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

Sundry Print Report

02/12/2025

Well Name: ROYAL OAK 25 FED COM
Well Location: T18S / R33E / SEC 24 / SWSE / 32.728048 / -103.613554
County or Parish/State: LEA / NM

Well Number: 304H
Type of Well: OIL WELL
Allottee or Tribe Name:

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

US Well Number: 3002554154
Operator: AVANT OPERATING LLC

Notice of Intent

Sundry ID: 2835867

Type of Submission: Notice of Intent
Type of Action: APD Change

Date Sundry Submitted: 02/07/2025
Time Sundry Submitted: 10:58

Date proposed operation will begin: 02/07/2025

Procedure Description: Avant Operating, LLC would like to change the SHL of this well from 763' FSL & 1711' FEL to 603' FSL & 1670' FEL, please see attached updated drilling info to reflect this change.

NOI Attachments

Procedure Description

Royal_Oak_24_Fed_Com_304H_APD_Change_Atatchments_20250207094528.pdf

Conditions of Approval

Additional

25_18_33_B_Sundry_ID_2835867_Royal_Oak_25_Fed_Com_304H_Lea_NM51842_AVANT_OPERATING_LLC_13_22g_2_27_2024_LV_20250211094341.pdf

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Lease Number: NMNM51842

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002554154

Operator: AVANT OPERATING LLC

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 10:57 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: 02/12/2025

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 FNL / 1711 FEL / TWSP: 18S / RANGE: 33E / SECTION: 24 / LAT: 32.728048 / LONG: -103.613554 (TVD: 0 feet, MD: 0 feet)

PPP: NESE / 2639 FNL / 331 FEL / TWSP: 18S / RANGE: 33E / SECTION: 25 / LAT: 32.718713 / LONG: -103.609053 (TVD: 8832 feet, MD: 11974 feet)

PPP: NENE / 100 FNL / 330 FEL / TWSP: 18S / RANGE: 33E / SECTION: 25 / LAT: 32.725691 / LONG: -103.60906 (TVD: 8832 feet, MD: 9335 feet)

BHL: SESE / 100 FSL / 330 FEL / TWSP: 18S / RANGE: 33E / SECTION: 36 / LAT: 32.697217 / LONG: -103.609029 (TVD: 8832 feet, MD: 19268 feet)

Royal Oak 25 Fed Com 304H

13 3/8	surface csg in a	17 1/2	inch hole.	Design Factors			Surface				
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	54.50	j 55	btc	9.10	1.28	0.95	1,720	4	1.64	2.23	93,740
"B"			btc				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,160		Tail Cmt	does not	circ to sfc.	Totals:	1,720				93,740

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
17 1/2	0.6946	965	1745	1195	46	9.90	1663	2M	1.56

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

9 5/8	casing inside the	13 3/8		Design Factors			Int 1				
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00	j 55	btc	2.78	1.24	0.91	4,000	1	1.64	2.15	160,000
"B"	40.00	hcl 80	btc	13.73	1.47	1.32	1,668	2	2.38	2.54	66,720
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,020					Totals:	5,668				226,720
	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
12 1/4	0.3132	1125	2148	1860	15	10.00	2416	3M	0.81
D V Tool(s):							sum of sx	Σ CuFt	Σ%excess
by stage % :		#VALUE!	#VALUE!				1125	2148	15

Class 'H' tail cmt yld > 1.20

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.99, b, c, d All > 0.70, OK.

5 1/2	casing inside the	9 5/8		Design Factors			Prod 1				
Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	20.00	p 110	gbcd	3.63	2.55	2.9	19,226	3	5.23	4.60	384,520
"B"							0				0
"C"							0				0
"D"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,943					Totals:	19,226				384,520
	The cement volume(s) are intended to achieve a top of			5468	ft from surface or a		200				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
8 3/4	0.2526	3547	5829	3477	68	9.50			1.23

Class 'C' tail cmt yld > 1.35

#N/A

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

Hole	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	
30-025-54154	21650	E-K; BONE SPRING	
Property Code	**Property Name**		**Well Number**
335845	ROYAL OAK 24 FED COM		304H
OGRID No.	**Operator Name**		**Ground Level Elevation**
330396	AVANT OPERATING, LLC		3910.5

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	1670 FEL	32.7276087° N	103.6134197° 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	330 FEL	32.6972166° N	103.6090292° W	LEA

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
1280			No	
Order Numbers.	R-23452		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	330 FEL	32.7258285° N	103.6090606° 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	330 FEL	32.7256911° N	103.6090604° 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	330 FEL	32.6972166° N	103.6090292° 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

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

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.

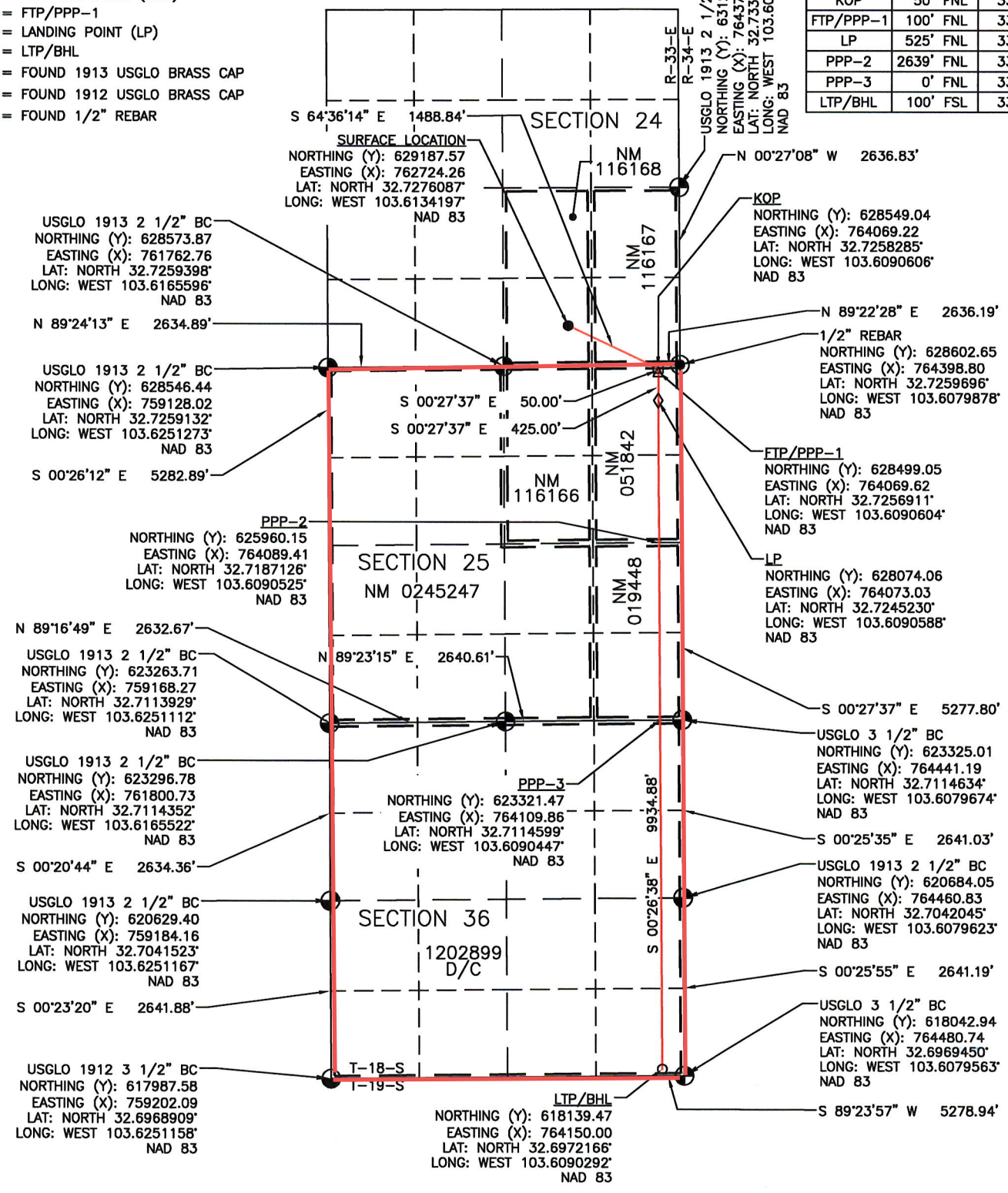
Plat Revised: 2/3/25

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

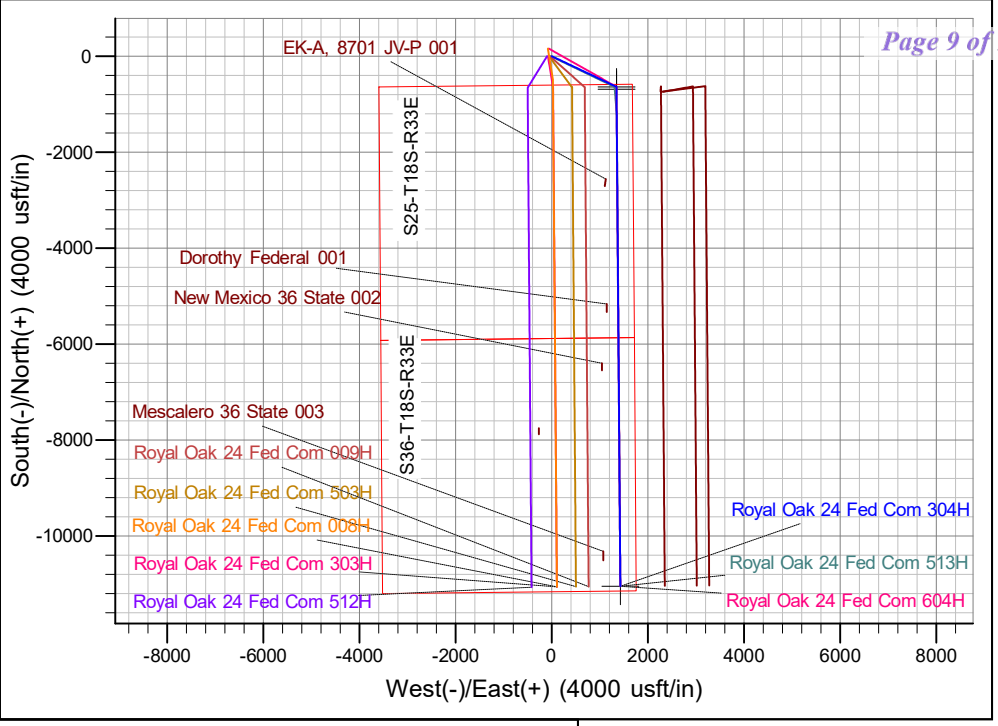
AVANT OPERATING, LLC			
ROYAL OAK 24 FED COM 304H			
FOOTAGES			SEC.
SHL	603' FSL	1670' FEL	24
KOP	50' FNL	330' FEL	25
FTP/PPP-1	100' FNL	330' FEL	25
LP	525' FNL	330' FEL	25
PPP-2	2639' FNL	331' FEL	25
PPP-3	0' FNL	331' FEL	36
LTP/BHL	100' FSL	330' FEL	36



AVANT NATURAL RESOURCES

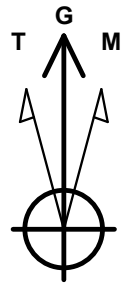
WELL DETAILS: Royal Oak 24 Fed Com 304H					
Ground Elev: 3910.5		KB: 3937			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	629187.57	762724.26	32.727609	-103.613420

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



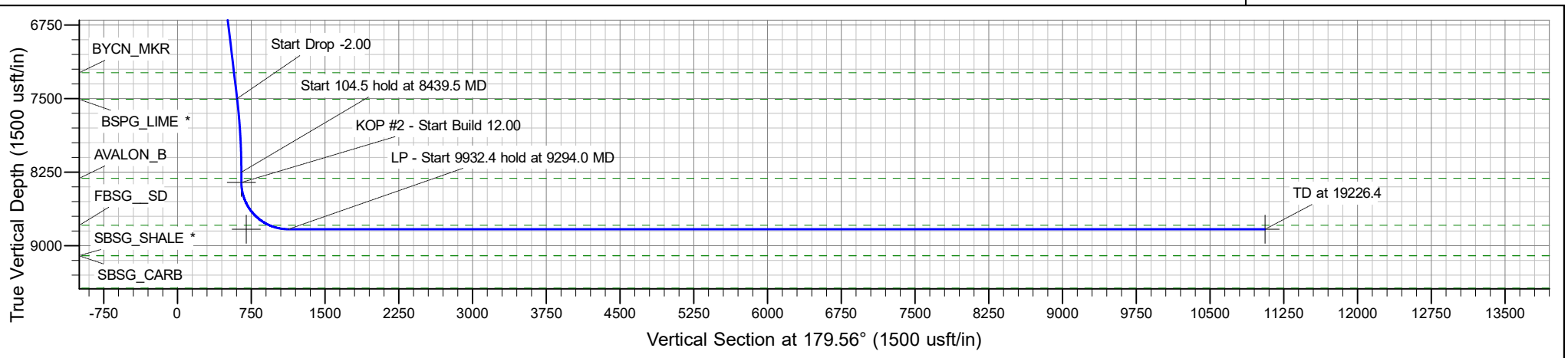
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	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	2759.1	15.18	115.40	2750.3	-42.9	90.3	2.00	115.40	43.6	Start 4921.2 hold at 2759.1 MD
4	7680.3	15.18	115.40	7499.7	-595.6	1254.6	0.00	0.00	605.3	Start Drop -2.00
5	8439.5	0.00	0.00	8250.0	-638.5	1345.0	2.00	180.00	648.8	Start 104.5 hold at 8439.5 MD
6	8544.0	0.00	0.00	8354.5	-638.5	1345.0	0.00	0.00	648.8	KOP #2 - Start Build 12.00
7	9294.0	90.00	179.56	8832.0	-1116.0	1348.7	12.00	179.56	1126.3	LP - Start 9932.4 hold at 9294.0 MD
8	19226.4	90.00	179.56	8832.0	-11048.1	1425.7	0.00	0.00	11058.7	TD at 19226.4



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 304H

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 304H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3937.0usft (3937)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3937.0usft (3937)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 304H	**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 304H

Well Position	**+N/-S**	0.0 usft	**Northing:**	629,187.57 usft	**Latitude:**	32.727609
	+E/-W	0.0 usft	**Easting:**	762,724.26 usft	**Longitude:**	-103.613420
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,910.5 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	49,721.28151989

