Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM140721

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.: SPEYSIDE 18 FEDERAL 502H [333899]

2. Name of Operator: AVANT OPERATING LLC [330396]

9. API Well No.:

3a. Address: 1515 WYNKOOP STREET, SUITE 700, DENVER, CO 802

3b. Phone No. *(include area code)*: (720) 746-5045

10. Field and Pool, or Exploratory: GRAMA RIDGE-BONE SPRINGS, WEST [28432]

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

At surface: NENE / 300 FNL / 693 FEL / LAT 32.39815 / LONG -103.5028531

At proposed prod. zone: SESE / 100 FSL / 990 FEL / LAT 32.384725 / LONG -103.5038425

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 18/T22S/R34E/NMP

14. Distance in miles and direction from nearest town or post office*: 20 miles

12. County or Parish: LEA

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 300 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 160.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 33 feet

19. Proposed Depth: 10600 feet / 15440 feet

20. BLM/BIA Bond No. in file: FED: NMB001882

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3507 feet

22. Approximate date work will start*: 01/02/2023

23. Estimated duration: 60 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	BRIAN WOOD / Ph: (720) 746-5045	10/13/2022

Title: President

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	CHRISTOPHER WALLS / Ph: (575) 234-2234	04/12/2023

Title	Office
Petroleum Engineer	Carlsbad Field Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NGMP Rec 04/12/2023

KZ

SL

APPROVED WITH CONDITIONS

Approval Date: 04/12/2023

(Continued on page 2)

*(Instructions on page 2)

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025- 51304	28432	GRAMA RIDGE; BONE SPRINGS, WEST

[4] Property Code	[5] Property Name	[6] Well Number
333899	Speyside 18 Federal	502H

[7] OGRID No.	[8] Operator Name	[9] Elevation
330396	Avant Operating, LLC	3507

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	18	22 S	34 E		300	North	693	East	Lea

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	18	22 S	34 E		100	South	990	East	Lea

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160.00			

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

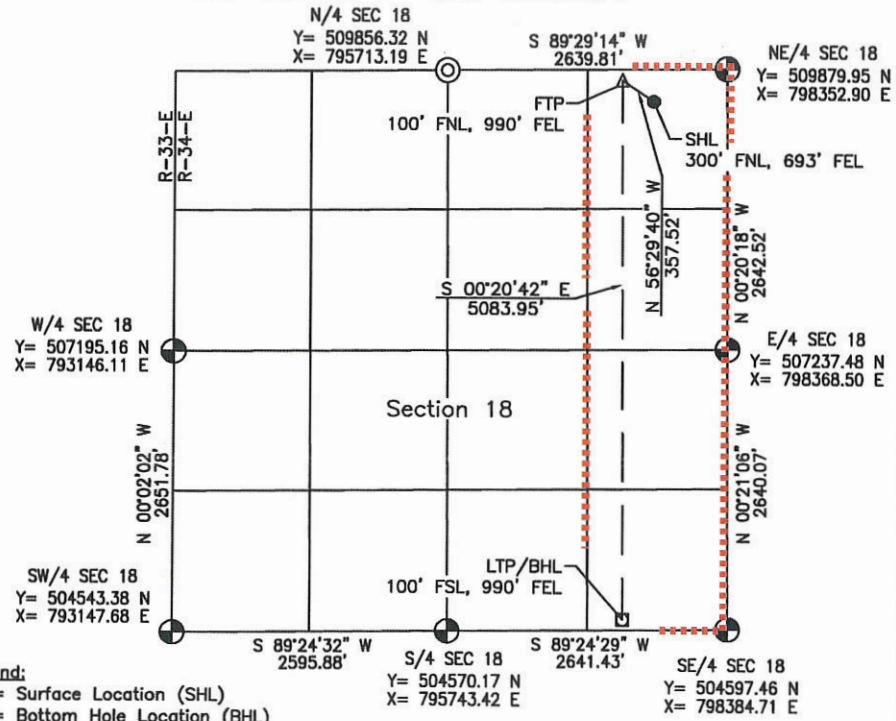
16

SURFACE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 509573.73 N
X= 797661.63 E
LAT.= 32.3981500° N
LONG.= 103.5028531° W

FIRST TAKE POINT
NAD 83 NMSPC ZONE 3001
100' FNL, 990' FEL
SEC. 18, T22S, R34E
Y= 509771.09 N
X= 797363.52 E
LAT.= 32.3986988° N
LONG.= 103.5038139° W

LAST TAKE POINT
NAD 83 NMSPC ZONE 3001
100' FSL, 990' FEL
SEC. 18, T22S, R34E
Y= 504687.23 N
X= 797394.14 E
LAT.= 32.3847250° N
LONG.= 103.5038425° W

BOTTOM HOLE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 504687.23 N
X= 797394.14 E
LAT.= 32.3847250° N
LONG.= 103.5038425° W



Legend:
- ● = Surface Location (SHL)
- ○ = Bottom Hole Location (BHL)
- △ = First Take Point (FTP)
- □ = Last Take Point (LTP)
- ◎ = Found 3/4" Iron Rod W/ 1 1/2" Washer
- ⊕ = Found 1913 USGLO Brass Cap

[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.

10-10-22
Signature Date

BRIAN WOOD
Printed Name

brian@permitswest.com
E-mail Address

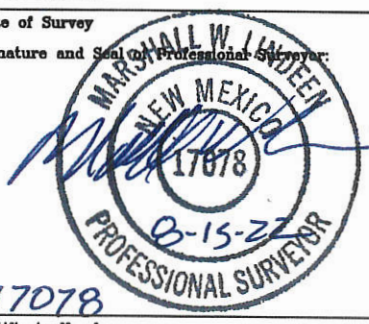
505 466-8120

[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.

6/10/22
Date of Survey

Signature and Seal of Professional Surveyor:



17078
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: Avant Operating, LLC **OGRID:** 330396 **Date:** 09/23/22

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
Speyside 18 Federal 501H		A-18-22S-34E	150 FNL; 660 FEL	2,000	5,000	10,500
Speyside 18 Federal 502H		A-18-22S-34E	300 FNL; 693 FEL	2,000	5,000	10,500
Speyside 18 Federal 601H		A-18-22S-34E	150 FNL; 627 FEL	2,300	4,000	10,500
Speyside 18 Federal 602H		A-18-22S-34E	150 FNL; 693 FEL	2,300	4,000	10,500
Speyside 18 Federal 301H		A-18-22S-34E	150 FNL; 594 FEL	1,500	6,000	10,500
Speyside 18 Federal 302H		A-18-22S-34E	150 FNL; 726 FEL	1,500	6,000	10,500
Speyside 18 Federal 201H		A-18-22S-34E	300 FNL; 627 FEL	2,000	7,000	10,500
Speyside 18 Federal 202H		A-18-22S-34E	300 FNL; 660 FEL	2,000	7,000	10,500

IV. Central Delivery Point Name: Speyside Pad 1 [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
Speyside 18 Federal 501H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023
Speyside 18 Federal 502H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023

Speyside 18 Federal 601H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023
Speyside 18 Federal 602H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023
Speyside 18 Federal 301H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023
Speyside 18 Federal 302H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023
Speyside 18 Federal 201H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023
Speyside 18 Federal 202H		4/11/2023	6/02/2023	6/30/2023	8/5/2023	8/6/2023

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: John Harper
Title: VP of Geosciences
E-mail Address: John@avantnr.com
Date: 4/7/2023
Phone: 678-988-6644

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

Natural Gas Management Plan – Attachment

VI. Separation equipment will be sized by construction engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping, compression needs, and VRUs will be sized utilizing ProMax modelling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Avant Operating, LLC (Avant) will take the following actions to comply with the regulations listed in 19.15.27.8:

A. Avant will maximize the recovery of natural gas by minimizing the waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. Avant will ensure that well(s) will be connected to a natural gas gathering system with sufficient capacity to transport natural gas.

B. All drilling operations will be equipped with a rig flare located at least 100' from the nearest surface hole. Rig flare will be utilized to combust any natural gas that is brought to surface during normal drilling operations. In the case of emergency venting or flaring the volumes will be estimated and reported appropriately.

C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flowback will be directed to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will not meet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, Avant will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. Avant will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will be analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.

D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D.(I) through (4). If there is no adequate takeaway for the separator gas, well(s) will be shut in until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting and/or flaring volumes will be estimated and repo1ted appropriately.

E. Avant will comply with the performance standards requirements and provisions listed in 19.15.27.8 (l) through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs to minimize the waste. Production storage tanks constructed after May 25, 2021, will be equipped with automatic gauging system. Flares constructed after May 25, 2021, will be equipped with automatic igniter or continuous pilot. Flares will be located at least 100' from the well and storage tanks unless otherwise approved by the division. Avant will conduct AVO inspections as described in 19.15.27.8 E (5) (a) with frequencies specified in 19.15.27.8 E (5) (b) and (c). All emergencies will be resolved as quickly and safely as feasible to minimize waste.

F. The volume of natural gas that is vented or flared as the result of malfunction or emergency during drilling and completions operations will be estimated. The volume of natural gas that is vented, flared, or beneficially used during production operations, will be measured, or estimated. Avant will install equipment to measure

VIII. For maintenance activities involving production equipment and compression, venting will be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production and compression equipment the associated producing wells will be shut in to eliminate venting. For maintenance of VRUs all gas normally routed to the VRU will be routed to flare to eliminate venting.

