706-2779) and (575-361-2822 Eddy County).

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. Operator must run a CBL from TD of the production casing to surface to verify top of cement. Submit results to the BLM.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

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.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi. Annular which shall be tested to 2100 (70% Working Pressure) psi.**
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **10-3/4** intermediate casing shoe shall be **5000 (5M) psi. Annular which shall be tested to 3500 (70% Working Pressure) psi.**
- c. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8** inch intermediate casing shoe shall be **5000 (5M) psi.**

Option 2:

- a. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi.**
 - 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 43 CFR 3172.6(b)(9) must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

BOPE Break Testing Variance (Approved)

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted **(575-361-2822 Eddy County)** 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at **21-day** intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR part 3170 Subpart 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Operator has been **(Approved)** to pump the proposed cement program offline in the **Intermediate(s) interval**.

Offline cementing should commence within 24 hours of landing the casing for the interval.

Notify the BLM 4hrs prior to cementing offline at **Eddy County: 575-361-2822**.

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

EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

BLM_NM_CFO_DrillingNotifications@BLM.GOV

(575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** 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.

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 of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

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 43 CFR 3172.6(b)(9) 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 cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 8 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 **43 CFR part 3170 Subpart 3172**.

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.

Long Vo (LVO) 12/3/2025

Section 2 - Blowout Preventer Testing Procedure

Variance Request

Devon Energy requests to only test BOP connection breaks after drilling out of surface casing and while skidding between wells which conforms to API Standard 53 and industry standards. The initial BOP test will follow 43 CFR 3172, and subsequent tests following a skid will only test connections that are broken. This test will at minimum include the Top Pipe Ram, HCR, Kill Line Check Valve, QDC (quick disconnect to wellhead) and BOP shell of the 10M BOPE to 5M for 10 minutes. Additional pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. If a break to the flex hose that runs to the choke manifold is required due to repositioning from a skid, the HCR will remain open during the shell test to include that additional break. The variance only pertains to intermediate hole-sections. This variance will meet or exceed 43 CFR 3172 per the following: Devon Energy will perform a full BOP test per 43 CFR 3172 before drilling out of the intermediate casing string(s) and starting the production hole, testing the Annular during initial BOP testing to a minimum of 70% RWP and higher than MASP, and pressure testing at a 21-day interval frequency. The BLM will be contacted 4hrs prior to a BOPE test. The BLM will be notified if and when a well control event is encountered. In the event break testing is not utilized, then a full BOPE test would be conducted.

Devon Energy requests to perform offline BOP stump testing and offline BOPE testing. All pressure-containing and pressure-controlling seals will be tested either online or offline as denoted in the table below and per BLM approval during initial BOP test following test pressure requirements set forth in 43 CFR 3172. Remaining components not tested offline or on the stump will be tested within 72-hours when the BOP is connected to the wellhead. If stump testing exceeds 72-hour window prior to connecting to the wellhead, the BLM will be notified and either stump testing restarted, or the BOP being tested online. The BLM will be contacted 4hrs prior to a BOPE test. The BLM will be notified if and when a well control event is encountered. In the event stump testing is not utilized, then a full BOPE test would be conducted.

Components	Offline	Offline, BOPE	Break	Online
Upper Rams		X	X	X
Blind Rams		X		X
Lower Rams				X
Outside Kill Valve		X	X	X
Inside Kill Valve		X	X	X
Kill Line Check Valve		X	X	X
Inside Choke Valve		X	X	X
HCR		X	X	X
Kill Line	X			X
Annular		X		X
Choke Manifold Valves and Hose	X			X
Mudline (Mud Pumps, Rig Floor Valves, Kelly Hose, Mud Line)	X			X
Standpipe Valve	X			X
IBOP (Upper and Lower)	X			X

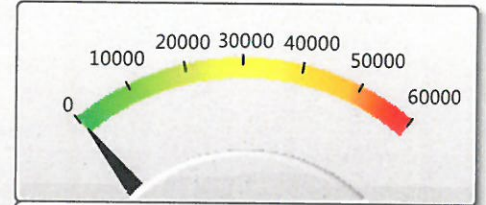
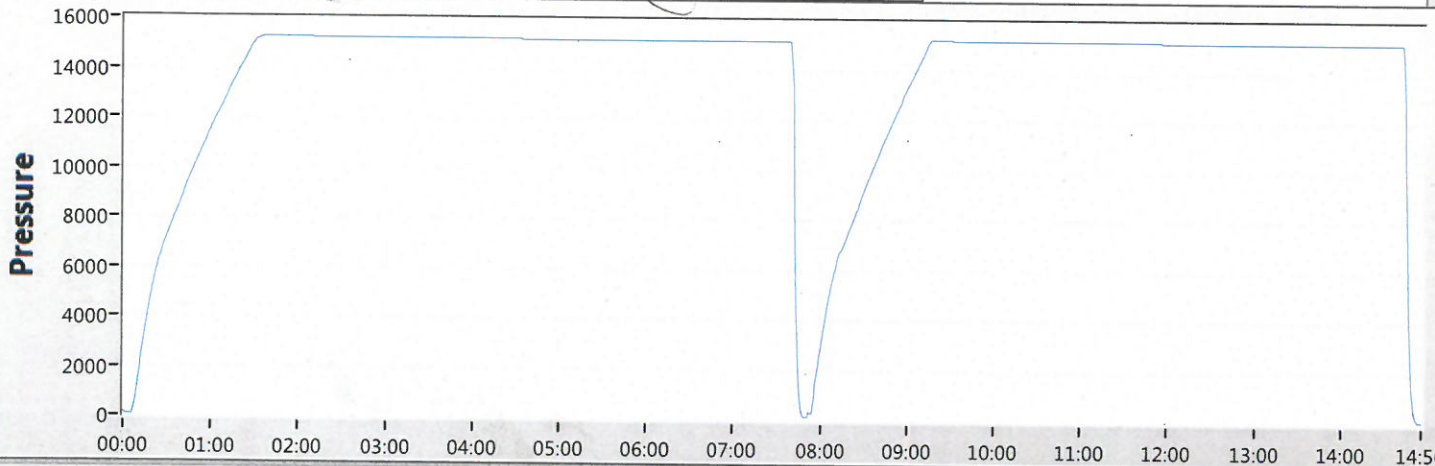
Devon requests offline BOPE testing for the following components: Upper Rams, Blind Rams, Kill Valves, Choke Valves, and Annular
 Remaining well control equipment components will either be tested offline or online, per BLM approval
 Remaining BOPE will be tested online within 72-hours form completing the offline BOPE component testing
 Notify the BLM if the online BOPE testing exceeds 72-hours
 All Full Tests not completed "Offline" or "Offline, BOPE" are required to be complete Online
 Devon requests Break testing as stated above for 5K tests, not including production hole
 Annular Preventer will be tested to minimum of 70% RWP and higher than MASP during initial BOP test
 Pressure testing is required for pressure-containing connections if the integrity of a pressure seal is broken during a break test
 Full Tests required when entering production hole

