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

Sundry Print Report

02/19/2025

Well Name: ROYAL OAK 25 FED COM

Well Location: T18S / R33E / SEC 24 / SWSE / 32.728046 / -103.613749

County or Parish/State: LEA / NM

Well Number: 009H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM51842

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002554152

Operator: AVANT OPERATING LLC

Notice of Intent

Sundry ID: 2835872

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/07/2025

Time Sundry Submitted: 10:59

Date proposed operation will begin: 02/07/2025

Procedure Description: Avant Operating, LLC would like to make the following changes to this well. SHL change from 763' FSL & 1771' FEL to 603' FSL & 1710' FEL. A target change from 11,354’ to 11,850’. Please see attached updated drilling info to reflect these changes.

NOI Attachments

Procedure Description

Royal_Oak_24_Fed_Com_009H_APD_Change_Attachments_20250207101417.pdf

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Lease Number: NMNM51842 | **Unit or CA Name:** | **Unit or CA Number:**

US Well Number: 3002554152 | **Operator:** AVANT OPERATING LLC

Conditions of Approval

Additional

Royal_Oak_25_Fed_Com_9H_Dr_COA_20250211090011.pdf

25_18_33_B_Sundry_ID_2835872_Royal_Oak_25_Fed_Com_009H_Lea_NM116166_AVANT_OPERATING_LLC_13_22g_2_27_2024_LV_20250211090011.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: MEGHAN TWELE **Signed on:** FEB 07, 2025 10:59 AM

Name: AVANT OPERATING LLC

Title: Contract Regulatory Analyst

Street Address: 1515 WYNKOOP ST SUITE 700

City: DENVER **State:** CO

Phone: (720) 339-6880

Email address: MTWELE@OUTLOOK.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS **BLM POC Title:** Petroleum Engineer

BLM POC Phone: 5752342234 **BLM POC Email Address:** cwalls@blm.gov

Disposition: Approved **Disposition Date:** 02/19/2025

Signature: Chris Walls

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

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

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ 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 recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be 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 OFICE 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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand 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: SWSE / 763 FSL / 1771 FEL / TWSP: 18S / RANGE: 33E / SECTION: 24 / LAT: 32.728046 / LONG: -103.613749 (TVD: 0 feet, MD: 0 feet)

PPP: NESE / 2639 FNL / 991 FEL / TWSP: 18S / RANGE: 33E / SECTION: 25 / LAT: 32.718705 / LONG: -103.611198 (TVD: 11354 feet, MD: 13354 feet)

PPP: NENE / 100 FNL / 990 FEL / TWSP: 18S / RANGE: 33E / SECTION: 25 / LAT: 32.725684 / LONG: -103.611207 (TVD: 11354 feet, MD: 11715 feet)

BHL: SESE / 100 FSL / 990 FEL / TWSP: 18S / RANGE: 33E / SECTION: 36 / LAT: 32.69721 / LONG: -103.611175 (TVD: 11354 feet, MD: 21647 feet)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Avant Operating LLC**
LOCATION:	Section 25, T.18 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	**Royal Oak 25 Fed Com 9H**
ATS/API ID:	**3002554152**
APD ID:	**10400094569**
Sundry ID:	**2835872**

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 ☐ 5 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	Waste Prevention: None	
Special Requirements Variance	☐ BOPE Break Testing ☐ Offline BOPE Testing	☑ Offline Cementing	☑ Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** 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 **10-3/4** inch surface casing shall be set at approximately **1720 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 **14 3/4** 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 **7-5/8** inch intermediate casing is:

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

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 **7-5/8** 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 **10-3/4** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

Offline Cementing

Operator has been **(Approved)** to pump the proposed cement program offline in the **Surface and intermediate(s) intervals**.

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**.

Casing Clearance

Operator casing variance is approved for the utilization of 5-1/2 inch P-110 Anaconda **from** base of curve and a minimum of 500 feet or the minimum tie-back requirement above, whichever is greater into the previous casing shoe.

Operator shall clean up cycles until wellbore is clear of cuttings and any large debris, ensure cutting sizes are less than 0.5 micron before cementing.

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) 2/11/2025

Royal Oak 25 Fed Com 009H

10 3/4	surface csg in a	14 3/4	inch hole.	Design Factors			Surface				
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.50	j 55	ltc	6.03	1.79	0.67	1,720	4	1.21	3.12	69,660
"B"			ltc				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,440		Tail Cmt	does not	circ to sfc.	Totals:	1,720				69,660

Comparison of Proposed to Minimum Required Cement Volumes

Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
14 3/4	0.5563	798	1453	957	52	9.90	2592	3M	2.00

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

7 5/8	casing inside the	10 3/4		Design Factors			Int 1				
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	29.70	p 110	ltc	2.73	1.14	1.62	9,573	2	2.92	2.06	284,318
"B"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 2,085					Totals:	9,573				284,318
	The cement volume(s) are intended to achieve a top of			0	ft from surface or a		1720				overlap.

Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
9 7/8	0.2148	1217	2811	2089	35	9.50	3241	5M	0.69
D V Tool(s):						sum of sx	Σ CuFt		Σ%excess
by stage % :		#VALUE!	#VALUE!			1217	2811		35

Class 'H' tail cmt yld > 1.20

Tail cmt

5 1/2	casing inside the	7 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	2.71	2.48	2.16	9,073	2	3.90	4.47	181,460
"B"	20.00	p 110	anaconda	10.39	1.97	2.16	2,351	2	3.90	3.56	47,020
"C"	20.00	p 110	gbcd	75.25	1.90	2.16	10,682	2	3.90	3.42	213,640
"D"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,996					Totals:	22,106				442,120
	The cement volume(s) are intended to achieve a top of			9073	ft from surface or a		500				overlap.

Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
6 3/4	0.0835	1222	2210	1093	102	9.50			0.23

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	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
0		#N/A	#N/A	0	#N/A				

#N/A Capitan Reef est top XXXX.

C-102	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024
Submit Electronically Via OCD Permitting		Submittal Type: ☒ Initial Submittal ☐ Amended Report ☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name	
30-025-54152	8170	Buffalo; Wolfcamp	
Property Code	Property Name		Well Number
335845	ROYAL OAK 24 FED COM		009H
OGRID No.	Operator Name		Ground Level Elevation
330396	AVANT OPERATING, LLC		3908.7
Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal		Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal	

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
O	24	18 S	33 E		603 FSL	1710 FEL	32.7276077° N	103.6135500° W	LEA

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
P	36	18 S	33 E		100 FSL	990 FEL	32.6972099° N	103.6111746° W	LEA

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
1280			No	
Order Numbers. R-23453			Well setbacks are under Common Ownership: ☐ Yes ☒ No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
A	25	18 S	33 E		50 FNL	990 FEL	32.7258211° N	103.6112067° W	LEA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
A	25	18 S	33 E		100 FNL	990 FEL	32.7256837° N	103.6112065° W	LEA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
P	36	18 S	33 E		100 FSL	990 FEL	32.6972099° N	103.6111746° W	LEA

Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:

OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division

Signature — Date: 2/7/2025

Meghan Twele

Printed Name

mtwele@outlook.com

E-mail Address

SURVEYOR CERTIFICATIONS

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. I further certify that United Field Services, Inc., located at 21 Road 3520 in Flora Vista, New Mexico is the company providing this information.

JOHN A VUKONICH NEW MEXICO 14831 PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor

14831	1/29/25	2/5/2025
Certificate Number	Date of Field Survey	Date of Certification

Note: 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.

ACREAGE DEDICATION PLATS

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

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

United Field Services, Inc., located at 21 Road 3520, Flora Vista, New Mexico, is the company providing this plat.

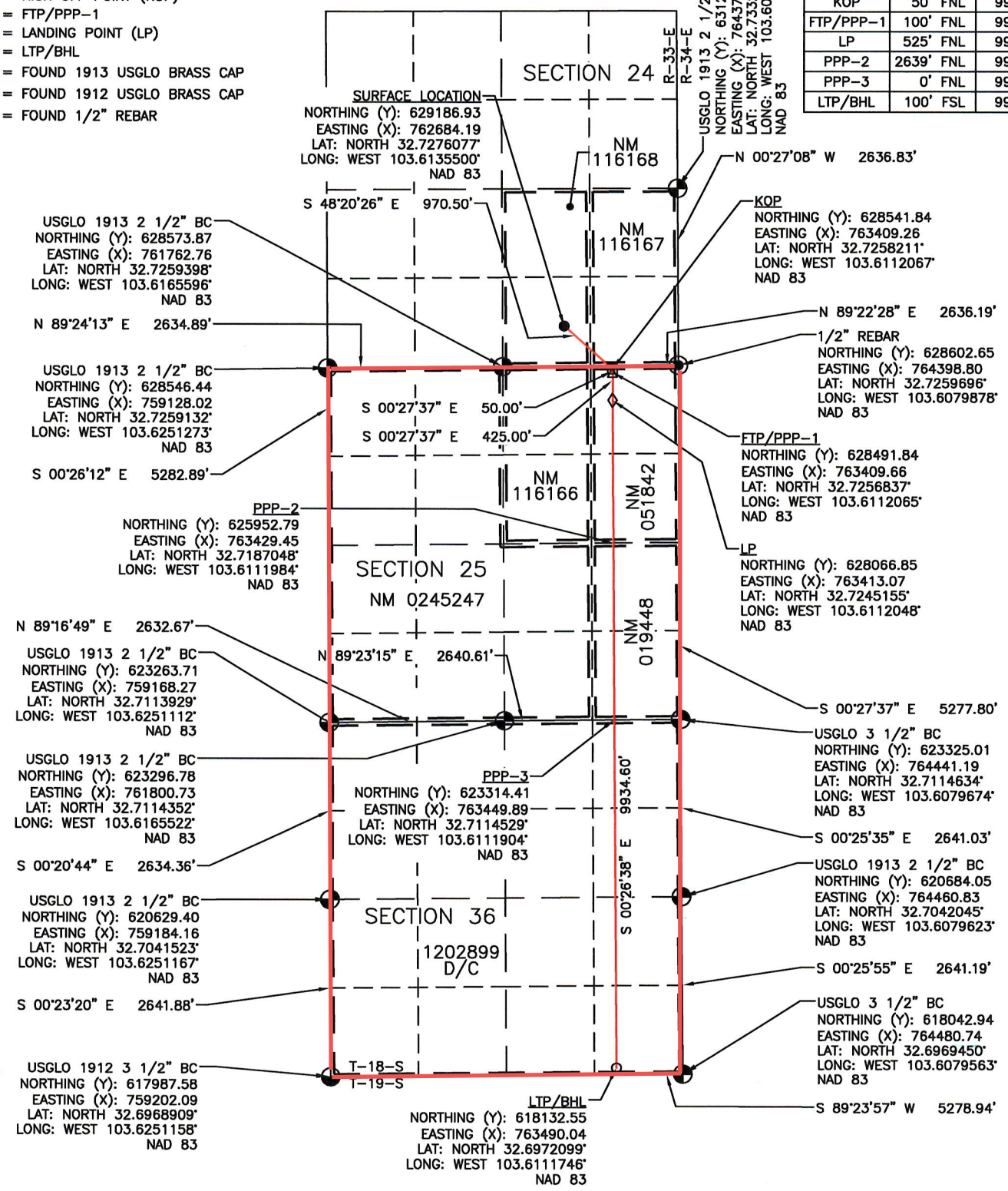
Plat Revised: 2/3/25

UFSI PROJECT NO. 11721

LEGEND:
- ● = SURFACE LOCATION (SHL)
- □ = KICK OFF POINT (KOP)
- △ = FTP/PPP-1
- ◊ = LANDING POINT (LP)
- ○ = LTP/BHL
- ◓ = FOUND 1913 USGLO BRASS CAP
- ◒ = FOUND 1912 USGLO BRASS CAP
- ◉ = FOUND 1/2" REBAR

NOTE: BEARINGS AND DISTANCES SHOWN ARE REFERENCED TO THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE, NAD 83, UNLESS OTHERWISE NOTED

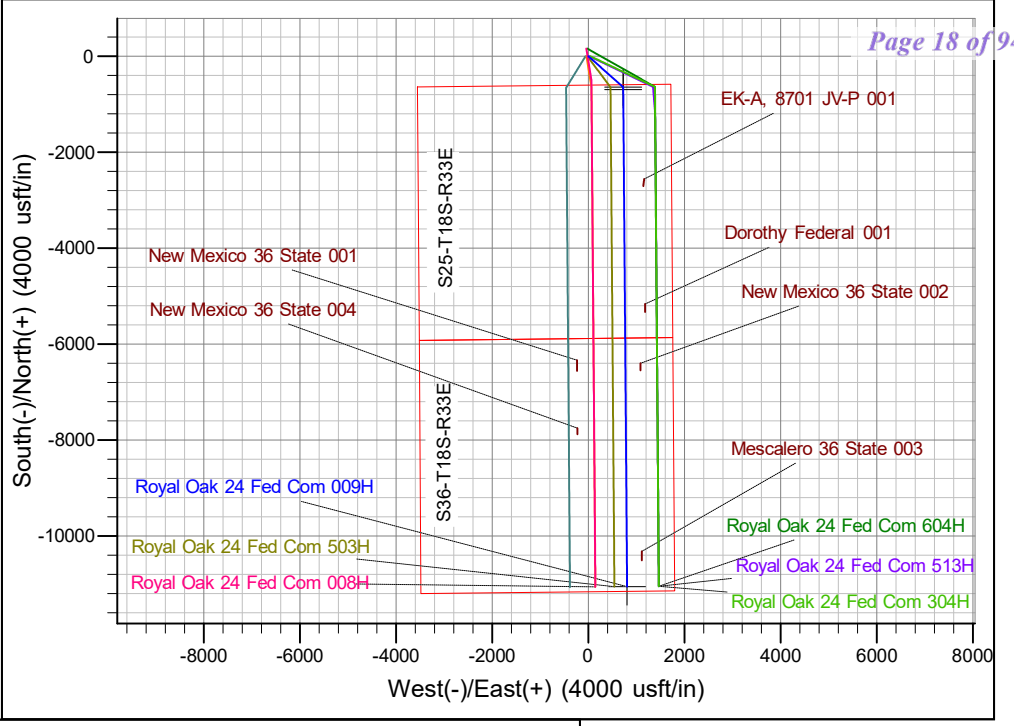
AVANT OPERATING, LLC			
ROYAL OAK 24 FED COM 009H			
FOOTAGES			SEC.
SHL	603' FSL	1710' FEL	24
KOP	50' FNL	990' FEL	25
FTP/PPP-1	100' FNL	990' FEL	25
LP	525' FNL	990' FEL	25
PPP-2	2639' FNL	991' FEL	25
PPP-3	0' FNL	991' FEL	36
LTP/BHL	100' FSL	990' FEL	36



AVANT NATURAL RESOURCES

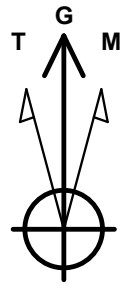
WELL DETAILS: Royal Oak 24 Fed Com 009H					
Ground Elev: 3908.7		KB: 3935.2			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	629186.95	762684.20	32.727608	-103.613550

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



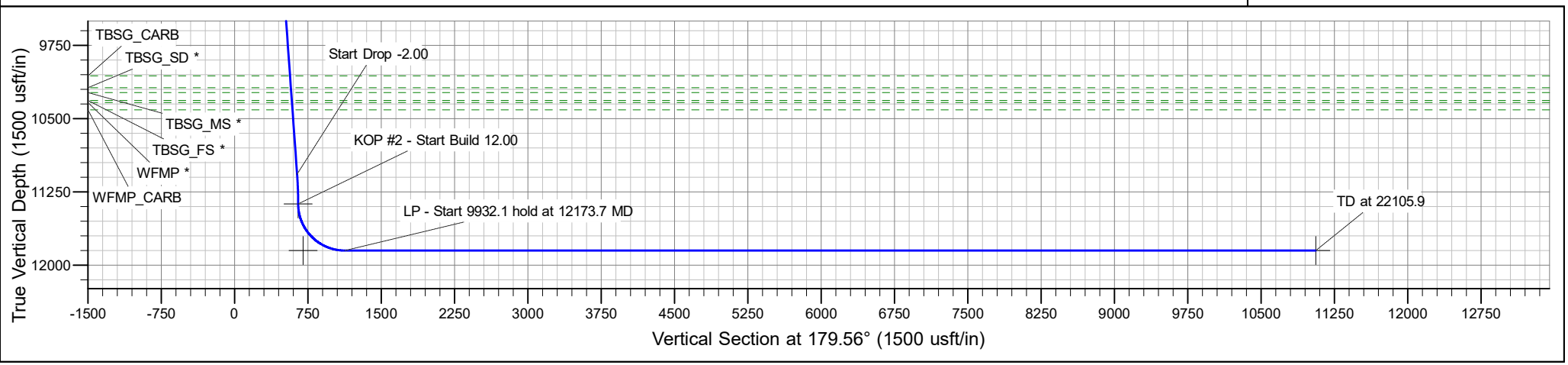
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	KOP - Start Build 2.00
3	2305.5	6.11	131.66	2304.9	-10.8	12.2	2.00	131.66	10.9	Start 8812.7 hold at 2305.5 MD
4	11118.2	6.11	131.66	11067.6	-634.3	712.9	0.00	0.00	639.7	Start Drop -2.00
5	11423.7	0.00	0.00	11372.5	-645.1	725.1	2.00	180.00	650.7	KOP #2 - Start Build 12.00
6	11423.7	0.00	0.00	11372.5	-645.1	725.1	0.00	0.00	650.7	KOP #2 - Start Build 12.00
7	12173.7	90.00	179.56	11850.0	-1122.6	728.8	12.00	179.56	1128.1	LP - Start 9932.1 hold at 12173.7 MD
8	22105.9	90.00	179.56	11850.0	-11054.4	805.8	0.00	0.00	11060.3	TD at 22105.9



Azimuths to Grid North
True North: -0.39°
Magnetic North: 8.23°

Magnetic Field
Strength: 49721.3nT
Dip Angle: 60.90°
Date: 12/31/2004
Model: IGRF2000



Avant Operating, LLC

Lea Co., NM (NAD 83)
Royal Oak 24 Fed Com Pad 1
Royal Oak 24 Fed Com 009H

OH

Plan: Plan 0.1

Standard Planning Report

05 February, 2025

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**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 Royal Oak 24 Fed Com Pad 1

Site Position:		**Northing:**	629,247.19 usft	**Latitude:**	32.727773
From:	Lat/Long	**Easting:**	762,688.50 usft	**Longitude:**	-103.613535
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well Royal Oak 24 Fed Com 009H

Well Position	**+N/-S**	0.0 usft	**Northing:**	629,186.95 usft	**Latitude:**	32.727608
	+E/-W	0.0 usft	**Easting:**	762,684.20 usft	**Longitude:**	-103.613550
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,908.7 usft
Grid Convergence:		0.39 °				

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	8.62	60.90	49,721.29029903

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	179.56

Plan Survey Tool Program **Date** 2/5/2025

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	22,105.9	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	
2,305.5	6.11	131.66	2,304.9	-10.8	12.2	2.00	2.00	0.00	131.66	
11,118.2	6.11	131.66	11,067.6	-634.3	712.9	0.00	0.00	0.00	0.00	
11,423.7	0.00	0.00	11,372.5	-645.1	725.1	2.00	-2.00	0.00	180.00	
11,423.7	0.00	0.00	11,372.5	-645.1	725.1	0.00	0.00	0.00	0.00	
12,173.7	90.00	179.56	11,850.0	-1,122.6	728.8	12.00	12.00	0.00	179.56	
22,105.9	90.00	179.56	11,850.0	-11,054.4	805.8	0.00	0.00	0.00	0.00	LTP/BHL- Royal Oak

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**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
1,628.0	0.00	0.00	1,628.0	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
1,951.0	0.00	0.00	1,951.0	0.0	0.0	0.0	0.00	0.00	0.00
SOLADO									
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	131.66	2,100.0	-1.2	1.3	1.2	2.00	2.00	0.00
2,200.0	4.00	131.66	2,199.8	-4.6	5.2	4.7	2.00	2.00	0.00
2,305.5	6.11	131.66	2,304.9	-10.8	12.2	10.9	2.00	2.00	0.00
Start 8812.7 hold at 2305.5 MD									
2,400.0	6.11	131.66	2,398.9	-17.5	19.7	17.7	0.00	0.00	0.00
2,500.0	6.11	131.66	2,498.3	-24.6	27.6	24.8	0.00	0.00	0.00
2,600.0	6.11	131.66	2,597.7	-31.7	35.6	31.9	0.00	0.00	0.00
2,700.0	6.11	131.66	2,697.2	-38.7	43.5	39.1	0.00	0.00	0.00
2,800.0	6.11	131.66	2,796.6	-45.8	51.5	46.2	0.00	0.00	0.00
2,900.0	6.11	131.66	2,896.0	-52.9	59.4	53.3	0.00	0.00	0.00
3,000.0	6.11	131.66	2,995.5	-60.0	67.4	60.5	0.00	0.00	0.00
3,100.0	6.11	131.66	3,094.9	-67.0	75.3	67.6	0.00	0.00	0.00
3,200.0	6.11	131.66	3,194.3	-74.1	83.3	74.7	0.00	0.00	0.00
3,300.0	6.11	131.66	3,293.8	-81.2	91.2	81.9	0.00	0.00	0.00
3,400.0	6.11	131.66	3,393.2	-88.2	99.2	89.0	0.00	0.00	0.00
3,500.0	6.11	131.66	3,492.6	-95.3	107.1	96.1	0.00	0.00	0.00
3,600.0	6.11	131.66	3,592.1	-102.4	115.1	103.3	0.00	0.00	0.00
3,649.2	6.11	131.66	3,641.0	-105.9	119.0	106.8	0.00	0.00	0.00
YATES									
3,700.0	6.11	131.66	3,691.5	-109.5	123.0	110.4	0.00	0.00	0.00
3,800.0	6.11	131.66	3,790.9	-116.5	131.0	117.6	0.00	0.00	0.00
3,900.0	6.11	131.66	3,890.4	-123.6	138.9	124.7	0.00	0.00	0.00
4,000.0	6.11	131.66	3,989.8	-130.7	146.9	131.8	0.00	0.00	0.00
4,100.0	6.11	131.66	4,089.2	-137.8	154.8	139.0	0.00	0.00	0.00
4,200.0	6.11	131.66	4,188.7	-144.8	162.8	146.1	0.00	0.00	0.00
4,300.0	6.11	131.66	4,288.1	-151.9	170.8	153.2	0.00	0.00	0.00
4,400.0	6.11	131.66	4,387.5	-159.0	178.7	160.4	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**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)
4,500.0	6.11	131.66	4,487.0	-166.1	186.7	167.5	0.00	0.00	0.00
4,600.0	6.11	131.66	4,586.4	-173.1	194.6	174.6	0.00	0.00	0.00
4,700.0	6.11	131.66	4,685.8	-180.2	202.6	181.8	0.00	0.00	0.00
4,800.0	6.11	131.66	4,785.3	-187.3	210.5	188.9	0.00	0.00	0.00
4,900.0	6.11	131.66	4,884.7	-194.4	218.5	196.0	0.00	0.00	0.00
5,000.0	6.11	131.66	4,984.1	-201.4	226.4	203.2	0.00	0.00	0.00
5,100.0	6.11	131.66	5,083.5	-208.5	234.4	210.3	0.00	0.00	0.00
5,200.0	6.11	131.66	5,183.0	-215.6	242.3	217.4	0.00	0.00	0.00
5,300.0	6.11	131.66	5,282.4	-222.7	250.3	224.6	0.00	0.00	0.00
5,400.0	6.11	131.66	5,381.8	-229.7	258.2	231.7	0.00	0.00	0.00
5,500.0	6.11	131.66	5,481.3	-236.8	266.2	238.9	0.00	0.00	0.00
5,600.0	6.11	131.66	5,580.7	-243.9	274.1	246.0	0.00	0.00	0.00
5,673.7	6.11	131.66	5,654.0	-249.1	280.0	251.3	0.00	0.00	0.00
CHERRY_CNYN									
5,700.0	6.11	131.66	5,680.1	-251.0	282.1	253.1	0.00	0.00	0.00
5,800.0	6.11	131.66	5,779.6	-258.0	290.0	260.3	0.00	0.00	0.00
5,900.0	6.11	131.66	5,879.0	-265.1	298.0	267.4	0.00	0.00	0.00
6,000.0	6.11	131.66	5,978.4	-272.2	305.9	274.5	0.00	0.00	0.00
6,100.0	6.11	131.66	6,077.9	-279.3	313.9	281.7	0.00	0.00	0.00
6,200.0	6.11	131.66	6,177.3	-286.3	321.8	288.8	0.00	0.00	0.00
6,300.0	6.11	131.66	6,276.7	-293.4	329.8	295.9	0.00	0.00	0.00
6,400.0	6.11	131.66	6,376.2	-300.5	337.7	303.1	0.00	0.00	0.00
6,500.0	6.11	131.66	6,475.6	-307.6	345.7	310.2	0.00	0.00	0.00
6,600.0	6.11	131.66	6,575.0	-314.6	353.6	317.3	0.00	0.00	0.00
6,700.0	6.11	131.66	6,674.5	-321.7	361.6	324.5	0.00	0.00	0.00
6,800.0	6.11	131.66	6,773.9	-328.8	369.5	331.6	0.00	0.00	0.00
6,900.0	6.11	131.66	6,873.3	-335.9	377.5	338.8	0.00	0.00	0.00
7,000.0	6.11	131.66	6,972.8	-342.9	385.4	345.9	0.00	0.00	0.00
7,100.0	6.11	131.66	7,072.2	-350.0	393.4	353.0	0.00	0.00	0.00
7,200.0	6.11	131.66	7,171.6	-357.1	401.3	360.2	0.00	0.00	0.00
7,264.7	6.11	131.66	7,236.0	-361.7	406.5	364.8	0.00	0.00	0.00
BYCN_MKR									
7,300.0	6.11	131.66	7,271.1	-364.2	409.3	367.3	0.00	0.00	0.00
7,400.0	6.11	131.66	7,370.5	-371.2	417.2	374.4	0.00	0.00	0.00
7,500.0	6.11	131.66	7,469.9	-378.3	425.2	381.6	0.00	0.00	0.00
7,538.3	6.11	131.66	7,508.0	-381.0	428.2	384.3	0.00	0.00	0.00
BSPG_LIME *									
7,600.0	6.11	131.66	7,569.3	-385.4	433.1	388.7	0.00	0.00	0.00
7,700.0	6.11	131.66	7,668.8	-392.5	441.1	395.8	0.00	0.00	0.00
7,800.0	6.11	131.66	7,768.2	-399.5	449.1	403.0	0.00	0.00	0.00
7,900.0	6.11	131.66	7,867.6	-406.6	457.0	410.1	0.00	0.00	0.00
8,000.0	6.11	131.66	7,967.1	-413.7	465.0	417.2	0.00	0.00	0.00
8,100.0	6.11	131.66	8,066.5	-420.8	472.9	424.4	0.00	0.00	0.00
8,200.0	6.11	131.66	8,165.9	-427.8	480.9	431.5	0.00	0.00	0.00
8,300.0	6.11	131.66	8,265.4	-434.9	488.8	438.6	0.00	0.00	0.00
8,347.9	6.11	131.66	8,313.0	-438.3	492.6	442.1	0.00	0.00	0.00
AVALON_B									
8,400.0	6.11	131.66	8,364.8	-442.0	496.8	445.8	0.00	0.00	0.00
8,500.0	6.11	131.66	8,464.2	-449.1	504.7	452.9	0.00	0.00	0.00
8,600.0	6.11	131.66	8,563.7	-456.1	512.7	460.1	0.00	0.00	0.00
8,700.0	6.11	131.66	8,663.1	-463.2	520.6	467.2	0.00	0.00	0.00
8,800.0	6.11	131.66	8,762.5	-470.3	528.6	474.3	0.00	0.00	0.00
8,829.6	6.11	131.66	8,792.0	-472.4	530.9	476.4	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**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)
FBSG__SD									
8,900.0	6.11	131.66	8,862.0	-477.4	536.5	481.5	0.00	0.00	0.00
9,000.0	6.11	131.66	8,961.4	-484.4	544.5	488.6	0.00	0.00	0.00
9,100.0	6.11	131.66	9,060.8	-491.5	552.4	495.7	0.00	0.00	0.00
9,139.4	6.11	131.66	9,100.0	-494.3	555.6	498.5	0.00	0.00	0.00
SBSG_SHALE *									
9,142.4	6.11	131.66	9,103.0	-494.5	555.8	498.8	0.00	0.00	0.00
SBSG_CARB									
9,200.0	6.11	131.66	9,160.3	-498.6	560.4	502.9	0.00	0.00	0.00
9,300.0	6.11	131.66	9,259.7	-505.7	568.3	510.0	0.00	0.00	0.00
9,400.0	6.11	131.66	9,359.1	-512.7	576.3	517.1	0.00	0.00	0.00
9,473.3	6.11	131.66	9,432.0	-517.9	582.1	522.4	0.00	0.00	0.00
SBSG_SD									
9,500.0	6.11	131.66	9,458.6	-519.8	584.2	524.3	0.00	0.00	0.00
9,600.0	6.11	131.66	9,558.0	-526.9	592.2	531.4	0.00	0.00	0.00
9,700.0	6.11	131.66	9,657.4	-534.0	600.1	538.5	0.00	0.00	0.00
9,800.0	6.11	131.66	9,756.9	-541.0	608.1	545.7	0.00	0.00	0.00
9,900.0	6.11	131.66	9,856.3	-548.1	616.0	552.8	0.00	0.00	0.00
10,000.0	6.11	131.66	9,955.7	-555.2	624.0	560.0	0.00	0.00	0.00
10,100.0	6.11	131.66	10,055.1	-562.3	631.9	567.1	0.00	0.00	0.00
10,106.9	6.11	131.66	10,062.0	-562.7	632.5	567.6	0.00	0.00	0.00
TBSG_CARB									
10,200.0	6.11	131.66	10,154.6	-569.3	639.9	574.2	0.00	0.00	0.00
10,228.6	6.11	131.66	10,183.0	-571.3	642.2	576.3	0.00	0.00	0.00
TBSG_SD *									
10,278.9	6.11	131.66	10,233.0	-574.9	646.2	579.9	0.00	0.00	0.00
TBSG_MS *									
10,300.0	6.11	131.66	10,254.0	-576.4	647.8	581.4	0.00	0.00	0.00
10,359.3	6.11	131.66	10,313.0	-580.6	652.6	585.6	0.00	0.00	0.00
TBSG_FS *									
10,380.4	6.11	131.66	10,334.0	-582.1	654.2	587.1	0.00	0.00	0.00
WFMP *									
10,400.0	6.11	131.66	10,353.4	-583.5	655.8	588.5	0.00	0.00	0.00
10,456.9	6.11	131.66	10,410.0	-587.5	660.3	592.6	0.00	0.00	0.00
WFMP_CARB									
10,500.0	6.11	131.66	10,452.9	-590.6	663.7	595.6	0.00	0.00	0.00
10,600.0	6.11	131.66	10,552.3	-597.6	671.7	602.8	0.00	0.00	0.00
10,700.0	6.11	131.66	10,651.7	-604.7	679.6	609.9	0.00	0.00	0.00
10,800.0	6.11	131.66	10,751.2	-611.8	687.6	617.0	0.00	0.00	0.00
10,900.0	6.11	131.66	10,850.6	-618.9	695.5	624.2	0.00	0.00	0.00
11,000.0	6.11	131.66	10,950.0	-625.9	703.5	631.3	0.00	0.00	0.00
11,100.0	6.11	131.66	11,049.5	-633.0	711.5	638.4	0.00	0.00	0.00
11,118.2	6.11	131.66	11,067.6	-634.3	712.9	639.7	0.00	0.00	0.00
Start Drop -2.00									
11,200.0	4.47	131.66	11,149.0	-639.3	718.5	644.8	2.00	-2.00	0.00
11,300.0	2.47	131.66	11,248.8	-643.3	723.1	648.9	2.00	-2.00	0.00
11,400.0	0.47	131.66	11,348.8	-645.0	725.0	650.6	2.00	-2.00	0.00
11,423.7	0.00	131.66	11,372.5	-645.1	725.1	650.7	2.00	-2.00	0.00
KOP #2 - Start Build 12.00 - KOP - Royal Oak 24 Fed Com 009H									
11,425.0	0.15	179.56	11,373.8	-645.1	725.1	650.7	11.64	11.62	3,722.93
11,450.0	3.15	179.56	11,398.8	-645.8	725.1	651.4	12.00	12.00	0.00
11,475.0	6.15	179.56	11,423.7	-647.9	725.1	653.4	12.00	12.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**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)
11,500.0	9.15	179.56	11,448.5	-651.2	725.1	656.7	12.00	12.00	0.00
11,525.0	12.15	179.56	11,473.0	-655.8	725.1	661.4	12.00	12.00	0.00
11,550.0	15.15	179.56	11,497.3	-661.7	725.2	667.2	12.00	12.00	0.00
11,575.0	18.15	179.56	11,521.3	-668.9	725.2	674.4	12.00	12.00	0.00
11,600.0	21.15	179.56	11,544.8	-677.3	725.3	682.8	12.00	12.00	0.00
11,625.0	24.15	179.56	11,567.9	-686.9	725.4	692.4	12.00	12.00	0.00
11,650.0	27.15	179.56	11,590.4	-697.7	725.5	703.3	12.00	12.00	0.00
11,675.0	30.15	179.56	11,612.4	-709.7	725.6	715.2	12.00	12.00	0.00
11,700.0	33.15	179.56	11,633.6	-722.8	725.7	728.4	12.00	12.00	0.00
11,725.0	36.15	179.56	11,654.2	-737.0	725.8	742.6	12.00	12.00	0.00
11,750.0	39.15	179.56	11,674.0	-752.3	725.9	757.8	12.00	12.00	0.00
11,775.0	42.15	179.56	11,693.0	-768.6	726.0	774.1	12.00	12.00	0.00
11,800.0	45.15	179.56	11,711.0	-785.8	726.2	791.4	12.00	12.00	0.00
11,825.0	48.15	179.56	11,728.2	-804.0	726.3	809.6	12.00	12.00	0.00
FTP - Royal Oak 24 Fed Com 009H									
11,850.0	51.15	179.56	11,744.4	-823.1	726.4	828.6	12.00	12.00	0.00
11,875.0	54.15	179.56	11,759.5	-842.9	726.6	848.5	12.00	12.00	0.00
11,900.0	57.15	179.56	11,773.7	-863.6	726.8	869.1	12.00	12.00	0.00
11,925.0	60.15	179.56	11,786.7	-884.9	726.9	890.5	12.00	12.00	0.00
11,950.0	63.15	179.56	11,798.5	-906.9	727.1	912.5	12.00	12.00	0.00
11,975.0	66.15	179.56	11,809.2	-929.5	727.3	935.1	12.00	12.00	0.00
12,000.0	69.15	179.56	11,818.7	-952.6	727.4	958.2	12.00	12.00	0.00
12,025.0	72.15	179.56	11,827.0	-976.2	727.6	981.8	12.00	12.00	0.00
12,050.0	75.15	179.56	11,834.1	-1,000.2	727.8	1,005.8	12.00	12.00	0.00
12,075.0	78.15	179.56	11,839.8	-1,024.5	728.0	1,030.1	12.00	12.00	0.00
12,100.0	81.15	179.56	11,844.3	-1,049.1	728.2	1,054.7	12.00	12.00	0.00
12,125.0	84.15	179.56	11,847.5	-1,073.9	728.4	1,079.5	12.00	12.00	0.00
12,150.0	87.15	179.56	11,849.4	-1,098.8	728.6	1,104.4	12.00	12.00	0.00
12,173.7	90.00	179.56	11,850.0	-1,122.6	728.8	1,128.1	12.00	12.00	0.00
LP - Start 9932.1 hold at 12173.7 MD									
12,200.0	90.00	179.56	11,850.0	-1,148.8	729.0	1,154.4	0.00	0.00	0.00
12,300.0	90.00	179.56	11,850.0	-1,248.8	729.7	1,254.4	0.00	0.00	0.00
12,400.0	90.00	179.56	11,850.0	-1,348.8	730.5	1,354.4	0.00	0.00	0.00
12,500.0	90.00	179.56	11,850.0	-1,448.8	731.3	1,454.4	0.00	0.00	0.00
12,600.0	90.00	179.56	11,850.0	-1,548.8	732.1	1,554.4	0.00	0.00	0.00
12,700.0	90.00	179.56	11,850.0	-1,648.8	732.8	1,654.4	0.00	0.00	0.00
12,800.0	90.00	179.56	11,850.0	-1,748.8	733.6	1,754.4	0.00	0.00	0.00
12,900.0	90.00	179.56	11,850.0	-1,848.8	734.4	1,854.4	0.00	0.00	0.00
13,000.0	90.00	179.56	11,850.0	-1,948.8	735.2	1,954.4	0.00	0.00	0.00
13,100.0	90.00	179.56	11,850.0	-2,048.8	736.0	2,054.4	0.00	0.00	0.00
13,200.0	90.00	179.56	11,850.0	-2,148.8	736.7	2,154.4	0.00	0.00	0.00
13,300.0	90.00	179.56	11,850.0	-2,248.8	737.5	2,254.4	0.00	0.00	0.00
13,400.0	90.00	179.56	11,850.0	-2,348.8	738.3	2,354.4	0.00	0.00	0.00
13,500.0	90.00	179.56	11,850.0	-2,448.8	739.1	2,454.4	0.00	0.00	0.00
13,600.0	90.00	179.56	11,850.0	-2,548.8	739.8	2,554.4	0.00	0.00	0.00
13,700.0	90.00	179.56	11,850.0	-2,648.8	740.6	2,654.4	0.00	0.00	0.00
13,800.0	90.00	179.56	11,850.0	-2,748.8	741.4	2,754.4	0.00	0.00	0.00
13,900.0	90.00	179.56	11,850.0	-2,848.8	742.2	2,854.4	0.00	0.00	0.00
14,000.0	90.00	179.56	11,850.0	-2,948.8	742.9	2,954.4	0.00	0.00	0.00
14,100.0	90.00	179.56	11,850.0	-3,048.7	743.7	3,054.4	0.00	0.00	0.00
14,200.0	90.00	179.56	11,850.0	-3,148.7	744.5	3,154.4	0.00	0.00	0.00
14,300.0	90.00	179.56	11,850.0	-3,248.7	745.3	3,254.4	0.00	0.00	0.00
14,400.0	90.00	179.56	11,850.0	-3,348.7	746.0	3,354.4	0.00	0.00	0.00
14,500.0	90.00	179.56	11,850.0	-3,448.7	746.8	3,454.4	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**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)
14,600.0	90.00	179.56	11,850.0	-3,548.7	747.6	3,554.4	0.00	0.00	0.00
14,700.0	90.00	179.56	11,850.0	-3,648.7	748.4	3,654.4	0.00	0.00	0.00
14,800.0	90.00	179.56	11,850.0	-3,748.7	749.1	3,754.4	0.00	0.00	0.00
14,900.0	90.00	179.56	11,850.0	-3,848.7	749.9	3,854.4	0.00	0.00	0.00
15,000.0	90.00	179.56	11,850.0	-3,948.7	750.7	3,954.4	0.00	0.00	0.00
15,100.0	90.00	179.56	11,850.0	-4,048.7	751.5	4,054.4	0.00	0.00	0.00
15,200.0	90.00	179.56	11,850.0	-4,148.7	752.2	4,154.4	0.00	0.00	0.00
15,300.0	90.00	179.56	11,850.0	-4,248.7	753.0	4,254.4	0.00	0.00	0.00
15,400.0	90.00	179.56	11,850.0	-4,348.7	753.8	4,354.4	0.00	0.00	0.00
15,500.0	90.00	179.56	11,850.0	-4,448.7	754.6	4,454.4	0.00	0.00	0.00
15,600.0	90.00	179.56	11,850.0	-4,548.7	755.4	4,554.4	0.00	0.00	0.00
15,700.0	90.00	179.56	11,850.0	-4,648.7	756.1	4,654.4	0.00	0.00	0.00
15,800.0	90.00	179.56	11,850.0	-4,748.7	756.9	4,754.4	0.00	0.00	0.00
15,900.0	90.00	179.56	11,850.0	-4,848.7	757.7	4,854.4	0.00	0.00	0.00
16,000.0	90.00	179.56	11,850.0	-4,948.7	758.5	4,954.4	0.00	0.00	0.00
16,100.0	90.00	179.56	11,850.0	-5,048.7	759.2	5,054.4	0.00	0.00	0.00
16,200.0	90.00	179.56	11,850.0	-5,148.7	760.0	5,154.4	0.00	0.00	0.00
16,300.0	90.00	179.56	11,850.0	-5,248.7	760.8	5,254.4	0.00	0.00	0.00
16,400.0	90.00	179.56	11,850.0	-5,348.7	761.6	5,354.4	0.00	0.00	0.00
16,500.0	90.00	179.56	11,850.0	-5,448.7	762.3	5,454.4	0.00	0.00	0.00
16,600.0	90.00	179.56	11,850.0	-5,548.7	763.1	5,554.4	0.00	0.00	0.00
16,700.0	90.00	179.56	11,850.0	-5,648.7	763.9	5,654.4	0.00	0.00	0.00
16,800.0	90.00	179.56	11,850.0	-5,748.7	764.7	5,754.4	0.00	0.00	0.00
16,900.0	90.00	179.56	11,850.0	-5,848.7	765.4	5,854.4	0.00	0.00	0.00
17,000.0	90.00	179.56	11,850.0	-5,948.7	766.2	5,954.4	0.00	0.00	0.00
17,100.0	90.00	179.56	11,850.0	-6,048.7	767.0	6,054.4	0.00	0.00	0.00
17,200.0	90.00	179.56	11,850.0	-6,148.7	767.8	6,154.4	0.00	0.00	0.00
17,300.0	90.00	179.56	11,850.0	-6,248.7	768.5	6,254.4	0.00	0.00	0.00
17,400.0	90.00	179.56	11,850.0	-6,348.6	769.3	6,354.4	0.00	0.00	0.00
17,500.0	90.00	179.56	11,850.0	-6,448.6	770.1	6,454.4	0.00	0.00	0.00
17,600.0	90.00	179.56	11,850.0	-6,548.6	770.9	6,554.4	0.00	0.00	0.00
17,700.0	90.00	179.56	11,850.0	-6,648.6	771.6	6,654.4	0.00	0.00	0.00
17,800.0	90.00	179.56	11,850.0	-6,748.6	772.4	6,754.4	0.00	0.00	0.00
17,900.0	90.00	179.56	11,850.0	-6,848.6	773.2	6,854.4	0.00	0.00	0.00
18,000.0	90.00	179.56	11,850.0	-6,948.6	774.0	6,954.4	0.00	0.00	0.00
18,100.0	90.00	179.56	11,850.0	-7,048.6	774.8	7,054.4	0.00	0.00	0.00
18,200.0	90.00	179.56	11,850.0	-7,148.6	775.5	7,154.4	0.00	0.00	0.00
18,300.0	90.00	179.56	11,850.0	-7,248.6	776.3	7,254.4	0.00	0.00	0.00
18,400.0	90.00	179.56	11,850.0	-7,348.6	777.1	7,354.4	0.00	0.00	0.00
18,500.0	90.00	179.56	11,850.0	-7,448.6	777.9	7,454.4	0.00	0.00	0.00
18,600.0	90.00	179.56	11,850.0	-7,548.6	778.6	7,554.4	0.00	0.00	0.00
18,700.0	90.00	179.56	11,850.0	-7,648.6	779.4	7,654.4	0.00	0.00	0.00
18,800.0	90.00	179.56	11,850.0	-7,748.6	780.2	7,754.4	0.00	0.00	0.00
18,900.0	90.00	179.56	11,850.0	-7,848.6	781.0	7,854.4	0.00	0.00	0.00
19,000.0	90.00	179.56	11,850.0	-7,948.6	781.7	7,954.4	0.00	0.00	0.00
19,100.0	90.00	179.56	11,850.0	-8,048.6	782.5	8,054.4	0.00	0.00	0.00
19,200.0	90.00	179.56	11,850.0	-8,148.6	783.3	8,154.4	0.00	0.00	0.00
19,300.0	90.00	179.56	11,850.0	-8,248.6	784.1	8,254.4	0.00	0.00	0.00
19,400.0	90.00	179.56	11,850.0	-8,348.6	784.8	8,354.4	0.00	0.00	0.00
19,500.0	90.00	179.56	11,850.0	-8,448.6	785.6	8,454.4	0.00	0.00	0.00
19,600.0	90.00	179.56	11,850.0	-8,548.6	786.4	8,554.4	0.00	0.00	0.00
19,700.0	90.00	179.56	11,850.0	-8,648.6	787.2	8,654.4	0.00	0.00	0.00
19,800.0	90.00	179.56	11,850.0	-8,748.6	787.9	8,754.4	0.00	0.00	0.00
19,900.0	90.00	179.56	11,850.0	-8,848.6	788.7	8,854.4	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**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)
20,000.0	90.00	179.56	11,850.0	-8,948.6	789.5	8,954.4	0.00	0.00	0.00
20,100.0	90.00	179.56	11,850.0	-9,048.6	790.3	9,054.4	0.00	0.00	0.00
20,200.0	90.00	179.56	11,850.0	-9,148.6	791.0	9,154.4	0.00	0.00	0.00
20,300.0	90.00	179.56	11,850.0	-9,248.6	791.8	9,254.4	0.00	0.00	0.00
20,400.0	90.00	179.56	11,850.0	-9,348.6	792.6	9,354.4	0.00	0.00	0.00
20,500.0	90.00	179.56	11,850.0	-9,448.6	793.4	9,454.4	0.00	0.00	0.00
20,600.0	90.00	179.56	11,850.0	-9,548.6	794.2	9,554.4	0.00	0.00	0.00
20,700.0	90.00	179.56	11,850.0	-9,648.6	794.9	9,654.4	0.00	0.00	0.00
20,800.0	90.00	179.56	11,850.0	-9,748.5	795.7	9,754.4	0.00	0.00	0.00
20,900.0	90.00	179.56	11,850.0	-9,848.5	796.5	9,854.4	0.00	0.00	0.00
21,000.0	90.00	179.56	11,850.0	-9,948.5	797.3	9,954.4	0.00	0.00	0.00
21,100.0	90.00	179.56	11,850.0	-10,048.5	798.0	10,054.4	0.00	0.00	0.00
21,200.0	90.00	179.56	11,850.0	-10,148.5	798.8	10,154.4	0.00	0.00	0.00
21,300.0	90.00	179.56	11,850.0	-10,248.5	799.6	10,254.4	0.00	0.00	0.00
21,400.0	90.00	179.56	11,850.0	-10,348.5	800.4	10,354.4	0.00	0.00	0.00
21,500.0	90.00	179.56	11,850.0	-10,448.5	801.1	10,454.4	0.00	0.00	0.00
21,600.0	90.00	179.56	11,850.0	-10,548.5	801.9	10,554.4	0.00	0.00	0.00
21,700.0	90.00	179.56	11,850.0	-10,648.5	802.7	10,654.4	0.00	0.00	0.00
21,800.0	90.00	179.56	11,850.0	-10,748.5	803.5	10,754.4	0.00	0.00	0.00
21,900.0	90.00	179.56	11,850.0	-10,848.5	804.2	10,854.4	0.00	0.00	0.00
22,000.0	90.00	179.56	11,850.0	-10,948.5	805.0	10,954.4	0.00	0.00	0.00
22,105.9	90.00	179.56	11,850.0	-11,054.4	805.8	11,060.3	0.00	0.00	0.00
TD at 22105.9 - LTP/BHL- Royal Oak 24 Fed Com 009H									

