

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**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[331213]</div>
2. Name of Operator <div style="text-align: center; font-weight: bold; font-size: 1.2em;">[373986]</div>		9. API Well No. <b>30-025-50003</b>
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory <b>[96776]</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish 13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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.<br>2. A Drilling Plan.<br>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).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
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.

**NGMP Rec 03/28/2022**

**NSL**

(Continued on page 2)



**KZ**  
**04/11/2022**

\*(Instructions on page 2)

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 <b>30-025-50003</b>	2 Pool Code <b>96776</b>	3 Pool Name <b>JABALINA;WOLFCAMP, SOUTHWEST</b>
4 Property Code <b>331213</b>	5 Property Name <b>LOS VAQUEROS FED</b>	6 Well Number <b>513H</b>
7 OGRID No. <b>373986</b>	8 Operator Name <b>TITUS OIL &amp; GAS PRODUCTION LLC</b>	9 Elevation <b>3183'</b>

" Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	30	26-S	35-E		210'	NORTH	2558'	EAST	LEA

" 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
4	31	26-S	35-E		10'	SOUTH	1537'	EAST	LEA

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
240	Y		

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

**16**

**SURFACE HOLE LOCATION (SHL)**  
NEW MEXICO EAST - NAD 83  
X=828679.60 LAT.= 32.02097863° N  
Y=372603.66 LONG.= 103.40619433° W  
NEW MEXICO EAST - NAD 27  
X=787491.28 LAT.= 32.02085228° N  
Y=372546.54 LONG.= 103.40573408° W  
210' FNL, 2558' FEL - SECTION 30  
210' FNL, 85' FWL - LEASE

**FIRST TAKE POINT (FTP)**  
NEW MEXICO EAST - NAD 83  
X=829710.50 LAT.= 32.02127280° N  
Y=372719.55 LONG.= 103.40286517° W  
NEW MEXICO EAST - NAD 27  
X=788522.18 LAT.= 32.02114641° N  
Y=372662.41 LONG.= 103.40240501° W  
100' FNL, 1526' FEL - SECTION 30  
100' FNL, 205' FEL - LEASE

**LAST TAKE POINT (LTP)**  
NEW MEXICO EAST - NAD 83  
X=829775.06 LAT.= 32.00056545° N  
Y=365186.42 LONG.= 103.40286615° W  
NEW MEXICO EAST - NAD 27  
X=788586.39 LAT.= 32.00043895° N  
Y=365129.49 LONG.= 103.40240717° W  
100' FSL, 1537' FEL - SECTION 31  
100' FSL, 204' FEL - LEASE

**BOTTOM HOLE LOCATION (BHL)**  
NEW MEXICO EAST - NAD 83  
X=829775.82 LAT.= 32.00031806° N  
Y=365096.42 LONG.= 103.40286617° W  
NEW MEXICO EAST - NAD 27  
X=788587.15 LAT.= 32.00019156° N  
Y=365039.49 LONG.= 103.40240721° W  
10' FSL, 1537' FEL - SECTION 31  
10' FSL, 204' FEL - LEASE

**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.

*Ryan DeLong* 10/28/2020  
Signature Date  
**Ryan DeLong - Regulatory Manager**  
Printed Name  
**rdelong@titusoil.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.

Date of Survey  
Signature and Seal of Professional Surveyor:  
  
Certificate Number

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

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

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description

Effective May 25, 2021

**I. Operator:** Titus Oil & Gas Production, LLC **OGRID:** 373986 **Date:** 3 / 28 / 2022

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Los Vaqueros Fed 513H	New Well	B, Sec 30, 26S-35E	210' FNL &	778	2783	2576
<del>30-025-50003</del>			2558' FEL			

**IV. Central Delivery Point Name:** El Campeon CTB 30 [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Los Vaqueros Fed 513H	New Well	10/18/2022	1/16/2023	3/18/2023	3/22/2023	3/24/2023
<del>30-025-50003</del>						

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

**Section 2 – Enhanced Plan****EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:
Printed Name:
Title:
E-mail Address:
Date:
Phone:
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
Approved By:
Title:
Approval Date:
Conditions of Approval:

**VI. Separation Equipment:** Attach a complete description of how Operator will size separation equipment to optimize gas capture:

Each surface facility design includes the following process equipment: 3-phase vertical separator (one per well), 3-phase heater treater (one per well), one or two sales gas scrubbers, two bulk free water knockouts, two bulk heater treaters, a vapor recover tower (VRT), a vapor recovery unit (VRU) compressor, multiple water and oil tanks, as well as flare liquid scrubbers (HP & LP), flares (HP & LP), and combustors. All process vessels will be sized to separate oil, water, and gas based upon historical & predicted well performance. Each process vessel will be fitted with the appropriately sized PSV as per ASME code requirements to mitigate vessel rupture and loss of containment. Additionally, the process vessels will be fitted with pressure transmitters tied to the facility control system with allow operations to monitor pressures and when necessary, shut-in the facility to avoid vessel over-pressure and potential flaring or venting of natural gas. Natural gas will be preferentially sent to pipeline, and only directed to the HP flare system in upset/emergency situations. Flash gas from the free water knockouts, bulk heater treaters, and VRT will be recompressed using a VRU compressor and will be preferentially redirected to gas sales pipeline. Oil tanks and water tanks will be fitted with 16 oz thief hatches as well as PRVs to protect the tank from rupture/collapse. The tank vapor outlets and tank vapor capture system will be sized to keep the tank pressures below 12 oz. the tank vapor capture system will include a scrubber and combustors. All tank vapors will be combusted to industry standards.

