

Form 3160-5 (June 2019)	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT	FORM APPROVED OMB No. 1004-0137 Expires: October 31, 2021
SUNDRY NOTICES AND REPORTS ON WELLS <i>Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.</i>		5. Lease Serial No.
		6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2		7. If Unit of CA/Agreement, Name and/or No.
1. Type of Well ☐ Oil Well ☐ Gas Well ☐ Other		8. Well Name and No.
2. Name of Operator		9. API Well No.
3a. Address	3b. Phone No. (include area code)	10. Field and Pool or Exploratory Area
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		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			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ 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 recompleate 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 perfonned 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 detennined 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: NENE / 140 FNL / 1065 FEL / TWSP: 20S / RANGE: 34E / SECTION: 11 / LAT: 32.594493 / LONG: -103.5257874 (TVD: 0 feet, MD: 0 feet)

PPP: SENE / 1320 FNL / 350 FEL / TWSP: 20S / RANGE: 34E / SECTION: 14 / LAT: 32.5746747 / LONG: -103.523721 (TVD: 10879 feet, MD: 16800 feet)

PPP: NENE / 0 FNL / 350 FEL / TWSP: 20S / RANGE: 34E / SECTION: 14 / LAT: 32.580369 / LONG: -103.523722 (TVD: 10883 feet, MD: 15500 feet)

PPP: SENE / 1320 FNL / 350 FEL / TWSP: 20S / RANGE: 34E / SECTION: 11 / LAT: 32.591269 / LONG: -103.523725 (TVD: 10894 feet, MD: 11500 feet)

PPP: NENE / 816 FNL / 350 FEL / TWSP: 20S / RANGE: 34E / SECTION: 11 / LAT: 32.592651 / LONG: -103.523725 (TVD: 11299 feet, MD: 11600 feet)

BHL: SENE / 2535 FNL / 350 FEL / TWSP: 20S / RANGE: 34E / SECTION: 14 / LAT: 32.5740103 / LONG: -103.5237209 (TVD: 10875 feet, MD: 18228 feet)

CONFIDENTIAL

11-20-34-A Sundry ID 2801742 Lea Unit 640H Lea NMNM06531 AVANT OPERATING LLC 13-22g 2-27-2024 LV

Lea Unit 640H

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	8.77	1.42	0.9	1,785	4	1.52	2.79	97,283		
"B"				btc				0				0		
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,132				Tail Cmt	does not	circ to sfc.	Totals:	1,785				97,283		
Comparison of Proposed to Minimum Required Cement Volumes														
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	830	1443	1240	16	8.60	1793	2M				1.56		
Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.														
Site plot (pipe racks 3 or 4) as per D.O.D. (D 4 L not found)														

9 5/8		casing inside the		13 3/8		Design Factors					Int 1	
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00		j 55	btc	2.77	1.2	0.81	4,000	1	1.49	2.04	160,000
"B"	40.00		i 80	btc	13.51	1.01	1.18	1,695	2	2.17	1.72	67,800
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,020								Totals:	5,695			227,800
The cement volume(s) are intended to achieve a top of 0						ft from surface or a		1785			overlap.	
Hole	Annular	1 Stage		Min	1 Stage	Drilling	Calc	Req'd			Min Dist	
Size	Volume	Cmt Sx		CuFt Cmt	Cu Ft	Mud Wt	MASP	BOPE			Hole-Cplg	
12 1/4	0.3132	1220		2140	1872	14	10.30	2651	3M			0.81
D V Tool(s):								sum of sx	Σ CuFt			Σ%excess
t by stage % :		#VALUE!	#VALUE!					1220	2140			14
Class 'C' tail cmt yld > 1.35												
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.99, b, c, d All > 0.70, OK.												

5 1/2	casing inside the		9 5/8		Design Factors					Prod 1		
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	20.00		p 110	gbcd	3.18	2.28	2.6	17,641	3	4.77	4.19	352,820
"B"								0				0
"C"								0				0
"D"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,217								Totals:	17,641			352,820
The cement volume(s) are intended to achieve a top of								5137	ft from surface or a		558	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
8 3/4	0.2526	2810	5114	3163	62	9.30						1.23
Class 'C' tail cmt yld > 1.35												

#N/A											
0	5 1/2			Design Factors				<Choose Casing>			
Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	B@S	a-B	a-C	Weight
"A"			0.00				0				0
"B"			0.00				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	0	0		
Cmt vol calc below includes this csg, TOC intended							#N/A	ft from surface or a	#N/A	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		
0		#N/A	#N/A	0	#N/A						
#N/A Capitan Reef est top XXXX.											

**PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Avant Operating LLC
LEASE NO.:	NMNM06531
LOCATION:	Section 11, T.20 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Lea Unit 501H
BOTTOM HOLE FOOTAGE	2535'/N & 1320'/E
ATS/API ID:	ATS-22-543
APD ID:	10400082584
Sundry ID:	2801742
Date APD Submitted:	N/a

COA

H2S	Yes		
Potash	None	None	
Cave/Karst Potential	Low		
Cave/Karst Potential	☐ Critical		
Variance	☒ None	☒ Flex Hose	☒ Other
Wellhead	Conventional and Multibowl		
Other	☐ 4 String	Capitan Reef Int 1	☐ WIPP
Other	Pilot Hole None	☐ Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter None	Primary Cement Squeeze None
Special Requirements	☐ Water Disposal/Injection	☐ COM	☒ Unit
Special Requirements	☐ Batch Sundry	Waste Prevention None	
Special Requirements Variance	☐ Break Testing	☒ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Yates-Severn Rivers and Wolfcamp** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1785 feet** (a minimum of **25 feet (Lea 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.

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.

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

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

- ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
 - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
 - ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
- Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 200** into the previous casing, whichever is greater. Operator shall provide method of verification.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.

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.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

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)**Unit Wells**

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

Commercial Well Determination

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

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 **Lea County: 575-689-5981**.

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)

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

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) 7/23/2024

Avant Operating, LLC

Lea Co., NM (NAD 83)

Lea Unit 14 11

Lea Unit 501H

OH

Plan: Plan 0.1

Standard Planning Report

16 July, 2024

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Lea Unit 501H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3692.6usft (3692.6)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3692.6usft (3692.6)
Site:	Lea Unit 14 11	North Reference:	Grid
Well:	Lea Unit 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Project	Lea Co., NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Lea Unit 14 11				
Site Position:		Northing:	573,022.18 usft	Latitude:	32.572704
From:	Lat/Long	Easting:	789,828.61 usft	Longitude:	-103.526675
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	Lea Unit 501H					
Well Position	+N/-S	0.0 usft	Northing:	580,952.15 usft	Latitude:	32.594495
	+E/-W	0.0 usft	Easting:	790,041.99 usft	Longitude:	-103.525787
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,666.1 usft
Grid Convergence:		0.44 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	8.57	60.80	49,652.61773660

Design	Plan 0.1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	181.46	

Plan Survey Tool Program			Date	7/16/2024	
Depth From (usft)	Depth To (usft)	Survey (Wellbore)		Tool Name	Remarks
1	0.0	17,641.4	Plan 0.1 (OH)	B001Mb_MWD+HRGM	
				OWSG MWD + HRGM	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,150.5	3.01	289.23	2,150.4	1.3	-3.7	2.00	2.00	0.00	289.23	
7,156.5	3.01	289.23	7,149.6	87.9	-251.9	0.00	0.00	0.00	0.00	
7,307.0	0.00	0.00	7,300.0	89.2	-255.7	2.00	-2.00	0.00	180.00	KOP - Lea Unit #501H
9,604.6	0.00	0.00	9,597.5	89.2	-255.7	0.00	0.00	0.00	0.00	
10,354.6	90.00	179.56	10,075.0	-388.3	-252.0	12.00	12.00	0.00	179.56	
17,641.4	90.00	179.56	10,075.0	-7,674.8	-195.4	0.00	0.00	0.00	0.00	LTP/BHL - Lea Unit #