Cactus
Wellhead

2-9-17
E Bell

80.7 °F

15:49



50

Date 02-09-17

Tested By E.BELL

Transducer bay2

Transducer Serial 181504

Calibration Date 9/6/15

Job#	Part#	Serial#	Description	Test Pressure
1	TRJ0006341-0007 116966	TRJ6341-7-1	ADPT,DRLG,CW,MBU-3T,13-5/8 10M	15000
2				
3				
4				
5			TRANSDUCER CALIBRATION DUE 03/13/2017	
6				
7				
8				

Start Stop Zero Config Save Print EXIT

Offline Cementing

Variance Request

Devon Energy requests to offline cement on intermediate strings that are set in formations shallower than the Wolfcamp. Prior to commencing offline cementing operations, the well will be monitored for any abnormal pressures and confirmed to be static. A dual manifold system (equipped with chokes) for the returns will also be utilized as a redundancy. All equipment used for offline cementing will have a minimum 5M rating to match intermediate sections' 5M BOPE requirements.

ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.

CAT LANTA 16 4 FED COM 711H

SURFACE HOLE LOCATION
 210' FSL & 959' FWL
 ELEV. = 3,358'
 NAD 83 X = 709,766.60'
 NAD 83 Y = 472,498.70'
 NAD 83 LAT = 32.297356°
 NAD 83 LONG = -103.788227°

KICK-OFF POINT
 50' FSL & 832' FWL
 NAD 83 X = 709,640.22'
 NAD 83 Y = 472,338.01'
 NAD 83 LAT = 32.297356°
 NAD 83 LONG = -103.788639°

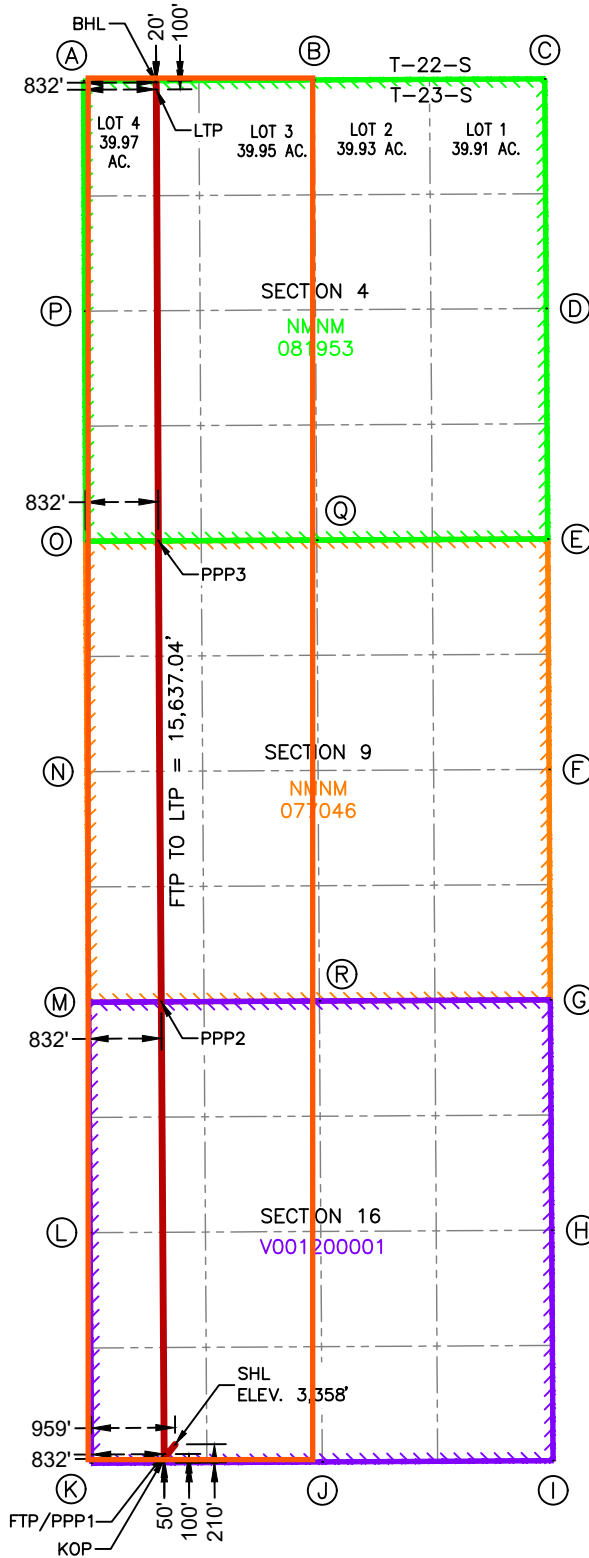
FIRST TAKE POINT & PENETRATION POINT 1
 100' FSL & 832' FWL
 NAD 83 X = 709,639.91'
 NAD 83 Y = 472,388.01'
 NAD 83 LAT = 32.297493°
 NAD 83 LONG = -103.788639°

PENETRATION POINT 2
 0' FSL & 832' FWL
 NAD 83 X = 709,607.57'
 NAD 83 Y = 477,570.11'
 NAD 83 LAT = 32.311738°
 NAD 83 LONG = -103.788658°

PENETRATION POINT 3
 0' FNL & 832' FWL
 NAD 83 X = 709,573.98'
 NAD 83 Y = 482,852.03'
 NAD 83 LAT = 32.326257°
 NAD 83 LONG = -103.788680°