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	19,226.4	Plan 0.1 (OH)	B001Mb_MWD+HRGM OWSG MWD + HRGM	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,759.1	15.18	115.40	2,750.3	-42.9	90.3	2.00	2.00	0.00	115.40	
7,680.3	15.18	115.40	7,499.7	-595.6	1,254.6	0.00	0.00	0.00	0.00	
8,439.5	0.00	0.00	8,250.0	-638.5	1,345.0	2.00	-2.00	0.00	180.00	
8,544.0	0.00	0.00	8,354.5	-638.5	1,345.0	0.00	0.00	0.00	0.00	
9,294.0	90.00	179.56	8,832.0	-1,116.0	1,348.7	12.00	12.00	0.00	179.56	
19,226.4	90.00	179.56	8,832.0	-11,048.1	1,425.7	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 304H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3937.0usft (3937)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3937.0usft (3937)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 304H	**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	115.40	2,100.0	-0.7	1.6	0.8	2.00	2.00	0.00
2,200.0	4.00	115.40	2,199.8	-3.0	6.3	3.0	2.00	2.00	0.00
2,300.0	6.00	115.40	2,299.5	-6.7	14.2	6.8	2.00	2.00	0.00
2,400.0	8.00	115.40	2,398.7	-12.0	25.2	12.2	2.00	2.00	0.00
2,500.0	10.00	115.40	2,497.5	-18.7	39.3	19.0	2.00	2.00	0.00
2,600.0	12.00	115.40	2,595.6	-26.8	56.6	27.3	2.00	2.00	0.00
2,700.0	14.00	115.40	2,693.1	-36.5	76.9	37.1	2.00	2.00	0.00
2,759.1	15.18	115.40	2,750.3	-42.9	90.3	43.6	2.00	2.00	0.00
Start 4921.2 hold at 2759.1 MD									
2,800.0	15.18	115.40	2,789.7	-47.5	100.0	48.2	0.00	0.00	0.00
2,900.0	15.18	115.40	2,886.2	-58.7	123.7	59.7	0.00	0.00	0.00
3,000.0	15.18	115.40	2,982.7	-69.9	147.3	71.1	0.00	0.00	0.00
3,100.0	15.18	115.40	3,079.2	-81.2	171.0	82.5	0.00	0.00	0.00
3,200.0	15.18	115.40	3,175.8	-92.4	194.6	93.9	0.00	0.00	0.00
3,300.0	15.18	115.40	3,272.3	-103.6	218.3	105.3	0.00	0.00	0.00
3,400.0	15.18	115.40	3,368.8	-114.9	242.0	116.7	0.00	0.00	0.00
3,500.0	15.18	115.40	3,465.3	-126.1	265.6	128.1	0.00	0.00	0.00
3,600.0	15.18	115.40	3,561.8	-137.3	289.3	139.6	0.00	0.00	0.00
3,682.1	15.18	115.40	3,641.0	-146.6	308.7	148.9	0.00	0.00	0.00
YATES									
3,700.0	15.18	115.40	3,658.3	-148.6	312.9	151.0	0.00	0.00	0.00
3,800.0	15.18	115.40	3,754.8	-159.8	336.6	162.4	0.00	0.00	0.00
3,900.0	15.18	115.40	3,851.3	-171.0	360.2	173.8	0.00	0.00	0.00
4,000.0	15.18	115.40	3,947.8	-182.3	383.9	185.2	0.00	0.00	0.00
4,100.0	15.18	115.40	4,044.3	-193.5	407.6	196.6	0.00	0.00	0.00
4,200.0	15.18	115.40	4,140.9	-204.7	431.2	208.0	0.00	0.00	0.00
4,300.0	15.18	115.40	4,237.4	-216.0	454.9	219.4	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 304H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3937.0usft (3937)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3937.0usft (3937)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 304H	**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)
4,400.0	15.18	115.40	4,333.9	-227.2	478.5	230.9	0.00	0.00	0.00
4,500.0	15.18	115.40	4,430.4	-238.4	502.2	242.3	0.00	0.00	0.00
4,600.0	15.18	115.40	4,526.9	-249.7	525.9	253.7	0.00	0.00	0.00
4,700.0	15.18	115.40	4,623.4	-260.9	549.5	265.1	0.00	0.00	0.00
4,800.0	15.18	115.40	4,719.9	-272.1	573.2	276.5	0.00	0.00	0.00
4,900.0	15.18	115.40	4,816.4	-283.4	596.8	287.9	0.00	0.00	0.00
5,000.0	15.18	115.40	4,912.9	-294.6	620.5	299.3	0.00	0.00	0.00
5,100.0	15.18	115.40	5,009.4	-305.8	644.2	310.8	0.00	0.00	0.00
5,200.0	15.18	115.40	5,106.0	-317.0	667.8	322.2	0.00	0.00	0.00
5,300.0	15.18	115.40	5,202.5	-328.3	691.5	333.6	0.00	0.00	0.00
5,400.0	15.18	115.40	5,299.0	-339.5	715.1	345.0	0.00	0.00	0.00
5,500.0	15.18	115.40	5,395.5	-350.7	738.8	356.4	0.00	0.00	0.00
5,600.0	15.18	115.40	5,492.0	-362.0	762.4	367.8	0.00	0.00	0.00
5,700.0	15.18	115.40	5,588.5	-373.2	786.1	379.2	0.00	0.00	0.00
5,767.9	15.18	115.40	5,654.0	-380.8	802.2	387.0	0.00	0.00	0.00
CHERRY_CNYN									
5,800.0	15.18	115.40	5,685.0	-384.4	809.8	390.6	0.00	0.00	0.00
5,900.0	15.18	115.40	5,781.5	-395.7	833.4	402.1	0.00	0.00	0.00
6,000.0	15.18	115.40	5,878.0	-406.9	857.1	413.5	0.00	0.00	0.00
6,100.0	15.18	115.40	5,974.5	-418.1	880.7	424.9	0.00	0.00	0.00
6,200.0	15.18	115.40	6,071.0	-429.4	904.4	436.3	0.00	0.00	0.00
6,300.0	15.18	115.40	6,167.6	-440.6	928.1	447.7	0.00	0.00	0.00
6,400.0	15.18	115.40	6,264.1	-451.8	951.7	459.1	0.00	0.00	0.00
6,500.0	15.18	115.40	6,360.6	-463.1	975.4	470.5	0.00	0.00	0.00
6,600.0	15.18	115.40	6,457.1	-474.3	999.0	482.0	0.00	0.00	0.00
6,700.0	15.18	115.40	6,553.6	-485.5	1,022.7	493.4	0.00	0.00	0.00
6,800.0	15.18	115.40	6,650.1	-496.8	1,046.4	504.8	0.00	0.00	0.00
6,900.0	15.18	115.40	6,746.6	-508.0	1,070.0	516.2	0.00	0.00	0.00
7,000.0	15.18	115.40	6,843.1	-519.2	1,093.7	527.6	0.00	0.00	0.00
7,100.0	15.18	115.40	6,939.6	-530.5	1,117.3	539.0	0.00	0.00	0.00
7,200.0	15.18	115.40	7,036.1	-541.7	1,141.0	550.4	0.00	0.00	0.00
7,300.0	15.18	115.40	7,132.7	-552.9	1,164.6	561.9	0.00	0.00	0.00
7,400.0	15.18	115.40	7,229.2	-564.2	1,188.3	573.3	0.00	0.00	0.00
7,407.1	15.18	115.40	7,236.0	-565.0	1,190.0	574.1	0.00	0.00	0.00
BYCN_MKR									
7,500.0	15.18	115.40	7,325.7	-575.4	1,212.0	584.7	0.00	0.00	0.00
7,600.0	15.18	115.40	7,422.2	-586.6	1,235.6	596.1	0.00	0.00	0.00
7,680.3	15.18	115.40	7,499.7	-595.6	1,254.6	605.3	0.00	0.00	0.00
Start Drop -2.00									
7,688.9	15.01	115.40	7,508.0	-596.6	1,256.6	606.2	2.00	-2.00	0.00
BSPG_LIME *									
7,700.0	14.79	115.40	7,518.7	-597.8	1,259.2	607.5	2.00	-2.00	0.00
7,800.0	12.79	115.40	7,615.8	-608.0	1,280.8	617.9	2.00	-2.00	0.00
7,900.0	10.79	115.40	7,713.7	-616.8	1,299.2	626.8	2.00	-2.00	0.00
8,000.0	8.79	115.40	7,812.2	-624.1	1,314.6	634.2	2.00	-2.00	0.00
8,100.0	6.79	115.40	7,911.3	-629.9	1,326.8	640.1	2.00	-2.00	0.00
8,200.0	4.79	115.40	8,010.8	-634.2	1,335.9	644.5	2.00	-2.00	0.00
8,300.0	2.79	115.40	8,110.6	-637.1	1,341.9	647.4	2.00	-2.00	0.00
8,400.0	0.79	115.40	8,210.5	-638.4	1,344.7	648.7	2.00	-2.00	0.00
8,439.5	0.00	0.00	8,250.0	-638.5	1,345.0	648.8	2.00	-2.00	0.00
Start 104.5 hold at 8439.5 MD									
8,500.0	0.00	0.00	8,310.5	-638.5	1,345.0	648.8	0.00	0.00	0.00
8,502.5	0.00	0.00	8,313.0	-638.5	1,345.0	648.8	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 304H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3937.0usft (3937)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3937.0usft (3937)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 304H	**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)
AVALON_B									
8,544.0	0.00	0.00	8,354.5	-638.5	1,345.0	648.8	0.00	0.00	0.00
KOP #2 - Start Build 12.00 - KOP - Royal Oak 24 Fed Com 304H									
8,550.0	0.72	179.56	8,360.5	-638.6	1,345.0	648.9	11.93	11.93	0.00
8,575.0	3.72	179.56	8,385.5	-639.5	1,345.0	649.8	12.00	12.00	0.00
8,600.0	6.72	179.56	8,410.4	-641.8	1,345.0	652.1	12.00	12.00	0.00
8,625.0	9.72	179.56	8,435.1	-645.4	1,345.0	655.7	12.00	12.00	0.00
8,650.0	12.72	179.56	8,459.7	-650.2	1,345.1	660.6	12.00	12.00	0.00
8,675.0	15.72	179.56	8,483.9	-656.4	1,345.1	666.7	12.00	12.00	0.00
8,700.0	18.72	179.56	8,507.8	-663.8	1,345.2	674.1	12.00	12.00	0.00
8,725.0	21.72	179.56	8,531.2	-672.4	1,345.2	682.7	12.00	12.00	0.00
8,750.0	24.72	179.56	8,554.2	-682.3	1,345.3	692.6	12.00	12.00	0.00
8,775.0	27.72	179.56	8,576.6	-693.3	1,345.4	703.6	12.00	12.00	0.00
8,800.0	30.72	179.56	8,598.4	-705.5	1,345.5	715.8	12.00	12.00	0.00
8,825.0	33.72	179.56	8,619.6	-718.8	1,345.6	729.2	12.00	12.00	0.00
8,850.0	36.72	179.56	8,640.0	-733.3	1,345.7	743.6	12.00	12.00	0.00
8,875.0	39.72	179.56	8,659.6	-748.7	1,345.8	759.0	12.00	12.00	0.00
8,900.0	42.72	179.56	8,678.4	-765.2	1,345.9	775.5	12.00	12.00	0.00
8,925.0	45.72	179.56	8,696.4	-782.6	1,346.1	792.9	12.00	12.00	0.00
8,948.1	48.48	179.56	8,712.1	-799.5	1,346.2	809.8	12.00	12.00	0.00
FTP - Royal Oak 24 Fed Com 304H									
8,950.0	48.72	179.56	8,713.3	-801.0	1,346.2	811.3	12.00	12.00	0.00
8,975.0	51.72	179.56	8,729.3	-820.2	1,346.4	830.5	12.00	12.00	0.00
9,000.0	54.72	179.56	8,744.3	-840.2	1,346.5	850.5	12.00	12.00	0.00
9,025.0	57.72	179.56	8,758.2	-861.0	1,346.7	871.3	12.00	12.00	0.00
9,050.0	60.72	179.56	8,771.0	-882.5	1,346.9	892.8	12.00	12.00	0.00
9,075.0	63.72	179.56	8,782.6	-904.6	1,347.0	914.9	12.00	12.00	0.00
9,097.2	66.38	179.56	8,792.0	-924.7	1,347.2	935.0	12.00	12.00	0.00
FBSG__SD									
9,100.0	66.72	179.56	8,793.1	-927.3	1,347.2	937.6	12.00	12.00	0.00
9,125.0	69.72	179.56	8,802.4	-950.5	1,347.4	960.8	12.00	12.00	0.00
9,150.0	72.72	179.56	8,810.4	-974.1	1,347.6	984.5	12.00	12.00	0.00
9,175.0	75.72	179.56	8,817.2	-998.2	1,347.8	1,008.5	12.00	12.00	0.00
9,200.0	78.72	179.56	8,822.8	-1,022.6	1,347.9	1,032.9	12.00	12.00	0.00
9,225.0	81.72	179.56	8,827.0	-1,047.2	1,348.1	1,057.5	12.00	12.00	0.00
9,250.0	84.72	179.56	8,830.0	-1,072.0	1,348.3	1,082.4	12.00	12.00	0.00
9,275.0	87.72	179.56	8,831.6	-1,097.0	1,348.5	1,107.3	12.00	12.00	0.00
9,294.0	90.00	179.56	8,832.0	-1,116.0	1,348.7	1,126.3	12.00	12.00	0.00
LP - Start 9932.4 hold at 9294.0 MD									
9,300.0	90.00	179.56	8,832.0	-1,122.0	1,348.7	1,132.3	0.00	0.00	0.00
9,400.0	90.00	179.56	8,832.0	-1,222.0	1,349.5	1,232.3	0.00	0.00	0.00
9,500.0	90.00	179.56	8,832.0	-1,322.0	1,350.3	1,332.3	0.00	0.00	0.00
9,600.0	90.00	179.56	8,832.0	-1,422.0	1,351.0	1,432.3	0.00	0.00	0.00
9,700.0	90.00	179.56	8,832.0	-1,522.0	1,351.8	1,532.3	0.00	0.00	0.00
9,800.0	90.00	179.56	8,832.0	-1,622.0	1,352.6	1,632.3	0.00	0.00	0.00
9,900.0	90.00	179.56	8,832.0	-1,721.9	1,353.4	1,732.3	0.00	0.00	0.00
10,000.0	90.00	179.56	8,832.0	-1,821.9	1,354.1	1,832.3	0.00	0.00	0.00
10,100.0	90.00	179.56	8,832.0	-1,921.9	1,354.9	1,932.3	0.00	0.00	0.00
10,200.0	90.00	179.56	8,832.0	-2,021.9	1,355.7	2,032.3	0.00	0.00	0.00
10,300.0	90.00	179.56	8,832.0	-2,121.9	1,356.5	2,132.3	0.00	0.00	0.00
10,400.0	90.00	179.56	8,832.0	-2,221.9	1,357.2	2,232.3	0.00	0.00	0.00
10,500.0	90.00	179.56	8,832.0	-2,321.9	1,358.0	2,332.3	0.00	0.00	0.00
10,600.0	90.00	179.56	8,832.0	-2,421.9	1,358.8	2,432.3	0.00	0.00	0.00
10,700.0	90.00	179.56	8,832.0	-2,521.9	1,359.6	2,532.3	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 304H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3937.0usft (3937)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3937.0usft (3937)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 304H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,800.0	90.00	179.56	8,832.0	-2,621.9	1,360.4	2,632.3	0.00	0.00	0.00
10,900.0	90.00	179.56	8,832.0	-2,721.9	1,361.1	2,732.3	0.00	0.00	0.00
11,000.0	90.00	179.56	8,832.0	-2,821.9	1,361.9	2,832.3	0.00	0.00	0.00
11,100.0	90.00	179.56	8,832.0	-2,921.9	1,362.7	2,932.3	0.00	0.00	0.00
11,200.0	90.00	179.56	8,832.0	-3,021.9	1,363.5	3,032.3	0.00	0.00	0.00
11,300.0	90.00	179.56	8,832.0	-3,121.9	1,364.2	3,132.3	0.00	0.00	0.00
11,400.0	90.00	179.56	8,832.0	-3,221.9	1,365.0	3,232.3	0.00	0.00	0.00
11,500.0	90.00	179.56	8,832.0	-3,321.9	1,365.8	3,332.3	0.00	0.00	0.00
11,600.0	90.00	179.56	8,832.0	-3,421.9	1,366.6	3,432.3	0.00	0.00	0.00
11,700.0	90.00	179.56	8,832.0	-3,521.9	1,367.3	3,532.3	0.00	0.00	0.00
11,800.0	90.00	179.56	8,832.0	-3,621.9	1,368.1	3,632.3	0.00	0.00	0.00
11,900.0	90.00	179.56	8,832.0	-3,721.9	1,368.9	3,732.3	0.00	0.00	0.00
12,000.0	90.00	179.56	8,832.0	-3,821.9	1,369.7	3,832.3	0.00	0.00	0.00
12,100.0	90.00	179.56	8,832.0	-3,921.9	1,370.4	3,932.3	0.00	0.00	0.00
12,200.0	90.00	179.56	8,832.0	-4,021.9	1,371.2	4,032.3	0.00	0.00	0.00
12,300.0	90.00	179.56	8,832.0	-4,121.9	1,372.0	4,132.3	0.00	0.00	0.00
12,400.0	90.00	179.56	8,832.0	-4,221.9	1,372.8	4,232.3	0.00	0.00	0.00
12,500.0	90.00	179.56	8,832.0	-4,321.9	1,373.5	4,332.3	0.00	0.00	0.00
12,600.0	90.00	179.56	8,832.0	-4,421.9	1,374.3	4,432.3	0.00	0.00	0.00
12,700.0	90.00	179.56	8,832.0	-4,521.9	1,375.1	4,532.3	0.00	0.00	0.00
12,800.0	90.00	179.56	8,832.0	-4,621.9	1,375.9	4,632.3	0.00	0.00	0.00
12,900.0	90.00	179.56	8,832.0	-4,721.9	1,376.6	4,732.3	0.00	0.00	0.00
13,000.0	90.00	179.56	8,832.0	-4,821.9	1,377.4	4,832.3	0.00	0.00	0.00
13,100.0	90.00	179.56	8,832.0	-4,921.9	1,378.2	4,932.3	0.00	0.00	0.00
13,200.0	90.00	179.56	8,832.0	-5,021.9	1,379.0	5,032.3	0.00	0.00	0.00
13,300.0	90.00	179.56	8,832.0	-5,121.8	1,379.8	5,132.3	0.00	0.00	0.00
13,400.0	90.00	179.56	8,832.0	-5,221.8	1,380.5	5,232.3	0.00	0.00	0.00
13,500.0	90.00	179.56	8,832.0	-5,321.8	1,381.3	5,332.3	0.00	0.00	0.00
13,600.0	90.00	179.56	8,832.0	-5,421.8	1,382.1	5,432.3	0.00	0.00	0.00
13,700.0	90.00	179.56	8,832.0	-5,521.8	1,382.9	5,532.3	0.00	0.00	0.00
13,800.0	90.00	179.56	8,832.0	-5,621.8	1,383.6	5,632.3	0.00	0.00	0.00
13,900.0	90.00	179.56	8,832.0	-5,721.8	1,384.4	5,732.3	0.00	0.00	0.00
14,000.0	90.00	179.56	8,832.0	-5,821.8	1,385.2	5,832.3	0.00	0.00	0.00
14,100.0	90.00	179.56	8,832.0	-5,921.8	1,386.0	5,932.3	0.00	0.00	0.00
14,200.0	90.00	179.56	8,832.0	-6,021.8	1,386.7	6,032.3	0.00	0.00	0.00
14,300.0	90.00	179.56	8,832.0	-6,121.8	1,387.5	6,132.3	0.00	0.00	0.00
14,400.0	90.00	179.56	8,832.0	-6,221.8	1,388.3	6,232.3	0.00	0.00	0.00
14,500.0	90.00	179.56	8,832.0	-6,321.8	1,389.1	6,332.3	0.00	0.00	0.00
14,600.0	90.00	179.56	8,832.0	-6,421.8	1,389.8	6,432.3	0.00	0.00	0.00
14,700.0	90.00	179.56	8,832.0	-6,521.8	1,390.6	6,532.3	0.00	0.00	0.00
14,800.0	90.00	179.56	8,832.0	-6,621.8	1,391.4	6,632.3	0.00	0.00	0.00
14,900.0	90.00	179.56	8,832.0	-6,721.8	1,392.2	6,732.3	0.00	0.00	0.00
15,000.0	90.00	179.56	8,832.0	-6,821.8	1,392.9	6,832.3	0.00	0.00	0.00
15,100.0	90.00	179.56	8,832.0	-6,921.8	1,393.7	6,932.3	0.00	0.00	0.00
15,200.0	90.00	179.56	8,832.0	-7,021.8	1,394.5	7,032.3	0.00	0.00	0.00
15,300.0	90.00	179.56	8,832.0	-7,121.8	1,395.3	7,132.3	0.00	0.00	0.00
15,400.0	90.00	179.56	8,832.0	-7,221.8	1,396.0	7,232.3	0.00	0.00	0.00
15,500.0	90.00	179.56	8,832.0	-7,321.8	1,396.8	7,332.3	0.00	0.00	0.00
15,600.0	90.00	179.56	8,832.0	-7,421.8	1,397.6	7,432.3	0.00	0.00	0.00
15,700.0	90.00	179.56	8,832.0	-7,521.8	1,398.4	7,532.3	0.00	0.00	0.00
15,800.0	90.00	179.56	8,832.0	-7,621.8	1,399.2	7,632.3	0.00	0.00	0.00
15,900.0	90.00	179.56	8,832.0	-7,721.8	1,399.9	7,732.3	0.00	0.00	0.00
16,000.0	90.00	179.56	8,832.0	-7,821.8	1,400.7	7,832.3	0.00	0.00	0.00
16,100.0	90.00	179.56	8,832.0	-7,921.8	1,401.5	7,932.3	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 304H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3937.0usft (3937)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3937.0usft (3937)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 304H	**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)
16,200.0	90.00	179.56	8,832.0	-8,021.8	1,402.3	8,032.3	0.00	0.00	0.00
16,300.0	90.00	179.56	8,832.0	-8,121.8	1,403.0	8,132.3	0.00	0.00	0.00
16,400.0	90.00	179.56	8,832.0	-8,221.8	1,403.8	8,232.3	0.00	0.00	0.00
16,500.0	90.00	179.56	8,832.0	-8,321.8	1,404.6	8,332.3	0.00	0.00	0.00
16,600.0	90.00	179.56	8,832.0	-8,421.7	1,405.4	8,432.3	0.00	0.00	0.00
16,700.0	90.00	179.56	8,832.0	-8,521.7	1,406.1	8,532.3	0.00	0.00	0.00
16,800.0	90.00	179.56	8,832.0	-8,621.7	1,406.9	8,632.3	0.00	0.00	0.00
16,900.0	90.00	179.56	8,832.0	-8,721.7	1,407.7	8,732.3	0.00	0.00	0.00
17,000.0	90.00	179.56	8,832.0	-8,821.7	1,408.5	8,832.3	0.00	0.00	0.00
17,100.0	90.00	179.56	8,832.0	-8,921.7	1,409.2	8,932.3	0.00	0.00	0.00
17,200.0	90.00	179.56	8,832.0	-9,021.7	1,410.0	9,032.3	0.00	0.00	0.00
17,300.0	90.00	179.56	8,832.0	-9,121.7	1,410.8	9,132.3	0.00	0.00	0.00
17,400.0	90.00	179.56	8,832.0	-9,221.7	1,411.6	9,232.3	0.00	0.00	0.00
17,500.0	90.00	179.56	8,832.0	-9,321.7	1,412.3	9,332.3	0.00	0.00	0.00
17,600.0	90.00	179.56	8,832.0	-9,421.7	1,413.1	9,432.3	0.00	0.00	0.00
17,700.0	90.00	179.56	8,832.0	-9,521.7	1,413.9	9,532.3	0.00	0.00	0.00
17,800.0	90.00	179.56	8,832.0	-9,621.7	1,414.7	9,632.3	0.00	0.00	0.00
17,900.0	90.00	179.56	8,832.0	-9,721.7	1,415.4	9,732.3	0.00	0.00	0.00
18,000.0	90.00	179.56	8,832.0	-9,821.7	1,416.2	9,832.3	0.00	0.00	0.00
18,100.0	90.00	179.56	8,832.0	-9,921.7	1,417.0	9,932.3	0.00	0.00	0.00
18,200.0	90.00	179.56	8,832.0	-10,021.7	1,417.8	10,032.3	0.00	0.00	0.00
18,300.0	90.00	179.56	8,832.0	-10,121.7	1,418.6	10,132.3	0.00	0.00	0.00
18,400.0	90.00	179.56	8,832.0	-10,221.7	1,419.3	10,232.3	0.00	0.00	0.00
18,500.0	90.00	179.56	8,832.0	-10,321.7	1,420.1	10,332.3	0.00	0.00	0.00
18,600.0	90.00	179.56	8,832.0	-10,421.7	1,420.9	10,432.3	0.00	0.00	0.00
18,700.0	90.00	179.56	8,832.0	-10,521.7	1,421.7	10,532.3	0.00	0.00	0.00
18,800.0	90.00	179.56	8,832.0	-10,621.7	1,422.4	10,632.3	0.00	0.00	0.00
18,900.0	90.00	179.56	8,832.0	-10,721.7	1,423.2	10,732.3	0.00	0.00	0.00
19,000.0	90.00	179.56	8,832.0	-10,821.7	1,424.0	10,832.3	0.00	0.00	0.00
19,100.0	90.00	179.56	8,832.0	-10,921.7	1,424.8	10,932.3	0.00	0.00	0.00
19,200.0	90.00	179.56	8,832.0	-11,021.7	1,425.5	11,032.3	0.00	0.00	0.00
19,226.4	90.00	179.56	8,832.0	-11,048.1	1,425.7	11,058.7	0.00	0.00	0.00
TD at 19226.4 - LTP/BHL - Royal Oak 24 Fed Com 304H									

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 Fec - plan hits target center - Point	0.00	0.00	8,354.5	-638.5	1,345.0	628,549.04	764,069.22	32.725829	-103.609061
LTP/BHL - Royal Oak 24 - plan hits target center - Point	0.00	0.00	8,832.0	-11,048.1	1,425.7	618,139.47	764,150.00	32.697217	-103.609029
FTP - Royal Oak 24 Fed - plan misses target center by 163.4usft at 8948.1usft MD (8712.1 TVD, -799.5 N, 1346.2 E) - Point	0.00	0.00	8,832.0	-688.5	1,345.4	628,499.05	764,069.62	32.725691	-103.609061

Planning Report

Database:	EDM 5000.16 Single User Db	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Company:	Avant Operating, LLC	**TVD Reference:**	Well @ 3937.0usft (3937)
Project:	Lea Co., NM (NAD 83)	**MD Reference:**	Well @ 3937.0usft (3937)
Site:	Royal Oak 24 Fed Com Pad 1	**North Reference:**	Grid
Well:	Royal Oak 24 Fed Com 304H	**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			
1,951.0	1,951.0	SOLADO			
3,682.1	3,641.0	YATES			
5,767.9	5,654.0	CHERRY_CNYN			
7,407.1	7,236.0	BYCN_MKR			
7,688.9	7,508.0	BSPG_LIME *			
8,502.5	8,313.0	AVALON_B			
9,097.2	8,792.0	FBSG__SD			

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
2,759.1	2,750.3	-42.9	90.3	Start 4921.2 hold at 2759.1 MD
7,680.3	7,499.7	-595.6	1,254.6	Start Drop -2.00
8,439.5	8,250.0	-638.5	1,345.0	Start 104.5 hold at 8439.5 MD
8,544.0	8,354.5	-638.5	1,345.0	KOP #2 - Start Build 12.00
9,294.0	8,832.0	-1,116.0	1,348.7	LP - Start 9932.4 hold at 9294.0 MD
19,226.4	8,832.0	-11,048.1	1,425.7	TD at 19226.4