Avant Operating, LLC Natural Gas Management Plan

VI. Separation equipment will be sized by construction engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping, compression needs, and VRUs will be sized utilizing ProMax modelling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Avant Operating, LLC (Avant) will take the following actions to comply with the regulations listed in 19.15.27.8:

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C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flowback will be directed to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will not meet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, Avant will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. Avant will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will be analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.

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AFMSS

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

Drilling Plan Data Report

04/12/2023

APD ID: 10400088636 **Submission Date:** 10/13/2022

Operator Name: AVANT OPERATING LLC

Well Name: SPEYSIDE 18 FEDERAL **Well Number:** 502H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
9371164	QUATERNARY	3507	0	0	OTHER : Caliche	USEABLE WATER	N
9371165	RUSTLER ANHYDRITE	1907	1600	1600	ANHYDRITE	NONE	N
9371166	SALADO	1716	1791	1791	SALT	NONE	N
9371167	BASE OF SALT	-193	3700	3700	SALT	NONE	N
9371168	CAPITAN REEF	-743	4250	4250	LIMESTONE	USEABLE WATER	N
9371169	LAMAR	-1648	5155	5155	SHALE	NONE	N
9371170	BELL CANYON	-1785	5292	5292	SANDSTONE	NONE	N
9371171	CHERRY CANYON	-2391	5898	5898	SANDSTONE	NATURAL GAS, OIL	N
9371172	BRUSHY CANYON	-3668	7175	7180	SANDSTONE	NATURAL GAS, OIL	N
9371173	BONE SPRING LIME	-5177	8684	8693	LIMESTONE	NATURAL GAS, OIL	N
9371174	AVALON SAND	-5690	9197	9208	SHALE	NATURAL GAS, OIL	N
9371162	BONE SPRING 1ST	-6311	9818	9831	SANDSTONE	NATURAL GAS, OIL	N
9371163	BONE SPRING 2ND	-6883	10390	10425	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: AVANT OPERATING LLC

Well Name: SPEYSIDE 18 FEDERAL **Well Number:** 502H

Pressure Rating (PSI): 5M **Rating Depth:** 10000

Equipment: A minimum 5M 10,000' system will be used. The minimum blowout preventer equipment (BOPE) shown in BOP Diagram will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer, and an annular preventer (5000-psi WP). Both units will be hydraulically operated, and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top.
Requesting Variance? YES

Variance request: Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line). Co-flex line will be tested in accordance with highest BOP test pressures (5000 psi) before drilling out of the surface casing and (5000 psi) before drilling out of the intermediate casing. Pressure tests will be charted for records. The manufacturers hydrostatic test report will be kept on location for inspection.

Testing Procedure: All BOPE will be tested in accordance with Onshore Oil & Gas Order 2. be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will always be kept on location. Surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will always be kept on location. Intermediate casing will be tested to 2000 psi for 30 minutes. A solid steel body pack-off will be used after running and cementing the intermediate casing. After installation, pack-off and lower flange will be pressure tested to 5000 psi. 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. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe. This pressure test will be repeated at least once every 30 days, as per Onshore Order 2. Kelly cock will always be kept in the drill string. Full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will always be on the rig floor. The multi-bowl wellhead will be installed by a third-party welder while being monitored by the vendors representative. All BOP equipment will be tested using a conventional test plug - not a cup or J-packer type. Both the surface and intermediate casing strings will be tested as per Onshore Order 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

Choke Diagram Attachment:

SS_Choke_20221013112729.pdf

BOP Diagram Attachment:

SS_BOP_20221013112739.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1625	0	1625	3507	1882	1625	J-55	54.5	BUTT	1.125	1.125	DRY	1.6	DRY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4000	0	4000	0	-493	4000	J-55	40	LT&C	1.125	1.125	DRY	1.6	DRY	1.6
3	INTERMEDIATE	12.25	9.625	NEW	API	N	4000	5223	4000	5223	-4000	-1716	1223	HCL-80	40	LT&C	1.125	1.125	DRY	1.6	DRY	1.6

Operator Name: AVANT OPERATING LLC

Well Name: SPEYSIDE 18 FEDERAL **Well Number:** 502H

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
4	PRODUCTION	8.75	5.5	NEW	NON API	N	0	10910	0	10600	0	-7093	10910	OTHER	20	OTHER - GBCD	1.125	1.125	DRY	1.6	DRY	1.6
5	PRODUCTION	8.5	5.5	NEW	NON API	N	10910	15440	10600	10600	-7089	-7093	4530	OTHER	20	OTHER - GBCD	1.125	1.125	DRY	1.6	DRY	1.6

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_20221013112809.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_20221013112831.pdf

Operator Name: AVANT OPERATING LLC

Well Name: SPEYSIDE 18 FEDERAL **Well Number:** 502H

Casing Attachments

Casing ID: 3 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_20221013112851.pdf

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

5.5in_Casing_Spec_20221013112914.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_20221013112924.pdf

Casing ID: 5 **String** PRODUCTION

Inspection Document:

Spec Document:

5.5in_Casing_Spec_20221013112956.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Design_Assumptions_20221013113007.pdf

Section 4 - Cement

Operator Name: AVANT OPERATING LLC

Well Name: SPEYSIDE 18 FEDERAL **Well Number:** 502H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1300	715	1.9	12.8	1358	45	35% B poz + 65% Class C	6% gel + 5% salt + 0.25 #/sack poly flake + 0.005 gal/sack no foam V1A
SURFACE	Tail		1300	1625	230	1.34	14.8	308	45	Class C	1% CaCl2 + 0.3% C-37 + 0.005 gal/sack no foam V1A
INTERMEDIATE	Lead	2800	0	2395	760	1.83	12.8	1390	100	35% Class B Poz + 65% Class C	2% gel + 5% salt + 0.05% R-1300 + 0.25 #/sack poly flake+ 0.005 gal/sack no foam V1A
INTERMEDIATE	Tail		2395	2800	100	1.33	14.8	133	100	Class C	0.3% C-37 + 0.005 gal/sack no foam V1A
INTERMEDIATE	Lead	2800	2800	4504	1380	1.84	12.8	2539	100	35% Class B Poz + 65% Class C	2% gel + 5% salt + 0.2% R-1300 + 0.25 #/sack poly flake + 0.005 gal/sack no foam V1A
INTERMEDIATE	Tail		4504	5223	230	1.27	14.2	292	100	Class C	5% salt +0.005 gal/sack no foam V1A
PRODUCTION	Lead		0	10093	950	3.39	10.7	3220	20	100% ProLite (Class H)	5 #/sack Plexcrete STE + 2% SMS + 0.05% SuspendaCem 6302 + 0.65% R-1300 + 0.2% C-47B + 3 #/sack gilsonite + 0.005 gal/sack no foam
PRODUCTION	Tail		10093	15440	1240	1.21	14.5	1500	20	50% Class B Poz + 50% Class H	5% salt + 0.05% SuspendaCem 6302 + 0.2% NSR-1 + 0.5% C-47B + 0.005 gal/sack NoFoam V1A

Operator Name: AVANT OPERATING LLC

Well Name: SPEYSIDE 18 FEDERAL **Well Number:** 502H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials (e. g., barite, bentonite, LCM) to maintain mud properties and meet minimum lost circulation and weight increase requirements will always be kept on site. If any lost circulation occurs below the base of salt, Avant will switch drilling mud from brine to fresh water to protect the Capitan Reef until intermediate casing is set.

Describe the mud monitoring system utilized: An electronic pit volume totalizer (PVT) mud system will monitor pit volumes for gains or losses, flow rate, pump pressures, and stroke rate.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1625	OTHER : Fresh Water	8.4	10.1							
1625	5223	OTHER : Brine	10	10.5							
5223	10093	OTHER : Cut Brine	9.2	9.5							
10093	15440	OIL-BASED MUD	9.5	9.8							

Operator Name: AVANT OPERATING LLC

Well Name: SPEYSIDE 18 FEDERAL **Well Number:** 502H

Section 6 - Test, Logging, Coring

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

GR log will be acquired by MWD tools throughout the well.

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

GAMMA RAY LOG,

Coring operation description for the well:

No core or open hole or cased hole log is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5071 **Anticipated Surface Pressure:** 2738

Anticipated Bottom Hole Temperature(F): 224

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

SS_H2S_Plan_RDC_20221013113834.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

SS_502H_Horizontal_Plan_20221013113952.pdf

Other proposed operations facets description:

All perforations will be >100' from the dedication perimeter. Closest water well (CP 01722POD1) is 0.39 miles south. Water bearing strata were reported at 785' in the 1122' deep well.

All casing strings below the conductor will be pressure tested to 0.22 psi/ft of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield. If pressure declines more than 10% in 30 minutes, then corrective action will be taken.