LAST TAKE POINT
 100' FNL & 832' FWL
 NAD 83 X = 709,549.73'
 NAD 83 Y = 488,024.79'
 NAD 83 LAT = 32.340476°
 NAD 83 LONG = -103.788674°

BOTTOM HOLE LOCATION
 20' FNL & 832' FWL
 NAD 83 X = 709,549.36'
 NAD 83 Y = 488,104.79'
 NAD 83 LAT = 32.340696°
 NAD 83 LONG = -103.788673°



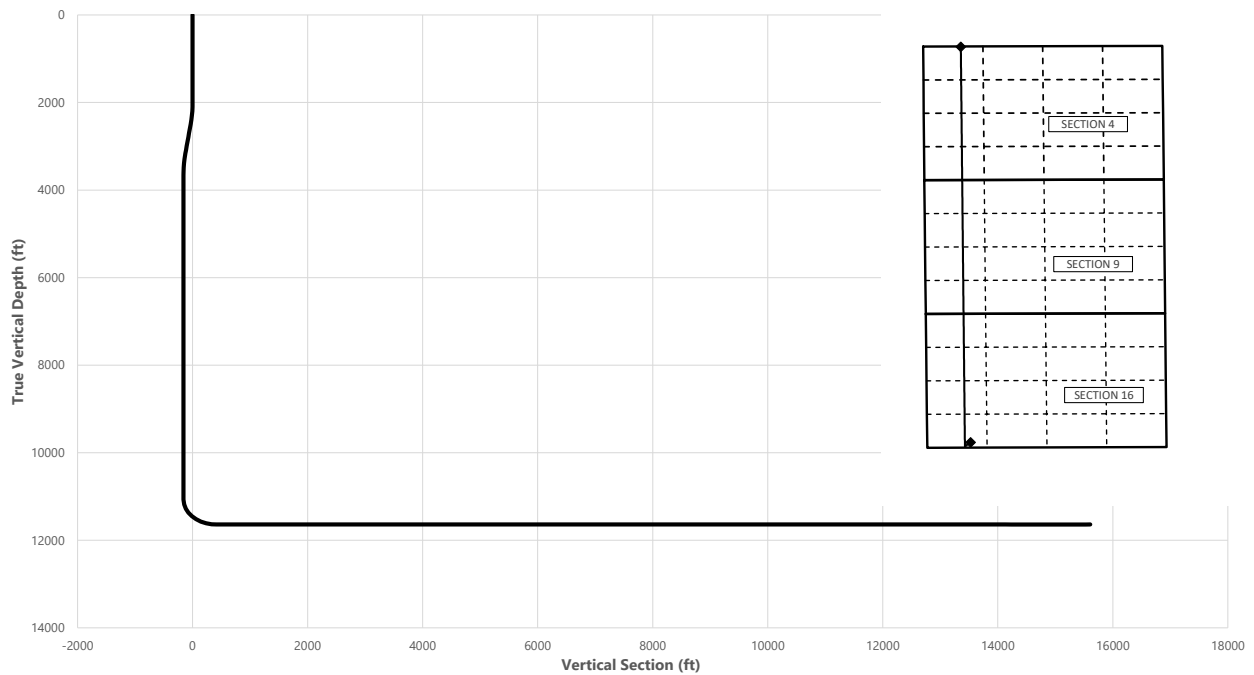
CORNER COORDINATES NEW MEXICO EAST - NAD 83	
A	IRON PIPE W/BRASS CAP N:488,120.90' E:708,717.27'
B	CALCULATED CORNER N:488,133.25' E:711,359.00'
C	IRON PIPE W/BRASS CAP N:488,145.60' E:714,000.73'
D	IRON PIPE W/BRASS CAP N:485,514.41' E:714,017.98'
E	IRON PIPE W/BRASS CAP N:482,873.50' E:714,035.79'
F	CALCULATED CORNER N:480,233.33' E:714,050.21'
G	IRON PIPE W/BRASS CAP N:477,593.16' E:714,064.63'
H	IRON PIPE W/BRASS CAP N:474,953.23' E:714,080.51'
I	IRON PIPE W/BRASS CAP N:472,312.24' E:714,095.70'
J	IRON PIPE W/BRASS CAP N:472,297.80' E:711,451.12'
K	IRON PIPE W/BRASS CAP N:472,283.52' E:708,808.55'
L	CALCULATED CORNER N:474,924.68' E:708,792.06'
M	IRON PIPE W/BRASS CAP N:477,565.85' E:708,775.58'
N	IRON PIPE W/BRASS CAP N:480,207.58' E:708,757.61'
O	IRON PIPE W/BRASS CAP N:482,848.03' E:708,741.99'
P	CALCULATED CORNER N:485,484.46' E:708,729.63'
Q	CALCULATED CORNER N:482,860.76' E:711,388.89'
R	IRON PIPE W/BRASS CAP N:477,579.39' E:711,419.01'



Well: CAT LANTA 16 4 FED COM 711H
 County: Eddy
 Wellbore: Permit Plan
 Design: Permit Plan #1

Geodetic System: US State Plane 1983
 Datum: North American Datum 1927
 Ellipsoid: Clarke 1866
 Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	218.20	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	218.20	2497.47	-34.20	-26.91	-33.82	2.00	Hold Tangent
3176.07	10.00	218.20	3163.26	-126.46	-99.51	-125.06	0.00	Drop to Vertical
3676.07	0.00	218.20	3660.72	-160.66	-126.43	-158.89	2.00	Hold Vertical
11082.38	0.00	359.67	11067.04	-160.66	-126.43	-158.89	0.00	KOP
11982.38	90.00	359.67	11640.00	412.29	-129.73	414.05	10.00	Landing Point
27176.44	90.00	359.67	11640.00	15606.09	-217.24	15607.60	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	485.00	485.00
Salt	815.00	815.00
Base of Salt	3980.34	3965.00
Delaware	4210.34	4195.00
Cherry Canyon	5110.34	5095.00
Brushy Canyon	6450.34	6435.00
Bone Spring 1st lime	8064.34	8049.00
Bone Spring 1st	8064.34	8049.00
Bone Spring 2nd	9697.34	9682.00
Bone Spring 3rd	10915.34	10900.00
Wolfcamp / Point of Penetration	11407.51	11375.00
exit	27096.44	11640.02

	MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
SHL	0.00	0.00	32.2977	-103.7883	210' FSL, 959' FWL of Sec 16 in T23S, R31E
KOP	11082.38	11067.04	32.2973	-103.7886	50' FSL, 832' FWL of Sec 16 in T23S, R31E
Point of Penetration	11407.51	11375.00	32.2975	-103.7886	100' FSL, 832' FWL of Sec 16 in T23S, R31E
Exit	27096.44	11640.02	32.3405	-103.7887	100' FNL, 832' FWL of Sec 4 in T23S, R31E
BHL	27176.44	11640.00	32.3406	-103.7888	20' FNL, 832' FWL of Sec 4 in T23S, R31E

	Y	X	MD
KOP	472338	709640	11082.38



Well: CAT LANTA 16 4 FED COM 711H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	218.20	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	218.20	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	218.20	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	218.20	400.00	0.00	0.00	0.00	0.00	
485.00	0.00	218.20	485.00	0.00	0.00	0.00	0.00	Rustler
500.00	0.00	218.20	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	218.20	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	218.20	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	218.20	800.00	0.00	0.00	0.00	0.00	
815.00	0.00	218.20	815.00	0.00	0.00	0.00	0.00	Salt
900.00	0.00	218.20	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	218.20	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	218.20	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	218.20	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	218.20	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	218.20	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	218.20	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	218.20	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	218.20	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	218.20	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	218.20	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	218.20	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	218.20	2099.98	-1.37	-1.08	-1.36	2.00	
2200.00	4.00	218.20	2199.84	-5.48	-4.32	-5.42	2.00	
2300.00	6.00	218.20	2299.45	-12.33	-9.71	-12.20	2.00	
2400.00	8.00	218.20	2398.70	-21.91	-17.24	-21.67	2.00	
2500.00	10.00	218.20	2497.47	-34.20	-26.91	-33.82	2.00	Hold Tangent
2600.00	10.00	218.20	2595.95	-47.85	-37.65	-47.32	0.00	
2700.00	10.00	218.20	2694.43	-61.50	-48.39	-60.82	0.00	
2800.00	10.00	218.20	2792.91	-75.14	-59.13	-74.31	0.00	
2900.00	10.00	218.20	2891.39	-88.79	-69.87	-87.81	0.00	
3000.00	10.00	218.20	2989.87	-102.43	-80.61	-101.30	0.00	
3100.00	10.00	218.20	3088.35	-116.08	-91.35	-114.80	0.00	
3176.07	10.00	218.20	3163.26	-126.46	-99.51	-125.06	0.00	Drop to Vertical
3200.00	9.52	218.20	3186.85	-129.65	-102.02	-128.22	2.00	
3300.00	7.52	218.20	3285.74	-141.29	-111.19	-139.73	2.00	
3400.00	5.52	218.20	3385.09	-150.22	-118.21	-148.56	2.00	
3500.00	3.52	218.20	3484.77	-156.41	-123.08	-154.68	2.00	
3600.00	1.52	218.20	3584.67	-159.87	-125.80	-158.10	2.00	
3676.07	0.00	218.20	3660.72	-160.66	-126.43	-158.89	2.00	Hold Vertical
3700.00	0.00	359.67	3684.66	-160.66	-126.43	-158.89	0.00	
3800.00	0.00	359.67	3784.66	-160.66	-126.43	-158.89	0.00	
3900.00	0.00	359.67	3884.66	-160.66	-126.43	-158.89	0.00	
3980.34	0.00	359.67	3965.00	-160.66	-126.43	-158.89	0.00	Base of Salt
4000.00	0.00	359.67	3984.66	-160.66	-126.43	-158.89	0.00	
4100.00	0.00	359.67	4084.66	-160.66	-126.43	-158.89	0.00	
4200.00	0.00	359.67	4184.66	-160.66	-126.43	-158.89	0.00	
4210.34	0.00	359.67	4195.00	-160.66	-126.43	-158.89	0.00	Delaware
4300.00	0.00	359.67	4284.66	-160.66	-126.43	-158.89	0.00	
4400.00	0.00	359.67	4384.66	-160.66	-126.43	-158.89	0.00	
4500.00	0.00	359.67	4484.66	-160.66	-126.43	-158.89	0.00	
4600.00	0.00	359.67	4584.66	-160.66	-126.43	-158.89	0.00	
4700.00	0.00	359.67	4684.66	-160.66	-126.43	-158.89	0.00	
4800.00	0.00	359.67	4784.66	-160.66	-126.43	-158.89	0.00	
4900.00	0.00	359.67	4884.66	-160.66	-126.43	-158.89	0.00	
5000.00	0.00	359.67	4984.66	-160.66	-126.43	-158.89	0.00	
5100.00	0.00	359.67	5084.66	-160.66	-126.43	-158.89	0.00	
5110.34	0.00	359.67	5095.00	-160.66	-126.43	-158.89	0.00	Cherry Canyon
5200.00	0.00	359.67	5184.66	-160.66	-126.43	-158.89	0.00	
5300.00	0.00	359.67	5284.66	-160.66	-126.43	-158.89	0.00	
5400.00	0.00	359.67	5384.66	-160.66	-126.43	-158.89	0.00	
5500.00	0.00	359.67	5484.66	-160.66	-126.43	-158.89	0.00	
5600.00	0.00	359.67	5584.66	-160.66	-126.43	-158.89	0.00	
5700.00	0.00	359.67	5684.66	-160.66	-126.43	-158.89	0.00	
5800.00	0.00	359.67	5784.66	-160.66	-126.43	-158.89	0.00	
5900.00	0.00	359.67	5884.66	-160.66	-126.43	-158.89	0.00	
6000.00	0.00	359.67	5984.66	-160.66	-126.43	-158.89	0.00	
6100.00	0.00	359.67	6084.66	-160.66	-126.43	-158.89	0.00	
6200.00	0.00	359.67	6184.66	-160.66	-126.43	-158.89	0.00	