Avant Operating, LLC

Lea Co., NM (NAD 83)
Royal Oak 24 Fed Com Pad 1
Royal Oak 24 Fed Com 304H

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
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	19,226.4	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	13,365.2	8,767.3	238.3	-28.8	0.892	Level 1, CC, ES, SF
EK-A, 8701 JV-P 001 - OH - OH	10,760.5	8,817.4	240.7	9.0	1.039	Level 2, CC, ES, SF
Mescalero 36 State 003 - OH - OH	18,538.8	8,722.5	349.0	8.3	1.024	Level 2, CC, ES, SF
New Mexico 36 State 002 - OH - OH	14,596.2	8,757.0	345.4	63.9	1.227	Level 2, CC, ES, SF
New Mexico 36 State 004 - OH - OH	15,940.6	8,737.9	1,668.0	1,376.1	5.715	CC, ES, SF
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	2,285.1	2,299.5	176.5	160.7	11.174	CC
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	2,300.0	2,314.4	176.6	160.7	11.106	ES
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	19,226.4	20,590.1	1,901.3	1,638.3	7.228	SF
Royal Oak 24 Fed Com 009H - OH - Plan 0.1	2,000.0	1,998.2	40.1	26.2	2.887	CC
Royal Oak 24 Fed Com 009H - OH - Plan 0.1	2,100.0	2,099.2	40.4	25.8	2.772	ES
Royal Oak 24 Fed Com 009H - OH - Plan 0.1	2,300.0	2,301.2	42.7	26.9	2.692	SF
Royal Oak 24 Fed Com 303H - OH - Plan 0.1	2,000.0	1,996.9	80.0	66.2	5.769	CC, ES
Royal Oak 24 Fed Com 303H - OH - Plan 0.1	19,226.4	19,074.1	1,320.0	995.1	4.063	SF
Royal Oak 24 Fed Com 503H - OH - Plan 0.1	2,000.0	1,997.2	60.1	46.2	4.329	CC, ES
Royal Oak 24 Fed Com 503H - OH - Plan 0.1	2,100.0	2,097.2	61.6	47.1	4.228	SF
Royal Oak 24 Fed Com 512H - OH - Plan 0.1	2,000.0	1,996.8	100.1	86.2	7.213	CC, ES
Royal Oak 24 Fed Com 512H - OH - Plan 0.1	19,226.4	19,548.7	1,907.1	1,588.3	5.982	SF
Royal Oak 24 Fed Com 513H - OH - Plan 0.1	2,000.0	2,000.0	20.0	6.1	1.441	Level 3, CC
Royal Oak 24 Fed Com 513H - OH - Plan 0.1	8,658.8	8,644.1	53.4	-10.1	0.840	Level 1, ES, SF
Royal Oak 24 Fed Com 604H - OH - Plan 0.1	2,000.0	2,000.1	170.8	156.9	12.303	CC
Royal Oak 24 Fed Com 604H - OH - Plan 0.1	8,725.0	8,755.2	197.5	133.4	3.079	ES, SF
Speedmaster 30 Fed Com Pad 1B						
Speedmaster 30 Fed Com 301H - OH - Plan 0.1	8,499.1	8,394.3	1,590.4	1,528.7	25.781	CC
Speedmaster 30 Fed Com 301H - OH - Plan 0.1	19,226.4	19,163.2	1,590.6	1,276.3	5.060	ES, SF
Speedmaster 30 Fed Com 501H - OH - Plan 0.1	8,479.0	8,310.2	923.3	861.7	14.993	CC
Speedmaster 30 Fed Com 501H - OH - Plan 0.1	19,226.4	19,707.2	1,127.7	855.5	4.143	ES, SF
Speedmaster 30 Fed Com 511H (fka 007H) - OH - Plan 0	8,004.1	7,651.1	1,734.7	1,676.6	29.884	CC, ES
Speedmaster 30 Fed Com 511H (fka 007H) - OH - Plan 0	19,226.4	19,997.6	2,045.3	1,755.4	7.055	SF

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
11,300.0	8,832.0	8,803.3	8,802.1	57.5	186.9	98.61	-5,188.2	1,141.9	2,078.6	1,851.7	226.83	9.164	
11,400.0	8,832.0	8,801.6	8,800.3	58.6	186.9	98.19	-5,188.3	1,141.9	1,979.3	1,752.2	227.05	8.717	
11,500.0	8,832.0	8,799.8	8,798.6	59.7	186.9	97.78	-5,188.3	1,141.9	1,880.0	1,652.8	227.29	8.272	
11,600.0	8,832.0	8,798.1	8,796.8	60.9	186.8	97.37	-5,188.3	1,141.9	1,780.9	1,553.3	227.56	7.826	
11,700.0	8,832.0	8,796.3	8,795.1	62.0	186.8	96.96	-5,188.3	1,141.9	1,681.9	1,454.0	227.88	7.381	
11,800.0	8,832.0	8,794.6	8,793.3	63.2	186.7	96.54	-5,188.4	1,141.9	1,583.0	1,354.7	228.24	6.936	
11,900.0	8,832.0	8,792.9	8,791.6	64.4	186.7	96.13	-5,188.4	1,141.9	1,484.2	1,255.5	228.65	6.491	
12,000.0	8,832.0	8,791.1	8,789.9	65.6	186.7	95.72	-5,188.4	1,141.9	1,385.6	1,156.5	229.13	6.047	
12,100.0	8,832.0	8,789.4	8,788.1	66.8	186.6	95.30	-5,188.5	1,141.9	1,287.2	1,057.5	229.70	5.604	
12,200.0	8,832.0	8,787.6	8,786.4	68.0	186.6	94.88	-5,188.5	1,141.9	1,189.1	958.7	230.37	5.162	
12,300.0	8,832.0	8,785.9	8,784.6	69.2	186.6	94.47	-5,188.5	1,141.9	1,091.3	860.2	231.18	4.721	
12,400.0	8,832.0	8,784.1	8,782.9	70.4	186.5	94.05	-5,188.6	1,141.9	994.0	761.8	232.17	4.281	
12,500.0	8,832.0	8,782.4	8,781.1	71.7	186.5	93.63	-5,188.6	1,141.9	897.3	663.9	233.40	3.844	
12,600.0	8,832.0	8,780.6	8,779.4	72.9	186.5	93.21	-5,188.6	1,141.9	801.3	566.4	234.94	3.411	
12,700.0	8,832.0	8,778.9	8,777.6	74.2	186.4	92.80	-5,188.6	1,141.9	706.5	469.5	236.94	2.982	
12,800.0	8,832.0	8,777.2	8,775.9	75.4	186.4	92.38	-5,188.7	1,141.9	613.3	373.7	239.57	2.560	
12,900.0	8,832.0	8,775.4	8,774.1	76.7	186.3	91.96	-5,188.7	1,141.9	522.6	279.5	243.11	2.150	
13,000.0	8,832.0	8,773.7	8,772.4	78.0	186.3	91.54	-5,188.7	1,141.9	436.0	188.1	247.95	1.758	
13,100.0	8,832.0	8,771.9	8,770.7	79.2	186.3	91.12	-5,188.8	1,141.9	356.5	102.0	254.47	1.401	Level 3
13,200.0	8,832.0	8,770.2	8,768.9	80.5	186.2	90.70	-5,188.8	1,141.9	290.0	27.7	262.30	1.105	Level 2
13,300.0	8,832.0	8,768.4	8,767.2	81.8	186.2	90.28	-5,188.8	1,141.9	247.1	-20.9	267.99	0.922	Level 1
13,365.2	8,832.0	8,767.3	8,766.0	82.7	186.2	90.01	-5,188.9	1,141.9	238.3	-28.8	267.10	0.892	Level 1, CC, ES, SF
13,400.0	8,832.0	8,766.7	8,765.4	83.1	186.2	89.86	-5,188.9	1,141.9	240.9	-23.8	264.63	0.910	Level 1
13,500.0	8,832.0	8,764.9	8,763.7	84.4	186.1	89.44	-5,188.9	1,141.9	273.8	21.1	252.79	1.083	Level 2
13,600.0	8,832.0	8,763.2	8,761.9	85.7	186.1	89.02	-5,188.9	1,141.9	334.6	93.7	240.91	1.389	Level 3
13,700.0	8,832.0	8,761.4	8,760.2	87.0	186.1	88.60	-5,189.0	1,141.9	411.0	178.3	232.68	1.766	
13,800.0	8,832.0	8,759.7	8,758.4	88.3	186.0	88.18	-5,189.0	1,141.9	495.8	268.2	227.63	2.178	
13,900.0	8,832.0	8,758.0	8,756.7	89.7	186.0	87.77	-5,189.0	1,141.9	585.5	360.8	224.64	2.606	
14,000.0	8,832.0	8,756.2	8,755.0	91.0	185.9	87.35	-5,189.0	1,141.9	678.0	455.1	222.87	3.042	
14,100.0	8,832.0	8,754.5	8,753.2	92.3	185.9	86.93	-5,189.1	1,141.9	772.4	550.6	221.83	3.482	
14,200.0	8,832.0	8,752.7	8,751.5	93.6	185.9	86.51	-5,189.1	1,141.9	868.1	646.9	221.22	3.924	
14,300.0	8,832.0	8,751.0	8,749.7	95.0	185.8	86.09	-5,189.1	1,141.9	964.6	743.7	220.88	4.367	
14,400.0	8,832.0	8,749.2	8,748.0	96.3	185.8	85.68	-5,189.2	1,141.9	1,061.8	841.1	220.69	4.811	
14,500.0	8,832.0	8,747.5	8,746.2	97.6	185.8	85.26	-5,189.2	1,141.9	1,159.4	938.8	220.60	5.256	
14,600.0	8,832.0	8,745.7	8,744.5	99.0	185.7	84.84	-5,189.2	1,141.9	1,257.5	1,036.9	220.58	5.701	
14,700.0	8,832.0	8,744.0	8,742.7	100.3	185.7	84.43	-5,189.3	1,141.9	1,355.8	1,135.2	220.60	6.146	
14,800.0	8,832.0	8,742.2	8,741.0	101.7	185.7	84.01	-5,189.3	1,141.9	1,454.3	1,233.6	220.64	6.591	
14,900.0	8,832.0	8,740.5	8,739.3	103.0	185.6	83.60	-5,189.3	1,141.9	1,553.0	1,332.3	220.71	7.037	
15,000.0	8,832.0	8,738.8	8,737.5	104.4	185.6	83.18	-5,189.3	1,141.9	1,651.9	1,431.1	220.78	7.482	
15,100.0	8,832.0	8,737.0	8,735.8	105.7	185.5	82.77	-5,189.4	1,141.9	1,750.9	1,530.0	220.86	7.928	
15,200.0	8,832.0	8,735.3	8,734.0	107.1	185.5	82.36	-5,189.4	1,141.9	1,850.0	1,629.0	220.94	8.373	
15,300.0	8,832.0	8,733.5	8,732.3	108.5	185.5	81.95	-5,189.4	1,141.9	1,949.2	1,728.2	221.02	8.819	
15,400.0	8,832.0	8,731.8	8,730.5	109.8	185.4	81.53	-5,189.5	1,141.9	2,048.4	1,827.3	221.11	9.265	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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