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
KOP - Royal Oak 24 Fed - plan hits target center - Point	0.00	0.00	11,372.5	-645.1	725.1	628,541.84	763,409.26	32.725821	-103.611207
LTP/BHL- Royal Oak 24 - plan hits target center - Point	0.00	0.00	11,850.0	-11,054.4	805.8	618,132.55	763,490.04	32.697210	-103.611175
FTP - Royal Oak 24 Fed - plan misses target center by 163.4usft at 11825.0usft MD (11728.2 TVD, -804.0 N, 726.3 E) - Point	0.00	0.00	11,850.0	-695.1	725.5	628,491.86	763,409.65	32.725684	-103.611207

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
22,105.9	11,850.0	20" Casing	20	24

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,628.0	1,628.0	RUSTLER		0.00	
1,951.0	1,951.0	SOLADO			
3,649.2	3,641.0	YATES			
5,673.7	5,654.0	CHERRY_CNYN			
7,264.7	7,236.0	BYCN_MKR			
7,538.3	7,508.0	BSPG_LIME *			
8,347.9	8,313.0	AVALON_B			
8,829.6	8,792.0	FBSG__SD			
9,139.4	9,100.0	SBSG_SHALE *			
9,142.4	9,103.0	SBSG_CARB			
9,473.3	9,432.0	SBSG_SD			
10,106.9	10,062.0	TBSG_CARB			
10,228.6	10,183.0	TBSG_SD *			
10,278.9	10,233.0	TBSG_MS *			
10,359.3	10,313.0	TBSG_FS *			
10,380.4	10,334.0	WFMP *			
10,456.9	10,410.0	WFMP_CARB			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 2.00
2,305.5	2,304.9	-10.8	12.2	Start 8812.7 hold at 2305.5 MD
11,118.2	11,067.6	-634.3	712.9	Start Drop -2.00
11,423.7	11,372.5	-645.1	725.1	KOP #2 - Start Build 12.00
12,173.7	11,850.0	-1,122.6	728.8	LP - Start 9932.1 hold at 12173.7 MD
22,105.9	11,850.0	-11,054.4	805.8	TD at 22105.9

Avant Operating, LLC

Lea Co., NM (NAD 83)
Royal Oak 24 Fed Com Pad 1
Royal Oak 24 Fed Com 009H

OH
Plan 0.1

Anticollision Report

05 February, 2025

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Reference	Plan 0.1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 2,122.6usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 2/5/2025

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	22,105.9	Plan 0.1 (OH)	B001Mb_MWD+HRGM	OWSG MWD + HRGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Royal Oak 24 Fed Com Pad 1						
Dorothy Federal 001 - OH - OH	16,220.2	10,510.0	1,345.1	1,217.1	10.514	CC, ES
Dorothy Federal 001 - OH - OH	17,200.0	10,510.0	1,664.1	1,464.7	8.345	SF
EK-A, 8701 JV-P 001 - OH - OH	10,700.0	10,505.0	2,018.1	1,763.4	7.923	SF
EK-A, 8701 JV-P 001 - OH - OH	13,614.2	10,505.0	1,397.3	1,289.4	12.953	CC, ES
Mescalero 36 State 003 - OH - OH	21,372.6	9,964.0	1,806.1	1,670.9	13.367	CC
Mescalero 36 State 003 - OH - OH	21,400.0	9,964.0	1,806.3	1,670.8	13.335	ES
Mescalero 36 State 003 - OH - OH	22,105.9	9,964.0	1,949.2	1,766.7	10.678	SF
New Mexico 36 State 001 - OH - OH	17,418.5	11,782.5	1,006.1	654.0	2.858	CC, ES, SF
New Mexico 36 State 002 - OH - OH	17,453.4	10,000.0	1,804.6	1,700.1	17.258	CC
New Mexico 36 State 002 - OH - OH	17,500.0	10,000.0	1,805.2	1,700.0	17.159	ES
New Mexico 36 State 002 - OH - OH	18,500.0	10,000.0	2,086.2	1,912.5	12.013	SF
New Mexico 36 State 004 - OH - OH	18,795.9	10,450.0	1,650.9	1,434.8	7.640	CC
New Mexico 36 State 004 - OH - OH	18,800.0	10,450.0	1,650.9	1,434.8	7.639	ES
New Mexico 36 State 004 - OH - OH	19,000.0	10,450.0	1,663.5	1,445.3	7.624	SF
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	2,295.6	2,311.5	162.1	146.2	10.219	CC
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	2,400.0	2,415.7	162.5	146.0	9.817	ES
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	5,200.0	5,209.3	260.3	223.8	7.134	SF
Royal Oak 24 Fed Com 303H - OH - Plan 0.1	2,000.0	1,998.7	40.0	26.1	2.880	CC, ES
Royal Oak 24 Fed Com 303H - OH - Plan 0.1	2,100.0	2,098.9	41.0	26.5	2.817	SF
Royal Oak 24 Fed Com 304H - OH - Plan 0.1	1,916.1	1,917.9	40.1	26.8	3.015	CC
Royal Oak 24 Fed Com 304H - OH - Plan 0.1	2,100.0	2,100.0	40.4	25.8	2.773	ES
Royal Oak 24 Fed Com 304H - OH - Plan 0.1	2,300.0	2,298.0	42.7	26.9	2.695	SF
Royal Oak 24 Fed Com 503H - OH - Plan 0.1	2,000.0	1,999.0	20.0	6.1	1.441	Level 3, CC, ES, SF
Royal Oak 24 Fed Com 512H - OH - Plan 0.1	2,000.0	1,998.6	60.0	46.1	4.323	CC, ES
Royal Oak 24 Fed Com 512H - OH - Plan 0.1	2,100.0	2,097.5	62.2	47.6	4.272	SF
Royal Oak 24 Fed Com 513H - OH - Plan 0.1	2,206.0	2,206.9	18.7	3.4	1.225	Level 2, CC
Royal Oak 24 Fed Com 513H - OH - Plan 0.1	2,300.0	2,300.4	19.2	3.3	1.207	Level 2, ES, SF
Royal Oak 24 Fed Com 604H - OH - Plan 0.1	2,000.0	2,001.9	161.2	147.3	11.603	CC
Royal Oak 24 Fed Com 604H - OH - Plan 0.1	3,900.0	3,925.7	167.8	140.1	6.047	ES
Royal Oak 24 Fed Com 604H - OH - Plan 0.1	4,200.0	4,222.5	175.4	145.2	5.815	SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Dorothy Federal 001 - OH - OH

Offset Site Error: 0.0 usft

Survey Program: 370-INC-ONLY

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,600.0	11,850.0	10,510.0	10,508.6	66.6	220.3	-18.28	-5,165.6	1,182.0	2,105.8	1,887.7	218.08	9.656	
14,700.0	11,850.0	10,510.0	10,508.6	67.7	220.3	-18.28	-5,165.6	1,182.0	2,029.8	1,815.5	214.40	9.468	
14,800.0	11,850.0	10,510.0	10,508.6	68.8	220.3	-18.28	-5,165.6	1,182.0	1,956.1	1,745.7	210.33	9.300	
14,900.0	11,850.0	10,510.0	10,508.6	70.0	220.3	-18.28	-5,165.6	1,182.0	1,884.7	1,678.9	205.84	9.156	
15,000.0	11,850.0	10,510.0	10,508.6	71.1	220.3	-18.28	-5,165.6	1,182.0	1,816.1	1,615.2	200.90	9.040	
15,100.0	11,850.0	10,510.0	10,508.6	72.3	220.3	-18.28	-5,165.6	1,182.0	1,750.5	1,555.0	195.48	8.955	
15,200.0	11,850.0	10,510.0	10,508.6	73.4	220.3	-18.28	-5,165.6	1,182.0	1,688.2	1,498.7	189.55	8.907	
15,300.0	11,850.0	10,510.0	10,508.6	74.6	220.3	-18.28	-5,165.6	1,182.0	1,629.7	1,446.6	183.10	8.901	
15,400.0	11,850.0	10,510.0	10,508.6	75.8	220.3	-18.28	-5,165.6	1,182.0	1,575.4	1,399.3	176.15	8.944	
15,500.0	11,850.0	10,510.0	10,508.6	77.0	220.3	-18.28	-5,165.6	1,182.0	1,525.8	1,357.0	168.76	9.041	
15,600.0	11,850.0	10,510.0	10,508.6	78.2	220.3	-18.28	-5,165.6	1,182.0	1,481.2	1,320.1	161.04	9.198	
15,700.0	11,850.0	10,510.0	10,508.6	79.4	220.3	-18.28	-5,165.6	1,182.0	1,442.2	1,289.0	153.19	9.414	
15,800.0	11,850.0	10,510.0	10,508.6	80.6	220.3	-18.28	-5,165.6	1,182.0	1,409.2	1,263.7	145.52	9.683	
15,900.0	11,850.0	10,510.0	10,508.6	81.8	220.3	-18.28	-5,165.6	1,182.0	1,382.7	1,244.2	138.50	9.983	
16,000.0	11,850.0	10,510.0	10,508.6	83.1	220.3	-18.28	-5,165.6	1,182.0	1,363.0	1,230.2	132.74	10.268	
16,100.0	11,850.0	10,510.0	10,508.6	84.3	220.3	-18.28	-5,165.6	1,182.0	1,350.4	1,221.5	128.96	10.472	
16,200.0	11,850.0	10,510.0	10,508.6	85.6	220.3	-18.28	-5,165.6	1,182.0	1,345.2	1,217.4	127.80	10.526	
16,220.2	11,850.0	10,510.0	10,508.6	85.8	220.3	-18.28	-5,165.6	1,182.0	1,345.1	1,217.1	127.93	10.514	CC, ES
16,300.0	11,850.0	10,510.0	10,508.6	86.8	220.3	-18.28	-5,165.6	1,182.0	1,347.4	1,217.8	129.60	10.397	
16,400.0	11,850.0	10,510.0	10,508.6	88.1	220.3	-18.28	-5,165.6	1,182.0	1,357.0	1,222.9	134.17	10.114	
16,500.0	11,850.0	10,510.0	10,508.6	89.3	220.3	-18.28	-5,165.6	1,182.0	1,373.9	1,232.9	140.92	9.749	
16,600.0	11,850.0	10,510.0	10,508.6	90.6	220.3	-18.28	-5,165.6	1,182.0	1,397.7	1,248.6	149.08	9.375	
16,700.0	11,850.0	10,510.0	10,508.6	91.9	220.3	-18.28	-5,165.6	1,182.0	1,428.1	1,270.1	157.96	9.041	
16,800.0	11,850.0	10,510.0	10,508.6	93.2	220.3	-18.28	-5,165.6	1,182.0	1,464.7	1,297.7	167.03	8.769	
16,900.0	11,850.0	10,510.0	10,508.6	94.4	220.3	-18.28	-5,165.6	1,182.0	1,507.1	1,331.2	175.89	8.568	
17,000.0	11,850.0	10,510.0	10,508.6	95.7	220.3	-18.28	-5,165.6	1,182.0	1,554.8	1,370.4	184.32	8.435	
17,100.0	11,850.0	10,510.0	10,508.6	97.0	220.3	-18.28	-5,165.6	1,182.0	1,607.2	1,415.1	192.18	8.363	
17,200.0	11,850.0	10,510.0	10,508.6	98.3	220.3	-18.28	-5,165.6	1,182.0	1,664.1	1,464.7	199.41	8.345	SF
17,300.0	11,850.0	10,510.0	10,508.6	99.6	220.3	-18.28	-5,165.6	1,182.0	1,724.9	1,518.9	206.00	8.373	
17,400.0	11,850.0	10,510.0	10,508.6	100.9	220.3	-18.28	-5,165.6	1,182.0	1,789.2	1,577.2	211.95	8.441	
17,500.0	11,850.0	10,510.0	10,508.6	102.2	220.3	-18.28	-5,165.6	1,182.0	1,856.6	1,639.3	217.32	8.543	
17,600.0	11,850.0	10,510.0	10,508.6	103.6	220.3	-18.28	-5,165.6	1,182.0	1,926.9	1,704.8	222.13	8.675	
17,700.0	11,850.0	10,510.0	10,508.6	104.9	220.3	-18.28	-5,165.6	1,182.0	1,999.7	1,773.3	226.45	8.831	
17,800.0	11,850.0	10,510.0	10,508.6	106.2	220.3	-18.28	-5,165.6	1,182.0	2,074.8	1,844.5	230.31	9.009	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - EK-A, 8701 JV-P 001 - OH - OH

Offset Site Error: 0.0 usft

Survey Program: 207-INC-ONLY **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,700.0	9,657.4	9,673.8	9,672.6	35.9	199.7	33.17	-2,572.4	1,160.5	2,114.3	1,879.8	234.44	9.018	
9,800.0	9,756.9	9,774.5	9,773.4	36.3	201.7	33.31	-2,570.9	1,160.6	2,103.9	1,867.1	236.83	8.884	
9,900.0	9,856.3	9,875.3	9,874.1	36.7	203.7	33.46	-2,569.3	1,160.8	2,093.5	1,854.3	239.21	8.752	
10,000.0	9,955.7	9,976.1	9,974.9	37.0	205.8	33.60	-2,567.6	1,161.0	2,083.1	1,841.5	241.60	8.622	
10,100.0	10,055.1	10,073.7	10,072.5	37.4	207.8	33.74	-2,565.9	1,161.3	2,072.6	1,828.7	243.99	8.495	
10,200.0	10,154.6	10,171.4	10,170.2	37.8	209.8	33.89	-2,564.4	1,161.5	2,062.3	1,815.9	246.39	8.370	
10,300.0	10,254.0	10,269.1	10,267.9	38.2	211.8	34.03	-2,562.9	1,161.7	2,052.1	1,803.3	248.79	8.248	
10,400.0	10,353.4	10,366.8	10,365.6	38.6	213.8	34.18	-2,561.5	1,161.9	2,041.9	1,790.7	251.19	8.129	
10,500.0	10,452.9	10,465.1	10,463.9	39.0	215.8	34.34	-2,560.2	1,162.0	2,031.9	1,778.3	253.56	8.013	
10,600.0	10,552.3	10,505.0	10,503.8	39.4	216.6	34.40	-2,559.7	1,162.0	2,022.7	1,768.0	254.73	7.941	
10,700.0	10,651.7	10,505.0	10,503.8	39.7	216.6	34.40	-2,559.7	1,162.0	2,018.1	1,763.4	254.70	7.923	SF
10,743.6	10,695.1	10,505.0	10,503.8	39.9	216.6	34.40	-2,559.7	1,162.0	2,017.6	1,763.1	254.51	7.927	
10,800.0	10,751.2	10,505.0	10,503.8	40.1	216.6	34.40	-2,559.7	1,162.0	2,018.4	1,764.3	254.10	7.943	
10,900.0	10,850.6	10,505.0	10,503.8	40.5	216.6	34.40	-2,559.7	1,162.0	2,023.6	1,770.7	252.92	8.001	
11,000.0	10,950.0	10,505.0	10,503.8	40.9	216.6	34.40	-2,559.7	1,162.0	2,033.8	1,782.6	251.18	8.097	
11,100.0	11,049.5	10,505.0	10,503.8	41.3	216.6	34.40	-2,559.7	1,162.0	2,048.8	1,799.9	248.93	8.231	
11,200.0	11,149.0	10,505.0	10,503.8	41.7	216.6	34.60	-2,559.7	1,162.0	2,069.5	1,823.3	246.20	8.406	
11,300.0	11,248.8	10,505.0	10,503.8	42.0	216.6	34.94	-2,559.7	1,162.0	2,097.4	1,854.4	243.06	8.629	
12,000.0	11,818.7	10,505.0	10,503.8	45.0	216.6	-13.28	-2,559.7	1,162.0	2,112.7	1,902.4	210.34	10.044	
12,100.0	11,844.3	10,505.0	10,503.8	45.5	216.6	-15.29	-2,559.7	1,162.0	2,056.5	1,851.6	204.95	10.034	
12,200.0	11,850.0	10,505.0	10,503.8	46.0	216.6	-17.58	-2,559.7	1,162.0	1,988.1	1,788.1	199.95	9.943	
12,300.0	11,850.0	10,505.0	10,503.8	46.5	216.6	-17.58	-2,559.7	1,162.0	1,918.2	1,723.5	194.75	9.850	
12,400.0	11,850.0	10,505.0	10,503.8	47.1	216.6	-17.58	-2,559.7	1,162.0	1,851.2	1,662.1	189.04	9.792	
12,500.0	11,850.0	10,505.0	10,503.8	47.7	216.6	-17.58	-2,559.7	1,162.0	1,787.2	1,604.4	182.80	9.777	
12,600.0	11,850.0	10,505.0	10,503.8	48.3	216.6	-17.58	-2,559.7	1,162.0	1,726.6	1,550.6	176.00	9.810	
12,700.0	11,850.0	10,505.0	10,503.8	49.0	216.6	-17.58	-2,559.7	1,162.0	1,669.8	1,501.2	168.66	9.901	
12,800.0	11,850.0	10,505.0	10,503.8	49.7	216.6	-17.58	-2,559.7	1,162.0	1,617.2	1,456.4	160.80	10.057	
12,900.0	11,850.0	10,505.0	10,503.8	50.5	216.6	-17.58	-2,559.7	1,162.0	1,569.3	1,416.7	152.52	10.289	
13,000.0	11,850.0	10,505.0	10,503.8	51.2	216.6	-17.58	-2,559.7	1,162.0	1,526.3	1,382.4	143.95	10.603	
13,100.0	11,850.0	10,505.0	10,503.8	52.0	216.6	-17.58	-2,559.7	1,162.0	1,488.9	1,353.6	135.33	11.002	
13,200.0	11,850.0	10,505.0	10,503.8	52.8	216.6	-17.58	-2,559.7	1,162.0	1,457.4	1,330.4	127.00	11.476	
13,300.0	11,850.0	10,505.0	10,503.8	53.7	216.6	-17.58	-2,559.7	1,162.0	1,432.2	1,312.8	119.45	11.990	
13,400.0	11,850.0	10,505.0	10,503.8	54.6	216.6	-17.58	-2,559.7	1,162.0	1,413.6	1,300.4	113.28	12.479	
13,500.0	11,850.0	10,505.0	10,503.8	55.5	216.6	-17.58	-2,559.7	1,162.0	1,402.0	1,292.8	109.21	12.837	
13,600.0	11,850.0	10,505.0	10,503.8	56.4	216.6	-17.58	-2,559.7	1,162.0	1,397.4	1,289.6	107.83	12.959	
13,614.2	11,850.0	10,505.0	10,503.8	56.5	216.6	-17.58	-2,559.7	1,162.0	1,397.3	1,289.4	107.88	12.953	CC, ES
13,700.0	11,850.0	10,505.0	10,503.8	57.3	216.6	-17.58	-2,559.7	1,162.0	1,399.9	1,290.5	109.43	12.793	
13,800.0	11,850.0	10,505.0	10,503.8	58.3	216.6	-17.58	-2,559.7	1,162.0	1,409.6	1,295.8	113.81	12.386	
13,900.0	11,850.0	10,505.0	10,503.8	59.3	216.6	-17.58	-2,559.7	1,162.0	1,426.2	1,305.9	120.39	11.847	
14,000.0	11,850.0	10,505.0	10,503.8	60.3	216.6	-17.58	-2,559.7	1,162.0	1,449.6	1,321.1	128.46	11.284	
14,100.0	11,850.0	10,505.0	10,503.8	61.3	216.6	-17.58	-2,559.7	1,162.0	1,479.4	1,342.0	137.36	10.770	
14,200.0	11,850.0	10,505.0	10,503.8	62.3	216.6	-17.58	-2,559.7	1,162.0	1,515.1	1,368.6	146.54	10.340	
14,300.0	11,850.0	10,505.0	10,503.8	63.4	216.6	-17.58	-2,559.7	1,162.0	1,556.5	1,400.9	155.64	10.001	
14,400.0	11,850.0	10,505.0	10,503.8	64.4	216.6	-17.58	-2,559.7	1,162.0	1,603.1	1,438.7	164.39	9.752	
14,500.0	11,850.0	10,505.0	10,503.8	65.5	216.6	-17.58	-2,559.7	1,162.0	1,654.4	1,481.8	172.66	9.582	
14,600.0	11,850.0	10,505.0	10,503.8	66.6	216.6	-17.58	-2,559.7	1,162.0	1,710.1	1,529.7	180.36	9.482	
14,700.0	11,850.0	10,505.0	10,503.8	67.7	216.6	-17.58	-2,559.7	1,162.0	1,769.6	1,582.2	187.44	9.441	
14,800.0	11,850.0	10,505.0	10,503.8	68.8	216.6	-17.58	-2,559.7	1,162.0	1,832.7	1,638.7	193.92	9.450	
14,900.0	11,850.0	10,505.0	10,503.8	70.0	216.6	-17.58	-2,559.7	1,162.0	1,898.9	1,699.1	199.82	9.503	
15,000.0	11,850.0	10,505.0	10,503.8	71.1	216.6	-17.58	-2,559.7	1,162.0	1,968.0	1,762.8	205.17	9.592	
15,100.0	11,850.0	10,505.0	10,503.8	72.3	216.6	-17.58	-2,559.7	1,162.0	2,039.6	1,829.6	210.01	9.712	
15,200.0	11,850.0	10,505.0	10,503.8	73.4	216.6	-17.58	-2,559.7	1,162.0	2,113.6	1,899.2	214.39	9.859	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Mescalero 36 State 003 - OH - OH

Offset Site Error: 0.0 usft

Survey Program: 281-INC-ONLY

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,300.0	11,850.0	9,964.0	9,961.8	140.0	223.9	-9.93	-10,318.7	1,111.5	2,100.6	1,909.1	191.43	10.973	
20,400.0	11,850.0	9,964.0	9,961.8	141.4	223.9	-9.93	-10,318.7	1,111.5	2,051.3	1,865.5	185.83	11.039	
20,500.0	11,850.0	9,964.0	9,961.8	142.8	223.9	-9.93	-10,318.7	1,111.5	2,005.8	1,826.0	179.85	11.152	
20,600.0	11,850.0	9,964.0	9,961.8	144.2	223.9	-9.93	-10,318.7	1,111.5	1,964.4	1,790.8	173.55	11.319	
20,700.0	11,850.0	9,964.0	9,961.8	145.5	223.9	-9.93	-10,318.7	1,111.5	1,927.2	1,760.3	166.98	11.542	
20,800.0	11,850.0	9,964.0	9,961.8	146.9	223.9	-9.93	-10,318.7	1,111.5	1,894.7	1,734.4	160.26	11.822	
20,900.0	11,850.0	9,964.0	9,961.8	148.3	223.9	-9.93	-10,318.7	1,111.5	1,866.9	1,713.3	153.60	12.154	
21,000.0	11,850.0	9,964.0	9,961.8	149.7	223.9	-9.93	-10,318.7	1,111.5	1,844.1	1,696.8	147.27	12.522	
21,100.0	11,850.0	9,964.0	9,961.8	151.1	223.9	-9.93	-10,318.7	1,111.5	1,826.5	1,684.8	141.69	12.891	
21,200.0	11,850.0	9,964.0	9,961.8	152.5	223.9	-9.93	-10,318.7	1,111.5	1,814.3	1,676.8	137.44	13.200	
21,300.0	11,850.0	9,964.0	9,961.8	153.9	223.9	-9.93	-10,318.7	1,111.5	1,807.5	1,672.3	135.19	13.370	
21,372.6	11,850.0	9,964.0	9,961.8	154.9	223.9	-9.93	-10,318.7	1,111.5	1,806.1	1,670.9	135.11	13.367	CC
21,400.0	11,850.0	9,964.0	9,961.8	155.2	223.9	-9.93	-10,318.7	1,111.5	1,806.3	1,670.8	135.45	13.335	ES
21,500.0	11,850.0	9,964.0	9,961.8	156.6	223.9	-9.93	-10,318.7	1,111.5	1,810.5	1,672.2	138.34	13.088	
21,600.0	11,850.0	9,964.0	9,961.8	158.0	223.9	-9.93	-10,318.7	1,111.5	1,820.3	1,676.9	143.47	12.688	
21,700.0	11,850.0	9,964.0	9,961.8	159.4	223.9	-9.93	-10,318.7	1,111.5	1,835.5	1,685.3	150.18	12.222	
21,800.0	11,850.0	9,964.0	9,961.8	160.8	223.9	-9.93	-10,318.7	1,111.5	1,855.9	1,698.1	157.83	11.759	
21,900.0	11,850.0	9,964.0	9,961.8	162.2	223.9	-9.93	-10,318.7	1,111.5	1,881.5	1,715.6	165.92	11.340	
22,000.0	11,850.0	9,964.0	9,961.8	163.6	223.9	-9.93	-10,318.7	1,111.5	1,911.9	1,737.8	174.08	10.983	
22,100.0	11,850.0	9,964.0	9,961.8	165.0	223.9	-9.93	-10,318.7	1,111.5	1,947.0	1,764.9	182.09	10.693	
22,105.9	11,850.0	9,964.0	9,961.8	165.1	223.9	-9.93	-10,318.7	1,111.5	1,949.2	1,766.7	182.55	10.678	SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - New Mexico 36 State 001 - OH - OH

Offset Site Error: 0.0 usft

Survey Program: 308-INC-ONLY

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,600.0	11,850.0	11,814.3	11,812.7	78.2	252.0	91.81	-6,374.4	-236.6	2,078.0	1,767.6	310.45	6.693	
15,700.0	11,850.0	11,812.5	11,810.9	79.4	252.0	91.71	-6,374.4	-236.6	1,991.1	1,679.3	311.80	6.386	
15,800.0	11,850.0	11,810.8	11,809.2	80.6	251.9	91.62	-6,374.5	-236.6	1,905.5	1,592.2	313.28	6.082	
15,900.0	11,850.0	11,809.0	11,807.4	81.8	251.9	91.52	-6,374.5	-236.6	1,821.4	1,506.4	314.92	5.783	
16,000.0	11,850.0	11,807.3	11,805.7	83.1	251.9	91.42	-6,374.5	-236.6	1,738.9	1,422.2	316.73	5.490	
16,100.0	11,850.0	11,805.5	11,803.9	84.3	251.8	91.32	-6,374.5	-236.6	1,658.3	1,339.6	318.72	5.203	
16,200.0	11,850.0	11,803.8	11,802.2	85.6	251.8	91.22	-6,374.6	-236.6	1,580.0	1,259.1	320.90	4.924	
16,300.0	11,850.0	11,802.1	11,800.5	86.8	251.7	91.12	-6,374.6	-236.6	1,504.3	1,181.0	323.29	4.653	
16,400.0	11,850.0	11,800.3	11,798.7	88.1	251.7	91.02	-6,374.6	-236.6	1,431.5	1,105.6	325.88	4.393	
16,500.0	11,850.0	11,798.6	11,797.0	89.3	251.7	90.92	-6,374.7	-236.6	1,362.2	1,033.5	328.67	4.145	
16,600.0	11,850.0	11,796.8	11,795.2	90.6	251.6	90.82	-6,374.7	-236.6	1,296.9	965.2	331.65	3.910	
16,700.0	11,850.0	11,795.1	11,793.5	91.9	251.6	90.72	-6,374.7	-236.6	1,236.2	901.5	334.76	3.693	
16,800.0	11,850.0	11,793.3	11,791.7	93.2	251.6	90.62	-6,374.8	-236.6	1,180.9	843.0	337.96	3.494	
16,900.0	11,850.0	11,791.6	11,790.0	94.4	251.5	90.52	-6,374.8	-236.6	1,131.8	790.7	341.14	3.318	
17,000.0	11,850.0	11,789.8	11,788.2	95.7	251.5	90.42	-6,374.8	-236.6	1,089.6	745.4	344.19	3.166	
17,100.0	11,850.0	11,788.1	11,786.5	97.0	251.4	90.32	-6,374.8	-236.6	1,055.3	708.3	346.96	3.041	
17,200.0	11,850.0	11,786.4	11,784.7	98.3	251.4	90.22	-6,374.9	-236.6	1,029.5	680.3	349.28	2.948	
17,300.0	11,850.0	11,784.6	11,783.0	99.6	251.4	90.13	-6,374.9	-236.6	1,013.0	662.0	350.99	2.886	
17,400.0	11,850.0	11,782.9	11,781.3	100.9	251.3	90.03	-6,374.9	-236.6	1,006.3	654.3	351.98	2.859	
17,418.5	11,850.0	11,782.5	11,780.9	101.2	251.3	90.01	-6,374.9	-236.6	1,006.1	654.0	352.08	2.858	CC, ES, SF
17,500.0	11,850.0	11,781.1	11,779.5	102.2	251.3	89.93	-6,375.0	-236.6	1,009.4	657.2	352.17	2.866	
17,600.0	11,850.0	11,779.4	11,777.8	103.6	251.3	89.83	-6,375.0	-236.6	1,022.3	670.7	351.58	2.908	
17,700.0	11,850.0	11,777.6	11,776.0	104.9	251.2	89.73	-6,375.0	-236.6	1,044.7	694.4	350.28	2.982	
17,800.0	11,850.0	11,775.9	11,774.3	106.2	251.2	89.63	-6,375.1	-236.6	1,076.0	727.6	348.41	3.088	
17,900.0	11,850.0	11,774.1	11,772.5	107.5	251.1	89.53	-6,375.1	-236.6	1,115.3	769.2	346.10	3.223	
18,000.0	11,850.0	11,772.4	11,770.8	108.8	251.1	89.43	-6,375.1	-236.6	1,162.0	818.5	343.53	3.383	
18,100.0	11,850.0	11,770.6	11,769.0	110.2	251.1	89.33	-6,375.2	-236.6	1,215.1	874.3	340.81	3.565	
18,200.0	11,850.0	11,768.9	11,767.3	111.5	251.0	89.23	-6,375.2	-236.6	1,273.9	935.8	338.06	3.768	
18,300.0	11,850.0	11,767.2	11,765.6	112.8	251.0	89.13	-6,375.2	-236.6	1,337.5	1,002.2	335.36	3.988	
18,400.0	11,850.0	11,765.4	11,763.8	114.2	251.0	89.03	-6,375.2	-236.6	1,405.4	1,072.7	332.76	4.224	
18,500.0	11,850.0	11,763.7	11,762.1	115.5	250.9	88.93	-6,375.3	-236.6	1,477.0	1,146.7	330.31	4.472	
18,600.0	11,850.0	11,761.9	11,760.3	116.9	250.9	88.83	-6,375.3	-236.6	1,551.7	1,223.7	328.01	4.731	
18,700.0	11,850.0	11,760.2	11,758.6	118.2	250.8	88.73	-6,375.3	-236.6	1,629.1	1,303.2	325.88	4.999	
18,800.0	11,850.0	11,758.4	11,756.8	119.6	250.8	88.64	-6,375.4	-236.6	1,708.9	1,384.9	323.92	5.276	
18,900.0	11,850.0	11,756.7	11,755.1	120.9	250.8	88.54	-6,375.4	-236.6	1,790.6	1,468.5	322.11	5.559	
19,000.0	11,850.0	11,754.9	11,753.3	122.3	250.7	88.44	-6,375.4	-236.6	1,874.2	1,553.7	320.45	5.849	
19,100.0	11,850.0	11,753.2	11,751.6	123.6	250.7	88.34	-6,375.5	-236.6	1,959.3	1,640.4	318.94	6.143	
19,200.0	11,850.0	11,751.4	11,749.9	125.0	250.7	88.24	-6,375.5	-236.6	2,045.7	1,728.2	317.56	6.442	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - New Mexico 36 State 002 - OH - OH

Offset Site Error: 0.0 usft

Survey Program: 307-INC-ONLY

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,400.0	11,850.0	10,000.0	9,998.8	88.1	210.9	-10.04	-6,399.6	1,084.5	2,089.6	1,928.3	161.24	12.960	
16,500.0	11,850.0	10,000.0	9,998.8	89.3	210.9	-10.04	-6,399.6	1,084.5	2,041.0	1,885.9	155.10	13.159	
16,600.0	11,850.0	10,000.0	9,998.8	90.6	210.9	-10.04	-6,399.6	1,084.5	1,996.2	1,847.6	148.66	13.428	
16,700.0	11,850.0	10,000.0	9,998.8	91.9	210.9	-10.04	-6,399.6	1,084.5	1,955.6	1,813.6	141.98	13.774	
16,800.0	11,850.0	10,000.0	9,998.8	93.2	210.9	-10.04	-6,399.6	1,084.5	1,919.3	1,784.1	135.13	14.203	
16,900.0	11,850.0	10,000.0	9,998.8	94.4	210.9	-10.04	-6,399.6	1,084.5	1,887.6	1,759.3	128.26	14.717	
17,000.0	11,850.0	10,000.0	9,998.8	95.7	210.9	-10.04	-6,399.6	1,084.5	1,860.7	1,739.1	121.58	15.305	
17,100.0	11,850.0	10,000.0	9,998.8	97.0	210.9	-10.04	-6,399.6	1,084.5	1,838.9	1,723.5	115.38	15.938	
17,200.0	11,850.0	10,000.0	9,998.8	98.3	210.9	-10.04	-6,399.6	1,084.5	1,822.3	1,712.2	110.10	16.551	
17,300.0	11,850.0	10,000.0	9,998.8	99.6	210.9	-10.04	-6,399.6	1,084.5	1,811.1	1,704.8	106.29	17.040	
17,400.0	11,850.0	10,000.0	9,998.8	100.9	210.9	-10.04	-6,399.6	1,084.5	1,805.4	1,700.9	104.52	17.273	
17,453.4	11,850.0	10,000.0	9,998.8	101.6	210.9	-10.04	-6,399.6	1,084.5	1,804.6	1,700.1	104.57	17.258	CC
17,500.0	11,850.0	10,000.0	9,998.8	102.2	210.9	-10.04	-6,399.6	1,084.5	1,805.2	1,700.0	105.21	17.159	ES
17,600.0	11,850.0	10,000.0	9,998.8	103.6	210.9	-10.04	-6,399.6	1,084.5	1,810.6	1,702.2	108.35	16.710	
17,700.0	11,850.0	10,000.0	9,998.8	104.9	210.9	-10.04	-6,399.6	1,084.5	1,821.4	1,707.9	113.55	16.041	
17,800.0	11,850.0	10,000.0	9,998.8	106.2	210.9	-10.04	-6,399.6	1,084.5	1,837.6	1,717.4	120.19	15.289	
17,900.0	11,850.0	10,000.0	9,998.8	107.5	210.9	-10.04	-6,399.6	1,084.5	1,859.1	1,731.4	127.72	14.556	
18,000.0	11,850.0	10,000.0	9,998.8	108.8	210.9	-10.04	-6,399.6	1,084.5	1,885.6	1,749.9	135.67	13.898	
18,100.0	11,850.0	10,000.0	9,998.8	110.2	210.9	-10.04	-6,399.6	1,084.5	1,917.0	1,773.2	143.74	13.337	
18,200.0	11,850.0	10,000.0	9,998.8	111.5	210.9	-10.04	-6,399.6	1,084.5	1,953.0	1,801.3	151.69	12.875	
18,300.0	11,850.0	10,000.0	9,998.8	112.8	210.9	-10.04	-6,399.6	1,084.5	1,993.4	1,834.0	159.38	12.507	
18,400.0	11,850.0	10,000.0	9,998.8	114.2	210.9	-10.04	-6,399.6	1,084.5	2,037.8	1,871.1	166.72	12.223	
18,500.0	11,850.0	10,000.0	9,998.8	115.5	210.9	-10.04	-6,399.6	1,084.5	2,086.2	1,912.5	173.66	12.013	SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - New Mexico 36 State 004 - OH - OH