Well: CAT LANTA 16 4 FED COM 711H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6300.00	0.00	359.67	6284.66	-160.66	-126.43	-158.89	0.00	
6400.00	0.00	359.67	6384.66	-160.66	-126.43	-158.89	0.00	
6450.34	0.00	359.67	6435.00	-160.66	-126.43	-158.89	0.00	Brushy Canyon
6500.00	0.00	359.67	6484.66	-160.66	-126.43	-158.89	0.00	
6600.00	0.00	359.67	6584.66	-160.66	-126.43	-158.89	0.00	
6700.00	0.00	359.67	6684.66	-160.66	-126.43	-158.89	0.00	
6800.00	0.00	359.67	6784.66	-160.66	-126.43	-158.89	0.00	
6900.00	0.00	359.67	6884.66	-160.66	-126.43	-158.89	0.00	
7000.00	0.00	359.67	6984.66	-160.66	-126.43	-158.89	0.00	
7100.00	0.00	359.67	7084.66	-160.66	-126.43	-158.89	0.00	
7200.00	0.00	359.67	7184.66	-160.66	-126.43	-158.89	0.00	
7300.00	0.00	359.67	7284.66	-160.66	-126.43	-158.89	0.00	
7400.00	0.00	359.67	7384.66	-160.66	-126.43	-158.89	0.00	
7500.00	0.00	359.67	7484.66	-160.66	-126.43	-158.89	0.00	
7600.00	0.00	359.67	7584.66	-160.66	-126.43	-158.89	0.00	
7700.00	0.00	359.67	7684.66	-160.66	-126.43	-158.89	0.00	
7800.00	0.00	359.67	7784.66	-160.66	-126.43	-158.89	0.00	
7900.00	0.00	359.67	7884.66	-160.66	-126.43	-158.89	0.00	
8000.00	0.00	359.67	7984.66	-160.66	-126.43	-158.89	0.00	
8064.34	0.00	359.67	8049.00	-160.66	-126.43	-158.89	0.00	Bone Spring 1st lime
8100.00	0.00	359.67	8084.66	-160.66	-126.43	-158.89	0.00	
8200.00	0.00	359.67	8184.66	-160.66	-126.43	-158.89	0.00	
8300.00	0.00	359.67	8284.66	-160.66	-126.43	-158.89	0.00	
8400.00	0.00	359.67	8384.66	-160.66	-126.43	-158.89	0.00	
8500.00	0.00	359.67	8484.66	-160.66	-126.43	-158.89	0.00	
8600.00	0.00	359.67	8584.66	-160.66	-126.43	-158.89	0.00	
8700.00	0.00	359.67	8684.66	-160.66	-126.43	-158.89	0.00	
8800.00	0.00	359.67	8784.66	-160.66	-126.43	-158.89	0.00	
8900.00	0.00	359.67	8884.66	-160.66	-126.43	-158.89	0.00	
9000.00	0.00	359.67	8984.66	-160.66	-126.43	-158.89	0.00	
9100.00	0.00	359.67	9084.66	-160.66	-126.43	-158.89	0.00	
9163.34	0.00	359.67	9148.00	-160.66	-126.43	-158.89	0.00	Bone Spring 1st
9200.00	0.00	359.67	9184.66	-160.66	-126.43	-158.89	0.00	
9300.00	0.00	359.67	9284.66	-160.66	-126.43	-158.89	0.00	
9400.00	0.00	359.67	9384.66	-160.66	-126.43	-158.89	0.00	
9500.00	0.00	359.67	9484.66	-160.66	-126.43	-158.89	0.00	
9600.00	0.00	359.67	9584.66	-160.66	-126.43	-158.89	0.00	
9697.34	0.00	359.67	9682.00	-160.66	-126.43	-158.89	0.00	Bone Spring 2nd
9700.00	0.00	359.67	9684.66	-160.66	-126.43	-158.89	0.00	
9800.00	0.00	359.67	9784.66	-160.66	-126.43	-158.89	0.00	
9900.00	0.00	359.67	9884.66	-160.66	-126.43	-158.89	0.00	
10000.00	0.00	359.67	9984.66	-160.66	-126.43	-158.89	0.00	
10100.00	0.00	359.67	10084.66	-160.66	-126.43	-158.89	0.00	
10200.00	0.00	359.67	10184.66	-160.66	-126.43	-158.89	0.00	
10300.00	0.00	359.67	10284.66	-160.66	-126.43	-158.89	0.00	
10400.00	0.00	359.67	10384.66	-160.66	-126.43	-158.89	0.00	
10500.00	0.00	359.67	10484.66	-160.66	-126.43	-158.89	0.00	
10600.00	0.00	359.67	10584.66	-160.66	-126.43	-158.89	0.00	
10700.00	0.00	359.67	10684.66	-160.66	-126.43	-158.89	0.00	
10800.00	0.00	359.67	10784.66	-160.66	-126.43	-158.89	0.00	
10900.00	0.00	359.67	10884.66	-160.66	-126.43	-158.89	0.00	
10915.34	0.00	359.67	10900.00	-160.66	-126.43	-158.89	0.00	Bone Spring 3rd
11000.00	0.00	359.67	10984.66	-160.66	-126.43	-158.89	0.00	
11082.38	0.00	359.67	11067.04	-160.66	-126.43	-158.89	0.00	KOP
11100.00	1.76	359.67	11084.66	-160.39	-126.43	-158.62	10.00	
11200.00	11.76	359.67	11183.84	-148.63	-126.50	-146.86	10.00	
11300.00	21.76	359.67	11279.47	-119.83	-126.66	-118.06	10.00	
11400.00	31.76	359.67	11368.64	-74.86	-126.92	-73.09	10.00	
11407.51	32.51	359.67	11375.00	-70.87	-126.95	-69.09	10.00	Wolfcamp / Point of Penetration
11500.00	41.76	359.67	11448.65	-15.09	-127.27	-13.31	10.00	
11600.00	51.76	359.67	11517.07	57.67	-127.69	59.44	10.00	
11700.00	61.76	359.67	11571.81	141.20	-128.17	142.97	10.00	
11800.00	71.76	359.67	11611.22	232.97	-128.70	234.74	10.00	
11900.00	81.76	359.67	11634.09	330.19	-129.26	331.96	10.00	
11982.38	90.00	359.67	11640.00	412.29	-129.73	414.05	10.00	Landing Point
12000.00	90.00	359.67	11640.00	429.90	-129.83	431.67	0.00	
12100.00	90.00	359.67	11640.00	529.90	-130.41	531.67	0.00	
12200.00	90.00	359.67	11640.00	629.90	-130.98	631.66	0.00	
12300.00	90.00	359.67	11640.00	729.90	-131.56	731.66	0.00	
12400.00	90.00	359.67	11640.00	829.90	-132.14	831.66	0.00	