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Lea Unit 501H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3692.6usft (3692.6)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3692.6usft (3692.6)
Site:	Lea Unit 14 11	North Reference:	Grid
Well:	Lea Unit 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,620.0	0.00	0.00	1,620.0	0.0	0.0	0.0	0.00	0.00	0.00
RUSTLER									
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
2,100.0	2.00	289.23	2,100.0	0.6	-1.6	-0.5	2.00	2.00	0.00
2,150.5	3.01	289.23	2,150.4	1.3	-3.7	-1.2	2.00	2.00	0.00
Start 5006.0 hold at 2150.5 MD									
2,200.0	3.01	289.23	2,199.9	2.2	-6.2	-2.0	0.00	0.00	0.00
2,300.0	3.01	289.23	2,299.7	3.9	-11.1	-3.6	0.00	0.00	0.00
2,400.0	3.01	289.23	2,399.6	5.6	-16.1	-5.2	0.00	0.00	0.00
2,500.0	3.01	289.23	2,499.4	7.3	-21.1	-6.8	0.00	0.00	0.00
2,600.0	3.01	289.23	2,599.3	9.1	-26.0	-8.4	0.00	0.00	0.00
2,700.0	3.01	289.23	2,699.2	10.8	-31.0	-10.0	0.00	0.00	0.00
2,800.0	3.01	289.23	2,799.0	12.5	-35.9	-11.6	0.00	0.00	0.00
2,900.0	3.01	289.23	2,898.9	14.3	-40.9	-13.2	0.00	0.00	0.00
3,000.0	3.01	289.23	2,998.8	16.0	-45.9	-14.8	0.00	0.00	0.00
3,100.0	3.01	289.23	3,098.6	17.7	-50.8	-16.4	0.00	0.00	0.00
3,200.0	3.01	289.23	3,198.5	19.5	-55.8	-18.0	0.00	0.00	0.00
3,300.0	3.01	289.23	3,298.3	21.2	-60.7	-19.6	0.00	0.00	0.00
3,400.0	3.01	289.23	3,398.2	22.9	-65.7	-21.2	0.00	0.00	0.00
3,416.8	3.01	289.23	3,415.0	23.2	-66.5	-21.5	0.00	0.00	0.00
YATES									
3,500.0	3.01	289.23	3,498.1	24.6	-70.6	-22.8	0.00	0.00	0.00
3,600.0	3.01	289.23	3,597.9	26.4	-75.6	-24.4	0.00	0.00	0.00
3,700.0	3.01	289.23	3,697.8	28.1	-80.6	-26.0	0.00	0.00	0.00
3,800.0	3.01	289.23	3,797.7	29.8	-85.5	-27.6	0.00	0.00	0.00
3,900.0	3.01	289.23	3,897.5	31.6	-90.5	-29.3	0.00	0.00	0.00
4,000.0	3.01	289.23	3,997.4	33.3	-95.4	-30.9	0.00	0.00	0.00
4,100.0	3.01	289.23	4,097.2	35.0	-100.4	-32.5	0.00	0.00	0.00
4,200.0	3.01	289.23	4,197.1	36.8	-105.3	-34.1	0.00	0.00	0.00
4,300.0	3.01	289.23	4,297.0	38.5	-110.3	-35.7	0.00	0.00	0.00
4,400.0	3.01	289.23	4,396.8	40.2	-115.3	-37.3	0.00	0.00	0.00
4,500.0	3.01	289.23	4,496.7	41.9	-120.2	-38.9	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Lea Unit 501H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3692.6usft (3692.6)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3692.6usft (3692.6)
Site:	Lea Unit 14 11	North Reference:	Grid
Well:	Lea Unit 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.0	3.01	289.23	4,596.6	43.7	-125.2	-40.5	0.00	0.00	0.00
4,700.0	3.01	289.23	4,696.4	45.4	-130.1	-42.1	0.00	0.00	0.00
4,800.0	3.01	289.23	4,796.3	47.1	-135.1	-43.7	0.00	0.00	0.00
4,900.0	3.01	289.23	4,896.1	48.9	-140.1	-45.3	0.00	0.00	0.00
5,000.0	3.01	289.23	4,996.0	50.6	-145.0	-46.9	0.00	0.00	0.00
5,100.0	3.01	289.23	5,095.9	52.3	-150.0	-48.5	0.00	0.00	0.00
5,187.3	3.01	289.23	5,183.0	53.8	-154.3	-49.9	0.00	0.00	0.00
CAPITAN_REEF									
5,200.0	3.01	289.23	5,195.7	54.1	-154.9	-50.1	0.00	0.00	0.00
5,300.0	3.01	289.23	5,295.6	55.8	-159.9	-51.7	0.00	0.00	0.00
5,400.0	3.01	289.23	5,395.4	57.5	-164.8	-53.3	0.00	0.00	0.00
5,500.0	3.01	289.23	5,495.3	59.2	-169.8	-54.9	0.00	0.00	0.00
5,594.8	3.01	289.23	5,590.0	60.9	-174.5	-56.4	0.00	0.00	0.00
CHERRY_CNYN									
5,600.0	3.01	289.23	5,595.2	61.0	-174.8	-56.5	0.00	0.00	0.00
5,700.0	3.01	289.23	5,695.0	62.7	-179.7	-58.1	0.00	0.00	0.00
5,800.0	3.01	289.23	5,794.9	64.4	-184.7	-59.7	0.00	0.00	0.00
5,900.0	3.01	289.23	5,894.8	66.2	-189.6	-61.3	0.00	0.00	0.00
6,000.0	3.01	289.23	5,994.6	67.9	-194.6	-62.9	0.00	0.00	0.00
6,100.0	3.01	289.23	6,094.5	69.6	-199.6	-64.5	0.00	0.00	0.00
6,200.0	3.01	289.23	6,194.3	71.4	-204.5	-66.1	0.00	0.00	0.00
6,300.0	3.01	289.23	6,294.2	73.1	-209.5	-67.7	0.00	0.00	0.00
6,400.0	3.01	289.23	6,394.1	74.8	-214.4	-69.3	0.00	0.00	0.00
6,481.0	3.01	289.23	6,475.0	76.2	-218.4	-70.6	0.00	0.00	0.00
BRUSHY_CANYON									
6,500.0	3.01	289.23	6,493.9	76.5	-219.4	-70.9	0.00	0.00	0.00
6,600.0	3.01	289.23	6,593.8	78.3	-224.3	-72.5	0.00	0.00	0.00
6,700.0	3.01	289.23	6,693.7	80.0	-229.3	-74.1	0.00	0.00	0.00
6,800.0	3.01	289.23	6,793.5	81.7	-234.3	-75.7	0.00	0.00	0.00
6,900.0	3.01	289.23	6,893.4	83.5	-239.2	-77.3	0.00	0.00	0.00
7,000.0	3.01	289.23	6,993.2	85.2	-244.2	-78.9	0.00	0.00	0.00
7,100.0	3.01	289.23	7,093.1	86.9	-249.1	-80.6	0.00	0.00	0.00
7,156.5	3.01	289.23	7,149.6	87.9	-251.9	-81.5	0.00	0.00	0.00
Start Drop -2.00									
7,200.0	2.14	289.23	7,193.0	88.5	-253.8	-82.1	2.00	-2.00	0.00
7,307.0	0.00	0.00	7,300.0	89.2	-255.7	-82.7	2.00	-2.00	0.00
Start 2297.5 hold at 7307.0 MD - KOP - Lea Unit #501H									
7,400.0	0.00	0.00	7,393.0	89.2	-255.7	-82.7	0.00	0.00	0.00
7,500.0	0.00	0.00	7,493.0	89.2	-255.7	-82.7	0.00	0.00	0.00
7,600.0	0.00	0.00	7,593.0	89.2	-255.7	-82.7	0.00	0.00	0.00
7,700.0	0.00	0.00	7,693.0	89.2	-255.7	-82.7	0.00	0.00	0.00
7,800.0	0.00	0.00	7,793.0	89.2	-255.7	-82.7	0.00	0.00	0.00
7,900.0	0.00	0.00	7,893.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,000.0	0.00	0.00	7,993.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,100.0	0.00	0.00	8,093.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,198.0	0.00	0.00	8,191.0	89.2	-255.7	-82.7	0.00	0.00	0.00
BSPG_LIME *									
8,200.0	0.00	0.00	8,193.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,292.0	0.00	0.00	8,285.0	89.2	-255.7	-82.7	0.00	0.00	0.00
AVLN_A									
8,300.0	0.00	0.00	8,293.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,400.0	0.00	0.00	8,393.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,500.0	0.00	0.00	8,493.0	89.2	-255.7	-82.7	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Lea Unit 501H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3692.6usft (3692.6)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3692.6usft (3692.6)
Site:	Lea Unit 14 11	North Reference:	Grid
Well:	Lea Unit 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,600.0	0.00	0.00	8,593.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,700.0	0.00	0.00	8,693.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,788.0	0.00	0.00	8,781.0	89.2	-255.7	-82.7	0.00	0.00	0.00
AVALON_B									
8,800.0	0.00	0.00	8,793.0	89.2	-255.7	-82.7	0.00	0.00	0.00
8,900.0	0.00	0.00	8,893.0	89.2	-255.7	-82.7	0.00	0.00	0.00
9,000.0	0.00	0.00	8,993.0	89.2	-255.7	-82.7	0.00	0.00	0.00
9,100.0	0.00	0.00	9,093.0	89.2	-255.7	-82.7	0.00	0.00	0.00
9,200.0	0.00	0.00	9,193.0	89.2	-255.7	-82.7	0.00	0.00	0.00
9,300.0	0.00	0.00	9,293.0	89.2	-255.7	-82.7	0.00	0.00	0.00
9,400.0	0.00	0.00	9,393.0	89.2	-255.7	-82.7	0.00	0.00	0.00
9,500.0	0.00	0.00	9,493.0	89.2	-255.7	-82.7	0.00	0.00	0.00
9,516.0	0.00	0.00	9,509.0	89.2	-255.7	-82.7	0.00	0.00	0.00
FBSG_SD *									
9,604.6	0.00	0.00	9,597.5	89.2	-255.7	-82.7	0.00	0.00	0.00
KOP #2 - Start Build 12.00									
9,625.0	2.45	179.56	9,617.9	88.8	-255.7	-82.2	12.00	12.00	0.00
9,642.1	4.50	179.56	9,635.0	87.7	-255.7	-81.2	12.00	12.00	0.00
FBSG_SD_A_BASE									
9,650.0	5.45	179.56	9,642.9	87.0	-255.7	-80.5	12.00	12.00	0.00
9,675.0	8.45	179.56	9,667.7	84.0	-255.6	-77.5	12.00	12.00	0.00
9,700.0	11.45	179.56	9,692.3	79.7	-255.6	-73.2	12.00	12.00	0.00
9,725.0	14.45	179.56	9,716.7	74.1	-255.6	-67.6	12.00	12.00	0.00
9,750.0	17.45	179.56	9,740.7	67.2	-255.5	-60.7	12.00	12.00	0.00
9,775.0	20.45	179.56	9,764.4	59.1	-255.4	-52.6	12.00	12.00	0.00
9,800.0	23.45	179.56	9,787.5	49.8	-255.4	-43.2	12.00	12.00	0.00
9,810.4	24.69	179.56	9,797.0	45.5	-255.3	-39.0	12.00	12.00	0.00
SBSG_CARB									
9,825.0	26.45	179.56	9,810.2	39.2	-255.3	-32.7	12.00	12.00	0.00
9,850.0	29.45	179.56	9,832.3	27.5	-255.2	-21.0	12.00	12.00	0.00
9,875.0	32.45	179.56	9,853.7	14.6	-255.1	-8.2	12.00	12.00	0.00
9,900.0	35.45	179.56	9,874.5	0.7	-255.0	5.8	12.00	12.00	0.00
9,925.0	38.45	179.56	9,894.4	-14.3	-254.9	20.8	12.00	12.00	0.00
9,950.0	41.45	179.56	9,913.6	-30.4	-254.7	36.9	12.00	12.00	0.00