**VII. Operational Practices:** Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC:

- **During drilling operations** - Gas meters will be installed at the shakers and Volume Totalizers will be installed on the pits. If elevated gas levels, or a pit gain are observed, returns will be diverted to a gas buster. Gas coming off the gas buster will be combusted at the flare stack. A 10' or taller flare will be located at least 100' from the SHL.
- **During Completion Operations, including stimulation and frac plug drill out operations:** hydrocarbon production to surface is minimized. If gas production does occur, gas will be combusted at a flare stack. A 10' or taller flare will be located at least 100' from SHL
- **During production operations:** All process vessels (separators, heater treaters, tanks) will recompress (where necessary) and route gas outlets into the natural gas gathering line. Gas will preferentially be routed to natural gas gathering pipeline and the flare system will only be used during emergency, malfunction, or if the gas does not meet pipeline specifications. In the event of flaring off-specification gas, operations will pull gas samples twice a week and will also route gas back to pipeline as soon as gas meets specifications. Exceptions to this will include only those qualified exceptions per the regulation 19.15.27.8 Subsection D.
- To comply with state performance standards, separation and storage equipment will be designed to handle the maximum anticipated throughput and pressure to minimize waste and reduce the likelihood of venting gas to atmosphere. Additionally, each storage atmospheric tank (oil & water) will be fitted with a level transmitter to facilitate gauging of the tank without opening the thief hatch. Any gas collected through the tank vent system is expected to be recompressed and routed to sales. However, in the event of an emergency, the tank vapor capture system will be designed to combust the gas using a combustor system with a continuous ignitor. The combustor will be properly anchored and will be

located a minimum of 100 feet from the well and storage tanks. Operators will conduct weekly AVO inspections. These AVO inspection records will be stored for the required 5-year period and will be made available upon Division request

**VII. Best Management Practices:** Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- When performing routine or preventive maintenance on a vessel or tank, initially all inlet valves are close, and the vessel or tank is allowed to depressurize through the normal outlet connections to gas sales and/or liquid tanks. Once the vessel or tank is depressurized to lowest acceptable sales outlet pressure, usually around 20 psig, a temporary low-pressure flowline is connected from the vessel or tank to the VRU for further pressure reduction. Once depressurized to less than 1-2 psig, the remaining natural gas in the vessel or tank is vented to atmosphere through a controlled pressure relief valve. Once the vessel or tank is depressurized to atmospheric pressure, the vessel or tank can be safely opened, and maintenance performed.



# Titus Oil & Gas Production, LLC - Los Vaqueros Fed 513H

## 1. Geologic Formations

TVD of target	13,133' EOL	Pilot hole depth	NA
MD at TD:	20,682'	Deepest expected fresh water:	400'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1040	Water	
Top of Salt	1500	Salt	
Base of Salt	5009	Salt	
Lamar	5334	Salt Water	
Delaware	5378	Salt Water	
Bone Spring Lime	9274	Oil/Gas	
1st Bone Spring	10600	Oil/Gas	
2nd Bone Spring	11062	Oil/Gas	
3rd Bone Spring	12142	Oil/Gas	
Wolfcamp	12520	Oil/Gas	
Wolfcamp X Sand	12554	Oil/Gas	
Wolfcamp Y Sand	12627	Oil/Gas	
Wolfcamp A	12659	Oil/Gas	
Wolfcamp B	12976	Target Oil/Gas	

## 2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
	From	To							
13.5"	0	1065	10.75"	45.5	J55	BTC	4.29	0.81	14.76
9.875"	0	12000	7.625"	29.7	HCL80	BTC	1.18	1.02	2.04
6.75"	0	11800	5.5"	20	P110	BTC	1.80	1.87	3.08
6.75"	11800	20,682	5"	18	P110	BTC	1.80	1.87	3.08
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse.  
 Surface burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface and  
 All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

The 5" casing will be run back 200' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for the cement bond tie in.

## Titus Oil &amp; Gas Production, LLC - Los Vaqueros Fed 513H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

## Titus Oil &amp; Gas Production, LLC - Los Vaqueros Fed 513H

## 3. Cementing Program

Casing	# Sk	Wt. lb/ gal	Yld ft3/ sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	250	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl <sub>2</sub>
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl <sub>2</sub>
Int Stg 1	500	10.3	3.6	22.95	16	TXI Lightweight Blend
	300	15.0	1.27	5.72	8	Tail: Class H
Int Stg 2	800	12.7	2.0	11.16	16	TXI Lightweight Blend
	100	14.8	1.33	6.33	8	Tail: Class H
Prod	350	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	950	14.2	1.3	6.2	19	Tail: 50:50:2 Class H Blend

Operator will utilize a DVT/ECP on the 7.625" Intermediate casing to pump a 2-stage cement job.

**The DVT/ECP will be place +/- 5,350' near the Lamar in gauge competent formation.**

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results

Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1 <sup>st</sup> Intermediate	0'	50%
Production	11,500'	35% OH in Lateral (KOP to EOL)

## Titus Oil &amp; Gas Production, LLC - Los Vaqueros Fed 513H

## 4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
9-7/8"	13-5/8"	3M	Annular	x	3000 psi
			Blind Ram		3M
			Pipe Ram		
			Double Ram		
			Other*		
6-3/4"	13-5/8"	10M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			VBR Ram	x	
			VBR Ram	x	
			Other*		

See attached 5M Annular Variance Well Control plan for Titus Oil & Gas Production, LLC.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Y	Formation integrity test will be performed per Onshore Order #2.  On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.  N Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

## Titus Oil &amp; Gas Production, LLC - Los Vaqueros Fed 513H

## 5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Nova N-Gauge	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	10.8 - 11.8	35-45	<20

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.	
Y	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.
N	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

**Titus Oil & Gas Production, LLC - Los Vaqueros Fed 513H****7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	8060 psi at 13133' TVD
Abnormal Temperature	NO 185 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N H<sub>2</sub>S is present

Y H<sub>2</sub>S Plan attached

**8. Other Facets of Operation**

Y	Is it a walking operation?
N	Is casing pre-set?

x	H <sub>2</sub> S Plan.
x	BOP & Choke Schematics.
x	Directional Plan
x	Multibowl Schematic