Offset Site Error: 0.0 usft

Survey Program: 251-INC-ONLY **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,500.0	11,850.0	10,450.0	10,449.2	102.2	209.4	37.62	-7,752.3	-227.6	2,098.8	1,865.7	233.11	9.003	
17,600.0	11,850.0	10,450.0	10,449.2	103.6	209.4	37.62	-7,752.3	-227.6	2,038.6	1,806.9	231.61	8.802	
17,700.0	11,850.0	10,450.0	10,449.2	104.9	209.4	37.62	-7,752.3	-227.6	1,981.5	1,751.6	229.99	8.616	
17,800.0	11,850.0	10,450.0	10,449.2	106.2	209.4	37.62	-7,752.3	-227.6	1,928.0	1,699.8	228.27	8.446	
17,900.0	11,850.0	10,450.0	10,449.2	107.5	209.4	37.62	-7,752.3	-227.6	1,878.3	1,651.9	226.48	8.294	
18,000.0	11,850.0	10,450.0	10,449.2	108.8	209.4	37.62	-7,752.3	-227.6	1,832.8	1,608.1	224.63	8.159	
18,100.0	11,850.0	10,450.0	10,449.2	110.2	209.4	37.62	-7,752.3	-227.6	1,791.6	1,568.8	222.79	8.042	
18,200.0	11,850.0	10,450.0	10,449.2	111.5	209.4	37.62	-7,752.3	-227.6	1,755.2	1,534.2	221.01	7.942	
18,300.0	11,850.0	10,450.0	10,449.2	112.8	209.4	37.62	-7,752.3	-227.6	1,723.8	1,504.4	219.36	7.858	
18,400.0	11,850.0	10,450.0	10,449.2	114.2	209.4	37.62	-7,752.3	-227.6	1,697.7	1,479.8	217.93	7.790	
18,500.0	11,850.0	10,450.0	10,449.2	115.5	209.4	37.62	-7,752.3	-227.6	1,677.2	1,460.4	216.82	7.736	
18,600.0	11,850.0	10,450.0	10,449.2	116.9	209.4	37.62	-7,752.3	-227.6	1,662.5	1,446.4	216.10	7.693	
18,700.0	11,850.0	10,450.0	10,449.2	118.2	209.4	37.62	-7,752.3	-227.6	1,653.7	1,437.9	215.85	7.661	
18,795.9	11,850.0	10,450.0	10,449.2	119.5	209.4	37.62	-7,752.3	-227.6	1,650.9	1,434.8	216.10	7.640	CC
18,800.0	11,850.0	10,450.0	10,449.2	119.6	209.4	37.62	-7,752.3	-227.6	1,650.9	1,434.8	216.12	7.639	ES
18,900.0	11,850.0	10,450.0	10,449.2	120.9	209.4	37.62	-7,752.3	-227.6	1,654.2	1,437.3	216.91	7.626	
19,000.0	11,850.0	10,450.0	10,449.2	122.3	209.4	37.62	-7,752.3	-227.6	1,663.5	1,445.3	218.19	7.624	SF
19,100.0	11,850.0	10,450.0	10,449.2	123.6	209.4	37.62	-7,752.3	-227.6	1,678.7	1,458.8	219.92	7.633	
19,200.0	11,850.0	10,450.0	10,449.2	125.0	209.4	37.62	-7,752.3	-227.6	1,699.7	1,477.7	222.00	7.656	
19,300.0	11,850.0	10,450.0	10,449.2	126.3	209.4	37.62	-7,752.3	-227.6	1,726.2	1,501.9	224.34	7.695	
19,400.0	11,850.0	10,450.0	10,449.2	127.7	209.4	37.62	-7,752.3	-227.6	1,758.0	1,531.2	226.84	7.750	
19,500.0	11,850.0	10,450.0	10,449.2	129.1	209.4	37.62	-7,752.3	-227.6	1,794.8	1,565.4	229.42	7.823	
19,600.0	11,850.0	10,450.0	10,449.2	130.4	209.4	37.62	-7,752.3	-227.6	1,836.4	1,604.4	232.00	7.915	
19,700.0	11,850.0	10,450.0	10,449.2	131.8	209.4	37.62	-7,752.3	-227.6	1,882.3	1,647.8	234.51	8.026	
19,800.0	11,850.0	10,450.0	10,449.2	133.2	209.4	37.62	-7,752.3	-227.6	1,932.3	1,695.4	236.92	8.156	
19,900.0	11,850.0	10,450.0	10,449.2	134.5	209.4	37.62	-7,752.3	-227.6	1,986.1	1,747.0	239.19	8.304	
20,000.0	11,850.0	10,450.0	10,449.2	135.9	209.4	37.62	-7,752.3	-227.6	2,043.4	1,802.1	241.30	8.468	
20,100.0	11,850.0	10,450.0	10,449.2	137.3	209.4	37.62	-7,752.3	-227.6	2,103.9	1,860.7	243.25	8.649	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 008H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.4	1.4	0.0	0.0	-14.86	159.3	-42.2	164.8				
100.0	100.0	101.4	101.4	0.1	0.1	-14.86	159.3	-42.2	164.8	164.5	0.27	613.647	
200.0	200.0	201.4	201.4	0.5	0.5	-14.86	159.3	-42.2	164.8	163.8	0.99	167.196	
300.0	300.0	301.4	301.4	0.8	0.9	-14.86	159.3	-42.2	164.8	163.1	1.70	96.783	
400.0	400.0	401.4	401.4	1.2	1.2	-14.86	159.3	-42.2	164.8	162.3	2.42	68.102	
500.0	500.0	501.4	501.4	1.6	1.6	-14.86	159.3	-42.2	164.8	161.6	3.14	52.534	
600.0	600.0	601.4	601.4	1.9	1.9	-14.86	159.3	-42.2	164.8	160.9	3.85	42.760	
700.0	700.0	701.4	701.4	2.3	2.3	-14.86	159.3	-42.2	164.8	160.2	4.57	36.052	
800.0	800.0	801.4	801.4	2.6	2.6	-14.86	159.3	-42.2	164.8	159.5	5.29	31.163	
900.0	900.0	901.4	901.4	3.0	3.0	-14.86	159.3	-42.2	164.8	158.8	6.00	27.442	
1,000.0	1,000.0	1,001.4	1,001.4	3.4	3.4	-14.86	159.3	-42.2	164.8	158.0	6.72	24.515	
1,100.0	1,100.0	1,101.4	1,101.4	3.7	3.7	-14.86	159.3	-42.2	164.8	157.3	7.44	22.152	
1,200.0	1,200.0	1,201.4	1,201.4	4.1	4.1	-14.86	159.3	-42.2	164.8	156.6	8.15	20.204	
1,300.0	1,300.0	1,301.4	1,301.4	4.4	4.4	-14.86	159.3	-42.2	164.8	155.9	8.87	18.571	
1,400.0	1,400.0	1,401.4	1,401.4	4.8	4.8	-14.86	159.3	-42.2	164.8	155.2	9.59	17.183	
1,500.0	1,500.0	1,501.4	1,501.4	5.2	5.2	-14.86	159.3	-42.2	164.8	154.5	10.31	15.987	
1,600.0	1,600.0	1,601.4	1,601.4	5.5	5.5	-14.86	159.3	-42.2	164.8	153.7	11.02	14.948	
1,700.0	1,700.0	1,701.4	1,701.4	5.9	5.9	-14.86	159.3	-42.2	164.8	153.0	11.74	14.035	
1,800.0	1,800.0	1,801.4	1,801.4	6.2	6.2	-14.86	159.3	-42.2	164.8	152.3	12.46	13.227	
1,900.0	1,900.0	1,901.4	1,901.4	6.6	6.6	-14.86	159.3	-42.2	164.8	151.6	13.17	12.507	
2,000.0	2,000.0	2,001.5	2,001.5	6.9	6.9	-14.86	159.3	-42.2	164.8	150.9	13.89	11.861	
2,100.0	2,100.0	2,107.5	2,107.5	7.3	7.3	-146.95	157.3	-41.9	164.3	149.7	14.59	11.267	
2,200.0	2,199.8	2,213.5	2,213.3	7.6	7.7	-148.24	151.4	-41.0	163.2	147.9	15.23	10.711	
2,295.6	2,295.0	2,311.5	2,310.9	7.9	8.0	-150.21	143.0	-39.6	162.1	146.2	15.86	10.219 CC	
2,300.0	2,299.5	2,315.9	2,315.3	8.0	8.0	-150.32	142.6	-39.6	162.1	146.2	15.89	10.200	
2,400.0	2,398.9	2,415.7	2,414.7	8.3	8.3	-152.70	133.7	-38.1	162.5	146.0	16.55	9.817 ES	
2,500.0	2,498.3	2,515.5	2,514.1	8.6	8.7	-155.06	124.8	-36.7	163.2	146.0	17.23	9.476	
2,600.0	2,597.7	2,615.2	2,613.4	9.0	9.0	-157.40	115.9	-35.3	164.3	146.3	17.90	9.175	
2,700.0	2,697.2	2,715.0	2,712.8	9.3	9.3	-159.70	106.9	-33.8	165.5	146.9	18.58	8.908	
2,800.0	2,796.6	2,814.8	2,812.1	9.7	9.7	-161.97	98.0	-32.4	167.1	147.8	19.27	8.671	
2,900.0	2,896.0	2,914.5	2,911.5	10.0	10.0	-164.19	89.1	-30.9	168.9	148.9	19.96	8.463	
3,000.0	2,995.5	3,014.3	3,010.9	10.4	10.4	-166.36	80.2	-29.5	170.9	150.3	20.65	8.279	
3,100.0	3,094.9	3,114.1	3,110.2	10.8	10.7	-168.48	71.3	-28.1	173.2	151.9	21.34	8.117	
3,200.0	3,194.3	3,213.9	3,209.6	11.1	11.1	-170.54	62.3	-26.6	175.8	153.7	22.04	7.974	
3,300.0	3,293.8	3,313.6	3,308.9	11.5	11.4	-172.54	53.4	-25.2	178.5	155.8	22.74	7.850	
3,400.0	3,393.2	3,413.4	3,408.3	11.9	11.8	-174.48	44.5	-23.8	181.5	158.0	23.44	7.740	
3,500.0	3,492.6	3,513.2	3,507.7	12.2	12.2	-176.35	35.6	-22.3	184.6	160.5	24.15	7.645	
3,600.0	3,592.1	3,612.9	3,607.0	12.6	12.5	-178.16	26.7	-20.9	188.0	163.1	24.86	7.561	
3,700.0	3,691.5	3,712.7	3,706.4	13.0	12.9	-179.90	17.7	-19.5	191.5	165.9	25.57	7.489	
3,800.0	3,790.9	3,812.5	3,805.7	13.3	13.2	178.42	8.8	-18.0	195.2	168.9	26.28	7.426	
3,900.0	3,890.4	3,912.2	3,905.1	13.7	13.6	176.80	-0.1	-16.6	199.1	172.1	27.00	7.372	
4,000.0	3,989.8	4,012.0	4,004.5	14.1	14.0	175.25	-9.0	-15.1	203.1	175.4	27.72	7.326	
4,100.0	4,089.2	4,111.8	4,103.8	14.4	14.3	173.76	-17.9	-13.7	207.2	178.8	28.44	7.287	
4,200.0	4,188.7	4,211.6	4,203.2	14.8	14.7	172.33	-26.9	-12.3	211.5	182.4	29.16	7.253	
4,300.0	4,288.1	4,311.3	4,302.5	15.2	15.1	170.95	-35.8	-10.8	215.9	186.1	29.89	7.225	
4,400.0	4,387.5	4,411.1	4,401.9	15.6	15.4	169.63	-44.7	-9.4	220.5	189.9	30.61	7.202	
4,500.0	4,487.0	4,510.9	4,501.3	15.9	15.8	168.37	-53.6	-8.0	225.1	193.8	31.34	7.183	
4,600.0	4,586.4	4,610.6	4,600.6	16.3	16.2	167.15	-62.5	-6.5	229.9	197.8	32.07	7.167	
4,700.0	4,685.8	4,710.4	4,700.0	16.7	16.5	165.99	-71.5	-5.1	234.7	201.9	32.81	7.155	
4,800.0	4,785.3	4,810.2	4,799.3	17.1	16.9	164.87	-80.4	-3.6	239.7	206.2	33.54	7.146	
4,900.0	4,884.7	4,910.0	4,898.7	17.5	17.3	163.80	-89.3	-2.2	244.7	210.5	34.28	7.140	
5,000.0	4,984.1	5,009.7	4,998.1	17.8	17.7	162.77	-98.2	-0.8	249.9	214.8	35.01	7.136	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 008H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,083.5	5,109.5	5,097.4	18.2	18.0	161.79	-107.1	0.7	255.0	219.3	35.75	7.134	
5,200.0	5,183.0	5,209.3	5,196.8	18.6	18.4	160.84	-116.1	2.1	260.3	223.8	36.49	7.134	SF
5,300.0	5,282.4	5,309.0	5,296.1	19.0	18.8	159.93	-125.0	3.5	265.7	228.4	37.23	7.135	
5,400.0	5,381.8	5,408.8	5,395.5	19.4	19.1	159.06	-133.9	5.0	271.1	233.1	37.97	7.138	
5,500.0	5,481.3	5,508.6	5,494.9	19.7	19.5	158.22	-142.8	6.4	276.5	237.8	38.72	7.142	
5,600.0	5,580.7	5,608.3	5,594.2	20.1	19.9	157.42	-151.7	7.8	282.0	242.6	39.46	7.148	
5,700.0	5,680.1	5,708.1	5,693.6	20.5	20.3	156.64	-160.7	9.3	287.6	247.4	40.20	7.154	
5,800.0	5,779.6	5,807.9	5,793.0	20.9	20.6	155.89	-169.6	10.7	293.2	252.3	40.95	7.161	
5,900.0	5,879.0	5,907.7	5,892.3	21.3	21.0	155.18	-178.5	12.2	298.9	257.2	41.70	7.169	
6,000.0	5,978.4	6,007.4	5,991.7	21.6	21.4	154.49	-187.4	13.6	304.6	262.2	42.44	7.177	
6,100.0	6,077.9	6,107.2	6,091.0	22.0	21.8	153.82	-196.3	15.0	310.4	267.2	43.19	7.186	
6,200.0	6,177.3	6,207.0	6,190.4	22.4	22.1	153.18	-205.3	16.5	316.2	272.2	43.94	7.196	
6,300.0	6,276.7	6,306.7	6,289.8	22.8	22.5	152.56	-214.2	17.9	322.0	277.3	44.69	7.206	
6,400.0	6,376.2	6,406.5	6,389.1	23.2	22.9	151.97	-223.1	19.3	327.9	282.4	45.44	7.216	
6,500.0	6,475.6	6,506.3	6,488.5	23.6	23.2	151.39	-232.0	20.8	333.8	287.6	46.19	7.227	
6,600.0	6,575.0	6,606.0	6,587.8	23.9	23.6	150.84	-240.9	22.2	339.7	292.8	46.94	7.238	
6,700.0	6,674.5	6,705.8	6,687.2	24.3	24.0	150.30	-249.9	23.6	345.7	298.0	47.69	7.249	
6,800.0	6,773.9	6,805.6	6,786.6	24.7	24.4	149.79	-258.8	25.1	351.7	303.2	48.44	7.260	
6,900.0	6,873.3	6,905.4	6,885.9	25.1	24.8	149.29	-267.7	26.5	357.7	308.5	49.19	7.271	
7,000.0	6,972.8	7,005.1	6,985.3	25.5	25.1	148.80	-276.6	28.0	363.8	313.8	49.95	7.283	
7,100.0	7,072.2	7,104.9	7,084.6	25.9	25.5	148.33	-285.5	29.4	369.8	319.1	50.70	7.295	
7,200.0	7,171.6	7,204.7	7,184.0	26.2	25.9	147.88	-294.5	30.8	375.9	324.5	51.45	7.306	
7,300.0	7,271.1	7,304.4	7,283.4	26.6	26.3	147.44	-303.4	32.3	382.1	329.8	52.21	7.318	
7,400.0	7,370.5	7,404.2	7,382.7	27.0	26.6	147.02	-312.3	33.7	388.2	335.2	52.96	7.330	
7,500.0	7,469.9	7,504.0	7,482.1	27.4	27.0	146.61	-321.2	35.1	394.4	340.6	53.72	7.342	
7,600.0	7,569.3	7,603.8	7,581.4	27.8	27.4	146.21	-330.1	36.6	400.5	346.1	54.47	7.354	
7,700.0	7,668.8	7,703.5	7,680.8	28.2	27.8	145.83	-339.1	38.0	406.8	351.5	55.23	7.365	
7,800.0	7,768.2	7,803.3	7,780.2	28.6	28.1	145.45	-348.0	39.4	413.0	357.0	55.98	7.377	
7,900.0	7,867.6	7,903.1	7,879.5	28.9	28.5	145.09	-356.9	40.9	419.2	362.5	56.74	7.389	
8,000.0	7,967.1	8,002.8	7,978.9	29.3	28.9	144.73	-365.8	42.3	425.5	368.0	57.49	7.400	
8,100.0	8,066.5	8,102.6	8,078.2	29.7	29.3	144.39	-374.7	43.8	431.7	373.5	58.25	7.412	
8,200.0	8,165.9	8,202.4	8,177.6	30.1	29.6	144.06	-383.7	45.2	438.0	379.0	59.01	7.423	
8,300.0	8,265.4	8,302.1	8,277.0	30.5	30.0	143.74	-392.6	46.6	444.3	384.6	59.76	7.435	
8,400.0	8,364.8	8,401.9	8,376.3	30.9	30.4	143.42	-401.5	48.1	450.6	390.1	60.52	7.446	
8,500.0	8,464.2	8,501.7	8,475.7	31.2	30.8	143.12	-410.4	49.5	457.0	395.7	61.28	7.457	
8,600.0	8,563.7	8,601.5	8,575.0	31.6	31.2	142.82	-419.3	50.9	463.3	401.3	62.03	7.469	
8,700.0	8,663.1	8,701.2	8,674.4	32.0	31.5	142.53	-428.2	52.4	469.6	406.9	62.79	7.480	
8,800.0	8,762.5	8,801.0	8,773.8	32.4	31.9	142.25	-437.2	53.8	476.0	412.5	63.55	7.491	
8,900.0	8,862.0	8,900.8	8,873.1	32.8	32.3	141.97	-446.1	55.2	482.4	418.1	64.31	7.501	
9,000.0	8,961.4	9,000.5	8,972.5	33.2	32.7	141.71	-455.0	56.7	488.8	423.7	65.06	7.512	
9,100.0	9,060.8	9,100.3	9,071.9	33.6	33.0	141.45	-463.9	58.1	495.2	429.3	65.82	7.523	
9,200.0	9,160.3	9,200.1	9,171.2	33.9	33.4	141.19	-472.8	59.6	501.6	435.0	66.58	7.533	
9,300.0	9,259.7	9,299.6	9,270.3	34.3	33.8	140.95	-481.7	61.0	508.0	440.6	67.34	7.544	
9,400.0	9,359.1	9,395.8	9,366.3	34.7	34.2	140.92	-488.5	62.1	514.8	446.7	68.06	7.564	
9,500.0	9,458.6	9,491.9	9,462.3	35.1	34.5	141.24	-492.1	62.7	522.3	453.6	68.76	7.596	
9,600.0	9,558.0	9,589.0	9,559.4	35.5	34.8	141.87	-492.7	62.8	530.5	461.1	69.43	7.642	
9,700.0	9,657.4	9,688.4	9,658.8	35.9	35.1	142.57	-492.7	62.8	539.0	468.9	70.10	7.689	
9,800.0	9,756.9	9,792.2	9,762.5	36.3	35.5	143.10	-494.4	62.8	547.3	476.5	70.81	7.729	
9,900.0	9,856.3	9,901.5	9,869.5	36.7	35.9	141.59	-515.9	62.9	554.2	482.5	71.71	7.728	
10,000.0	9,955.7	10,000.0	9,959.4	37.0	36.4	138.15	-555.6	63.3	560.7	488.1	72.64	7.720	
10,100.0	10,055.1	10,082.3	10,027.0	37.4	36.8	133.91	-602.4	63.6	570.5	497.1	73.41	7.772	
10,200.0	10,154.6	10,150.0	10,075.9	37.8	37.2	129.64	-649.1	64.0	586.9	513.2	73.73	7.960	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 008H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.0	10,254.0	10,200.0	10,107.6	38.2	37.5	126.15	-687.8	64.3	612.2	538.9	73.26	8.357	
10,400.0	10,353.4	10,242.6	10,131.2	38.6	37.7	123.00	-723.3	64.6	647.4	575.2	72.13	8.975	
10,500.0	10,452.9	10,275.0	10,147.0	39.0	37.9	120.54	-751.5	64.8	692.2	621.8	70.38	9.835	
10,600.0	10,552.3	10,300.0	10,157.8	39.4	38.1	118.62	-774.0	65.0	745.6	677.3	68.28	10.921	
10,700.0	10,651.7	10,325.0	10,167.5	39.7	38.2	116.69	-797.1	65.2	806.5	740.3	66.20	12.182	
10,800.0	10,751.2	10,350.0	10,176.0	40.1	38.4	114.77	-820.6	65.3	873.7	809.4	64.28	13.592	
10,900.0	10,850.6	10,360.1	10,179.0	40.5	38.5	114.00	-830.2	65.4	945.9	883.6	62.22	15.203	
11,000.0	10,950.0	10,375.0	10,183.2	40.9	38.5	112.86	-844.5	65.5	1,022.3	961.7	60.53	16.888	
11,100.0	11,049.5	10,385.2	10,185.7	41.3	38.6	112.09	-854.4	65.6	1,102.1	1,043.1	59.00	18.678	
11,200.0	11,149.0	10,400.0	10,189.1	41.7	38.7	113.17	-868.8	65.7	1,184.5	1,126.7	57.79	20.495	
11,300.0	11,248.8	10,400.0	10,189.1	42.0	38.7	115.99	-868.8	65.7	1,268.4	1,211.9	56.49	22.454	
11,400.0	11,348.8	10,409.5	10,191.0	42.4	38.8	118.18	-878.1	65.8	1,353.7	1,298.2	55.53	24.377	
11,500.0	11,448.5	10,425.0	10,193.8	42.7	38.9	56.73	-893.4	65.9	1,439.1	1,384.3	54.77	26.276	
11,600.0	11,544.8	10,425.0	10,193.8	43.1	38.9	43.99	-893.4	65.9	1,520.1	1,466.3	53.77	28.269	
11,700.0	11,633.6	10,450.0	10,197.2	43.6	39.0	34.96	-918.1	66.1	1,593.9	1,540.8	53.15	29.989	
11,800.0	11,711.0	10,450.0	10,197.2	44.0	39.0	29.59	-918.1	66.1	1,658.1	1,605.8	52.29	31.711	
11,900.0	11,773.7	10,475.0	10,199.2	44.5	39.2	25.85	-943.0	66.3	1,710.5	1,658.7	51.80	33.022	
12,000.0	11,818.7	10,502.1	10,200.0	45.0	39.3	23.53	-970.2	66.5	1,749.8	1,698.4	51.44	34.020	
12,100.0	11,844.3	10,586.3	10,200.0	45.5	39.8	22.12	-1,054.3	67.2	1,773.5	1,721.9	51.59	34.376	
12,200.0	11,850.0	10,686.0	10,200.0	46.0	40.5	21.82	-1,154.0	68.0	1,778.8	1,726.8	51.98	34.222	
12,300.0	11,850.0	10,786.0	10,200.0	46.5	41.2	21.82	-1,254.0	68.7	1,778.8	1,726.3	52.45	33.916	
12,400.0	11,850.0	10,886.0	10,200.0	47.1	41.9	21.81	-1,354.0	69.5	1,778.8	1,725.8	52.97	33.578	
12,500.0	11,850.0	10,986.0	10,200.0	47.7	42.7	21.81	-1,454.0	70.3	1,778.8	1,725.2	53.56	33.213	
12,600.0	11,850.0	11,086.0	10,200.0	48.3	43.5	21.81	-1,554.0	71.1	1,778.8	1,724.6	54.19	32.822	
12,700.0	11,850.0	11,186.0	10,200.0	49.0	44.4	21.81	-1,654.0	71.9	1,778.8	1,723.9	54.88	32.410	
12,800.0	11,850.0	11,286.0	10,200.0	49.7	45.2	21.81	-1,754.0	72.7	1,778.8	1,723.1	55.62	31.980	
12,900.0	11,850.0	11,386.0	10,200.0	50.5	46.1	21.81	-1,854.0	73.5	1,778.8	1,722.4	56.41	31.534	
13,000.0	11,850.0	11,486.0	10,200.0	51.2	47.1	21.81	-1,954.0	74.2	1,778.8	1,721.5	57.24	31.075	
13,100.0	11,850.0	11,586.0	10,200.0	52.0	48.0	21.81	-2,054.0	75.0	1,778.8	1,720.6	58.12	30.606	
13,200.0	11,850.0	11,686.0	10,200.0	52.8	49.0	21.81	-2,154.0	75.8	1,778.7	1,719.7	59.04	30.129	
13,300.0	11,850.0	11,786.0	10,200.0	53.7	50.0	21.81	-2,254.0	76.6	1,778.7	1,718.7	60.00	29.648	
13,400.0	11,850.0	11,886.0	10,200.0	54.6	51.0	21.81	-2,354.0	77.4	1,778.7	1,717.7	60.99	29.163	
13,500.0	11,850.0	11,986.0	10,200.0	55.5	52.1	21.81	-2,454.0	78.2	1,778.7	1,716.7	62.03	28.677	
13,600.0	11,850.0	12,086.0	10,200.0	56.4	53.1	21.81	-2,554.0	79.0	1,778.7	1,715.6	63.10	28.191	
13,700.0	11,850.0	12,186.0	10,200.0	57.3	54.2	21.81	-2,654.0	79.8	1,778.7	1,714.5	64.20	27.707	
13,800.0	11,850.0	12,286.0	10,200.0	58.3	55.3	21.81	-2,754.0	80.5	1,778.7	1,713.4	65.33	27.227	
13,900.0	11,850.0	12,386.0	10,200.0	59.3	56.4	21.81	-2,854.0	81.3	1,778.7	1,712.2	66.49	26.751	
14,000.0	11,850.0	12,486.0	10,200.0	60.3	57.5	21.81	-2,953.9	82.1	1,778.7	1,711.0	67.68	26.280	
14,100.0	11,850.0	12,586.0	10,200.0	61.3	58.7	21.81	-3,053.9	82.9	1,778.7	1,709.8	68.90	25.816	
14,200.0	11,850.0	12,686.0	10,200.0	62.3	59.8	21.81	-3,153.9	83.7	1,778.7	1,708.6	70.14	25.359	
14,300.0	11,850.0	12,786.0	10,200.0	63.4	61.0	21.81	-3,253.9	84.5	1,778.7	1,707.3	71.41	24.909	
14,400.0	11,850.0	12,886.0	10,200.0	64.4	62.2	21.81	-3,353.9	85.3	1,778.7	1,706.0	72.70	24.467	
14,500.0	11,850.0	12,986.0	10,200.0	65.5	63.4	21.81	-3,453.9	86.0	1,778.7	1,704.7	74.01	24.033	
14,600.0	11,850.0	13,086.0	10,200.0	66.6	64.6	21.81	-3,553.9	86.8	1,778.7	1,703.4	75.34	23.609	
14,700.0	11,850.0	13,186.0	10,200.0	67.7	65.8	21.81	-3,653.9	87.6	1,778.7	1,702.0	76.69	23.193	
14,800.0	11,850.0	13,286.0	10,200.0	68.8	67.0	21.81	-3,753.9	88.4	1,778.7	1,700.6	78.06	22.786	
14,900.0	11,850.0	13,386.0	10,200.0	70.0	68.2	21.81	-3,853.9	89.2	1,778.7	1,699.2	79.45	22.388	
15,000.0	11,850.0	13,486.0	10,200.0	71.1	69.5	21.81	-3,953.9	90.0	1,778.7	1,697.8	80.85	21.999	
15,100.0	11,850.0	13,586.0	10,200.0	72.3	70.7	21.81	-4,053.9	90.8	1,778.7	1,696.4	82.27	21.620	
15,200.0	11,850.0	13,686.0	10,200.0	73.4	72.0	21.81	-4,153.9	91.5	1,778.7	1,695.0	83.70	21.249	
15,300.0	11,850.0	13,786.0	10,200.0	74.6	73.2	21.81	-4,253.9	92.3	1,778.7	1,693.5	85.15	20.888	
15,400.0	11,850.0	13,886.0	10,200.0	75.8	74.5	21.81	-4,353.9	93.1	1,778.7	1,692.0	86.61	20.535	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 008H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,500.0	11,850.0	13,986.0	10,200.0	77.0	75.8	21.81	-4,453.9	93.9	1,778.7	1,690.6	88.09	20.192	
15,600.0	11,850.0	14,086.0	10,200.0	78.2	77.0	21.80	-4,553.9	94.7	1,778.7	1,689.1	89.58	19.856	
15,700.0	11,850.0	14,186.0	10,200.0	79.4	78.3	21.80	-4,653.9	95.5	1,778.7	1,687.6	91.07	19.530	
15,800.0	11,850.0	14,286.0	10,200.0	80.6	79.6	21.80	-4,753.9	96.3	1,778.6	1,686.1	92.58	19.211	
15,900.0	11,850.0	14,386.0	10,200.0	81.8	80.9	21.80	-4,853.9	97.1	1,778.6	1,684.5	94.10	18.901	
16,000.0	11,850.0	14,486.0	10,200.0	83.1	82.2	21.80	-4,953.9	97.8	1,778.6	1,683.0	95.63	18.598	
16,100.0	11,850.0	14,586.0	10,200.0	84.3	83.5	21.80	-5,053.9	98.6	1,778.6	1,681.5	97.17	18.304	
16,200.0	11,850.0	14,686.0	10,200.0	85.6	84.8	21.80	-5,153.9	99.4	1,778.6	1,679.9	98.72	18.017	
16,300.0	11,850.0	14,786.0	10,200.0	86.8	86.1	21.80	-5,253.9	100.2	1,778.6	1,678.3	100.28	17.737	
16,400.0	11,850.0	14,886.0	10,200.0	88.1	87.5	21.80	-5,353.9	101.0	1,778.6	1,676.8	101.85	17.464	
16,500.0	11,850.0	14,986.0	10,200.0	89.3	88.8	21.80	-5,453.9	101.8	1,778.6	1,675.2	103.42	17.198	
16,600.0	11,850.0	15,086.0	10,200.0	90.6	90.1	21.80	-5,553.9	102.6	1,778.6	1,673.6	105.00	16.939	
16,700.0	11,850.0	15,186.0	10,200.0	91.9	91.4	21.80	-5,653.9	103.3	1,778.6	1,672.0	106.59	16.687	
16,800.0	11,850.0	15,286.0	10,200.0	93.2	92.8	21.80	-5,753.9	104.1	1,778.6	1,670.4	108.18	16.441	
16,900.0	11,850.0	15,386.0	10,200.0	94.4	94.1	21.80	-5,853.9	104.9	1,778.6	1,668.8	109.79	16.201	
17,000.0	11,850.0	15,486.0	10,200.0	95.7	95.5	21.80	-5,953.9	105.7	1,778.6	1,667.2	111.39	15.967	
17,100.0	11,850.0	15,586.0	10,200.0	97.0	96.8	21.80	-6,053.9	106.5	1,778.6	1,665.6	113.01	15.739	
17,200.0	11,850.0	15,686.0	10,200.0	98.3	98.1	21.80	-6,153.8	107.3	1,778.6	1,664.0	114.63	15.516	
17,300.0	11,850.0	15,786.0	10,200.0	99.6	99.5	21.80	-6,253.8	108.1	1,778.6	1,662.3	116.25	15.299	
17,400.0	11,850.0	15,886.0	10,200.0	100.9	100.8	21.80	-6,353.8	108.8	1,778.6	1,660.7	117.89	15.087	
17,500.0	11,850.0	15,986.0	10,200.0	102.2	102.2	21.80	-6,453.8	109.6	1,778.6	1,659.1	119.52	14.881	
17,600.0	11,850.0	16,086.0	10,200.0	103.6	103.6	21.80	-6,553.8	110.4	1,778.6	1,657.4	121.16	14.679	
17,700.0	11,850.0	16,186.0	10,200.0	104.9	104.9	21.80	-6,653.8	111.2	1,778.6	1,655.8	122.81	14.482	
17,800.0	11,850.0	16,286.0	10,200.0	106.2	106.3	21.80	-6,753.8	112.0	1,778.6	1,654.1	124.46	14.290	
17,900.0	11,850.0	16,386.0	10,200.0	107.5	107.6	21.80	-6,853.8	112.8	1,778.6	1,652.5	126.11	14.103	
18,000.0	11,850.0	16,486.0	10,200.0	108.8	109.0	21.80	-6,953.8	113.6	1,778.6	1,650.8	127.77	13.920	
18,100.0	11,850.0	16,586.0	10,200.0	110.2	110.4	21.80	-7,053.8	114.4	1,778.6	1,649.1	129.44	13.741	
18,200.0	11,850.0	16,686.0	10,200.0	111.5	111.8	21.80	-7,153.8	115.1	1,778.6	1,647.5	131.10	13.566	
18,300.0	11,850.0	16,786.0	10,200.0	112.8	113.1	21.80	-7,253.8	115.9	1,778.6	1,645.8	132.77	13.395	
18,400.0	11,850.0	16,886.0	10,200.0	114.2	114.5	21.80	-7,353.8	116.7	1,778.5	1,644.1	134.45	13.229	
18,500.0	11,850.0	16,986.0	10,200.0	115.5	115.9	21.80	-7,453.8	117.5	1,778.5	1,642.4	136.12	13.066	
18,600.0	11,850.0	17,086.0	10,200.0	116.9	117.3	21.80	-7,553.8	118.3	1,778.5	1,640.7	137.81	12.906	
18,700.0	11,850.0	17,186.0	10,200.0	118.2	118.6	21.80	-7,653.8	119.1	1,778.5	1,639.0	139.49	12.750	
18,800.0	11,850.0	17,286.0	10,200.0	119.6	120.0	21.80	-7,753.8	119.9	1,778.5	1,637.4	141.18	12.598	
18,900.0	11,850.0	17,386.0	10,200.0	120.9	121.4	21.79	-7,853.8	120.6	1,778.5	1,635.7	142.87	12.449	
19,000.0	11,850.0	17,486.0	10,200.0	122.3	122.8	21.79	-7,953.8	121.4	1,778.5	1,634.0	144.56	12.303	
19,100.0	11,850.0	17,586.0	10,200.0	123.6	124.2	21.79	-8,053.8	122.2	1,778.5	1,632.3	146.25	12.160	
19,200.0	11,850.0	17,686.0	10,200.0	125.0	125.6	21.79	-8,153.8	123.0	1,778.5	1,630.6	147.95	12.021	
19,300.0	11,850.0	17,786.0	10,200.0	126.3	126.9	21.79	-8,253.8	123.8	1,778.5	1,628.9	149.65	11.884	
19,400.0	11,850.0	17,886.0	10,200.0	127.7	128.3	21.79	-8,353.8	124.6	1,778.5	1,627.2	151.36	11.750	
19,500.0	11,850.0	17,986.0	10,200.0	129.1	129.7	21.79	-8,453.8	125.4	1,778.5	1,625.4	153.06	11.619	
19,600.0	11,850.0	18,086.0	10,200.0	130.4	131.1	21.79	-8,553.8	126.1	1,778.5	1,623.7	154.77	11.491	
19,700.0	11,850.0	18,186.0	10,200.0	131.8	132.5	21.79	-8,653.8	126.9	1,778.5	1,622.0	156.48	11.365	
19,800.0	11,850.0	18,286.0	10,200.0	133.2	133.9	21.79	-8,753.8	127.7	1,778.5	1,620.3	158.20	11.242	
19,900.0	11,850.0	18,386.0	10,200.0	134.5	135.3	21.79	-8,853.8	128.5	1,778.5	1,618.6	159.91	11.122	
20,000.0	11,850.0	18,486.0	10,200.0	135.9	136.7	21.79	-8,953.8	129.3	1,778.5	1,616.9	161.63	11.004	
20,100.0	11,850.0	18,586.0	10,200.0	137.3	138.1	21.79	-9,053.8	130.1	1,778.5	1,615.1	163.35	10.888	
20,200.0	11,850.0	18,686.0	10,200.0	138.6	139.5	21.79	-9,153.8	130.9	1,778.5	1,613.4	165.07	10.774	
20,300.0	11,850.0	18,786.0	10,200.0	140.0	140.9	21.79	-9,253.8	131.7	1,778.5	1,611.7	166.79	10.663	
20,400.0	11,850.0	18,886.0	10,200.0	141.4	142.3	21.79	-9,353.8	132.4	1,778.5	1,610.0	168.51	10.554	
20,500.0	11,850.0	18,986.0	10,200.0	142.8	143.7	21.79	-9,453.7	133.2	1,778.5	1,608.2	170.24	10.447	
20,600.0	11,850.0	19,086.0	10,200.0	144.2	145.1	21.79	-9,553.7	134.0	1,778.5	1,606.5	171.97	10.342	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 008H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,700.0	11,850.0	19,186.0	10,200.0	145.5	146.5	21.79	-9,653.7	134.8	1,778.5	1,604.8	173.70	10.239	
20,800.0	11,850.0	19,286.0	10,200.0	146.9	147.9	21.79	-9,753.7	135.6	1,778.5	1,603.0	175.43	10.138	
20,900.0	11,850.0	19,386.0	10,200.0	148.3	149.3	21.79	-9,853.7	136.4	1,778.5	1,601.3	177.16	10.039	
21,000.0	11,850.0	19,486.0	10,200.0	149.7	150.7	21.79	-9,953.7	137.2	1,778.4	1,599.6	178.89	9.941	
21,100.0	11,850.0	19,586.0	10,200.0	151.1	152.1	21.79	-10,053.7	137.9	1,778.4	1,597.8	180.63	9.846	
21,200.0	11,850.0	19,686.0	10,200.0	152.5	153.5	21.79	-10,153.7	138.7	1,778.4	1,596.1	182.37	9.752	
21,300.0	11,850.0	19,786.0	10,200.0	153.9	154.9	21.79	-10,253.7	139.5	1,778.4	1,594.3	184.11	9.660	
21,400.0	11,850.0	19,886.0	10,200.0	155.2	156.4	21.79	-10,353.7	140.3	1,778.4	1,592.6	185.84	9.569	
21,500.0	11,850.0	19,986.0	10,200.0	156.6	157.8	21.79	-10,453.7	141.1	1,778.4	1,590.8	187.59	9.481	
21,600.0	11,850.0	20,086.0	10,200.0	158.0	159.2	21.79	-10,553.7	141.9	1,778.4	1,589.1	189.33	9.393	
21,700.0	11,850.0	20,186.0	10,200.0	159.4	160.6	21.79	-10,653.7	142.7	1,778.4	1,587.4	191.07	9.308	
21,800.0	11,850.0	20,286.0	10,200.0	160.8	162.0	21.79	-10,753.7	143.4	1,778.4	1,585.6	192.82	9.223	
21,900.0	11,850.0	20,386.0	10,200.0	162.2	163.4	21.79	-10,853.7	144.2	1,778.4	1,583.9	194.56	9.141	
22,000.0	11,850.0	20,486.0	10,200.0	163.6	164.8	21.79	-10,953.7	145.0	1,778.4	1,582.1	196.31	9.059	
22,100.0	11,850.0	20,586.0	10,200.0	165.0	166.2	21.78	-11,053.7	145.8	1,778.4	1,580.3	198.06	8.979	
22,105.9	11,850.0	20,591.9	10,200.0	165.1	166.3	21.78	-11,059.6	145.9	1,778.4	1,580.2	198.16	8.975	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 303H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.96	-0.7	-40.0	40.0				
100.0	100.0	98.7	98.7	0.1	0.1	-90.96	-0.7	-40.0	40.0	39.7	0.26	152.737	
200.0	200.0	198.7	198.7	0.5	0.5	-90.96	-0.7	-40.0	40.0	39.0	0.98	40.974	
300.0	300.0	298.7	298.7	0.8	0.8	-90.96	-0.7	-40.0	40.0	38.3	1.69	23.620	
400.0	400.0	398.7	398.7	1.2	1.2	-90.96	-0.7	-40.0	40.0	37.6	2.41	16.592	
500.0	500.0	498.7	498.7	1.6	1.6	-90.96	-0.7	-40.0	40.0	36.9	3.13	12.787	
600.0	600.0	598.7	598.7	1.9	1.9	-90.96	-0.7	-40.0	40.0	36.1	3.84	10.402	
700.0	700.0	698.7	698.7	2.3	2.3	-90.96	-0.7	-40.0	40.0	35.4	4.56	8.767	
800.0	800.0	798.7	798.7	2.6	2.6	-90.96	-0.7	-40.0	40.0	34.7	5.28	7.576	
900.0	900.0	898.7	898.7	3.0	3.0	-90.96	-0.7	-40.0	40.0	34.0	5.99	6.670	
1,000.0	1,000.0	998.7	998.7	3.4	3.4	-90.96	-0.7	-40.0	40.0	33.3	6.71	5.957	
1,100.0	1,100.0	1,098.7	1,098.7	3.7	3.7	-90.96	-0.7	-40.0	40.0	32.6	7.43	5.382	
1,200.0	1,200.0	1,198.7	1,198.7	4.1	4.1	-90.96	-0.7	-40.0	40.0	31.8	8.15	4.909	
1,300.0	1,300.0	1,298.7	1,298.7	4.4	4.4	-90.96	-0.7	-40.0	40.0	31.1	8.86	4.511	
1,400.0	1,400.0	1,398.7	1,398.7	4.8	4.8	-90.96	-0.7	-40.0	40.0	30.4	9.58	4.174	
1,500.0	1,500.0	1,498.7	1,498.7	5.2	5.1	-90.96	-0.7	-40.0	40.0	29.7	10.30	3.883	
1,600.0	1,600.0	1,598.7	1,598.7	5.5	5.5	-90.96	-0.7	-40.0	40.0	29.0	11.01	3.630	
1,700.0	1,700.0	1,698.7	1,698.7	5.9	5.9	-90.96	-0.7	-40.0	40.0	28.3	11.73	3.408	
1,800.0	1,800.0	1,798.7	1,798.7	6.2	6.2	-90.96	-0.7	-40.0	40.0	27.5	12.45	3.212	
1,900.0	1,900.0	1,898.7	1,898.7	6.6	6.6	-90.96	-0.7	-40.0	40.0	26.8	13.16	3.037	
2,000.0	2,000.0	1,998.7	1,998.7	6.9	6.9	-90.96	-0.7	-40.0	40.0	26.1	13.88	2.880	CC, ES
2,100.0	2,100.0	2,098.9	2,098.9	7.3	7.3	136.66	-2.4	-39.7	41.0	26.5	14.56	2.817	SF
2,200.0	2,199.8	2,199.0	2,198.8	7.6	7.6	134.59	-7.5	-38.9	44.2	29.0	15.22	2.903	
2,300.0	2,299.5	2,298.9	2,298.4	8.0	7.9	131.69	-16.1	-37.5	49.5	33.7	15.88	3.120	
2,400.0	2,398.9	2,398.7	2,397.4	8.3	8.3	127.58	-27.8	-35.6	56.2	39.7	16.55	3.398	
2,500.0	2,498.3	2,498.3	2,496.3	8.6	8.6	123.65	-40.4	-33.6	63.2	46.0	17.22	3.670	
2,600.0	2,597.7	2,598.0	2,595.1	9.0	8.9	120.51	-52.9	-31.5	70.4	52.5	17.91	3.933	
2,700.0	2,697.2	2,697.7	2,694.0	9.3	9.3	117.96	-65.5	-29.5	77.8	59.2	18.60	4.184	
2,800.0	2,796.6	2,797.4	2,792.8	9.7	9.6	115.85	-78.0	-27.5	85.3	66.0	19.30	4.421	
2,900.0	2,896.0	2,897.0	2,891.7	10.0	10.0	114.09	-90.6	-25.5	93.0	72.9	20.01	4.646	
3,000.0	2,995.5	2,996.7	2,990.6	10.4	10.3	112.59	-103.1	-23.5	100.6	79.9	20.72	4.858	
3,100.0	3,094.9	3,096.4	3,089.4	10.8	10.7	111.31	-115.7	-21.4	108.4	87.0	21.44	5.057	
3,200.0	3,194.3	3,196.0	3,188.3	11.1	11.1	110.20	-128.2	-19.4	116.2	94.0	22.16	5.244	
3,300.0	3,293.8	3,295.7	3,287.1	11.5	11.4	109.23	-140.8	-17.4	124.0	101.1	22.88	5.420	
3,400.0	3,393.2	3,395.4	3,386.0	11.9	11.8	108.38	-153.3	-15.4	131.9	108.3	23.61	5.586	
3,500.0	3,492.6	3,495.1	3,484.8	12.2	12.2	107.62	-165.9	-13.3	139.8	115.4	24.34	5.742	
3,600.0	3,592.1	3,594.7	3,583.7	12.6	12.6	106.94	-178.4	-11.3	147.7	122.6	25.08	5.889	
3,700.0	3,691.5	3,694.4	3,682.6	13.0	12.9	106.33	-191.0	-9.3	155.6	129.8	25.81	6.029	
3,800.0	3,790.9	3,794.1	3,781.4	13.3	13.3	105.78	-203.5	-7.3	163.6	137.0	26.55	6.160	
3,900.0	3,890.4	3,893.7	3,880.3	13.7	13.7	105.28	-216.1	-5.2	171.5	144.2	27.29	6.284	
4,000.0	3,989.8	3,993.4	3,979.1	14.1	14.1	104.83	-228.6	-3.2	179.5	151.4	28.04	6.402	
4,100.0	4,089.2	4,093.1	4,078.0	14.4	14.4	104.41	-241.2	-1.2	187.5	158.7	28.78	6.513	
4,200.0	4,188.7	4,192.8	4,176.9	14.8	14.8	104.03	-253.7	0.8	195.5	165.9	29.53	6.619	
4,300.0	4,288.1	4,292.4	4,275.7	15.2	15.2	103.68	-266.3	2.8	203.4	173.2	30.28	6.719	
4,400.0	4,387.5	4,392.1	4,374.6	15.6	15.6	103.36	-278.8	4.9	211.5	180.4	31.03	6.815	
4,500.0	4,487.0	4,491.8	4,473.4	15.9	16.0	103.05	-291.4	6.9	219.5	187.7	31.78	6.906	
4,600.0	4,586.4	4,591.5	4,572.3	16.3	16.3	102.77	-303.9	8.9	227.5	194.9	32.53	6.992	
4,700.0	4,685.8	4,691.1	4,671.1	16.7	16.7	102.51	-316.5	10.9	235.5	202.2	33.29	7.075	
4,800.0	4,785.3	4,790.8	4,770.0	17.1	17.1	102.27	-329.0	13.0	243.5	209.5	34.04	7.154	
4,900.0	4,884.7	4,890.5	4,868.9	17.5	17.5	102.04	-341.6	15.0	251.6	216.8	34.80	7.229	
5,000.0	4,984.1	4,990.1	4,967.7	17.8	17.9	101.83	-354.1	17.0	259.6	224.0	35.56	7.301	
5,100.0	5,083.5	5,089.8	5,066.6	18.2	18.3	101.63	-366.7	19.0	267.6	231.3	36.31	7.370	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 303H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,183.0	5,189.5	5,165.4	18.6	18.7	101.44	-379.2	21.1	275.7	238.6	37.07	7.436	
5,300.0	5,282.4	5,289.2	5,264.3	19.0	19.1	101.26	-391.8	23.1	283.7	245.9	37.83	7.499	
5,400.0	5,381.8	5,388.8	5,363.2	19.4	19.4	101.09	-404.3	25.1	291.8	253.2	38.59	7.560	
5,500.0	5,481.3	5,488.5	5,462.0	19.7	19.8	100.93	-416.9	27.1	299.8	260.5	39.35	7.618	
5,600.0	5,580.7	5,588.2	5,560.9	20.1	20.2	100.78	-429.4	29.2	307.9	267.7	40.12	7.674	
5,700.0	5,680.1	5,687.8	5,659.7	20.5	20.6	100.63	-442.0	31.2	315.9	275.0	40.88	7.728	
5,800.0	5,779.6	5,787.5	5,758.6	20.9	21.0	100.50	-454.5	33.2	324.0	282.3	41.64	7.780	
5,900.0	5,879.0	5,887.2	5,857.4	21.3	21.4	100.37	-467.1	35.2	332.0	289.6	42.41	7.830	
6,000.0	5,978.4	5,986.9	5,956.3	21.6	21.8	100.24	-479.6	37.2	340.1	296.9	43.17	7.878	
6,100.0	6,077.9	6,086.5	6,055.2	22.0	22.2	100.12	-492.2	39.3	348.1	304.2	43.93	7.924	
6,200.0	6,177.3	6,186.2	6,154.0	22.4	22.6	100.01	-504.7	41.3	356.2	311.5	44.70	7.969	
6,300.0	6,276.7	6,285.9	6,252.9	22.8	23.0	99.90	-517.3	43.3	364.3	318.8	45.46	8.012	
6,400.0	6,376.2	6,385.6	6,351.7	23.2	23.4	99.80	-529.8	45.3	372.3	326.1	46.23	8.053	
6,500.0	6,475.6	6,485.2	6,450.6	23.6	23.7	99.70	-542.4	47.4	380.4	333.4	47.00	8.094	
6,600.0	6,575.0	6,584.9	6,549.5	23.9	24.1	99.61	-554.9	49.4	388.4	340.7	47.76	8.133	
6,700.0	6,674.5	6,684.6	6,648.3	24.3	24.5	99.52	-567.5	51.4	396.5	348.0	48.53	8.170	
6,800.0	6,773.9	6,784.2	6,747.2	24.7	24.9	99.43	-580.0	53.4	404.6	355.3	49.30	8.207	
6,900.0	6,873.3	6,883.9	6,846.0	25.1	25.3	99.34	-592.6	55.5	412.6	362.6	50.07	8.242	
7,000.0	6,972.8	6,983.6	6,944.9	25.5	25.7	99.26	-605.1	57.5	420.7	369.9	50.83	8.276	
7,100.0	7,072.2	7,083.3	7,043.7	25.9	26.1	99.19	-617.7	59.5	428.8	377.2	51.60	8.309	
7,200.0	7,171.6	7,183.6	7,143.3	26.2	26.5	99.11	-630.3	61.5	436.9	384.5	52.38	8.341	
7,300.0	7,271.1	7,291.6	7,250.6	26.6	26.9	99.30	-641.6	63.4	443.8	390.6	53.20	8.342	
7,400.0	7,370.5	7,399.6	7,358.4	27.0	27.3	99.93	-648.8	64.5	449.0	395.0	54.01	8.314	
7,500.0	7,469.9	7,507.4	7,466.1	27.4	27.7	101.00	-652.1	65.1	452.4	397.6	54.78	8.258	
7,600.0	7,569.3	7,609.3	7,568.0	27.8	28.0	102.32	-652.3	65.1	454.7	399.1	55.51	8.191	
7,700.0	7,668.8	7,708.7	7,667.5	28.2	28.3	103.62	-652.3	65.1	457.1	400.8	56.23	8.129	
7,800.0	7,768.2	7,808.2	7,766.9	28.6	28.7	104.90	-652.3	65.1	459.7	402.8	56.94	8.073	
7,900.0	7,867.6	7,907.6	7,866.3	28.9	29.0	106.17	-652.3	65.1	462.6	404.9	57.65	8.023	
8,000.0	7,967.1	8,007.0	7,965.8	29.3	29.3	107.42	-652.3	65.1	465.7	407.3	58.37	7.978	
8,100.0	8,066.5	8,106.5	8,065.2	29.7	29.6	108.65	-652.3	65.1	469.0	409.9	59.08	7.938	
8,200.0	8,165.9	8,205.9	8,164.6	30.1	29.9	109.87	-652.3	65.1	472.5	412.7	59.78	7.904	
8,300.0	8,265.4	8,305.3	8,264.1	30.5	30.2	111.07	-652.3	65.1	476.2	415.7	60.49	7.873	
8,400.0	8,364.8	8,400.0	8,358.7	30.9	30.6	112.19	-652.3	65.1	480.2	419.0	61.17	7.850	
8,500.0	8,464.2	8,475.0	8,433.4	31.2	30.8	112.37	-658.9	65.1	488.0	426.2	61.74	7.904	
8,600.0	8,563.7	8,539.4	8,496.0	31.6	31.1	111.53	-673.7	65.3	501.9	439.9	62.04	8.090	
8,700.0	8,663.1	8,600.0	8,552.6	32.0	31.4	109.99	-695.3	65.4	522.5	460.4	62.06	8.419	
8,800.0	8,762.5	8,660.8	8,606.2	32.4	31.7	107.81	-724.0	65.6	550.2	488.3	61.85	8.895	
8,900.0	8,862.0	8,712.1	8,648.2	32.8	32.0	105.57	-753.3	65.9	585.5	524.3	61.17	9.572	
9,000.0	8,961.4	8,757.0	8,682.3	33.2	32.2	103.40	-782.5	66.1	628.4	568.3	60.11	10.455	
9,100.0	9,060.8	8,800.0	8,712.2	33.6	32.5	101.18	-813.4	66.3	678.7	619.8	58.90	11.522	
9,200.0	9,160.3	8,825.0	8,728.2	33.9	32.7	99.85	-832.6	66.5	735.5	678.4	57.09	12.884	
9,300.0	9,259.7	8,858.7	8,748.2	34.3	32.9	98.03	-859.6	66.7	798.2	742.6	55.68	14.337	
9,400.0	9,359.1	8,883.9	8,762.0	34.7	33.0	96.67	-880.8	66.9	866.0	811.9	54.14	15.997	
9,500.0	9,458.6	8,900.0	8,770.1	35.1	33.1	95.80	-894.7	67.0	938.2	885.7	52.51	17.869	
9,600.0	9,558.0	8,925.0	8,781.9	35.5	33.3	94.45	-916.8	67.1	1,013.9	962.6	51.36	19.743	
9,700.0	9,657.4	8,950.0	8,792.4	35.9	33.5	93.13	-939.4	67.3	1,092.8	1,042.4	50.38	21.690	
9,800.0	9,756.9	8,950.0	8,792.4	36.3	33.5	93.13	-939.4	67.3	1,174.2	1,125.3	48.93	23.997	
9,900.0	9,856.3	8,975.0	8,801.8	36.7	33.6	91.82	-962.6	67.5	1,257.8	1,209.4	48.30	26.038	
10,000.0	9,955.7	8,975.0	8,801.8	37.0	33.6	91.82	-962.6	67.5	1,343.2	1,296.0	47.24	28.437	
10,100.0	10,055.1	9,000.0	8,809.9	37.4	33.8	90.54	-986.2	67.7	1,430.2	1,383.3	46.87	30.516	
10,200.0	10,154.6	9,000.0	8,809.9	37.8	33.8	90.54	-986.2	67.7	1,518.5	1,472.4	46.09	32.945	
10,300.0	10,254.0	9,011.4	8,813.2	38.2	33.9	89.97	-997.1	67.8	1,608.0	1,562.3	45.66	35.214	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 303H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.0	10,353.4	9,025.0	8,816.8	38.6	34.0	89.29	-1,010.2	67.9	1,698.5	1,653.2	45.36	37.444	
10,500.0	10,452.9	9,025.0	8,816.8	39.0	34.0	89.29	-1,010.2	67.9	1,789.9	1,745.0	44.91	39.851	
10,600.0	10,552.3	9,025.0	8,816.8	39.4	34.0	89.29	-1,010.2	67.9	1,882.1	1,837.6	44.56	42.240	
10,700.0	10,651.7	9,039.4	8,820.2	39.7	34.1	88.59	-1,024.2	68.0	1,974.8	1,930.3	44.48	44.393	
10,800.0	10,751.2	9,050.0	8,822.4	40.1	34.1	88.08	-1,034.6	68.1	2,068.3	2,023.8	44.41	46.575	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 304H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.8	1.8	0.0	0.0	89.11	0.6	40.1	40.1				
100.0	100.0	101.8	101.8	0.1	0.1	89.11	0.6	40.1	40.1	39.8	0.27	148.419	
200.0	200.0	201.8	201.8	0.5	0.5	89.11	0.6	40.1	40.1	39.1	0.99	40.596	
300.0	300.0	301.8	301.8	0.8	0.9	89.11	0.6	40.1	40.1	38.4	1.70	23.514	
400.0	400.0	401.8	401.8	1.2	1.2	89.11	0.6	40.1	40.1	37.6	2.42	16.550	
500.0	500.0	501.8	501.8	1.6	1.6	89.11	0.6	40.1	40.1	36.9	3.14	12.768	
600.0	600.0	601.8	601.8	1.9	1.9	89.11	0.6	40.1	40.1	36.2	3.85	10.393	
700.0	700.0	701.8	701.8	2.3	2.3	89.11	0.6	40.1	40.1	35.5	4.57	8.763	
800.0	800.0	801.8	801.8	2.6	2.6	89.11	0.6	40.1	40.1	34.8	5.29	7.575	
900.0	900.0	901.8	901.8	3.0	3.0	89.11	0.6	40.1	40.1	34.1	6.01	6.671	
1,000.0	1,000.0	1,001.8	1,001.8	3.4	3.4	89.11	0.6	40.1	40.1	33.3	6.72	5.960	
1,100.0	1,100.0	1,101.8	1,101.8	3.7	3.7	89.11	0.6	40.1	40.1	32.6	7.44	5.385	
1,200.0	1,200.0	1,201.8	1,201.8	4.1	4.1	89.11	0.6	40.1	40.1	31.9	8.16	4.912	
1,300.0	1,300.0	1,301.8	1,301.8	4.4	4.4	89.11	0.6	40.1	40.1	31.2	8.87	4.515	
1,400.0	1,400.0	1,401.8	1,401.8	4.8	4.8	89.11	0.6	40.1	40.1	30.5	9.59	4.177	
1,500.0	1,500.0	1,501.8	1,501.8	5.2	5.2	89.11	0.6	40.1	40.1	29.8	10.31	3.887	
1,600.0	1,600.0	1,601.8	1,601.8	5.5	5.5	89.11	0.6	40.1	40.1	29.0	11.02	3.634	
1,700.0	1,700.0	1,701.8	1,701.8	5.9	5.9	89.11	0.6	40.1	40.1	28.3	11.74	3.412	
1,800.0	1,800.0	1,801.8	1,801.8	6.2	6.2	89.11	0.6	40.1	40.1	27.6	12.46	3.216	
1,900.0	1,900.0	1,901.8	1,901.8	6.6	6.6	89.11	0.6	40.1	40.1	26.9	13.17	3.041	
1,916.1	1,916.1	1,917.9	1,917.9	6.6	6.6	89.11	0.6	40.1	40.1	26.8	13.29	3.015 CC	
2,000.0	2,000.0	2,001.8	2,001.8	6.9	6.9	89.11	0.6	40.1	40.1	26.2	13.89	2.884	
2,000.0	2,000.0	2,001.8	2,001.8	6.9	6.9	89.11	0.6	40.1	40.1	26.2	13.89	2.884	
2,100.0	2,100.0	2,100.0	2,100.0	7.3	7.3	-43.09	-0.1	41.6	40.4	25.8	14.56	2.773 ES	
2,200.0	2,199.8	2,199.3	2,199.1	7.6	7.6	-44.75	-2.3	46.3	41.2	26.0	15.21	2.711	
2,300.0	2,299.5	2,298.0	2,297.5	8.0	8.0	-47.38	-6.0	54.0	42.7	26.9	15.85	2.695 SF	
2,400.0	2,398.9	2,396.6	2,395.4	8.3	8.3	-49.31	-11.1	64.8	45.9	29.4	16.48	2.785	
2,500.0	2,498.3	2,495.1	2,492.6	8.6	8.6	-48.86	-17.7	78.6	52.0	34.9	17.11	3.039	
2,600.0	2,597.7	2,593.0	2,588.8	9.0	9.0	-46.81	-25.6	95.3	61.0	43.3	17.72	3.442	
2,700.0	2,697.2	2,690.2	2,683.6	9.3	9.4	-44.01	-34.9	114.8	73.0	54.7	18.30	3.990	
2,800.0	2,796.6	2,787.3	2,777.5	9.7	9.7	-41.09	-45.4	137.1	88.1	69.2	18.90	4.661	
2,900.0	2,896.0	2,886.0	2,872.7	10.0	10.1	-38.81	-56.5	160.4	104.1	84.5	19.58	5.317	
3,000.0	2,995.5	2,984.6	2,967.9	10.4	10.5	-37.13	-67.6	183.7	120.2	100.0	20.27	5.932	
3,100.0	3,094.9	3,083.2	3,063.1	10.8	11.0	-35.86	-78.7	207.1	136.5	115.5	20.97	6.508	
3,200.0	3,194.3	3,181.9	3,158.3	11.1	11.4	-34.85	-89.7	230.4	152.7	131.0	21.67	7.046	
3,300.0	3,293.8	3,280.5	3,253.4	11.5	11.8	-34.04	-100.8	253.7	169.0	146.6	22.38	7.551	
3,400.0	3,393.2	3,379.1	3,348.6	11.9	12.2	-33.37	-111.9	277.1	185.3	162.2	23.10	8.024	
3,500.0	3,492.6	3,477.8	3,443.8	12.2	12.7	-32.81	-123.0	300.4	201.7	177.9	23.82	8.469	
3,600.0	3,592.1	3,576.4	3,539.0	12.6	13.1	-32.33	-134.1	323.7	218.1	193.5	24.54	8.886	
3,700.0	3,691.5	3,675.0	3,634.2	13.0	13.6	-31.92	-145.1	347.1	234.4	209.2	25.26	9.280	
3,800.0	3,790.9	3,773.7	3,729.4	13.3	14.0	-31.56	-156.2	370.4	250.8	224.8	25.99	9.650	
3,900.0	3,890.4	3,872.3	3,824.6	13.7	14.5	-31.25	-167.3	393.8	267.2	240.5	26.72	10.000	
4,000.0	3,989.8	3,971.0	3,919.8	14.1	15.0	-30.97	-178.4	417.1	283.6	256.2	27.45	10.330	
4,100.0	4,089.2	4,069.6	4,015.0	14.4	15.4	-30.73	-189.5	440.4	300.0	271.8	28.19	10.642	
4,200.0	4,188.7	4,168.2	4,110.2	14.8	15.9	-30.51	-200.5	463.8	316.4	287.5	28.93	10.938	
4,300.0	4,288.1	4,266.9	4,205.4	15.2	16.4	-30.31	-211.6	487.1	332.8	303.2	29.67	11.219	
4,400.0	4,387.5	4,365.5	4,300.6	15.6	16.9	-30.13	-222.7	510.4	349.3	318.8	30.41	11.486	
4,500.0	4,487.0	4,464.1	4,395.8	15.9	17.3	-29.96	-233.8	533.8	365.7	334.5	31.15	11.739	
4,600.0	4,586.4	4,562.8	4,491.0	16.3	17.8	-29.81	-244.9	557.1	382.1	350.2	31.89	11.980	
4,700.0	4,685.8	4,661.4	4,586.2	16.7	18.3	-29.68	-255.9	580.4	398.5	365.9	32.64	12.210	
4,800.0	4,785.3	4,760.1	4,681.4	17.1	18.8	-29.55	-267.0	603.8	415.0	381.6	33.39	12.429	
4,900.0	4,884.7	4,858.7	4,776.6	17.5	19.3	-29.43	-278.1	627.1	431.4	397.3	34.13	12.638	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 304H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,984.1	4,957.3	4,871.8	17.8	19.8	-29.32	-289.2	650.5	447.8	412.9	34.88	12.838	
5,100.0	5,083.5	5,056.0	4,966.9	18.2	20.2	-29.22	-300.2	673.8	464.3	428.6	35.63	13.029	
5,200.0	5,183.0	5,154.6	5,062.1	18.6	20.7	-29.13	-311.3	697.1	480.7	444.3	36.38	13.211	
5,300.0	5,282.4	5,253.2	5,157.3	19.0	21.2	-29.04	-322.4	720.5	497.1	460.0	37.14	13.386	
5,400.0	5,381.8	5,351.9	5,252.5	19.4	21.7	-28.96	-333.5	743.8	513.6	475.7	37.89	13.554	
5,500.0	5,481.3	5,450.5	5,347.7	19.7	22.2	-28.88	-344.6	767.1	530.0	491.4	38.64	13.715	
5,600.0	5,580.7	5,549.2	5,442.9	20.1	22.7	-28.81	-355.6	790.5	546.4	507.0	39.40	13.870	
5,700.0	5,680.1	5,647.8	5,538.1	20.5	23.2	-28.74	-366.7	813.8	562.9	522.7	40.15	14.019	
5,800.0	5,779.6	5,746.4	5,633.3	20.9	23.7	-28.68	-377.8	837.1	579.3	538.4	40.91	14.161	
5,900.0	5,879.0	5,845.1	5,728.5	21.3	24.2	-28.62	-388.9	860.5	595.8	554.1	41.66	14.299	
6,000.0	5,978.4	5,943.7	5,823.7	21.6	24.7	-28.56	-400.0	883.8	612.2	569.8	42.42	14.431	
6,100.0	6,077.9	6,042.3	5,918.9	22.0	25.2	-28.50	-411.0	907.2	628.6	585.5	43.18	14.559	
6,200.0	6,177.3	6,141.0	6,014.1	22.4	25.7	-28.45	-422.1	930.5	645.1	601.1	43.94	14.682	
6,300.0	6,276.7	6,239.6	6,109.3	22.8	26.2	-28.40	-433.2	953.8	661.5	616.8	44.70	14.800	
6,400.0	6,376.2	6,338.3	6,204.5	23.2	26.7	-28.36	-444.3	977.2	678.0	632.5	45.46	14.915	
6,500.0	6,475.6	6,436.9	6,299.7	23.6	27.2	-28.31	-455.4	1,000.5	694.4	648.2	46.22	15.026	
6,600.0	6,575.0	6,535.5	6,394.9	23.9	27.7	-28.27	-466.4	1,023.8	710.9	663.9	46.98	15.132	
6,700.0	6,674.5	6,634.2	6,490.1	24.3	28.2	-28.23	-477.5	1,047.2	727.3	679.6	47.74	15.236	
6,800.0	6,773.9	6,732.8	6,585.3	24.7	28.7	-28.19	-488.6	1,070.5	743.8	695.3	48.50	15.336	
6,900.0	6,873.3	6,831.4	6,680.4	25.1	29.2	-28.15	-499.7	1,093.8	760.2	710.9	49.26	15.433	
7,000.0	6,972.8	6,930.1	6,775.6	25.5	29.7	-28.12	-510.7	1,117.2	776.6	726.6	50.02	15.526	
7,100.0	7,072.2	7,028.7	6,870.8	25.9	30.2	-28.08	-521.8	1,140.5	793.1	742.3	50.78	15.617	
7,200.0	7,171.6	7,127.4	6,966.0	26.2	30.7	-28.05	-532.9	1,163.9	809.5	758.0	51.55	15.705	
7,300.0	7,271.1	7,226.0	7,061.2	26.6	31.2	-28.02	-544.0	1,187.2	826.0	773.7	52.31	15.790	
7,400.0	7,370.5	7,324.6	7,156.4	27.0	31.7	-27.99	-555.1	1,210.5	842.4	789.4	53.07	15.873	
7,500.0	7,469.9	7,423.3	7,251.6	27.4	32.2	-27.96	-566.1	1,233.9	858.9	805.0	53.84	15.954	
7,600.0	7,569.3	7,521.9	7,346.8	27.8	32.7	-27.93	-577.2	1,257.2	875.3	820.7	54.60	16.032	
7,700.0	7,668.8	7,620.5	7,442.0	28.2	33.2	-27.91	-588.3	1,280.5	891.8	836.4	55.36	16.107	
7,800.0	7,768.2	7,736.6	7,554.2	28.6	33.8	-27.88	-601.1	1,307.5	907.8	851.5	56.30	16.125	
7,900.0	7,867.6	7,881.0	7,695.0	28.9	34.5	-27.93	-614.6	1,336.0	920.0	862.5	57.42	16.020	
8,000.0	7,967.1	8,026.7	7,838.6	29.3	35.1	-28.07	-625.2	1,358.2	927.1	868.7	58.43	15.867	
8,100.0	8,066.5	8,173.0	7,983.9	29.7	35.7	-28.30	-632.6	1,373.8	929.3	870.0	59.31	15.669	
8,200.0	8,165.9	8,319.2	8,129.7	30.1	36.2	-28.63	-636.8	1,382.7	926.6	866.5	60.06	15.427	
8,300.0	8,265.4	8,456.6	8,267.2	30.5	36.6	-29.04	-637.9	1,385.0	918.9	858.2	60.69	15.140	
8,400.0	8,364.8	8,550.0	8,360.5	30.9	36.8	-29.34	-637.9	1,385.0	909.6	848.2	61.42	14.811	
8,500.0	8,464.2	8,625.0	8,435.1	31.2	37.1	-29.16	-644.8	1,385.1	902.4	840.2	62.17	14.514	
8,600.0	8,563.7	8,690.5	8,498.7	31.6	37.3	-28.42	-660.2	1,385.2	898.6	835.7	62.88	14.291	
8,646.3	8,609.7	8,720.6	8,527.1	31.8	37.4	-27.89	-670.2	1,385.3	898.1	834.9	63.17	14.217	
8,700.0	8,663.1	8,750.0	8,554.2	32.0	37.5	-27.27	-681.7	1,385.4	898.8	835.3	63.47	14.159	
8,800.0	8,762.5	8,812.0	8,608.7	32.4	37.7	-25.63	-711.2	1,385.6	903.7	839.8	63.95	14.133	
8,900.0	8,862.0	8,863.3	8,650.5	32.8	38.0	-23.96	-740.7	1,385.8	914.4	850.2	64.21	14.242	
9,000.0	8,961.4	8,908.0	8,684.3	33.2	38.1	-22.30	-770.0	1,386.0	931.5	867.3	64.21	14.507	
9,100.0	9,060.8	8,950.0	8,713.3	33.6	38.3	-20.60	-800.4	1,386.3	955.4	891.4	63.96	14.937	
9,200.0	9,160.3	8,975.0	8,729.3	33.9	38.4	-19.53	-819.6	1,386.4	986.2	922.9	63.30	15.581	
9,300.0	9,259.7	9,009.1	8,749.5	34.3	38.6	-18.02	-847.1	1,386.6	1,023.9	961.3	62.56	16.367	
9,400.0	9,359.1	9,034.2	8,763.0	34.7	38.7	-16.87	-868.2	1,386.8	1,068.1	1,006.5	61.57	17.348	
9,500.0	9,458.6	9,050.0	8,771.0	35.1	38.8	-16.14	-881.8	1,386.9	1,118.3	1,057.9	60.35	18.530	
9,600.0	9,558.0	9,075.0	8,782.6	35.5	38.9	-14.97	-903.9	1,387.1	1,173.9	1,114.6	59.26	19.809	
9,700.0	9,657.4	9,100.0	8,793.1	35.9	39.0	-13.79	-926.6	1,387.3	1,234.5	1,176.3	58.19	21.213	
9,800.0	9,756.9	9,100.0	8,793.1	36.3	39.0	-13.79	-926.6	1,387.3	1,299.3	1,242.5	56.78	22.883	
9,900.0	9,856.3	9,125.0	8,802.4	36.7	39.1	-12.60	-949.9	1,387.4	1,367.8	1,312.0	55.84	24.494	
10,000.0	9,955.7	9,125.0	8,802.4	37.0	39.1	-12.60	-949.9	1,387.4	1,439.8	1,385.2	54.61	26.367	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 304H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,055.1	9,150.0	8,810.4	37.4	39.3	-11.42	-973.5	1,387.6	1,514.6	1,460.7	53.85	28.124	
10,200.0	10,154.6	9,150.0	8,810.4	37.8	39.3	-11.42	-973.5	1,387.6	1,591.9	1,539.0	52.83	30.133	
10,300.0	10,254.0	9,160.8	8,813.5	38.2	39.3	-10.91	-983.9	1,387.7	1,671.4	1,619.3	52.06	32.103	
10,400.0	10,353.4	9,175.0	8,817.2	38.6	39.4	-10.24	-997.6	1,387.8	1,752.9	1,701.5	51.44	34.076	
10,500.0	10,452.9	9,175.0	8,817.2	39.0	39.4	-10.24	-997.6	1,387.8	1,836.1	1,785.3	50.72	36.201	
10,600.0	10,552.3	9,175.0	8,817.2	39.4	39.4	-10.24	-997.6	1,387.8	1,920.8	1,870.7	50.09	38.348	
10,700.0	10,651.7	9,188.6	8,820.4	39.7	39.5	-9.60	-1,010.8	1,387.9	2,006.7	1,957.0	49.71	40.369	
10,800.0	10,751.2	9,200.0	8,822.8	40.1	39.5	-9.07	-1,022.0	1,388.0	2,093.9	2,044.5	49.37	42.410	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 503H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.96	-0.3	-20.0	20.0				
100.0	100.0	99.0	99.0	0.1	0.1	-90.96	-0.3	-20.0	20.0	19.7	0.26	76.308	
200.0	200.0	199.0	199.0	0.5	0.5	-90.96	-0.3	-20.0	20.0	19.0	0.98	20.479	
300.0	300.0	299.0	299.0	0.8	0.8	-90.96	-0.3	-20.0	20.0	18.3	1.69	11.811	
400.0	400.0	399.0	399.0	1.2	1.2	-90.96	-0.3	-20.0	20.0	17.6	2.41	8.298	
500.0	500.0	499.0	499.0	1.6	1.6	-90.96	-0.3	-20.0	20.0	16.9	3.13	6.396	
600.0	600.0	599.0	599.0	1.9	1.9	-90.96	-0.3	-20.0	20.0	16.2	3.84	5.203	
700.0	700.0	699.0	699.0	2.3	2.3	-90.96	-0.3	-20.0	20.0	15.4	4.56	4.386	
800.0	800.0	799.0	799.0	2.6	2.6	-90.96	-0.3	-20.0	20.0	14.7	5.28	3.790	
900.0	900.0	899.0	899.0	3.0	3.0	-90.96	-0.3	-20.0	20.0	14.0	6.00	3.337	
1,000.0	1,000.0	999.0	999.0	3.4	3.4	-90.96	-0.3	-20.0	20.0	13.3	6.71	2.980	
1,100.0	1,100.0	1,099.0	1,099.0	3.7	3.7	-90.96	-0.3	-20.0	20.0	12.6	7.43	2.693	
1,200.0	1,200.0	1,199.0	1,199.0	4.1	4.1	-90.96	-0.3	-20.0	20.0	11.9	8.15	2.456	
1,300.0	1,300.0	1,299.0	1,299.0	4.4	4.4	-90.96	-0.3	-20.0	20.0	11.1	8.86	2.257	