9,975.0	44.45	179.56	9,931.9	-47.4	-254.6	53.9	12.00	12.00	0.00
10,000.0	47.45	179.56	9,949.3	-65.4	-254.5	71.8	12.00	12.00	0.00
10,003.7	47.89	179.56	9,951.8	-68.1	-254.4	74.6	12.00	12.00	0.00
FTP - Lea Unit #501H									
10,025.0	50.45	179.56	9,965.7	-84.2	-254.3	90.7	12.00	12.00	0.00
10,050.0	53.45	179.56	9,981.1	-103.9	-254.2	110.4	12.00	12.00	0.00
10,075.0	56.45	179.56	9,995.5	-124.4	-254.0	130.8	12.00	12.00	0.00
10,100.0	59.45	179.56	10,008.7	-145.6	-253.8	152.0	12.00	12.00	0.00
10,125.0	62.45	179.56	10,020.9	-167.4	-253.7	173.8	12.00	12.00	0.00
10,150.0	65.45	179.56	10,031.8	-189.9	-253.5	196.3	12.00	12.00	0.00
10,168.0	67.61	179.56	10,039.0	-206.4	-253.4	212.8	12.00	12.00	0.00
SBSG_SD									
10,175.0	68.45	179.56	10,041.6	-212.9	-253.3	219.3	12.00	12.00	0.00
10,200.0	71.45	179.56	10,050.2	-236.4	-253.1	242.7	12.00	12.00	0.00
10,225.0	74.45	179.56	10,057.5	-260.3	-253.0	266.6	12.00	12.00	0.00
10,250.0	77.45	179.56	10,063.6	-284.5	-252.8	290.8	12.00	12.00	0.00
10,275.0	80.45	179.56	10,068.4	-309.0	-252.6	315.4	12.00	12.00	0.00
10,300.0	83.45	179.56	10,071.9	-333.8	-252.4	340.1	12.00	12.00	0.00
10,325.0	86.45	179.56	10,074.1	-358.7	-252.2	365.0	12.00	12.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Lea Unit 501H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3692.6usft (3692.6)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3692.6usft (3692.6)
Site:	Lea Unit 14 11	North Reference:	Grid
Well:	Lea Unit 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,350.0	89.45	179.56	10,075.0	-383.7	-252.0	390.0	12.00	12.00	0.00
10,354.6	90.00	179.56	10,075.0	-388.3	-252.0	394.5	12.00	12.00	0.00
LP - Start 7286.8 hold at 10354.6 MD									
10,400.0	90.00	179.56	10,075.0	-433.7	-251.6	439.9	0.00	0.00	0.00
10,500.0	90.00	179.56	10,075.0	-533.7	-250.8	539.9	0.00	0.00	0.00
10,600.0	90.00	179.56	10,075.0	-633.7	-250.1	639.8	0.00	0.00	0.00
10,700.0	90.00	179.56	10,075.0	-733.7	-249.3	739.8	0.00	0.00	0.00
10,800.0	90.00	179.56	10,075.0	-833.7	-248.5	839.7	0.00	0.00	0.00
10,900.0	90.00	179.56	10,075.0	-933.7	-247.7	939.7	0.00	0.00	0.00
11,000.0	90.00	179.56	10,075.0	-1,033.7	-247.0	1,039.6	0.00	0.00	0.00
11,100.0	90.00	179.56	10,075.0	-1,133.6	-246.2	1,139.5	0.00	0.00	0.00
11,200.0	90.00	179.56	10,075.0	-1,233.6	-245.4	1,239.5	0.00	0.00	0.00
11,300.0	90.00	179.56	10,075.0	-1,333.6	-244.6	1,339.4	0.00	0.00	0.00
11,400.0	90.00	179.56	10,075.0	-1,433.6	-243.8	1,439.4	0.00	0.00	0.00
11,500.0	90.00	179.56	10,075.0	-1,533.6	-243.1	1,539.3	0.00	0.00	0.00
11,600.0	90.00	179.56	10,075.0	-1,633.6	-242.3	1,639.3	0.00	0.00	0.00
11,700.0	90.00	179.56	10,075.0	-1,733.6	-241.5	1,739.2	0.00	0.00	0.00
11,800.0	90.00	179.56	10,075.0	-1,833.6	-240.7	1,839.2	0.00	0.00	0.00
11,900.0	90.00	179.56	10,075.0	-1,933.6	-240.0	1,939.1	0.00	0.00	0.00
12,000.0	90.00	179.56	10,075.0	-2,033.6	-239.2	2,039.0	0.00	0.00	0.00
12,100.0	90.00	179.56	10,075.0	-2,133.6	-238.4	2,139.0	0.00	0.00	0.00
12,200.0	90.00	179.56	10,075.0	-2,233.6	-237.6	2,238.9	0.00	0.00	0.00
12,300.0	90.00	179.56	10,075.0	-2,333.6	-236.9	2,338.9	0.00	0.00	0.00
12,400.0	90.00	179.56	10,075.0	-2,433.6	-236.1	2,438.8	0.00	0.00	0.00
12,500.0	90.00	179.56	10,075.0	-2,533.6	-235.3	2,538.8	0.00	0.00	0.00
12,600.0	90.00	179.56	10,075.0	-2,633.6	-234.5	2,638.7	0.00	0.00	0.00
12,700.0	90.00	179.56	10,075.0	-2,733.6	-233.8	2,738.7	0.00	0.00	0.00
12,800.0	90.00	179.56	10,075.0	-2,833.6	-233.0	2,838.6	0.00	0.00	0.00
12,900.0	90.00	179.56	10,075.0	-2,933.6	-232.2	2,938.6	0.00	0.00	0.00
13,000.0	90.00	179.56	10,075.0	-3,033.6	-231.4	3,038.5	0.00	0.00	0.00
13,100.0	90.00	179.56	10,075.0	-3,133.6	-230.7	3,138.4	0.00	0.00	0.00
13,200.0	90.00	179.56	10,075.0	-3,233.6	-229.9	3,238.4	0.00	0.00	0.00
13,300.0	90.00	179.56	10,075.0	-3,333.6	-229.1	3,338.3	0.00	0.00	0.00
13,400.0	90.00	179.56	10,075.0	-3,433.6	-228.3	3,438.3	0.00	0.00	0.00
13,500.0	90.00	179.56	10,075.0	-3,533.6	-227.5	3,538.2	0.00	0.00	0.00
13,600.0	90.00	179.56	10,075.0	-3,633.6	-226.8	3,638.2	0.00	0.00	0.00
13,700.0	90.00	179.56	10,075.0	-3,733.6	-226.0	3,738.1	0.00	0.00	0.00
13,800.0	90.00	179.56	10,075.0	-3,833.6	-225.2	3,838.1	0.00	0.00	0.00
13,900.0	90.00	179.56	10,075.0	-3,933.6	-224.4	3,938.0	0.00	0.00	0.00
14,000.0	90.00	179.56	10,075.0	-4,033.6	-223.7	4,037.9	0.00	0.00	0.00
14,100.0	90.00	179.56	10,075.0	-4,133.6	-222.9	4,137.9	0.00	0.00	0.00
14,200.0	90.00	179.56	10,075.0	-4,233.6	-222.1	4,237.8	0.00	0.00	0.00
14,300.0	90.00	179.56	10,075.0	-4,333.6	-221.3	4,337.8	0.00	0.00	0.00
14,400.0	90.00	179.56	10,075.0	-4,433.5	-220.6	4,437.7	0.00	0.00	0.00
14,500.0	90.00	179.56	10,075.0	-4,533.5	-219.8	4,537.7	0.00	0.00	0.00
14,600.0	90.00	179.56	10,075.0	-4,633.5	-219.0	4,637.6	0.00	0.00	0.00
14,700.0	90.00	179.56	10,075.0	-4,733.5	-218.2	4,737.6	0.00	0.00	0.00
14,800.0	90.00	179.56	10,075.0	-4,833.5	-217.5	4,837.5	0.00	0.00	0.00
14,900.0	90.00	179.56	10,075.0	-4,933.5	-216.7	4,937.4	0.00	0.00	0.00
15,000.0	90.00	179.56	10,075.0	-5,033.5	-215.9	5,037.4	0.00	0.00	0.00
15,100.0	90.00	179.56	10,075.0	-5,133.5	-215.1	5,137.3	0.00	0.00	0.00
15,200.0	90.00	179.56	10,075.0	-5,233.5	-214.4	5,237.3	0.00	0.00	0.00
15,300.0	90.00	179.56	10,075.0	-5,333.5	-213.6	5,337.2	0.00	0.00	0.00
15,400.0	90.00	179.56	10,075.0	-5,433.5	-212.8	5,437.2	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Lea Unit 501H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3692.6usft (3692.6)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3692.6usft (3692.6)
Site:	Lea Unit 14 11	North Reference:	Grid
Well:	Lea Unit 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,500.0	90.00	179.56	10,075.0	-5,533.5	-212.0	5,537.1	0.00	0.00	0.00	
15,600.0	90.00	179.56	10,075.0	-5,633.5	-211.2	5,637.1	0.00	0.00	0.00	
15,700.0	90.00	179.56	10,075.0	-5,733.5	-210.5	5,737.0	0.00	0.00	0.00	
15,800.0	90.00	179.56	10,075.0	-5,833.5	-209.7	5,837.0	0.00	0.00	0.00	
15,900.0	90.00	179.56	10,075.0	-5,933.5	-208.9	5,936.9	0.00	0.00	0.00	
16,000.0	90.00	179.56	10,075.0	-6,033.5	-208.1	6,036.8	0.00	0.00	0.00	
16,100.0	90.00	179.56	10,075.0	-6,133.5	-207.4	6,136.8	0.00	0.00	0.00	
16,200.0	90.00	179.56	10,075.0	-6,233.5	-206.6	6,236.7	0.00	0.00	0.00	
16,300.0	90.00	179.56	10,075.0	-6,333.5	-205.8	6,336.7	0.00	0.00	0.00	
16,400.0	90.00	179.56	10,075.0	-6,433.5	-205.0	6,436.6	0.00	0.00	0.00	
16,500.0	90.00	179.56	10,075.0	-6,533.5	-204.3	6,536.6	0.00	0.00	0.00	
16,600.0	90.00	179.56	10,075.0	-6,633.5	-203.5	6,636.5	0.00	0.00	0.00	
16,700.0	90.00	179.56	10,075.0	-6,733.5	-202.7	6,736.5	0.00	0.00	0.00	
16,800.0	90.00	179.56	10,075.0	-6,833.5	-201.9	6,836.4	0.00	0.00	0.00	
16,900.0	90.00	179.56	10,075.0	-6,933.5	-201.2	6,936.3	0.00	0.00	0.00	
17,000.0	90.00	179.56	10,075.0	-7,033.5	-200.4	7,036.3	0.00	0.00	0.00	
17,100.0	90.00	179.56	10,075.0	-7,133.5	-199.6	7,136.2	0.00	0.00	0.00	
17,200.0	90.00	179.56	10,075.0	-7,233.5	-198.8	7,236.2	0.00	0.00	0.00	
17,300.0	90.00	179.56	10,075.0	-7,333.5	-198.1	7,336.1	0.00	0.00	0.00	
17,400.0	90.00	179.56	10,075.0	-7,433.5	-197.3	7,436.1	0.00	0.00	0.00	
17,500.0	90.00	179.56	10,075.0	-7,533.5	-196.5	7,536.0	0.00	0.00	0.00	
17,600.0	90.00	179.56	10,075.0	-7,633.5	-195.7	7,636.0	0.00	0.00	0.00	
17,641.4	90.00	179.56	10,075.0	-7,674.8	-195.4	7,677.3	0.00	0.00	0.00	
TD at 17641.4 - LTP/BHL - Lea Unit #501H										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP - Lea Unit #501H - hit/miss target - Shape - Point	0.00	0.00	7,300.0	89.2	-255.7	581,041.35	789,786.32	32.594745	-103.526615
LTP/BHL - Lea Unit #501 - plan hits target center - Point	0.00	0.00	10,075.0	-7,674.8	-195.4	573,277.30	789,846.59	32.573405	-103.526611
FTP - Lea Unit #501H - plan misses target center by 163.4usft at 10003.7usft MD (9951.8 TVD, -68.1 N, -254.4 E) - Point	0.00	0.00	10,075.0	39.2	-255.3	580,991.35	789,786.71	32.594608	-103.526615