## **Titus Oil & Gas Production, LLC**

**Lea County, NM (NAD83-NME)**

**A10\_Los Vaqueros**

**Los Vaqueros Fed 513H**

**Permit**

**Plan: APD-Rev0**

## **Standard Planning Report**

**27 October, 2020**



## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Los Vaqueros Fed 513H
<b>Company:</b>	Titus Oil & Gas Production, LLC	<b>TVD Reference:</b>	3183+25 @ 3208.00usft
<b>Project:</b>	Lea County, NM (NAD83-NME)	<b>MD Reference:</b>	3183+25 @ 3208.00usft
<b>Site:</b>	A10_Los Vaqueros	<b>North Reference:</b>	Grid
<b>Well:</b>	Los Vaqueros Fed 513H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Permit		
<b>Design:</b>	APD-Rev0		

<b>Project</b>	Lea County, NM (NAD83-NME)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

Site	A10_Los Vaqueros				
Site Position:		Northing:	372,597.64 usft	Latitude:	32.02097964
From:	Map	Easting:	827,934.38 usft	Longitude:	-103.40859876
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.49 °

Well	Los Vaqueros Fed 513H					
Well Position	+N/-S	6.02 usft	Northing:	372,603.66 usft	Latitude:	32.02097863
	+E/-W	745.22 usft	Easting:	828,679.60 usft	Longitude:	-103.40619433
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,183.00 usft

<b>Wellbore</b>	Permit				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	10/26/2020	6.53	59.76	47,458.19630408

<b>Design</b>	APD-Rev0			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	179.51

<b>Plan Survey Tool Program</b>	<b>Date</b>	10/27/2020		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	20,682.64	APD-Rev0 (Permit)	MWD+IFR1+SAG+MS OWSG MWD + IFR1 + Sag + M

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,848.61	7.48	80.86	1,847.20	5.16	32.08	1.50	1.50	0.00	80.86	
9,368.19	7.48	80.86	9,302.80	160.61	998.46	0.00	0.00	0.00	0.00	
9,866.80	0.00	0.00	9,800.00	165.77	1,030.54	1.50	-1.50	0.00	180.00	A10-00-EON(LV513H)
12,736.80	0.00	0.00	12,670.00	165.77	1,030.54	0.00	0.00	0.00	0.00	
13,487.71	90.11	179.51	13,147.46	-312.58	1,034.63	12.00	12.00	23.91	179.51	
20,682.64	90.11	179.51	13,133.83	-7,507.24	1,096.22	0.00	0.00	0.00	0.00	A10-03-PBHL(LV513H)





## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Los Vaqueros Fed 513H
<b>Company:</b>	Titus Oil & Gas Production, LLC	<b>TVD Reference:</b>	3183+25 @ 3208.00usft
<b>Project:</b>	Lea County, NM (NAD83-NME)	<b>MD Reference:</b>	3183+25 @ 3208.00usft
<b>Site:</b>	A10_Los Vaqueros	<b>North Reference:</b>	Grid
<b>Well:</b>	Los Vaqueros Fed 513H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Permit		
<b>Design:</b>	APD-Rev0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.75	80.86	1,400.00	0.05	0.32	-0.05	1.50	1.50	0.00
1,500.00	2.25	80.86	1,499.96	0.47	2.91	-0.44	1.50	1.50	0.00
1,600.00	3.75	80.86	1,599.82	1.30	8.07	-1.23	1.50	1.50	0.00
1,700.00	5.25	80.86	1,699.51	2.54	15.82	-2.41	1.50	1.50	0.00
1,800.00	6.75	80.86	1,798.96	4.20	26.14	-3.98	1.50	1.50	0.00
1,848.61	7.48	80.86	1,847.20	5.16	32.08	-4.89	1.50	1.50	0.00
1,900.00	7.48	80.86	1,898.15	6.22	38.69	-5.89	0.00	0.00	0.00
2,000.00	7.48	80.86	1,997.30	8.29	51.54	-7.85	0.00	0.00	0.00
2,100.00	7.48	80.86	2,096.45	10.36	64.39	-9.81	0.00	0.00	0.00
2,200.00	7.48	80.86	2,195.60	12.43	77.24	-11.76	0.00	0.00	0.00
2,300.00	7.48	80.86	2,294.74	14.49	90.09	-13.72	0.00	0.00	0.00
2,400.00	7.48	80.86	2,393.89	16.56	102.95	-15.68	0.00	0.00	0.00
2,500.00	7.48	80.86	2,493.04	18.63	115.80	-17.64	0.00	0.00	0.00
2,600.00	7.48	80.86	2,592.19	20.69	128.65	-19.59	0.00	0.00	0.00
2,700.00	7.48	80.86	2,691.34	22.76	141.50	-21.55	0.00	0.00	0.00
2,800.00	7.48	80.86	2,790.49	24.83	154.35	-23.51	0.00	0.00	0.00
2,900.00	7.48	80.86	2,889.64	26.90	167.20	-25.46	0.00	0.00	0.00
3,000.00	7.48	80.86	2,988.79	28.96	180.05	-27.42	0.00	0.00	0.00
3,100.00	7.48	80.86	3,087.94	31.03	192.91	-29.38	0.00	0.00	0.00
3,200.00	7.48	80.86	3,187.09	33.10	205.76	-31.34	0.00	0.00	0.00
3,300.00	7.48	80.86	3,286.24	35.16	218.61	-33.29	0.00	0.00	0.00
3,400.00	7.48	80.86	3,385.39	37.23	231.46	-35.25	0.00	0.00	0.00
3,500.00	7.48	80.86	3,484.54	39.30	244.31	-37.21	0.00	0.00	0.00
3,600.00	7.48	80.86	3,583.68	41.37	257.16	-39.17	0.00	0.00	0.00
3,700.00	7.48	80.86	3,682.83	43.43	270.01	-41.12	0.00	0.00	0.00
3,800.00	7.48	80.86	3,781.98	45.50	282.87	-43.08	0.00	0.00	0.00
3,900.00	7.48	80.86	3,881.13	47.57	295.72	-45.04	0.00	0.00	0.00
4,000.00	7.48	80.86	3,980.28	49.64	308.57	-46.99	0.00	0.00	0.00
4,100.00	7.48	80.86	4,079.43	51.70	321.42	-48.95	0.00	0.00	0.00
4,200.00	7.48	80.86	4,178.58	53.77	334.27	-50.91	0.00	0.00	0.00
4,300.00	7.48	80.86	4,277.73	55.84	347.12	-52.87	0.00	0.00	0.00
4,400.00	7.48	80.86	4,376.88	57.90	359.97	-54.82	0.00	0.00	0.00
4,500.00	7.48	80.86	4,476.03	59.97	372.82	-56.78	0.00	0.00	0.00
4,600.00	7.48	80.86	4,575.18	62.04	385.68	-58.74	0.00	0.00	0.00
4,700.00	7.48	80.86	4,674.33	64.11	398.53	-60.70	0.00	0.00	0.00
4,800.00	7.48	80.86	4,773.48	66.17	411.38	-62.65	0.00	0.00	0.00
4,900.00	7.48	80.86	4,872.62	68.24	424.23	-64.61	0.00	0.00	0.00
5,000.00	7.48	80.86	4,971.77	70.31	437.08	-66.57	0.00	0.00	0.00
5,100.00	7.48	80.86	5,070.92	72.38	449.93	-68.52	0.00	0.00	0.00