Well: CAT LANTA 16 4 FED COM 711H
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 Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12500.00	90.00	359.67	11640.00	929.90	-132.71	931.65	0.00	
12600.00	90.00	359.67	11640.00	1029.89	-133.29	1031.65	0.00	
12700.00	90.00	359.67	11640.00	1129.89	-133.87	1131.65	0.00	
12800.00	90.00	359.67	11640.00	1229.89	-134.44	1231.64	0.00	
12900.00	90.00	359.67	11640.00	1329.89	-135.02	1331.64	0.00	
13000.00	90.00	359.67	11640.00	1429.89	-135.60	1431.64	0.00	
13100.00	90.00	359.67	11640.00	1529.89	-136.17	1531.63	0.00	
13200.00	90.00	359.67	11640.00	1629.88	-136.75	1631.63	0.00	
13300.00	90.00	359.67	11640.00	1729.88	-137.32	1731.63	0.00	
13400.00	90.00	359.67	11640.00	1829.88	-137.90	1831.62	0.00	
13500.00	90.00	359.67	11640.00	1929.88	-138.48	1931.62	0.00	
13600.00	90.00	359.67	11640.00	2029.88	-139.05	2031.62	0.00	
13700.00	90.00	359.67	11640.00	2129.88	-139.63	2131.61	0.00	
13800.00	90.00	359.67	11640.00	2229.87	-140.21	2231.61	0.00	
13900.00	90.00	359.67	11640.00	2329.87	-140.78	2331.61	0.00	
14000.00	90.00	359.67	11640.00	2429.87	-141.36	2431.60	0.00	
14100.00	90.00	359.67	11640.00	2529.87	-141.94	2531.60	0.00	
14200.00	90.00	359.67	11640.00	2629.87	-142.51	2631.60	0.00	
14300.00	90.00	359.67	11640.00	2729.87	-143.09	2731.59	0.00	
14400.00	90.00	359.67	11640.00	2829.86	-143.67	2831.59	0.00	
14500.00	90.00	359.67	11640.00	2929.86	-144.24	2931.59	0.00	
14600.00	90.00	359.67	11640.00	3029.86	-144.82	3031.58	0.00	
14700.00	90.00	359.67	11640.00	3129.86	-145.40	3131.58	0.00	
14800.00	90.00	359.67	11640.00	3229.86	-145.97	3231.58	0.00	
14900.00	90.00	359.67	11640.00	3329.86	-146.55	3331.57	0.00	
15000.00	90.00	359.67	11640.00	3429.85	-147.13	3431.57	0.00	
15100.00	90.00	359.67	11640.00	3529.85	-147.70	3531.57	0.00	
15200.00	90.00	359.67	11640.00	3629.85	-148.28	3631.56	0.00	
15300.00	90.00	359.67	11640.00	3729.85	-148.85	3731.56	0.00	
15400.00	90.00	359.67	11640.00	3829.85	-149.43	3831.56	0.00	
15500.00	90.00	359.67	11640.00	3929.85	-150.01	3931.55	0.00	
15600.00	90.00	359.67	11640.00	4029.84	-150.58	4031.55	0.00	
15700.00	90.00	359.67	11640.00	4129.84	-151.16	4131.55	0.00	
15800.00	90.00	359.67	11640.00	4229.84	-151.74	4231.54	0.00	
15900.00	90.00	359.67	11640.00	4329.84	-152.31	4331.54	0.00	
16000.00	90.00	359.67	11640.00	4429.84	-152.89	4431.54	0.00	
16100.00	90.00	359.67	11640.00	4529.84	-153.47	4531.53	0.00	
16200.00	90.00	359.67	11640.01	4629.83	-154.04	4631.53	0.00	
16300.00	90.00	359.67	11640.01	4729.83	-154.62	4731.53	0.00	
16400.00	90.00	359.67	11640.01	4829.83	-155.20	4831.52	0.00	
16500.00	90.00	359.67	11640.01	4929.83	-155.77	4931.52	0.00	
16600.00	90.00	359.67	11640.01	5029.83	-156.35	5031.52	0.00	
16700.00	90.00	359.67	11640.01	5129.83	-156.93	5131.51	0.00	
16800.00	90.00	359.67	11640.01	5229.82	-157.50	5231.51	0.00	
16900.00	90.00	359.67	11640.01	5329.82	-158.08	5331.51	0.00	
17000.00	90.00	359.67	11640.01	5429.82	-158.65	5431.50	0.00	
17100.00	90.00	359.67	11640.01	5529.82	-159.23	5531.50	0.00	
17200.00	90.00	359.67	11640.01	5629.82	-159.81	5631.50	0.00	
17300.00	90.00	359.67	11640.01	5729.82	-160.38	5731.49	0.00	
17400.00	90.00	359.67	11640.01	5829.81	-160.96	5831.49	0.00	
17500.00	90.00	359.67	11640.01	5929.81	-161.54	5931.49	0.00	
17600.00	90.00	359.67	11640.01	6029.81	-162.11	6031.48	0.00	
17700.00	90.00	359.67	11640.01	6129.81	-162.69	6131.48	0.00	
17800.00	90.00	359.67	11640.01	6229.81	-163.27	6231.48	0.00	
17900.00	90.00	359.67	11640.01	6329.81	-163.84	6331.47	0.00	
18000.00	90.00	359.67	11640.01	6429.80	-164.42	6431.47	0.00	
18100.00	90.00	359.67	11640.01	6529.80	-165.00	6531.47	0.00	
18200.00	90.00	359.67	11640.01	6629.80	-165.57	6631.46	0.00	
18300.00	90.00	359.67	11640.01	6729.80	-166.15	6731.46	0.00	
18400.00	90.00	359.67	11640.01	6829.80	-166.73	6831.46	0.00	
18500.00	90.00	359.67	11640.01	6929.80	-167.30	6931.45	0.00	
18600.00	90.00	359.67	11640.01	7029.79	-167.88	7031.45	0.00	
18700.00	90.00	359.67	11640.01	7129.79	-168.46	7131.45	0.00	
18800.00	90.00	359.67	11640.01	7229.79	-169.03	7231.44	0.00	
18900.00	90.00	359.67	11640.01	7329.79	-169.61	7331.44	0.00	
19000.00	90.00	359.67	11640.01	7429.79	-170.18	7431.44	0.00	
19100.00	90.00	359.67	11640.01	7529.79	-170.76	7531.43	0.00	
19200.00	90.00	359.67	11640.01	7629.78	-171.34	7631.43	0.00	
19300.00	90.00	359.67	11640.01	7729.78	-171.91	7731.43	0.00	
19400.00	90.00	359.67	11640.01	7829.78	-172.49	7831.42	0.00	