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
17,647.3		20" Casing	20	24

Planning Report

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Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3692.6usft (3692.6)
Site:	Lea Unit 14 11	North Reference:	Grid
Well:	Lea Unit 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,620.0	1,620.0	RUSTLER				
3,416.8	3,415.0	YATES				
5,187.3	5,183.0	CAPITAN_REEF				
5,594.8	5,590.0	CHERRY_CNYN				
6,481.0	6,475.0	BRUSHY_CANYON				
8,198.0	8,191.0	BSPG_LIME *				
8,292.0	8,285.0	AVLN_A				
8,788.0	8,781.0	AVALON_B				
9,516.0	9,509.0	FBSG__SD *				
9,642.1	9,635.0	FBSG_SD_A_BASE				
9,810.4	9,797.0	SBSG_CARB				
10,168.0	10,039.0	SBSG_SD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 2.00	
2,150.5	2,150.4	1.3	-3.7	Start 5006.0 hold at 2150.5 MD	
7,156.5	7,149.6	87.9	-251.9	Start Drop -2.00	
7,307.0	7,300.0	89.2	-255.7	Start 2297.5 hold at 7307.0 MD	
9,604.6	9,597.5	89.2	-255.7	KOP #2 - Start Build 12.00	
10,354.6	10,075.0	-388.3	-252.0	LP - Start 7286.8 hold at 10354.6 MD	
17,641.4	10,075.0	-7,674.8	-195.4	TD at 17641.4	