Other proposed operations facets attachment:

SS_502H_Anti_Collision_Report_20221013114041.pdf

SS_Speed_Head_Specs_20221013114105.pdf

SS_CoFlex_Certs_20230331095332.pdf

SS_502H_Drill_Plan_Rev_20230331112248.pdf

Other Variance attachment:

Casing_Cementing_Variance_20221013114155.pdf

Avant Operating, LLC

Speyside 18 Federal 502H
Lea Co., NM (NAD 83)
Job No. WT-22-*
Plan 0.1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	
2	5620.00	0.00	0.00	5620.00	0.00	0.00	0.000	0.00	0.00	Build: 2°/100
3	5855.84	4.72	298.87	5855.57	4.68	-8.50	2.000	298.87	-4.74	Hold: 4.72° Inc, 298.87° Azm
4	9757.04	4.72	298.87	9743.56	159.59	-289.41	0.000	0.00	-161.36	Drop: 2°/100'
5	9992.88	0.00	179.65	9979.13	164.28	-297.91	2.000	180.00	-166.09	Hold
6	10092.88	0.00	179.65	10079.13	164.28	-297.91	0.000	0.00	-166.09	KOP: 11°/100' @ 10092.88' MD
7	10911.06	90.00	179.65	10600.00	-356.58	-294.77	11.000	0.00	354.77	LP/Hold: 90.00° Inc, 179.65° Azm
8	15441.06	90.00	179.65	10600.00	-4886.50	-267.49	0.000	0.00	4884.77	PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP - Speyside 18 Federal 502H	10600.00	197.36	-298.11	509771.09	797363.52	32° 23' 55.316 N	103° 30' 13.730 W
LTP/PBHL - Speyside 18 Federal 502H	10600.00	-4886.50	-267.49	504687.23	797394.14	32° 23' 5.010 N	103° 30' 13.833 W

PROJECT DETAILS: Lea Co., NM (NAD 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

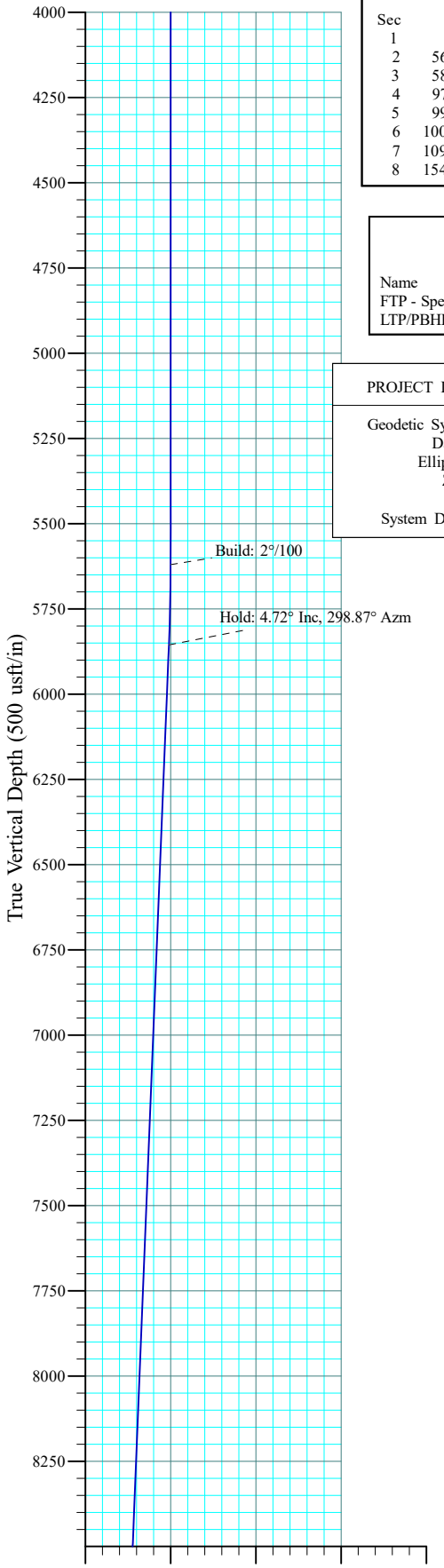
Azimuths to Grid North
True North: -0.45°
Magnetic North: 5.86°

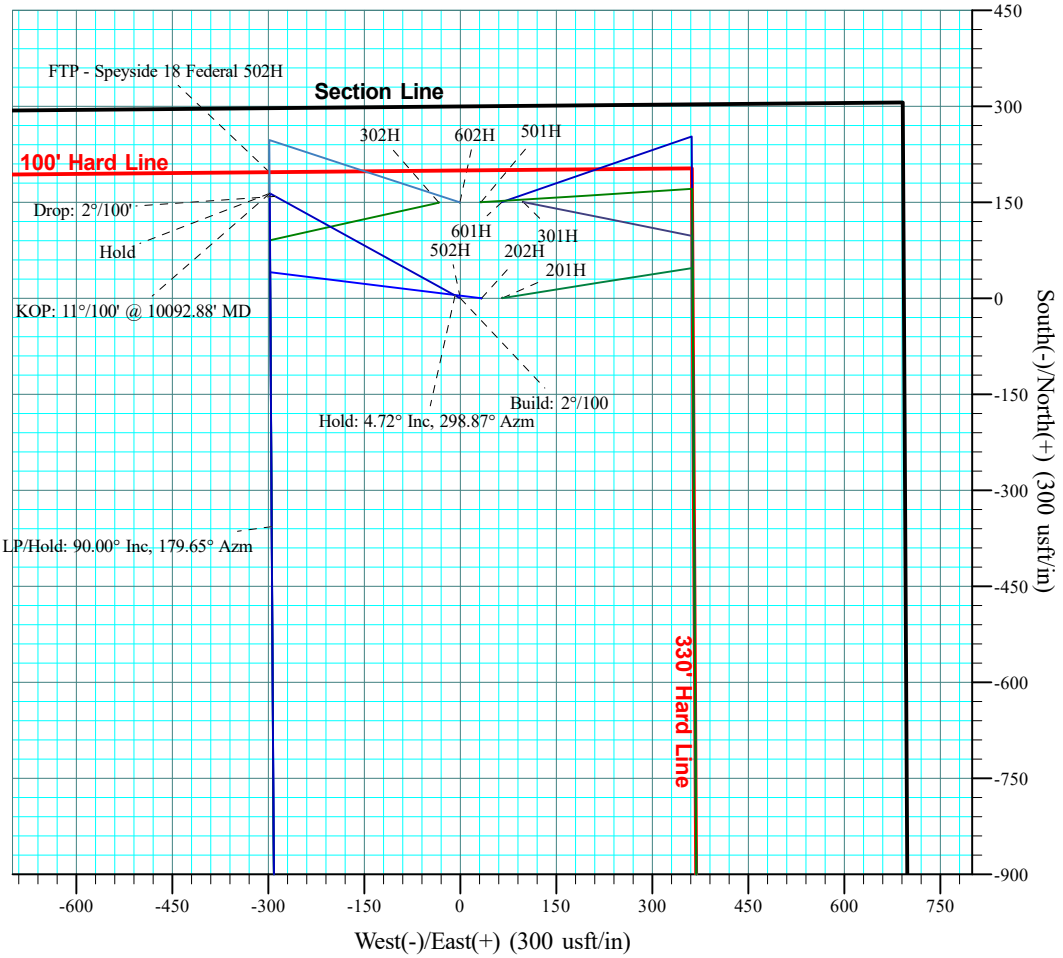
Magnetic Field
Strength: 47711.7nT
Dip Angle: 60.03°
Date: 10/3/2022
Model: MVHD

SITE DETAILS: Speyside 18 Federal Pad

Site Centre Northing: 509649.38
Easting: 797697.64

Positional Uncertainty: 0.00
Convergence: 0.45
Local North: Grid





Drawn By: KRN
Date Created: 8/17/2022
Date Revised: 8/17/2022
File: Avant - Speyside 18 Federal 502H - Plan 0.1 - Int.wpc

Avant Natural Resources

Speyside 18 Federal 502H
Lea Co., NM (NAD 83)
Job No. WT-22-*
Plan 0.1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00		
2	5620.00	0.00	0.00	5620.00	0.00	0.00	0.000	0.00	0.00		Build: 2°/100
3	5855.84	4.72	298.87	5855.57	4.68	-8.50	2.000	298.87	-4.74		Hold: 4.72° Inc, 298.87° Azm
4	9757.04	4.72	298.87	9743.56	159.59	-289.41	0.000	0.00	-161.36		Drop: 2°/100'
5	9992.88	0.00	179.65	9979.13	164.28	-297.91	2.000	180.00	-166.09		Hold
6	10092.88	0.00	179.65	10079.13	164.28	-297.91	0.000	0.00	-166.09		KOP: 11°/100' @ 10092.88' MD
7	10911.06	90.00	179.65	10600.00	-356.58	-294.77	11.000	0.00	354.77		LP/Hold: 90.00° Inc, 179.65° Azm
8	15441.06	90.00	179.65	10600.00	-4886.50	-267.49	0.000	0.00	4884.77	LTP/PBHL - Speyside 18 Federal 502H	PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP - Speyside 18 Federal 502H	10600.00	197.36	-298.11	509771.09	797363.52	32° 23' 55.316 N	103° 30' 13.730 W
LTP/PBHL - Speyside 18 Federal 502H	10600.00	-4886.50	-267.49	504687.23	797394.14	32° 23' 5.010 N	103° 30' 13.833 W

PROJECT DETAILS: Lea Co., NM (NAD 83)