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
6,900.0	6,746.6	6,776.0	6,775.3	29.5	138.6	64.54	-2,620.7	1,112.8	2,113.6	1,946.4	167.16	12.644	
7,000.0	6,843.1	6,876.0	6,875.2	30.0	140.9	65.18	-2,618.4	1,113.2	2,099.9	1,929.9	169.96	12.355	
7,100.0	6,939.6	6,975.9	6,975.2	30.6	143.2	65.82	-2,616.1	1,113.7	2,086.2	1,913.5	172.76	12.076	
7,200.0	7,036.1	7,074.0	7,073.2	31.1	145.5	66.46	-2,613.6	1,114.2	2,072.7	1,897.1	175.60	11.803	
7,300.0	7,132.7	7,170.3	7,169.5	31.6	147.9	67.10	-2,611.1	1,114.8	2,059.5	1,881.0	178.49	11.539	
7,400.0	7,229.2	7,266.6	7,265.8	32.1	150.2	67.74	-2,608.7	1,115.4	2,046.5	1,865.1	181.37	11.283	
7,500.0	7,325.7	7,362.9	7,362.1	32.6	152.6	68.39	-2,606.2	1,115.9	2,033.8	1,849.5	184.26	11.037	
7,600.0	7,422.2	7,459.3	7,458.4	33.1	154.9	69.05	-2,603.7	1,116.5	2,021.3	1,834.2	187.15	10.801	
7,700.0	7,518.7	7,553.9	7,553.0	33.6	157.2	69.65	-2,601.3	1,117.0	2,009.2	1,819.2	189.94	10.578	
7,800.0	7,615.8	7,645.9	7,644.9	34.1	159.2	70.03	-2,599.2	1,117.5	1,998.3	1,805.8	192.51	10.380	
7,900.0	7,713.7	7,738.6	7,737.6	34.6	161.3	70.37	-2,597.2	1,117.9	1,989.1	1,794.0	195.07	10.197	
8,000.0	7,812.2	7,832.0	7,831.0	35.0	163.3	70.65	-2,595.5	1,118.2	1,981.5	1,783.8	197.61	10.027	
8,100.0	7,911.3	7,926.0	7,924.9	35.4	165.4	70.88	-2,594.0	1,118.5	1,975.3	1,775.2	200.12	9.870	
8,200.0	8,010.8	8,021.2	8,020.1	35.8	167.5	71.06	-2,592.7	1,118.6	1,970.6	1,768.1	202.55	9.729	
8,300.0	8,110.6	8,119.1	8,118.1	36.1	169.4	71.17	-2,591.5	1,118.7	1,967.2	1,762.5	204.78	9.606	
8,400.0	8,210.5	8,217.2	8,216.2	36.4	171.2	71.21	-2,590.4	1,118.9	1,965.1	1,758.1	206.99	9.494	
8,500.0	8,310.5	8,315.4	8,314.4	36.7	173.1	-173.39	-2,589.3	1,118.9	1,963.9	1,754.8	209.16	9.390	
8,600.0	8,410.4	8,413.5	8,412.4	37.0	175.0	7.12	-2,588.4	1,119.0	1,959.7	1,748.4	211.33	9.273	
8,700.0	8,507.8	8,510.5	8,509.5	37.3	176.9	7.57	-2,587.5	1,119.1	1,937.0	1,723.5	213.50	9.073	
8,800.0	8,598.4	8,602.4	8,601.4	37.7	178.6	8.53	-2,586.6	1,119.2	1,894.8	1,679.2	215.58	8.789	
8,900.0	8,678.4	8,683.2	8,682.2	38.1	180.2	10.32	-2,585.8	1,119.2	1,834.8	1,617.3	217.44	8.438	
9,000.0	8,744.3	8,749.3	8,748.3	38.6	181.5	13.66	-2,585.1	1,119.3	1,759.7	1,540.7	218.99	8.036	
9,100.0	8,793.1	8,797.9	8,796.9	39.0	182.4	20.72	-2,584.5	1,119.4	1,672.9	1,452.8	220.17	7.598	
9,200.0	8,822.8	8,826.9	8,825.8	39.5	182.9	40.03	-2,584.2	1,119.4	1,578.3	1,357.4	220.94	7.144	
9,300.0	8,832.0	8,835.0	8,834.0	40.0	183.1	94.27	-2,584.1	1,119.4	1,480.1	1,258.8	221.30	6.688	
9,400.0	8,832.0	8,833.8	8,832.7	40.6	183.1	93.98	-2,584.1	1,119.4	1,381.5	1,160.0	221.48	6.238	
9,500.0	8,832.0	8,832.6	8,831.5	41.2	183.1	93.69	-2,584.1	1,119.4	1,283.2	1,061.5	221.70	5.788	
9,600.0	8,832.0	8,831.4	8,830.3	41.8	183.0	93.40	-2,584.1	1,119.4	1,185.1	963.1	221.95	5.339	
9,700.0	8,832.0	8,830.2	8,829.1	42.5	183.0	93.11	-2,584.1	1,119.4	1,087.4	865.1	222.26	4.892	
9,800.0	8,832.0	8,828.9	8,827.9	43.2	183.0	92.82	-2,584.1	1,119.4	990.1	767.5	222.64	4.447	
9,900.0	8,832.0	8,827.7	8,826.7	44.0	183.0	92.54	-2,584.2	1,119.4	893.5	670.3	223.11	4.005	
10,000.0	8,832.0	8,826.5	8,825.4	44.8	182.9	92.25	-2,584.2	1,119.4	797.6	573.9	223.69	3.566	
10,100.0	8,832.0	8,825.3	8,824.2	45.6	182.9	91.96	-2,584.2	1,119.4	702.9	478.5	224.43	3.132	
10,200.0	8,832.0	8,824.1	8,823.0	46.5	182.9	91.67	-2,584.2	1,119.4	609.9	384.5	225.40	2.706	
10,300.0	8,832.0	8,822.9	8,821.8	47.4	182.9	91.39	-2,584.2	1,119.4	519.6	292.9	226.69	2.292	
10,400.0	8,832.0	8,821.7	8,820.6	48.3	182.8	91.10	-2,584.2	1,119.4	433.4	205.0	228.39	1.898	
10,500.0	8,832.0	8,820.5	8,819.4	49.2	182.8	90.82	-2,584.2	1,119.4	354.6	124.1	230.56	1.538	
10,600.0	8,832.0	8,819.3	8,818.2	50.2	182.8	90.53	-2,584.3	1,119.4	289.3	56.5	232.80	1.243	Level 2
10,700.0	8,832.0	8,818.1	8,817.0	51.2	182.8	90.25	-2,584.3	1,119.4	248.2	14.8	233.32	1.064	Level 2
10,760.5	8,832.0	8,817.4	8,816.3	51.8	182.8	90.07	-2,584.3	1,119.4	240.7	9.0	231.66	1.039	Level 2, CC, ES, SF
10,800.0	8,832.0	8,816.9	8,815.8	52.2	182.8	89.96	-2,584.3	1,119.4	243.9	14.2	229.73	1.062	Level 2
10,900.0	8,832.0	8,815.7	8,814.7	53.2	182.7	89.68	-2,584.3	1,119.4	278.2	54.3	223.88	1.243	Level 2
11,000.0	8,832.0	8,814.5	8,813.5	54.2	182.7	89.40	-2,584.3	1,119.4	339.5	119.9	219.59	1.546	
11,100.0	8,832.0	8,813.3	8,812.3	55.3	182.7	89.11	-2,584.3	1,119.4	416.1	198.7	217.39	1.914	
11,200.0	8,832.0	8,812.2	8,811.1	56.4	182.7	88.83	-2,584.3	1,119.4	501.1	284.6	216.45	2.315	
11,300.0	8,832.0	8,811.0	8,809.9	57.5	182.6	88.55	-2,584.4	1,119.4	590.7	374.6	216.11	2.733	
11,400.0	8,832.0	8,809.8	8,808.7	58.6	182.6	88.27	-2,584.4	1,119.4	683.3	467.2	216.05	3.162	
11,500.0	8,832.0	8,808.6	8,807.6	59.7	182.6	87.99	-2,584.4	1,119.4	777.6	561.5	216.11	3.598	
11,600.0	8,832.0	8,807.4	8,806.4	60.9	182.6	87.71	-2,584.4	1,119.4	873.3	657.1	216.22	4.039	
11,700.0	8,832.0	8,806.3	8,805.2	62.0	182.5	87.43	-2,584.4	1,119.4	969.8	753.4	216.35	4.482	
11,800.0	8,832.0	8,805.1	8,804.0	63.2	182.5	87.15	-2,584.4	1,119.4	1,066.9	850.5	216.49	4.928	
11,900.0	8,832.0	8,803.9	8,802.9	64.4	182.5	86.88	-2,584.4	1,119.4	1,164.6	948.0	216.62	5.376	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
12,000.0	8,832.0	8,802.8	8,801.7	65.6	182.5	86.60	-2,584.5	1,119.4	1,262.6	1,045.8	216.74	5.825	
12,100.0	8,832.0	8,801.6	8,800.5	66.8	182.5	86.32	-2,584.5	1,119.4	1,360.9	1,144.0	216.86	6.275	
12,200.0	8,832.0	8,800.4	8,799.4	68.0	182.4	86.05	-2,584.5	1,119.4	1,459.4	1,242.4	216.97	6.726	
12,300.0	8,832.0	8,799.3	8,798.2	69.2	182.4	85.77	-2,584.5	1,119.4	1,558.1	1,341.0	217.07	7.178	
12,400.0	8,832.0	8,798.1	8,797.1	70.4	182.4	85.50	-2,584.5	1,119.4	1,657.0	1,439.8	217.17	7.630	
12,500.0	8,832.0	8,797.0	8,795.9	71.7	182.4	85.23	-2,584.5	1,119.4	1,756.0	1,538.7	217.26	8.082	
12,600.0	8,832.0	8,795.8	8,794.7	72.9	182.3	84.95	-2,584.5	1,119.4	1,855.1	1,637.7	217.35	8.535	
12,700.0	8,832.0	8,794.7	8,793.6	74.2	182.3	84.68	-2,584.5	1,119.4	1,954.3	1,736.8	217.43	8.988	
12,800.0	8,832.0	8,793.5	8,792.4	75.4	182.3	84.41	-2,584.6	1,119.4	2,053.5	1,836.0	217.51	9.441	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
16,500.0	8,832.0	8,790.8	8,789.3	124.9	190.2	101.07	-10,361.0	1,071.4	2,067.4	1,825.9	241.49	8.561	
16,600.0	8,832.0	8,787.4	8,785.9	126.3	190.1	100.53	-10,361.1	1,071.4	1,969.0	1,726.6	242.33	8.125	
16,700.0	8,832.0	8,784.0	8,782.5	127.7	190.0	99.99	-10,361.2	1,071.4	1,870.7	1,627.4	243.28	7.690	
16,800.0	8,832.0	8,780.6	8,779.1	129.1	189.9	99.45	-10,361.3	1,071.4	1,772.6	1,528.2	244.35	7.254	
16,900.0	8,832.0	8,777.2	8,775.7	130.5	189.8	98.91	-10,361.4	1,071.4	1,674.7	1,429.2	245.57	6.820	
17,000.0	8,832.0	8,773.8	8,772.3	131.9	189.7	98.37	-10,361.5	1,071.4	1,577.1	1,330.1	246.96	6.386	
17,100.0	8,832.0	8,770.4	8,769.0	133.3	189.6	97.83	-10,361.7	1,071.4	1,479.8	1,231.2	248.56	5.954	
17,200.0	8,832.0	8,767.1	8,765.6	134.6	189.5	97.28	-10,361.8	1,071.4	1,382.9	1,132.5	250.42	5.522	
17,300.0	8,832.0	8,763.7	8,762.2	136.0	189.4	96.74	-10,361.9	1,071.4	1,286.4	1,033.8	252.58	5.093	
17,400.0	8,832.0	8,760.4	8,758.9	137.4	189.3	96.20	-10,362.0	1,071.4	1,190.5	935.4	255.13	4.666	
17,500.0	8,832.0	8,757.0	8,755.5	138.8	189.3	95.65	-10,362.1	1,071.4	1,095.4	837.2	258.16	4.243	
17,600.0	8,832.0	8,753.7	8,752.2	140.2	189.2	95.11	-10,362.2	1,071.4	1,001.1	739.4	261.79	3.824	
17,700.0	8,832.0	8,750.3	8,748.9	141.6	189.1	94.56	-10,362.3	1,071.4	908.1	642.0	266.18	3.412	
17,800.0	8,832.0	8,747.0	8,745.5	143.0	189.0	94.02	-10,362.4	1,071.4	816.8	545.2	271.56	3.008	
17,900.0	8,832.0	8,743.7	8,742.2	144.4	188.9	93.48	-10,362.6	1,071.4	727.7	449.5	278.20	2.616	
18,000.0	8,832.0	8,740.3	8,738.9	145.8	188.8	92.93	-10,362.7	1,071.4	641.8	355.3	286.44	2.240	
18,100.0	8,832.0	8,737.0	8,735.6	147.2	188.7	92.39	-10,362.8	1,071.4	560.5	263.9	296.61	1.890	
18,200.0	8,832.0	8,733.7	8,732.3	148.6	188.6	91.85	-10,362.9	1,071.4	486.3	177.5	308.85	1.575	
18,300.0	8,832.0	8,730.4	8,729.0	150.0	188.5	91.31	-10,363.0	1,071.4	422.8	100.3	322.51	1.311	Level 3
18,400.0	8,832.0	8,727.1	8,725.7	151.4	188.4	90.76	-10,363.1	1,071.4	375.6	40.6	335.00	1.121	Level 2
18,500.0	8,832.0	8,723.8	8,722.4	152.8	188.4	90.22	-10,363.2	1,071.4	351.2	10.0	341.19	1.029	Level 2
18,538.8	8,832.0	8,722.5	8,721.1	153.4	188.3	90.01	-10,363.2	1,071.4	349.0	8.3	340.76	1.024	Level 2, CC, ES, SF
18,600.0	8,832.0	8,720.5	8,719.1	154.2	188.3	89.68	-10,363.3	1,071.4	354.3	17.7	336.58	1.053	Level 2
18,700.0	8,832.0	8,717.2	8,715.8	155.7	188.2	89.15	-10,363.4	1,071.4	384.4	61.7	322.70	1.191	Level 2
18,800.0	8,832.0	8,714.0	8,712.5	157.1	188.1	88.61	-10,363.5	1,071.4	435.8	130.3	305.47	1.427	Level 3
18,900.0	8,832.0	8,710.7	8,709.3	158.5	188.0	88.07	-10,363.6	1,071.4	502.1	212.7	289.41	1.735	
19,000.0	8,832.0	8,707.4	8,706.0	159.9	187.9	87.54	-10,363.7	1,071.4	578.1	302.0	276.12	2.094	
19,100.0	8,832.0	8,704.2	8,702.7	161.3	187.8	87.00	-10,363.9	1,071.4	660.6	395.0	265.62	2.487	
19,200.0	8,832.0	8,700.9	8,699.5	162.7	187.7	86.47	-10,364.0	1,071.4	747.3	489.8	257.46	2.903	
19,226.4	8,832.0	8,700.1	8,698.6	163.1	187.7	86.33	-10,364.0	1,071.4	770.8	515.1	255.63	3.015	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
12,600.0	8,832.0	8,783.2	8,782.2	72.9	184.5	94.33	-6,420.3	1,044.4	2,025.7	1,797.6	228.06	8.882	
12,700.0	8,832.0	8,781.9	8,780.9	74.2	184.5	94.12	-6,420.4	1,044.4	1,927.2	1,698.7	228.56	8.432	
12,800.0	8,832.0	8,780.5	8,779.5	75.4	184.5	93.90	-6,420.4	1,044.4	1,829.0	1,599.9	229.11	7.983	
12,900.0	8,832.0	8,779.2	8,778.2	76.7	184.5	93.68	-6,420.4	1,044.4	1,730.9	1,501.1	229.74	7.534	
13,000.0	8,832.0	8,777.9	8,776.9	78.0	184.4	93.47	-6,420.4	1,044.4	1,633.0	1,402.6	230.45	7.086	
13,100.0	8,832.0	8,776.6	8,775.6	79.2	184.4	93.25	-6,420.4	1,044.4	1,535.4	1,304.2	231.26	6.639	
13,200.0	8,832.0	8,775.3	8,774.3	80.5	184.4	93.03	-6,420.5	1,044.4	1,438.2	1,206.0	232.20	6.194	
13,300.0	8,832.0	8,774.0	8,773.0	81.8	184.4	92.82	-6,420.5	1,044.4	1,341.3	1,108.0	233.28	5.750	
13,400.0	8,832.0	8,772.7	8,771.7	83.1	184.3	92.60	-6,420.5	1,044.4	1,245.0	1,010.4	234.55	5.308	
13,500.0	8,832.0	8,771.4	8,770.4	84.4	184.3	92.38	-6,420.5	1,044.4	1,149.2	913.2	236.06	4.869	
13,600.0	8,832.0	8,770.1	8,769.1	85.7	184.3	92.17	-6,420.5	1,044.4	1,054.3	816.5	237.85	4.433	
13,700.0	8,832.0	8,768.8	8,767.8	87.0	184.3	91.95	-6,420.5	1,044.4	960.4	720.4	240.01	4.001	
13,800.0	8,832.0	8,767.5	8,766.5	88.3	184.2	91.73	-6,420.6	1,044.4	867.8	625.2	242.65	3.577	
13,900.0	8,832.0	8,766.1	8,765.1	89.7	184.2	91.52	-6,420.6	1,044.4	777.1	531.2	245.90	3.160	
14,000.0	8,832.0	8,764.8	8,763.8	91.0	184.2	91.30	-6,420.6	1,044.4	689.0	439.0	249.95	2.757	
14,100.0	8,832.0	8,763.5	8,762.5	92.3	184.1	91.08	-6,420.6	1,044.4	604.6	349.6	254.98	2.371	
14,200.0	8,832.0	8,762.2	8,761.2	93.6	184.1	90.87	-6,420.6	1,044.4	525.6	264.4	261.18	2.012	
14,300.0	8,832.0	8,760.9	8,759.9	95.0	184.1	90.65	-6,420.6	1,044.4	455.0	186.6	268.44	1.695	
14,400.0	8,832.0	8,759.6	8,758.6	96.3	184.1	90.43	-6,420.7	1,044.4	397.2	121.3	275.95	1.440	Level 3
14,500.0	8,832.0	8,758.3	8,757.3	97.6	184.0	90.21	-6,420.7	1,044.4	358.6	77.2	281.39	1.274	Level 3
14,596.2	8,832.0	8,757.0	8,756.0	98.9	184.0	90.01	-6,420.7	1,044.4	345.4	63.9	281.51	1.227	Level 2, CC, ES, SF
14,600.0	8,832.0	8,757.0	8,756.0	99.0	184.0	90.00	-6,420.7	1,044.4	345.4	64.1	281.38	1.228	Level 2
14,700.0	8,832.0	8,755.7	8,754.7	100.3	184.0	89.78	-6,420.7	1,044.4	360.7	85.9	274.74	1.313	Level 3
14,800.0	8,832.0	8,754.4	8,753.4	101.7	184.0	89.56	-6,420.7	1,044.4	401.1	136.7	264.34	1.517	
14,900.0	8,832.0	8,753.1	8,752.1	103.0	183.9	89.35	-6,420.7	1,044.4	460.0	206.1	253.86	1.812	
15,000.0	8,832.0	8,751.7	8,750.8	104.4	183.9	89.13	-6,420.8	1,044.4	531.4	286.2	245.12	2.168	
15,100.0	8,832.0	8,750.4	8,749.4	105.7	183.9	88.91	-6,420.8	1,044.4	610.8	372.4	238.42	2.562	
15,200.0	8,832.0	8,749.1	8,748.1	107.1	183.9	88.70	-6,420.8	1,044.4	695.6	462.1	233.45	2.980	
15,300.0	8,832.0	8,747.8	8,746.8	108.5	183.8	88.48	-6,420.8	1,044.4	783.9	554.1	229.80	3.411	
15,400.0	8,832.0	8,746.5	8,745.5	109.8	183.8	88.26	-6,420.8	1,044.4	874.8	647.7	227.14	3.851	
15,500.0	8,832.0	8,745.2	8,744.2	111.2	183.8	88.04	-6,420.8	1,044.4	967.5	742.3	225.18	4.296	
15,600.0	8,832.0	8,743.9	8,742.9	112.5	183.8	87.83	-6,420.9	1,044.4	1,061.5	837.7	223.74	4.744	
15,700.0	8,832.0	8,742.6	8,741.6	113.9	183.7	87.61	-6,420.9	1,044.4	1,156.5	933.8	222.68	5.194	
15,800.0	8,832.0	8,741.3	8,740.3	115.3	183.7	87.39	-6,420.9	1,044.4	1,252.3	1,030.4	221.89	5.644	
15,900.0	8,832.0	8,740.0	8,739.0	116.7	183.7	87.18	-6,420.9	1,044.4	1,348.7	1,127.4	221.30	6.094	
16,000.0	8,832.0	8,738.7	8,737.7	118.0	183.7	86.96	-6,420.9	1,044.4	1,445.6	1,224.7	220.87	6.545	