AFE:

API:

REGULATORY: NMOCD

PERMIT #

RIG: H&P 255

KB: 3691.5 (25.5')

GL: 3666'

CAMERON WELLHEAD

9-5/8" x 7"11"

5K SSD-II

SHL:

Lea Unit #501H

Bone Spring

Lea County, NM

Sec. 11, T-20S, R-34E; 140 FNL, 1065 FEL

Lat: 32.5944949, Long: -103.5257872 (NAD83)

HOLE SIZE	MD	FORMATION	TVD	MUD	CASING	CEMENT	SPECIAL INSTRUCTIONS
	120	20" Conductor	120	SPUD MW 8.4 ppg	13 3/8 "	LEAD: 12.8 PPG Top of Lead: 0 20% Excess	Circ cement to surface is a NMOCD requirement
17 1/2 "	1,620	Rustler	1,620	Fresh	+/- 13 Bowsprings 1 20' pup jt	TAIL: 14.8 PPG Top of Tail: 1316' 20% Excess	Casing must be set 25' into the Rustler
	1,645	SURF CSG PT	1,645	8.6 ppg	1 joint shoe track		MUD: Fresh water only
12 1/4 "	3,417	Yates	3,415	DRLOUT MW 9.8 ppg	SPLIT STRING 9 5/8 "	LEAD: 12.8 PPG Top of Lead: 0' 20% excess	Circ cement to surface is a NMOCD requirement
	5,187	Capitan Reef	5,183		40# J-55 BTC 0' - 4000'	TAIL: 14.8 PPG Top of Tail: 4556' 20% Excess	
	5,595	Cherry Canyon	5,590	Brine	1 20' pup jt		
	5,695	INTRM CSG PT	5,690	40# L-80 HC BTC 4000' - 5695'	+/- 9 Bowsprings		
				TD MW 10.3 ppg	1 joint shoe track		
8 3/4 " VERTICAL	6,481	Brushy Canyon	6,475	DRLOUT MW 8.8			
	8,198	Bone Spring	8,191	Cut Brine			
	9,516	1st BS Sand	9,509	KOP MW 9.3			
8 3/4 " CURVE	9,605	KOP	9,598	EOC CUT MW 9.3	Lat MW 9.3	OBM	TD MW 9.3
	10,168	2nd BS Sand	10,039				
	10,355	EOC	10,075				
8 3/4 " LATERAL					5 1/2 "	LEAD: 11 PPG Top of Lead: 0 20% Excess	17,641 ' MD
					20# P-110 HC GBCD	TAIL: 14.8 PPG Top of Tail: 0 20% Excess	7,677 ' VS
					1 20' pup jt		10,075 ' TVD
					2 20' Marker Jts		
					+/- 32 Bowsprings		
					+/- 27 Doublebows		
					+/- 173 Solid Bodies		
						All aqueous fluids (spacer and disp) left inside or outside of pipe must have biocide & corrosion inhibitor	

DIRECTIONS TO LOCAITON:



Offline Cementing Summary – Intermediate Casing

No changes to the cement program will take place for offline cementing.

Note: Offline cementing will only be preformed within the Bone Springs and shallower with a MASP less than 5000 psi.

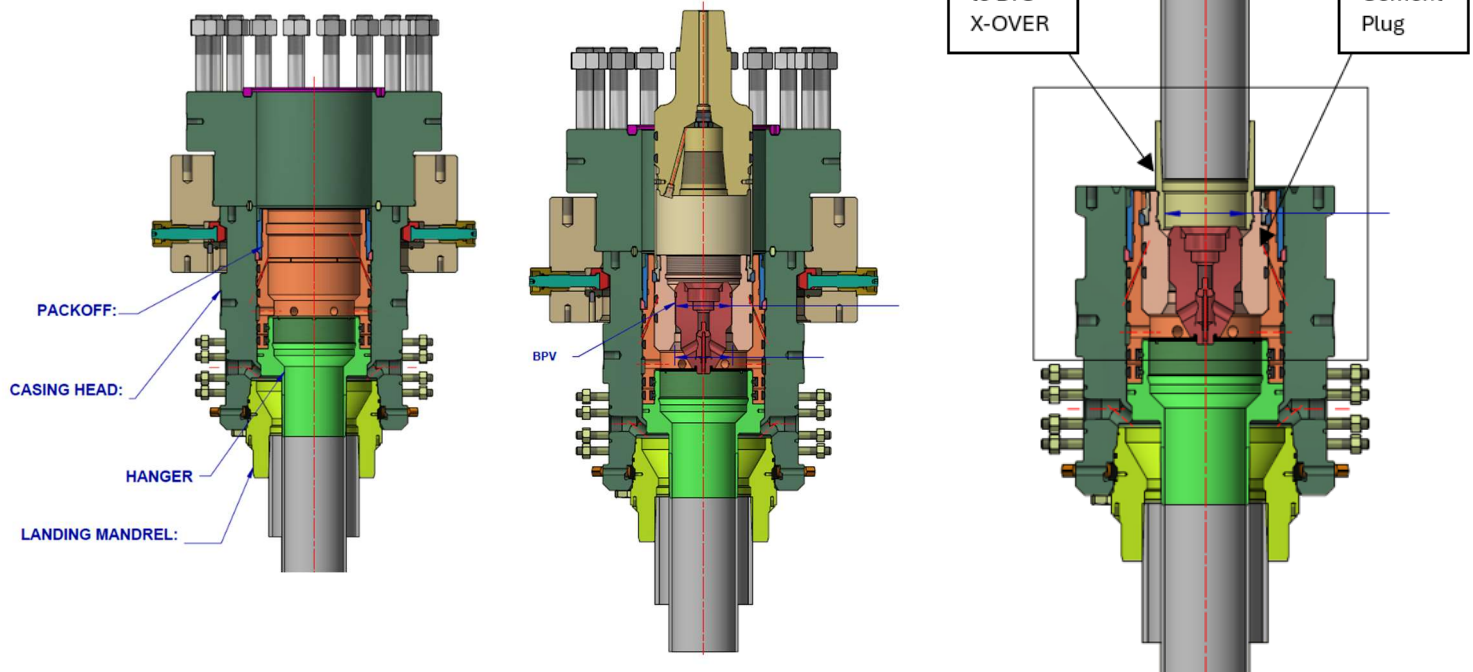
1. Run casing as per normal operations. While running casing, conduct negative pressure test and test back pressure valves.
 - a. Float equipment is equipped with two back pressure valves rated to a minimum of 5,000 psi.
2. Land production casing on mandrel hanger through BOP.
 - a. If casing is unable to be landed with a mandrel hanger, then the **casing will be cemented online.**
 - b. Shoe assembly shown in Figure 1.
3. Break circulation and confirm no restrictions.
 - a. Ensure no blockage of float equipment and appropriate annular returns.
 - b. Perform flow check to confirm well is static.
4. Set pack-off
 - a. If utilizing a fluted/ported mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid, remove landing joint, and set annular packoff through BOP. Pressure test to 5,000 psi for 10 min.
 - b. If utilizing a solid mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid. Pressure test seals to 5,000 psi for 10 min. Remove landing joint through BOP.
5. After confirmation of both annular barriers and the two casing barriers, install TA plug and pressure test to 5,000 psi for 10 min. Notify the BLM with intent to proceed with nipple down and offline cementing.
 - a. Minimum 4 hrs notice.
6. With the well secured and BLM notified, nipple down BOP and secure with 10k cement tool and cement head.
 - a. **Note: If any of the mechanical barriers fail to pressure test or well does not remain static, the BOP stack will not be nipped down until after the cement job has concluded and both lead and tail slurry have reached 500 psi.**
7. Skid/Walk rig off current well.
8. Rig up return lines to take returns from wellhead to pits and rig choke.
 - a. Test all connections and lines from wellhead to choke manifold to 5,000 psi high for 10 min.
 - b. If either test fails, perform corrections and retest before proceeding.
9. Rig up cementing lines.
 - a. Pressure test cement lines against cement head to 80% of casing burst for 10 min.
10. Break circulation on well to confirm no restrictions.
 - a. If gas is present on circulation, well will be shut in and returns rerouted through gas buster.
 - b. Max anticipated time before circulating with cement truck is 6 hrs.
11. Pump cement job as per plan.
 - a. At plug bump, test casing to 0.22 psi/ft or 1500 psi, whichever is greater.
 - b. If plug does not bump on calculated, shut down and wait 8 hrs or 500 psi compressive strength, whichever is greater before testing casing.
 - c. If an influx is taken while cementing, Well Control Procedure from Appendix III will be followed.
12. Confirm well is static and floats are holding after cement job.
 - a. With floats holding and backside static:
 - i. Remove cement head.
 - b. If floats are leaking:
 - i. Shut-in well and WOC (Wait on Cement) until tail slurry reaches 500 psi compressive strength and the casing is static prior to removing cement head.
 - c. If there is flow on the backside:
 - i. Shut in well and WOC until tail slurry reaches 500 psi compressive strength. Ensure that the casing is static prior to removing cement head.
 - d. If bradenhead cement remediation is required, Well Control Procedure from Appendix IV will be followed.
13. Remove offline cement tool.
14. Install night cap with pressure gauge for monitoring.
15. Test night cap to 5,000 psi for 10 min.