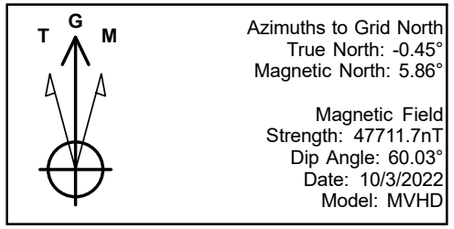
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

SITE DETAILS: Speyside 18 Federal Pad

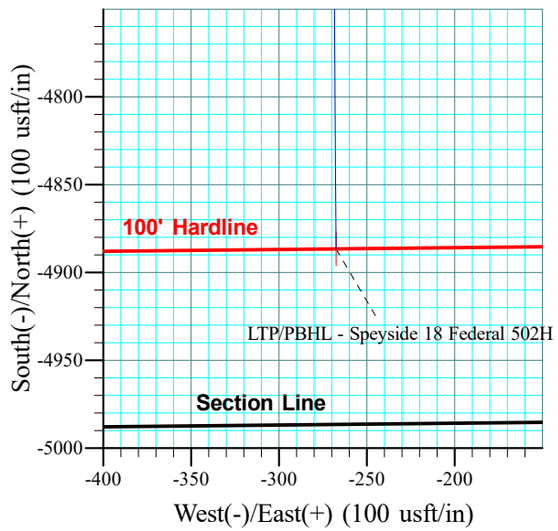
Site Centre Northing: 509649.38
Easting: 797697.64

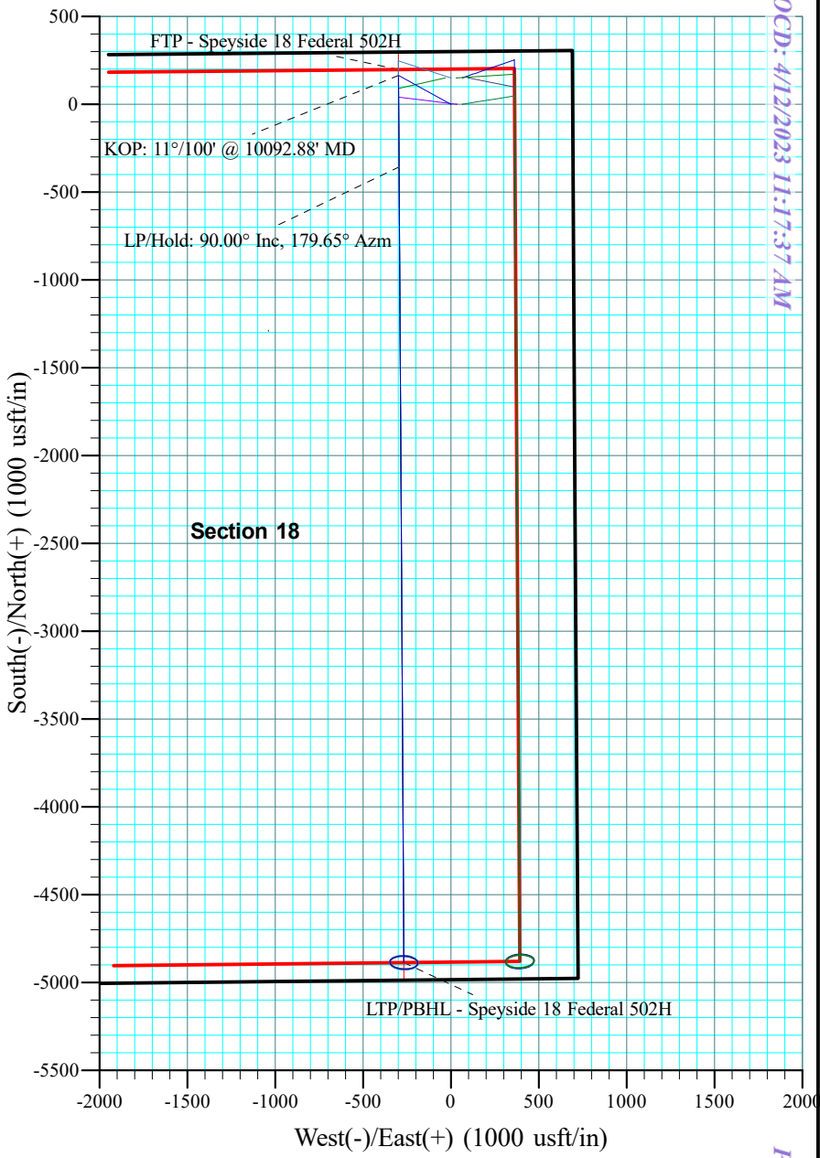
Positional Uncertainity: 0.00
Convergence: 0.45
Local North: Grid

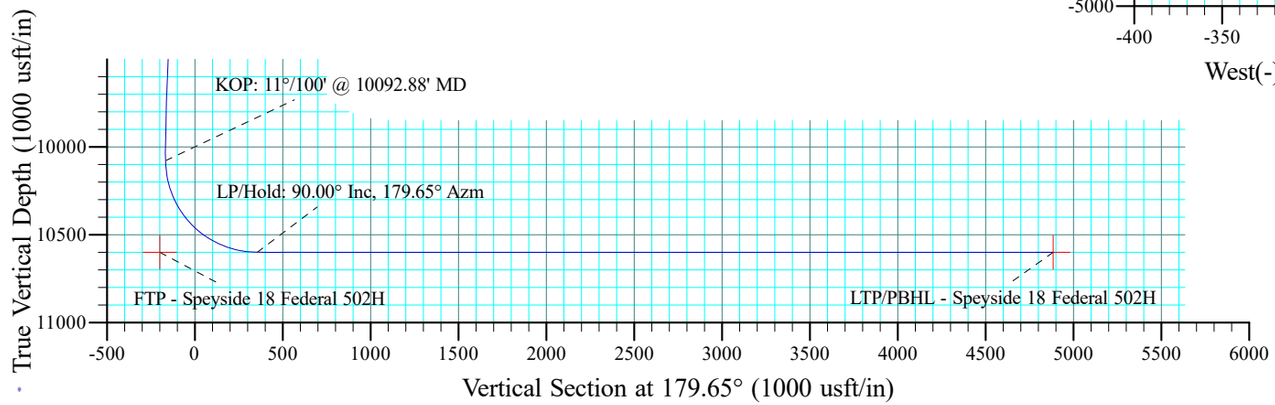


Azimuths to Grid North
True North: -0.45°
Magnetic North: 5.86°

Magnetic Field
Strength: 47711.7nT
Dip Angle: 60.03°
Date: 10/3/2022
Model: MVHD







Drawn By: KRN
Date Created: 8/17/2022
Date Revised: 8/17/2022
File: Avant - Speyside 18 Federal 502H - Plan 0.1.wpc

*Note - Aim is not responsible for any collision issues against unknown offset wells.

Avant Operating, LLC

Lea Co., NM (NAD 83)
Speyside 18 Federal Pad
Speyside 18 Federal 502H

Planning

Plan: Plan 0.1

Standard Planning Report

17 August, 2022

AVANT NATURAL RESOURCES

Aim Directional Services, LLC
Planning Report

Aim Directional Services

Database:	RTOC- EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Speyside 18 Federal 502H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3532.00usft
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3532.00usft
Site:	Speyside 18 Federal Pad	**North Reference:**	Grid
Well:	Speyside 18 Federal 502H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Planning		
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 Speyside 18 Federal Pad

Site Position:		**Northing:**	509,649.38 usft	**Latitude:**	32° 23' 54.086 N
From:	Map	**Easting:**	797,697.63 usft	**Longitude:**	103° 30' 9.844 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.45 °

Well Speyside 18 Federal 502H

Well Position	**+N/-S**	-75.65 usft	**Northing:**	509,573.73 usft	**Latitude:**	32° 23' 53.340 N
	+E/-W	-36.01 usft	**Easting:**	797,661.63 usft	**Longitude:**	103° 30' 10.271 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,507.00 usft

Wellbore Planning

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	10/3/2022	6.30	60.03	47,711.727

Design Plan 0.1

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.65

Plan Survey Tool Program **Date** 8/17/2022

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	15,441.06	Plan 0.1 (Planning)	B001Mb_MWD+HRGM OWSG MWD + HRGM	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.00	
5,620.00	0.00	0.00	5,620.00	0.00	0.00	0.000	0.000	0.000	0.00	
5,855.84	4.72	298.87	5,855.57	4.68	-8.50	2.000	2.000	0.000	298.87	
9,757.04	4.72	298.87	9,743.56	159.59	-289.41	0.000	0.000	0.000	0.00	
9,992.88	0.00	179.65	9,979.13	164.28	-297.91	2.000	-2.000	0.000	180.00	
10,092.88	0.00	179.65	10,079.13	164.28	-297.91	0.000	0.000	0.000	0.00	
10,911.06	90.00	179.65	10,600.00	-356.58	-294.77	11.000	11.000	0.000	0.00	
15,441.06	90.00	179.65	10,600.00	-4,886.50	-267.49	0.000	0.000	0.000	0.00	LTP/PBHL - Speysi