## Planning Report

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<b>Company:</b>	Titus Oil & Gas Production, LLC	<b>TVD Reference:</b>	3183+25 @ 3208.00usft
<b>Project:</b>	Lea County, NM (NAD83-NME)	<b>MD Reference:</b>	3183+25 @ 3208.00usft
<b>Site:</b>	A10_Los Vaqueros	<b>North Reference:</b>	Grid
<b>Well:</b>	Los Vaqueros Fed 513H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Permit		
<b>Design:</b>	APD-Rev0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.00	7.48	80.86	5,170.07	74.44	462.78	-70.48	0.00	0.00	0.00
5,300.00	7.48	80.86	5,269.22	76.51	475.64	-72.44	0.00	0.00	0.00
5,400.00	7.48	80.86	5,368.37	78.58	488.49	-74.40	0.00	0.00	0.00
5,500.00	7.48	80.86	5,467.52	80.64	501.34	-76.35	0.00	0.00	0.00
5,600.00	7.48	80.86	5,566.67	82.71	514.19	-78.31	0.00	0.00	0.00
5,700.00	7.48	80.86	5,665.82	84.78	527.04	-80.27	0.00	0.00	0.00
5,800.00	7.48	80.86	5,764.97	86.85	539.89	-82.23	0.00	0.00	0.00
5,900.00	7.48	80.86	5,864.12	88.91	552.74	-84.18	0.00	0.00	0.00
6,000.00	7.48	80.86	5,963.27	90.98	565.60	-86.14	0.00	0.00	0.00
6,100.00	7.48	80.86	6,062.42	93.05	578.45	-88.10	0.00	0.00	0.00
6,200.00	7.48	80.86	6,161.56	95.11	591.30	-90.05	0.00	0.00	0.00
6,300.00	7.48	80.86	6,260.71	97.18	604.15	-92.01	0.00	0.00	0.00
6,400.00	7.48	80.86	6,359.86	99.25	617.00	-93.97	0.00	0.00	0.00
6,500.00	7.48	80.86	6,459.01	101.32	629.85	-95.93	0.00	0.00	0.00
6,600.00	7.48	80.86	6,558.16	103.38	642.70	-97.88	0.00	0.00	0.00
6,700.00	7.48	80.86	6,657.31	105.45	655.56	-99.84	0.00	0.00	0.00
6,800.00	7.48	80.86	6,756.46	107.52	668.41	-101.80	0.00	0.00	0.00
6,900.00	7.48	80.86	6,855.61	109.59	681.26	-103.76	0.00	0.00	0.00
7,000.00	7.48	80.86	6,954.76	111.65	694.11	-105.71	0.00	0.00	0.00
7,100.00	7.48	80.86	7,053.91	113.72	706.96	-107.67	0.00	0.00	0.00
7,200.00	7.48	80.86	7,153.06	115.79	719.81	-109.63	0.00	0.00	0.00
7,300.00	7.48	80.86	7,252.21	117.85	732.66	-111.58	0.00	0.00	0.00
7,400.00	7.48	80.86	7,351.36	119.92	745.52	-113.54	0.00	0.00	0.00
7,500.00	7.48	80.86	7,450.50	121.99	758.37	-115.50	0.00	0.00	0.00
7,600.00	7.48	80.86	7,549.65	124.06	771.22	-117.46	0.00	0.00	0.00
7,700.00	7.48	80.86	7,648.80	126.12	784.07	-119.41	0.00	0.00	0.00
7,800.00	7.48	80.86	7,747.95	128.19	796.92	-121.37	0.00	0.00	0.00
7,900.00	7.48	80.86	7,847.10	130.26	809.77	-123.33	0.00	0.00	0.00
8,000.00	7.48	80.86	7,946.25	132.33	822.62	-125.29	0.00	0.00	0.00
8,100.00	7.48	80.86	8,045.40	134.39	835.47	-127.24	0.00	0.00	0.00
8,200.00	7.48	80.86	8,144.55	136.46	848.33	-129.20	0.00	0.00	0.00
8,300.00	7.48	80.86	8,243.70	138.53	861.18	-131.16	0.00	0.00	0.00
8,400.00	7.48	80.86	8,342.85	140.59	874.03	-133.11	0.00	0.00	0.00
8,500.00	7.48	80.86	8,442.00	142.66	886.88	-135.07	0.00	0.00	0.00
8,600.00	7.48	80.86	8,541.15	144.73	899.73	-137.03	0.00	0.00	0.00
8,700.00	7.48	80.86	8,640.30	146.80	912.58	-138.99	0.00	0.00	0.00
8,800.00	7.48	80.86	8,739.44	148.86	925.43	-140.94	0.00	0.00	0.00
8,900.00	7.48	80.86	8,838.59	150.93	938.29	-142.90	0.00	0.00	0.00
9,000.00	7.48	80.86	8,937.74	153.00	951.14	-144.86	0.00	0.00	0.00
9,100.00	7.48	80.86	9,036.89	155.06	963.99	-146.82	0.00	0.00	0.00
9,200.00	7.48	80.86	9,136.04	157.13	976.84	-148.77	0.00	0.00	0.00
9,300.00	7.48	80.86	9,235.19	159.20	989.69	-150.73	0.00	0.00	0.00
9,368.19	7.48	80.86	9,302.80	160.61	998.46	-152.06	0.00	0.00	0.00
9,400.00	7.00	80.86	9,334.36	161.25	1,002.41	-152.67	1.50	-1.50	0.00
9,500.00	5.50	80.86	9,433.76	162.98	1,013.16	-154.30	1.50	-1.50	0.00
9,600.00	4.00	80.86	9,533.41	164.29	1,021.34	-155.55	1.50	-1.50	0.00
9,700.00	2.50	80.86	9,633.25	165.19	1,026.94	-156.40	1.50	-1.50	0.00
9,800.00	1.00	80.86	9,733.20	165.68	1,029.96	-156.86	1.50	-1.50	0.00
9,866.80	0.00	0.00	9,800.00	165.77	1,030.54	-156.95	1.50	-1.50	0.00
<b>A10-00-EON(LV513H)</b>									
9,900.00	0.00	0.00	9,833.20	165.77	1,030.54	-156.95	0.00	0.00	0.00
10,000.00	0.00	0.00	9,933.20	165.77	1,030.54	-156.95	0.00	0.00	0.00
10,100.00	0.00	0.00	10,033.20	165.77	1,030.54	-156.95	0.00	0.00	0.00