Appendix

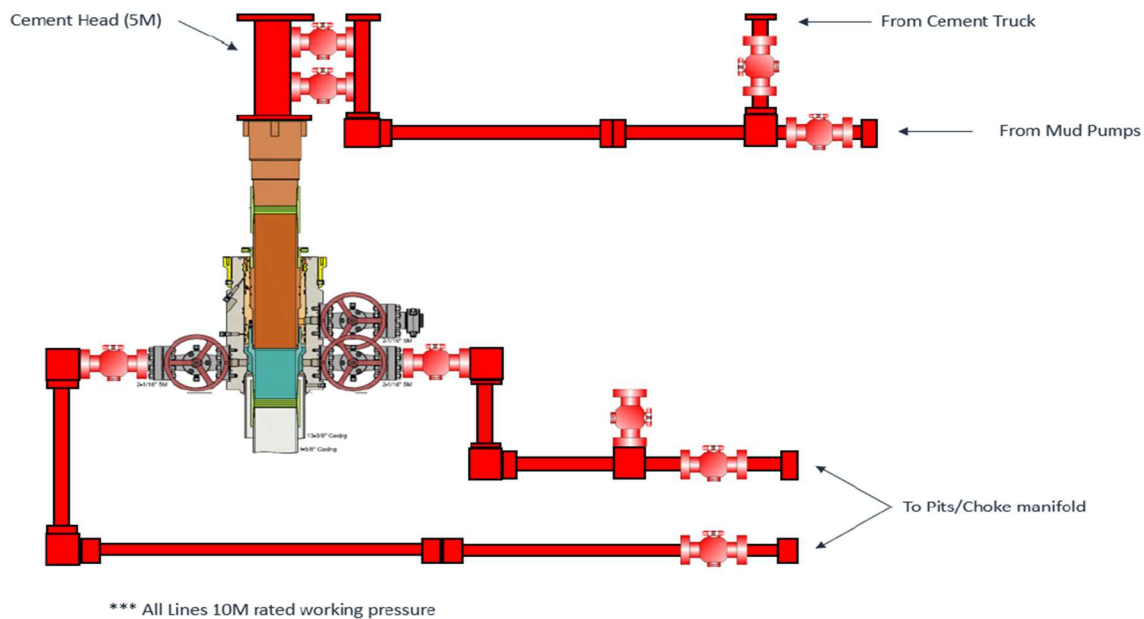
I. Offline cementing equipment ratings – 5M requirement

Component RWP

1. Pack-off 10M
2. Cement head 10M
3. Casing Wellhead Valves 10M
4. Annular Wellhead Valves 5M
5. TA Plug 10M
6. Float Valves 5M
7. 2" 1502 Lo-Torque Valves 15M



II. Cementing Instrumentation Diagram



- III. Well Control Procedure (Influx occurs while cementing)
8. Alert location and shut down pumps.
 9. Shut-in the well and record pressures and pit levels
 10. Open choke and resume pumping to take returns through choke manifold to mud/gas separator.
 11. Bump plug, close choke and cement head.
 12. Record time, SICP, annulus pressure, pit gain.
 13. Shut in annulus valves on wellhead and bleed of return line through the choke.
- IV. Well Control Procedure (Remediation – Bradenhead squeeze)
- a. If well is static:
 1. Rig up cement pump to annulus wellhead valve
 2. Close choke and cement head
 3. Pump planned cement volume down annulus
 4. Shut-in the well and record pressures and pit levels
 5. Record time, SICP, annulus pressure.
 6. Shut in annulus valves on wellhead and bleed of return line through the choke.
 - b. If well is not static:
 1. Rig up mud pump to annulus wellhead valve as shown in Figure 2.
 2. Close choke and cement head
 3. Bullhead kill fluid down annulus while monitoring casing pressure.
 4. Shut-in the well and record pressures and pit levels.
 5. Once well kill is confirmed, continue with cement remediation.