Well: CAT LANTA 16 4 FED COM 711H
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Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
19500.00	90.00	359.67	11640.01	7929.78	-173.07	7931.42	0.00	
19600.00	90.00	359.67	11640.01	8029.78	-173.64	8031.42	0.00	
19700.00	90.00	359.67	11640.01	8129.78	-174.22	8131.41	0.00	
19800.00	90.00	359.67	11640.01	8229.77	-174.80	8231.41	0.00	
19900.00	90.00	359.67	11640.01	8329.77	-175.37	8331.41	0.00	
20000.00	90.00	359.67	11640.01	8429.77	-175.95	8431.40	0.00	
20100.00	90.00	359.67	11640.01	8529.77	-176.53	8531.40	0.00	
20200.00	90.00	359.67	11640.01	8629.77	-177.10	8631.40	0.00	
20300.00	90.00	359.67	11640.01	8729.77	-177.68	8731.39	0.00	
20400.00	90.00	359.67	11640.01	8829.76	-178.26	8831.39	0.00	
20500.00	90.00	359.67	11640.01	8929.76	-178.83	8931.39	0.00	
20600.00	90.00	359.67	11640.01	9029.76	-179.41	9031.38	0.00	
20700.00	90.00	359.67	11640.01	9129.76	-179.98	9131.38	0.00	
20800.00	90.00	359.67	11640.01	9229.76	-180.56	9231.38	0.00	
20900.00	90.00	359.67	11640.01	9329.76	-181.14	9331.37	0.00	
21000.00	90.00	359.67	11640.01	9429.75	-181.71	9431.37	0.00	
21100.00	90.00	359.67	11640.01	9529.75	-182.29	9531.37	0.00	
21200.00	90.00	359.67	11640.01	9629.75	-182.87	9631.36	0.00	
21300.00	90.00	359.67	11640.01	9729.75	-183.44	9731.36	0.00	
21400.00	90.00	359.67	11640.01	9829.75	-184.02	9831.36	0.00	
21500.00	90.00	359.67	11640.01	9929.75	-184.60	9931.35	0.00	
21600.00	90.00	359.67	11640.01	10029.74	-185.17	10031.35	0.00	
21700.00	90.00	359.67	11640.01	10129.74	-185.75	10131.35	0.00	
21800.00	90.00	359.67	11640.01	10229.74	-186.33	10231.34	0.00	
21900.00	90.00	359.67	11640.01	10329.74	-186.90	10331.34	0.00	
22000.00	90.00	359.67	11640.01	10429.74	-187.48	10431.34	0.00	
22100.00	90.00	359.67	11640.01	10529.74	-188.06	10531.33	0.00	
22200.00	90.00	359.67	11640.01	10629.73	-188.63	10631.33	0.00	
22300.00	90.00	359.67	11640.01	10729.73	-189.21	10731.33	0.00	
22400.00	90.00	359.67	11640.01	10829.73	-189.79	10831.32	0.00	
22500.00	90.00	359.67	11640.01	10929.73	-190.36	10931.32	0.00	
22600.00	90.00	359.67	11640.01	11029.73	-190.94	11031.32	0.00	
22700.00	90.00	359.67	11640.01	11129.73	-191.51	11131.31	0.00	
22800.00	90.00	359.67	11640.01	11229.72	-192.09	11231.31	0.00	
22900.00	90.00	359.67	11640.01	11329.72	-192.67	11331.31	0.00	
23000.00	90.00	359.67	11640.01	11429.72	-193.24	11431.30	0.00	
23100.00	90.00	359.67	11640.01	11529.72	-193.82	11531.30	0.00	
23200.00	90.00	359.67	11640.01	11629.72	-194.40	11631.30	0.00	
23300.00	90.00	359.67	11640.01	11729.72	-194.97	11731.29	0.00	
23400.00	90.00	359.67	11640.01	11829.71	-195.55	11831.29	0.00	
23500.00	90.00	359.67	11640.01	11929.71	-196.13	11931.29	0.00	
23600.00	90.00	359.67	11640.01	12029.71	-196.70	12031.28	0.00	
23700.00	90.00	359.67	11640.02	12129.71	-197.28	12131.28	0.00	
23800.00	90.00	359.67	11640.02	12229.71	-197.86	12231.28	0.00	
23900.00	90.00	359.67	11640.02	12329.71	-198.43	12331.27	0.00	
24000.00	90.00	359.67	11640.02	12429.70	-199.01	12431.27	0.00	
24100.00	90.00	359.67	11640.02	12529.70	-199.59	12531.27	0.00	
24200.00	90.00	359.67	11640.02	12629.70	-200.16	12631.26	0.00	
24300.00	90.00	359.67	11640.02	12729.70	-200.74	12731.26	0.00	
24400.00	90.00	359.67	11640.02	12829.70	-201.31	12831.26	0.00	
24500.00	90.00	359.67	11640.02	12929.70	-201.89	12931.25	0.00	
24600.00	90.00	359.67	11640.02	13029.69	-202.47	13031.25	0.00	
24700.00	90.00	359.67	11640.02	13129.69	-203.04	13131.25	0.00	
24800.00	90.00	359.67	11640.02	13229.69	-203.62	13231.24	0.00	
24900.00	90.00	359.67	11640.02	13329.69	-204.20	13331.24	0.00	
25000.00	90.00	359.67	11640.02	13429.69	-204.77	13431.24	0.00	
25100.00	90.00	359.67	11640.02	13529.69	-205.35	13531.23	0.00	
25200.00	90.00	359.67	11640.02	13629.68	-205.93	13631.23	0.00	
25300.00	90.00	359.67	11640.02	13729.68	-206.50	13731.23	0.00	
25400.00	90.00	359.67	11640.02	13829.68	-207.08	13831.22	0.00	
25500.00	90.00	359.67	11640.02	13929.68	-207.66	13931.22	0.00	
25600.00	90.00	359.67	11640.02	14029.68	-208.23	14031.22	0.00	
25700.00	90.00	359.67	11640.02	14129.68	-208.81	14131.21	0.00	
25800.00	90.00	359.67	11640.02	14229.67	-209.39	14231.21	0.00	
25900.00	90.00	359.67	11640.02	14329.67	-209.96	14331.21	0.00	
26000.00	90.00	359.67	11640.02	14429.67	-210.54	14431.20	0.00	
26100.00	90.00	359.67	11640.02	14529.67	-211.12	14531.20	0.00	
26200.00	90.00	359.67	11640.02	14629.67	-211.69	14631.20	0.00	
26300.00	90.00	359.67	11640.02	14729.67	-212.27	14731.19	0.00	
26400.00	90.00	359.67	11640.02	14829.66	-212.84	14831.19	0.00	