## Planning Report

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<b>Company:</b>	Titus Oil & Gas Production, LLC	<b>TVD Reference:</b>	3183+25 @ 3208.00usft
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<b>Site:</b>	A10_Los Vaqueros	<b>North Reference:</b>	Grid
<b>Well:</b>	Los Vaqueros Fed 513H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Permit		
<b>Design:</b>	APD-Rev0		

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)	
10,200.00	0.00	0.00	10,133.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
10,300.00	0.00	0.00	10,233.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
10,400.00	0.00	0.00	10,333.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,433.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
10,600.00	0.00	0.00	10,533.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
10,700.00	0.00	0.00	10,633.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
10,800.00	0.00	0.00	10,733.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,833.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,000.00	0.00	0.00	10,933.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,100.00	0.00	0.00	11,033.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,200.00	0.00	0.00	11,133.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,300.00	0.00	0.00	11,233.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,400.00	0.00	0.00	11,333.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,500.00	0.00	0.00	11,433.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,600.00	0.00	0.00	11,533.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,700.00	0.00	0.00	11,633.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,800.00	0.00	0.00	11,733.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
11,900.00	0.00	0.00	11,833.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,000.00	0.00	0.00	11,933.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,100.00	0.00	0.00	12,033.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,200.00	0.00	0.00	12,133.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,300.00	0.00	0.00	12,233.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,400.00	0.00	0.00	12,333.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,500.00	0.00	0.00	12,433.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,600.00	0.00	0.00	12,533.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,700.00	0.00	0.00	12,633.20	165.77	1,030.54	-156.95	0.00	0.00	0.00	
12,736.80	0.00	0.00	12,670.00	165.77	1,030.54	-156.95	0.00	0.00	0.00	
KOP: 12736.80' MD, -156.95' VS, 12670.00' TVD										
12,750.00	1.58	179.51	12,683.19	165.59	1,030.54	-156.77	12.00	12.00	0.00	
12,775.00	4.58	179.51	12,708.16	164.24	1,030.55	-155.42	12.00	12.00	0.00	
12,800.00	7.58	179.51	12,733.01	161.59	1,030.58	-152.77	12.00	12.00	0.00	
12,825.00	10.58	179.51	12,757.70	157.65	1,030.61	-148.83	12.00	12.00	0.00	
12,850.00	13.58	179.51	12,782.14	152.42	1,030.65	-143.60	12.00	12.00	0.00	
12,875.00	16.58	179.51	12,806.27	145.91	1,030.71	-137.09	12.00	12.00	0.00	
12,900.00	19.58	179.51	12,830.04	138.15	1,030.78	-129.33	12.00	12.00	0.00	
12,925.00	22.58	179.51	12,853.36	129.16	1,030.85	-120.34	12.00	12.00	0.00	
12,950.00	25.58	179.51	12,876.18	118.96	1,030.94	-110.14	12.00	12.00	0.00	
12,975.00	28.58	179.51	12,898.44	107.58	1,031.04	-98.76	12.00	12.00	0.00	
13,000.00	31.58	179.51	12,920.07	95.05	1,031.15	-86.23	12.00	12.00	0.00	
13,025.00	34.58	179.51	12,941.01	81.41	1,031.26	-72.58	12.00	12.00	0.00	
13,050.00	37.58	179.51	12,961.21	66.68	1,031.39	-57.86	12.00	12.00	0.00	
13,075.00	40.58	179.51	12,980.62	50.92	1,031.52	-42.10	12.00	12.00	0.00	
13,100.00	43.58	179.51	12,999.17	34.17	1,031.67	-25.35	12.00	12.00	0.00	
13,125.00	46.58	179.51	13,016.82	16.47	1,031.82	-7.65	12.00	12.00	0.00	
13,138.65	48.22	179.51	13,026.06	6.42	1,031.90	2.40	12.00	12.00	0.00	
A10-01-FTP(LV513H)										
13,150.00	49.58	179.51	13,033.52	-2.13	1,031.98	10.95	12.00	12.00	0.00	
13,175.00	52.58	179.51	13,049.22	-21.58	1,032.14	30.40	12.00	12.00	0.00	
13,200.00	55.58	179.51	13,063.89	-41.82	1,032.32	50.65	12.00	12.00	0.00	
13,225.00	58.58	179.51	13,077.47	-62.81	1,032.50	71.63	12.00	12.00	0.00	
13,250.00	61.58	179.51	13,089.94	-84.47	1,032.68	93.30	12.00	12.00	0.00	
13,275.00	64.58	179.51	13,101.25	-106.76	1,032.87	115.59	12.00	12.00	0.00	
13,300.00	67.58	179.51	13,111.39	-129.61	1,033.07	138.44	12.00	12.00	0.00	
13,325.00	70.58	179.51	13,120.31	-152.96	1,033.27	161.79	12.00	12.00	0.00	



## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Los Vaqueros Fed 513H
<b>Company:</b>	Titus Oil & Gas Production, LLC	<b>TVD Reference:</b>	3183+25 @ 3208.00usft
<b>Project:</b>	Lea County, NM (NAD83-NME)	<b>MD Reference:</b>	3183+25 @ 3208.00usft
<b>Site:</b>	A10_Los Vaqueros	<b>North Reference:</b>	Grid
<b>Well:</b>	Los Vaqueros Fed 513H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Permit		
<b>Design:</b>	APD-Rev0		

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)	
13,350.00	73.58	179.51	13,128.00	-176.74	1,033.47	185.57	12.00	12.00	0.00	
13,375.00	76.58	179.51	13,134.43	-200.90	1,033.68	209.73	12.00	12.00	0.00	
13,400.00	79.58	179.51	13,139.60	-225.35	1,033.89	234.19	12.00	12.00	0.00	
13,425.00	82.58	179.51	13,143.47	-250.05	1,034.10	258.88	12.00	12.00	0.00	
13,450.00	85.58	179.51	13,146.05	-274.91	1,034.31	283.75	12.00	12.00	0.00	
13,475.00	88.58	179.51	13,147.32	-299.87	1,034.53	308.71	12.00	12.00	0.00	
13,487.71	90.11	179.51	13,147.46	-312.58	1,034.63	321.42	12.00	12.00	0.00	
EOC: 13487.71' MD, 321.42' VS, 13147.46' TVD										
13,500.00	90.11	179.51	13,147.44	-324.87	1,034.74	333.71	0.00	0.00	0.00	
13,600.00	90.11	179.51	13,147.25	-424.87	1,035.60	433.71	0.00	0.00	0.00	
13,700.00	90.11	179.51	13,147.06	-524.86	1,036.45	533.71	0.00	0.00	0.00	
13,800.00	90.11	179.51	13,146.87	-624.86	1,037.31	633.71	0.00	0.00	0.00	
13,900.00	90.11	179.51	13,146.68	-724.86	1,038.16	733.71	0.00	0.00	0.00	
14,000.00	90.11	179.51	13,146.49	-824.85	1,039.02	833.71	0.00	0.00	0.00	
14,100.00	90.11	179.51	13,146.30	-924.85	1,039.88	933.71	0.00	0.00	0.00	
14,200.00	90.11	179.51	13,146.11	-1,024.85	1,040.73	1,033.71	0.00	0.00	0.00	
14,300.00	90.11	179.51	13,145.93	-1,124.84	1,041.59	1,133.71	0.00	0.00	0.00	
14,400.00	90.11	179.51	13,145.74	-1,224.84	1,042.44	1,233.71	0.00	0.00	0.00	
14,500.00	90.11	179.51	13,145.55	-1,324.83	1,043.30	1,333.71	0.00	0.00	0.00	
14,600.00	90.11	179.51	13,145.36	-1,424.83	1,044.16	1,433.71	0.00	0.00	0.00	
14,700.00	90.11	179.51	13,145.17	-1,524.83	1,045.01	1,533.71	0.00	0.00	0.00	
14,800.00	90.11	179.51	13,144.98	-1,624.82	1,045.87	1,633.71	0.00	0.00	0.00	
14,900.00	90.11	179.51	13,144.79	-1,724.82	1,046.72	1,733.71	0.00	0.00	0.00	
15,000.00	90.11	179.51	13,144.60	-1,824.81	1,047.58	1,833.71	0.00	0.00	0.00	
15,100.00	90.11	179.51	13,144.41	-1,924.81	1,048.44	1,933.71	0.00	0.00	0.00	
15,200.00	90.11	179.51	13,144.22	-2,024.81	1,049.29	2,033.71	0.00	0.00	0.00	
15,300.00	90.11	179.51	13,144.03	-2,124.80	1,050.15	2,133.71	0.00	0.00	0.00	
15,400.00	90.11	179.51	13,143.84	-2,224.80	1,051.00	2,233.71	0.00	0.00	0.00	
15,500.00	90.11	179.51	13,143.65	-2,324.80	1,051.86	2,333.71	0.00	0.00	0.00	
15,600.00	90.11	179.51	13,143.46	-2,424.79	1,052.71	2,433.71	0.00	0.00	0.00	
15,700.00	90.11	179.51	13,143.27	-2,524.79	1,053.57	2,533.71	0.00	0.00	0.00	
15,800.00	90.11	179.51	13,143.08	-2,624.78	1,054.43	2,633.71	0.00	0.00	0.00	
15,900.00	90.11	179.51	13,142.89	-2,724.78	1,055.28	2,733.71	0.00	0.00	0.00	
16,000.00	90.11	179.51	13,142.70	-2,824.78	1,056.14	2,833.71	0.00	0.00	0.00	
16,100.00	90.11	179.51	13,142.51	-2,924.77	1,056.99	2,933.70	0.00	0.00	0.00	
16,200.00	90.11	179.51	13,142.32	-3,024.77	1,057.85	3,033.70	0.00	0.00	0.00	
16,300.00	90.11	179.51	13,142.14	-3,124.76	1,058.71	3,133.70	0.00	0.00	0.00	
16,400.00	90.11	179.51	13,141.95	-3,224.76	1,059.56	3,233.70	0.00	0.00	0.00	
16,500.00	90.11	179.51	13,141.76	-3,324.76	1,060.42	3,333.70	0.00	0.00	0.00	
16,600.00	90.11	179.51	13,141.57	-3,424.75	1,061.27	3,433.70	0.00	0.00	0.00	
16,700.00	90.11	179.51	13,141.38	-3,524.75	1,062.13	3,533.70	0.00	0.00	0.00	
16,800.00	90.11	179.51	13,141.19	-3,624.75	1,062.99	3,633.70	0.00	0.00	0.00	
16,900.00	90.11	179.51	13,141.00	-3,724.74	1,063.84	3,733.70	0.00	0.00	0.00	
17,000.00	90.11	179.51	13,140.81	-3,824.74	1,064.70	3,833.70	0.00	0.00	0.00	
17,100.00	90.11	179.51	13,140.62	-3,924.73	1,065.55	3,933.70	0.00	0.00	0.00	
17,200.00	90.11	179.51	13,140.43	-4,024.73	1,066.41	4,033.70	0.00	0.00	0.00	
17,300.00	90.11	179.51	13,140.24	-4,124.73	1,067.27	4,133.70	0.00	0.00	0.00	
17,400.00	90.11	179.51	13,140.05	-4,224.72	1,068.12	4,233.70	0.00	0.00	0.00	
17,500.00	90.11	179.51	13,139.86	-4,324.72	1,068.98	4,333.70	0.00	0.00	0.00	
17,600.00	90.11	179.51	13,139.67	-4,424.71	1,069.83	4,433.70	0.00	0.00	0.00	
17,700.00	90.11	179.51	13,139.48	-4,524.71	1,070.69	4,533.70	0.00	0.00	0.00	
17,800.00	90.11	179.51	13,139.29	-4,624.71	1,071.55	4,633.70	0.00	0.00	0.00	
17,900.00	90.11	179.51	13,139.10	-4,724.70	1,072.40	4,733.70	0.00	0.00	0.00	



## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Los Vaqueros Fed 513H
<b>Company:</b>	Titus Oil & Gas Production, LLC	<b>TVD Reference:</b>	3183+25 @ 3208.00usft
<b>Project:</b>	Lea County, NM (NAD83-NME)	<b>MD Reference:</b>	3183+25 @ 3208.00usft
<b>Site:</b>	A10_Los Vaqueros	<b>North Reference:</b>	Grid
<b>Well:</b>	Los Vaqueros Fed 513H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Permit		
<b>Design:</b>	APD-Rev0		

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)	
18,000.00	90.11	179.51	13,138.91	-4,824.70	1,073.26	4,833.70	0.00	0.00	0.00	
18,100.00	90.11	179.51	13,138.72	-4,924.70	1,074.11	4,933.70	0.00	0.00	0.00	
18,200.00	90.11	179.51	13,138.53	-5,024.69	1,074.97	5,033.70	0.00	0.00	0.00	
18,300.00	90.11	179.51	13,138.35	-5,124.69	1,075.83	5,133.70	0.00	0.00	0.00	
18,400.00	90.11	179.51	13,138.16	-5,224.68	1,076.68	5,233.70	0.00	0.00	0.00	
18,500.00	90.11	179.51	13,137.97	-5,324.68	1,077.54	5,333.70	0.00	0.00	0.00	
18,600.00	90.11	179.51	13,137.78	-5,424.68	1,078.39	5,433.70	0.00	0.00	0.00	
18,700.00	90.11	179.51	13,137.59	-5,524.67	1,079.25	5,533.70	0.00	0.00	0.00	
18,800.00	90.11	179.51	13,137.40	-5,624.67	1,080.11	5,633.70	0.00	0.00	0.00	
18,900.00	90.11	179.51	13,137.21	-5,724.66	1,080.96	5,733.70	0.00	0.00	0.00	
19,000.00	90.11	179.51	13,137.02	-5,824.66	1,081.82	5,833.70	0.00	0.00	0.00	
19,100.00	90.11	179.51	13,136.83	-5,924.66	1,082.67	5,933.70	0.00	0.00	0.00	
19,200.00	90.11	179.51	13,136.64	-6,024.65	1,083.53	6,033.70	0.00	0.00	0.00	
19,300.00	90.11	179.51	13,136.45	-6,124.65	1,084.39	6,133.70	0.00	0.00	0.00	
19,400.00	90.11	179.51	13,136.26	-6,224.65	1,085.24	6,233.70	0.00	0.00	0.00	
19,500.00	90.11	179.51	13,136.07	-6,324.64	1,086.10	6,333.70	0.00	0.00	0.00	
19,600.00	90.11	179.51	13,135.88	-6,424.64	1,086.95	6,433.70	0.00	0.00	0.00	
19,700.00	90.11	179.51	13,135.69	-6,524.63	1,087.81	6,533.70	0.00	0.00	0.00	
19,800.00	90.11	179.51	13,135.50	-6,624.63	1,088.66	6,633.70	0.00	0.00	0.00	
19,900.00	90.11	179.51	13,135.31	-6,724.63	1,089.52	6,733.70	0.00	0.00	0.00	
20,000.00	90.11	179.51	13,135.12	-6,824.62	1,090.38	6,833.70	0.00	0.00	0.00	
20,100.00	90.11	179.51	13,134.93	-6,924.62	1,091.23	6,933.70	0.00	0.00	0.00	
20,200.00	90.11	179.51	13,134.74	-7,024.61	1,092.09	7,033.70	0.00	0.00	0.00	
20,300.00	90.11	179.51	13,134.56	-7,124.61	1,092.94	7,133.70	0.00	0.00	0.00	
20,400.00	90.11	179.51	13,134.37	-7,224.61	1,093.80	7,233.70	0.00	0.00	0.00	
20,500.00	90.11	179.51	13,134.18	-7,324.60	1,094.66	7,333.70	0.00	0.00	0.00	
20,592.64	90.11	179.51	13,134.00	-7,417.24	1,095.45	7,426.34	0.00	0.00	0.00	
A10-02-LTP(LV513H)										
20,600.00	90.11	179.51	13,133.99	-7,424.60	1,095.51	7,433.70	0.00	0.00	0.00	
20,682.64	90.11	179.51	13,133.83	-7,507.24	1,096.22	7,516.34	0.00	0.00	0.00	
TD: 20682.64' MD, 7516.34' VS, 13133.83' TVD - A10-03-PBHL(LV513H)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
A10-00-EON(LV513H) - hit/miss target - Shape - Point	0.00	0.00	9,800.00	165.77	1,030.54	372,769.43	829,710.14	32.02140992	-103.40286496	
A10-03-PBHL(LV513H) - plan hits target center - Point	0.00	0.00	13,133.83	-7,507.24	1,096.22	365,096.42	829,775.82	32.00031806	-103.40286618	
A10-02-LTP(LV513H) - plan misses target center by 0.01usft at 20592.64usft MD (13134.00 TVD, -7417.24 N, 1095.45 E) - Point	0.00	0.00	13,134.00	-7,417.24	1,095.46	365,186.42	829,775.06	32.00056545	-103.40286613	
A10-01-FTP(LV513H) - plan misses target center by 163.87usft at 13138.65usft MD (13026.06 TVD, 6.42 N, 1031.90 E) - Point	0.00	0.00	13,148.00	115.89	1,030.90	372,719.55	829,710.50	32.02127281	-103.40286518	