FIGURE 2: Well Control

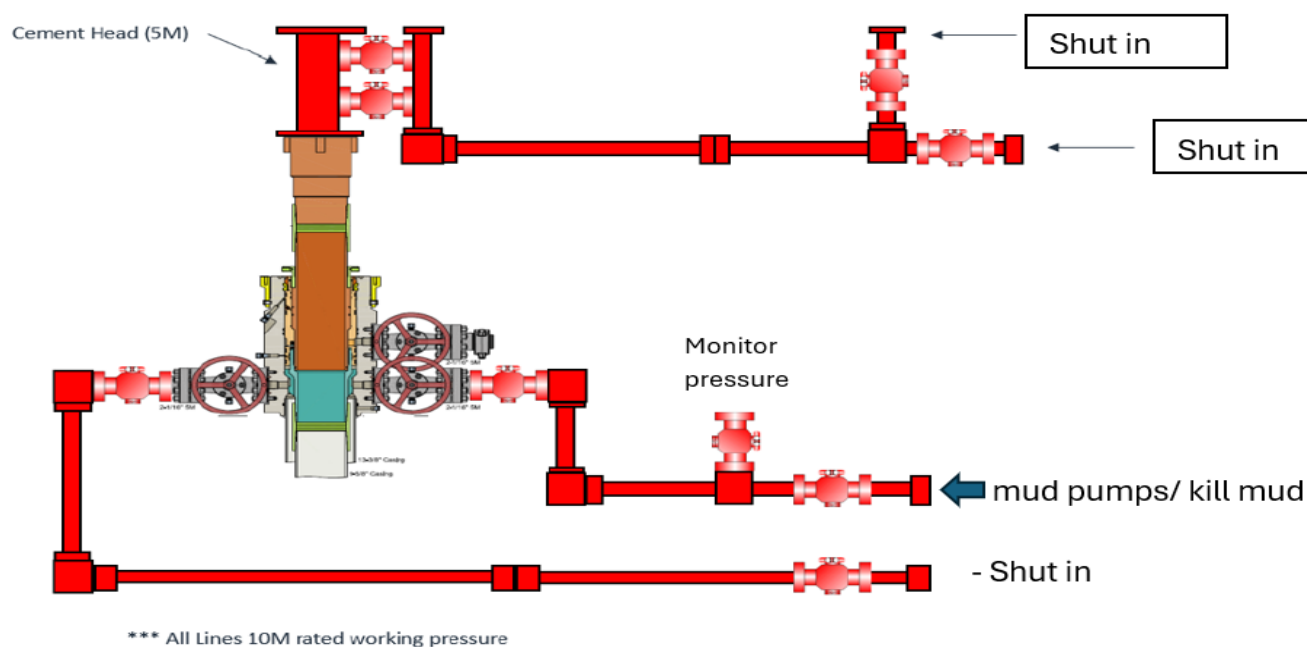
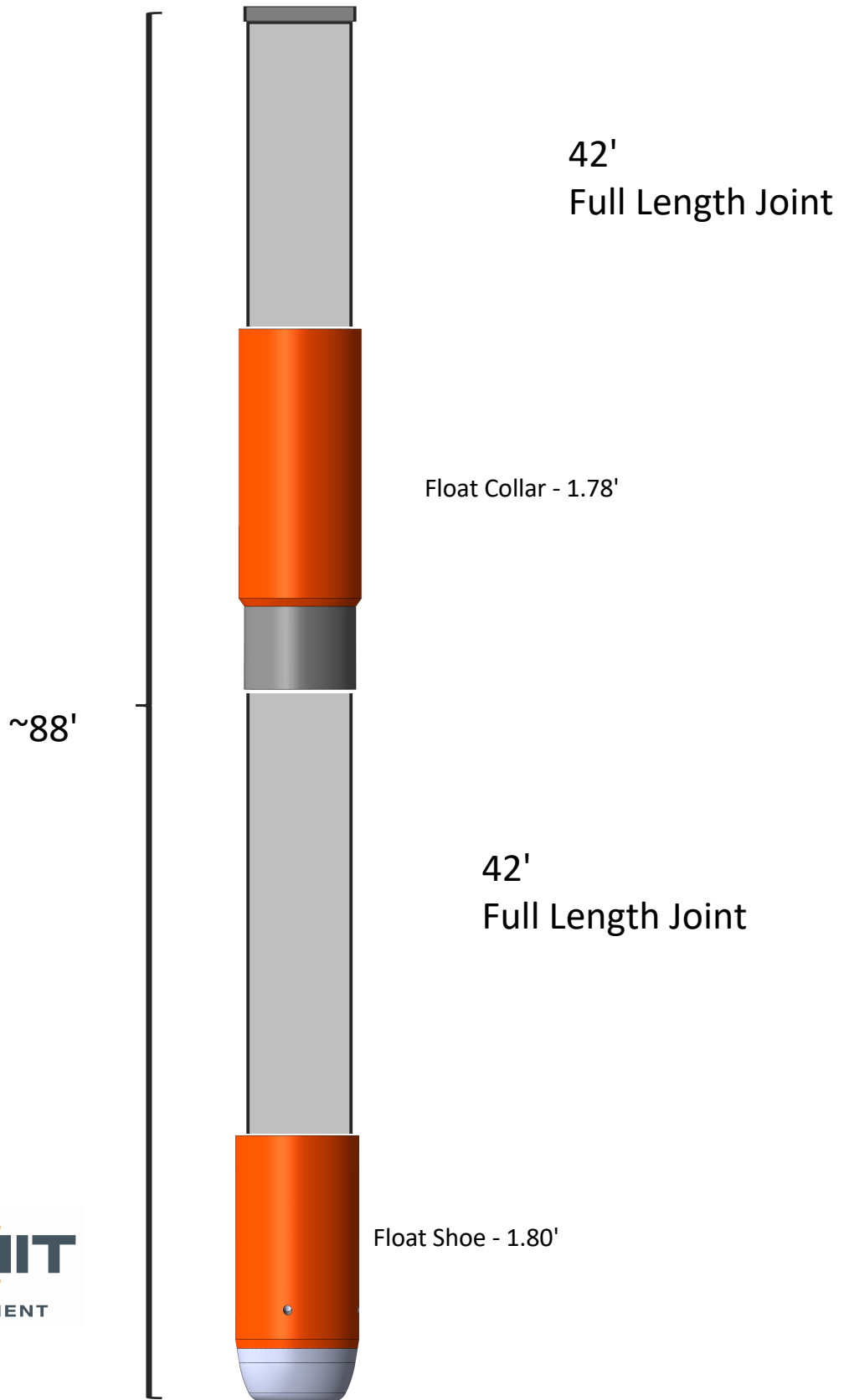


Figure 1: Shoe Assembly - Intermediate



PROPOSAL#: 240717130414-A



CEMENT PROCEDURE & PROPOSAL

PREPARED FOR:

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Avant Natural Resources

Lea Unit #501H

Lea County, NM

Rig: H&P 255

Service Point

Odessa

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432-701-8955

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.Disclaimer Notice:

The ability of West Texas Cementers to complete this work is subject to the availability of the raw materials required to complete the job.

This information is presented in good faith, but no warranty is given by and West Texas Cementers LLC assumes no liability for advice or recommendations made concerning results to be obtained from the use of any product or service. The results given are estimates based on calculations produced by a computer model including various assumptions on the well, reservoir and treatment. The results depend on input data provided by the Operator and estimates as to unknown data and can be no more accurate than the model, the assumptions and such input data. The information presented is WTC LLC best estimate of the actual results that may be achieved and should be used for comparison purposes rather than absolute values. The quality of input data, and hence results, may be improved through the use of certain tests and procedures which West Texas Cementers LLC can assist in selecting. The Operator has superior knowledge of the well, the reservoir, the field and conditions affecting them. If the Operator is aware of any conditions whereby a neighboring well or wells might be affected by the treatment proposed herein it is the Operator's responsibility to notify the owner or owners of the well or wells accordingly. Prices quoted are estimates only and are good for 30 days from the date of issue. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Freedom from infringement of patents of West Texas Cementers LLC or others is not to be inferred.

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VERSION: v0.29b

Avant Natural Resources
Lea Unit #501H
Lea County, NM
Rig: H&P 255

Surface



PROPOSAL#: 240717130414-A

WELL INFORMATION						
MUD	8.4# Fresh Water					
PREVIOUS PIPE	20" 94# CSG to 120					
OPEN HOLE	17.5" OH to 1645					
CASING/INJECTION	13.375" 54.5# J-55/BTC to 1645					
MD	1645					
EST BHST/BHCT	94-F / 86-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	120	19.124	13.375		0.1815	21.8
Lead	1196	17.5	13.375	20%	0.1485	177.6
Tail	329	17.5	13.375	20%	0.1485	48.8
SHOE JOINT	40	13.375	12.615		0.1546	6.2
FLUIDS						
SPACER						
Fresh Water						
VOLUME	20-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	595-SX		Slurry Volume: 201.3-bbls			
DENSITY	12.8-ppg		Mix Water Required: 145-bbls			
YIELD	1.9-cf/sx					
MIX WATER	10.17-gps					
TOP OF CEMENT	Surface					
EXCESS	20%					

Avant Natural Resources
Lea Unit #501H
Lea County, NM
Rig: H&P 255

Surface



PROPOSAL#: 240717130414-A

Tail		
100% Class C+1% CaCl2+0.005GPS NoFoam V1A		
VOLUME	235-SX	Slurry Volume: 55.7-bbbls
DENSITY	14.8-ppg	Mix Water Required: 36-bbbls
YIELD	1.33-cf/sx	
MIX WATER	6.34-gps	
TOP OF CEMENT	1316-ft	
EXCESS	20%	
DISPLACEMENT		
Displacement		
VOLUME	248.1-bbl	

Avant Natural Resources
Lea Unit #501H
Lea County, NM
Rig: H&P 255

Intermediate



PROPOSAL#: 240717130414-A

WELL INFORMATION						
MUD	10.3# Brine					
PREVIOUS PIPE	13.375" 54.5# CSG to 1645					
OPEN HOLE	12.25" OH to 5695					
CASING/INJECTION	9.625" 40# J-55/L-80 HC/BTC to 5695					
MD	5695					
TVD	5690					
EST BHST/BHCT	126-F / 110-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	1645	12.615	9.625		0.0646	106.3
Lead	2911	12.25	9.625	20%	0.0669	194.8
Tail	1139	12.25	9.625	20%	0.0669	76.2
SHOE JOINT	40	9.625	8.835		0.0758	3.0
FLUIDS						
SPACER						
Fresh Water						
VOLUME	25-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.5% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	890-SX				Slurry Volume: 301.2-bbls	
DENSITY	12.8-ppg				Mix Water Required: 216-bbls	
YIELD	1.9-cf/sx					
MIX WATER	10.18-gps					
TOP OF CEMENT	Surface					
EXCESS	20%					