1,400.0	1,400.0	1,399.0	1,399.0	4.8	4.8	-90.96	-0.3	-20.0	20.0	10.4	9.58	2.088	
1,500.0	1,500.0	1,499.0	1,499.0	5.2	5.1	-90.96	-0.3	-20.0	20.0	9.7	10.30	1.943	
1,600.0	1,600.0	1,599.0	1,599.0	5.5	5.5	-90.96	-0.3	-20.0	20.0	9.0	11.01	1.816	
1,700.0	1,700.0	1,699.0	1,699.0	5.9	5.9	-90.96	-0.3	-20.0	20.0	8.3	11.73	1.705	
1,800.0	1,800.0	1,799.0	1,799.0	6.2	6.2	-90.96	-0.3	-20.0	20.0	7.6	12.45	1.607	
1,900.0	1,900.0	1,899.0	1,899.0	6.6	6.6	-90.96	-0.3	-20.0	20.0	6.8	13.16	1.520	
2,000.0	2,000.0	1,999.0	1,999.0	6.9	6.9	-90.96	-0.3	-20.0	20.0	6.1	13.88	1.441	Level 3, CC, ES, SF
2,100.0	2,100.0	2,099.0	2,099.0	7.3	7.3	140.54	-0.3	-20.0	21.3	6.7	14.58	1.462	Level 3
2,200.0	2,199.8	2,198.8	2,198.8	7.6	7.7	147.96	-0.3	-20.0	25.6	10.3	15.27	1.675	
2,300.0	2,299.5	2,299.3	2,299.3	8.0	8.0	154.13	-1.7	-19.0	31.9	16.0	15.94	2.002	
2,400.0	2,398.9	2,400.2	2,400.0	8.3	8.3	156.39	-5.9	-15.8	37.4	20.8	16.59	2.254	
2,500.0	2,498.3	2,501.3	2,500.7	8.6	8.7	155.24	-13.0	-10.6	40.0	22.8	17.23	2.323	
2,600.0	2,597.7	2,602.2	2,600.9	9.0	9.0	151.17	-22.9	-3.2	40.0	22.1	17.89	2.235	
2,700.0	2,697.2	2,702.1	2,699.9	9.3	9.3	145.80	-33.8	4.8	39.2	20.6	18.58	2.108	
2,800.0	2,796.6	2,802.0	2,798.9	9.7	9.7	140.25	-44.6	12.9	38.7	19.4	19.29	2.008	
2,868.7	2,864.9	2,870.7	2,866.9	9.9	9.9	136.38	-52.1	18.4	38.6	18.9	19.78	1.954	
2,900.0	2,896.0	2,902.0	2,897.9	10.0	10.0	134.62	-55.5	21.0	38.7	18.7	20.00	1.933	
3,000.0	2,995.5	3,001.9	2,996.9	10.4	10.4	129.04	-66.3	29.0	39.0	18.2	20.72	1.880	
3,100.0	3,094.9	3,101.8	3,095.9	10.8	10.8	123.58	-77.2	37.1	39.6	18.2	21.46	1.847	
3,200.0	3,194.3	3,201.7	3,194.9	11.1	11.1	118.36	-88.0	45.1	40.6	18.4	22.19	1.831	
3,300.0	3,293.8	3,301.7	3,293.9	11.5	11.5	113.42	-98.9	53.2	42.0	19.0	22.94	1.830	
3,400.0	3,393.2	3,401.6	3,392.9	11.9	11.8	108.82	-109.7	61.3	43.6	19.9	23.68	1.841	
3,500.0	3,492.6	3,501.5	3,491.9	12.2	12.2	104.58	-120.6	69.3	45.5	21.1	24.43	1.862	
3,600.0	3,592.1	3,601.5	3,591.0	12.6	12.6	100.69	-131.4	77.4	47.6	22.4	25.17	1.891	
3,700.0	3,691.5	3,701.4	3,690.0	13.0	13.0	97.15	-142.3	85.4	49.9	24.0	25.92	1.926	
3,800.0	3,790.9	3,801.3	3,789.0	13.3	13.3	93.93	-153.1	93.5	52.4	25.7	26.66	1.965	
3,900.0	3,890.4	3,901.2	3,888.0	13.7	13.7	91.01	-164.0	101.5	55.0	27.6	27.41	2.008	
4,000.0	3,989.8	4,001.2	3,987.0	14.1	14.1	88.37	-174.8	109.6	57.8	29.6	28.15	2.053	
4,100.0	4,089.2	4,101.1	4,086.0	14.4	14.5	85.97	-185.7	117.7	60.7	31.8	28.90	2.100	
4,200.0	4,188.7	4,201.0	4,185.0	14.8	14.9	83.79	-196.5	125.7	63.7	34.0	29.64	2.148	
4,300.0	4,288.1	4,300.9	4,284.0	15.2	15.2	81.81	-207.4	133.8	66.7	36.3	30.38	2.196	
4,400.0	4,387.5	4,400.9	4,383.0	15.6	15.6	80.00	-218.2	141.8	69.8	38.7	31.13	2.244	
4,500.0	4,487.0	4,500.8	4,482.0	15.9	16.0	78.35	-229.1	149.9	73.0	41.2	31.87	2.292	
4,600.0	4,586.4	4,600.7	4,581.1	16.3	16.4	76.84	-239.9	158.0	76.3	43.7	32.61	2.339	
4,700.0	4,685.8	4,700.7	4,680.1	16.7	16.8	75.45	-250.8	166.0	79.6	46.2	33.35	2.386	
4,800.0	4,785.3	4,800.6	4,779.1	17.1	17.2	74.18	-261.6	174.1	82.9	48.8	34.10	2.432	
4,900.0	4,884.7	4,900.5	4,878.1	17.5	17.6	73.00	-272.5	182.1	86.3	51.5	34.84	2.477	
5,000.0	4,984.1	5,000.4	4,977.1	17.8	18.0	71.91	-283.3	190.2	89.7	54.1	35.59	2.521	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 503H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,083.5	5,100.4	5,076.1	18.2	18.3	70.91	-294.2	198.2	93.2	56.8	36.33	2.564	
5,200.0	5,183.0	5,200.3	5,175.1	18.6	18.7	69.97	-305.0	206.3	96.6	59.6	37.07	2.606	
5,300.0	5,282.4	5,300.2	5,274.1	19.0	19.1	69.10	-315.8	214.4	100.1	62.3	37.82	2.647	
5,400.0	5,381.8	5,400.2	5,373.1	19.4	19.5	68.29	-326.7	222.4	103.6	65.1	38.56	2.687	
5,500.0	5,481.3	5,500.1	5,472.1	19.7	19.9	67.53	-337.5	230.5	107.2	67.9	39.31	2.726	
5,600.0	5,580.7	5,600.0	5,571.2	20.1	20.3	66.83	-348.4	238.5	110.7	70.7	40.06	2.764	
5,700.0	5,680.1	5,699.9	5,670.2	20.5	20.7	66.16	-359.2	246.6	114.3	73.5	40.80	2.801	
5,800.0	5,779.6	5,799.9	5,769.2	20.9	21.1	65.54	-370.1	254.7	117.9	76.3	41.55	2.837	
5,900.0	5,879.0	5,899.8	5,868.2	21.3	21.5	64.95	-380.9	262.7	121.5	79.2	42.30	2.872	
6,000.0	5,978.4	5,999.7	5,967.2	21.6	21.9	64.39	-391.8	270.8	125.1	82.0	43.04	2.906	
6,100.0	6,077.9	6,099.6	6,066.2	22.0	22.3	63.87	-402.6	278.8	128.7	84.9	43.79	2.939	
6,200.0	6,177.3	6,199.6	6,165.2	22.4	22.7	63.38	-413.5	286.9	132.3	87.8	44.54	2.971	
6,300.0	6,276.7	6,299.5	6,264.2	22.8	23.1	62.91	-424.3	294.9	136.0	90.7	45.29	3.002	
6,400.0	6,376.2	6,399.4	6,363.2	23.2	23.5	62.47	-435.2	303.0	139.6	93.6	46.03	3.033	
6,500.0	6,475.6	6,499.4	6,462.2	23.6	23.9	62.04	-446.0	311.1	143.3	96.5	46.78	3.062	
6,600.0	6,575.0	6,599.3	6,561.3	23.9	24.3	61.64	-456.9	319.1	146.9	99.4	47.53	3.091	
6,700.0	6,674.5	6,699.2	6,660.3	24.3	24.7	61.26	-467.7	327.2	150.6	102.3	48.28	3.119	
6,800.0	6,773.9	6,799.1	6,759.3	24.7	25.1	60.90	-478.6	335.2	154.3	105.2	49.03	3.147	
6,900.0	6,873.3	6,899.1	6,858.3	25.1	25.5	60.56	-489.4	343.3	158.0	108.2	49.78	3.173	
7,000.0	6,972.8	6,999.0	6,957.3	25.5	25.9	60.23	-500.3	351.4	161.6	111.1	50.53	3.199	
7,100.0	7,072.2	7,098.9	7,056.3	25.9	26.3	59.91	-511.1	359.4	165.3	114.1	51.28	3.224	
7,200.0	7,171.6	7,198.9	7,155.3	26.2	26.7	59.61	-522.0	367.5	169.0	117.0	52.03	3.249	
7,300.0	7,271.1	7,298.8	7,254.3	26.6	27.0	59.32	-532.8	375.5	172.7	119.9	52.78	3.273	
7,400.0	7,370.5	7,398.7	7,353.3	27.0	27.4	59.05	-543.7	383.6	176.4	122.9	53.53	3.296	
7,500.0	7,469.9	7,498.6	7,452.3	27.4	27.8	58.78	-554.5	391.6	180.1	125.9	54.28	3.319	
7,600.0	7,569.3	7,598.6	7,551.3	27.8	28.2	58.53	-565.4	399.7	183.9	128.8	55.03	3.341	
7,700.0	7,668.8	7,698.5	7,650.4	28.2	28.6	58.28	-576.2	407.8	187.6	131.8	55.78	3.363	
7,800.0	7,768.2	7,798.4	7,749.4	28.6	29.0	58.05	-587.1	415.8	191.3	134.8	56.53	3.384	
7,900.0	7,867.6	7,898.4	7,848.4	28.9	29.4	57.82	-597.9	423.9	195.0	137.7	57.28	3.404	
8,000.0	7,967.1	7,998.3	7,947.4	29.3	29.8	57.61	-608.8	431.9	198.7	140.7	58.04	3.424	
8,100.0	8,066.5	8,098.2	8,046.4	29.7	30.2	57.40	-619.6	440.0	202.5	143.7	58.79	3.444	
8,200.0	8,165.9	8,199.9	8,147.2	30.1	30.7	57.23	-630.5	448.1	206.1	146.5	59.56	3.459	
8,300.0	8,265.4	8,305.2	8,251.9	30.5	31.1	57.66	-639.3	454.7	207.6	147.3	60.38	3.439	
8,400.0	8,364.8	8,410.3	8,356.8	30.9	31.4	58.85	-645.1	458.9	206.7	145.6	61.18	3.379	
8,500.0	8,464.2	8,515.1	8,461.4	31.2	31.8	60.86	-647.8	460.9	203.5	141.5	61.98	3.283	
8,600.0	8,563.7	8,616.3	8,562.7	31.6	32.1	63.52	-648.0	461.1	198.7	135.9	62.81	3.163	
8,700.0	8,663.1	8,715.7	8,662.1	32.0	32.5	66.32	-648.0	461.1	194.1	130.5	63.64	3.051	
8,800.0	8,762.5	8,815.1	8,761.5	32.4	32.8	69.24	-648.0	461.1	190.1	125.6	64.47	2.949	
8,900.0	8,862.0	8,914.6	8,861.0	32.8	33.1	72.29	-648.0	461.1	186.6	121.3	65.30	2.857	
9,000.0	8,961.4	9,014.0	8,960.4	33.2	33.4	75.43	-648.0	461.1	183.6	117.5	66.13	2.776	
9,100.0	9,060.8	9,113.4	9,059.8	33.6	33.7	78.68	-648.0	461.1	181.2	114.3	66.94	2.707	
9,200.0	9,160.3	9,212.9	9,159.3	33.9	34.0	81.99	-648.0	461.1	179.4	111.7	67.75	2.648	
9,292.6	9,252.3	9,302.9	9,249.3	34.3	34.3	85.03	-648.0	461.1	178.3	109.9	68.47	2.604	
9,300.0	9,259.7	9,308.6	9,255.0	34.3	34.3	85.21	-648.2	461.1	178.4	109.9	68.53	2.603	
9,400.0	9,359.1	9,385.3	9,331.2	34.7	34.6	86.19	-656.3	461.1	186.0	117.2	68.75	2.705	
9,500.0	9,458.6	9,459.3	9,402.5	35.1	34.9	84.95	-675.6	461.3	205.9	137.8	68.15	3.022	
9,600.0	9,558.0	9,525.0	9,462.7	35.5	35.2	82.52	-701.8	461.5	237.8	171.3	66.54	3.574	
9,700.0	9,657.4	9,588.1	9,516.6	35.9	35.5	79.54	-734.5	461.7	280.9	216.2	64.66	4.344	
9,800.0	9,756.9	9,640.7	9,558.0	36.3	35.8	76.90	-767.0	462.0	334.0	271.8	62.23	5.367	
9,900.0	9,856.3	9,685.8	9,590.4	36.7	36.0	74.65	-798.4	462.2	395.6	335.8	59.75	6.621	
10,000.0	9,955.7	9,725.0	9,616.0	37.0	36.3	72.79	-828.0	462.5	463.9	406.5	57.46	8.074	
10,100.0	10,055.1	9,757.0	9,635.1	37.4	36.4	71.35	-853.7	462.7	537.7	482.4	55.33	9.719	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 503H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	10,154.6	9,785.0	9,650.3	37.8	36.6	70.15	-877.1	462.9	615.9	562.4	53.54	11.504	
10,300.0	10,254.0	9,809.0	9,662.3	38.2	36.7	69.18	-898.0	463.0	697.5	645.5	52.02	13.407	
10,400.0	10,353.4	9,825.0	9,669.7	38.6	36.8	68.55	-912.1	463.1	781.8	731.3	50.55	15.466	
10,500.0	10,452.9	9,850.0	9,680.3	39.0	37.0	67.62	-934.8	463.3	868.4	818.5	49.82	17.429	
10,600.0	10,552.3	9,863.6	9,685.5	39.4	37.0	67.14	-947.3	463.4	956.7	907.8	48.89	19.567	
10,700.0	10,651.7	9,875.0	9,689.7	39.7	37.1	66.74	-957.9	463.5	1,046.5	998.4	48.14	21.740	
10,800.0	10,751.2	9,889.9	9,694.6	40.1	37.2	66.24	-971.9	463.6	1,137.6	1,089.9	47.68	23.856	
10,900.0	10,850.6	9,900.0	9,697.8	40.5	37.3	65.91	-981.6	463.7	1,229.6	1,182.4	47.24	26.027	
11,000.0	10,950.0	9,910.7	9,700.9	40.9	37.3	65.57	-991.8	463.7	1,322.6	1,275.6	46.95	28.169	
11,100.0	11,049.5	9,925.0	9,704.7	41.3	37.4	65.13	-1,005.6	463.9	1,416.3	1,369.4	46.84	30.236	
11,200.0	11,149.0	9,925.0	9,704.7	41.7	37.4	69.50	-1,005.6	463.9	1,510.7	1,464.2	46.52	32.475	
11,300.0	11,248.8	9,925.0	9,704.7	42.0	37.4	75.60	-1,005.6	463.9	1,606.1	1,559.8	46.31	34.679	
11,400.0	11,348.8	9,939.5	9,708.1	42.4	37.5	81.52	-1,019.6	464.0	1,702.0	1,655.6	46.45	36.641	
11,500.0	11,448.5	9,950.0	9,710.4	42.7	37.6	22.16	-1,029.9	464.0	1,797.0	1,750.5	46.49	38.655	
11,600.0	11,544.8	9,950.0	9,710.4	43.1	37.6	14.95	-1,029.9	464.0	1,885.3	1,839.1	46.18	40.827	
11,700.0	11,633.6	9,975.0	9,714.7	43.6	37.7	11.27	-1,054.6	464.2	1,963.9	1,917.8	46.08	42.623	
11,800.0	11,711.0	9,975.0	9,714.7	44.0	37.7	9.35	-1,054.6	464.2	2,030.3	1,984.8	45.55	44.572	
11,900.0	11,773.7	10,000.0	9,717.8	44.5	37.9	8.16	-1,079.4	464.4	2,082.8	2,037.5	45.27	46.007	
12,000.0	11,818.7	10,014.5	9,719.0	45.0	38.0	7.48	-1,093.8	464.5	2,119.9	2,075.0	44.87	47.244	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 512H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-91.00	-1.0	-60.0	60.0				
100.0	100.0	98.6	98.6	0.1	0.1	-91.00	-1.0	-60.0	60.0	59.7	0.26	229.372	
200.0	200.0	198.6	198.6	0.5	0.5	-91.00	-1.0	-60.0	60.0	59.0	0.98	61.525	
300.0	300.0	298.6	298.6	0.8	0.8	-91.00	-1.0	-60.0	60.0	58.3	1.69	35.460	
400.0	400.0	398.6	398.6	1.2	1.2	-91.00	-1.0	-60.0	60.0	57.6	2.41	24.908	
500.0	500.0	498.6	498.6	1.6	1.6	-91.00	-1.0	-60.0	60.0	56.9	3.13	19.196	
600.0	600.0	598.6	598.6	1.9	1.9	-91.00	-1.0	-60.0	60.0	56.2	3.84	15.615	
700.0	700.0	698.6	698.6	2.3	2.3	-91.00	-1.0	-60.0	60.0	55.5	4.56	13.160	
800.0	800.0	798.6	798.6	2.6	2.6	-91.00	-1.0	-60.0	60.0	54.7	5.28	11.372	
900.0	900.0	898.6	898.6	3.0	3.0	-91.00	-1.0	-60.0	60.0	54.0	5.99	10.012	
1,000.0	1,000.0	998.6	998.6	3.4	3.4	-91.00	-1.0	-60.0	60.0	53.3	6.71	8.942	
1,100.0	1,100.0	1,098.6	1,098.6	3.7	3.7	-91.00	-1.0	-60.0	60.0	52.6	7.43	8.079	
1,200.0	1,200.0	1,198.6	1,198.6	4.1	4.1	-91.00	-1.0	-60.0	60.0	51.9	8.14	7.368	
1,300.0	1,300.0	1,298.6	1,298.6	4.4	4.4	-91.00	-1.0	-60.0	60.0	51.1	8.86	6.772	
1,400.0	1,400.0	1,398.6	1,398.6	4.8	4.8	-91.00	-1.0	-60.0	60.0	50.4	9.58	6.265	
1,500.0	1,500.0	1,498.6	1,498.6	5.2	5.1	-91.00	-1.0	-60.0	60.0	49.7	10.30	5.829	
1,600.0	1,600.0	1,598.6	1,598.6	5.5	5.5	-91.00	-1.0	-60.0	60.0	49.0	11.01	5.449	
1,700.0	1,700.0	1,698.6	1,698.6	5.9	5.9	-91.00	-1.0	-60.0	60.0	48.3	11.73	5.116	
1,800.0	1,800.0	1,798.6	1,798.6	6.2	6.2	-91.00	-1.0	-60.0	60.0	47.6	12.45	4.822	
1,900.0	1,900.0	1,898.6	1,898.6	6.6	6.6	-91.00	-1.0	-60.0	60.0	46.8	13.16	4.559	
2,000.0	2,000.0	1,998.6	1,998.6	6.9	6.9	-91.00	-1.0	-60.0	60.0	46.1	13.88	4.323	CC, ES
2,100.0	2,100.0	2,097.5	2,097.4	7.3	7.3	137.10	-2.5	-60.9	62.2	47.6	14.56	4.272	SF
2,200.0	2,199.8	2,196.0	2,195.9	7.6	7.6	136.40	-6.8	-63.5	68.8	53.6	15.20	4.525	
2,300.0	2,299.5	2,294.0	2,293.5	8.0	7.9	135.45	-13.9	-67.9	79.8	64.0	15.85	5.036	
2,400.0	2,398.9	2,391.5	2,390.3	8.3	8.2	134.00	-23.8	-73.9	94.1	77.6	16.49	5.707	
2,500.0	2,498.3	2,490.3	2,488.3	8.6	8.6	132.42	-34.8	-80.7	109.2	92.0	17.16	6.363	
2,600.0	2,597.7	2,589.2	2,586.2	9.0	8.9	131.22	-45.9	-87.5	124.3	106.5	17.83	6.970	
2,700.0	2,697.2	2,688.0	2,684.2	9.3	9.3	130.28	-56.9	-94.2	139.4	120.9	18.51	7.533	
2,800.0	2,796.6	2,786.8	2,782.2	9.7	9.6	129.53	-67.9	-101.0	154.6	135.4	19.20	8.054	
2,900.0	2,896.0	2,885.6	2,880.2	10.0	10.0	128.91	-79.0	-107.8	169.8	150.0	19.89	8.538	
3,000.0	2,995.5	2,984.4	2,978.1	10.4	10.3	128.39	-90.0	-114.5	185.1	164.5	20.59	8.988	
3,100.0	3,094.9	3,083.3	3,076.1	10.8	10.7	127.95	-101.0	-121.3	200.3	179.0	21.30	9.407	
3,200.0	3,194.3	3,182.1	3,174.1	11.1	11.1	127.57	-112.1	-128.1	215.6	193.6	22.00	9.798	
3,300.0	3,293.8	3,280.9	3,272.0	11.5	11.4	127.25	-123.1	-134.8	230.8	208.1	22.71	10.163	
3,400.0	3,393.2	3,379.7	3,370.0	11.9	11.8	126.96	-134.1	-141.6	246.1	222.7	23.43	10.505	
3,500.0	3,492.6	3,478.6	3,468.0	12.2	12.2	126.71	-145.2	-148.4	261.4	237.2	24.14	10.825	
3,600.0	3,592.1	3,577.4	3,565.9	12.6	12.5	126.48	-156.2	-155.1	276.6	251.8	24.86	11.126	
3,700.0	3,691.5	3,676.2	3,663.9	13.0	12.9	126.28	-167.2	-161.9	291.9	266.3	25.59	11.409	
3,800.0	3,790.9	3,775.0	3,761.9	13.3	13.3	126.10	-178.3	-168.7	307.2	280.9	26.31	11.676	
3,900.0	3,890.4	3,873.8	3,859.9	13.7	13.7	125.93	-189.3	-175.4	322.5	295.5	27.04	11.927	
4,000.0	3,989.8	3,972.7	3,957.8	14.1	14.0	125.78	-200.3	-182.2	337.8	310.0	27.77	12.165	
4,100.0	4,089.2	4,071.5	4,055.8	14.4	14.4	125.65	-211.4	-189.0	353.1	324.6	28.50	12.389	
4,200.0	4,188.7	4,170.3	4,153.8	14.8	14.8	125.52	-222.4	-195.7	368.4	339.1	29.23	12.602	
4,300.0	4,288.1	4,269.1	4,251.7	15.2	15.2	125.41	-233.5	-202.5	383.7	353.7	29.96	12.804	
4,400.0	4,387.5	4,367.9	4,349.7	15.6	15.5	125.30	-244.5	-209.3	399.0	368.3	30.70	12.996	
4,500.0	4,487.0	4,466.8	4,447.7	15.9	15.9	125.20	-255.5	-216.0	414.2	382.8	31.44	13.178	
4,600.0	4,586.4	4,565.6	4,545.6	16.3	16.3	125.11	-266.6	-222.8	429.5	397.4	32.17	13.351	
4,700.0	4,685.8	4,664.4	4,643.6	16.7	16.7	125.03	-277.6	-229.6	444.8	411.9	32.91	13.516	
4,800.0	4,785.3	4,763.2	4,741.6	17.1	17.1	124.95	-288.6	-236.3	460.1	426.5	33.65	13.673	
4,900.0	4,884.7	4,862.0	4,839.5	17.5	17.5	124.87	-299.7	-243.1	475.4	441.0	34.39	13.824	
5,000.0	4,984.1	4,960.9	4,937.5	17.8	17.9	124.80	-310.7	-249.9	490.7	455.6	35.14	13.967	
5,100.0	5,083.5	5,059.7	5,035.5	18.2	18.2	124.74	-321.7	-256.6	506.0	470.2	35.88	14.104	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 512H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.0	5,183.0	5,158.5	5,133.5	18.6	18.6	124.68	-332.8	-263.4	521.3	484.7	36.62	14.236	
5,300.0	5,282.4	5,257.3	5,231.4	19.0	19.0	124.62	-343.8	-270.2	536.6	499.3	37.37	14.362	
5,400.0	5,381.8	5,356.1	5,329.4	19.4	19.4	124.56	-354.8	-276.9	551.9	513.8	38.11	14.482	
5,500.0	5,481.3	5,455.0	5,427.4	19.7	19.8	124.51	-365.9	-283.7	567.3	528.4	38.86	14.598	
5,600.0	5,580.7	5,553.8	5,525.3	20.1	20.2	124.46	-376.9	-290.5	582.6	543.0	39.60	14.709	
5,700.0	5,680.1	5,652.6	5,623.3	20.5	20.6	124.41	-387.9	-297.2	597.9	557.5	40.35	14.816	
5,800.0	5,779.6	5,751.4	5,721.3	20.9	21.0	124.37	-399.0	-304.0	613.2	572.1	41.10	14.919	
5,900.0	5,879.0	5,850.3	5,819.2	21.3	21.3	124.33	-410.0	-310.8	628.5	586.6	41.85	15.018	
6,000.0	5,978.4	5,949.1	5,917.2	21.6	21.7	124.29	-421.0	-317.5	643.8	601.2	42.60	15.113	
6,100.0	6,077.9	6,047.9	6,015.2	22.0	22.1	124.25	-432.1	-324.3	659.1	615.7	43.35	15.205	
6,200.0	6,177.3	6,146.7	6,113.1	22.4	22.5	124.21	-443.1	-331.1	674.4	630.3	44.10	15.294	
6,300.0	6,276.7	6,245.5	6,211.1	22.8	22.9	124.18	-454.2	-337.8	689.7	644.8	44.85	15.379	
6,400.0	6,376.2	6,344.4	6,309.1	23.2	23.3	124.14	-465.2	-344.6	705.0	659.4	45.60	15.461	
6,500.0	6,475.6	6,443.2	6,407.1	23.6	23.7	124.11	-476.2	-351.4	720.3	674.0	46.35	15.541	
6,600.0	6,575.0	6,542.0	6,505.0	23.9	24.1	124.08	-487.3	-358.1	735.6	688.5	47.10	15.618	
6,700.0	6,674.5	6,640.8	6,603.0	24.3	24.5	124.05	-498.3	-364.9	750.9	703.1	47.85	15.692	
6,800.0	6,773.9	6,739.6	6,701.0	24.7	24.9	124.02	-509.3	-371.7	766.2	717.6	48.61	15.764	
6,900.0	6,873.3	6,838.5	6,798.9	25.1	25.3	124.00	-520.4	-378.4	781.5	732.2	49.36	15.834	
7,000.0	6,972.8	6,937.3	6,896.9	25.5	25.7	123.97	-531.4	-385.2	796.8	746.7	50.11	15.901	
7,100.0	7,072.2	7,036.1	6,994.9	25.9	26.0	123.94	-542.4	-392.0	812.1	761.3	50.86	15.967	
7,200.0	7,171.6	7,134.9	7,092.8	26.2	26.4	123.92	-553.5	-398.7	827.5	775.8	51.62	16.030	
7,300.0	7,271.1	7,233.7	7,190.8	26.6	26.8	123.90	-564.5	-405.5	842.8	790.4	52.37	16.092	
7,400.0	7,370.5	7,332.6	7,288.8	27.0	27.2	123.87	-575.5	-412.3	858.1	804.9	53.13	16.151	
7,500.0	7,469.9	7,431.4	7,386.7	27.4	27.6	123.85	-586.6	-419.0	873.4	819.5	53.88	16.209	
7,600.0	7,569.3	7,530.2	7,484.7	27.8	28.0	123.83	-597.6	-425.8	888.7	834.1	54.64	16.265	
7,700.0	7,668.8	7,629.0	7,582.7	28.2	28.4	123.81	-608.6	-432.6	904.0	848.6	55.39	16.320	
7,800.0	7,768.2	7,727.8	7,680.7	28.6	28.8	123.79	-619.7	-439.3	919.3	863.2	56.15	16.373	
7,900.0	7,867.6	7,826.7	7,778.6	28.9	29.2	123.77	-630.7	-446.1	934.6	877.7	56.90	16.425	
8,000.0	7,967.1	7,938.6	7,889.7	29.3	29.6	123.78	-642.8	-453.5	949.6	891.9	57.75	16.443	
8,100.0	8,066.5	8,068.9	8,019.4	29.7	30.1	123.98	-652.7	-459.6	962.0	903.3	58.69	16.390	
8,200.0	8,165.9	8,199.7	8,150.1	30.1	30.6	124.43	-657.5	-462.6	971.1	911.5	59.57	16.301	
8,300.0	8,265.4	8,313.6	8,264.0	30.5	31.0	124.99	-658.1	-462.9	977.5	917.2	60.33	16.203	
8,400.0	8,364.8	8,413.0	8,363.4	30.9	31.3	125.49	-658.1	-462.9	983.7	922.6	61.03	16.118	
8,500.0	8,464.2	8,512.4	8,462.8	31.2	31.6	125.99	-658.1	-462.9	989.9	928.2	61.73	16.035	
8,600.0	8,563.7	8,611.9	8,562.3	31.6	31.9	126.49	-658.1	-462.9	996.2	933.8	62.44	15.956	
8,700.0	8,663.1	8,711.3	8,661.7	32.0	32.2	126.98	-658.1	-462.9	1,002.6	939.5	63.14	15.879	
8,800.0	8,762.5	8,810.7	8,761.1	32.4	32.5	127.46	-658.1	-462.9	1,009.1	945.2	63.84	15.805	
8,900.0	8,862.0	8,900.0	8,850.4	32.8	32.8	127.84	-658.9	-462.9	1,015.8	951.3	64.52	15.744	
9,000.0	8,961.4	8,975.0	8,924.6	33.2	33.1	127.62	-669.1	-462.8	1,024.7	959.5	65.17	15.724	
9,100.0	9,060.8	9,042.4	8,989.2	33.6	33.4	126.89	-688.1	-462.6	1,036.3	970.6	65.75	15.761	
9,200.0	9,160.3	9,106.6	9,047.7	33.9	33.7	125.74	-714.5	-462.4	1,051.3	985.0	66.27	15.863	
9,300.0	9,259.7	9,164.0	9,096.5	34.3	34.0	124.36	-744.5	-462.2	1,070.2	1,003.5	66.65	16.057	
9,400.0	9,359.1	9,214.2	9,136.0	34.7	34.3	122.93	-775.4	-462.0	1,093.7	1,026.8	66.83	16.365	
9,500.0	9,458.6	9,257.5	9,167.4	35.1	34.5	121.53	-805.3	-461.7	1,122.3	1,055.5	66.79	16.803	
9,600.0	9,558.0	9,300.0	9,195.4	35.5	34.7	120.04	-837.3	-461.5	1,156.3	1,089.7	66.60	17.363	
9,700.0	9,657.4	9,325.0	9,210.5	35.9	34.9	119.11	-857.2	-461.3	1,195.7	1,129.7	66.02	18.111	
9,800.0	9,756.9	9,350.0	9,224.5	36.3	35.0	118.16	-877.9	-461.2	1,240.4	1,175.1	65.33	18.988	
9,900.0	9,856.3	9,375.0	9,237.5	36.7	35.2	117.18	-899.3	-461.0	1,290.2	1,225.6	64.55	19.986	
10,000.0	9,955.7	9,400.0	9,249.2	37.0	35.3	116.17	-921.3	-460.8	1,344.6	1,280.9	63.74	21.095	
10,100.0	10,055.1	9,416.8	9,256.5	37.4	35.4	115.49	-936.5	-460.7	1,403.4	1,340.6	62.79	22.352	
10,200.0	10,154.6	9,425.0	9,259.9	37.8	35.5	115.15	-943.9	-460.7	1,466.1	1,404.4	61.71	23.757	
10,300.0	10,254.0	9,450.0	9,269.3	38.2	35.6	114.12	-967.1	-460.5	1,532.3	1,471.4	60.93	25.147	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 512H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.0	10,353.4	9,459.2	9,272.5	38.6	35.7	113.73	-975.7	-460.4	1,601.6	1,541.7	59.97	26.709	
10,500.0	10,452.9	9,475.0	9,277.5	39.0	35.8	113.07	-990.7	-460.3	1,673.9	1,614.7	59.16	28.295	
10,600.0	10,552.3	9,475.0	9,277.5	39.4	35.8	113.07	-990.7	-460.3	1,748.6	1,690.4	58.20	30.045	
10,700.0	10,651.7	9,489.3	9,281.6	39.7	35.9	112.47	-1,004.4	-460.2	1,825.5	1,768.0	57.51	31.742	
10,800.0	10,751.2	9,500.0	9,284.5	40.1	35.9	112.02	-1,014.7	-460.1	1,904.4	1,847.6	56.84	33.503	
10,900.0	10,850.6	9,500.0	9,284.5	40.5	35.9	112.02	-1,014.7	-460.1	1,985.1	1,929.0	56.11	35.376	
11,000.0	10,950.0	9,511.7	9,287.3	40.9	36.0	111.53	-1,026.1	-460.0	2,067.4	2,011.8	55.60	37.180	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 513H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.8	1.8	0.0	0.0	89.07	0.3	20.0	20.1				
100.0	100.0	101.8	101.8	0.1	0.1	89.07	0.3	20.0	20.1	19.8	0.27	74.281	
200.0	200.0	201.8	201.8	0.5	0.5	89.07	0.3	20.0	20.1	19.1	0.99	20.317	
300.0	300.0	301.8	301.8	0.8	0.9	89.07	0.3	20.0	20.1	18.3	1.70	11.768	
400.0	400.0	401.8	401.8	1.2	1.2	89.07	0.3	20.0	20.1	17.6	2.42	8.283	
500.0	500.0	501.8	501.8	1.6	1.6	89.07	0.3	20.0	20.1	16.9	3.14	6.390	
600.0	600.0	601.8	601.8	1.9	1.9	89.07	0.3	20.0	20.1	16.2	3.85	5.202	
700.0	700.0	701.8	701.8	2.3	2.3	89.07	0.3	20.0	20.1	15.5	4.57	4.386	
800.0	800.0	801.8	801.8	2.6	2.6	89.07	0.3	20.0	20.1	14.8	5.29	3.791	
900.0	900.0	901.8	901.8	3.0	3.0	89.07	0.3	20.0	20.1	14.0	6.01	3.339	
1,000.0	1,000.0	1,001.8	1,001.8	3.4	3.4	89.07	0.3	20.0	20.1	13.3	6.72	2.983	
1,100.0	1,100.0	1,101.8	1,101.8	3.7	3.7	89.07	0.3	20.0	20.1	12.6	7.44	2.695	
1,200.0	1,200.0	1,201.8	1,201.8	4.1	4.1	89.07	0.3	20.0	20.1	11.9	8.16	2.458	
1,300.0	1,300.0	1,301.8	1,301.8	4.4	4.4	89.07	0.3	20.0	20.1	11.2	8.87	2.260	
1,400.0	1,400.0	1,401.8	1,401.8	4.8	4.8	89.07	0.3	20.0	20.1	10.5	9.59	2.091	
1,500.0	1,500.0	1,501.8	1,501.8	5.2	5.2	89.07	0.3	20.0	20.1	9.7	10.31	1.945	
1,600.0	1,600.0	1,601.8	1,601.8	5.5	5.5	89.07	0.3	20.0	20.1	9.0	11.02	1.819	
1,700.0	1,700.0	1,701.8	1,701.8	5.9	5.9	89.07	0.3	20.0	20.1	8.3	11.74	1.708	
1,800.0	1,800.0	1,801.8	1,801.8	6.2	6.2	89.07	0.3	20.0	20.1	7.6	12.46	1.609	
1,900.0	1,900.0	1,901.8	1,901.8	6.6	6.6	89.07	0.3	20.0	20.1	6.9	13.17	1.522	
2,000.0	2,000.0	2,001.8	2,001.8	6.9	6.9	89.07	0.3	20.0	20.1	6.2	13.89	1.443	Level 3
2,100.0	2,100.0	2,101.5	2,101.5	7.3	7.3	-45.49	0.1	20.5	19.2	4.6	14.58	1.317	Level 3
2,200.0	2,199.8	2,200.9	2,200.8	7.6	7.6	-51.57	-1.4	23.6	18.7	3.5	15.24	1.228	Level 2
2,206.0	2,205.8	2,206.9	2,206.8	7.6	7.7	-52.01	-1.5	23.9	18.7	3.4	15.27	1.225	Level 2, CC
2,300.0	2,299.5	2,300.4	2,300.0	8.0	8.0	-59.77	-4.4	29.9	19.2	3.3	15.89	1.207	Level 2, ES, SF
2,400.0	2,398.9	2,400.0	2,399.1	8.3	8.3	-64.96	-8.9	39.3	21.5	4.9	16.56	1.296	Level 3
2,500.0	2,498.3	2,499.2	2,497.3	8.6	8.7	-63.05	-14.9	51.7	26.1	8.9	17.20	1.517	
2,600.0	2,597.7	2,598.2	2,594.8	9.0	9.0	-57.46	-22.4	67.2	33.3	15.4	17.82	1.866	
2,700.0	2,697.2	2,696.5	2,691.0	9.3	9.4	-51.10	-31.2	85.5	43.4	25.0	18.41	2.356	
2,800.0	2,796.6	2,795.0	2,786.7	9.7	9.7	-45.62	-41.3	106.4	56.3	37.3	19.03	2.960	
2,900.0	2,896.0	2,894.0	2,882.9	10.0	10.1	-42.06	-51.5	127.7	69.9	50.2	19.70	3.548	
3,000.0	2,995.5	2,993.0	2,979.0	10.4	10.5	-39.66	-61.8	149.0	83.7	63.3	20.39	4.104	
3,100.0	3,094.9	3,092.0	3,075.1	10.8	10.9	-37.94	-72.1	170.3	97.5	76.4	21.08	4.626	
3,200.0	3,194.3	3,191.0	3,171.2	11.1	11.3	-36.64	-82.3	191.6	111.5	89.7	21.79	5.116	
3,300.0	3,293.8	3,290.0	3,267.4	11.5	11.8	-35.64	-92.6	212.9	125.4	102.9	22.49	5.576	
3,400.0	3,393.2	3,389.0	3,363.5	11.9	12.2	-34.84	-102.8	234.2	139.4	116.2	23.21	6.009	
3,500.0	3,492.6	3,488.0	3,459.6	12.2	12.6	-34.18	-113.1	255.5	153.5	129.5	23.92	6.415	
3,600.0	3,592.1	3,587.0	3,555.8	12.6	13.0	-33.63	-123.4	276.9	167.5	142.9	24.64	6.797	
3,700.0	3,691.5	3,685.9	3,651.9	13.0	13.5	-33.17	-133.6	298.2	181.6	156.2	25.37	7.158	
3,800.0	3,790.9	3,784.9	3,748.0	13.3	13.9	-32.78	-143.9	319.5	195.6	169.5	26.09	7.497	
3,900.0	3,890.4	3,883.9	3,844.2	13.7	14.3	-32.43	-154.2	340.8	209.7	182.9	26.82	7.818	
4,000.0	3,989.8	3,982.9	3,940.3	14.1	14.8	-32.13	-164.4	362.1	223.8	196.2	27.55	8.122	
4,100.0	4,089.2	4,081.9	4,036.4	14.4	15.2	-31.87	-174.7	383.4	237.9	209.6	28.29	8.409	
4,200.0	4,188.7	4,180.9	4,132.6	14.8	15.7	-31.63	-185.0	404.7	252.0	222.9	29.02	8.682	
4,300.0	4,288.1	4,279.9	4,228.7	15.2	16.1	-31.43	-195.2	426.0	266.0	236.3	29.76	8.941	
4,400.0	4,387.5	4,378.9	4,324.8	15.6	16.6	-31.24	-205.5	447.3	280.1	249.6	30.50	9.186	
4,500.0	4,487.0	4,477.9	4,420.9	15.9	17.1	-31.07	-215.8	468.6	294.2	263.0	31.24	9.420	
4,600.0	4,586.4	4,576.9	4,517.1	16.3	17.5	-30.91	-226.0	489.9	308.3	276.4	31.98	9.643	
4,700.0	4,685.8	4,675.9	4,613.2	16.7	18.0	-30.77	-236.3	511.2	322.4	289.7	32.72	9.855	
4,800.0	4,785.3	4,774.9	4,709.3	17.1	18.4	-30.64	-246.5	532.6	336.5	303.1	33.46	10.057	
4,900.0	4,884.7	4,873.9	4,805.5	17.5	18.9	-30.52	-256.8	553.9	350.7	316.4	34.21	10.250	
5,000.0	4,984.1	4,972.9	4,901.6	17.8	19.4	-30.41	-267.1	575.2	364.8	329.8	34.95	10.435	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 513H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,083.5	5,071.9	4,997.7	18.2	19.8	-30.31	-277.3	596.5	378.9	343.2	35.70	10.612	
5,200.0	5,183.0	5,170.9	5,093.9	18.6	20.3	-30.22	-287.6	617.8	393.0	356.5	36.45	10.781	
5,300.0	5,282.4	5,269.9	5,190.0	19.0	20.8	-30.13	-297.9	639.1	407.1	369.9	37.20	10.944	
5,400.0	5,381.8	5,368.9	5,286.1	19.4	21.2	-30.05	-308.1	660.4	421.2	383.3	37.95	11.099	
5,500.0	5,481.3	5,467.9	5,382.3	19.7	21.7	-29.97	-318.4	681.7	435.3	396.6	38.70	11.249	
5,600.0	5,580.7	5,566.9	5,478.4	20.1	22.2	-29.90	-328.7	703.0	449.4	410.0	39.45	11.392	
5,700.0	5,680.1	5,665.9	5,574.5	20.5	22.7	-29.83	-338.9	724.3	463.5	423.3	40.20	11.530	
5,800.0	5,779.6	5,764.9	5,670.6	20.9	23.1	-29.77	-349.2	745.6	477.7	436.7	40.95	11.663	
5,900.0	5,879.0	5,863.9	5,766.8	21.3	23.6	-29.71	-359.4	767.0	491.8	450.1	41.71	11.791	
6,000.0	5,978.4	5,962.9	5,862.9	21.6	24.1	-29.65	-369.7	788.3	505.9	463.4	42.46	11.914	
6,100.0	6,077.9	6,061.9	5,959.0	22.0	24.6	-29.60	-380.0	809.6	520.0	476.8	43.22	12.033	
6,200.0	6,177.3	6,160.9	6,055.2	22.4	25.0	-29.55	-390.2	830.9	534.1	490.2	43.97	12.147	
6,300.0	6,276.7	6,259.9	6,151.3	22.8	25.5	-29.50	-400.5	852.2	548.2	503.5	44.73	12.258	
6,400.0	6,376.2	6,358.9	6,247.4	23.2	26.0	-29.45	-410.8	873.5	562.4	516.9	45.48	12.364	
6,500.0	6,475.6	6,457.9	6,343.6	23.6	26.5	-29.41	-421.0	894.8	576.5	530.2	46.24	12.468	
6,600.0	6,575.0	6,556.9	6,439.7	23.9	26.9	-29.37	-431.3	916.1	590.6	543.6	46.99	12.567	
6,700.0	6,674.5	6,655.9	6,535.8	24.3	27.4	-29.33	-441.6	937.4	604.7	557.0	47.75	12.664	
6,800.0	6,773.9	6,754.9	6,632.0	24.7	27.9	-29.29	-451.8	958.7	618.8	570.3	48.51	12.757	
6,900.0	6,873.3	6,853.9	6,728.1	25.1	28.4	-29.26	-462.1	980.0	632.9	583.7	49.27	12.847	
7,000.0	6,972.8	6,952.9	6,824.2	25.5	28.9	-29.22	-472.4	1,001.3	647.1	597.0	50.03	12.935	
7,100.0	7,072.2	7,051.9	6,920.3	25.9	29.3	-29.19	-482.6	1,022.7	661.2	610.4	50.78	13.019	
7,200.0	7,171.6	7,150.9	7,016.5	26.2	29.8	-29.16	-492.9	1,044.0	675.3	623.8	51.54	13.102	
7,300.0	7,271.1	7,249.9	7,112.6	26.6	30.3	-29.13	-503.1	1,065.3	689.4	637.1	52.30	13.181	
7,400.0	7,370.5	7,348.9	7,208.7	27.0	30.8	-29.10	-513.4	1,086.6	703.5	650.5	53.06	13.259	
7,500.0	7,469.9	7,447.9	7,304.9	27.4	31.3	-29.07	-523.7	1,107.9	717.7	663.8	53.82	13.334	
7,600.0	7,569.3	7,546.9	7,401.0	27.8	31.7	-29.04	-533.9	1,129.2	731.8	677.2	54.58	13.407	
7,700.0	7,668.8	7,645.9	7,497.1	28.2	32.2	-29.02	-544.2	1,150.5	745.9	690.6	55.34	13.478	
7,800.0	7,768.2	7,744.8	7,593.3	28.6	32.7	-28.99	-554.5	1,171.8	760.0	703.9	56.10	13.547	
7,900.0	7,867.6	7,843.8	7,689.4	28.9	33.2	-28.97	-564.7	1,193.1	774.1	717.3	56.86	13.614	
8,000.0	7,967.1	7,942.8	7,785.5	29.3	33.7	-28.95	-575.0	1,214.4	788.3	730.6	57.63	13.679	
8,100.0	8,066.5	8,041.8	7,881.7	29.7	34.2	-28.92	-585.3	1,235.7	802.4	744.0	58.39	13.743	
8,200.0	8,165.9	8,140.8	7,977.8	30.1	34.6	-28.90	-595.5	1,257.1	816.5	757.4	59.15	13.804	
8,300.0	8,265.4	8,254.6	8,088.3	30.5	35.2	-28.89	-607.1	1,281.1	830.3	770.2	60.05	13.826	
8,400.0	8,364.8	8,393.5	8,224.5	30.9	35.8	-28.95	-619.0	1,305.8	840.3	779.2	61.12	13.748	
8,500.0	8,464.2	8,533.5	8,362.9	31.2	36.4	-29.12	-628.1	1,324.7	845.6	783.5	62.08	13.622	
8,600.0	8,563.7	8,673.7	8,502.4	31.6	36.9	-29.39	-634.2	1,337.5	846.2	783.2	62.91	13.450	
8,700.0	8,663.1	8,813.6	8,642.1	32.0	37.4	-29.77	-637.4	1,344.0	842.0	778.3	63.63	13.233	
8,800.0	8,762.5	8,935.9	8,764.3	32.4	37.7	-30.20	-637.9	1,345.0	833.5	769.2	64.28	12.968	
8,900.0	8,862.0	9,025.0	8,853.5	32.8	38.0	-30.47	-638.9	1,345.1	824.7	759.6	65.02	12.683	
9,000.0	8,961.4	9,089.6	8,917.5	33.2	38.2	-30.13	-647.4	1,345.8	819.0	753.2	65.79	12.450	
9,083.4	9,044.3	9,144.3	8,970.3	33.5	38.4	-29.40	-661.3	1,346.9	817.5	751.1	66.34	12.323	
9,100.0	9,060.8	9,154.9	8,980.3	33.6	38.5	-29.21	-664.7	1,347.2	817.5	751.1	66.44	12.305	
9,200.0	9,160.3	9,215.7	9,036.3	33.9	38.7	-27.83	-688.3	1,349.0	820.8	753.9	66.95	12.261	
9,300.0	9,259.7	9,275.0	9,087.5	34.3	38.9	-26.04	-718.0	1,351.3	829.7	762.5	67.28	12.333	
9,400.0	9,359.1	9,325.0	9,127.6	34.7	39.2	-24.24	-747.8	1,353.7	845.0	777.7	67.33	12.550	
9,500.0	9,458.6	9,362.7	9,155.6	35.1	39.3	-22.73	-772.9	1,355.7	867.2	800.2	67.01	12.942	
9,600.0	9,558.0	9,400.0	9,181.3	35.5	39.5	-21.12	-799.8	1,357.8	896.6	830.2	66.41	13.501	
9,700.0	9,657.4	9,432.4	9,201.8	35.9	39.7	-19.66	-824.8	1,359.8	933.2	867.7	65.54	14.239	
9,800.0	9,756.9	9,460.5	9,218.3	36.3	39.8	-18.34	-847.6	1,361.6	976.6	912.1	64.45	15.154	
9,900.0	9,856.3	9,485.0	9,231.4	36.7	39.9	-17.17	-868.2	1,363.2	1,026.3	963.1	63.21	16.238	
10,000.0	9,955.7	9,500.0	9,239.0	37.0	40.0	-16.45	-881.1	1,364.2	1,081.9	1,020.1	61.77	17.515	
10,100.0	10,055.1	9,525.0	9,250.6	37.4	40.2	-15.23	-903.1	1,365.9	1,142.4	1,081.9	60.56	18.865	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 513H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	10,154.6	9,550.0	9,261.1	37.8	40.3	-14.01	-925.8	1,367.7	1,207.6	1,148.2	59.42	20.324	
10,300.0	10,254.0	9,550.0	9,261.1	38.2	40.3	-14.01	-925.8	1,367.7	1,276.6	1,218.7	57.92	22.041	
10,400.0	10,353.4	9,575.0	9,270.4	38.6	40.4	-12.79	-948.9	1,369.5	1,349.0	1,292.1	56.99	23.671	
10,500.0	10,452.9	9,575.0	9,270.4	39.0	40.4	-12.79	-948.9	1,369.5	1,424.5	1,368.7	55.74	25.554	
10,600.0	10,552.3	9,600.0	9,278.4	39.4	40.6	-11.58	-972.5	1,371.4	1,502.5	1,447.5	55.05	27.296	
10,700.0	10,651.7	9,600.0	9,278.4	39.7	40.6	-11.58	-972.5	1,371.4	1,582.6	1,528.6	54.05	29.281	
10,800.0	10,751.2	9,610.3	9,281.4	40.1	40.6	-11.08	-982.4	1,372.2	1,664.8	1,611.5	53.34	31.213	
10,900.0	10,850.6	9,625.0	9,285.2	40.5	40.7	-10.37	-996.5	1,373.3	1,748.7	1,695.9	52.79	33.126	
11,000.0	10,950.0	9,625.0	9,285.2	40.9	40.7	-10.37	-996.5	1,373.3	1,834.0	1,781.9	52.13	35.184	
11,100.0	11,049.5	9,625.0	9,285.2	41.3	40.7	-10.37	-996.5	1,373.3	1,920.7	1,869.1	51.56	37.252	
11,200.0	11,149.0	9,638.1	9,288.3	41.7	40.8	-10.29	-1,009.2	1,374.3	2,008.9	1,957.7	51.27	39.187	
11,300.0	11,248.8	9,650.0	9,290.7	42.0	40.8	-10.44	-1,020.8	1,375.2	2,099.7	2,048.7	51.07	41.118	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 604H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM **Rule Assigned:** **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.9	1.9	0.0	0.0	-7.98	159.6	-22.4	161.2				
100.0	100.0	101.9	101.9	0.1	0.1	-7.98	159.6	-22.4	161.2	160.9	0.27	596.391	
200.0	200.0	201.9	201.9	0.5	0.5	-7.98	159.6	-22.4	161.2	160.2	0.99	163.282	
300.0	300.0	301.9	301.9	0.8	0.9	-7.98	159.6	-22.4	161.2	159.5	1.70	94.590	
400.0	400.0	401.9	401.9	1.2	1.2	-7.98	159.6	-22.4	161.2	158.8	2.42	66.580	
500.0	500.0	501.9	501.9	1.6	1.6	-7.98	159.6	-22.4	161.2	158.1	3.14	51.368	
600.0	600.0	601.9	601.9	1.9	1.9	-7.98	159.6	-22.4	161.2	157.3	3.86	41.815	
700.0	700.0	701.9	701.9	2.3	2.3	-7.98	159.6	-22.4	161.2	156.6	4.57	35.258	
800.0	800.0	801.9	801.9	2.6	2.6	-7.98	159.6	-22.4	161.2	155.9	5.29	30.478	
900.0	900.0	901.9	901.9	3.0	3.0	-7.98	159.6	-22.4	161.2	155.2	6.01	26.840	
1,000.0	1,000.0	1,001.9	1,001.9	3.4	3.4	-7.98	159.6	-22.4	161.2	154.5	6.72	23.978	
1,100.0	1,100.0	1,101.9	1,101.9	3.7	3.7	-7.98	159.6	-22.4	161.2	153.8	7.44	21.667	
1,200.0	1,200.0	1,201.9	1,201.9	4.1	4.1	-7.98	159.6	-22.4	161.2	153.0	8.16	19.763	
1,300.0	1,300.0	1,301.9	1,301.9	4.4	4.4	-7.98	159.6	-22.4	161.2	152.3	8.87	18.166	
1,400.0	1,400.0	1,401.9	1,401.9	4.8	4.8	-7.98	159.6	-22.4	161.2	151.6	9.59	16.808	
1,500.0	1,500.0	1,501.9	1,501.9	5.2	5.2	-7.98	159.6	-22.4	161.2	150.9	10.31	15.639	
1,600.0	1,600.0	1,601.9	1,601.9	5.5	5.5	-7.98	159.6	-22.4	161.2	150.2	11.02	14.622	
1,700.0	1,700.0	1,701.9	1,701.9	5.9	5.9	-7.98	159.6	-22.4	161.2	149.5	11.74	13.729	
1,800.0	1,800.0	1,801.9	1,801.9	6.2	6.2	-7.98	159.6	-22.4	161.2	148.7	12.46	12.939	
1,900.0	1,900.0	1,901.9	1,901.9	6.6	6.6	-7.98	159.6	-22.4	161.2	148.0	13.18	12.235	
2,000.0	2,000.0	2,001.9	2,001.9	6.9	6.9	-7.98	159.6	-22.4	161.2	147.3	13.89	11.603 CC	
2,100.0	2,100.0	2,101.9	2,101.9	7.3	7.3	-140.03	159.6	-22.4	162.5	147.9	14.59	11.137	
2,200.0	2,199.8	2,201.7	2,201.7	7.6	7.7	-141.13	159.6	-22.4	166.6	151.3	15.28	10.899	
2,300.0	2,299.5	2,301.4	2,301.4	8.0	8.0	-142.85	159.6	-22.4	173.5	157.5	15.98	10.857	
2,400.0	2,398.9	2,400.8	2,400.8	8.3	8.4	-144.87	159.6	-22.4	182.1	165.4	16.67	10.922	
2,500.0	2,498.3	2,500.2	2,500.2	8.6	8.7	-146.70	159.6	-22.4	190.9	173.5	17.36	10.993	
2,600.0	2,597.7	2,604.9	2,604.9	9.0	9.1	-148.08	158.7	-20.7	198.6	180.5	18.06	10.994	
2,700.0	2,697.2	2,710.1	2,709.9	9.3	9.4	-148.61	155.8	-15.7	203.7	184.9	18.74	10.867	
2,800.0	2,796.6	2,815.5	2,814.9	9.7	9.8	-148.39	151.1	-7.3	206.1	186.7	19.42	10.614	
2,900.0	2,896.0	2,920.9	2,919.4	10.0	10.2	-147.43	144.4	4.5	205.9	185.8	20.09	10.249	
3,000.0	2,995.5	3,026.0	3,023.0	10.4	10.5	-145.69	135.9	19.5	203.2	182.5	20.77	9.787	
3,100.0	3,094.9	3,130.4	3,125.4	10.8	10.9	-143.09	125.6	37.7	198.3	176.9	21.45	9.245	
3,200.0	3,194.3	3,233.0	3,225.0	11.1	11.3	-139.57	113.7	58.7	191.6	169.4	22.16	8.645	
3,300.0	3,293.8	3,331.9	3,321.0	11.5	11.7	-135.68	101.8	79.7	185.0	162.1	22.93	8.071	
3,400.0	3,393.2	3,430.9	3,416.9	11.9	12.0	-131.53	89.8	100.8	179.4	155.7	23.71	7.568	
3,500.0	3,492.6	3,529.8	3,512.9	12.2	12.4	-127.15	77.9	121.9	174.8	150.3	24.50	7.134	
3,600.0	3,592.1	3,628.8	3,608.8	12.6	12.8	-122.55	65.9	143.0	171.3	146.0	25.31	6.767	
3,700.0	3,691.5	3,727.7	3,704.7	13.0	13.2	-117.80	54.0	164.1	168.9	142.8	26.12	6.466	
3,800.0	3,790.9	3,826.7	3,800.7	13.3	13.7	-112.96	42.0	185.1	167.8	140.8	26.94	6.227	
3,842.7	3,833.4	3,869.0	3,841.7	13.5	13.8	-110.87	36.9	194.1	167.6	140.4	27.29	6.143	
3,900.0	3,890.4	3,925.7	3,896.6	13.7	14.1	-108.08	30.1	206.2	167.8	140.1	27.76	6.047 ES	
4,000.0	3,989.8	4,024.6	3,992.6	14.1	14.5	-103.24	18.1	227.3	169.2	140.6	28.57	5.922	
4,100.0	4,089.2	4,123.6	4,088.5	14.4	14.9	-98.51	6.2	248.4	171.7	142.3	29.37	5.846	
4,200.0	4,188.7	4,222.5	4,184.4	14.8	15.4	-93.95	-5.7	269.5	175.4	145.2	30.16	5.815 SF	
4,300.0	4,288.1	4,321.5	4,280.4	15.2	15.8	-89.59	-17.7	290.5	180.2	149.2	30.94	5.823	
4,400.0	4,387.5	4,420.4	4,376.3	15.6	16.2	-85.48	-29.6	311.6	185.9	154.2	31.70	5.865	
4,500.0	4,487.0	4,519.4	4,472.3	15.9	16.7	-81.63	-41.6	332.7	192.6	160.2	32.46	5.934	
4,600.0	4,586.4	4,618.3	4,568.2	16.3	17.1	-78.05	-53.5	353.8	200.1	166.9	33.20	6.027	
4,700.0	4,685.8	4,717.3	4,664.2	16.7	17.6	-74.73	-65.5	374.8	208.3	174.4	33.94	6.139	
4,800.0	4,785.3	4,816.2	4,760.1	17.1	18.0	-71.68	-77.4	395.9	217.2	182.6	34.67	6.266	
4,900.0	4,884.7	4,915.2	4,856.0	17.5	18.5	-68.87	-89.4	417.0	226.7	191.3	35.39	6.404	
5,000.0	4,984.1	5,014.1	4,952.0	17.8	18.9	-66.28	-101.3	438.1	236.6	200.5	36.12	6.552	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 604H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,083.5	5,113.1	5,047.9	18.2	19.4	-63.91	-113.3	459.2	247.0	210.2	36.84	6.706	
5,200.0	5,183.0	5,212.0	5,143.9	18.6	19.9	-61.73	-125.2	480.2	257.8	220.3	37.56	6.864	
5,300.0	5,282.4	5,311.0	5,239.8	19.0	20.3	-59.73	-137.1	501.3	268.9	230.7	38.28	7.026	
5,400.0	5,381.8	5,410.0	5,335.7	19.4	20.8	-57.88	-149.1	522.4	280.4	241.4	39.00	7.189	
5,500.0	5,481.3	5,508.9	5,431.7	19.7	21.2	-56.19	-161.0	543.5	292.1	252.3	39.72	7.353	
5,600.0	5,580.7	5,607.9	5,527.6	20.1	21.7	-54.62	-173.0	564.6	304.0	263.5	40.44	7.516	
5,700.0	5,680.1	5,706.8	5,623.6	20.5	22.2	-53.17	-184.9	585.6	316.1	275.0	41.17	7.679	
5,800.0	5,779.6	5,805.8	5,719.5	20.9	22.6	-51.83	-196.9	606.7	328.5	286.6	41.89	7.840	
5,900.0	5,879.0	5,904.7	5,815.4	21.3	23.1	-50.58	-208.8	627.8	340.9	298.3	42.62	8.000	
6,000.0	5,978.4	6,003.7	5,911.4	21.6	23.6	-49.43	-220.8	648.9	353.6	310.2	43.35	8.157	
6,100.0	6,077.9	6,102.6	6,007.3	22.0	24.1	-48.35	-232.7	670.0	366.3	322.3	44.08	8.312	
6,200.0	6,177.3	6,201.6	6,103.3	22.4	24.5	-47.35	-244.6	691.0	379.2	334.4	44.81	8.464	
6,300.0	6,276.7	6,300.5	6,199.2	22.8	25.0	-46.41	-256.6	712.1	392.2	346.7	45.54	8.613	
6,400.0	6,376.2	6,399.5	6,295.2	23.2	25.5	-45.53	-268.5	733.2	405.3	359.1	46.27	8.760	
6,500.0	6,475.6	6,498.4	6,391.1	23.6	26.0	-44.71	-280.5	754.3	418.5	371.5	47.01	8.903	
6,600.0	6,575.0	6,597.4	6,487.0	23.9	26.4	-43.94	-292.4	775.4	431.8	384.0	47.74	9.044	
6,700.0	6,674.5	6,696.3	6,583.0	24.3	26.9	-43.21	-304.4	796.4	445.1	396.6	48.48	9.181	
6,800.0	6,773.9	6,795.3	6,678.9	24.7	27.4	-42.52	-316.3	817.5	458.5	409.3	49.22	9.316	
6,900.0	6,873.3	6,894.3	6,774.9	25.1	27.9	-41.88	-328.3	838.6	472.0	422.0	49.96	9.448	
7,000.0	6,972.8	6,993.2	6,870.8	25.5	28.4	-41.27	-340.2	859.7	485.5	434.8	50.70	9.576	
7,100.0	7,072.2	7,092.2	6,966.7	25.9	28.8	-40.69	-352.2	880.8	499.0	447.6	51.44	9.702	
7,200.0	7,171.6	7,191.1	7,062.7	26.2	29.3	-40.15	-364.1	901.8	512.7	460.5	52.18	9.825	
7,300.0	7,271.1	7,290.1	7,158.6	26.6	29.8	-39.63	-376.0	922.9	526.3	473.4	52.92	9.945	
7,400.0	7,370.5	7,389.0	7,254.6	27.0	30.3	-39.14	-388.0	944.0	540.0	486.4	53.67	10.063	
7,500.0	7,469.9	7,488.0	7,350.5	27.4	30.8	-38.67	-399.9	965.1	553.8	499.3	54.41	10.177	
7,600.0	7,569.3	7,586.9	7,446.4	27.8	31.2	-38.22	-411.9	986.2	567.5	512.4	55.16	10.289	
7,700.0	7,668.8	7,685.9	7,542.4	28.2	31.7	-37.80	-423.8	1,007.2	581.3	525.4	55.90	10.399	
7,800.0	7,768.2	7,784.8	7,638.3	28.6	32.2	-37.40	-435.8	1,028.3	595.2	538.5	56.65	10.506	
7,900.0	7,867.6	7,883.8	7,734.3	28.9	32.7	-37.01	-447.7	1,049.4	609.0	551.6	57.40	10.611	
8,000.0	7,967.1	7,982.7	7,830.2	29.3	33.2	-36.64	-459.7	1,070.5	622.9	564.8	58.15	10.713	
8,100.0	8,066.5	8,081.7	7,926.2	29.7	33.7	-36.29	-471.6	1,091.5	636.8	577.9	58.89	10.813	
8,200.0	8,165.9	8,180.6	8,022.1	30.1	34.1	-35.95	-483.5	1,112.6	650.8	591.1	59.64	10.911	
8,300.0	8,265.4	8,279.6	8,118.0	30.5	34.6	-35.63	-495.5	1,133.7	664.7	604.3	60.39	11.006	
8,400.0	8,364.8	8,378.5	8,214.0	30.9	35.1	-35.32	-507.4	1,154.8	678.7	617.5	61.14	11.100	
8,500.0	8,464.2	8,477.5	8,309.9	31.2	35.6	-35.02	-519.4	1,175.9	692.7	630.8	61.90	11.191	
8,600.0	8,563.7	8,576.5	8,405.9	31.6	36.1	-34.73	-531.3	1,196.9	706.7	644.0	62.65	11.280	
8,700.0	8,663.1	8,675.4	8,501.8	32.0	36.6	-34.46	-543.3	1,218.0	720.7	657.3	63.40	11.368	
8,800.0	8,762.5	8,774.4	8,597.7	32.4	37.1	-34.20	-555.2	1,239.1	734.8	670.6	64.15	11.453	
8,900.0	8,862.0	8,873.3	8,693.7	32.8	37.6	-33.94	-567.2	1,260.2	748.8	683.9	64.90	11.537	
9,000.0	8,961.4	8,972.3	8,789.6	33.2	38.0	-33.70	-579.1	1,281.3	762.9	697.2	65.66	11.619	
9,100.0	9,060.8	9,071.2	8,885.6	33.6	38.5	-33.46	-591.1	1,302.3	777.0	710.6	66.41	11.699	
9,200.0	9,160.3	9,193.4	9,004.3	33.9	39.1	-33.22	-605.1	1,327.2	790.1	722.7	67.40	11.722	
9,300.0	9,259.7	9,327.7	9,136.2	34.3	39.7	-33.11	-617.8	1,349.5	799.1	730.7	68.43	11.678	
9,400.0	9,359.1	9,462.9	9,269.9	34.7	40.3	-33.17	-627.4	1,366.6	803.7	734.4	69.35	11.589	
9,500.0	9,458.6	9,598.3	9,404.7	35.1	40.8	-33.39	-634.0	1,378.1	804.0	733.8	70.18	11.457	
9,600.0	9,558.0	9,733.3	9,539.5	35.5	41.2	-33.78	-637.4	1,384.1	799.8	728.9	70.89	11.283	
9,700.0	9,657.4	9,853.2	9,659.3	35.9	41.6	-34.27	-637.9	1,385.0	791.7	720.2	71.56	11.064	
9,800.0	9,756.9	9,945.4	9,751.5	36.3	41.8	-34.59	-639.0	1,385.0	783.1	710.8	72.31	10.830	
9,900.0	9,856.3	10,025.0	9,830.1	36.7	42.1	-34.06	-651.1	1,385.1	776.5	703.4	73.05	10.629	
10,000.0	9,955.7	10,103.2	9,904.3	37.0	42.4	-32.60	-675.5	1,385.3	772.6	698.9	73.71	10.482	
10,047.8	10,003.3	10,137.3	9,935.3	37.2	42.5	-31.68	-689.9	1,385.4	772.1	698.1	73.98	10.436	
10,100.0	10,055.1	10,175.0	9,968.1	37.4	42.7	-30.47	-708.3	1,385.6	772.8	698.5	74.25	10.408	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 604H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
10,200.0	10,154.6	10,232.7	10,015.4	37.8	42.9	-28.28	-741.4	1,385.8	778.4	703.8	74.58	10.438	
10,300.0	10,254.0	10,284.1	10,053.9	38.2	43.2	-25.99	-775.5	1,386.1	790.9	716.3	74.59	10.603	
10,400.0	10,353.4	10,325.0	10,081.7	38.6	43.4	-24.00	-805.4	1,386.3	811.0	736.9	74.17	10.934	
10,500.0	10,452.9	10,364.3	10,105.9	39.0	43.5	-21.96	-836.3	1,386.6	839.4	766.0	73.41	11.434	
10,600.0	10,552.3	10,400.0	10,125.7	39.4	43.7	-20.02	-866.0	1,386.8	875.8	803.4	72.34	12.107	
10,700.0	10,651.7	10,425.0	10,138.2	39.7	43.8	-18.64	-887.7	1,387.0	919.8	848.9	70.91	12.971	
10,800.0	10,751.2	10,450.0	10,149.5	40.1	44.0	-17.23	-909.9	1,387.1	970.8	901.4	69.40	13.989	
10,900.0	10,850.6	10,463.4	10,155.1	40.5	44.0	-16.48	-922.1	1,387.2	1,028.0	960.3	67.68	15.188	
11,000.0	10,950.0	10,475.0	10,159.7	40.9	44.1	-15.82	-932.8	1,387.3	1,090.6	1,024.6	66.00	16.524	
11,100.0	11,049.5	10,500.0	10,168.7	41.3	44.2	-14.41	-956.1	1,387.5	1,157.8	1,093.2	64.67	17.904	
11,200.0	11,149.0	10,500.0	10,168.7	41.7	44.2	-14.84	-956.1	1,387.5	1,229.9	1,166.8	63.07	19.501	
11,300.0	11,248.8	10,525.0	10,176.4	42.0	44.4	-13.96	-979.9	1,387.7	1,307.4	1,245.2	62.11	21.048	
11,400.0	11,348.8	10,525.0	10,176.4	42.4	44.4	-14.66	-979.9	1,387.7	1,389.3	1,328.4	60.96	22.790	
11,500.0	11,448.5	10,536.0	10,179.4	42.7	44.4	-50.60	-990.5	1,387.8	1,473.0	1,412.8	60.13	24.497	
11,600.0	11,544.8	10,550.0	10,182.8	43.1	44.5	-39.46	-1,004.0	1,387.9	1,551.1	1,491.7	59.35	26.136	
11,700.0	11,633.6	10,564.7	10,186.0	43.6	44.6	-32.29	-1,018.4	1,388.0	1,620.8	1,562.2	58.62	27.651	
11,800.0	11,711.0	10,575.0	10,188.0	44.0	44.6	-27.72	-1,028.5	1,388.0	1,680.0	1,622.1	57.92	29.003	
11,900.0	11,773.7	10,600.0	10,191.9	44.5	44.8	-24.68	-1,053.2	1,388.2	1,726.7	1,669.1	57.53	30.012	
12,000.0	11,818.7	10,625.0	10,194.5	45.0	44.9	-22.85	-1,078.0	1,388.4	1,759.8	1,702.5	57.30	30.709	
12,100.0	11,844.3	10,650.0	10,195.8	45.5	45.0	-21.92	-1,103.0	1,388.6	1,778.4	1,721.1	57.29	31.044	
12,200.0	11,850.0	10,690.7	10,196.0	46.0	45.2	-21.73	-1,143.7	1,388.9	1,782.6	1,725.0	57.58	30.959	
12,300.0	11,850.0	10,790.7	10,196.0	46.5	45.8	-21.73	-1,243.7	1,389.7	1,782.6	1,724.3	58.23	30.611	
12,400.0	11,850.0	10,890.7	10,196.0	47.1	46.4	-21.73	-1,343.7	1,390.5	1,782.6	1,723.6	58.93	30.247	
12,500.0	11,850.0	10,990.7	10,196.0	47.7	47.1	-21.73	-1,443.7	1,391.3	1,782.6	1,722.9	59.68	29.868	
12,600.0	11,850.0	11,090.7	10,196.0	48.3	47.8	-21.73	-1,543.7	1,392.0	1,782.6	1,722.1	60.47	29.477	
12,700.0	11,850.0	11,190.7	10,196.0	49.0	48.5	-21.73	-1,643.7	1,392.8	1,782.6	1,721.3	61.31	29.075	
12,800.0	11,850.0	11,290.7	10,196.0	49.7	49.2	-21.73	-1,743.7	1,393.6	1,782.6	1,720.4	62.19	28.666	
12,900.0	11,850.0	11,390.7	10,196.0	50.5	50.0	-21.73	-1,843.7	1,394.4	1,782.6	1,719.5	63.10	28.250	
13,000.0	11,850.0	11,490.7	10,196.0	51.2	50.8	-21.73	-1,943.7	1,395.2	1,782.6	1,718.5	64.05	27.829	
13,100.0	11,850.0	11,590.7	10,196.0	52.0	51.7	-21.73	-2,043.7	1,395.9	1,782.6	1,717.5	65.04	27.406	
13,200.0	11,850.0	11,690.7	10,196.0	52.8	52.6	-21.73	-2,143.7	1,396.7	1,782.6	1,716.5	66.07	26.981	
13,300.0	11,850.0	11,790.7	10,196.0	53.7	53.4	-21.73	-2,243.7	1,397.5	1,782.6	1,715.5	67.13	26.556	
13,400.0	11,850.0	11,890.7	10,196.0	54.6	54.4	-21.73	-2,343.6	1,398.3	1,782.6	1,714.4	68.21	26.132	
13,500.0	11,850.0	11,990.7	10,196.0	55.5	55.3	-21.73	-2,443.6	1,399.0	1,782.6	1,713.2	69.33	25.710	
13,600.0	11,850.0	12,090.7	10,196.0	56.4	56.3	-21.73	-2,543.6	1,399.8	1,782.6	1,712.1	70.48	25.292	
13,700.0	11,850.0	12,190.7	10,196.0	57.3	57.2	-21.73	-2,643.6	1,400.6	1,782.6	1,710.9	71.66	24.877	
13,800.0	11,850.0	12,290.7	10,196.0	58.3	58.2	-21.73	-2,743.6	1,401.4	1,782.6	1,709.7	72.86	24.467	
13,900.0	11,850.0	12,390.7	10,196.0	59.3	59.3	-21.73	-2,843.6	1,402.1	1,782.6	1,708.5	74.08	24.063	
14,000.0	11,850.0	12,490.7	10,196.0	60.3	60.3	-21.73	-2,943.6	1,402.9	1,782.6	1,707.3	75.33	23.664	
14,100.0	11,850.0	12,590.7	10,196.0	61.3	61.4	-21.73	-3,043.6	1,403.7	1,782.6	1,706.0	76.60	23.271	
14,200.0	11,850.0	12,690.7	10,196.0	62.3	62.4	-21.73	-3,143.6	1,404.5	1,782.6	1,704.7	77.89	22.885	
14,300.0	11,850.0	12,790.7	10,196.0	63.4	63.5	-21.73	-3,243.6	1,405.2	1,782.6	1,703.4	79.20	22.506	
14,400.0	11,850.0	12,890.7	10,196.0	64.4	64.6	-21.73	-3,343.6	1,406.0	1,782.6	1,702.0	80.54	22.134	
14,500.0	11,850.0	12,990.7	10,196.0	65.5	65.7	-21.73	-3,443.6	1,406.8	1,782.6	1,700.7	81.89	21.769	
14,600.0	11,850.0	13,090.7	10,196.0	66.6	66.8	-21.73	-3,543.6	1,407.6	1,782.6	1,699.3	83.25	21.411	
14,700.0	11,850.0	13,190.7	10,196.0	67.7	68.0	-21.73	-3,643.6	1,408.3	1,782.6	1,697.9	84.64	21.061	
14,800.0	11,850.0	13,290.7	10,196.0	68.8	69.1	-21.73	-3,743.6	1,409.1	1,782.6	1,696.5	86.04	20.719	
14,900.0	11,850.0	13,390.7	10,196.0	70.0	70.3	-21.73	-3,843.6	1,409.9	1,782.6	1,695.1	87.45	20.383	
15,000.0	11,850.0	13,490.7	10,196.0	71.1	71.5	-21.73	-3,943.6	1,410.7	1,782.6	1,693.7	88.88	20.056	
15,100.0	11,850.0	13,590.7	10,196.0	72.3	72.6	-21.73	-4,043.6	1,411.4	1,782.6	1,692.3	90.32	19.735	
15,200.0	11,850.0	13,690.7	10,196.0	73.4	73.8	-21.73	-4,143.6	1,412.2	1,782.6	1,690.8	91.78	19.422	
15,300.0	11,850.0	13,790.7	10,196.0	74.6	75.0	-21.73	-4,243.6	1,413.0	1,782.6	1,689.3	93.25	19.117	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 604H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Rule Assigned:

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.0	11,850.0	13,890.7	10,196.0	75.8	76.2	-21.73	-4,343.6	1,413.8	1,782.6	1,687.9	94.73	18.818	
15,500.0	11,850.0	13,990.7	10,196.0	77.0	77.5	-21.73	-4,443.6	1,414.6	1,782.6	1,686.4	96.22	18.526	
15,600.0	11,850.0	14,090.7	10,196.0	78.2	78.7	-21.73	-4,543.6	1,415.3	1,782.6	1,684.9	97.72	18.241	
15,700.0	11,850.0	14,190.7	10,196.0	79.4	79.9	-21.73	-4,643.6	1,416.1	1,782.6	1,683.3	99.23	17.963	
15,800.0	11,850.0	14,290.7	10,196.0	80.6	81.2	-21.73	-4,743.6	1,416.9	1,782.6	1,681.8	100.76	17.692	
15,900.0	11,850.0	14,390.7	10,196.0	81.8	82.4	-21.73	-4,843.6	1,417.7	1,782.6	1,680.3	102.29	17.427	
16,000.0	11,850.0	14,490.7	10,196.0	83.1	83.7	-21.73	-4,943.6	1,418.4	1,782.6	1,678.8	103.83	17.168	
16,100.0	11,850.0	14,590.7	10,196.0	84.3	84.9	-21.73	-5,043.6	1,419.2	1,782.6	1,677.2	105.38	16.916	
16,200.0	11,850.0	14,690.7	10,196.0	85.6	86.2	-21.73	-5,143.6	1,420.0	1,782.6	1,675.6	106.94	16.670	
16,300.0	11,850.0	14,790.7	10,196.0	86.8	87.4	-21.73	-5,243.6	1,420.8	1,782.6	1,674.1	108.50	16.429	
16,400.0	11,850.0	14,890.7	10,196.0	88.1	88.7	-21.73	-5,343.6	1,421.5	1,782.6	1,672.5	110.07	16.194	
16,500.0	11,850.0	14,990.7	10,196.0	89.3	90.0	-21.73	-5,443.6	1,422.3	1,782.6	1,670.9	111.65	15.965	
16,600.0	11,850.0	15,090.7	10,196.0	90.6	91.3	-21.73	-5,543.6	1,423.1	1,782.6	1,669.3	113.24	15.741	
16,700.0	11,850.0	15,190.7	10,196.0	91.9	92.6	-21.73	-5,643.5	1,423.9	1,782.6	1,667.7	114.84	15.523	
16,800.0	11,850.0	15,290.7	10,196.0	93.2	93.9	-21.73	-5,743.5	1,424.6	1,782.6	1,666.1	116.44	15.310	
16,900.0	11,850.0	15,390.7	10,196.0	94.4	95.2	-21.73	-5,843.5	1,425.4	1,782.6	1,664.5	118.04	15.101	
17,000.0	11,850.0	15,490.7	10,196.0	95.7	96.5	-21.73	-5,943.5	1,426.2	1,782.6	1,662.9	119.65	14.898	
17,100.0	11,850.0	15,590.7	10,196.0	97.0	97.8	-21.73	-6,043.5	1,427.0	1,782.6	1,661.3	121.27	14.699	
17,200.0	11,850.0	15,690.7	10,196.0	98.3	99.1	-21.73	-6,143.5	1,427.7	1,782.6	1,659.7	122.89	14.505	
17,300.0	11,850.0	15,790.7	10,196.0	99.6	100.4	-21.73	-6,243.5	1,428.5	1,782.6	1,658.1	124.52	14.315	
17,400.0	11,850.0	15,890.7	10,196.0	100.9	101.7	-21.73	-6,343.5	1,429.3	1,782.6	1,656.4	126.16	14.130	
17,500.0	11,850.0	15,990.7	10,196.0	102.2	103.1	-21.73	-6,443.5	1,430.1	1,782.6	1,654.8	127.79	13.949	
17,600.0	11,850.0	16,090.7	10,196.0	103.6	104.4	-21.73	-6,543.5	1,430.8	1,782.6	1,653.1	129.44	13.772	
17,700.0	11,850.0	16,190.7	10,196.0	104.9	105.7	-21.73	-6,643.5	1,431.6	1,782.6	1,651.5	131.08	13.599	
17,800.0	11,850.0	16,290.7	10,196.0	106.2	107.0	-21.73	-6,743.5	1,432.4	1,782.6	1,649.8	132.73	13.430	
17,900.0	11,850.0	16,390.7	10,196.0	107.5	108.4	-21.73	-6,843.5	1,433.2	1,782.6	1,648.2	134.39	13.264	
18,000.0	11,850.0	16,490.7	10,196.0	108.8	109.7	-21.73	-6,943.5	1,434.0	1,782.6	1,646.5	136.05	13.102	
18,100.0	11,850.0	16,590.7	10,196.0	110.2	111.1	-21.73	-7,043.5	1,434.7	1,782.6	1,644.9	137.71	12.944	
18,200.0	11,850.0	16,690.7	10,196.0	111.5	112.4	-21.73	-7,143.5	1,435.5	1,782.6	1,643.2	139.38	12.789	
18,300.0	11,850.0	16,790.7	10,196.0	112.8	113.8	-21.73	-7,243.5	1,436.3	1,782.6	1,641.5	141.05	12.638	
18,400.0	11,850.0	16,890.7	10,196.0	114.2	115.1	-21.73	-7,343.5	1,437.1	1,782.6	1,639.9	142.72	12.490	
18,500.0	11,850.0	16,990.7	10,196.0	115.5	116.5	-21.73	-7,443.5	1,437.8	1,782.6	1,638.2	144.40	12.345	
18,600.0	11,850.0	17,090.7	10,196.0	116.9	117.8	-21.73	-7,543.5	1,438.6	1,782.6	1,636.5	146.08	12.203	
18,700.0	11,850.0	17,190.7	10,196.0	118.2	119.2	-21.73	-7,643.5	1,439.4	1,782.6	1,634.8	147.77	12.064	
18,800.0	11,850.0	17,290.7	10,196.0	119.6	120.5	-21.73	-7,743.5	1,440.2	1,782.6	1,633.1	149.45	11.927	
18,900.0	11,850.0	17,390.7	10,196.0	120.9	121.9	-21.73	-7,843.5	1,440.9	1,782.6	1,631.4	151.14	11.794	
19,000.0	11,850.0	17,490.7	10,196.0	122.3	123.2	-21.73	-7,943.5	1,441.7	1,782.6	1,629.7	152.83	11.664	
19,100.0	11,850.0	17,590.7	10,196.0	123.6	124.6	-21.73	-8,043.5	1,442.5	1,782.6	1,628.1	154.53	11.536	
19,200.0	11,850.0	17,690.7	10,196.0	125.0	126.0	-21.73	-8,143.5	1,443.3	1,782.6	1,626.4	156.23	11.410	
19,300.0	11,850.0	17,790.7	10,196.0	126.3	127.3	-21.73	-8,243.5	1,444.0	1,782.6	1,624.7	157.93	11.287	
19,400.0	11,850.0	17,890.7	10,196.0	127.7	128.7	-21.73	-8,343.5	1,444.8	1,782.6	1,623.0	159.63	11.167	
19,500.0	11,850.0	17,990.7	10,196.0	129.1	130.1	-21.73	-8,443.5	1,445.6	1,782.6	1,621.2	161.33	11.049	
19,600.0	11,850.0	18,090.7	10,196.0	130.4	131.4	-21.73	-8,543.5	1,446.4	1,782.6	1,619.5	163.04	10.933	
19,700.0	11,850.0	18,190.7	10,196.0	131.8	132.8	-21.73	-8,643.5	1,447.1	1,782.6	1,617.8	164.75	10.820	
19,800.0	11,850.0	18,290.7	10,196.0	133.2	134.2	-21.73	-8,743.5	1,447.9	1,782.6	1,616.1	166.46	10.709	
19,900.0	11,850.0	18,390.7	10,196.0	134.5	135.6	-21.73	-8,843.5	1,448.7	1,782.6	1,614.4	168.18	10.600	
20,000.0	11,850.0	18,490.7	10,196.0	135.9	137.0	-21.73	-8,943.5	1,449.5	1,782.6	1,612.7	169.89	10.492	
20,100.0	11,850.0	18,590.7	10,196.0	137.3	138.3	-21.73	-9,043.4	1,450.2	1,782.6	1,611.0	171.61	10.387	
20,200.0	11,850.0	18,690.7	10,196.0	138.6	139.7	-21.73	-9,143.4	1,451.0	1,782.6	1,609.3	173.33	10.284	
20,300.0	11,850.0	18,790.7	10,196.0	140.0	141.1	-21.73	-9,243.4	1,451.8	1,782.6	1,607.5	175.05	10.183	
20,400.0	11,850.0	18,890.7	10,196.0	141.4	142.5	-21.73	-9,343.4	1,452.6	1,782.6	1,605.8	176.77	10.084	
20,500.0	11,850.0	18,990.7	10,196.0	142.8	143.9	-21.73	-9,443.4	1,453.4	1,782.6	1,604.1	178.50	9.987	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 604H - OH - Plan 0.1