16,100.0	8,832.0	8,737.3	8,736.4	119.4	183.6	86.74	-6,420.9	1,044.4	1,542.8	1,322.3	220.55	6.995	
16,200.0	8,832.0	8,736.0	8,735.0	120.8	183.6	86.53	-6,421.0	1,044.4	1,640.4	1,420.1	220.31	7.446	
16,300.0	8,832.0	8,734.7	8,733.7	122.2	183.6	86.31	-6,421.0	1,044.4	1,738.3	1,518.2	220.15	7.896	
16,400.0	8,832.0	8,733.4	8,732.4	123.5	183.6	86.10	-6,421.0	1,044.4	1,836.4	1,616.4	220.03	8.346	
16,500.0	8,832.0	8,732.1	8,731.1	124.9	183.5	85.88	-6,421.0	1,044.4	1,934.7	1,714.8	219.95	8.796	
16,600.0	8,832.0	8,730.8	8,729.8	126.3	183.5	85.66	-6,421.0	1,044.4	2,033.2	1,813.3	219.91	9.246	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
14,700.0	8,832.0	8,754.1	8,753.4	100.3	176.2	90.56	-7,775.1	-267.7	2,078.7	1,811.3	267.47	7.772	
14,800.0	8,832.0	8,752.8	8,752.1	101.7	176.2	90.52	-7,775.1	-267.7	2,020.6	1,750.6	270.03	7.483	
14,900.0	8,832.0	8,751.5	8,750.8	103.0	176.1	90.47	-7,775.1	-267.7	1,965.9	1,693.3	272.62	7.211	
15,000.0	8,832.0	8,750.2	8,749.5	104.4	176.1	90.43	-7,775.2	-267.7	1,914.9	1,639.7	275.20	6.958	
15,100.0	8,832.0	8,748.9	8,748.2	105.7	176.1	90.38	-7,775.2	-267.7	1,867.8	1,590.1	277.73	6.725	
15,200.0	8,832.0	8,747.5	8,746.9	107.1	176.1	90.34	-7,775.2	-267.7	1,825.0	1,544.8	280.20	6.513	
15,300.0	8,832.0	8,746.2	8,745.6	108.5	176.0	90.29	-7,775.2	-267.7	1,786.8	1,504.2	282.54	6.324	
15,400.0	8,832.0	8,744.9	8,744.2	109.8	176.0	90.25	-7,775.2	-267.7	1,753.4	1,468.7	284.73	6.158	
15,500.0	8,832.0	8,743.6	8,742.9	111.2	176.0	90.20	-7,775.3	-267.7	1,725.2	1,438.5	286.70	6.017	
15,600.0	8,832.0	8,742.3	8,741.6	112.5	176.0	90.16	-7,775.3	-267.7	1,702.4	1,414.0	288.42	5.903	
15,700.0	8,832.0	8,741.0	8,740.3	113.9	175.9	90.11	-7,775.3	-267.7	1,685.3	1,395.4	289.85	5.814	
15,800.0	8,832.0	8,739.7	8,739.0	115.3	175.9	90.07	-7,775.3	-267.7	1,673.9	1,383.0	290.94	5.753	
15,900.0	8,832.0	8,738.4	8,737.7	116.7	175.9	90.02	-7,775.3	-267.7	1,668.5	1,376.8	291.68	5.720	
15,940.6	8,832.0	8,737.9	8,737.2	117.2	175.9	90.01	-7,775.3	-267.7	1,668.0	1,376.1	291.88	5.715	CC, ES, SF
16,000.0	8,832.0	8,737.1	8,736.4	118.0	175.9	89.98	-7,775.3	-267.7	1,669.1	1,377.0	292.05	5.715	
16,100.0	8,832.0	8,735.8	8,735.1	119.4	175.8	89.93	-7,775.4	-267.7	1,675.6	1,383.6	292.04	5.738	
16,200.0	8,832.0	8,734.5	8,733.8	120.8	175.8	89.89	-7,775.4	-267.7	1,688.0	1,396.4	291.66	5.788	
16,300.0	8,832.0	8,733.1	8,732.5	122.2	175.8	89.84	-7,775.4	-267.7	1,706.3	1,415.3	290.93	5.865	
16,400.0	8,832.0	8,731.8	8,731.2	123.5	175.7	89.80	-7,775.4	-267.7	1,730.1	1,440.2	289.89	5.968	
16,500.0	8,832.0	8,730.5	8,729.8	124.9	175.7	89.75	-7,775.4	-267.7	1,759.3	1,470.7	288.57	6.097	
16,600.0	8,832.0	8,729.2	8,728.5	126.3	175.7	89.71	-7,775.4	-267.7	1,793.6	1,506.6	287.00	6.249	
16,700.0	8,832.0	8,727.9	8,727.2	127.7	175.7	89.66	-7,775.5	-267.7	1,832.7	1,547.5	285.25	6.425	
16,800.0	8,832.0	8,726.6	8,725.9	129.1	175.6	89.62	-7,775.5	-267.7	1,876.3	1,593.0	283.34	6.622	
16,900.0	8,832.0	8,725.3	8,724.6	130.5	175.6	89.57	-7,775.5	-267.7	1,924.2	1,642.9	281.31	6.840	
17,000.0	8,832.0	8,724.0	8,723.3	131.9	175.6	89.53	-7,775.5	-267.7	1,975.9	1,696.7	279.22	7.077	
17,100.0	8,832.0	8,722.7	8,722.0	133.3	175.6	89.48	-7,775.5	-267.7	2,031.3	1,754.2	277.08	7.331	
17,200.0	8,832.0	8,721.4	8,720.7	134.6	175.5	89.44	-7,775.5	-267.7	2,090.0	1,815.1	274.92	7.602	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	0.0	0.0	0.0	0.0	-27.42	158.6	-82.3	178.7				
100.0	100.0	99.6	99.6	0.1	0.1	-27.42	158.6	-82.3	178.7	178.4	0.26	679.630	
200.0	200.0	199.6	199.6	0.5	0.5	-27.42	158.6	-82.3	178.7	177.7	0.98	182.545	
300.0	300.0	299.6	299.6	0.8	0.8	-27.42	158.6	-82.3	178.7	177.0	1.70	105.375	
400.0	400.0	399.6	399.6	1.2	1.2	-27.42	158.6	-82.3	178.7	176.3	2.41	74.065	
500.0	500.0	499.6	499.6	1.6	1.6	-27.42	158.6	-82.3	178.7	175.6	3.13	57.099	
600.0	600.0	599.6	599.6	1.9	1.9	-27.42	158.6	-82.3	178.7	174.9	3.85	46.457	
700.0	700.0	699.6	699.6	2.3	2.3	-27.42	158.6	-82.3	178.7	174.1	4.56	39.159	
800.0	800.0	799.6	799.6	2.6	2.6	-27.42	158.6	-82.3	178.7	173.4	5.28	33.842	
900.0	900.0	899.6	899.6	3.0	3.0	-27.42	158.6	-82.3	178.7	172.7	6.00	29.797	
1,000.0	1,000.0	999.6	999.6	3.4	3.4	-27.42	158.6	-82.3	178.7	172.0	6.71	26.615	
1,100.0	1,100.0	1,099.6	1,099.6	3.7	3.7	-27.42	158.6	-82.3	178.7	171.3	7.43	24.048	
1,200.0	1,200.0	1,199.6	1,199.6	4.1	4.1	-27.42	158.6	-82.3	178.7	170.6	8.15	21.932	
1,300.0	1,300.0	1,299.6	1,299.6	4.4	4.4	-27.42	158.6	-82.3	178.7	169.8	8.87	20.158	
1,400.0	1,400.0	1,399.6	1,399.6	4.8	4.8	-27.42	158.6	-82.3	178.7	169.1	9.58	18.650	
1,500.0	1,500.0	1,499.6	1,499.6	5.2	5.1	-27.42	158.6	-82.3	178.7	168.4	10.30	17.352	
1,600.0	1,600.0	1,599.6	1,599.6	5.5	5.5	-27.42	158.6	-82.3	178.7	167.7	11.02	16.222	
1,700.0	1,700.0	1,699.6	1,699.6	5.9	5.9	-27.42	158.6	-82.3	178.7	167.0	11.73	15.231	
1,800.0	1,800.0	1,799.6	1,799.6	6.2	6.2	-27.42	158.6	-82.3	178.7	166.3	12.45	14.354	
1,900.0	1,900.0	1,899.6	1,899.6	6.6	6.6	-27.42	158.6	-82.3	178.7	165.5	13.17	13.572	
2,000.0	2,000.0	1,999.6	1,999.6	6.9	6.9	-27.42	158.6	-82.3	178.7	164.8	13.88	12.872	
2,100.0	2,100.0	2,105.8	2,105.8	7.3	7.3	-143.38	156.7	-82.0	178.4	163.8	14.58	12.231	
2,200.0	2,199.8	2,211.9	2,211.7	7.6	7.6	-145.07	150.9	-81.1	177.4	162.1	15.24	11.639	
2,285.1	2,284.6	2,299.5	2,299.0	7.9	7.9	-147.31	143.5	-79.9	176.5	160.7	15.80	11.174	CC
2,300.0	2,299.5	2,314.4	2,313.8	8.0	8.0	-147.74	142.1	-79.6	176.6	160.7	15.90	11.106	ES
2,400.0	2,398.7	2,413.8	2,412.8	8.3	8.3	-150.93	133.2	-78.2	178.8	162.3	16.57	10.794	
2,500.0	2,497.5	2,513.0	2,511.6	8.7	8.6	-154.46	124.4	-76.8	184.8	167.6	17.24	10.716	
2,600.0	2,595.6	2,611.7	2,609.9	9.0	9.0	-158.11	115.5	-75.4	194.7	176.7	17.92	10.861	
2,700.0	2,693.1	2,709.9	2,707.7	9.4	9.3	-161.68	106.8	-73.9	208.6	190.0	18.60	11.210	
2,800.0	2,789.7	2,807.5	2,804.9	9.8	9.7	-165.02	98.0	-72.5	226.2	207.0	19.29	11.731	
2,900.0	2,886.2	2,904.9	2,901.9	10.2	10.0	-167.96	89.3	-71.1	245.2	225.2	19.97	12.278	
3,000.0	2,982.7	3,002.4	2,999.0	10.6	10.3	-170.48	80.6	-69.7	264.7	244.0	20.66	12.813	
3,100.0	3,079.2	3,099.9	3,096.1	11.0	10.7	-172.65	71.9	-68.3	284.6	263.3	21.35	13.331	
3,200.0	3,175.8	3,197.3	3,193.1	11.5	11.0	-174.54	63.2	-66.9	304.9	282.8	22.04	13.829	
3,300.0	3,272.3	3,294.8	3,290.2	11.9	11.4	-176.20	54.5	-65.5	325.4	302.7	22.75	14.306	
3,400.0	3,368.8	3,392.2	3,387.2	12.3	11.7	-177.66	45.8	-64.1	346.2	322.7	23.45	14.762	
3,500.0	3,465.3	3,489.7	3,484.3	12.8	12.1	-178.95	37.1	-62.7	367.1	343.0	24.16	15.197	
3,600.0	3,561.8	3,587.1	3,581.3	13.2	12.4	179.89	28.3	-61.3	388.3	363.4	24.87	15.611	
3,700.0	3,658.3	3,684.6	3,678.4	13.7	12.8	178.86	19.6	-59.9	409.5	383.9	25.59	16.005	
3,800.0	3,754.8	3,782.1	3,775.5	14.2	13.1	177.93	10.9	-58.5	430.9	404.6	26.31	16.380	
3,900.0	3,851.3	3,879.5	3,872.5	14.6	13.5	177.08	2.2	-57.1	452.4	425.4	27.03	16.736	
4,000.0	3,947.8	3,977.0	3,969.6	15.1	13.8	176.31	-6.5	-55.7	474.0	446.2	27.76	17.075	
4,100.0	4,044.3	4,074.4	4,066.6	15.6	14.2	175.61	-15.2	-54.3	495.6	467.1	28.49	17.398	
4,200.0	4,140.9	4,171.9	4,163.7	16.1	14.6	174.97	-23.9	-52.9	517.3	488.1	29.22	17.705	
4,300.0	4,237.4	4,269.4	4,260.7	16.5	14.9	174.37	-32.7	-51.5	539.1	509.1	29.95	17.998	
4,400.0	4,333.9	4,366.8	4,357.8	17.0	15.3	173.83	-41.4	-50.1	560.9	530.2	30.69	18.277	
4,500.0	4,430.4	4,464.3	4,454.9	17.5	15.6	173.32	-50.1	-48.7	582.7	551.3	31.43	18.543	
4,600.0	4,526.9	4,561.7	4,551.9	18.0	16.0	172.85	-58.8	-47.3	604.6	572.5	32.17	18.797	
4,700.0	4,623.4	4,659.2	4,649.0	18.5	16.4	172.42	-67.5	-45.9	626.6	593.6	32.91	19.039	
4,800.0	4,719.9	4,756.6	4,746.0	19.0	16.7	172.01	-76.2	-44.5	648.5	614.9	33.65	19.271	
4,900.0	4,816.4	4,854.1	4,843.1	19.5	17.1	171.63	-84.9	-43.1	670.5	636.1	34.40	19.492	
5,000.0	4,912.9	4,951.6	4,940.1	20.0	17.4	171.28	-93.6	-41.7	692.5	657.4	35.15	19.704	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	Rule Assigned: Warning
5,100.0	5,009.4	5,049.0	5,037.2	20.5	17.8	170.94	-102.4	-40.3	714.6	678.7	35.90	19.907	
5,200.0	5,106.0	5,146.5	5,134.3	21.0	18.2	170.63	-111.1	-38.9	736.6	700.0	36.65	20.101	
5,300.0	5,202.5	5,243.9	5,231.3	21.5	18.5	170.33	-119.8	-37.5	758.7	721.3	37.40	20.288	
5,400.0	5,299.0	5,341.4	5,328.4	22.0	18.9	170.05	-128.5	-36.1	780.8	742.7	38.15	20.466	
5,500.0	5,395.5	5,438.8	5,425.4	22.5	19.2	169.79	-137.2	-34.7	803.0	764.0	38.91	20.638	
5,600.0	5,492.0	5,536.3	5,522.5	23.0	19.6	169.54	-145.9	-33.3	825.1	785.4	39.66	20.803	
5,700.0	5,588.5	5,633.8	5,619.5	23.5	20.0	169.30	-154.6	-31.8	847.2	806.8	40.42	20.962	
5,800.0	5,685.0	5,731.2	5,716.6	24.0	20.3	169.08	-163.3	-30.4	869.4	828.2	41.18	21.114	
5,900.0	5,781.5	5,828.7	5,813.7	24.5	20.7	168.87	-172.1	-29.0	891.6	849.6	41.94	21.261	
6,000.0	5,878.0	5,926.1	5,910.7	25.0	21.1	168.66	-180.8	-27.6	913.8	871.1	42.69	21.402	
6,100.0	5,974.5	6,023.6	6,007.8	25.5	21.4	168.47	-189.5	-26.2	936.0	892.5	43.46	21.538	
6,200.0	6,071.0	6,121.1	6,104.8	26.0	21.8	168.28	-198.2	-24.8	958.2	913.9	44.22	21.670	
6,300.0	6,167.6	6,218.5	6,201.9	26.5	22.2	168.11	-206.9	-23.4	980.4	935.4	44.98	21.796	
6,400.0	6,264.1	6,316.0	6,298.9	27.0	22.5	167.94	-215.6	-22.0	1,002.6	956.9	45.74	21.919	
6,500.0	6,360.6	6,413.4	6,396.0	27.5	22.9	167.78	-224.3	-20.6	1,024.8	978.3	46.51	22.037	
6,600.0	6,457.1	6,510.9	6,493.1	28.0	23.3	167.63	-233.1	-19.2	1,047.1	999.8	47.27	22.151	
6,700.0	6,553.6	6,608.3	6,590.1	28.5	23.6	167.48	-241.8	-17.8	1,069.3	1,021.3	48.04	22.261	
6,800.0	6,650.1	6,705.8	6,687.2	29.0	24.0	167.34	-250.5	-16.4	1,091.6	1,042.8	48.80	22.368	
6,900.0	6,746.6	6,803.3	6,784.2	29.5	24.4	167.20	-259.2	-15.0	1,113.8	1,064.3	49.57	22.471	
7,000.0	6,843.1	6,900.7	6,881.3	30.0	24.7	167.07	-267.9	-13.6	1,136.1	1,085.8	50.33	22.571	
7,100.0	6,939.6	6,998.2	6,978.4	30.6	25.1	166.94	-276.6	-12.2	1,158.4	1,107.3	51.10	22.668	
7,200.0	7,036.1	7,095.6	7,075.4	31.1	25.5	166.82	-285.3	-10.8	1,180.6	1,128.8	51.87	22.761	
7,300.0	7,132.7	7,193.1	7,172.5	31.6	25.8	166.71	-294.0	-9.4	1,202.9	1,150.3	52.64	22.852	
7,400.0	7,229.2	7,290.5	7,269.5	32.1	26.2	166.59	-302.8	-8.0	1,225.2	1,171.8	53.41	22.940	
7,500.0	7,325.7	7,388.0	7,366.6	32.6	26.6	166.49	-311.5	-6.6	1,247.5	1,193.3	54.18	23.026	
7,600.0	7,422.2	7,485.5	7,463.6	33.1	26.9	166.38	-320.2	-5.2	1,269.8	1,214.8	54.95	23.109	
7,700.0	7,518.7	7,582.9	7,560.7	33.6	27.3	166.30	-328.9	-3.8	1,292.0	1,236.3	55.72	23.188	
7,800.0	7,615.8	7,680.9	7,658.2	34.1	27.7	166.27	-337.7	-2.4	1,312.0	1,255.5	56.49	23.227	
7,900.0	7,713.7	7,779.4	7,756.4	34.6	28.0	166.20	-346.5	-1.0	1,328.7	1,271.4	57.25	23.207	
8,000.0	7,812.2	7,878.4	7,855.0	35.0	28.4	166.07	-355.3	0.5	1,342.0	1,284.0	58.01	23.132	
8,100.0	7,911.3	7,977.8	7,953.9	35.4	28.8	165.90	-364.2	1.9	1,352.0	1,293.2	58.77	23.005	
8,200.0	8,010.8	8,077.4	8,053.1	35.8	29.2	165.68	-373.1	3.3	1,358.6	1,299.1	59.52	22.827	
8,300.0	8,110.6	8,177.1	8,152.4	36.1	29.6	165.41	-382.0	4.8	1,361.9	1,301.6	60.26	22.601	
8,400.0	8,210.5	8,276.8	8,251.7	36.4	29.9	165.08	-390.9	6.2	1,361.8	1,300.8	60.99	22.329	
8,500.0	8,310.5	8,376.4	8,350.9	36.7	30.3	-79.88	-399.8	7.6	1,359.1	1,297.4	61.70	22.026	
8,600.0	8,410.4	8,476.1	8,450.2	37.0	30.7	100.47	-408.7	9.1	1,356.7	1,294.3	62.41	21.737	
8,622.0	8,432.2	8,498.1	8,472.1	37.1	30.8	100.53	-410.7	9.4	1,356.6	1,294.0	62.58	21.679	
8,700.0	8,507.8	8,575.1	8,548.8	37.3	31.1	100.88	-417.6	10.5	1,357.8	1,294.7	63.12	21.511	
8,800.0	8,598.4	8,669.1	8,642.4	37.7	31.4	101.54	-426.0	11.9	1,363.3	1,299.5	63.79	21.371	
8,900.0	8,678.4	8,754.1	8,727.1	38.1	31.7	102.07	-433.6	13.1	1,374.4	1,310.0	64.40	21.340	
9,000.0	8,744.3	8,826.4	8,799.1	38.6	32.0	101.98	-440.1	14.1	1,392.3	1,327.4	64.93	21.444	
9,100.0	8,793.1	8,882.8	8,855.3	39.0	32.2	100.75	-445.1	14.9	1,418.2	1,352.9	65.34	21.707	
9,200.0	8,822.8	8,920.9	8,893.2	39.5	32.4	97.88	-448.5	15.5	1,452.6	1,387.0	65.60	22.143	
9,300.0	8,832.0	8,939.0	8,911.2	40.0	32.4	93.43	-450.1	15.7	1,494.8	1,429.1	65.71	22.750	
9,400.0	8,832.0	8,947.9	8,920.1	40.6	32.5	93.81	-450.9	15.9	1,543.0	1,477.3	65.74	23.472	
9,500.0	8,832.0	8,956.9	8,929.0	41.2	32.5	94.20	-451.7	16.0	1,595.9	1,530.2	65.77	24.265	
9,600.0	8,832.0	8,965.8	8,937.9	41.8	32.5	94.58	-452.5	16.1	1,653.2	1,587.4	65.80	25.123	
9,700.0	8,832.0	8,974.8	8,946.8	42.5	32.6	94.96	-453.3	16.3	1,714.3	1,648.5	65.84	26.038	
9,800.0	8,832.0	8,983.7	8,955.8	43.2	32.6	95.34	-454.1	16.4	1,779.0	1,713.1	65.87	27.005	
9,900.0	8,832.0	8,992.7	8,964.7	44.0	32.6	95.73	-454.9	16.5	1,846.7	1,780.8	65.91	28.017	
10,000.0	8,832.0	11,363.7	10,200.0	44.8	45.9	136.01	-1,832.3	33.2	1,902.0	1,830.7	71.30	26.677	
10,100.0	8,832.0	11,463.7	10,200.0	45.6	46.9	136.01	-1,932.3	34.0	1,901.9	1,829.2	72.75	26.145	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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