AVANT NATURAL RESOURCES

Aim Directional Services, LLC
Planning Report

Aim Directional Services

Database:	RTOC- EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Speyside 18 Federal 502H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3532.00usft
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3532.00usft
Site:	Speyside 18 Federal Pad	**North Reference:**	Grid
Well:	Speyside 18 Federal 502H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Planning		
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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.000	0.000	0.000
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.000	0.000	0.000
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.000	0.000	0.000
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.000	0.000	0.000
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.000	0.000	0.000
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.000	0.000	0.000
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.000	0.000	0.000
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.000	0.000	0.000
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.000	0.000	0.000
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.000	0.000	0.000
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.000	0.000	0.000
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.000	0.000	0.000
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.000	0.000	0.000
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.000	0.000	0.000
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.000	0.000	0.000
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.000	0.000	0.000
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.000	0.000	0.000
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.000	0.000	0.000
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.000	0.000	0.000
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.000	0.000	0.000
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.000	0.000	0.000
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.000	0.000	0.000
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.000	0.000	0.000
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.000	0.000	0.000
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.000	0.000	0.000
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.000	0.000	0.000
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.000	0.000	0.000
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.000	0.000	0.000
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.000	0.000	0.000
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.000	0.000	0.000
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.000	0.000	0.000
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.000	0.000	0.000
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.000	0.000	0.000
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.000	0.000	0.000
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.000	0.000	0.000
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.000	0.000	0.000
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.000	0.000	0.000
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.000	0.000	0.000
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.000	0.000	0.000
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.000	0.000	0.000
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.000	0.000	0.000
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.000	0.000	0.000
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.000	0.000	0.000
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.000	0.000	0.000
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.000	0.000	0.000
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.000	0.000	0.000
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.000	0.000	0.000
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.000	0.000	0.000
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.000	0.000	0.000
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.000	0.000	0.000
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.000	0.000	0.000
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.000	0.000	0.000
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.000	0.000	0.000

AVANT NATURAL RESOURCES

Aim Directional Services, LLC
Planning Report

Aim Directional Services

Database:	RTOC- EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Speyside 18 Federal 502H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3532.00usft
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3532.00usft
Site:	Speyside 18 Federal Pad	**North Reference:**	Grid
Well:	Speyside 18 Federal 502H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Planning		
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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.000	0.000	0.000
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.000	0.000	0.000
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.000	0.000	0.000
5,620.00	0.00	0.00	5,620.00	0.00	0.00	0.00	0.000	0.000	0.000
Build: 2°/100									
5,700.00	1.60	298.87	5,699.99	0.54	-0.98	-0.55	2.000	2.000	0.000
5,800.00	3.60	298.87	5,799.88	2.73	-4.95	-2.76	2.000	2.000	0.000
5,855.84	4.72	298.87	5,855.57	4.68	-8.50	-4.74	2.000	2.000	0.000
Hold: 4.72° Inc, 298.87° Azm									
5,900.00	4.72	298.87	5,899.58	6.44	-11.68	-6.51	0.000	0.000	0.000
6,000.00	4.72	298.87	5,999.25	10.41	-18.88	-10.52	0.000	0.000	0.000
6,100.00	4.72	298.87	6,098.91	14.38	-26.08	-14.54	0.000	0.000	0.000
6,200.00	4.72	298.87	6,198.57	18.35	-33.28	-18.55	0.000	0.000	0.000
6,300.00	4.72	298.87	6,298.23	22.32	-40.48	-22.57	0.000	0.000	0.000
6,400.00	4.72	298.87	6,397.89	26.29	-47.68	-26.58	0.000	0.000	0.000
6,500.00	4.72	298.87	6,497.55	30.26	-54.88	-30.60	0.000	0.000	0.000
6,600.00	4.72	298.87	6,597.21	34.23	-62.08	-34.61	0.000	0.000	0.000
6,700.00	4.72	298.87	6,696.87	38.20	-69.28	-38.63	0.000	0.000	0.000
6,800.00	4.72	298.87	6,796.54	42.18	-76.48	-42.64	0.000	0.000	0.000
6,900.00	4.72	298.87	6,896.20	46.15	-83.68	-46.66	0.000	0.000	0.000
7,000.00	4.72	298.87	6,995.86	50.12	-90.89	-50.67	0.000	0.000	0.000
7,100.00	4.72	298.87	7,095.52	54.09	-98.09	-54.69	0.000	0.000	0.000
7,200.00	4.72	298.87	7,195.18	58.06	-105.29	-58.70	0.000	0.000	0.000
7,300.00	4.72	298.87	7,294.84	62.03	-112.49	-62.72	0.000	0.000	0.000
7,400.00	4.72	298.87	7,394.50	66.00	-119.69	-66.73	0.000	0.000	0.000
7,500.00	4.72	298.87	7,494.17	69.97	-126.89	-70.74	0.000	0.000	0.000
7,600.00	4.72	298.87	7,593.83	73.94	-134.09	-74.76	0.000	0.000	0.000
7,700.00	4.72	298.87	7,693.49	77.91	-141.29	-78.77	0.000	0.000	0.000
7,800.00	4.72	298.87	7,793.15	81.88	-148.49	-82.79	0.000	0.000	0.000
7,900.00	4.72	298.87	7,892.81	85.85	-155.69	-86.80	0.000	0.000	0.000
8,000.00	4.72	298.87	7,992.47	89.82	-162.89	-90.82	0.000	0.000	0.000
8,100.00	4.72	298.87	8,092.13	93.80	-170.09	-94.83	0.000	0.000	0.000
8,200.00	4.72	298.87	8,191.79	97.77	-177.30	-98.85	0.000	0.000	0.000
8,300.00	4.72	298.87	8,291.46	101.74	-184.50	-102.86	0.000	0.000	0.000
8,400.00	4.72	298.87	8,391.12	105.71	-191.70	-106.88	0.000	0.000	0.000
8,500.00	4.72	298.87	8,490.78	109.68	-198.90	-110.89	0.000	0.000	0.000
8,600.00	4.72	298.87	8,590.44	113.65	-206.10	-114.91	0.000	0.000	0.000
8,700.00	4.72	298.87	8,690.10	117.62	-213.30	-118.92	0.000	0.000	0.000
8,800.00	4.72	298.87	8,789.76	121.59	-220.50	-122.94	0.000	0.000	0.000
8,900.00	4.72	298.87	8,889.42	125.56	-227.70	-126.95	0.000	0.000	0.000
9,000.00	4.72	298.87	8,989.09	129.53	-234.90	-130.97	0.000	0.000	0.000
9,100.00	4.72	298.87	9,088.75	133.50	-242.10	-134.98	0.000	0.000	0.000
9,200.00	4.72	298.87	9,188.41	137.47	-249.30	-138.99	0.000	0.000	0.000
9,300.00	4.72	298.87	9,288.07	141.45	-256.50	-143.01	0.000	0.000	0.000
9,400.00	4.72	298.87	9,387.73	145.42	-263.71	-147.02	0.000	0.000	0.000
9,500.00	4.72	298.87	9,487.39	149.39	-270.91	-151.04	0.000	0.000	0.000
9,600.00	4.72	298.87	9,587.05	153.36	-278.11	-155.05	0.000	0.000	0.000
9,700.00	4.72	298.87	9,686.71	157.33	-285.31	-159.07	0.000	0.000	0.000
9,757.04	4.72	298.87	9,743.56	159.59	-289.41	-161.36	0.000	0.000	0.000
Drop: 2°/100'									
9,800.00	3.86	298.87	9,786.40	161.14	-292.23	-162.93	2.000	-2.000	0.000
9,900.00	1.86	298.87	9,886.27	163.55	-296.59	-165.36	2.000	-2.000	0.000
9,992.88	0.00	179.65	9,979.13	164.28	-297.91	-166.09	2.000	-2.000	0.000