Offset Site Error: 0.0 usft

Survey Program: 0-B001Mb_MWD+HRGM

Offset Well Error: 0.0 usft

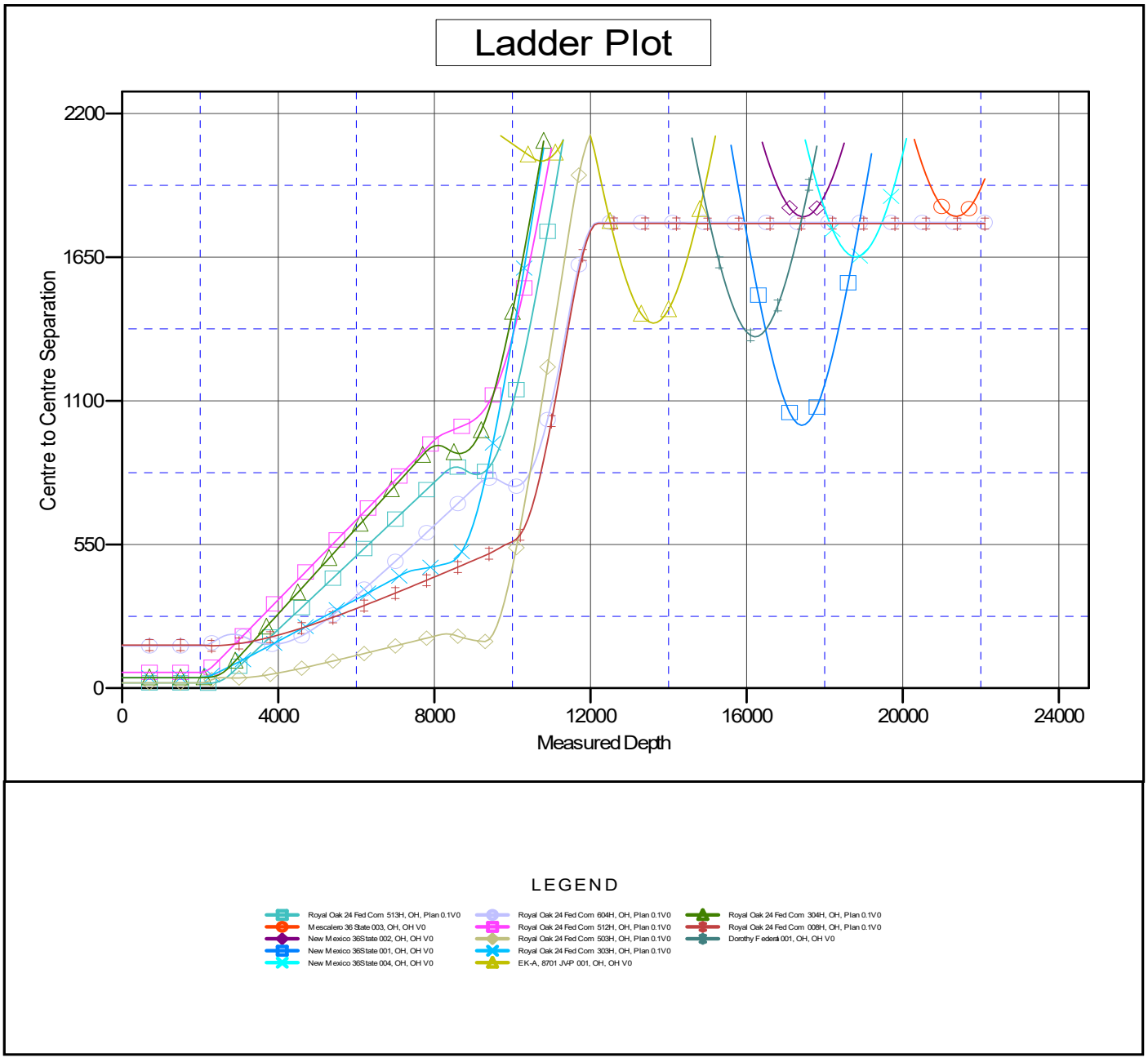
Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
20,600.0	11,850.0	19,090.7	10,196.0	144.2	145.3	-21.73	-9,543.4	1,454.1	1,782.6	1,602.4	180.22	9.891	
20,700.0	11,850.0	19,190.7	10,196.0	145.5	146.6	-21.73	-9,643.4	1,454.9	1,782.6	1,600.6	181.95	9.797	
20,800.0	11,850.0	19,290.7	10,196.0	146.9	148.0	-21.73	-9,743.4	1,455.7	1,782.6	1,598.9	183.68	9.705	
20,900.0	11,850.0	19,390.7	10,196.0	148.3	149.4	-21.73	-9,843.4	1,456.5	1,782.6	1,597.2	185.41	9.614	
21,000.0	11,850.0	19,490.7	10,196.0	149.7	150.8	-21.73	-9,943.4	1,457.2	1,782.6	1,595.4	187.15	9.525	
21,100.0	11,850.0	19,590.7	10,196.0	151.1	152.2	-21.73	-10,043.4	1,458.0	1,782.6	1,593.7	188.88	9.438	
21,200.0	11,850.0	19,690.7	10,196.0	152.5	153.6	-21.73	-10,143.4	1,458.8	1,782.6	1,592.0	190.62	9.352	
21,300.0	11,850.0	19,790.7	10,196.0	153.9	155.0	-21.73	-10,243.4	1,459.6	1,782.6	1,590.2	192.35	9.267	
21,400.0	11,850.0	19,890.7	10,196.0	155.2	156.4	-21.73	-10,343.4	1,460.3	1,782.6	1,588.5	194.09	9.184	
21,500.0	11,850.0	19,990.7	10,196.0	156.6	157.8	-21.73	-10,443.4	1,461.1	1,782.6	1,586.7	195.83	9.103	
21,600.0	11,850.0	20,090.7	10,196.0	158.0	159.2	-21.73	-10,543.4	1,461.9	1,782.6	1,585.0	197.57	9.022	
21,700.0	11,850.0	20,190.7	10,196.0	159.4	160.6	-21.73	-10,643.4	1,462.7	1,782.6	1,583.3	199.32	8.943	
21,800.0	11,850.0	20,290.7	10,196.0	160.8	162.0	-21.73	-10,743.4	1,463.4	1,782.6	1,581.5	201.06	8.866	
21,900.0	11,850.0	20,390.7	10,196.0	162.2	163.4	-21.73	-10,843.4	1,464.2	1,782.6	1,579.8	202.81	8.790	
22,000.0	11,850.0	20,490.7	10,196.0	163.6	164.8	-21.73	-10,943.4	1,465.0	1,782.6	1,578.0	204.55	8.715	
22,100.0	11,850.0	20,590.7	10,196.0	165.0	166.2	-21.73	-11,043.4	1,465.8	1,782.6	1,576.3	206.30	8.641	
22,104.1	11,850.0	20,594.8	10,196.0	165.1	166.2	-21.73	-11,047.5	1,465.8	1,782.6	1,576.2	206.37	8.638	
22,105.9	11,850.0	20,594.8	10,196.0	165.1	166.2	-21.73	-11,047.5	1,465.8	1,782.6	1,576.2	206.40	8.637	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 3935.2usft (3935.2)
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

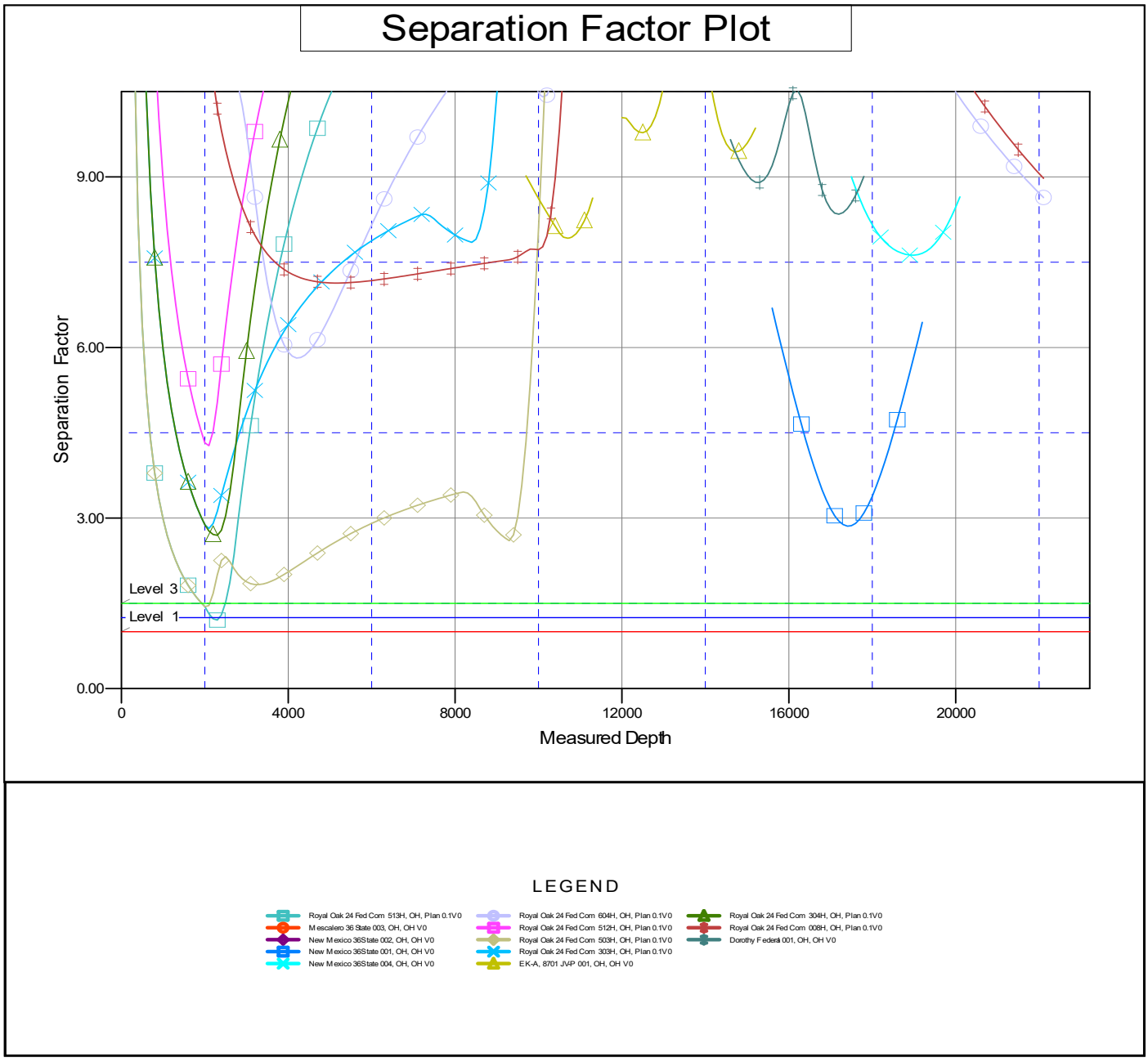
Coordinates are relative to: Royal Oak 24 Fed Com 009H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.39°



Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 009H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3935.2usft (3935.2)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3935.2usft (3935.2)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 009H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 3935.2usft (3935.2)	Coordinates are relative to: Royal Oak 24 Fed Com 009H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is -104.333334	Grid Convergence at Surface is: 0.39°



AFE:

API:

REGULATORY: NMOCD

PERMIT #

RIG: H&P 460

KB: 3935.5 (26.5')

GL: 3909'

AVANT NATURAL RESOURCES

Royal Oak 24 Fed Com 009H

Wolfcamp

Lea County, NM

SHL: *Sec. 24, T-18S, R-33E; 603 FSL, 1710 FEL*

Lat: 32.7276077, Long: -103.61355 (NAD83)

HOLE SIZE	MD	FORMATION	TVD	MUD	CASING	CEMENT	SPECIAL INSTRUCTIONS
	120	20" Conductor	120	SPUD MW 8.4 ppg	10 3/4 " 40.5# J-55 LTC	LEAD: 12.8 PPG Top of Lead: 0 50% Excess	Circ cement to surface is a NMOCD requirement
14 3/4 "	1,628	Rustler	1,628	Fresh	+/- 13 Bowsprings 1 20' pup jt *1 joint shoe track, prebucked*	TAIL: 14.8 PPG Top of Tail: 1311' 20% Excess	Casing must be set 25' into the Rustler
	1,653	SURF CSG PT	1,653	9 ppg			MUD: Fresh water only
	1,951	Soldao	1,951	DRLOUT MW 9.5 ppg	7 5/8 " 29.7# P-110 HC LTC	LEAD: 11 PPG Top of Lead: 0' 50% excess	Circ cement to surface is a NMOCD requirement
	3,649	Yates	3,641				
9 7/8 "	5,674	Cherry Canyon	5,654				
	7,265	Brushy Canyon	7,236				
	7,583	Bone Spring	7,508	Cut Brine	1 20' pup jt	TAIL: 14.8 PPG Top of Tail: 7650' 20% Excess	
	8,830	1st BS Sand	8,782				
	9,473	2nd BS Sand	9,378	TD MW 9.5 ppg	+/- 63 Bowsprings *1 joint shoe track, prebucked*		
	9,573	INTRM CSG PT	9,478				
6 3/4 " VERTICAL	10,229	3rd BS Sand	10,086	DRLOUT MW 9.2 Cut Brine KOP MW 9.5	*SPLIT STRING* 5 1/2 " 20# P-110 HC Anaconda SP (5.90" collars) *9073' - 11424'*		
	10,380	Wolfcamp	10,236				
6 3/4 " CURVE	**11,424**	**KOP**	**11,373**	OBM EOC MW 9.5	Lat MW 9.5	OBM TD MW 9.5	
	12,174	**EOC**	**11,850**				
6 3/4 " LATERAL					5 1/2 " 20# P-110 HC GBCD *0' - 9073' & 11424' - TD* 1 15' pup jt 2 20' Marker Jts +/- 17 Doublebows +/- 225 Solid Bodies	LEAD: 10.7 PPG Top of Lead: 0 50% Excess TAIL: 14.8 PPG Top of Tail: 11424 20% Excess All aqueous fluids (spacer and disp) left inside or outside of pipe must have biocide & corrision inhibitor	Expected BHL Pressure: 5214 psi

FLOAT

12° / 100'

WET SHOE

22,106 ' MD

11,060 ' VS

11,850 ' TVD

BHL: 100 FSL, 990 FEL

EOC VS = 1128' *Lat. Azi = VS Azi. = 179.56°* Est BHST = 184°F, Est BHCT = 167°F

DIRECTIONAL PLAN

MD	INC	INC	TVD	ANNOTATION

PRELIMINARY

DIRECTIONS TO LOCAITON:

Coterra Energy Inc.
CEMENT PROPOSAL #81451

Surface Proposal

Royal Oak 24 Fed Com 009H 30-025-54152
S:24 T:18S R:33E Lea NM

February 06, 2025

AMERICAN CEMENTING

Surface Proposal

CEMENT PROPOSAL

Attention: Kyle Adamek | (660) 247-2024 | kyle@deepenergyllc.com
Coterra Energy Inc.
202 S. Cheyenne Ave Suite 1000 | Tulsa, OK 74103
February 06, 2025

Dear Kyle Adamek,

Thank you for the opportunity to submit pricing for cementing services on the attached wellbore. American Cementing's priority is to provide premium customer service while operating in a safe, efficient manner. If you have any questions regarding the proposal or services offered, please contact American Cementing at any time.

Sincerely,

Will Bautista
Sales | (432) 254-0261 | will.bautista@americancementing.com

Prepared By
Meseret Belayneh
Field Engineer III | (801) 513-8231 | meseret.belayneh@americancementing.com

Field Office 6165 W Murphy St, Odessa, TX 79763
Phone: (432) 208-6452

Disclaimer

1. Proposal is valid for 30 days
2. Proposal is for pricing purposes only; actual job procedure to be confirmed prior to job
3. American Cementing recommends proper hole conditioning prior to initiating cementing; please discuss procedures with your American Cementing representative
4. Applicable sales tax will be added to the final invoice
5. American Cementing's general terms and conditions are hereby incorporated into this Proposal

Well Information

Well Name: **Royal Oak 24 Fed Com 009H**
Well API: **30-025-54152**
Latitude: **32.728046**
Longitude: **-103.613749**
Section: **24**
Township: **18S**
Range: **33E**
County: **Lea, NM**

Job: Surface (Surface) - Well Information

Drilling Fluid Density: **8.40 lb/gal**
Drilling Fluid: **Water**
Total Measured Depth: **1653 ft**
Total Vertical Depth: **1653 ft**
BHCT: **86 °F**
BHST: **95 °F**
Temperature Gradient: **0.90 °F/100ft**
Surface Temp: **80 °F**

Geometry

#	Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Grade	Thread	Top	Bottom	Excess (%)
1	Casing	Outer	20.000	19.500	53.00		n/a	0	120	0.0
2	OpenHole	Outer		14.750			n/a	120	1353	50.0
3	OpenHole	Outer		14.750			n/a	1353	1653	20.0
1	Casing	Inner	10.750	10.050	40.50		n/a	0	1653	0.0

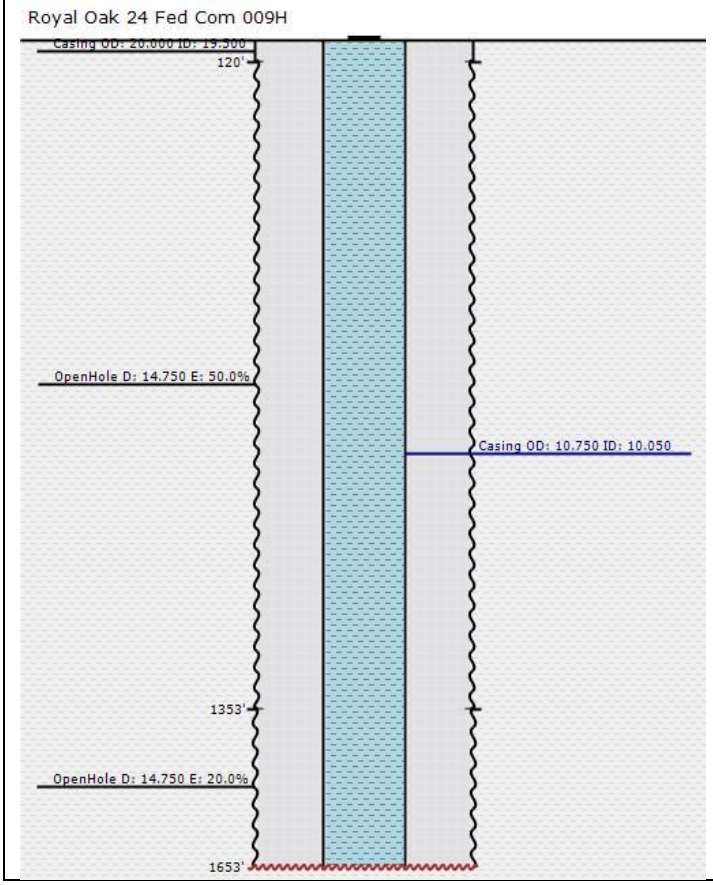
Capacities

Excess added to Capacity Factor

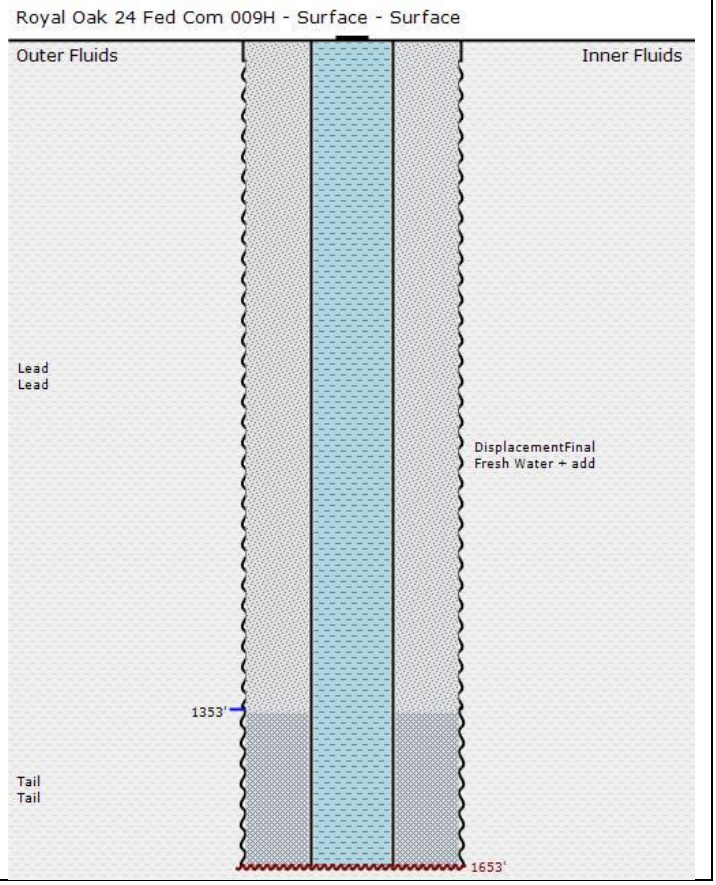
Type	TopDepth (ft)	Length (ft)	OD (in)	ID (in)	Capacity (bbl/ft)	Capacity ($ft^{3/ft}$)	Fill (ft/bbl)	Fill (ft/ft^{3})
DisplacementFinal	0	1568	10.050	0.000	0.0981	0.5509	10.19	1.82
ShoeJoint	1568	85	10.050	0.000	0.0981	0.5509	10.19	1.82
Casing to OpenHole	1353	300	14.750	10.750	0.1189	0.6676	8.41	1.50
Casing to OpenHole	120	1233	14.750	10.750	0.1486	0.8345	6.73	1.20
Casing to Casing	0	120	19.500	10.750	0.2571	1.4436	3.89	0.69

Job: Surface (Surface) - Well & Fluid Diagrams

Well Diagram



Fluid Diagram



Job: Surface (Surface) - Material Information

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/bbl)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
1	Flush	FW with dye	0.00	8.34	42.0	n/a		20.00
DYE, LIQUID, BLUE - Other - 0.050 gal/bbl								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/sk)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
2	Lead	Lead	0.00	12.80	10.8	1.97	612	214.38
CEMENT, CLASS C, HSR - Cement - 100.000 %								
Cement Additive, Sodium Metasilicate A-2 - Accelerator - 1.200 %BWOB								
ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS - Accelerator - 0.500 %BWOB								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
IntegraSeal CELLO - LostCirculation - 0.250 lb/sk								
IntegraSeal KOL - LostCirculation - 2.500 lb/sk								
RETARDER, R-7C - Retarder - 0.170 %BWOB								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/sk)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
3	Tail	Tail	1353.00	14.80	6.3	1.33	186	44.08
CEMENT, CLASS C, HSR - Cement - 100.000 %								
ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS - Accelerator - 0.500 %BWOB								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
ANTI STATIC ADDITIVE, STATIC FREE - Other - 0.005 lb/sk								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/bbl)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
4	DisplacementFinal	Fresh Water + add	0.00	8.34	42.0	n/a		154.00

Job: Surface (Surface) - Pump Schedule

Sequence	Type	Fluid	Density (lb/gal)	Pump Rate (bpm)	Volume (bbls)	Volume (sks)	Cum. Vol. (bbls)	Stage Time (min)	Cum. Time (min)
1	Flush	FW with dye	8.34	5.00	20.00		20.00	4.00	4.00
2	Lead	Lead	12.80	5.00	214.38	612	234.38	42.88	46.88
3	Tail	Tail	14.80	5.00	44.08	186	278.46	8.82	55.70
4	DisplacementFinal	Fresh Water + add	8.34	5.00	154.00		432.46	30.80	86.50

General Terms and Conditions

AMERICAN CEMENTING, LLC TERMS AND CONDITIONS

These Terms and Conditions (these "T&Cs") contain INDEMNIFICATION, LIMITATION OF LIABILITY AND RISK SHIFTING PROVISIONS. The provision of Work by American Cementing, LLC or its affiliated companies ("Contractor" or "American") to any person or entity placing an Order for such Work ("Company" or "Customer") is subject to these T&Cs. By requesting the Work, Company voluntarily elects to enter into and be bound by these T&Cs, and any Order for Work shall constitute acceptance of these T&Cs, *unless* Contractor and Company have entered into a Master Service Agreement or other agreement expressly accepted in writing by Contractor's authorized representative, in which case the terms and conditions of such agreements shall govern the provision of the Work and completely supersede these T&Cs in all respects.