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
10,200.0	8,832.0	11,563.7	10,200.0	46.5	47.8	136.01	-2,032.3	34.8	1,901.9	1,827.7	74.24	25.619	
10,300.0	8,832.0	11,663.7	10,200.0	47.4	48.8	136.01	-2,132.3	35.6	1,901.9	1,826.2	75.77	25.100	
10,400.0	8,832.0	11,763.7	10,200.0	48.3	49.8	136.01	-2,232.3	36.4	1,901.9	1,824.6	77.35	24.590	
10,500.0	8,832.0	11,863.7	10,200.0	49.2	50.8	136.01	-2,332.3	37.2	1,901.9	1,823.0	78.96	24.089	
10,600.0	8,832.0	11,963.7	10,200.0	50.2	51.8	136.01	-2,432.3	37.9	1,901.9	1,821.3	80.60	23.598	
10,700.0	8,832.0	12,063.7	10,200.0	51.2	52.9	136.01	-2,532.3	38.7	1,901.9	1,819.6	82.27	23.117	
10,800.0	8,832.0	12,163.7	10,200.0	52.2	54.0	136.01	-2,632.3	39.5	1,901.9	1,817.9	83.98	22.648	
10,900.0	8,832.0	12,263.7	10,200.0	53.2	55.0	136.01	-2,732.3	40.3	1,901.9	1,816.2	85.71	22.190	
11,000.0	8,832.0	12,363.7	10,200.0	54.2	56.2	136.01	-2,832.3	41.1	1,901.9	1,814.4	87.47	21.743	
11,100.0	8,832.0	12,463.7	10,200.0	55.3	57.3	136.01	-2,932.3	41.9	1,901.9	1,812.6	89.25	21.309	
11,200.0	8,832.0	12,563.7	10,200.0	56.4	58.4	136.01	-3,032.3	42.7	1,901.9	1,810.8	91.06	20.886	
11,300.0	8,832.0	12,663.7	10,200.0	57.5	59.6	136.01	-3,132.3	43.5	1,901.9	1,809.0	92.89	20.474	
11,400.0	8,832.0	12,763.7	10,200.0	58.6	60.7	136.01	-3,232.3	44.2	1,901.9	1,807.1	94.74	20.074	
11,500.0	8,832.0	12,863.7	10,200.0	59.7	61.9	136.01	-3,332.3	45.0	1,901.8	1,805.2	96.61	19.685	
11,600.0	8,832.0	12,963.7	10,200.0	60.9	63.1	136.01	-3,432.3	45.8	1,901.8	1,803.3	98.50	19.308	
11,700.0	8,832.0	13,063.7	10,200.0	62.0	64.3	136.01	-3,532.3	46.6	1,901.8	1,801.4	100.41	18.941	
11,800.0	8,832.0	13,163.7	10,200.0	63.2	65.5	136.01	-3,632.3	47.4	1,901.8	1,799.5	102.33	18.585	
11,900.0	8,832.0	13,263.7	10,200.0	64.4	66.7	136.01	-3,732.3	48.2	1,901.8	1,797.6	104.27	18.239	
12,000.0	8,832.0	13,363.7	10,200.0	65.6	67.9	136.02	-3,832.3	49.0	1,901.8	1,795.6	106.22	17.904	
12,100.0	8,832.0	13,463.7	10,200.0	66.8	69.2	136.02	-3,932.3	49.7	1,901.8	1,793.6	108.19	17.578	
12,200.0	8,832.0	13,563.7	10,200.0	68.0	70.4	136.02	-4,032.3	50.5	1,901.8	1,791.6	110.17	17.262	
12,300.0	8,832.0	13,663.7	10,200.0	69.2	71.7	136.02	-4,132.3	51.3	1,901.8	1,789.6	112.16	16.955	
12,400.0	8,832.0	13,763.7	10,200.0	70.4	72.9	136.02	-4,232.3	52.1	1,901.8	1,787.6	114.17	16.658	
12,500.0	8,832.0	13,863.7	10,200.0	71.7	74.2	136.02	-4,332.3	52.9	1,901.8	1,785.6	116.19	16.368	
12,600.0	8,832.0	13,963.7	10,200.0	72.9	75.5	136.02	-4,432.3	53.7	1,901.8	1,783.6	118.21	16.088	
12,700.0	8,832.0	14,063.7	10,200.0	74.2	76.7	136.02	-4,532.3	54.5	1,901.8	1,781.5	120.25	15.815	
12,800.0	8,832.0	14,163.7	10,200.0	75.4	78.0	136.02	-4,632.2	55.2	1,901.8	1,779.5	122.30	15.550	
12,900.0	8,832.0	14,263.7	10,200.0	76.7	79.3	136.02	-4,732.2	56.0	1,901.7	1,777.4	124.35	15.293	
13,000.0	8,832.0	14,363.7	10,200.0	78.0	80.6	136.02	-4,832.2	56.8	1,901.7	1,775.3	126.42	15.044	
13,100.0	8,832.0	14,463.7	10,200.0	79.2	81.9	136.02	-4,932.2	57.6	1,901.7	1,773.2	128.49	14.801	
13,200.0	8,832.0	14,563.7	10,200.0	80.5	83.2	136.02	-5,032.2	58.4	1,901.7	1,771.2	130.57	14.565	
13,300.0	8,832.0	14,663.7	10,200.0	81.8	84.5	136.02	-5,132.2	59.2	1,901.7	1,769.1	132.66	14.336	
13,400.0	8,832.0	14,763.7	10,200.0	83.1	85.8	136.02	-5,232.2	60.0	1,901.7	1,767.0	134.75	14.113	
13,500.0	8,832.0	14,863.7	10,200.0	84.4	87.2	136.02	-5,332.2	60.8	1,901.7	1,764.9	136.85	13.896	
13,600.0	8,832.0	14,963.7	10,200.0	85.7	88.5	136.02	-5,432.2	61.5	1,901.7	1,762.7	138.96	13.685	
13,700.0	8,832.0	15,063.7	10,200.0	87.0	89.8	136.02	-5,532.2	62.3	1,901.7	1,760.6	141.08	13.480	
13,800.0	8,832.0	15,163.7	10,200.0	88.3	91.1	136.02	-5,632.2	63.1	1,901.7	1,758.5	143.20	13.280	
13,900.0	8,832.0	15,263.7	10,200.0	89.7	92.5	136.02	-5,732.2	63.9	1,901.7	1,756.4	145.33	13.086	
14,000.0	8,832.0	15,363.7	10,200.0	91.0	93.8	136.02	-5,832.2	64.7	1,901.7	1,754.2	147.46	12.896	
14,100.0	8,832.0	15,463.7	10,200.0	92.3	95.2	136.02	-5,932.2	65.5	1,901.7	1,752.1	149.59	12.712	
14,200.0	8,832.0	15,563.7	10,200.0	93.6	96.5	136.02	-6,032.2	66.3	1,901.7	1,749.9	151.74	12.533	
14,300.0	8,832.0	15,663.7	10,200.0	95.0	97.8	136.02	-6,132.2	67.0	1,901.6	1,747.8	153.88	12.358	
14,400.0	8,832.0	15,763.7	10,200.0	96.3	99.2	136.02	-6,232.2	67.8	1,901.6	1,745.6	156.03	12.187	
14,500.0	8,832.0	15,863.7	10,200.0	97.6	100.5	136.02	-6,332.2	68.6	1,901.6	1,743.4	158.19	12.021	
14,600.0	8,832.0	15,963.7	10,200.0	99.0	101.9	136.02	-6,432.2	69.4	1,901.6	1,741.3	160.35	11.859	
14,700.0	8,832.0	16,063.7	10,200.0	100.3	103.3	136.02	-6,532.2	70.2	1,901.6	1,739.1	162.51	11.701	
14,800.0	8,832.0	16,163.7	10,200.0	101.7	104.6	136.02	-6,632.2	71.0	1,901.6	1,736.9	164.68	11.547	
14,900.0	8,832.0	16,263.7	10,200.0	103.0	106.0	136.02	-6,732.2	71.8	1,901.6	1,734.7	166.85	11.397	
15,000.0	8,832.0	16,363.7	10,200.0	104.4	107.3	136.02	-6,832.2	72.5	1,901.6	1,732.6	169.03	11.250	
15,100.0	8,832.0	16,463.7	10,200.0	105.7	108.7	136.02	-6,932.2	73.3	1,901.6	1,730.4	171.21	11.107	
15,200.0	8,832.0	16,563.7	10,200.0	107.1	110.1	136.02	-7,032.2	74.1	1,901.6	1,728.2	173.39	10.967	
15,300.0	8,832.0	16,663.7	10,200.0	108.5	111.4	136.02	-7,132.2	74.9	1,901.6	1,726.0	175.58	10.830	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
15,400.0	8,832.0	16,763.7	10,200.0	109.8	112.8	136.02	-7,232.2	75.7	1,901.6	1,723.8	177.76	10.697	
15,500.0	8,832.0	16,863.7	10,200.0	111.2	114.2	136.02	-7,332.2	76.5	1,901.6	1,721.6	179.96	10.567	
15,600.0	8,832.0	16,963.7	10,200.0	112.5	115.6	136.02	-7,432.2	77.3	1,901.6	1,719.4	182.15	10.439	
15,700.0	8,832.0	17,063.7	10,200.0	113.9	116.9	136.02	-7,532.2	78.1	1,901.5	1,717.2	184.35	10.315	
15,800.0	8,832.0	17,163.7	10,200.0	115.3	118.3	136.02	-7,632.2	78.8	1,901.5	1,715.0	186.55	10.193	
15,900.0	8,832.0	17,263.7	10,200.0	116.7	119.7	136.02	-7,732.2	79.6	1,901.5	1,712.8	188.75	10.074	
16,000.0	8,832.0	17,363.7	10,200.0	118.0	121.1	136.02	-7,832.1	80.4	1,901.5	1,710.6	190.95	9.958	
16,100.0	8,832.0	17,463.7	10,200.0	119.4	122.5	136.02	-7,932.1	81.2	1,901.5	1,708.4	193.16	9.844	
16,200.0	8,832.0	17,563.7	10,200.0	120.8	123.9	136.02	-8,032.1	82.0	1,901.5	1,706.1	195.37	9.733	
16,300.0	8,832.0	17,663.7	10,200.0	122.2	125.2	136.02	-8,132.1	82.8	1,901.5	1,703.9	197.58	9.624	
16,400.0	8,832.0	17,763.7	10,200.0	123.5	126.6	136.03	-8,232.1	83.6	1,901.5	1,701.7	199.80	9.517	
16,500.0	8,832.0	17,863.7	10,200.0	124.9	128.0	136.03	-8,332.1	84.3	1,901.5	1,699.5	202.01	9.413	
16,600.0	8,832.0	17,963.7	10,200.0	126.3	129.4	136.03	-8,432.1	85.1	1,901.5	1,697.3	204.23	9.311	
16,700.0	8,832.0	18,063.7	10,200.0	127.7	130.8	136.03	-8,532.1	85.9	1,901.5	1,695.0	206.45	9.210	
16,800.0	8,832.0	18,163.7	10,200.0	129.1	132.2	136.03	-8,632.1	86.7	1,901.5	1,692.8	208.67	9.112	
16,900.0	8,832.0	18,263.7	10,200.0	130.5	133.6	136.03	-8,732.1	87.5	1,901.5	1,690.6	210.89	9.016	
17,000.0	8,832.0	18,363.7	10,200.0	131.9	135.0	136.03	-8,832.1	88.3	1,901.5	1,688.3	213.12	8.922	
17,100.0	8,832.0	18,463.7	10,200.0	133.3	136.4	136.03	-8,932.1	89.1	1,901.4	1,686.1	215.35	8.830	
17,200.0	8,832.0	18,563.7	10,200.0	134.6	137.8	136.03	-9,032.1	89.8	1,901.4	1,683.9	217.58	8.739	
17,300.0	8,832.0	18,663.7	10,200.0	136.0	139.2	136.03	-9,132.1	90.6	1,901.4	1,681.6	219.81	8.650	
17,400.0	8,832.0	18,763.7	10,200.0	137.4	140.6	136.03	-9,232.1	91.4	1,901.4	1,679.4	222.04	8.564	
17,500.0	8,832.0	18,863.7	10,200.0	138.8	142.0	136.03	-9,332.1	92.2	1,901.4	1,677.1	224.27	8.478	
17,600.0	8,832.0	18,963.7	10,200.0	140.2	143.4	136.03	-9,432.1	93.0	1,901.4	1,674.9	226.51	8.395	
17,700.0	8,832.0	19,063.7	10,200.0	141.6	144.8	136.03	-9,532.1	93.8	1,901.4	1,672.7	228.74	8.312	
17,800.0	8,832.0	19,163.7	10,200.0	143.0	146.2	136.03	-9,632.1	94.6	1,901.4	1,670.4	230.98	8.232	
17,900.0	8,832.0	19,263.7	10,200.0	144.4	147.6	136.03	-9,732.1	95.4	1,901.4	1,668.2	233.22	8.153	
18,000.0	8,832.0	19,363.7	10,200.0	145.8	149.0	136.03	-9,832.1	96.1	1,901.4	1,665.9	235.46	8.075	
18,100.0	8,832.0	19,463.7	10,200.0	147.2	150.4	136.03	-9,932.1	96.9	1,901.4	1,663.7	237.70	7.999	
18,200.0	8,832.0	19,563.7	10,200.0	148.6	151.8	136.03	-10,032.1	97.7	1,901.4	1,661.4	239.94	7.924	
18,300.0	8,832.0	19,663.7	10,200.0	150.0	153.2	136.03	-10,132.1	98.5	1,901.4	1,659.2	242.19	7.851	
18,400.0	8,832.0	19,763.7	10,200.0	151.4	154.6	136.03	-10,232.1	99.3	1,901.4	1,656.9	244.43	7.779	
18,500.0	8,832.0	19,863.7	10,200.0	152.8	156.0	136.03	-10,332.1	100.1	1,901.3	1,654.7	246.68	7.708	
18,600.0	8,832.0	19,963.7	10,200.0	154.2	157.4	136.03	-10,432.1	100.9	1,901.3	1,652.4	248.93	7.638	
18,700.0	8,832.0	20,063.7	10,200.0	155.7	158.9	136.03	-10,532.1	101.6	1,901.3	1,650.2	251.18	7.570	
18,800.0	8,832.0	20,163.7	10,200.0	157.1	160.3	136.03	-10,632.1	102.4	1,901.3	1,647.9	253.43	7.502	
18,900.0	8,832.0	20,263.7	10,200.0	158.5	161.7	136.03	-10,732.1	103.2	1,901.3	1,645.6	255.68	7.436	
19,000.0	8,832.0	20,363.7	10,200.0	159.9	163.1	136.03	-10,832.1	104.0	1,901.3	1,643.4	257.93	7.371	
19,100.0	8,832.0	20,463.7	10,200.0	161.3	164.5	136.03	-10,932.1	104.8	1,901.3	1,641.1	260.18	7.308	
19,200.0	8,832.0	20,563.7	10,200.0	162.7	165.9	136.03	-11,032.0	105.6	1,901.3	1,638.9	262.43	7.245	
19,226.4	8,832.0	20,590.1	10,200.0	163.1	166.3	136.03	-11,058.5	105.8	1,901.3	1,638.3	263.03	7.228	SF