Well: CAT LANTA 16 4 FED COM 711H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
26500.00	90.00	359.67	11640.02	14929.66	-213.42	14931.19	0.00	
26600.00	90.00	359.67	11640.02	15029.66	-214.00	15031.18	0.00	
26700.00	90.00	359.67	11640.02	15129.66	-214.57	15131.18	0.00	
26800.00	90.00	359.67	11640.02	15229.66	-215.15	15231.18	0.00	
26900.00	90.00	359.67	11640.02	15329.66	-215.73	15331.17	0.00	
27000.00	90.00	359.67	11640.02	15429.65	-216.30	15431.17	0.00	
27096.44	90.00	359.67	11640.02	15526.09	-216.86	15527.61	0.00	exit
27100.00	90.00	359.67	11640.02	15529.65	-216.88	15531.17	0.00	
27176.44	90.00	359.67	11640.00	15606.09	-217.24	15607.60	0.00	BHL

1. Geologic Formations

TVD of target	11640	Pilot hole depth	N/A
MD at TD:	27176	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	485		
Salt	815		
Base of Salt	3965		
Delaware	4195		
Cherry Canyon	5095		
Brushy Canyon	6435		
Bone Spring 1st lime	8049		
Bone Spring 1st	9148		
Bone Spring 2nd	9682		
Bone Spring 3rd	10900		
Wolfcamp	11375		
Salado, #126	1761		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program (Primary Design)

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Top (MD)	Bottom (MD)	Top (TVD)	Bottom (TVD)
17 1/2	13 3/8	54.5	J-55	BTC	0.0	555 MD	0	555 TVD
12 1/4	10 3/4	45.5	J-55	BTC SCC	0.0	4065 MD	0	4065 TVD
9 7/8	8 5/8	32.0	P110	MOFXL	0	10982	0	10982
7 7/8	5 1/2	20.0	P110HP	CDC-HTQ	0	27176 MD	0	11640 TVD

- All casing strings will be tested in accordance with 43 CFR 3172. Must have table for contingency casing.
- The Rustler top will be validated via drilling parameters (i.e. reduction in ROP), and the surface casing setting depth will be revised accordingly. In addition, surface casing will be set a minimum of 25' above the top of the salt.

3. Cementing Program (Primary Design)

Casing	# Skis	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	440	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	268	Surf	9	3.27	Lead: Class C Cement + additives
	101	3565	13.2	1.44	Tail: Class H / C + additives
Int 2					
	267	8049	13.2	1.44	Tail: Class H / C + additives
Int 2 Intermediate Squeeze, Post completions	458	2900	9	1.44	Squeeze Lead: Class C Cement + additives
Production	117	9082	9	3.27	Lead: Class H / C + additives
	2130	11082	13.2	1.44	Tail: Class H / C + additives

- Devon will design around R111-Q: 4 String, Open 1st Int and 2nd Int Annulus, Figure D
- Int 2 TOC will be, prior to completion, brought up to the 1st Bone Lime, leaving an open annulus for pressure monitoring
- Following completion, a cement top out will be performed to bring TOC 500ft into Int 1, but below the POTASH interval
- The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program

.Int 2 cement will adhere to R111-Q requirements

Casing String	% Excess
Surface	50%
Intermediate	30%
Intermediate 2 (Two Stage)	
Prod	10%

Devon Energy requests to offline cement on intermediate strings that are set in formations shallower than the Wolfcamp. Prior to commencing offline cementing operations, the well will be monitored for any abnormal pressures and confirmed to be static. A dual manifold system (equipped with chokes) for the returns will also be utilized as a redundancy. All equipment used for offline cementing will have a minimum 5M rating to match intermediate sections' 5M BOPE requirements.

4. Pressure Control Equipment (Four String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Int 2	13-5/8"	5M	Annular (5M)	X	100% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular (5M)	X	100% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.				
N	A variance is requested to run a 5 M annular on a 10M system				

5. Mud Program (Four String Design)

Section	Type	Weight (ppg)
Surface	WBM	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Intermediate 2	WBM	8.5-9
Production	OBM	10-10.5

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL from TD to surface (horizontal well - vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain.
	Coring? If yes, explain.

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
Mud log	Intermediate shoe to TD
PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	6355
Abnormal temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of 43 CFR 3176. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S plan attached.

8. Other facets of operation

Is this a walking operation? Potentially

- 1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
- 2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
- 3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

- 1 Spudder rig will move in and batch drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.,
- 2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (43 CFR 3172, all COAs and NMOCD regulations).
- 3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
- 4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
- 5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pa.
- 6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
- 7 Drilling operations will be performed with drilling rig. A that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

- Directional Plan
- Other, describe

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 531767

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 531767
	Action Type: [C-103A] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	4/20/2026