1. DEFINITIONS. "Claims" means all claims, lawsuits, demands, causes of action, liabilities, damages (including punitive damages), judgments, awards, fines, penalties, losses, costs, expenses (including, without limitation, reasonable attorneys' fees, expert fees, and costs of litigation) of any kind or character, without limit, which arise out of or are related to the Work. "COMPANY GROUP" means (i) COMPANY, and any of its parent, subsidiary and affiliated or related entities; (ii) the working interest owners, co-owners, co-lessees, co-lessors, partners and joint venturers of (i); (iii) any person or entity with an economic interest or property rights in the well, premises or the property in relation to or upon which Work is performed; and (iv) the officers, directors, employees, shareholders, agents, representatives, contractors (except CONTRACTOR), subcontractors, consultants, and invitees of (i), (ii) and (iii) above. "CONTRACTOR GROUP" means (i) CONTRACTOR and any of its subsidiary and affiliated or related entities; and (ii) the officers, directors, employees, shareholders, agents, representatives, contractors, subcontractors, consultants, and invitees of all of the foregoing. "Order" means a written or verbal request for specific Work, including by way of a purchase order, work order, service order, work authorization, or similar instrument issued by COMPANY to CONTRACTOR, and which shall incorporate the pricing proposal submitted by CONTRACTOR for such Work. A request will be considered written if exchanges, whether by correspondence, letter, fax, or email include all material terms and conditions and they have been accepted or ratified by both COMPANY and CONTRACTOR; *provided, however*, if verbal, such request shall be confirmed in writing as soon as practicable, and the terms of the written Order shall control. "Work" means any cementing services and other related services provided by CONTRACTOR, along with all related personnel, equipment, machinery, tools, supplies, materials, vehicles, facilities, consumables, goods, and any other items used in connection with such services.

2. INDEPENDENT CONTRACTOR. This Agreement does not create any agency, partnership, joint venture, or similar business relationship between parties. COMPANY will have the right generally to oversee and inspect the performance of the Work to ensure the reasonable satisfactory completion thereof; it being understood and agreed that CONTRACTOR shall have exclusive control over the operational details of the Work.

3. PRICING AND PAYMENT. 3.1 COMPANY will pay CONTRACTOR for the Work according to the prices and rates contained the applicable Order; *provided, however*, that if there are no such prices and rates, then the prices and rates set forth in the pricing proposal submitted by CONTRACTOR for the Work shall apply. The pricing proposals submitted by CONTRACTOR are generally valid sixty (60) days from submission of such proposal, unless otherwise set forth in such pricing proposal. Notwithstanding the foregoing, before commencing the Work and until an agreement is reached between the parties regarding such prices and rates, CONTRACTOR has the right to revise and shall advise COMPANY of any changes in the pricing proposal, and COMPANY may either accept or reject such changes, and proceed with the Work or not. **3.2** COMPANY shall pay CONTRACTOR's invoices within thirty (30) days of receipt of invoice. In the event COMPANY disputes any amount, it shall do so in good faith and shall notify CONTRACTOR of such dispute within thirty (30) days of receipt of invoice; *provided, however*, that COMPANY shall pay any undisputed portion of the invoice within the time for payment noted above and shall endeavor to expeditiously resolve such disputes. Any undisputed invoices, remaining unpaid for sixty (60) days after receipt by COMPANY, shall accrue interest at the rate of 1.5% per month or the maximum interest rate allowed by applicable law, whichever is less, through the time of collection. **3.3** Prices quoted by CONTRACTOR do not include sales, VAT, use or similar taxes, and such taxes, where applicable, shall be added to the quoted prices and invoiced accordingly. Each party shall pay all taxes levied or assessed by any governmental authority in connection with or incident to its performance under an Order; *provided, however,* that CONTRACTOR shall pay any assessments or taxes upon wages of CONTRACTOR, social security, unemployment insurance, old age benefits, or any other employment taxes, contributions or withholdings.

4. ORDERS; STANDARD OF PERFORMANCE; WARRANTIES. 4.1 COMPANY may from time to time place an Order for Work, and CONTRACTOR may provide such Work to COMPANY, subject to these T&Cs. Orders shall become binding only after signed or acknowledged by an authorized representative of each party. **4.2** CONTRACTOR shall provide all labor, equipment, machinery, tools, supplies, materials, vehicles, facilities, consumables, goods, and any other items required for the execution and completion of the Work, as more fully described in the applicable Order. **4.3** CONTRACTOR shall perform the Work with due diligence and care, in a good and workmanlike manner, using skilled, competent, experienced, and, where applicable, licensed personnel in accordance with the specifications represented by CONTRACTOR and with generally accepted oilfield practices. **4.4** CONTRACTOR shall conduct its Work, in all material respects, in accordance with all applicable laws, rules, regulations, decrees, and/or official government orders of any governing body having jurisdiction over the Work. **4.5** CONTRACTOR's Work is designed to operate under conditions normally encountered in a wellbore. COMPANY shall notify CONTRACTOR in advance and make special arrangements for Work in which hazardous or unusual conditions exist. COMPANY has complete care, custody, and control of the well, the premises around the well, and the drilling and production equipment of the well (other than such equipment provided by CONTRACTOR hereunder), and Company shall furnish directions and requirements for Work performed hereunder. CONTRACTOR is relying on COMPANY to provide such directions and requirements without further investigation by CONTRACTOR. CONTRACTOR agrees to observe and abide by COMPANY's safety policies and procedures communicated to and acknowledged by CONTRACTOR. CONTRACTOR shall as promptly as possible under the circumstances report to COMPANY's representative all accidents or occurrences resulting in injuries, illness or death to person(s) or damage to property, arising out of or occurring during the Work. **4.6** CONTRACTOR's sole liability, and COMPANY's exclusive remedy, for any Claims for breach of warranty under this Section 4 are limited to, at CONTRACTOR's sole option, (i) if practical, the re-performance of the defective Work or portion thereof, at no additional cost to COMPANY; or (ii) a refund or credit to COMPANY of any amount paid to CONTRACTOR for such defective Work or portion thereof. In the event that CONTRACTOR materially fails to perform the Work or if CONTRACTOR provides defective Work for reasons solely within CONTRACTOR's control, COMPANY shall give notice to CONTRACTOR of such non-performance or defective performance immediately upon discovery and prior to CONTRACTOR's departure from the worksite, otherwise such warranty Claim is waived. **4.7** Due to the nature of the Work to be performed in unpredictable wellbore conditions, CONTRACTOR does not warrant the accuracy, correctness, or completeness of any interpretations, analysis, recommendations, or advice, nor that COMPANY's or any third party's reliance on such interpretations, analysis, recommendations, or advice will accomplish any particular results, and which in any event are opinions only. Accordingly, it is COMPANY's responsibility, and sole risk, to determine the completion, well treatment, production, or financial decision involving any risk. Any outcomes that are less than expected will not relieve COMPANY of its responsibility to pay for the Work in accordance with these T&Cs. **4.8** THE WARRANTIES PROVIDED IN THIS SECTION 4 ARE THE SOLE AND EXCLUSIVE WARRANTIES RELATING TO THE WORK AND ARE IN LIEU OF ANY AND ALL OTHER WARRANTIES WHETHER ORAL, WRITTEN, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

5. ORDER CHANGES; PROJECT ADMINISTRATION. 5.1 COMPANY may ask for and CONTRACTOR may agree to variations in the Work, whether by way of addition, modification or omission, which variations shall be in writing and signed by authorized representatives of both parties. The value of any such variations shall be ascertained by reference to the prices and rates specified in the applicable Order for like or analogous Work; *provided, however,* that if there are no such prices and rates or if they are otherwise inapplicable, then the prices and rates set forth in the pricing proposal submitted by CONTRACTOR for such additional Work shall apply. **5.2** To acknowledge or document various events during the provision of the Work, a party may from time to time sign the other party's forms, such as Orders, delivery tickets, job tickets, invoices, or similar instruments used by the parties in the normal course of business. In the event of a conflict between these T&Cs and any such documents, these T&Cs shall control, *unless* specific reference is made that these T&Cs are modified and the intention to modify is explicitly stated in such documents. **5.3** It is understood and agreed between the parties that COMPANY's representative (appointed in accordance with Section 5.4 below) shall have the authority to approve any job tickets, delivery tickets, or similar forms attesting to the completion of the Work by CONTRACTOR ("Job Tickets"). A COMPANY representative's signature on such Tickets shall indicate acceptance of the Work. If the Job Tickets are not acknowledged within forty-eight (48) hours of receipt through no fault of CONTRACTOR, CONTRACTOR may submit invoices for payment as if such Tickets had been acknowledged. **5.4** COMPANY will appoint a representative who will be responsible for the supervision of the Work, and who shall have full authority to represent and make decisions on behalf of COMPANY with respect to the Work, or otherwise to resolve the day-to-day issues which may arise related to the Work. Likewise, CONTRACTOR shall designate a representative with similar responsibilities and authority to liaise with COMPANY's representative.

6. CONTRACTOR'S EQUIPMENT. 6.1 Title to CONTRACTOR's equipment, including any lost, damaged, or confiscated equipment, shall remain in CONTRACTOR, and COMPANY shall have no right to assign, transfer, hypothecate, or remove such equipment from the place of its intended use without CONTRACTOR's prior written consent. **6.2** COMPANY shall be responsible for and agrees to compensate CONTRACTOR for all damages, losses, or any abnormal wear to CONTRACTOR GROUP's equipment: (i) while in COMPANY GROUP's care, custody or control, including while being transported by any member of COMPANY GROUP; (ii) as a result of operations conducted out of specifications at COMPANY GROUP's request, or in corrosive, abnormal temperatures or other

unusual conditions; (iii) due to fishing operations (if any); or (iv) if lost in the hole or damaged beyond repair while in the hole or used in the hole. COMPANY will replace such equipment or reimburse CONTRACTOR with the current replacement price of such equipment.

7. INDEMNITY.

7.1 Application of Indemnities. 7.1.1 In those matters in which a party is required by these T&Cs to RELEASE, DEFEND, PROTECT, INDEMNIFY, AND HOLD HARMLESS the other party and/or members of its respective Group, SUCH OBLIGATIONS SHALL, EXCEPT TO THE EXTENT EXPRESSLY PROVIDED OTHERWISE IN THESE T&CS, APPLY TO INDEMNITOR REGARDLESS OF THE CAUSE OR REASON, OR WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY CONTRACT, STATUTE, RULE, OR THEORY OF LAW, INCLUDING WITHOUT LIMITATION STRICT LIABILITY, TORT, BREACH OF DUTY (STATUTORY OR OTHERWISE), BREACH OF CONTRACT, BREACH OF REPRESENTATION OR WARRANTY, BREACH OF ANY SAFETY REQUIREMENT OR REGULATION, DUE TO ANY LATENT, PATENT, OR PRE-EXISTING DEFECTS OR CONDITIONS, IMPERFECTION OF MATERIAL, FAILURE OF EQUIPMENT, OR ANY LEGAL FAULT OR RESPONSIBILITY OF EITHER PARTY, INCLUDING THE SOLE, JOINT, AND/OR CONCURRENT NEGLIGENCE OR FAULT, WHETHER ACTIVE OR PASSIVE, OF THE INDEMNIFIED PARTY, OR OTHER PERSONS OR ENTITIES. **7.1.2** In the event these T&Cs are subject to the indemnity limitations in Chapter 127 of the Texas Civil Practice and Remedies Code (or any successor statute), and so long as such limitations are in force, each party covenants and agrees to support the mutual indemnity and release obligations contained herein by carrying insurance in an amount and of a type sufficient to cover their indemnity obligations**.** **7.1.3** Notwithstanding any provisions in these T&Cs to the contrary, the following provision applies where Work is to be performed in New Mexico or Wyoming, as applicable: to the extent this Section 7 is governed by New Mexico or Wyoming law, then the provisions herein shall be read not to include indemnification for the indemnified party's own negligence. **7.1.4** If any defense, indemnity, or insurance provision contained in these T&Cs conflicts with, is prohibited by or violates public policy under any federal, state or other law determined to be applicable to a particular situation arising or involving these T&Cs, it is understood and agreed that the conflicting, prohibited or violating provision shall be deemed automatically amended in that situation to the extent—but only to the extent—necessary to conform with, not be prohibited by, and avoid violating public policy under such applicable law. The parties agree that the exculpatory, indemnification, and hold harmless provisions herein shall be modified or altered only insofar as required by a jurisdiction purporting to limit such provisions, it being the intention of both parties to enforce to the fullest extent, all terms and conditions herein agreed to.

7.2 CONTRACTOR's Indemnification. CONTRACTOR shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD COMPANY GROUP HARMLESS from and against any and all Claims for personal or bodily injury to, sickness, disease or death of any member of CONTRACTOR GROUP, and any and all Claims for damage to or loss of any property of CONTRACTOR GROUP.

7.3 COMPANY's Indemnification. COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims for personal or bodily injury to, sickness, disease or death of any member of COMPANY GROUP, and any and all Claims for damage to or loss of any property of COMPANY GROUP.

7.4 Pollution and Contamination; Catastrophic Damages or Losses. Notwithstanding each party's obligations pursuant to Sections 7.2 and 7.3 hereof, it is understood and agreed between the parties that the following additional terms shall apply: 7.4.1 (a) CONTRACTOR shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD COMPANY GROUP HARMLESS from and against any and all Claims arising from pollution or contamination, which originates above the surface of the land or water, and which shall directly result from or be caused by CONTRACTOR GROUP's equipment, vehicles, or other tools and instruments while in CONTRACTOR GROUP's sole care, custody or control, and shall assume all responsibility for control and removal of same; and (b) COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims arising from any and all pollution or contamination other than that described under Section 7.4.1 (a) above, and including but not limited to, that which may result from cratering, seepage or any other uncontrolled flow of oil, gas, water or other substance, and shall assume all responsibility for control and removal of same. 7.4.2 COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims arising from any and all catastrophic damages or losses, including but not limited to those on account of injury, destruction of, loss or impairment (i) of any formation, strata, or reservoir beneath the surface of the earth; (ii) of any property rights in or to oil, gas, or other mineral substance or water, or the quiet enjoyment thereof, including subsurface trespass; (iii) to the well or the hole, including its casing; (iv) from radioactive sources; and (v) from fire, explosion, blowout, or any other uncontrolled well conditions, and the cost of controlling or regaining control of a wild well or out of control well.

7.5 Incidental or Consequential Damages. Notwithstanding any provisions to the contrary in these T&Cs, neither party shall be liable to the other party for, and parties shall RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD EACH OTHER HARMLESS from and against any special, punitive, indirect, incidental or consequential damages or losses suffered by the other party and its Group resulting from or arising, directly or indirectly, out of or in connection with the Work, including, without limitation, loss and/or deferral of production, loss of product, loss of use, loss of bargain, contract expectations, or opportunity to contract with others, loss of revenue, profit, or anticipated profit, loss of business, business interruption, or downtime, whether direct or indirect, and whether or not such loss was foreseeable at the time of placing of an Order.

8. INSURANCE. **8.1** CONTRACTOR and COMPANY agree, at their sole cost and expense, to procure and continuously maintain in full force and effect throughout the term of this Agreement the following insurance coverage which may be met by a combination of primary and excess/umbrella insurance: A. Statutory Workers' Compensation Insurance and Employer's Liability in the amount of $1,000,000 per occurrence and in the aggregate; B. Commercial General Liability insurance providing for third party property damage and personal injury, including broad form contractual liability for any agreement and broad form property damage in the amount of $1,000,000 per occurrence and $2,000,000 in the aggregate; C. Owned and Non-Owned Automobile Liability Insurance for bodily injury and property damage combined single limit in the amount of $1,000,000 per occurrence and in the aggregate; D. Excess/Umbrella Liability Insurance providing coverage in excess of the foregoing insurances in the amount of $5,000,000 per occurrence and in the aggregate, excluding statutory insurance coverage. **8.2** Each party agrees that, to the extent it assumes liability herein, it shall endorse the above coverages to name the indemnified parties as additional insureds (except for Workers' Compensation), shall waive its right of subrogation against the indemnified parties and their insurers, and agrees that its insurance shall be primary to that carried by the indemnified parties and non-contributory as per negligence for third party Claims, and shall not contribute in case of any Claim of exhaustion of horizontal limits. **8.3** Each party shall furnish an insurance certificate to the other to evidence the insurance required herein, and such certificates shall contain an endorsement stating that the insurer will endeavor to provide a thirty (30) days prior written notice of alteration or material change to such coverage. All deductible amounts, premiums, franchise amounts, or other charges due with respect to each party's required insurance should be the sole obligation of the insured party.

9. CONFIDENTIALITY. Each party contemplates that the other party may be provided and exposed to confidential and proprietary information ("Confidential Information"), which includes information relating to specifications of its tools, designs, inventions, component parts, parts list, software, firmware, hardware, processes, computer interfaces, operational parameters, and terms and pricing of Work. All Confidential Information shall remain the property of the party disclosing the same and no license is granted to the receiving party by virtue of the provision of such information. Confidential Information shall (i) be used by the recipient solely for the purpose of the provision of the Work and (ii) kept confidential and not disclosed to any person, except authorized representatives of the receiving Party, without written permission of the disclosing party. The receiving party shall take all reasonable steps to require its authorized representatives to keep such information confidential during and after the Work. Confidential Information shall not include information which: (i) at the time of placement of the Order is in the public domain or subsequently comes into the public domain through no fault of the receiving party and not in breach of these T&Cs; (ii) was already known to the receiving party on the date of disclosure, provided that such prior knowledge can be substantiated and proved by documentation; or (iii) properly and lawfully available to the receiving party from sources independent of the disclosing party.

10. INTELLECTUAL PROPERTY. While performing the Work, CONTRACTOR may utilize CONTRACTOR's intellectual property (including, without limitation, copyrights, registered marks, trademarks, service marks, patents, know-how, trade secrets, inventions, discoveries, techniques. technical information, technologies, designs, software, computer programs, formulae, calculations, computations, expertise, ideas, concepts, improvements, sketches, drawings, models, methods, practices, and/or processes, whether patentable or not) and/or develop, conceive, create, acquire, obtain, collect, generate, or make such additional intellectual property, which is and shall be CONTRACTOR's exclusive property. *Except if* expressly and specifically agreed in writing in a separate development agreement executed by the parties, and in exchange for appropriate payment, CONTRACTOR shall not develop any intellectual property for ownership by COMPANY in association with Work performed under a specific Order. Notwithstanding the foregoing, COMPANY or COMPANY GROUP shall own any intellectual property solely developed by COMPANY or COMPANY GROUP, respectively.

11. FORCE MAJEURE. 11.1 "Force Majeure" means (to the extent and only to the extent that any of the following are not reasonably within the control of the party claiming a Force Majeure and by the exercise of due diligence such party could not have mitigated, avoided, or overcome such condition) acts of God, fire, floods, lightning, blizzards, tornadoes, earthquakes, ice storms, named tropical storms and hurricanes, pandemics, terrorism, insurrection, revolution, war, strikes, lockouts, federal or state laws, rules and regulations of any governmental or public authorities having or asserting jurisdiction over the premises of either or both parties, inability to procure material due to industry wide shortages or soaring commodity costs, equipment, or necessary labor despite reasonable efforts, or similar causes. 11.2 If a party is rendered unable, wholly or in part, by a Force Majeure event to perform, that party will give written notice detailing such Force Majeure event to the other party as soon as reasonably possible. If a Force Majeure event continues without interruption for ten (10) days, either Party may cancel the applicable Order by giving prompt, written cancellation notice to the other party. Nothing in this Section 14.2 shall excuse COMPANY from its payment obligations of any invoices due and owing for Work performed under a specific Order.

12. LIMITATION OF LIABILITY. Notwithstanding anything to the contrary in these T&Cs, CONTRACTOR's liability arising from or in connection with its performance of the Work shall be limited to the value of the consideration paid to CONTRACTOR under the applicable Order.

13. GOVERNING LAW; VENUE. 13.1 For Work performed on a worksite within the **United States,** these T&Cs shall be exclusively governed by the laws of the **State of Texas**, excluding any conflict of laws principle that would refer to the laws of another jurisdiction. Venue shall lie exclusively in the state or federal courts of Harris County, Texas, and the parties consent to personal

jurisdiction therein. **13.2** For Work performed on a worksite within **Canada,** these T&Cs shall be exclusively governed by the laws of **Province of Alberta**, excluding any conflict of laws principle that would refer to the laws of another jurisdiction.

14. MISCELLANEOUS. 14.1 Notices. Notices shall be sent by registered post, or delivered in person, to the address for notices communicated by the other party. Said notices shall be deemed received (i) upon delivery if hand delivered, (ii) upon delivery if sent by registered post, and (iii) upon recipient's confirmation of receipt if faxed. **14.2 Waiver.** No benefit or right accruing to either party under these T&Cs shall be deemed to be waived unless the waiver is in writing, expressly refers to these T&Cs, and is signed by a duly authorized representative of both parties. A waiver in any one or more instances shall not constitute a continuing waiver, unless specifically so stated in the written waiver. **14.3 Severability.** In the event one or more of the provisions contained in these T&Cs shall be held, for any reason, to be invalid, void, illegal, contrary to law and/or unenforceable in any respect, these T&Cs shall be deemed to be amended to partially or completely modify such provision or portion thereof to the extent necessary to make it enforceable. If necessary, these T&Cs shall be deemed to be amended to delete the unenforceable provision or portion thereof, in which event such invalidity, illegality or unenforceability shall not affect the remaining provisions hereof, and these T&Cs shall remain unaffected and shall be construed as if such invalid, void, illegal or unenforceable provision never had been contained herein. **14.4 Independent Representation.** COMPANY AND CONTRACTOR ACKNOWLEDGE THAT THEY HAVE CONSULTED AN ATTORNEY CONCERNING THESE T&Cs OR HAVE ELECTED NOT TO DO SO, BUT REPRESENT THAT THEY FULLY UNDERSTAND THEIR RIGHTS AND OBLIGATIONS HEREUNDER

Company: _____

Signature: _____
Name: _____
Title:_____
Date: _____

Coterra Energy Inc.
CEMENT PROPOSAL #81470

Intermediate Proposal

Royal Oak 24 Fed Com 009H 30-025-54152
S:24 T:18S R:33E Lea NM

February 06, 2025

CEMENT PROPOSAL

Attention: Kyle Adamek | (660) 247-2024 | kyle@deepenergyllc.com
Coterra Energy Inc.
202 S. Cheyenne Ave Suite 1000 | Tulsa, OK 74103
February 06, 2025

Dear Kyle Adamek,

Thank you for the opportunity to submit pricing for cementing services on the attached wellbore. American Cementing's priority is to provide premium customer service while operating in a safe, efficient manner. If you have any questions regarding the proposal or services offered, please contact American Cementing at any time.

Sincerely,

Will Bautista
Sales | (432) 254-0261 | will.bautista@americancementing.com

Prepared By
Meseret Belayneh
Field Engineer III | (801) 513-8231 | meseret.belayneh@americancementing.com

Field Office 6165 W Murphy St, Odessa, TX 79763
Phone: (432) 208-6452

Disclaimer

1. Proposal is valid for 30 days
2. Proposal is for pricing purposes only; actual job procedure to be confirmed prior to job
3. American Cementing recommends proper hole conditioning prior to initiating cementing; please discuss procedures with your American Cementing representative
4. Applicable sales tax will be added to the final invoice
5. American Cementing's general terms and conditions are hereby incorporated into this Proposal

Well Information

Well Name: **Royal Oak 24 Fed Com 009H**
Well API: **30-025-54152**
Latitude: **32.728046**
Longitude: **-103.613749**
Section: **24**
Township: **18S**
Range: **33E**
County: **Lea, NM**

Job: Intermediate (Intermediate) - Well Information

Drilling Fluid Density: **9.50 lb/gal**
Drilling Fluid: **WBM**
Total Measured Depth: **9478 ft**
Total Vertical Depth: **9478 ft**
BHCT: **137 °F**
BHST: **165 °F**
Temperature Gradient: **0.90 °F/100ft**
Surface Temp: **80 °F**

Geometry

#	Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Grade	Thread	Top	Bottom	Excess (%)
1	Casing	Outer	10.750	10.050	40.50		n/a	0	1653	0.0
2	OpenHole	Outer		9.875			n/a	1653	7650	50.0
3	OpenHole	Outer		9.875			n/a	7650	9478	20.0
1	Casing	Inner	7.625	6.875	29.70		n/a	0	9478	0.0

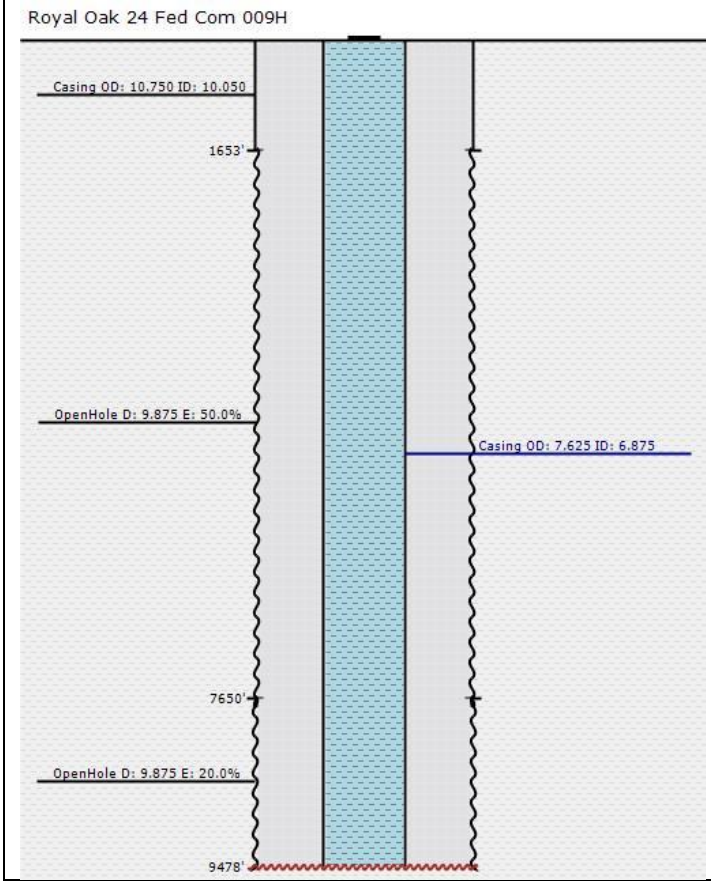
Capacities

Excess added to Capacity Factor

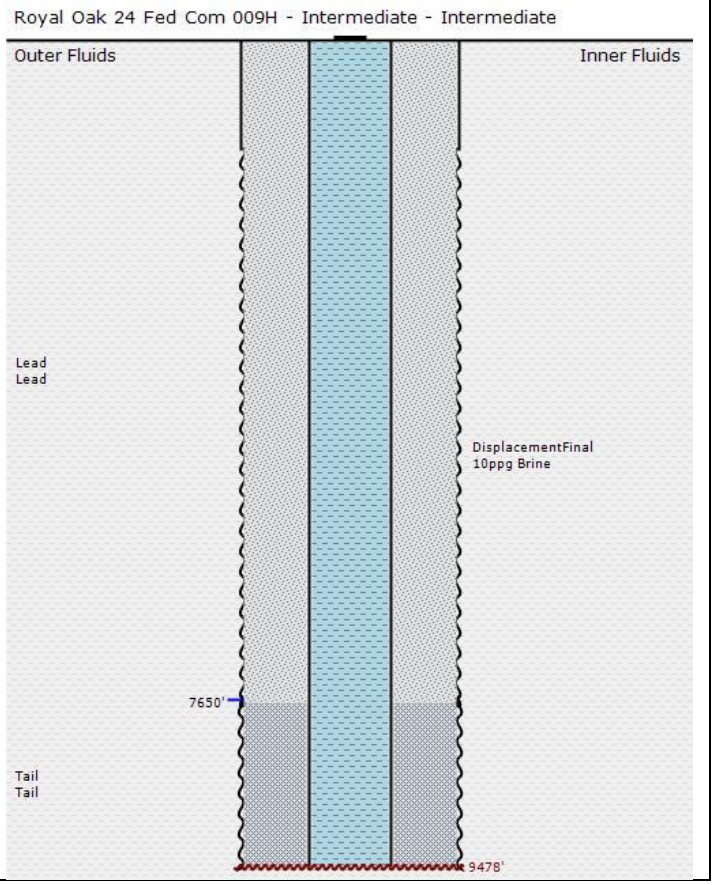
Type	TopDepth (ft)	Length (ft)	OD (in)	ID (in)	Capacity (bbl/ft)	Capacity ($ft^{3/ft}$)	Fill (ft/bbl)	Fill (ft/ft^{3})
DisplacementFinal	0	9393	6.875	0.000	0.0459	0.2578	21.78	3.88
ShoeJoint	9393	85	6.875	0.000	0.0459	0.2578	21.78	3.88
Casing to OpenHole	7650	1828	9.875	7.625	0.0459	0.2577	21.79	3.88
Casing to OpenHole	1653	5997	9.875	7.625	0.0574	0.3221	17.43	3.10
Casing to Casing	0	1653	10.050	7.625	0.0416	0.2338	24.02	4.28

Job: Intermediate (Intermediate) - Well & Fluid Diagrams

Well Diagram



Fluid Diagram



Job: Intermediate (Intermediate) - Material Information

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/bbl)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
1	Flush	Fresh Water	0.00	8.34	42.0	n/a		20.00

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/sk)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
2	Lead	Lead	0.00	11.00	16.1	2.74	846	412.90
IntegraCem XTL, AEXT-1012 - Extender - 5.000 %								
CEMENT, CLASS C, HSR - Cement - 40.000 %								
CEMENT, FLY ASH (OTX1) - Extender - 55.000 %								
CEMENT EXTENDER, GYPSUM, A-10 - Accelerator - 5.000 %BWOB								
Cement Additive, Sodium Metasilicate A-2 - Accelerator - 2.000 %BWOB								
SALT,SODIUM CHLORIDE, A-5 - Accelerator - 5.000 %BWOW								
Viscosifier, AVIS-617 - Viscosifier - 0.200 %BWOB								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
IntegraSeal CELLO - LostCirculation - 0.125 lb/sk								
IntegraSeal KOL - LostCirculation - 1.500 lb/sk								
IntegraSeal PHENO - LostCirculation - 1.500 lb/sk								
RETARDER, R-7C - Retarder - 0.250 %BWOB								
XCem-502 - FluidLoss - 0.500 %BWOB								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/sk)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
3	Tail	Tail	7650.00	14.80	6.3	1.33	371	87.98
CEMENT, CLASS C, HSR - Cement - 100.000 %								
FLUID LOSS, FL-66 - FluidLoss - 0.400 %BWOB								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
IntegraSeal CELLO - LostCirculation - 0.250 lb/sk								
RETARDER, R-7C - Retarder - 0.150 %BWOB								
DISPERSANT, XCem-403 - Dispersant - 0.200 %BWOB								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/bbl)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
4	DisplacementFinal	10ppg Brine	0.00	8.34	42.0	n/a		432.00

Job: Intermediate (Intermediate) - Pump Schedule

Sequence	Type	Fluid	Density (lb/gal)	Pump Rate (bpm)	Volume (bbls)	Volume (sks)	Cum. Vol. (bbls)	Stage Time (min)	Cum. Time (min)
1	Flush	Fresh Water	8.34	5.00	20.00		20.00	4.00	4.00
2	Lead	Lead	11.00	5.00	412.90	846	432.90	82.58	86.58
3	Tail	Tail	14.80	5.00	87.98	371	520.88	17.60	104.18
4	DisplacementFinal	10ppg Brine	8.34	5.00	432.00		952.88	86.40	190.58

General Terms and Conditions

AMERICAN CEMENTING, LLC TERMS AND CONDITIONS

These Terms and Conditions (these "T&Cs") contain INDEMNIFICATION, LIMITATION OF LIABILITY AND RISK SHIFTING PROVISIONS. The provision of Work by American Cementing, LLC or its affiliated companies ("Contractor" or "American") to any person or entity placing an Order for such Work ("Company" or "Customer") is subject to these T&Cs. By requesting the Work, Company voluntarily elects to enter into and be bound by these T&Cs, and any Order for Work shall constitute acceptance of these T&Cs, *unless* Contractor and Company have entered into a Master Service Agreement or other agreement expressly accepted in writing by Contractor's authorized representative, in which case the terms and conditions of such agreements shall govern the provision of the Work and completely supersede these T&Cs in all respects.

1. DEFINITIONS. "Claims" means all claims, lawsuits, demands, causes of action, liabilities, damages (including punitive damages), judgments, awards, fines, penalties, losses, costs, expenses (including, without limitation, reasonable attorneys' fees, expert fees, and costs of litigation) of any kind or character, without limit, which arise out of or are related to the Work. "COMPANY GROUP" means (i) COMPANY, and any of its parent, subsidiary and affiliated or related entities; (ii) the working interest owners, co-owners, co-lessees, co-lessors, partners and joint venturers of (i); (iii) any person or entity with an economic interest or property rights in the well, premises or the property in relation to or upon which Work is performed; and (iv) the officers, directors, employees, shareholders, agents, representatives, contractors (except CONTRACTOR), subcontractors, consultants, and invitees of (i), (ii) and (iii) above. "CONTRACTOR GROUP" means (i) CONTRACTOR and any of its subsidiary and affiliated or related entities; and (ii) the officers, directors, employees, shareholders, agents, representatives, contractors, subcontractors, consultants, and invitees of all of the foregoing. "Order" means a written or verbal request for specific Work, including by way of a purchase order, work order, service order, work authorization, or similar instrument issued by COMPANY to CONTRACTOR, and which shall incorporate the pricing proposal submitted by CONTRACTOR for such Work. A request will be considered written if exchanges, whether by correspondence, letter, fax, or email include all material terms and conditions and they have been accepted or ratified by both COMPANY and CONTRACTOR; *provided, however*, if verbal, such request shall be confirmed in writing as soon as practicable, and the terms of the written Order shall control. "Work" means any cementing services and other related services provided by CONTRACTOR, along with all related personnel, equipment, machinery, tools, supplies, materials, vehicles, facilities, consumables, goods, and any other items used in connection with such services.

2. INDEPENDENT CONTRACTOR. This Agreement does not create any agency, partnership, joint venture, or similar business relationship between parties. COMPANY will have the right generally to oversee and inspect the performance of the Work to ensure the reasonable satisfactory completion thereof; it being understood and agreed that CONTRACTOR shall have exclusive control over the operational details of the Work.

3. PRICING AND PAYMENT. 3.1 COMPANY will pay CONTRACTOR for the Work according to the prices and rates contained the applicable Order; *provided, however*, that if there are no such prices and rates, then the prices and rates set forth in the pricing proposal submitted by CONTRACTOR for the Work shall apply. The pricing proposals submitted by CONTRACTOR are generally valid sixty (60) days from submission of such proposal, unless otherwise set forth in such pricing proposal. Notwithstanding the foregoing, before commencing the Work and until an agreement is reached between the parties regarding such prices and rates, CONTRACTOR has the right to revise and shall advise COMPANY of any changes in the pricing proposal, and COMPANY may either accept or reject such changes, and proceed with the Work or not. **3.2** COMPANY shall pay CONTRACTOR's invoices within thirty (30) days of receipt of invoice. In the event COMPANY disputes any amount, it shall do so in good faith and shall notify CONTRACTOR of such dispute within thirty (30) days of receipt of invoice; *provided, however*, that COMPANY shall pay any undisputed portion of the invoice within the time for payment noted above and shall endeavor to expeditiously resolve such disputes. Any undisputed invoices, remaining unpaid for sixty (60) days after receipt by COMPANY, shall accrue interest at the rate of 1.5% per month or the maximum interest rate allowed by applicable law, whichever is less, through the time of collection. **3.3** Prices quoted by CONTRACTOR do not include sales, VAT, use or similar taxes, and such taxes, where applicable, shall be added to the quoted prices and invoiced accordingly. Each party shall pay all taxes levied or assessed by any governmental authority in connection with or incident to its performance under an Order; *provided, however,* that CONTRACTOR shall pay any assessments or taxes upon wages of CONTRACTOR, social security, unemployment insurance, old age benefits, or any other employment taxes, contributions or withholdings.

4. ORDERS; STANDARD OF PERFORMANCE; WARRANTIES. 4.1 COMPANY may from time to time place an Order for Work, and CONTRACTOR may provide such Work to COMPANY, subject to these T&Cs. Orders shall become binding only after signed or acknowledged by an authorized representative of each party. **4.2** CONTRACTOR shall provide all labor, equipment, machinery, tools, supplies, materials, vehicles, facilities, consumables, goods, and any other items required for the execution and completion of the Work, as more fully described in the applicable Order. **4.3** CONTRACTOR shall perform the Work with due diligence and care, in a good and workmanlike manner, using skilled, competent, experienced, and, where applicable, licensed personnel in accordance with the specifications represented by CONTRACTOR and with generally accepted oilfield practices. **4.4** CONTRACTOR shall conduct its Work, in all material respects, in accordance with all applicable laws, rules, regulations, decrees, and/or official government orders of any governing body having jurisdiction over the Work. **4.5** CONTRACTOR's Work is designed to operate under conditions normally encountered in a wellbore. COMPANY shall notify CONTRACTOR in advance and make special arrangements for Work in which hazardous or unusual conditions exist. COMPANY has complete care, custody, and control of the well, the premises around the well, and the drilling and production equipment of the well (other than such equipment provided by CONTRACTOR hereunder), and Company shall furnish directions and requirements for Work performed hereunder. CONTRACTOR is relying on COMPANY to provide such directions and requirements without further investigation by CONTRACTOR. CONTRACTOR agrees to observe and abide by COMPANY's safety policies and procedures communicated to and acknowledged by CONTRACTOR. CONTRACTOR shall as promptly as possible under the circumstances report to COMPANY's representative all accidents or occurrences resulting in injuries, illness or death to person(s) or damage to property, arising out of or occurring during the Work. **4.6** CONTRACTOR's sole liability, and COMPANY's exclusive remedy, for any Claims for breach of warranty under this Section 4 are limited to, at CONTRACTOR's sole option, (i) if practical, the re-performance of the defective Work or portion thereof, at no additional cost to COMPANY; or (ii) a refund or credit to COMPANY of any amount paid to CONTRACTOR for such defective Work or portion thereof. In the event that CONTRACTOR materially fails to perform the Work or if CONTRACTOR provides defective Work for reasons solely within CONTRACTOR's control, COMPANY shall give notice to CONTRACTOR of such non-performance or defective performance immediately upon discovery and prior to CONTRACTOR's departure from the worksite, otherwise such warranty Claim is waived. **4.7** Due to the nature of the Work to be performed in unpredictable wellbore conditions, CONTRACTOR does not warrant the accuracy, correctness, or completeness of any interpretations, analysis, recommendations, or advice, nor that COMPANY's or any third party's reliance on such interpretations, analysis, recommendations, or advice will accomplish any particular results, and which in any event are opinions only. Accordingly, it is COMPANY's responsibility, and sole risk, to determine the completion, well treatment, production, or financial decision involving any risk. Any outcomes that are less than expected will not relieve COMPANY of its responsibility to pay for the Work in accordance with these T&Cs. **4.8** THE WARRANTIES PROVIDED IN THIS SECTION 4 ARE THE SOLE AND EXCLUSIVE WARRANTIES RELATING TO THE WORK AND ARE IN LIEU OF ANY AND ALL OTHER WARRANTIES WHETHER ORAL, WRITTEN, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

5. ORDER CHANGES; PROJECT ADMINISTRATION. 5.1 COMPANY may ask for and CONTRACTOR may agree to variations in the Work, whether by way of addition, modification or omission, which variations shall be in writing and signed by authorized representatives of both parties. The value of any such variations shall be ascertained by reference to the prices and rates specified in the applicable Order for like or analogous Work; *provided, however,* that if there are no such prices and rates or if they are otherwise inapplicable, then the prices and rates set forth in the pricing proposal submitted by CONTRACTOR for such additional Work shall apply. **5.2** To acknowledge or document various events during the provision of the Work, a party may from time to time sign the other party's forms, such as Orders, delivery tickets, job tickets, invoices, or similar instruments used by the parties in the normal course of business. In the event of a conflict between these T&Cs and any such documents, these T&Cs shall control, *unless* specific reference is made that these T&Cs are modified and the intention to modify is explicitly stated in such documents. **5.3** It is understood and agreed between the parties that COMPANY's representative (appointed in accordance with Section 5.4 below) shall have the authority to approve any job tickets, delivery tickets, or similar forms attesting to the completion of the Work by CONTRACTOR ("Job Tickets"). A COMPANY representative's signature on such Tickets shall indicate acceptance of the Work. If the Job Tickets are not acknowledged within forty-eight (48) hours of receipt through no fault of CONTRACTOR, CONTRACTOR may submit invoices for payment as if such Tickets had been acknowledged. **5.4** COMPANY will appoint a representative who will be responsible for the supervision of the Work, and who shall have full authority to represent and make decisions on behalf of COMPANY with respect to the Work, or otherwise to resolve the day-to-day issues which may arise related to the Work. Likewise, CONTRACTOR shall designate a representative with similar responsibilities and authority to liaise with COMPANY's representative.

6. CONTRACTOR'S EQUIPMENT. 6.1 Title to CONTRACTOR's equipment, including any lost, damaged, or confiscated equipment, shall remain in CONTRACTOR, and COMPANY shall have no right to assign, transfer, hypothecate, or remove such equipment from the place of its intended use without CONTRACTOR's prior written consent. **6.2** COMPANY shall be responsible for and agrees to compensate CONTRACTOR for all damages, losses, or any abnormal wear to CONTRACTOR GROUP's equipment: (i) while in COMPANY GROUP's care, custody or control, including while being transported by any member of COMPANY GROUP; (ii) as a result of operations conducted out of specifications at COMPANY GROUP's request, or in corrosive, abnormal temperatures or other

unusual conditions; (iii) due to fishing operations (if any); or (iv) if lost in the hole or damaged beyond repair while in the hole or used in the hole. COMPANY will replace such equipment or reimburse CONTRACTOR with the current replacement price of such equipment.

7. INDEMNITY.

7.1 Application of Indemnities. 7.1.1 In those matters in which a party is required by these T&Cs to RELEASE, DEFEND, PROTECT, INDEMNIFY, AND HOLD HARMLESS the other party and/or members of its respective Group, SUCH OBLIGATIONS SHALL, EXCEPT TO THE EXTENT EXPRESSLY PROVIDED OTHERWISE IN THESE T&CS, APPLY TO INDEMNITOR REGARDLESS OF THE CAUSE OR REASON, OR WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY CONTRACT, STATUTE, RULE, OR THEORY OF LAW, INCLUDING WITHOUT LIMITATION STRICT LIABILITY, TORT, BREACH OF DUTY (STATUTORY OR OTHERWISE), BREACH OF CONTRACT, BREACH OF REPRESENTATION OR WARRANTY, BREACH OF ANY SAFETY REQUIREMENT OR REGULATION, DUE TO ANY LATENT, PATENT, OR PRE-EXISTING DEFECTS OR CONDITIONS, IMPERFECTION OF MATERIAL, FAILURE OF EQUIPMENT, OR ANY LEGAL FAULT OR RESPONSIBILITY OF EITHER PARTY, INCLUDING THE SOLE, JOINT, AND/OR CONCURRENT NEGLIGENCE OR FAULT, WHETHER ACTIVE OR PASSIVE, OF THE INDEMNIFIED PARTY, OR OTHER PERSONS OR ENTITIES. **7.1.2** In the event these T&Cs are subject to the indemnity limitations in Chapter 127 of the Texas Civil Practice and Remedies Code (or any successor statute), and so long as such limitations are in force, each party covenants and agrees to support the mutual indemnity and release obligations contained herein by carrying insurance in an amount and of a type sufficient to cover their indemnity obligations**. 7.1.3** Notwithstanding any provisions in these T&Cs to the contrary, the following provision applies where Work is to be performed in New Mexico or Wyoming, as applicable: to the extent this Section 7 is governed by New Mexico or Wyoming law, then the provisions herein shall be read not to include indemnification for the indemnified party's own negligence. **7.1.4** If any defense, indemnity, or insurance provision contained in these T&Cs conflicts with, is prohibited by or violates public policy under any federal, state or other law determined to be applicable to a particular situation arising or involving these T&Cs, it is understood and agreed that the conflicting, prohibited or violating provision shall be deemed automatically amended in that situation to the extent—but only to the extent—necessary to conform with, not be prohibited by, and avoid violating public policy under such applicable law. The parties agree that the exculpatory, indemnification, and hold harmless provisions herein shall be modified or altered only insofar as required by a jurisdiction purporting to limit such provisions, it being the intention of both parties to enforce to the fullest extent, all terms and conditions herein agreed to.