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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 009H - 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
0.0	0.0	0.0	0.0	0.0	0.0	-90.89	-0.6	-40.1	40.1				
100.0	100.0	98.2	98.2	0.1	0.1	-90.89	-0.6	-40.1	40.1	39.8	0.26	153.435	
200.0	200.0	198.2	198.2	0.5	0.5	-90.89	-0.6	-40.1	40.1	39.1	0.97	41.134	
300.0	300.0	298.2	298.2	0.8	0.8	-90.89	-0.6	-40.1	40.1	38.4	1.69	23.693	
400.0	400.0	398.2	398.2	1.2	1.2	-90.89	-0.6	-40.1	40.1	37.7	2.41	16.638	
500.0	500.0	498.2	498.2	1.6	1.6	-90.89	-0.6	-40.1	40.1	36.9	3.12	12.821	
600.0	600.0	598.2	598.2	1.9	1.9	-90.89	-0.6	-40.1	40.1	36.2	3.84	10.428	
700.0	700.0	698.2	698.2	2.3	2.3	-90.89	-0.6	-40.1	40.1	35.5	4.56	8.788	
800.0	800.0	798.2	798.2	2.6	2.6	-90.89	-0.6	-40.1	40.1	34.8	5.28	7.594	
900.0	900.0	898.2	898.2	3.0	3.0	-90.89	-0.6	-40.1	40.1	34.1	5.99	6.685	
1,000.0	1,000.0	998.2	998.2	3.4	3.4	-90.89	-0.6	-40.1	40.1	33.4	6.71	5.971	
1,100.0	1,100.0	1,098.2	1,098.2	3.7	3.7	-90.89	-0.6	-40.1	40.1	32.6	7.43	5.395	
1,200.0	1,200.0	1,198.2	1,198.2	4.1	4.1	-90.89	-0.6	-40.1	40.1	31.9	8.14	4.920	
1,300.0	1,300.0	1,298.2	1,298.2	4.4	4.4	-90.89	-0.6	-40.1	40.1	31.2	8.86	4.522	
1,400.0	1,400.0	1,398.2	1,398.2	4.8	4.8	-90.89	-0.6	-40.1	40.1	30.5	9.58	4.183	
1,500.0	1,500.0	1,498.2	1,498.2	5.2	5.1	-90.89	-0.6	-40.1	40.1	29.8	10.29	3.892	
1,600.0	1,600.0	1,598.2	1,598.2	5.5	5.5	-90.89	-0.6	-40.1	40.1	29.1	11.01	3.638	
1,700.0	1,700.0	1,698.2	1,698.2	5.9	5.9	-90.89	-0.6	-40.1	40.1	28.3	11.73	3.416	
1,800.0	1,800.0	1,798.2	1,798.2	6.2	6.2	-90.89	-0.6	-40.1	40.1	27.6	12.45	3.219	
1,900.0	1,900.0	1,898.2	1,898.2	6.6	6.6	-90.89	-0.6	-40.1	40.1	26.9	13.16	3.044	
2,000.0	2,000.0	1,998.2	1,998.2	6.9	6.9	-90.89	-0.6	-40.1	40.1	26.2	13.88	2.887 CC	
2,100.0	2,100.0	2,099.2	2,099.2	7.3	7.3	153.17	-1.8	-38.8	40.4	25.8	14.57	2.772 ES	
2,200.0	2,199.8	2,200.2	2,200.1	7.6	7.6	151.47	-5.3	-34.8	41.2	26.0	15.22	2.710	
2,300.0	2,299.5	2,301.2	2,300.7	8.0	8.0	148.75	-11.1	-28.2	42.7	26.9	15.88	2.692 SF	
2,400.0	2,398.7	2,401.2	2,400.1	8.3	8.3	146.82	-18.2	-20.3	46.0	29.5	16.56	2.779	
2,500.0	2,497.5	2,501.0	2,499.3	8.7	8.6	147.30	-25.3	-12.4	52.2	35.0	17.24	3.029	
2,600.0	2,595.6	2,600.6	2,598.3	9.0	9.0	149.38	-32.3	-4.4	61.4	43.5	17.92	3.426	
2,700.0	2,693.1	2,699.7	2,696.9	9.4	9.3	152.19	-39.3	3.4	73.7	55.1	18.61	3.961	
2,800.0	2,789.7	2,798.5	2,795.1	9.8	9.7	155.10	-46.3	11.3	89.0	69.7	19.29	4.612	
2,900.0	2,886.2	2,897.1	2,893.2	10.2	10.0	157.34	-53.3	19.1	105.0	85.0	19.99	5.255	
3,000.0	2,982.7	2,995.7	2,991.3	10.6	10.4	158.98	-60.3	27.0	121.2	100.5	20.68	5.858	
3,100.0	3,079.2	3,094.4	3,089.3	11.0	10.7	160.24	-67.3	34.8	137.4	116.0	21.39	6.423	
3,200.0	3,175.8	3,193.0	3,187.4	11.5	11.1	161.24	-74.2	42.7	153.6	131.5	22.09	6.954	
3,300.0	3,272.3	3,291.7	3,285.5	11.9	11.5	162.04	-81.2	50.5	169.9	147.1	22.81	7.452	
3,400.0	3,368.8	3,390.3	3,383.6	12.3	11.8	162.70	-88.2	58.4	186.3	162.7	23.52	7.919	
3,500.0	3,465.3	3,488.9	3,481.6	12.8	12.2	163.26	-95.2	66.2	202.6	178.4	24.24	8.358	
3,600.0	3,561.8	3,587.6	3,579.7	13.2	12.5	163.73	-102.1	74.0	219.0	194.0	24.96	8.772	
3,700.0	3,658.3	3,686.2	3,677.8	13.7	12.9	164.14	-109.1	81.9	235.3	209.7	25.69	9.162	
3,800.0	3,754.8	3,784.8	3,775.9	14.2	13.3	164.49	-116.1	89.7	251.7	225.3	26.42	9.529	
3,900.0	3,851.3	3,883.5	3,873.9	14.6	13.6	164.80	-123.1	97.6	268.1	241.0	27.15	9.877	
4,000.0	3,947.8	3,982.1	3,972.0	15.1	14.0	165.08	-130.1	105.4	284.5	256.6	27.88	10.205	
4,100.0	4,044.3	4,080.8	4,070.1	15.6	14.4	165.32	-137.0	113.3	300.9	272.3	28.62	10.516	
4,200.0	4,140.9	4,179.4	4,168.2	16.1	14.7	165.54	-144.0	121.1	317.3	288.0	29.35	10.811	
4,300.0	4,237.4	4,278.0	4,266.3	16.5	15.1	165.74	-151.0	128.9	333.8	303.7	30.09	11.092	
4,400.0	4,333.9	4,376.7	4,364.3	17.0	15.5	165.92	-158.0	136.8	350.2	319.3	30.83	11.358	
4,500.0	4,430.4	4,475.3	4,462.4	17.5	15.9	166.08	-164.9	144.6	366.6	335.0	31.57	11.611	
4,600.0	4,526.9	4,573.9	4,560.5	18.0	16.2	166.23	-171.9	152.5	383.0	350.7	32.32	11.852	
4,700.0	4,623.4	4,672.6	4,658.6	18.5	16.6	166.37	-178.9	160.3	399.5	366.4	33.06	12.082	
4,800.0	4,719.9	4,771.2	4,756.6	19.0	17.0	166.50	-185.9	168.2	415.9	382.1	33.81	12.301	
4,900.0	4,816.4	4,869.9	4,854.7	19.5	17.3	166.61	-192.9	176.0	432.3	397.8	34.56	12.511	
5,000.0	4,912.9	4,968.5	4,952.8	20.0	17.7	166.72	-199.8	183.8	448.7	413.4	35.30	12.711	
5,100.0	5,009.4	5,067.1	5,050.9	20.5	18.1	166.82	-206.8	191.7	465.2	429.1	36.05	12.902	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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 009H - 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	5,106.0	5,165.8	5,148.9	21.0	18.5	166.91	-213.8	199.5	481.6	444.8	36.80	13.086	
5,300.0	5,202.5	5,264.4	5,247.0	21.5	18.8	167.00	-220.8	207.4	498.0	460.5	37.56	13.262	
5,400.0	5,299.0	5,363.0	5,345.1	22.0	19.2	167.08	-227.8	215.2	514.5	476.2	38.31	13.430	
5,500.0	5,395.5	5,461.7	5,443.2	22.5	19.6	167.16	-234.7	223.1	530.9	491.9	39.06	13.592	
5,600.0	5,492.0	5,560.3	5,541.3	23.0	20.0	167.23	-241.7	230.9	547.4	507.5	39.81	13.748	
5,700.0	5,588.5	5,659.0	5,639.3	23.5	20.3	167.30	-248.7	238.7	563.8	523.2	40.57	13.898	
5,800.0	5,685.0	5,757.6	5,737.4	24.0	20.7	167.36	-255.7	246.6	580.2	538.9	41.32	14.041	
5,900.0	5,781.5	5,856.2	5,835.5	24.5	21.1	167.42	-262.6	254.4	596.7	554.6	42.08	14.180	
6,000.0	5,878.0	5,954.9	5,933.6	25.0	21.5	167.48	-269.6	262.3	613.1	570.3	42.84	14.313	
6,100.0	5,974.5	6,053.5	6,031.6	25.5	21.8	167.54	-276.6	270.1	629.6	586.0	43.59	14.442	
6,200.0	6,071.0	6,152.1	6,129.7	26.0	22.2	167.59	-283.6	278.0	646.0	601.7	44.35	14.566	
6,300.0	6,167.6	6,250.8	6,227.8	26.5	22.6	167.64	-290.6	285.8	662.5	617.3	45.11	14.686	
6,400.0	6,264.1	6,349.4	6,325.9	27.0	23.0	167.68	-297.5	293.7	678.9	633.0	45.87	14.801	
6,500.0	6,360.6	6,448.1	6,423.9	27.5	23.4	167.73	-304.5	301.5	695.3	648.7	46.63	14.913	
6,600.0	6,457.1	6,546.7	6,522.0	28.0	23.7	167.77	-311.5	309.3	711.8	664.4	47.39	15.021	
6,700.0	6,553.6	6,645.3	6,620.1	28.5	24.1	167.81	-318.5	317.2	728.2	680.1	48.15	15.126	
6,800.0	6,650.1	6,744.0	6,718.2	29.0	24.5	167.85	-325.4	325.0	744.7	695.8	48.91	15.227	
6,900.0	6,746.6	6,842.6	6,816.3	29.5	24.9	167.89	-332.4	332.9	761.1	711.5	49.67	15.324	
7,000.0	6,843.1	6,941.2	6,914.3	30.0	25.3	167.92	-339.4	340.7	777.6	727.1	50.43	15.419	
7,100.0	6,939.6	7,039.9	7,012.4	30.6	25.6	167.96	-346.4	348.6	794.0	742.8	51.19	15.511	
7,200.0	7,036.1	7,138.5	7,110.5	31.1	26.0	167.99	-353.4	356.4	810.5	758.5	51.95	15.600	
7,300.0	7,132.7	7,237.2	7,208.6	31.6	26.4	168.02	-360.3	364.2	826.9	774.2	52.71	15.687	
7,400.0	7,229.2	7,335.8	7,306.6	32.1	26.8	168.05	-367.3	372.1	843.4	789.9	53.48	15.770	
7,500.0	7,325.7	7,434.4	7,404.7	32.6	27.1	168.08	-374.3	379.9	859.8	805.6	54.24	15.852	
7,600.0	7,422.2	7,533.1	7,502.8	33.1	27.5	168.11	-381.3	387.8	876.2	821.2	55.00	15.931	
7,700.0	7,518.7	7,631.7	7,600.9	33.6	27.9	168.15	-388.3	395.6	892.6	836.9	55.77	16.007	
7,800.0	7,615.8	7,730.7	7,699.3	34.1	28.3	168.20	-395.3	403.5	906.7	850.2	56.53	16.040	
7,900.0	7,713.7	7,830.1	7,798.2	34.6	28.7	168.19	-402.3	411.4	917.4	860.1	57.29	16.015	
8,000.0	7,812.2	7,929.8	7,897.3	35.0	29.1	168.13	-409.3	419.3	924.7	866.7	58.04	15.933	
8,100.0	7,911.3	8,029.7	7,996.6	35.4	29.4	168.01	-416.4	427.3	928.6	869.8	58.79	15.797	
8,200.0	8,010.8	8,129.7	8,096.0	35.8	29.8	167.83	-423.5	435.2	929.1	869.6	59.53	15.609	
8,300.0	8,110.6	8,229.6	8,195.3	36.1	30.2	167.59	-430.6	443.2	926.2	866.0	60.26	15.371	
8,400.0	8,210.5	8,329.3	8,294.5	36.4	30.6	167.28	-437.6	451.1	919.9	858.9	60.98	15.085	
8,500.0	8,310.5	8,428.7	8,393.4	36.7	31.0	-77.66	-444.6	459.0	910.9	849.2	61.69	14.766	
8,600.0	8,410.4	8,528.3	8,492.3	37.0	31.4	103.19	-451.7	466.9	902.3	839.9	62.38	14.464	
8,700.0	8,507.8	8,626.6	8,590.2	37.3	31.7	104.69	-458.6	474.7	898.2	835.2	63.04	14.248	
8,720.9	8,527.4	8,646.6	8,610.0	37.4	31.8	105.06	-460.1	476.3	898.1	834.9	63.18	14.216	
8,800.0	8,598.4	8,719.8	8,682.8	37.7	32.1	106.57	-465.2	482.1	900.3	836.7	63.64	14.147	
8,900.0	8,678.4	8,803.6	8,766.1	38.1	32.4	108.23	-471.2	488.8	910.6	846.4	64.16	14.193	
9,000.0	8,744.3	8,874.4	8,836.5	38.6	32.7	108.91	-476.2	494.4	931.4	866.8	64.59	14.420	
9,100.0	8,793.1	8,929.2	8,891.0	39.0	32.9	107.78	-480.0	498.8	964.2	899.3	64.92	14.852	
9,200.0	8,822.8	8,965.5	8,927.1	39.5	33.0	104.06	-482.6	501.7	1,009.5	944.3	65.14	15.496	
9,300.0	8,832.0	8,981.7	8,943.2	40.0	33.1	97.66	-483.8	503.0	1,065.5	1,000.3	65.23	16.335	
9,400.0	8,832.0	8,988.9	8,950.3	40.6	33.1	98.14	-484.3	503.5	1,128.8	1,063.6	65.27	17.295	
9,500.0	8,832.0	8,996.0	8,957.4	41.2	33.2	98.62	-484.8	504.1	1,197.1	1,131.8	65.33	18.325	
9,600.0	8,832.0	9,003.2	8,964.5	41.8	33.2	99.10	-485.3	504.7	1,269.6	1,204.2	65.40	19.413	
9,700.0	8,832.0	9,010.3	8,971.6	42.5	33.2	99.57	-485.8	505.2	1,345.5	1,280.0	65.47	20.550	
9,800.0	8,832.0	9,017.4	8,978.7	43.2	33.2	100.05	-486.3	505.8	1,424.4	1,358.8	65.56	21.727	
9,900.0	8,832.0	9,024.6	8,985.8	44.0	33.3	100.53	-486.8	506.4	1,505.7	1,440.1	65.65	22.937	
10,000.0	8,832.0	9,031.7	8,992.9	44.8	33.3	101.00	-487.3	506.9	1,589.2	1,523.5	65.73	24.176	
10,100.0	8,832.0	9,038.8	9,000.0	45.6	33.3	101.48	-487.8	507.5	1,674.4	1,608.6	65.82	25.438	
10,200.0	8,832.0	9,046.0	9,007.1	46.5	33.4	101.95	-488.3	508.1	1,761.2	1,695.3	65.91	26.720	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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 009H - 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
10,300.0	8,832.0	9,053.1	9,014.2	47.4	33.4	102.42	-488.8	508.6	1,849.3	1,783.3	66.00	28.018	
10,400.0	8,832.0	9,060.2	9,021.3	48.3	33.4	102.90	-489.3	509.2	1,938.5	1,872.4	66.09	29.330	
10,500.0	8,832.0	9,067.4	9,028.4	49.2	33.4	103.37	-489.8	509.8	2,028.7	1,962.5	66.18	30.653	
10,600.0	8,832.0	9,074.5	9,035.5	50.2	33.5	103.84	-490.3	510.3	2,119.7	2,053.4	66.27	31.986	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	-90.93	-1.3	-80.0	80.1				
100.0	100.0	96.9	96.9	0.1	0.1	-90.93	-1.3	-80.0	80.0	79.8	0.26	308.582	
200.0	200.0	196.9	196.9	0.5	0.5	-90.93	-1.3	-80.0	80.0	79.1	0.97	82.579	
300.0	300.0	296.9	296.9	0.8	0.8	-90.93	-1.3	-80.0	80.0	78.4	1.69	47.469	
400.0	400.0	396.9	396.9	1.2	1.2	-90.93	-1.3	-80.0	80.0	77.6	2.40	33.307	
500.0	500.0	496.9	496.9	1.6	1.6	-90.93	-1.3	-80.0	80.0	76.9	3.12	25.654	
600.0	600.0	596.9	596.9	1.9	1.9	-90.93	-1.3	-80.0	80.0	76.2	3.84	20.861	
700.0	700.0	696.9	696.9	2.3	2.3	-90.93	-1.3	-80.0	80.0	75.5	4.55	17.577	
800.0	800.0	796.9	796.9	2.6	2.6	-90.93	-1.3	-80.0	80.0	74.8	5.27	15.186	
900.0	900.0	896.9	896.9	3.0	3.0	-90.93	-1.3	-80.0	80.0	74.1	5.99	13.368	
1,000.0	1,000.0	996.9	996.9	3.4	3.3	-90.93	-1.3	-80.0	80.0	73.3	6.70	11.938	
1,100.0	1,100.0	1,096.9	1,096.9	3.7	3.7	-90.93	-1.3	-80.0	80.0	72.6	7.42	10.785	
1,200.0	1,200.0	1,196.9	1,196.9	4.1	4.1	-90.93	-1.3	-80.0	80.0	71.9	8.14	9.835	
1,300.0	1,300.0	1,296.9	1,296.9	4.4	4.4	-90.93	-1.3	-80.0	80.0	71.2	8.86	9.039	
1,400.0	1,400.0	1,396.9	1,396.9	4.8	4.8	-90.93	-1.3	-80.0	80.0	70.5	9.57	8.362	
1,500.0	1,500.0	1,496.9	1,496.9	5.2	5.1	-90.93	-1.3	-80.0	80.0	69.8	10.29	7.779	
1,600.0	1,600.0	1,596.9	1,596.9	5.5	5.5	-90.93	-1.3	-80.0	80.0	69.0	11.01	7.272	
1,700.0	1,700.0	1,696.9	1,696.9	5.9	5.9	-90.93	-1.3	-80.0	80.0	68.3	11.72	6.828	
1,800.0	1,800.0	1,796.9	1,796.9	6.2	6.2	-90.93	-1.3	-80.0	80.0	67.6	12.44	6.434	
1,900.0	1,900.0	1,896.9	1,896.9	6.6	6.6	-90.93	-1.3	-80.0	80.0	66.9	13.16	6.084	
2,000.0	2,000.0	1,996.9	1,996.9	6.9	6.9	-90.93	-1.3	-80.0	80.0	66.2	13.87	5.769	CC, ES
2,100.0	2,100.0	2,097.3	2,097.2	7.3	7.3	153.06	-2.9	-79.8	81.4	66.8	14.56	5.589	
2,200.0	2,199.8	2,197.5	2,197.3	7.6	7.6	151.19	-8.0	-79.0	85.4	70.2	15.22	5.611	
2,300.0	2,299.5	2,297.4	2,296.9	8.0	7.9	148.39	-16.5	-77.6	92.3	76.4	15.88	5.809	
2,400.0	2,398.7	2,396.8	2,395.6	8.3	8.3	145.18	-28.2	-75.7	102.2	85.6	16.55	6.173	
2,500.0	2,497.5	2,495.9	2,493.9	8.7	8.6	143.12	-40.7	-73.7	115.1	97.9	17.23	6.681	
2,600.0	2,595.6	2,594.7	2,591.8	9.0	8.9	142.37	-53.1	-71.7	130.9	113.0	17.92	7.306	
2,700.0	2,693.1	2,692.9	2,689.3	9.4	9.3	142.54	-65.5	-69.7	149.4	130.8	18.61	8.028	
2,800.0	2,789.7	2,790.7	2,786.2	9.8	9.6	143.36	-77.8	-67.7	170.4	151.1	19.31	8.826	
2,900.0	2,886.2	2,888.3	2,883.0	10.2	10.0	144.22	-90.1	-65.7	192.0	171.9	20.01	9.591	
3,000.0	2,982.7	2,985.9	2,979.8	10.6	10.3	144.92	-102.4	-63.7	213.5	192.8	20.73	10.302	
3,100.0	3,079.2	3,083.5	3,076.7	11.0	10.7	145.48	-114.7	-61.8	235.1	213.7	21.45	10.962	
3,200.0	3,175.8	3,181.1	3,173.5	11.5	11.0	145.95	-127.0	-59.8	256.7	234.6	22.18	11.576	
3,300.0	3,272.3	3,278.7	3,270.3	11.9	11.4	146.35	-139.3	-57.8	278.4	255.5	22.91	12.149	
3,400.0	3,368.8	3,376.4	3,367.1	12.3	11.7	146.69	-151.6	-55.8	300.0	276.4	23.65	12.684	
3,500.0	3,465.3	3,474.0	3,463.9	12.8	12.1	146.99	-163.9	-53.8	321.7	297.3	24.40	13.183	
3,600.0	3,561.8	3,571.6	3,560.8	13.2	12.5	147.24	-176.1	-51.8	343.3	318.2	25.15	13.651	
3,700.0	3,658.3	3,669.2	3,657.6	13.7	12.8	147.47	-188.4	-49.9	365.0	339.1	25.90	14.090	
3,800.0	3,754.8	3,766.8	3,754.4	14.2	13.2	147.67	-200.7	-47.9	386.6	360.0	26.66	14.501	
3,900.0	3,851.3	3,864.4	3,851.2	14.6	13.6	147.85	-213.0	-45.9	408.3	380.9	27.43	14.888	
4,000.0	3,947.8	3,962.1	3,948.0	15.1	13.9	148.01	-225.3	-43.9	430.0	401.8	28.19	15.253	
4,100.0	4,044.3	4,059.7	4,044.8	15.6	14.3	148.16	-237.6	-41.9	451.7	422.7	28.96	15.597	
4,200.0	4,140.9	4,157.3	4,141.7	16.1	14.7	148.29	-249.9	-40.0	473.4	443.6	29.73	15.921	
4,300.0	4,237.4	4,254.9	4,238.5	16.5	15.1	148.41	-262.2	-38.0	495.0	464.5	30.51	16.228	
4,400.0	4,333.9	4,352.5	4,335.3	17.0	15.4	148.52	-274.5	-36.0	516.7	485.4	31.28	16.518	
4,500.0	4,430.4	4,450.1	4,432.1	17.5	15.8	148.63	-286.8	-34.0	538.4	506.3	32.06	16.793	
4,600.0	4,526.9	4,547.8	4,528.9	18.0	16.2	148.72	-299.1	-32.0	560.1	527.2	32.84	17.055	
4,700.0	4,623.4	4,645.4	4,625.8	18.5	16.6	148.81	-311.3	-30.0	581.8	548.2	33.62	17.303	
4,800.0	4,719.9	4,743.0	4,722.6	19.0	16.9	148.89	-323.6	-28.1	603.5	569.1	34.41	17.538	
4,900.0	4,816.4	4,840.6	4,819.4	19.5	17.3	148.96	-335.9	-26.1	625.2	590.0	35.19	17.763	
5,000.0	4,912.9	4,938.2	4,916.2	20.0	17.7	149.03	-348.2	-24.1	646.9	610.9	35.98	17.977	
5,100.0	5,009.4	5,035.8	5,013.0	20.5	18.1	149.10	-360.5	-22.1	668.5	631.8	36.77	18.181	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	Rule Assigned: Warning
5,200.0	5,106.0	5,133.4	5,109.9	21.0	18.4	149.16	-372.8	-20.1	690.2	652.7	37.56	18.376	
5,300.0	5,202.5	5,231.1	5,206.7	21.5	18.8	149.22	-385.1	-18.2	711.9	673.6	38.35	18.562	
5,400.0	5,299.0	5,328.7	5,303.5	22.0	19.2	149.27	-397.4	-16.2	733.6	694.5	39.15	18.740	
5,500.0	5,395.5	5,426.3	5,400.3	22.5	19.6	149.32	-409.7	-14.2	755.3	715.4	39.94	18.910	
5,600.0	5,492.0	5,523.9	5,497.1	23.0	20.0	149.37	-422.0	-12.2	777.0	736.3	40.74	19.073	
5,700.0	5,588.5	5,621.5	5,593.9	23.5	20.4	149.42	-434.2	-10.2	798.7	757.2	41.53	19.230	
5,800.0	5,685.0	5,719.1	5,690.8	24.0	20.7	149.46	-446.5	-8.2	820.4	778.1	42.33	19.380	
5,900.0	5,781.5	5,816.8	5,787.6	24.5	21.1	149.50	-458.8	-6.3	842.1	799.0	43.13	19.524	
6,000.0	5,878.0	5,914.4	5,884.4	25.0	21.5	149.54	-471.1	-4.3	863.8	819.9	43.93	19.663	
6,100.0	5,974.5	6,012.0	5,981.2	25.5	21.9	149.58	-483.4	-2.3	885.5	840.8	44.73	19.796	
6,200.0	6,071.0	6,109.6	6,078.0	26.0	22.3	149.62	-495.7	-0.3	907.2	861.7	45.53	19.925	
6,300.0	6,167.6	6,207.2	6,174.9	26.5	22.7	149.65	-508.0	1.7	928.9	882.6	46.33	20.048	
6,400.0	6,264.1	6,304.8	6,271.7	27.0	23.0	149.68	-520.3	3.6	950.6	903.5	47.14	20.167	
6,500.0	6,360.6	6,402.5	6,368.5	27.5	23.4	149.71	-532.6	5.6	972.3	924.4	47.94	20.282	
6,600.0	6,457.1	6,500.1	6,465.3	28.0	23.8	149.74	-544.9	7.6	994.0	945.3	48.74	20.392	
6,700.0	6,553.6	6,597.7	6,562.1	28.5	24.2	149.77	-557.2	9.6	1,015.7	966.2	49.55	20.499	
6,800.0	6,650.1	6,695.3	6,659.0	29.0	24.6	149.80	-569.4	11.6	1,037.4	987.0	50.35	20.602	
6,900.0	6,746.6	6,792.9	6,755.8	29.5	25.0	149.82	-581.7	13.6	1,059.1	1,007.9	51.16	20.702	
7,000.0	6,843.1	6,890.5	6,852.6	30.0	25.3	149.85	-594.0	15.5	1,080.8	1,028.8	51.97	20.799	
7,100.0	6,939.6	6,988.2	6,949.4	30.6	25.7	149.87	-606.3	17.5	1,102.5	1,049.7	52.77	20.892	
7,200.0	7,036.1	7,085.8	7,046.2	31.1	26.1	149.89	-618.6	19.5	1,124.2	1,070.6	53.58	20.982	
7,300.0	7,132.7	7,183.1	7,142.8	31.6	26.5	149.92	-630.9	21.5	1,145.9	1,091.5	54.38	21.070	
7,400.0	7,229.2	7,277.1	7,236.2	32.1	26.9	150.03	-640.9	23.1	1,167.8	1,112.6	55.15	21.175	
7,500.0	7,325.7	7,370.7	7,329.6	32.6	27.2	150.28	-647.9	24.2	1,190.0	1,134.1	55.89	21.292	
7,600.0	7,422.2	7,463.8	7,422.5	33.1	27.5	150.68	-651.9	24.9	1,212.5	1,155.9	56.60	21.424	
7,700.0	7,518.7	7,556.9	7,515.6	33.6	27.9	151.24	-652.9	25.0	1,235.4	1,178.2	57.27	21.572	
7,800.0	7,615.8	7,654.0	7,612.7	34.1	28.2	151.96	-652.9	25.0	1,256.5	1,198.6	57.94	21.686	
7,900.0	7,713.7	7,751.9	7,710.6	34.6	28.5	152.56	-652.9	25.0	1,274.7	1,216.1	58.61	21.748	
8,000.0	7,812.2	7,850.4	7,809.1	35.0	28.8	153.05	-652.9	25.0	1,289.9	1,230.6	59.28	21.760	
8,100.0	7,911.3	7,949.5	7,908.2	35.4	29.1	153.43	-652.9	25.0	1,302.0	1,242.0	59.94	21.721	
8,200.0	8,010.8	8,049.0	8,007.7	35.8	29.4	153.71	-652.9	25.0	1,311.0	1,250.4	60.60	21.634	
8,300.0	8,110.6	8,148.7	8,107.5	36.1	29.7	153.89	-652.9	25.0	1,317.0	1,255.7	61.25	21.500	
8,400.0	8,210.5	8,248.7	8,207.4	36.4	30.1	153.97	-652.9	25.0	1,319.8	1,257.9	61.90	21.320	
8,500.0	8,310.5	8,348.7	8,307.4	36.7	30.4	-90.63	-652.9	25.0	1,320.0	1,257.5	62.53	21.109	
8,600.0	8,410.4	8,448.2	8,406.9	37.0	30.7	89.84	-655.8	25.1	1,320.0	1,256.8	63.19	20.890	
8,700.0	8,507.8	8,547.5	8,503.7	37.3	31.1	89.87	-676.8	25.2	1,320.0	1,256.0	63.99	20.630	
8,800.0	8,598.4	8,647.0	8,594.3	37.7	31.6	89.91	-717.5	25.5	1,320.0	1,255.1	64.91	20.336	
8,900.0	8,678.4	8,746.7	8,674.7	38.1	32.2	89.96	-776.2	26.0	1,320.0	1,254.1	65.95	20.015	
8,994.4	8,741.0	8,841.0	8,738.0	38.5	32.8	90.00	-845.9	26.5	1,320.0	1,253.0	67.03	19.693	
9,000.0	8,744.3	8,846.6	8,741.3	38.6	32.8	90.00	-850.4	26.6	1,320.0	1,252.9	67.09	19.674	