AVANT NATURAL RESOURCES

Aim Directional Services, LLC
Planning Report

Aim Directional Services

Database:	RTOC- EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Speyside 18 Federal 502H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3532.00usft
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3532.00usft
Site:	Speyside 18 Federal Pad	**North Reference:**	Grid
Well:	Speyside 18 Federal 502H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Planning		
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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Hold									
10,000.00	0.00	0.00	9,986.26	164.28	-297.91	-166.09	0.000	0.000	0.000
10,092.88	0.00	0.00	10,079.13	164.28	-297.91	-166.09	0.000	0.000	0.000
KOP: 11°/100' @ 10092.88' MD									
10,100.00	0.78	179.65	10,086.26	164.23	-297.91	-166.05	11.000	11.000	0.000
10,150.00	6.28	179.65	10,136.14	161.15	-297.89	-162.97	11.000	11.000	0.000
10,200.00	11.78	179.65	10,185.50	153.30	-297.84	-155.12	11.000	11.000	0.000
10,250.00	17.28	179.65	10,233.88	140.76	-297.77	-142.57	11.000	11.000	0.000
10,300.00	22.78	179.65	10,280.84	123.64	-297.67	-125.45	11.000	11.000	0.000
10,350.00	28.28	179.65	10,325.94	102.09	-297.54	-103.91	11.000	11.000	0.000
10,400.00	33.78	179.65	10,368.77	76.33	-297.38	-78.14	11.000	11.000	0.000
10,450.00	39.28	179.65	10,408.93	46.57	-297.20	-48.39	11.000	11.000	0.000
10,500.00	44.78	179.65	10,446.05	13.11	-297.00	-14.92	11.000	11.000	0.000
10,550.00	50.28	179.65	10,479.79	-23.76	-296.78	21.95	11.000	11.000	0.000
10,600.00	55.78	179.65	10,509.85	-63.69	-296.54	61.88	11.000	11.000	0.000
10,650.00	61.28	179.65	10,535.94	-106.32	-296.28	104.51	11.000	11.000	0.000
10,700.00	66.78	179.65	10,557.82	-151.26	-296.01	149.45	11.000	11.000	0.000
10,750.00	72.28	179.65	10,575.30	-198.08	-295.73	196.27	11.000	11.000	0.000
10,800.00	77.78	179.65	10,588.21	-246.37	-295.44	244.56	11.000	11.000	0.000
10,850.00	83.28	179.65	10,596.43	-295.67	-295.14	293.86	11.000	11.000	0.000
10,900.00	88.78	179.65	10,599.88	-345.53	-294.84	343.72	11.000	11.000	0.000
10,911.06	90.00	179.65	10,600.00	-356.58	-294.77	354.77	11.000	11.000	0.000
LP/Hold: 90.00° Inc, 179.65° Azm									
11,000.00	90.00	179.65	10,600.00	-445.53	-294.24	443.72	0.000	0.000	0.000
11,100.00	90.00	179.65	10,600.00	-545.52	-293.64	543.72	0.000	0.000	0.000
11,200.00	90.00	179.65	10,600.00	-645.52	-293.03	643.72	0.000	0.000	0.000
11,300.00	90.00	179.65	10,600.00	-745.52	-292.43	743.72	0.000	0.000	0.000
11,400.00	90.00	179.65	10,600.00	-845.52	-291.83	843.72	0.000	0.000	0.000
11,500.00	90.00	179.65	10,600.00	-945.52	-291.23	943.72	0.000	0.000	0.000
11,600.00	90.00	179.65	10,600.00	-1,045.51	-290.62	1,043.72	0.000	0.000	0.000
11,700.00	90.00	179.65	10,600.00	-1,145.51	-290.02	1,143.72	0.000	0.000	0.000
11,800.00	90.00	179.65	10,600.00	-1,245.51	-289.42	1,243.72	0.000	0.000	0.000
11,900.00	90.00	179.65	10,600.00	-1,345.51	-288.82	1,343.72	0.000	0.000	0.000
12,000.00	90.00	179.65	10,600.00	-1,445.51	-288.22	1,443.72	0.000	0.000	0.000
12,100.00	90.00	179.65	10,600.00	-1,545.51	-287.61	1,543.72	0.000	0.000	0.000
12,200.00	90.00	179.65	10,600.00	-1,645.50	-287.01	1,643.72	0.000	0.000	0.000
12,300.00	90.00	179.65	10,600.00	-1,745.50	-286.41	1,743.72	0.000	0.000	0.000
12,400.00	90.00	179.65	10,600.00	-1,845.50	-285.81	1,843.72	0.000	0.000	0.000
12,500.00	90.00	179.65	10,600.00	-1,945.50	-285.20	1,943.72	0.000	0.000	0.000
12,600.00	90.00	179.65	10,600.00	-2,045.50	-284.60	2,043.72	0.000	0.000	0.000
12,700.00	90.00	179.65	10,600.00	-2,145.49	-284.00	2,143.72	0.000	0.000	0.000
12,800.00	90.00	179.65	10,600.00	-2,245.49	-283.40	2,243.72	0.000	0.000	0.000
12,900.00	90.00	179.65	10,600.00	-2,345.49	-282.79	2,343.72	0.000	0.000	0.000
13,000.00	90.00	179.65	10,600.00	-2,445.49	-282.19	2,443.72	0.000	0.000	0.000
13,100.00	90.00	179.65	10,600.00	-2,545.49	-281.59	2,543.72	0.000	0.000	0.000
13,200.00	90.00	179.65	10,600.00	-2,645.49	-280.99	2,643.72	0.000	0.000	0.000
13,300.00	90.00	179.65	10,600.00	-2,745.48	-280.39	2,743.72	0.000	0.000	0.000
13,400.00	90.00	179.65	10,600.00	-2,845.48	-279.78	2,843.72	0.000	0.000	0.000
13,500.00	90.00	179.65	10,600.00	-2,945.48	-279.18	2,943.72	0.000	0.000	0.000
13,600.00	90.00	179.65	10,600.00	-3,045.48	-278.58	3,043.72	0.000	0.000	0.000
13,700.00	90.00	179.65	10,600.00	-3,145.48	-277.98	3,143.72	0.000	0.000	0.000
13,800.00	90.00	179.65	10,600.00	-3,245.47	-277.37	3,243.72	0.000	0.000	0.000
13,900.00	90.00	179.65	10,600.00	-3,345.47	-276.77	3,343.72	0.000	0.000	0.000

AVANT NATURAL RESOURCES

Aim Directional Services, LLC
Planning Report

Aim Directional Services

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Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3532.00usft
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3532.00usft
Site:	Speyside 18 Federal Pad	**North Reference:**	Grid
Well:	Speyside 18 Federal 502H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Planning		
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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,000.00	90.00	179.65	10,600.00	-3,445.47	-276.17	3,443.72	0.000	0.000	0.000
14,100.00	90.00	179.65	10,600.00	-3,545.47	-275.57	3,543.72	0.000	0.000	0.000
14,200.00	90.00	179.65	10,600.00	-3,645.47	-274.96	3,643.72	0.000	0.000	0.000
14,300.00	90.00	179.65	10,600.00	-3,745.47	-274.36	3,743.72	0.000	0.000	0.000
14,400.00	90.00	179.65	10,600.00	-3,845.46	-273.76	3,843.72	0.000	0.000	0.000
14,500.00	90.00	179.65	10,600.00	-3,945.46	-273.16	3,943.72	0.000	0.000	0.000
14,600.00	90.00	179.65	10,600.00	-4,045.46	-272.56	4,043.72	0.000	0.000	0.000
14,700.00	90.00	179.65	10,600.00	-4,145.46	-271.95	4,143.72	0.000	0.000	0.000
14,800.00	90.00	179.65	10,600.00	-4,245.46	-271.35	4,243.72	0.000	0.000	0.000
14,900.00	90.00	179.65	10,600.00	-4,345.45	-270.75	4,343.72	0.000	0.000	0.000
15,000.00	90.00	179.65	10,600.00	-4,445.45	-270.15	4,443.72	0.000	0.000	0.000
15,100.00	90.00	179.65	10,600.00	-4,545.45	-269.54	4,543.72	0.000	0.000	0.000
15,200.00	90.00	179.65	10,600.00	-4,645.45	-268.94	4,643.72	0.000	0.000	0.000
15,300.00	90.00	179.65	10,600.00	-4,745.45	-268.34	4,743.72	0.000	0.000	0.000
15,400.00	90.00	179.65	10,600.00	-4,845.45	-267.74	4,843.72	0.000	0.000	0.000
15,441.06	90.00	179.65	10,600.00	-4,886.50	-267.49	4,884.77	0.000	0.000	0.000
PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LTP/PBHL - Speyside - plan hits target center - Point	0.00	0.00	10,600.00	-4,886.50	-267.49	504,687.23	797,394.14	32° 23' 5.010 N	103° 30' 13.833 W
FTP - Speyside 18 Fe - plan misses target center by 239.58usft at 10490.97usft MD (10439.59 TVD, 19.41 N, -297.04 E) - Point	0.00	0.00	10,600.00	197.36	-298.11	509,771.09	797,363.52	32° 23' 55.316 N	103° 30' 13.730 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
15,473.42		20" Casing	20	24

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,620.00	5,620.00	0.00	0.00	Build: 2°/100
5,855.84	5,855.57	4.68	-8.50	Hold: 4.72° Inc, 298.87° Azm
9,757.04	9,743.56	159.59	-289.41	Drop: 2°/100'
9,992.88	9,979.13	164.28	-297.91	Hold
10,092.88	10,079.13	164.28	-297.91	KOP: 11°/100' @ 10092.88' MD
10,911.06	10,600.00	-356.58	-294.77	LP/Hold: 90.00° Inc, 179.65° Azm
15,441.06	10,600.00	-4,886.50	-267.49	PBHL

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Avant Operating LLC**
LEASE NO.:	**NMNM140721**
LOCATION:	Section 18, T.22 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	**Speyside 18 Federal 301H**
SURFACE HOLE FOOTAGE:	150'/N & 594'/E
BOTTOM HOLE FOOTAGE	100'/S & 330'/E
ATS/API ID:	**ATS-23-70**
APD ID:	**10400088609**
Sundry ID:	**N/A**

WELL NAME & NO.:	**Speyside 18 Federal 302H**
SURFACE HOLE FOOTAGE:	150'/N & 726'/E
BOTTOM HOLE FOOTAGE	100'/S & 990'/E
ATS/API ID:	**ATS-23-69**
APD ID:	**10400088611**
Sundry ID:	**N/A**

WELL NAME & NO.:	**Speyside 18 Federal 501H**
SURFACE HOLE FOOTAGE:	150'/N & 660'/E
BOTTOM HOLE FOOTAGE	100'/S & 330'/E
ATS/API ID:	**ATS-23-51**
APD ID:	**10400088629**
Sundry ID:	**N/A**

WELL NAME & NO.:	**Speyside 18 Federal 502H**
SURFACE HOLE FOOTAGE:	300'/N & 693'/E
BOTTOM HOLE FOOTAGE	100'/S & 990'/E
ATS/API ID:	**ATS-23-50**
APD ID:	**10400088636**
Sundry ID:	**N/A**

WELL NAME & NO.:	**Speyside 18 Federal 601H**
SURFACE HOLE FOOTAGE:	150'/N & 627'/E
BOTTOM HOLE FOOTAGE	100'/S & 330'/E
ATS/API ID:	**ATS-23-49**
APD ID:	**10400088637**
Sundry ID:	**N/A**

Approval Date: 04/12/2023

WELL NAME & NO.:	**Speyside 18 Federal 602H**
SURFACE HOLE FOOTAGE:	150'/N & 627'/E
BOTTOM HOLE FOOTAGE	100'/S & 330'/E
ATS/API ID:	**ATS-23-48**
APD ID:	**10400088640**
Sundry ID:	**N/A**

COA

H2S	No		
Potash	None		
Cave/Karst Potential	Low		
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	Conventional and Multibowl		
Other	☐ 4 String	Capitan Reef: None	☐ 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		
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

Approval Date: 04/12/2023

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1812 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, 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.