Avant Natural Resources
Lea Unit #501H
Lea County, NM
Rig: H&P 255

Intermediate



PROPOSAL#: 240717130414-A

Tail		
	100% Class C+5% SALT+0.005GPS NoFoam V1A	
VOLUME	330-SX	Slurry Volume: 79.9-bbls
DENSITY	14.8-ppg	Mix Water Required: 52-bbls
YIELD	1.36-cf/sx	
MIX WATER	6.51-gps	
TOP OF CEMENT	4556-ft	
EXCESS	20%	
DISPLACEMENT		
	Displacement	
VOLUME	428.8-bbl	

Avant Natural Resources
Lea Unit #501H
Lea County, NM
Rig: H&P 255

Production



PROPOSAL#: 240717130414-A

WELL INFORMATION						
MUD	9.3# OBM					
PREVIOUS PIPE	9.625" 40# CSG to 5695					
OPEN HOLE	8.75" OH to 17641					
CASING/INJECTION	5.5" 20# P-110 HC/GBCD to 17641					
MD	17641					
TVD	10075					
EST BHST/BHCT	166-F / 166-F (0.85-F/100-FT)					
KOP	9605					
NOTES	Standby charges start after WTC has been on location for more than 8-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	5695	8.835	5.5		0.0464	264.5
Lead	3910	8.75	5.5	20%	0.0540	211.1
Tail	8036	8.75	5.5	20%	0.0540	433.8
SHOE JOINT	80	5.5	4.778		0.0222	1.8
FLUIDS						
SPACER						
Wt. Spacer 37.85GPB Water+8PPB PolyScrub 4320+78.84PPB Barite+1GPB HoleScrub 4311+1PPB R-1300						
VOLUME	40-bbl					
DENSITY	9.8-ppg					
Lead						
100% ProLite+5PPS Plexcrete STE+2% SMS+0.65% R-1300+0.2% FL-24+3PPS Gilsonite+0.005GPS NoFoam V1A						
VOLUME	790-SX				Slurry Volume: 475.6-bbls	
DENSITY	10.7-ppg				Mix Water Required: 397-bbls	
YIELD	3.38-cf/sx					
MIX WATER	21.06-gps					
TOP OF CEMENT	Surface					
EXCESS	20%					

Avant Natural Resources
Lea Unit #501H
Lea County, NM
Rig: H&P 255

Production



PROPOSAL#: 240717130414-A

Tail		
50% B_Poz+50% Class H+5% SALT+0.05% RCKCAS-100+0.75% FR-5+0.5% FL-24+0.005GPS NoFoam V1A		
VOLUME	2020-SX	Slurry Volume: 435.3-bbls
DENSITY	14.5-ppg	Mix Water Required: 254-bbls
YIELD	1.21-cf/sx	
MIX WATER	5.28-gps	
TOP OF CEMENT	9605-ft	
EXCESS	20%	
DISPLACEMENT		
Fresh Water+ 0.25GPT Plexicide 24L+1GPT Corplex		
VOLUME	389.4-bbl	
DENSITY	8.34-ppg	

CHEMICAL DESCRIPTIONS		
CHEMICAL NAME	CODE	DESCRIPTION
B_Poz	WTC228	Poz - Fly Ash, Extender
Class H	WTC101	API Cement
Class C	WTC100	API Cement
M_Poz	WTC280	Poz - Fly Ash, Extender
ProLite		Blended Based Cement
Plexcrete SFA	WTC129	Cement Strength Enhancer
Gel	WTC102	Extender
Micro Crystal	WTC212	Cement Strength Enhancer
Micro Shell	WTC209	Cement Strength Enhancer
WTC1	WTC250	Extender
GB-52	WTC008	Microspheres, Extender
Plexcrete STE	WTC127	Cement Strength Enhancer
CSE-NP	WTC236	Cement Strength Enhancer
Gypsum	WTC111	Free Water Control, Extender
CaCl2	WTC112	Accelerator
SMS	WTC115	Free Water Control, Extender
RCKCAS-100	WTC276	Free Water Control, Anti-Settling Agent
R-1300	WTC201	Low Temperature Retarder
CRT-201	WTC278	Lignosulfonate Retarder
FR-5	WTC258	Lignosulfonate Retarder
C-37	WTC224	Dispersant, Friction Reducer
CFL-312	WTC265	Fluid Loss and Gas Migration Control
FL-24	WTC277	Fluid Loss (polymers/copolymers - 300-F max)
FL-17	WTC130	Fluid Loss and Gas Migration Control (400-F max)
MagBond	WTC271	Expanding Agent
Gilsonite	WTC003	Premium Lost Circulation Material, Free Water Control
Pol-E-Flake	WTC106	Lost Circulation Material
Web Seal	WTC133	Premium Fiber Lost Circulation Material
Zone Seal	WTC207	Premium Lost Circulation Material
NoFoam V1A	WTC105	Liquid Defoamer
Water		Fresh Water
PolyScrub 4320	WTC232	Spacer Gelling Agent
Barite	WTC116	Weighting Agent
HoleScrub 4311	WTC281	Surfactant
HoleScrub 4305	WTC213	Surfactant
HoleScrub 4308	WTC215	Surfactant
Soda Ash	WTC164	pH Control
R-1300	WTC201	Low Temperature Retarder
RCKCAS-100	WTC276	Free Water Control, Anti-Settling Agent
Sugar	WTC119	Retarder
R-33	WTC243	Lignosulfonate Retarder
Plexcide 24L	WTC166	Biocide
Corplex	WTC134	Corrosion Inhibitor
Clay Max	WTC096	KCL Substitute
Zone Seal	WTC207	Premium Lost Circulation Material

Performance Data Sheet

Issued on: 01.09.2023



OD Label	LM Label	Grade	Connection
5 1/2	20.00	P110HC	INTREPID-SP®

PIPE BODY PROPERTIES

Nominal OD	Nominal ID	Nominal WT	Nominal LM
5.500 inch 139,70 mm	4.778 inch 121,36 mm	0.361 inch 9,17 mm	20.00 ppf 29,76 kg/m
Standard Drift	Minimal YS	Maximal YS	Minimal UTS
4.653 inch 118,19 mm	110 ksi 758 MPa	140 ksi 965 MPa	125 ksi 862 MPa

CONNECTION PROPERTIES & PERFORMANCES

Name	Type	Coupling OD	Connection ID
INTREPID-SP®	Semi-Premium T&C	6.300 inch 160,02 mm	4.778 inch 121,36 mm
Coupling length	Tension efficiency	Compression Efficiency	Make-up loss
9.449 inch 240,00 mm	641 klb 2 850 kN 100 % PB	641 klb 2 850 kN 100 % PB	4.126 inch 104,80 mm
Burst	Collapse	Max. Bending	Max. Load on Coupling Face
12 640 Psi 87,1 MPa 100 % PB	12 200 Psi 84,1 MPa 100 % PB	46 °/100 ft 46 °/30 m	583 klb 2 591 kN

FIELD TORQUE VALUES

	[ft-lb]	[N·m]		[ft-lb]	[N·m]
Min. Make-Up Torque	12 400	16 800	Operational Torque	21 500	29 150
Opt. Make-Up Torque	13 800	18 700			
Max. Make-Up Torque	15 200	20 600	Yield Torque	23 900	32 400

The Performance Data Sheet contains general information that is correct at the time of issue. In the interests of continuous development, the Interpipe company reserves the right to change the format and contents of the Data Sheet at any time without warning and without incurring any obligations. For any questions regarding mentioned data, please mail to Yuriy.Kuratsapov@m.interpipe.biz

FOOTAGES		
SHL	140' FNL	1065' FEL
KOP	50' FNL	1320' FEL
FTP/PPP-1	100' FNL	1320' FEL
LP	525' FNL	1320' FEL
PPP-2	1320' FNL	1320' FEL
PPP-3	0' FNL	1320' FEL
PPP-4	1319' FNL	1320' FEL
LTP/BHL	2535' FNL	1320' FEL

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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
Phone:(505) 334-6178 Fax:(505) 334-6170
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 369696

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 369696
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	8/2/2024