7.2 CONTRACTOR's Indemnification. CONTRACTOR shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD COMPANY GROUP HARMLESS from and against any and all Claims for personal or bodily injury to, sickness, disease or death of any member of CONTRACTOR GROUP, and any and all Claims for damage to or loss of any property of CONTRACTOR GROUP.

7.3 COMPANY's Indemnification. COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims for personal or bodily injury to, sickness, disease or death of any member of COMPANY GROUP, and any and all Claims for damage to or loss of any property of COMPANY GROUP.

7.4 Pollution and Contamination; Catastrophic Damages or Losses. Notwithstanding each party's obligations pursuant to Sections 7.2 and 7.3 hereof, it is understood and agreed between the parties that the following additional terms shall apply: 7.4.1 (a) CONTRACTOR shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD COMPANY GROUP HARMLESS from and against any and all Claims arising from pollution or contamination, which originates above the surface of the land or water, and which shall directly result from or be caused by CONTRACTOR GROUP's equipment, vehicles, or other tools and instruments while in CONTRACTOR GROUP's sole care, custody or control, and shall assume all responsibility for control and removal of same; and (b) COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims arising from any and all pollution or contamination other than that described under Section 7.4.1 (a) above, and including but not limited to, that which may result from cratering, seepage or any other uncontrolled flow of oil, gas, water or other substance, and shall assume all responsibility for control and removal of same. 7.4.2 COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims arising from any and all catastrophic damages or losses, including but not limited to those on account of injury, destruction of, loss or impairment (i) of any formation, strata, or reservoir beneath the surface of the earth; (ii) of any property rights in or to oil, gas, or other mineral substance or water, or the quiet enjoyment thereof, including subsurface trespass; (iii) to the well or the hole, including its casing; (iv) from radioactive sources; and (v) from fire, explosion, blowout, or any other uncontrolled well conditions, and the cost of controlling or regaining control of a wild well or out of control well.

7.5 Incidental or Consequential Damages. Notwithstanding any provisions to the contrary in these T&Cs, neither party shall be liable to the other party for, and parties shall RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD EACH OTHER HARMLESS from and against any special, punitive, indirect, incidental or consequential damages or losses suffered by the other party and its Group resulting from or arising, directly or indirectly, out of or in connection with the Work, including, without limitation, loss and/or deferral of production, loss of product, loss of use, loss of bargain, contract expectations, or opportunity to contract with others, loss of revenue, profit, or anticipated profit, loss of business, business interruption, or downtime, whether direct or indirect, and whether or not such loss was foreseeable at the time of placing of an Order.

8. INSURANCE. **8.1** CONTRACTOR and COMPANY agree, at their sole cost and expense, to procure and continuously maintain in full force and effect throughout the term of this Agreement the following insurance coverage which may be met by a combination of primary and excess/umbrella insurance: A. Statutory Workers' Compensation Insurance and Employer's Liability in the amount of $1,000,000 per occurrence and in the aggregate; B. Commercial General Liability insurance providing for third party property damage and personal injury, including broad form contractual liability for any agreement and broad form property damage in the amount of $1,000,000 per occurrence and $2,000,000 in the aggregate; C. Owned and Non-Owned Automobile Liability Insurance for bodily injury and property damage combined single limit in the amount of $1,000,000 per occurrence and in the aggregate; D. Excess/Umbrella Liability Insurance providing coverage in excess of the foregoing insurances in the amount of $5,000,000 per occurrence and in the aggregate, excluding statutory insurance coverage. **8.2** Each party agrees that, to the extent it assumes liability herein, it shall endorse the above coverages to name the indemnified parties as additional insureds (except for Workers' Compensation), shall waive its right of subrogation against the indemnified parties and their insurers, and agrees that its insurance shall be primary to that carried by the indemnified parties and non-contributory as per negligence for third party Claims, and shall not contribute in case of any Claim of exhaustion of horizontal limits. **8.3** Each party shall furnish an insurance certificate to the other to evidence the insurance required herein, and such certificates shall contain an endorsement stating that the insurer will endeavor to provide a thirty (30) days prior written notice of alteration or material change to such coverage. All deductible amounts, premiums, franchise amounts, or other charges due with respect to each party's required insurance should be the sole obligation of the insured party.

9. CONFIDENTIALITY. Each party contemplates that the other party may be provided and exposed to confidential and proprietary information ("Confidential Information"), which includes information relating to specifications of its tools, designs, inventions, component parts, parts list, software, firmware, hardware, processes, computer interfaces, operational parameters, and terms and pricing of Work. All Confidential Information shall remain the property of the party disclosing the same and no license is granted to the receiving party by virtue of the provision of such information. Confidential Information shall (i) be used by the recipient solely for the purpose of the provision of the Work and (ii) kept confidential and not disclosed to any person, except authorized representatives of the receiving Party, without written permission of the disclosing party. The receiving party shall take all reasonable steps to require its authorized representatives to keep such information confidential during and after the Work. Confidential Information shall not include information which: (i) at the time of placement of the Order is in the public domain or subsequently comes into the public domain through no fault of the receiving party and not in breach of these T&Cs; (ii) was already known to the receiving party on the date of disclosure, provided that such prior knowledge can be substantiated and proved by documentation; or (iii) properly and lawfully available to the receiving party from sources independent of the disclosing party.

10. INTELLECTUAL PROPERTY. While performing the Work, CONTRACTOR may utilize CONTRACTOR's intellectual property (including, without limitation, copyrights, registered marks, trademarks, service marks, patents, know-how, trade secrets, inventions, discoveries, techniques. technical information, technologies, designs, software, computer programs, formulae, calculations, computations, expertise, ideas, concepts, improvements, sketches, drawings, models, methods, practices, and/or processes, whether patentable or not) and/or develop, conceive, create, acquire, obtain, collect, generate, or make such additional intellectual property, which is and shall be CONTRACTOR's exclusive property. *Except if* expressly and specifically agreed in writing in a separate development agreement executed by the parties, and in exchange for appropriate payment, CONTRACTOR shall not develop any intellectual property for ownership by COMPANY in association with Work performed under a specific Order. Notwithstanding the foregoing, COMPANY or COMPANY GROUP shall own any intellectual property solely developed by COMPANY or COMPANY GROUP, respectively.

11. FORCE MAJEURE. 11.1 "Force Majeure" means (to the extent and only to the extent that any of the following are not reasonably within the control of the party claiming a Force Majeure and by the exercise of due diligence such party could not have mitigated, avoided, or overcome such condition) acts of God, fire, floods, lightning, blizzards, tornadoes, earthquakes, ice storms, named tropical storms and hurricanes, pandemics, terrorism, insurrection, revolution, war, strikes, lockouts, federal or state laws, rules and regulations of any governmental or public authorities having or asserting jurisdiction over the premises of either or both parties, inability to procure material due to industry wide shortages or soaring commodity costs, equipment, or necessary labor despite reasonable efforts, or similar causes. 11.2 If a party is rendered unable, wholly or in part, by a Force Majeure event to perform, that party will give written notice detailing such Force Majeure event to the other party as soon as reasonably possible. If a Force Majeure event continues without interruption for ten (10) days, either Party may cancel the applicable Order by giving prompt, written cancellation notice to the other party. Nothing in this Section 14.2 shall excuse COMPANY from its payment obligations of any invoices due and owing for Work performed under a specific Order.

12. LIMITATION OF LIABILITY. Notwithstanding anything to the contrary in these T&Cs, CONTRACTOR's liability arising from or in connection with its performance of the Work shall be limited to the value of the consideration paid to CONTRACTOR under the applicable Order.

13. GOVERNING LAW; VENUE. 13.1 For Work performed on a worksite within the **United States,** these T&Cs shall be exclusively governed by the laws of the **State of Texas**, excluding any conflict of laws principle that would refer to the laws of another jurisdiction. Venue shall lie exclusively in the state or federal courts of Harris County, Texas, and the parties consent to personal

jurisdiction therein. **13.2** For Work performed on a worksite within **Canada,** these T&Cs shall be exclusively governed by the laws of **Province of Alberta**, excluding any conflict of laws principle that would refer to the laws of another jurisdiction.

14. MISCELLANEOUS. 14.1 Notices. Notices shall be sent by registered post, or delivered in person, to the address for notices communicated by the other party. Said notices shall be deemed received (i) upon delivery if hand delivered, (ii) upon delivery if sent by registered post, and (iii) upon recipient's confirmation of receipt if faxed. **14.2 Waiver.** No benefit or right accruing to either party under these T&Cs shall be deemed to be waived unless the waiver is in writing, expressly refers to these T&Cs, and is signed by a duly authorized representative of both parties. A waiver in any one or more instances shall not constitute a continuing waiver, unless specifically so stated in the written waiver. **14.3 Severability.** In the event one or more of the provisions contained in these T&Cs shall be held, for any reason, to be invalid, void, illegal, contrary to law and/or unenforceable in any respect, these T&Cs shall be deemed to be amended to partially or completely modify such provision or portion thereof to the extent necessary to make it enforceable. If necessary, these T&Cs shall be deemed to be amended to delete the unenforceable provision or portion thereof, in which event such invalidity, illegality or unenforceability shall not affect the remaining provisions hereof, and these T&Cs shall remain unaffected and shall be construed as if such invalid, void, illegal or unenforceable provision never had been contained herein. **14.4 Independent Representation.** COMPANY AND CONTRACTOR ACKNOWLEDGE THAT THEY HAVE CONSULTED AN ATTORNEY CONCERNING THESE T&Cs OR HAVE ELECTED NOT TO DO SO, BUT REPRESENT THAT THEY FULLY UNDERSTAND THEIR RIGHTS AND OBLIGATIONS HEREUNDER

Company: _____

Signature: _____
Name: _____
Title:_____
Date: _____

Coterra Energy Inc.
CEMENT PROPOSAL #81477

Long String Proposal

Royal Oak 24 Fed Com 009H 30-025-54152
S:24 T:18S R:33E Lea NM

February 06, 2025

AMERICAN CEMENTING

Long String Proposal

CEMENT PROPOSAL

Attention: Kyle Adamek | (660) 247-2024 | kyle@deepenergyllc.com
Coterra Energy Inc.
202 S. Cheyenne Ave Suite 1000 | Tulsa, OK 74103
February 06, 2025

Dear Kyle Adamek,

Thank you for the opportunity to submit pricing for cementing services on the attached wellbore. American Cementing's priority is to provide premium customer service while operating in a safe, efficient manner. If you have any questions regarding the proposal or services offered, please contact American Cementing at any time.

Sincerely,

Will Bautista
Sales | (432) 254-0261 | will.bautista@americancementing.com

Prepared By
Meseret Belayneh
Field Engineer III | (801) 513-8231 | meseret.belayneh@americancementing.com

Field Office 6165 W Murphy St, Odessa, TX 79763
Phone: (432) 208-6452

Disclaimer

1. Proposal is valid for 30 days
2. Proposal is for pricing purposes only; actual job procedure to be confirmed prior to job
3. American Cementing recommends proper hole conditioning prior to initiating cementing; please discuss procedures with your American Cementing representative
4. Applicable sales tax will be added to the final invoice
5. American Cementing's general terms and conditions are hereby incorporated into this Proposal

Well Information

Well Name: **Royal Oak 24 Fed Com 009H**
Well API: **30-025-54152**
Latitude: **32.728046**
Longitude: **-103.613749**
Section: **24**
Township: **18S**
Range: **33E**
County: **Lea, NM**

Job: Long String (Long String) - Well Information

Drilling Fluid Density: **9.50 lb/gal**
Drilling Fluid: **OBM**
Total Measured Depth: **22106 ft**
Total Vertical Depth: **11850 ft**
BHCT: **196 °F**
BHST: **196 °F**
Temperature Gradient: **0.98 °F/100ft**
Surface Temp: **80 °F**

Geometry

#	Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Grade	Thread	Top	Bottom	Excess (%)
1	Casing	Outer	7.625	6.875	29.70		n/a	0	9478	0.0
2	OpenHole	Outer		6.750			n/a	9478	11424	50.0
3	OpenHole	Outer		6.750			n/a	11424	22106	20.0
1	Casing	Inner	5.500	4.778	20.00		n/a	0	22106	0.0

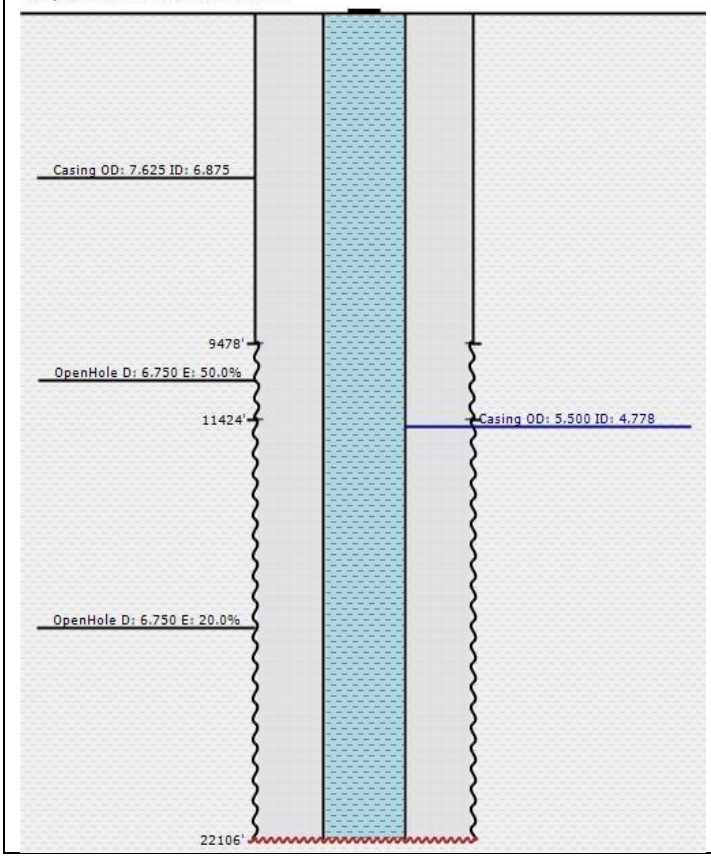
Capacities

Excess added to Capacity Factor

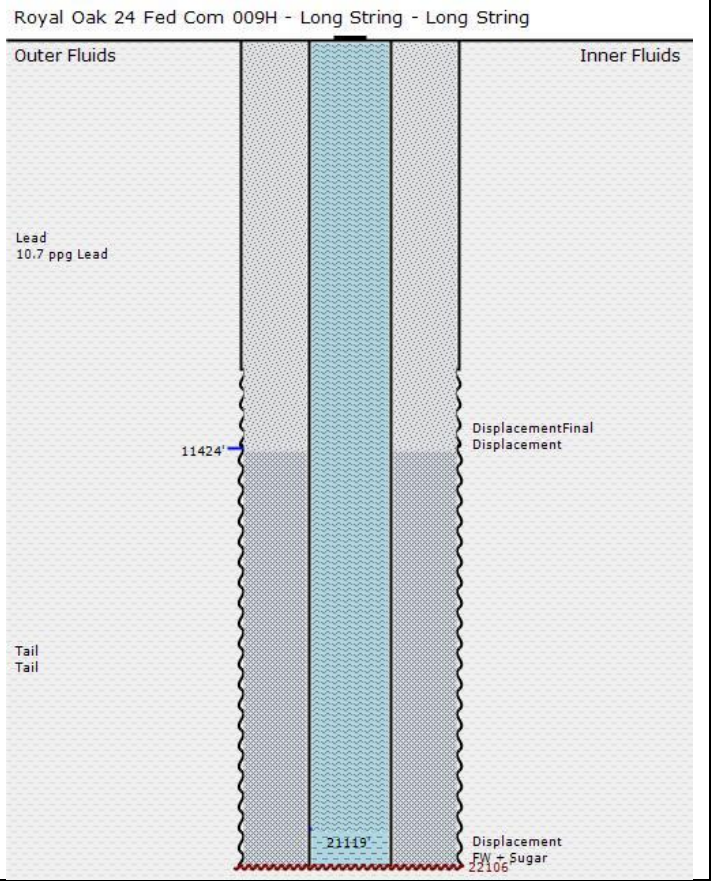
Type	TopDepth (ft)	Length (ft)	OD (in)	ID (in)	Capacity (bbl/ft)	Capacity ($ft^{3/ft}$)	Fill (ft/bbl)	Fill (ft/ft^{3})
DisplacementFinal	0	22021	4.778	0.000	0.0222	0.1245	45.09	8.03
ShoeJoint	22021	85	4.778	0.000	0.0222	0.1245	45.09	8.03
Casing to OpenHole	11424	10682	6.750	5.500	0.0178	0.1002	56.02	9.98
Casing to OpenHole	9478	1946	6.750	5.500	0.0223	0.1253	44.82	7.98
Casing to Casing	0	9478	6.875	5.500	0.0165	0.0928	60.50	10.78

Job: Long String (Long String) - Well & Fluid Diagrams

Well Diagram



Fluid Diagram



Job: Long String (Long String) - Material Information

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/bbl)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
1	Spacer	Spacer + LCM	0.00	10.00	38.0	n/a		40.00
WEIGHTING ADDITIVE, BARITE - Heavyweight - 81.573 lb/bbl								
IntegraSeal HOLD, ALOC-1212 - LostCirculation - 10.000 lb/bbl								
BIOSUITE GQ2510 - Biocide - 0.010 gal/bbl								
DYE, LIQUID, BLUE - Other - 0.050 gal/bbl								
CORROSION INHIBITORS, HS-2 - Other - 0.050 gal/bbl								
XCem-621 - Viscosifier - 10.000 lb/bbl								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/sk)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
2	Lead	10.7 ppg Lead	0.00	10.70	24.5	3.92	287	200.31
CEMENT, CLASS C, HSR - Cement - 75.000 %								
CEMENT, FLY ASH (OTX1) - Extender - 25.000 %								
CEMENT EXTENDER, GYPSUM, A-10 - Accelerator - 5.000 %BWOB								
Cement Additive, Sodium Metasilicate A-2 - Accelerator - 2.000 %BWOB								
FLUID LOSS, AFL-533 - FluidLoss - 0.500 %BWOB								
Viscosifier, AVIS-617 - Viscosifier - 0.300 %BWOB								
BONDING AGENT, BA-95 - BondEnhancer - 15.000 lb/sk								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
RETARDER, R-21 - Retarder - 0.100 %BWOB								
RETARDER, R-7C - Retarder - 0.500 %BWOB								
DISPERSANT, XCem-403 - Dispersant - 0.100 %BWOB								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/sk)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
3	Tail	Tail	11424.00	14.80	4.9	1.16	935	192.68
IntegraCem XTL, AEXT-1012 - Extender - 5.000 %								
CEMENT, CLASS H, HSR - Cement - 70.000 %								
CEMENT, FLY ASH (OTX1) - Extender - 25.000 %								
SALT,SODIUM CHLORIDE, A-5 - Accelerator - 3.000 %BWOW								
ANTI SETTLING, ASA-301 - Viscosifier - 0.150 %BWOB								
FLUID LOSS, FL-66 - FluidLoss - 0.700 %BWOB								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
RETARDER, R-3 - Retarder - 0.080 %BWOB								
DISPERSANT, XCem-403 - Dispersant - 0.700 %BWOB								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/bbl)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
4	Displacement	FW + Sugar	21119.00	8.36	41.8	n/a		20.00
RETARDER, SUGAR, GRANULAR - Retarder - 2.500 lb/bbl								

Pump Order	Type	Fluid	Fluid Top (ft)	Density (lb/gal)	Water Req. (gal/bbl)	Yield ($ft^{3/sk}$)	Proposed Volume (sks)	Proposed Volume (bbl)
5	DisplacementFinal	Displacement	0.00	8.34	41.9	n/a		469.00
BIOSUITE GQ2510 - Biocide - 0.010 gal/bbl								
CORROSION INHIBITORS, HS-2 - Other - 0.050 gal/bbl								

Job: Long String (Long String) - Pump Schedule

Sequence	Type	Fluid	Density (lb/gal)	Pump Rate (bpm)	Volume (bbls)	Volume (sks)	Cum. Vol. (bbls)	Stage Time (min)	Cum. Time (min)
1	Spacer	Spacer + LCM	10.00	5.00	40.00		40.00	8.00	8.00
2	Lead	10.7 ppg Lead	10.70	5.00	200.31	287	240.31	40.06	48.06
3	Tail	Tail	14.80	5.00	192.68	935	432.98	38.54	86.60
4	Displacement	FW + Sugar	8.36	5.00	20.00		452.98	4.00	90.60
5	DisplacementFinal	Displacement	8.34	5.00	469.00		921.98	93.80	184.40

General Terms and Conditions

AMERICAN CEMENTING, LLC TERMS AND CONDITIONS

These Terms and Conditions (these "T&Cs") contain INDEMNIFICATION, LIMITATION OF LIABILITY AND RISK SHIFTING PROVISIONS. The provision of Work by American Cementing, LLC or its affiliated companies ("Contractor" or "American") to any person or entity placing an Order for such Work ("Company" or "Customer") is subject to these T&Cs. By requesting the Work, Company voluntarily elects to enter into and be bound by these T&Cs, and any Order for Work shall constitute acceptance of these T&Cs, *unless* Contractor and Company have entered into a Master Service Agreement or other agreement expressly accepted in writing by Contractor's authorized representative, in which case the terms and conditions of such agreements shall govern the provision of the Work and completely supersede these T&Cs in all respects.

1. DEFINITIONS. "Claims" means all claims, lawsuits, demands, causes of action, liabilities, damages (including punitive damages), judgments, awards, fines, penalties, losses, costs, expenses (including, without limitation, reasonable attorneys' fees, expert fees, and costs of litigation) of any kind or character, without limit, which arise out of or are related to the Work. "COMPANY GROUP" means (i) COMPANY, and any of its parent, subsidiary and affiliated or related entities; (ii) the working interest owners, co-owners, co-lessees, co-lessors, partners and joint venturers of (i); (iii) any person or entity with an economic interest or property rights in the well, premises or the property in relation to or upon which Work is performed; and (iv) the officers, directors, employees, shareholders, agents, representatives, contractors (except CONTRACTOR), subcontractors, consultants, and invitees of (i), (ii) and (iii) above. "CONTRACTOR GROUP" means (i) CONTRACTOR and any of its subsidiary and affiliated or related entities; and (ii) the officers, directors, employees, shareholders, agents, representatives, contractors, subcontractors, consultants, and invitees of all of the foregoing. "Order" means a written or verbal request for specific Work, including by way of a purchase order, work order, service order, work authorization, or similar instrument issued by COMPANY to CONTRACTOR, and which shall incorporate the pricing proposal submitted by CONTRACTOR for such Work. A request will be considered written if exchanges, whether by correspondence, letter, fax, or email include all material terms and conditions and they have been accepted or ratified by both COMPANY and CONTRACTOR; *provided, however*, if verbal, such request shall be confirmed in writing as soon as practicable, and the terms of the written Order shall control. "Work" means any cementing services and other related services provided by CONTRACTOR, along with all related personnel, equipment, machinery, tools, supplies, materials, vehicles, facilities, consumables, goods, and any other items used in connection with such services.

2. INDEPENDENT CONTRACTOR. This Agreement does not create any agency, partnership, joint venture, or similar business relationship between parties. COMPANY will have the right generally to oversee and inspect the performance of the Work to ensure the reasonable satisfactory completion thereof; it being understood and agreed that CONTRACTOR shall have exclusive control over the operational details of the Work.

3. PRICING AND PAYMENT. 3.1 COMPANY will pay CONTRACTOR for the Work according to the prices and rates contained the applicable Order; *provided, however*, that if there are no such prices and rates, then the prices and rates set forth in the pricing proposal submitted by CONTRACTOR for the Work shall apply. The pricing proposals submitted by CONTRACTOR are generally valid sixty (60) days from submission of such proposal, unless otherwise set forth in such pricing proposal. Notwithstanding the foregoing, before commencing the Work and until an agreement is reached between the parties regarding such prices and rates, CONTRACTOR has the right to revise and shall advise COMPANY of any changes in the pricing proposal, and COMPANY may either accept or reject such changes, and proceed with the Work or not. **3.2** COMPANY shall pay CONTRACTOR's invoices within thirty (30) days of receipt of invoice. In the event COMPANY disputes any amount, it shall do so in good faith and shall notify CONTRACTOR of such dispute within thirty (30) days of receipt of invoice; *provided, however*, that COMPANY shall pay any undisputed portion of the invoice within the time for payment noted above and shall endeavor to expeditiously resolve such disputes. Any undisputed invoices, remaining unpaid for sixty (60) days after receipt by COMPANY, shall accrue interest at the rate of 1.5% per month or the maximum interest rate allowed by applicable law, whichever is less, through the time of collection. **3.3** Prices quoted by CONTRACTOR do not include sales, VAT, use or similar taxes, and such taxes, where applicable, shall be added to the quoted prices and invoiced accordingly. Each party shall pay all taxes levied or assessed by any governmental authority in connection with or incident to its performance under an Order; *provided, however,* that CONTRACTOR shall pay any assessments or taxes upon wages of CONTRACTOR, social security, unemployment insurance, old age benefits, or any other employment taxes, contributions or withholdings.

4. ORDERS; STANDARD OF PERFORMANCE; WARRANTIES. 4.1 COMPANY may from time to time place an Order for Work, and CONTRACTOR may provide such Work to COMPANY, subject to these T&Cs. Orders shall become binding only after signed or acknowledged by an authorized representative of each party. **4.2** CONTRACTOR shall provide all labor, equipment, machinery, tools, supplies, materials, vehicles, facilities, consumables, goods, and any other items required for the execution and completion of the Work, as more fully described in the applicable Order. **4.3** CONTRACTOR shall perform the Work with due diligence and care, in a good and workmanlike manner, using skilled, competent, experienced, and, where applicable, licensed personnel in accordance with the specifications represented by CONTRACTOR and with generally accepted oilfield practices. **4.4** CONTRACTOR shall conduct its Work, in all material respects, in accordance with all applicable laws, rules, regulations, decrees, and/or official government orders of any governing body having jurisdiction over the Work. **4.5** CONTRACTOR's Work is designed to operate under conditions normally encountered in a wellbore. COMPANY shall notify CONTRACTOR in advance and make special arrangements for Work in which hazardous or unusual conditions exist. COMPANY has complete care, custody, and control of the well, the premises around the well, and the drilling and production equipment of the well (other than such equipment provided by CONTRACTOR hereunder), and Company shall furnish directions and requirements for Work performed hereunder. CONTRACTOR is relying on COMPANY to provide such directions and requirements without further investigation by CONTRACTOR. CONTRACTOR agrees to observe and abide by COMPANY's safety policies and procedures communicated to and acknowledged by CONTRACTOR. CONTRACTOR shall as promptly as possible under the circumstances report to COMPANY's representative all accidents or occurrences resulting in injuries, illness or death to person(s) or damage to property, arising out of or occurring during the Work. **4.6** CONTRACTOR's sole liability, and COMPANY's exclusive remedy, for any Claims for breach of warranty under this Section 4 are limited to, at CONTRACTOR's sole option, (i) if practical, the re-performance of the defective Work or portion thereof, at no additional cost to COMPANY; or (ii) a refund or credit to COMPANY of any amount paid to CONTRACTOR for such defective Work or portion thereof. In the event that CONTRACTOR materially fails to perform the Work or if CONTRACTOR provides defective Work for reasons solely within CONTRACTOR's control, COMPANY shall give notice to CONTRACTOR of such non-performance or defective performance immediately upon discovery and prior to CONTRACTOR's departure from the worksite, otherwise such warranty Claim is waived. **4.7** Due to the nature of the Work to be performed in unpredictable wellbore conditions, CONTRACTOR does not warrant the accuracy, correctness, or completeness of any interpretations, analysis, recommendations, or advice, nor that COMPANY's or any third party's reliance on such interpretations, analysis, recommendations, or advice will accomplish any particular results, and which in any event are opinions only. Accordingly, it is COMPANY's responsibility, and sole risk, to determine the completion, well treatment, production, or financial decision involving any risk. Any outcomes that are less than expected will not relieve COMPANY of its responsibility to pay for the Work in accordance with these T&Cs. **4.8** THE WARRANTIES PROVIDED IN THIS SECTION 4 ARE THE SOLE AND EXCLUSIVE WARRANTIES RELATING TO THE WORK AND ARE IN LIEU OF ANY AND ALL OTHER WARRANTIES WHETHER ORAL, WRITTEN, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WARRANTY OF MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

5. ORDER CHANGES; PROJECT ADMINISTRATION. 5.1 COMPANY may ask for and CONTRACTOR may agree to variations in the Work, whether by way of addition, modification or omission, which variations shall be in writing and signed by authorized representatives of both parties. The value of any such variations shall be ascertained by reference to the prices and rates specified in the applicable Order for like or analogous Work; *provided, however,* that if there are no such prices and rates or if they are otherwise inapplicable, then the prices and rates set forth in the pricing proposal submitted by CONTRACTOR for such additional Work shall apply. **5.2** To acknowledge or document various events during the provision of the Work, a party may from time to time sign the other party's forms, such as Orders, delivery tickets, job tickets, invoices, or similar instruments used by the parties in the normal course of business. In the event of a conflict between these T&Cs and any such documents, these T&Cs shall control, *unless* specific reference is made that these T&Cs are modified and the intention to modify is explicitly stated in such documents. **5.3** It is understood and agreed between the parties that COMPANY's representative (appointed in accordance with Section 5.4 below) shall have the authority to approve any job tickets, delivery tickets, or similar forms attesting to the completion of the Work by CONTRACTOR ("Job Tickets"). A COMPANY representative's signature on such Tickets shall indicate acceptance of the Work. If the Job Tickets are not acknowledged within forty-eight (48) hours of receipt through no fault of CONTRACTOR, CONTRACTOR may submit invoices for payment as if such Tickets had been acknowledged. **5.4** COMPANY will appoint a representative who will be responsible for the supervision of the Work, and who shall have full authority to represent and make decisions on behalf of COMPANY with respect to the Work, or otherwise to resolve the day-to-day issues which may arise related to the Work. Likewise, CONTRACTOR shall designate a representative with similar responsibilities and authority to liaise with COMPANY's representative.

6. CONTRACTOR'S EQUIPMENT. 6.1 Title to CONTRACTOR's equipment, including any lost, damaged, or confiscated equipment, shall remain in CONTRACTOR, and COMPANY shall have no right to assign, transfer, hypothecate, or remove such equipment from the place of its intended use without CONTRACTOR's prior written consent. **6.2** COMPANY shall be responsible for and agrees to compensate CONTRACTOR for all damages, losses, or any abnormal wear to CONTRACTOR GROUP's equipment: (i) while in COMPANY GROUP's care, custody or control, including while being transported by any member of COMPANY GROUP; (ii) as a result of operations conducted out of specifications at COMPANY GROUP's request, or in corrosive, abnormal temperatures or other

unusual conditions; (iii) due to fishing operations (if any); or (iv) if lost in the hole or damaged beyond repair while in the hole or used in the hole. COMPANY will replace such equipment or reimburse CONTRACTOR with the current replacement price of such equipment.

7. INDEMNITY.

7.1 Application of Indemnities. 7.1.1 In those matters in which a party is required by these T&Cs to RELEASE, DEFEND, PROTECT, INDEMNIFY, AND HOLD HARMLESS the other party and/or members of its respective Group, SUCH OBLIGATIONS SHALL, EXCEPT TO THE EXTENT EXPRESSLY PROVIDED OTHERWISE IN THESE T&CS, APPLY TO INDEMNITOR REGARDLESS OF THE CAUSE OR REASON, OR WHO MAY BE AT FAULT OR OTHERWISE RESPONSIBLE UNDER ANY CONTRACT, STATUTE, RULE, OR THEORY OF LAW, INCLUDING WITHOUT LIMITATION STRICT LIABILITY, TORT, BREACH OF DUTY (STATUTORY OR OTHERWISE), BREACH OF CONTRACT, BREACH OF REPRESENTATION OR WARRANTY, BREACH OF ANY SAFETY REQUIREMENT OR REGULATION, DUE TO ANY LATENT, PATENT, OR PRE-EXISTING DEFECTS OR CONDITIONS, IMPERFECTION OF MATERIAL, FAILURE OF EQUIPMENT, OR ANY LEGAL FAULT OR RESPONSIBILITY OF EITHER PARTY, INCLUDING THE SOLE, JOINT, AND/OR CONCURRENT NEGLIGENCE OR FAULT, WHETHER ACTIVE OR PASSIVE, OF THE INDEMNIFIED PARTY, OR OTHER PERSONS OR ENTITIES. **7.1.2** In the event these T&Cs are subject to the indemnity limitations in Chapter 127 of the Texas Civil Practice and Remedies Code (or any successor statute), and so long as such limitations are in force, each party covenants and agrees to support the mutual indemnity and release obligations contained herein by carrying insurance in an amount and of a type sufficient to cover their indemnity obligations**.** **7.1.3** Notwithstanding any provisions in these T&Cs to the contrary, the following provision applies where Work is to be performed in New Mexico or Wyoming, as applicable: to the extent this Section 7 is governed by New Mexico or Wyoming law, then the provisions herein shall be read not to include indemnification for the indemnified party's own negligence. **7.1.4** If any defense, indemnity, or insurance provision contained in these T&Cs conflicts with, is prohibited by or violates public policy under any federal, state or other law determined to be applicable to a particular situation arising or involving these T&Cs, it is understood and agreed that the conflicting, prohibited or violating provision shall be deemed automatically amended in that situation to the extent—but only to the extent—necessary to conform with, not be prohibited by, and avoid violating public policy under such applicable law. The parties agree that the exculpatory, indemnification, and hold harmless provisions herein shall be modified or altered only insofar as required by a jurisdiction purporting to limit such provisions, it being the intention of both parties to enforce to the fullest extent, all terms and conditions herein agreed to.

7.2 CONTRACTOR's Indemnification. CONTRACTOR shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD COMPANY GROUP HARMLESS from and against any and all Claims for personal or bodily injury to, sickness, disease or death of any member of CONTRACTOR GROUP, and any and all Claims for damage to or loss of any property of CONTRACTOR GROUP.

7.3 COMPANY's Indemnification. COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims for personal or bodily injury to, sickness, disease or death of any member of COMPANY GROUP, and any and all Claims for damage to or loss of any property of COMPANY GROUP.

7.4 Pollution and Contamination; Catastrophic Damages or Losses. Notwithstanding each party's obligations pursuant to Sections 7.2 and 7.3 hereof, it is understood and agreed between the parties that the following additional terms shall apply: 7.4.1 (a) CONTRACTOR shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD COMPANY GROUP HARMLESS from and against any and all Claims arising from pollution or contamination, which originates above the surface of the land or water, and which shall directly result from or be caused by CONTRACTOR GROUP's equipment, vehicles, or other tools and instruments while in CONTRACTOR GROUP's sole care, custody or control, and shall assume all responsibility for control and removal of same; and (b) COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims arising from any and all pollution or contamination other than that described under Section 7.4.1 (a) above, and including but not limited to, that which may result from cratering, seepage or any other uncontrolled flow of oil, gas, water or other substance, and shall assume all responsibility for control and removal of same. 7.4.2 COMPANY shall be liable for, and hereby agrees to RELEASE, DEFEND, PROTECT, INDEMNIFY AND HOLD CONTRACTOR GROUP HARMLESS from and against any and all Claims arising from any and all catastrophic damages or losses, including but not limited to those on account of injury, destruction of, loss or impairment (i) of any formation, strata, or reservoir beneath the surface of the earth; (ii) of any property rights in or to oil, gas, or other mineral substance or water, or the quiet enjoyment thereof, including subsurface trespass; (iii) to the well or the hole, including its casing; (iv) from radioactive sources; and (v) from fire, explosion, blowout, or any other uncontrolled well conditions, and the cost of controlling or regaining control of a wild well or out of control well.

7.5 Incidental or Consequential Damages. Notwithstanding any provisions to the contrary in these T&Cs, neither party shall be liable to the other party for, and parties shall RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD EACH OTHER HARMLESS from and against any special, punitive, indirect, incidental or consequential damages or losses suffered by the other party and its Group resulting from or arising, directly or indirectly, out of or in connection with the Work, including, without limitation, loss and/or deferral of production, loss of product, loss of use, loss of bargain, contract expectations, or opportunity to contract with others, loss of revenue, profit, or anticipated profit, loss of business, business interruption, or downtime, whether direct or indirect, and whether or not such loss was foreseeable at the time of placing of an Order.

8. INSURANCE. **8.1** CONTRACTOR and COMPANY agree, at their sole cost and expense, to procure and continuously maintain in full force and effect throughout the term of this Agreement the following insurance coverage which may be met by a combination of primary and excess/umbrella insurance: A. Statutory Workers' Compensation Insurance and Employer's Liability in the amount of $1,000,000 per occurrence and in the aggregate; B. Commercial General Liability insurance providing for third party property damage and personal injury, including broad form contractual liability for any agreement and broad form property damage in the amount of $1,000,000 per occurrence and $2,000,000 in the aggregate; C. Owned and Non-Owned Automobile Liability Insurance for bodily injury and property damage combined single limit in the amount of $1,000,000 per occurrence and in the aggregate; D. Excess/Umbrella Liability Insurance providing coverage in excess of the foregoing insurances in the amount of $5,000,000 per occurrence and in the aggregate, excluding statutory insurance coverage. **8.2** Each party agrees that, to the extent it assumes liability herein, it shall endorse the above coverages to name the indemnified parties as additional insureds (except for Workers' Compensation), shall waive its right of subrogation against the indemnified parties and their insurers, and agrees that its insurance shall be primary to that carried by the indemnified parties and non-contributory as per negligence for third party Claims, and shall not contribute in case of any Claim of exhaustion of horizontal limits. **8.3** Each party shall furnish an insurance certificate to the other to evidence the insurance required herein, and such certificates shall contain an endorsement stating that the insurer will endeavor to provide a thirty (30) days prior written notice of alteration or material change to such coverage. All deductible amounts, premiums, franchise amounts, or other charges due with respect to each party's required insurance should be the sole obligation of the insured party.

9. CONFIDENTIALITY. Each party contemplates that the other party may be provided and exposed to confidential and proprietary information ("Confidential Information"), which includes information relating to specifications of its tools, designs, inventions, component parts, parts list, software, firmware, hardware, processes, computer interfaces, operational parameters, and terms and pricing of Work. All Confidential Information shall remain the property of the party disclosing the same and no license is granted to the receiving party by virtue of the provision of such information. Confidential Information shall (i) be used by the recipient solely for the purpose of the provision of the Work and (ii) kept confidential and not disclosed to any person, except authorized representatives of the receiving Party, without written permission of the disclosing party. The receiving party shall take all reasonable steps to require its authorized representatives to keep such information confidential during and after the Work. Confidential Information shall not include information which: (i) at the time of placement of the Order is in the public domain or subsequently comes into the public domain through no fault of the receiving party and not in breach of these T&Cs; (ii) was already known to the receiving party on the date of disclosure, provided that such prior knowledge can be substantiated and proved by documentation; or (iii) properly and lawfully available to the receiving party from sources independent of the disclosing party.

10. INTELLECTUAL PROPERTY. While performing the Work, CONTRACTOR may utilize CONTRACTOR's intellectual property (including, without limitation, copyrights, registered marks, trademarks, service marks, patents, know-how, trade secrets, inventions, discoveries, techniques. technical information, technologies, designs, software, computer programs, formulae, calculations, computations, expertise, ideas, concepts, improvements, sketches, drawings, models, methods, practices, and/or processes, whether patentable or not) and/or develop, conceive, create, acquire, obtain, collect, generate, or make such additional intellectual property, which is and shall be CONTRACTOR's exclusive property. *Except if* expressly and specifically agreed in writing in a separate development agreement executed by the parties, and in exchange for appropriate payment, CONTRACTOR shall not develop any intellectual property for ownership by COMPANY in association with Work performed under a specific Order. Notwithstanding the foregoing, COMPANY or COMPANY GROUP shall own any intellectual property solely developed by COMPANY or COMPANY GROUP, respectively.

11. FORCE MAJEURE. 11.1 "Force Majeure" means (to the extent and only to the extent that any of the following are not reasonably within the control of the party claiming a Force Majeure and by the exercise of due diligence such party could not have mitigated, avoided, or overcome such condition) acts of God, fire, floods, lightning, blizzards, tornadoes, earthquakes, ice storms, named tropical storms and hurricanes, pandemics, terrorism, insurrection, revolution, war, strikes, lockouts, federal or state laws, rules and regulations of any governmental or public authorities having or asserting jurisdiction over the premises of either or both parties, inability to procure material due to industry wide shortages or soaring commodity costs, equipment, or necessary labor despite reasonable efforts, or similar causes. 11.2 If a party is rendered unable, wholly or in part, by a Force Majeure event to perform, that party will give written notice detailing such Force Majeure event to the other party as soon as reasonably possible. If a Force Majeure event continues without interruption for ten (10) days, either Party may cancel the applicable Order by giving prompt, written cancellation notice to the other party. Nothing in this Section 14.2 shall excuse COMPANY from its payment obligations of any invoices due and owing for Work performed under a specific Order.

12. LIMITATION OF LIABILITY. Notwithstanding anything to the contrary in these T&Cs, CONTRACTOR's liability arising from or in connection with its performance of the Work shall be limited to the value of the consideration paid to CONTRACTOR under the applicable Order.

13. GOVERNING LAW; VENUE. 13.1 For Work performed on a worksite within the **United States,** these T&Cs shall be exclusively governed by the laws of the **State of Texas**, excluding any conflict of laws principle that would refer to the laws of another jurisdiction. Venue shall lie exclusively in the state or federal courts of Harris County, Texas, and the parties consent to personal

jurisdiction therein. **13.2** For Work performed on a worksite within **Canada,** these T&Cs shall be exclusively governed by the laws of **Province of Alberta**, excluding any conflict of laws principle that would refer to the laws of another jurisdiction.

14. MISCELLANEOUS. 14.1 Notices. Notices shall be sent by registered post, or delivered in person, to the address for notices communicated by the other party. Said notices shall be deemed received (i) upon delivery if hand delivered, (ii) upon delivery if sent by registered post, and (iii) upon recipient's confirmation of receipt if faxed. **14.2 Waiver.** No benefit or right accruing to either party under these T&Cs shall be deemed to be waived unless the waiver is in writing, expressly refers to these T&Cs, and is signed by a duly authorized representative of both parties. A waiver in any one or more instances shall not constitute a continuing waiver, unless specifically so stated in the written waiver. **14.3 Severability.** In the event one or more of the provisions contained in these T&Cs shall be held, for any reason, to be invalid, void, illegal, contrary to law and/or unenforceable in any respect, these T&Cs shall be deemed to be amended to partially or completely modify such provision or portion thereof to the extent necessary to make it enforceable. If necessary, these T&Cs shall be deemed to be amended to delete the unenforceable provision or portion thereof, in which event such invalidity, illegality or unenforceability shall not affect the remaining provisions hereof, and these T&Cs shall remain unaffected and shall be construed as if such invalid, void, illegal or unenforceable provision never had been contained herein. **14.4 Independent Representation.** COMPANY AND CONTRACTOR ACKNOWLEDGE THAT THEY HAVE CONSULTED AN ATTORNEY CONCERNING THESE T&Cs OR HAVE ELECTED NOT TO DO SO, BUT REPRESENT THAT THEY FULLY UNDERSTAND THEIR RIGHTS AND OBLIGATIONS HEREUNDER

Company: _____

Signature: _____
Name: _____
Title:_____
Date: _____

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 433563
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	If cement is not circulated to surface during cementing operations, a Cement Bond Log (CBL) is required.	2/19/2025
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing.	2/19/2025