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

    Option 1 (Single Stage):

    - Cement to surface. If cement does not circulate see B.1.a, c-d above.

    Option 2:

    Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

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

    b. Second stage above DV tool:

    - Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Approval Date: 04/12/2023

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

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

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

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 OOGO2.III.A.2.i must be followed.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 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 Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

Approval Date: 04/12/2023

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

Approval Date: 04/12/2023

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin

after cut-off or once cement reaches 500 psi compressive strength (including lead 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 Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

LVO 4/5/2023

Approval Date: 04/12/2023

Hydrogen Sulfide Plan Summary

A. All personnel shall receive proper H2S training in accordance with Onshore Order III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun.
  b. Choke manifold with a remotely operated choke.
  c. Mud/gas separator

- Protective equipment for essential personnel.

  Breathing apparatus:
  a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  b. Work/Escape packs —4 packs shall be stored on the rig floor th sufficient air hose not to restrict work activity.
  c. Emergency Escape Packs —4 packs shall be stored in the doghouse for emergency evacuation.

  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harness
  c. 100 ft 5/8 inch OSHA approved rope
  d. 1-20# class ABC fire extinguisher

- H2S detection and monitoring equipment:
  The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
  (Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
  a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  c. Two wind socks will be placed in strategic locations, visible from all angles.

AVANT
NATURAL RESOURCES

- Mud program:
  The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

- Metallurgy:
  All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

- Communication:
  Communication will be via cell phones and land lines where available.

Company Personnel to be Notified

John Harper, Vice President of Geoscience	Office: (720) 746-5045 Mobile: (678) 988-6644
Braden Harris, Engineer	Mobile: (406) 600-3310

Local & County Agencies

Eunice Fire Department	911 or (575) 394-3258
Lea County Sheriff (Lovington)	911 or (575) 396-3611
Lea County Emergency Management (Lovington)	(575) 396-8602
Lea Regional Medical Center Hopital (Hobbs)	(575) 492-5000

State Agencies

NM State Police (Hobbs)	(575) 392-5588
NM Oil Conservation (Hobbs)	(575) 370-3186
NM Oil Conservation (Santa Fe)	(505) 476-3440
NM Dept. of Transportation (Roswell)	(575) 637-7201

AVANT
NATURAL RESOURCES

Federal Agencies

BLM (Carlsbad)	(575) 234-5972
BLM (Hobbs)	(575) 393-3612
National Response Center	(800) 424-8802
US EPA Region 6 (Dallas)	(800) 887-6063
	(214) 665-6444

Veterinarians

Eunice Veterinary Clinic	(575) 394-3303

Residents within 2 miles

None

Air Evacuation

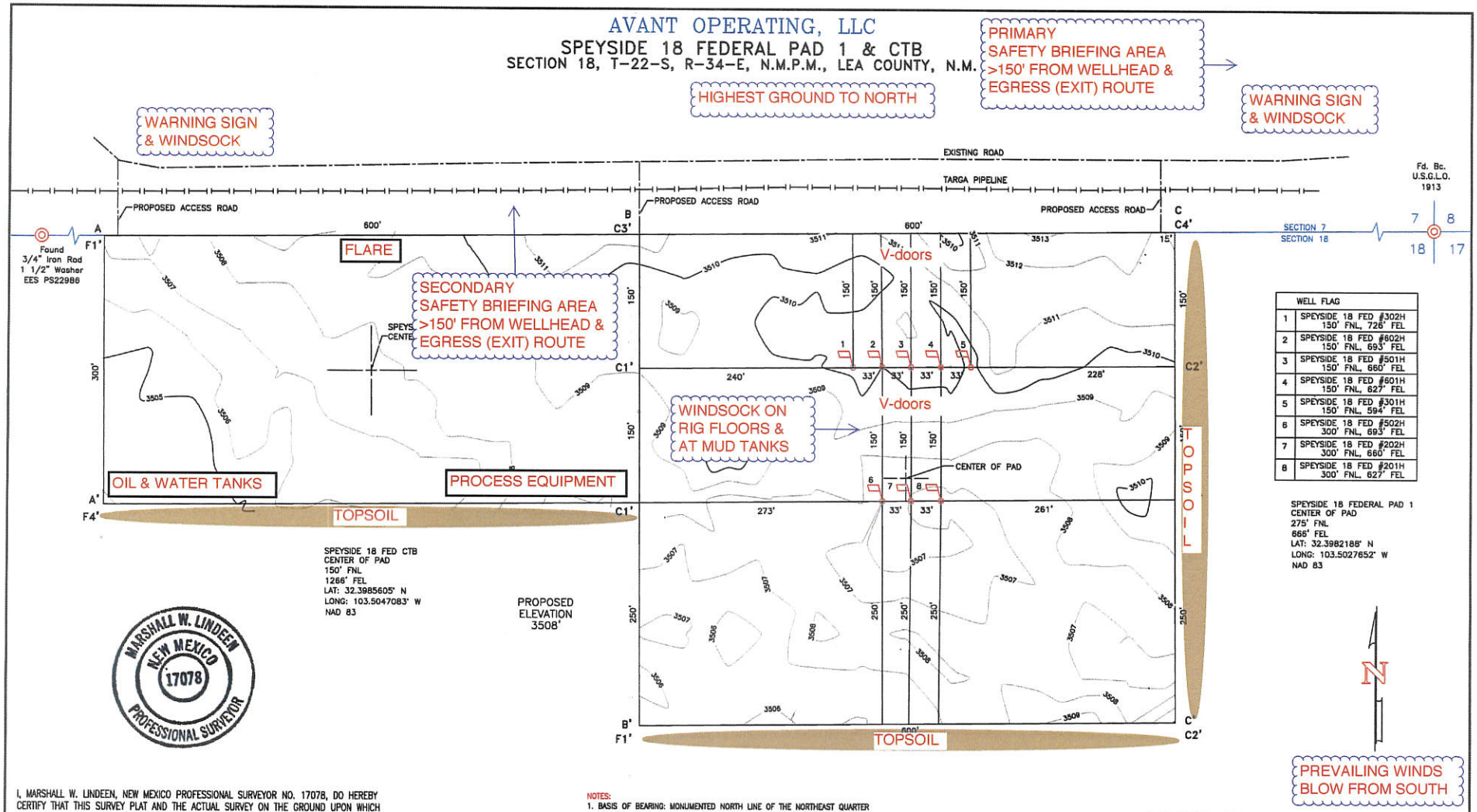
AeroCare (Lubbock)	(800) 627-2376
Med Flight Air Ambulance (Albuquerque)	(800) 842-4431
Lifeguard (Albuquerque)	(888) 866-7256

AVANT
NATURAL RESOURCES

AVANT OPERATING, LLC

SPEYSIDE 18 FEDERAL PAD 1 & CTB

SECTION 18, T-22-S, R-34-E, N.M.P.M., LEA COUNTY, N.M.



WELL FLAG	
1	SPEYSIDE 18 FED #302H 150' FNL, 726' FEL
2	SPEYSIDE 18 FED #602H 150' FNL, 693' FEL
3	SPEYSIDE 18 FED #501H 150' FNL, 660' FEL
4	SPEYSIDE 18 FED #601H 150' FNL, 627' FEL
5	SPEYSIDE 18 FED #301H 150' FNL, 594' FEL
6	SPEYSIDE 18 FED #502H 300' FNL, 693' FEL
7	SPEYSIDE 18 FED #202H 300' FNL, 660' FEL
8	SPEYSIDE 18 FED #201H 300' FNL, 627' FEL

SPEYSIDE 18 FEDERAL PAD 1
CENTER OF PAD
275' FNL
666' FEL
LAT: 32.3982188° N
LONG: 103.5027652° W
NAD 83

SPEYSIDE 18 FED CTB
CENTER OF PAD
150' FNL
1266' FEL
LAT: 32.3985605° N
LONG: 103.5047083° W
NAD 83

PROPOSED ELEVATION 3508'