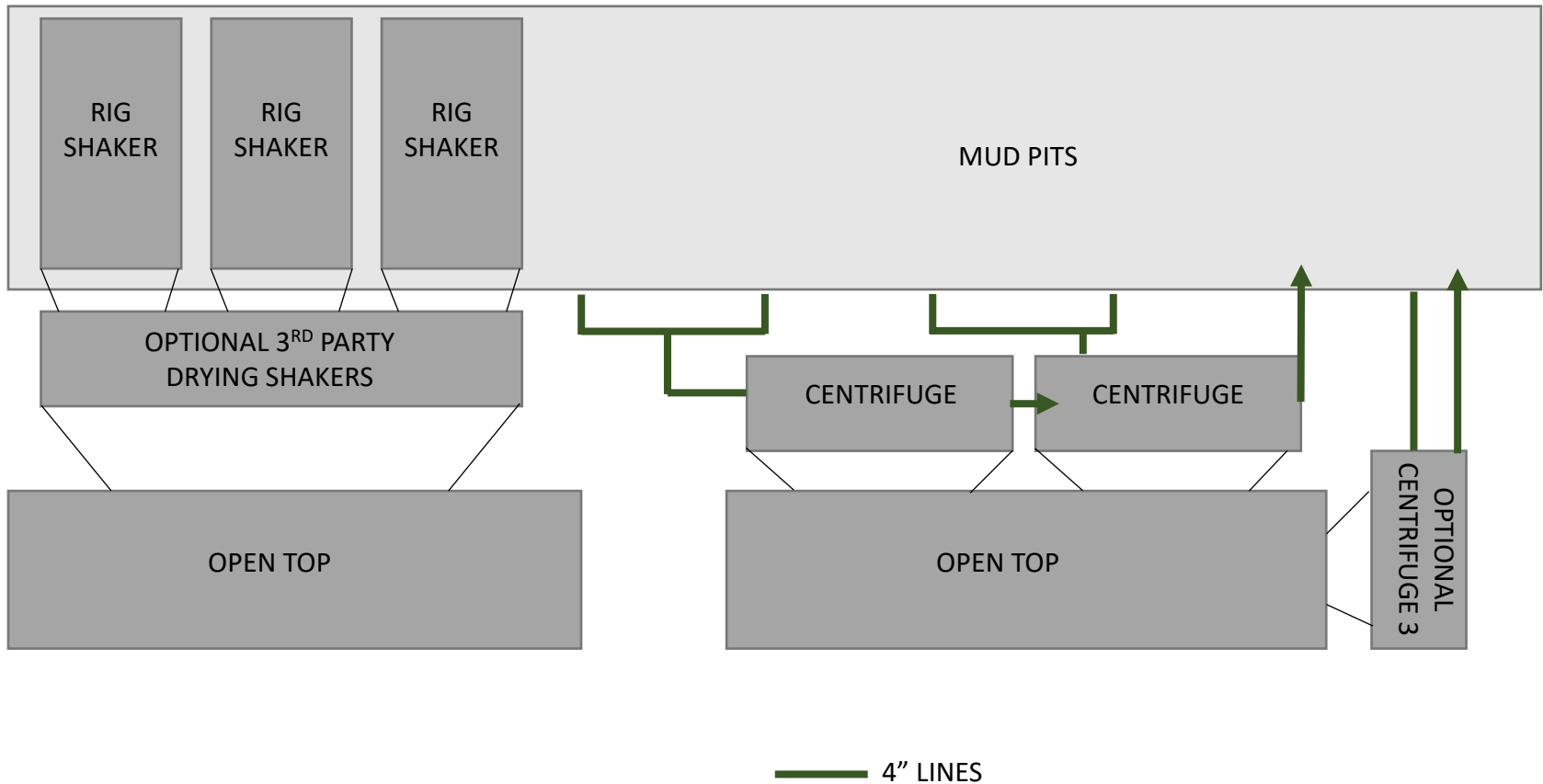


## Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Los Vaqueros Fed 513H
<b>Company:</b>	Titus Oil & Gas Production, LLC	<b>TVD Reference:</b>	3183+25 @ 3208.00usft
<b>Project:</b>	Lea County, NM (NAD83-NME)	<b>MD Reference:</b>	3183+25 @ 3208.00usft
<b>Site:</b>	A10_Los Vaqueros	<b>North Reference:</b>	Grid
<b>Well:</b>	Los Vaqueros Fed 513H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Permit		
<b>Design:</b>	APD-Rev0		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,736.80	12,670.00	165.77	1,030.54	KOP: 12736.80' MD, -156.95' VS, 12670.00' TVD
13,487.71	13,147.46	-312.58	1,034.63	EOC: 13487.71' MD, 321.42' VS, 13147.46' TVD
20,682.64	13,133.83	-7,507.24	1,096.22	TD: 20682.64' MD, 7516.34' VS, 13133.83' TVD

CLOSED LOOP SCHEMATIC



**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 Rd., Aztec, NM 87410  
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**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 93644

**CONDITIONS**

Operator: Titus Oil & Gas Production, LLC 420 Throckmorton St, Ste 1150 Fort Worth, TX 76012	OGRID: 373986
	Action Number: 93644
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**CONDITIONS**

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	4/11/2022
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	4/11/2022
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	4/11/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	4/11/2022