PREVAILING WINDS BLOW FROM SOUTH

MARSHALL W. LINDEEN NEW MEXICO 17078 PROFESSIONAL SURVEYOR

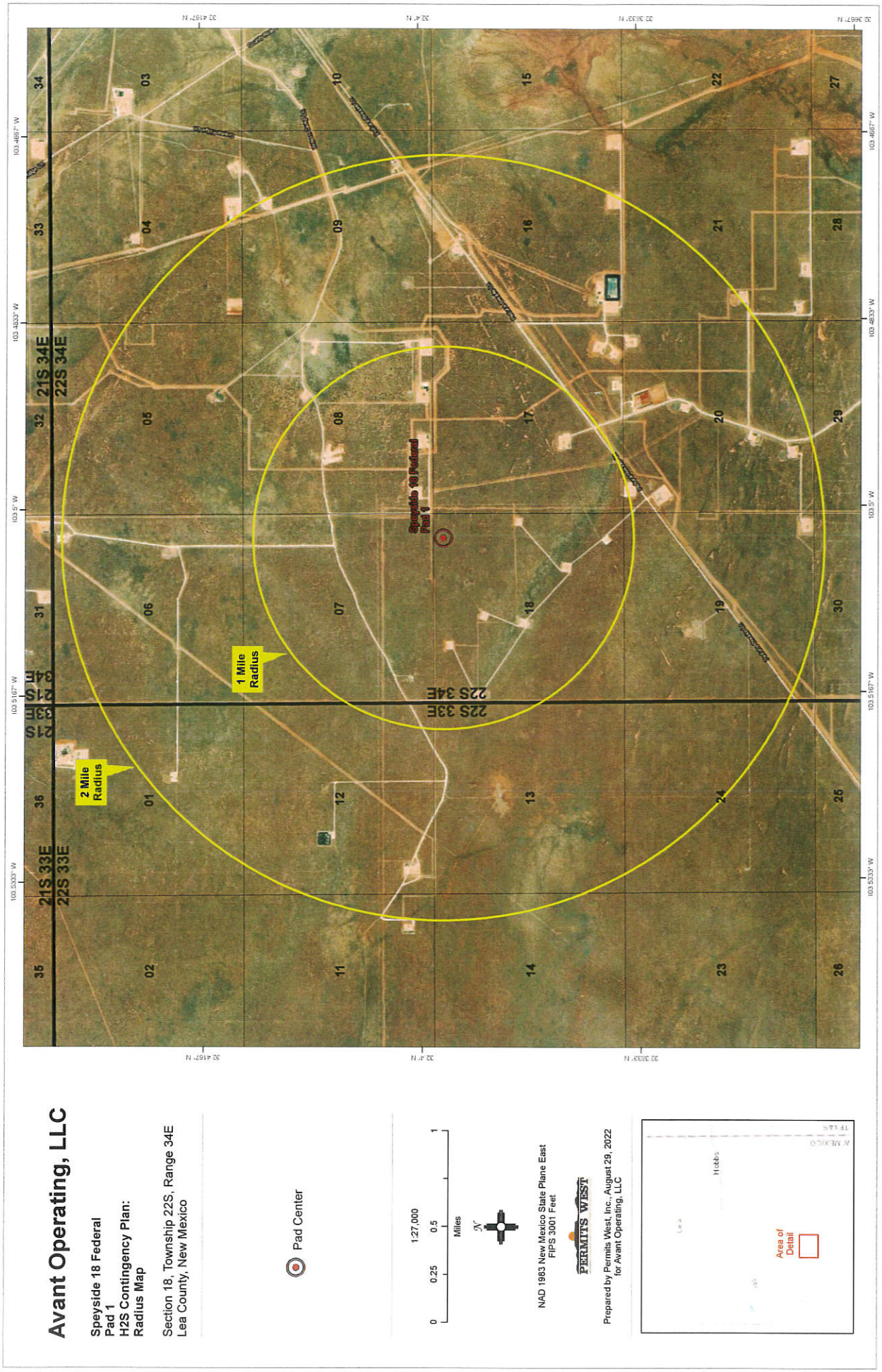
I, MARSHALL W. LINDEEN, NEW MEXICO PROFESSIONAL SURVEYOR NO. 17078, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT.

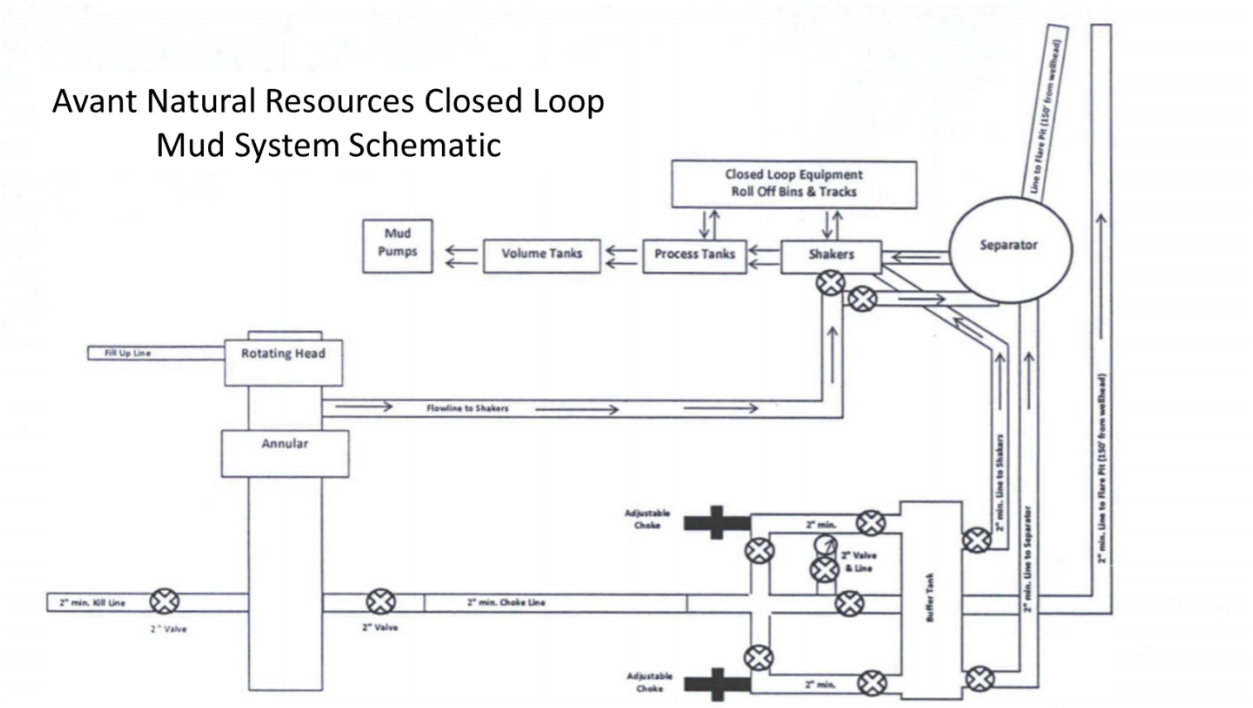
MARSHALL W. LINDEEN P.S. #17078 — DATE 9-26-22

NOTES:
1. BASIS OF BEARING: MONUMENTED NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 18, T-22-S, R-34-E, N.M.P.M., LEA COUNTY, NEW MEXICO. BEARS: S 89°29'14" W - 2639.81'
2. ALL BEARINGS, DISTANCES & COORDINATES SHOWN ARE BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83, IN U.S. SURVEY FEET.
3. CONTRACTOR SHALL CONTACT "ONE-CALL" FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINE OR CABLES ON WELL PAD AND/OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.
4. UNITED FIELD SERVICES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES.
5. CUT AND FILL CALCULATIONS ARE ROUNDED TO THE NEAREST FOOT.

AVANT OPERATING, LLC		
SURVEYED: 6/10/22	REV. DATE:	APP. BY: M.W.L.
DRAWN BY: K.S.	DATE DRAWN: 9/01/22	FILE NAME: 11670-C01

UNITED FIELD SERVICES INC.
P.O. BOX 3651
FARMINGTON, NM 87499
OFFICE: (505) 334-0408


Avant Operating, LLC
Speyside 18 Federal
Pad 1
H2S Contingency Plan:
Radius Map
Section 18, Township 22S, Range 34E
Lea County, New Mexico
Pad Center
1 Mile Radius
2 Mile Radius
Speyside 18 Federal Pad 1
21S 33E
22S 33E
21S 34E
22S 34E
1:27,000
0 0.25 0.5 1
Miles
NAD 1983 New Mexico State Plane East FIPS 3001 Feet
PERMITS WEST
Prepared by Permits West, Inc., August 29, 2022 for Avant Operating, LLC
Area of Detail
Hobbs
NEW MEXICO
TEXAS


Avant Natural Resources Closed Loop
Mud System Schematic
Closed Loop Equipment
Roll Off Bins & Tracks
Mud
Pumps
Volume Tanks
Process Tanks
Shakers
Separator
Line to Flare Pit (150' from wellhead)
Fill Up Line
Rotating Head
Flowline to Shakers
Annular
Adjustable
Choke
2" min.
2" Valve
& Line
Buffer Tank
2" min. Line to Shakers
2" min. Line to Separator
2" min. Line to Flare Pit (150' from wellhead)
2" min. Kill Line
2" Valve
2" Valve
2" min. Choke Line
Adjustable
Choke
2" min.

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
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 206795

CONDITIONS

Operator:	OGRID:
Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	330396
	Action Number: 206795
	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	4/14/2023
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	4/14/2023
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	4/14/2023
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	4/14/2023