9,100.0	8,793.1	8,946.7	8,791.1	39.0	33.4	90.05	-937.0	27.2	1,320.0	1,251.7	68.32	19.322	
9,200.0	8,822.8	9,047.1	8,821.8	39.5	34.1	90.10	-1,032.4	28.0	1,320.0	1,250.4	69.59	18.968	
9,300.0	8,832.0	9,147.6	8,832.0	40.0	34.8	90.13	-1,132.2	28.7	1,320.0	1,249.1	70.88	18.622	
9,400.0	8,832.0	9,247.6	8,832.0	40.6	35.5	90.13	-1,232.2	29.5	1,320.0	1,247.8	72.21	18.279	
9,500.0	8,832.0	9,347.6	8,832.0	41.2	36.2	90.13	-1,332.2	30.3	1,320.0	1,246.4	73.63	17.927	
9,600.0	8,832.0	9,447.6	8,832.0	41.8	37.0	90.13	-1,432.2	31.1	1,320.0	1,244.9	75.13	17.569	
9,700.0	8,832.0	9,547.6	8,832.0	42.5	37.8	90.13	-1,532.2	31.9	1,320.0	1,243.3	76.71	17.207	
9,800.0	8,832.0	9,647.6	8,832.0	43.2	38.7	90.13	-1,632.2	32.6	1,320.0	1,241.6	78.37	16.843	
9,900.0	8,832.0	9,747.6	8,832.0	44.0	39.6	90.13	-1,732.2	33.4	1,320.0	1,239.9	80.10	16.480	
10,000.0	8,832.0	9,847.6	8,832.0	44.8	40.5	90.13	-1,832.2	34.2	1,320.0	1,238.1	81.89	16.119	
10,100.0	8,832.0	9,947.6	8,832.0	45.6	41.5	90.13	-1,932.2	35.0	1,320.0	1,236.3	83.74	15.762	
10,200.0	8,832.0	10,047.6	8,832.0	46.5	42.4	90.13	-2,032.2	35.7	1,320.0	1,234.3	85.66	15.410	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.0	8,832.0	10,147.6	8,832.0	47.4	43.5	90.13	-2,132.2	36.5	1,320.0	1,232.4	87.62	15.065	
10,400.0	8,832.0	10,247.6	8,832.0	48.3	44.5	90.13	-2,232.2	37.3	1,320.0	1,230.4	89.64	14.726	
10,500.0	8,832.0	10,347.6	8,832.0	49.2	45.5	90.13	-2,332.2	38.1	1,320.0	1,228.3	91.70	14.394	
10,600.0	8,832.0	10,447.6	8,832.0	50.2	46.6	90.13	-2,432.2	38.8	1,320.0	1,226.2	93.81	14.071	
10,700.0	8,832.0	10,547.6	8,832.0	51.2	47.7	90.13	-2,532.2	39.6	1,320.0	1,224.0	95.96	13.756	
10,800.0	8,832.0	10,647.6	8,832.0	52.2	48.8	90.13	-2,632.2	40.4	1,320.0	1,221.9	98.15	13.449	
10,900.0	8,832.0	10,747.6	8,832.0	53.2	50.0	90.13	-2,732.2	41.2	1,320.0	1,219.6	100.37	13.151	
11,000.0	8,832.0	10,847.6	8,832.0	54.2	51.1	90.13	-2,832.2	41.9	1,320.0	1,217.4	102.63	12.862	
11,100.0	8,832.0	10,947.6	8,832.0	55.3	52.3	90.13	-2,932.2	42.7	1,320.0	1,215.1	104.92	12.582	
11,200.0	8,832.0	11,047.6	8,832.0	56.4	53.5	90.13	-3,032.2	43.5	1,320.0	1,212.8	107.23	12.310	
11,300.0	8,832.0	11,147.6	8,832.0	57.5	54.6	90.13	-3,132.2	44.3	1,320.0	1,210.4	109.58	12.046	
11,400.0	8,832.0	11,247.6	8,832.0	58.6	55.8	90.13	-3,232.1	45.0	1,320.0	1,208.1	111.95	11.791	
11,500.0	8,832.0	11,347.6	8,832.0	59.7	57.1	90.13	-3,332.1	45.8	1,320.0	1,205.7	114.34	11.544	
11,600.0	8,832.0	11,447.6	8,832.0	60.9	58.3	90.13	-3,432.1	46.6	1,320.0	1,203.2	116.76	11.305	
11,700.0	8,832.0	11,547.6	8,832.0	62.0	59.5	90.13	-3,532.1	47.4	1,320.0	1,200.8	119.20	11.074	
11,800.0	8,832.0	11,647.6	8,832.0	63.2	60.8	90.13	-3,632.1	48.2	1,320.0	1,198.3	121.66	10.850	
11,900.0	8,832.0	11,747.6	8,832.0	64.4	62.0	90.13	-3,732.1	48.9	1,320.0	1,195.9	124.14	10.633	
12,000.0	8,832.0	11,847.6	8,832.0	65.6	63.3	90.13	-3,832.1	49.7	1,320.0	1,193.4	126.63	10.424	
12,100.0	8,832.0	11,947.6	8,832.0	66.8	64.5	90.13	-3,932.1	50.5	1,320.0	1,190.9	129.14	10.221	
12,200.0	8,832.0	12,047.6	8,832.0	68.0	65.8	90.13	-4,032.1	51.3	1,320.0	1,188.3	131.67	10.025	
12,300.0	8,832.0	12,147.6	8,832.0	69.2	67.1	90.13	-4,132.1	52.0	1,320.0	1,185.8	134.22	9.835	
12,400.0	8,832.0	12,247.6	8,832.0	70.4	68.4	90.13	-4,232.1	52.8	1,320.0	1,183.2	136.77	9.651	
12,500.0	8,832.0	12,347.6	8,832.0	71.7	69.7	90.13	-4,332.1	53.6	1,320.0	1,180.7	139.34	9.473	
12,600.0	8,832.0	12,447.6	8,832.0	72.9	71.0	90.13	-4,432.1	54.4	1,320.0	1,178.1	141.93	9.301	
12,700.0	8,832.0	12,547.6	8,832.0	74.2	72.3	90.13	-4,532.1	55.1	1,320.0	1,175.5	144.52	9.134	
12,800.0	8,832.0	12,647.6	8,832.0	75.4	73.6	90.13	-4,632.1	55.9	1,320.0	1,172.9	147.13	8.972	
12,900.0	8,832.0	12,747.6	8,832.0	76.7	74.9	90.13	-4,732.1	56.7	1,320.0	1,170.3	149.74	8.815	
13,000.0	8,832.0	12,847.6	8,832.0	78.0	76.2	90.13	-4,832.1	57.5	1,320.0	1,167.6	152.37	8.663	
13,100.0	8,832.0	12,947.6	8,832.0	79.2	77.6	90.13	-4,932.1	58.2	1,320.0	1,165.0	155.00	8.516	
13,200.0	8,832.0	13,047.6	8,832.0	80.5	78.9	90.13	-5,032.1	59.0	1,320.0	1,162.4	157.65	8.373	
13,300.0	8,832.0	13,147.6	8,832.0	81.8	80.2	90.13	-5,132.1	59.8	1,320.0	1,159.7	160.30	8.234	
13,400.0	8,832.0	13,247.6	8,832.0	83.1	81.6	90.13	-5,232.1	60.6	1,320.0	1,157.0	162.97	8.100	
13,500.0	8,832.0	13,347.6	8,832.0	84.4	82.9	90.13	-5,332.1	61.3	1,320.0	1,154.4	165.64	7.969	
13,600.0	8,832.0	13,447.6	8,832.0	85.7	84.3	90.13	-5,432.1	62.1	1,320.0	1,151.7	168.31	7.843	
13,700.0	8,832.0	13,547.6	8,832.0	87.0	85.6	90.13	-5,532.1	62.9	1,320.0	1,149.0	171.00	7.719	
13,800.0	8,832.0	13,647.6	8,832.0	88.3	87.0	90.13	-5,632.1	63.7	1,320.0	1,146.3	173.69	7.600	
13,900.0	8,832.0	13,747.6	8,832.0	89.7	88.3	90.13	-5,732.1	64.4	1,320.0	1,143.6	176.39	7.484	
14,000.0	8,832.0	13,847.6	8,832.0	91.0	89.7	90.13	-5,832.1	65.2	1,320.0	1,140.9	179.09	7.371	
14,100.0	8,832.0	13,947.6	8,832.0	92.3	91.0	90.13	-5,932.1	66.0	1,320.0	1,138.2	181.80	7.261	
14,200.0	8,832.0	14,047.6	8,832.0	93.6	92.4	90.13	-6,032.1	66.8	1,320.0	1,135.5	184.52	7.154	
14,300.0	8,832.0	14,147.6	8,832.0	95.0	93.8	90.13	-6,132.1	67.6	1,320.0	1,132.8	187.24	7.050	
14,400.0	8,832.0	14,247.6	8,832.0	96.3	95.1	90.13	-6,232.1	68.3	1,320.0	1,130.0	189.97	6.949	
14,500.0	8,832.0	14,347.6	8,832.0	97.6	96.5	90.13	-6,332.1	69.1	1,320.0	1,127.3	192.70	6.850	
14,600.0	8,832.0	14,447.6	8,832.0	99.0	97.9	90.13	-6,432.1	69.9	1,320.0	1,124.6	195.43	6.754	
14,700.0	8,832.0	14,547.6	8,832.0	100.3	99.3	90.13	-6,532.0	70.7	1,320.0	1,121.8	198.17	6.661	
14,800.0	8,832.0	14,647.6	8,832.0	101.7	100.6	90.13	-6,632.0	71.4	1,320.0	1,119.1	200.92	6.570	
14,900.0	8,832.0	14,747.6	8,832.0	103.0	102.0	90.13	-6,732.0	72.2	1,320.0	1,116.3	203.67	6.481	
15,000.0	8,832.0	14,847.6	8,832.0	104.4	103.4	90.13	-6,832.0	73.0	1,320.0	1,113.6	206.42	6.395	
15,100.0	8,832.0	14,947.6	8,832.0	105.7	104.8	90.13	-6,932.0	73.8	1,320.0	1,110.8	209.18	6.310	
15,200.0	8,832.0	15,047.6	8,832.0	107.1	106.2	90.13	-7,032.0	74.5	1,320.0	1,108.1	211.94	6.228	
15,300.0	8,832.0	15,147.6	8,832.0	108.5	107.6	90.13	-7,132.0	75.3	1,320.0	1,105.3	214.70	6.148	
15,400.0	8,832.0	15,247.6	8,832.0	109.8	108.9	90.13	-7,232.0	76.1	1,320.0	1,102.5	217.47	6.070	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
15,500.0	8,832.0	15,347.6	8,832.0	111.2	110.3	90.13	-7,332.0	76.9	1,320.0	1,099.8	220.24	5.993	
15,600.0	8,832.0	15,447.6	8,832.0	112.5	111.7	90.13	-7,432.0	77.6	1,320.0	1,097.0	223.01	5.919	
15,700.0	8,832.0	15,547.6	8,832.0	113.9	113.1	90.13	-7,532.0	78.4	1,320.0	1,094.2	225.79	5.846	
15,800.0	8,832.0	15,647.6	8,832.0	115.3	114.5	90.13	-7,632.0	79.2	1,320.0	1,091.4	228.57	5.775	
15,900.0	8,832.0	15,747.6	8,832.0	116.7	115.9	90.13	-7,732.0	80.0	1,320.0	1,088.6	231.35	5.706	
16,000.0	8,832.0	15,847.6	8,832.0	118.0	117.3	90.13	-7,832.0	80.7	1,320.0	1,085.9	234.14	5.638	
16,100.0	8,832.0	15,947.6	8,832.0	119.4	118.7	90.13	-7,932.0	81.5	1,320.0	1,083.1	236.93	5.571	
16,200.0	8,832.0	16,047.6	8,832.0	120.8	120.1	90.13	-8,032.0	82.3	1,320.0	1,080.3	239.72	5.506	
16,300.0	8,832.0	16,147.6	8,832.0	122.2	121.5	90.13	-8,132.0	83.1	1,320.0	1,077.5	242.51	5.443	
16,400.0	8,832.0	16,247.6	8,832.0	123.5	122.9	90.13	-8,232.0	83.8	1,320.0	1,074.7	245.31	5.381	
16,500.0	8,832.0	16,347.6	8,832.0	124.9	124.3	90.13	-8,332.0	84.6	1,320.0	1,071.9	248.11	5.320	
16,600.0	8,832.0	16,447.6	8,832.0	126.3	125.7	90.13	-8,432.0	85.4	1,320.0	1,069.1	250.91	5.261	
16,700.0	8,832.0	16,547.6	8,832.0	127.7	127.1	90.13	-8,532.0	86.2	1,320.0	1,066.3	253.71	5.203	
16,800.0	8,832.0	16,647.6	8,832.0	129.1	128.5	90.13	-8,632.0	87.0	1,320.0	1,063.5	256.51	5.146	
16,900.0	8,832.0	16,747.6	8,832.0	130.5	129.9	90.13	-8,732.0	87.7	1,320.0	1,060.7	259.32	5.090	
17,000.0	8,832.0	16,847.6	8,832.0	131.9	131.3	90.13	-8,832.0	88.5	1,320.0	1,057.9	262.13	5.036	
17,100.0	8,832.0	16,947.6	8,832.0	133.3	132.7	90.13	-8,932.0	89.3	1,320.0	1,055.1	264.94	4.982	
17,200.0	8,832.0	17,047.6	8,832.0	134.6	134.1	90.13	-9,032.0	90.1	1,320.0	1,052.3	267.75	4.930	
17,300.0	8,832.0	17,147.6	8,832.0	136.0	135.6	90.13	-9,132.0	90.8	1,320.0	1,049.4	270.56	4.879	
17,400.0	8,832.0	17,247.6	8,832.0	137.4	137.0	90.13	-9,232.0	91.6	1,320.0	1,046.6	273.38	4.828	
17,500.0	8,832.0	17,347.6	8,832.0	138.8	138.4	90.13	-9,332.0	92.4	1,320.0	1,043.8	276.20	4.779	
17,600.0	8,832.0	17,447.6	8,832.0	140.2	139.8	90.13	-9,432.0	93.2	1,320.0	1,041.0	279.02	4.731	
17,700.0	8,832.0	17,547.6	8,832.0	141.6	141.2	90.13	-9,532.0	93.9	1,320.0	1,038.2	281.84	4.684	
17,800.0	8,832.0	17,647.6	8,832.0	143.0	142.6	90.13	-9,632.0	94.7	1,320.0	1,035.3	284.66	4.637	
17,900.0	8,832.0	17,747.6	8,832.0	144.4	144.0	90.13	-9,732.0	95.5	1,320.0	1,032.5	287.48	4.592	
18,000.0	8,832.0	17,847.6	8,832.0	145.8	145.4	90.13	-9,831.9	96.3	1,320.0	1,029.7	290.31	4.547	
18,100.0	8,832.0	17,947.6	8,832.0	147.2	146.9	90.13	-9,931.9	97.0	1,320.0	1,026.9	293.13	4.503	
18,200.0	8,832.0	18,047.6	8,832.0	148.6	148.3	90.13	-10,031.9	97.8	1,320.0	1,024.0	295.96	4.460	
18,300.0	8,832.0	18,147.6	8,832.0	150.0	149.7	90.13	-10,131.9	98.6	1,320.0	1,021.2	298.79	4.418	
18,400.0	8,832.0	18,247.6	8,832.0	151.4	151.1	90.13	-10,231.9	99.4	1,320.0	1,018.4	301.62	4.376	
18,500.0	8,832.0	18,347.6	8,832.0	152.8	152.5	90.13	-10,331.9	100.1	1,320.0	1,015.5	304.45	4.336	
18,600.0	8,832.0	18,447.6	8,832.0	154.2	153.9	90.13	-10,431.9	100.9	1,320.0	1,012.7	307.28	4.296	
18,700.0	8,832.0	18,547.6	8,832.0	155.7	155.4	90.13	-10,531.9	101.7	1,320.0	1,009.9	310.12	4.256	
18,800.0	8,832.0	18,647.6	8,832.0	157.1	156.8	90.13	-10,631.9	102.5	1,320.0	1,007.0	312.95	4.218	
18,900.0	8,832.0	18,747.6	8,832.0	158.5	158.2	90.13	-10,731.9	103.2	1,320.0	1,004.2	315.79	4.180	
19,000.0	8,832.0	18,847.6	8,832.0	159.9	159.6	90.13	-10,831.9	104.0	1,320.0	1,001.4	318.63	4.143	
19,100.0	8,832.0	18,947.6	8,832.0	161.3	161.0	90.13	-10,931.9	104.8	1,320.0	998.5	321.46	4.106	
19,200.0	8,832.0	19,047.6	8,832.0	162.7	162.4	90.13	-11,031.9	105.6	1,320.0	995.8	324.20	4.072	
19,226.4	8,832.0	19,074.1	8,832.0	163.1	162.7	90.13	-11,058.3	105.8	1,320.0	995.1	324.89	4.063 SF	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	-90.92	-1.0	-60.1	60.1				
100.0	100.0	97.2	97.2	0.1	0.1	-90.92	-1.0	-60.1	60.1	59.8	0.26	231.218	
200.0	200.0	197.2	197.2	0.5	0.5	-90.92	-1.0	-60.1	60.1	59.1	0.97	61.901	
300.0	300.0	297.2	297.2	0.8	0.8	-90.92	-1.0	-60.1	60.1	58.4	1.69	35.599	
400.0	400.0	397.2	397.2	1.2	1.2	-90.92	-1.0	-60.1	60.1	57.7	2.40	24.984	
500.0	500.0	497.2	497.2	1.6	1.6	-90.92	-1.0	-60.1	60.1	56.9	3.12	19.245	
600.0	600.0	597.2	597.2	1.9	1.9	-90.92	-1.0	-60.1	60.1	56.2	3.84	15.650	
700.0	700.0	697.2	697.2	2.3	2.3	-90.92	-1.0	-60.1	60.1	55.5	4.56	13.187	
800.0	800.0	797.2	797.2	2.6	2.6	-90.92	-1.0	-60.1	60.1	54.8	5.27	11.394	
900.0	900.0	897.2	897.2	3.0	3.0	-90.92	-1.0	-60.1	60.1	54.1	5.99	10.030	
1,000.0	1,000.0	997.2	997.2	3.4	3.3	-90.92	-1.0	-60.1	60.1	53.4	6.71	8.957	
1,100.0	1,100.0	1,097.2	1,097.2	3.7	3.7	-90.92	-1.0	-60.1	60.1	52.6	7.42	8.092	
1,200.0	1,200.0	1,197.2	1,197.2	4.1	4.1	-90.92	-1.0	-60.1	60.1	51.9	8.14	7.379	
1,300.0	1,300.0	1,297.2	1,297.2	4.4	4.4	-90.92	-1.0	-60.1	60.1	51.2	8.86	6.782	
1,400.0	1,400.0	1,397.2	1,397.2	4.8	4.8	-90.92	-1.0	-60.1	60.1	50.5	9.57	6.274	
1,500.0	1,500.0	1,497.2	1,497.2	5.2	5.1	-90.92	-1.0	-60.1	60.1	49.8	10.29	5.837	
1,600.0	1,600.0	1,597.2	1,597.2	5.5	5.5	-90.92	-1.0	-60.1	60.1	49.1	11.01	5.457	
1,700.0	1,700.0	1,697.2	1,697.2	5.9	5.9	-90.92	-1.0	-60.1	60.1	48.3	11.72	5.123	
1,800.0	1,800.0	1,797.2	1,797.2	6.2	6.2	-90.92	-1.0	-60.1	60.1	47.6	12.44	4.828	
1,900.0	1,900.0	1,897.2	1,897.2	6.6	6.6	-90.92	-1.0	-60.1	60.1	46.9	13.16	4.565	
2,000.0	2,000.0	1,997.2	1,997.2	6.9	6.9	-90.92	-1.0	-60.1	60.1	46.2	13.88	4.329	CC, ES
2,100.0	2,100.0	2,097.2	2,097.2	7.3	7.3	154.39	-1.0	-60.1	61.6	47.1	14.58	4.228	SF
2,200.0	2,199.8	2,197.0	2,197.0	7.6	7.6	156.31	-1.0	-60.1	66.4	51.1	15.27	4.348	
2,300.0	2,299.5	2,298.3	2,298.3	8.0	8.0	158.00	-2.3	-59.1	73.4	57.4	15.95	4.600	
2,400.0	2,398.7	2,399.7	2,399.6	8.3	8.3	158.36	-6.5	-55.9	81.4	64.7	16.61	4.898	
2,500.0	2,497.5	2,501.3	2,500.8	8.7	8.7	157.73	-13.7	-50.6	90.3	73.0	17.27	5.228	
2,600.0	2,595.6	2,602.6	2,601.3	9.0	9.0	156.41	-23.6	-43.2	100.2	82.3	17.93	5.587	
2,700.0	2,693.1	2,701.8	2,699.6	9.4	9.3	155.52	-34.4	-35.2	112.5	93.9	18.62	6.043	
2,800.0	2,789.7	2,800.7	2,797.5	9.8	9.7	155.43	-45.1	-27.3	127.7	108.4	19.31	6.615	
2,900.0	2,886.2	2,899.4	2,895.4	10.2	10.0	155.52	-55.8	-19.3	143.5	123.5	20.01	7.172	
3,000.0	2,982.7	2,998.2	2,993.2	10.6	10.4	155.59	-66.6	-11.3	159.2	138.5	20.71	7.689	
3,100.0	3,079.2	3,096.9	3,091.1	11.0	10.7	155.65	-77.3	-3.4	175.0	153.6	21.42	8.169	
3,200.0	3,175.8	3,195.7	3,188.9	11.5	11.1	155.70	-88.0	4.6	190.8	168.6	22.14	8.615	
3,300.0	3,272.3	3,294.4	3,286.8	11.9	11.5	155.74	-98.7	12.6	206.5	183.7	22.87	9.031	
3,400.0	3,368.8	3,393.2	3,384.6	12.3	11.8	155.78	-109.4	20.5	222.3	198.7	23.60	9.418	
3,500.0	3,465.3	3,491.9	3,482.4	12.8	12.2	155.81	-120.2	28.5	238.0	213.7	24.34	9.781	
3,600.0	3,561.8	3,590.7	3,580.3	13.2	12.6	155.84	-130.9	36.4	253.8	228.7	25.08	10.120	
3,700.0	3,658.3	3,689.4	3,678.1	13.7	12.9	155.86	-141.6	44.4	269.6	243.7	25.83	10.438	
3,800.0	3,754.8	3,788.2	3,776.0	14.2	13.3	155.88	-152.3	52.4	285.3	258.7	26.58	10.736	
3,900.0	3,851.3	3,886.9	3,873.8	14.6	13.7	155.90	-163.0	60.3	301.1	273.8	27.33	11.017	
4,000.0	3,947.8	3,985.7	3,971.7	15.1	14.0	155.92	-173.8	68.3	316.8	288.8	28.09	11.281	
4,100.0	4,044.3	4,084.4	4,069.5	15.6	14.4	155.93	-184.5	76.3	332.6	303.8	28.85	11.530	
4,200.0	4,140.9	4,183.2	4,167.3	16.1	14.8	155.95	-195.2	84.2	348.4	318.8	29.61	11.766	
4,300.0	4,237.4	4,281.9	4,265.2	16.5	15.2	155.96	-205.9	92.2	364.1	333.7	30.37	11.988	
4,400.0	4,333.9	4,380.7	4,363.0	17.0	15.5	155.97	-216.6	100.1	379.9	348.7	31.14	12.198	
4,500.0	4,430.4	4,479.4	4,460.9	17.5	15.9	155.98	-227.4	108.1	395.6	363.7	31.91	12.398	
4,600.0	4,526.9	4,578.2	4,558.7	18.0	16.3	155.99	-238.1	116.1	411.4	378.7	32.68	12.587	
4,700.0	4,623.4	4,676.9	4,656.6	18.5	16.7	156.00	-248.8	124.0	427.2	393.7	33.46	12.767	
4,800.0	4,719.9	4,775.7	4,754.4	19.0	17.1	156.01	-259.5	132.0	442.9	408.7	34.23	12.938	
4,900.0	4,816.4	4,874.4	4,852.2	19.5	17.5	156.02	-270.2	140.0	458.7	423.7	35.01	13.101	
5,000.0	4,912.9	4,973.2	4,950.1	20.0	17.8	156.03	-281.0	147.9	474.4	438.7	35.79	13.256	
5,100.0	5,009.4	5,071.9	5,047.9	20.5	18.2	156.03	-291.7	155.9	490.2	453.6	36.57	13.404	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	Rule Assigned: Warning
5,200.0	5,106.0	5,170.7	5,145.8	21.0	18.6	156.04	-302.4	163.9	506.0	468.6	37.35	13.545	
5,300.0	5,202.5	5,269.4	5,243.6	21.5	19.0	156.05	-313.1	171.8	521.7	483.6	38.14	13.680	
5,400.0	5,299.0	5,368.2	5,341.5	22.0	19.4	156.05	-323.9	179.8	537.5	498.6	38.92	13.809	
5,500.0	5,395.5	5,466.9	5,439.3	22.5	19.8	156.06	-334.6	187.7	553.2	513.5	39.71	13.932	
5,600.0	5,492.0	5,565.7	5,537.1	23.0	20.2	156.06	-345.3	195.7	569.0	528.5	40.50	14.051	
5,700.0	5,588.5	5,664.4	5,635.0	23.5	20.6	156.07	-356.0	203.7	584.8	543.5	41.28	14.164	
5,800.0	5,685.0	5,763.2	5,732.8	24.0	20.9	156.07	-366.7	211.6	600.5	558.5	42.07	14.273	
5,900.0	5,781.5	5,861.9	5,830.7	24.5	21.3	156.08	-377.5	219.6	616.3	573.4	42.86	14.378	
6,000.0	5,878.0	5,960.7	5,928.5	25.0	21.7	156.08	-388.2	227.6	632.0	588.4	43.65	14.478	
6,100.0	5,974.5	6,059.4	6,026.4	25.5	22.1	156.08	-398.9	235.5	647.8	603.4	44.45	14.575	
6,200.0	6,071.0	6,158.2	6,124.2	26.0	22.5	156.09	-409.6	243.5	663.6	618.3	45.24	14.668	
6,300.0	6,167.6	6,256.9	6,222.0	26.5	22.9	156.09	-420.3	251.5	679.3	633.3	46.03	14.758	
6,400.0	6,264.1	6,355.7	6,319.9	27.0	23.3	156.09	-431.1	259.4	695.1	648.3	46.83	14.844	
6,500.0	6,360.6	6,454.4	6,417.7	27.5	23.7	156.10	-441.8	267.4	710.8	663.2	47.62	14.927	
6,600.0	6,457.1	6,553.2	6,515.6	28.0	24.1	156.10	-452.5	275.3	726.6	678.2	48.42	15.008	
6,700.0	6,553.6	6,651.9	6,613.4	28.5	24.5	156.10	-463.2	283.3	742.4	693.2	49.21	15.085	
6,800.0	6,650.1	6,750.7	6,711.3	29.0	24.9	156.11	-473.9	291.3	758.1	708.1	50.01	15.160	
6,900.0	6,746.6	6,849.4	6,809.1	29.5	25.3	156.11	-484.7	299.2	773.9	723.1	50.81	15.232	
7,000.0	6,843.1	6,948.2	6,906.9	30.0	25.7	156.11	-495.4	307.2	789.6	738.0	51.60	15.302	
7,100.0	6,939.6	7,046.9	7,004.8	30.6	26.0	156.12	-506.1	315.2	805.4	753.0	52.40	15.370	
7,200.0	7,036.1	7,145.7	7,102.6	31.1	26.4	156.12	-516.8	323.1	821.2	768.0	53.20	15.435	
7,300.0	7,132.7	7,244.4	7,200.5	31.6	26.8	156.12	-527.5	331.1	836.9	782.9	54.00	15.499	
7,400.0	7,229.2	7,343.2	7,298.3	32.1	27.2	156.12	-538.3	339.1	852.7	797.9	54.80	15.560	
7,500.0	7,325.7	7,441.9	7,396.2	32.6	27.6	156.12	-549.0	347.0	868.4	812.8	55.60	15.620	
7,600.0	7,422.2	7,540.7	7,494.0	33.1	28.0	156.13	-559.7	355.0	884.2	827.8	56.40	15.678	
7,700.0	7,518.7	7,639.4	7,591.9	33.6	28.4	156.15	-570.4	362.9	899.9	842.7	57.20	15.733	
7,800.0	7,615.8	7,738.5	7,690.0	34.1	28.8	156.20	-581.2	370.9	913.5	855.5	58.00	15.749	
7,900.0	7,713.7	7,837.9	7,788.5	34.6	29.2	156.14	-592.0	379.0	923.9	865.1	58.80	15.712	
8,000.0	7,812.2	7,937.6	7,887.3	35.0	29.6	155.97	-602.8	387.0	931.1	871.5	59.60	15.623	
8,100.0	7,911.3	8,037.4	7,986.1	35.4	30.0	155.69	-613.6	395.0	935.1	874.8	60.39	15.484	
8,200.0	8,010.8	8,137.2	8,085.0	35.8	30.4	155.29	-624.5	403.1	936.1	874.9	61.18	15.299	
8,300.0	8,110.6	8,225.0	8,172.1	36.1	30.8	154.88	-633.5	409.8	934.3	872.4	61.89	15.097	
8,400.0	8,210.5	8,308.5	8,255.2	36.4	31.1	154.51	-640.2	414.8	931.2	868.6	62.53	14.891	
8,500.0	8,310.5	8,400.0	8,346.5	36.7	31.4	-90.42	-645.3	418.6	927.2	864.1	63.18	14.676	
8,600.0	8,410.4	8,476.0	8,422.4	37.0	31.7	90.18	-647.8	420.4	924.7	861.1	63.66	14.525	
8,670.7	8,479.7	8,534.3	8,480.7	37.2	31.9	90.89	-648.6	421.0	924.1	860.2	63.98	14.443	
8,700.0	8,507.8	8,558.6	8,505.0	37.3	32.0	91.31	-648.6	421.0	924.3	860.2	64.09	14.420	
8,800.0	8,598.4	8,649.2	8,595.6	37.7	32.2	93.41	-648.6	421.0	926.2	861.7	64.53	14.353	
8,900.0	8,678.4	8,729.3	8,675.6	38.1	32.5	95.62	-648.6	421.0	932.2	867.4	64.85	14.375	
9,000.0	8,744.3	8,795.1	8,741.5	38.6	32.7	97.08	-648.6	421.0	945.1	880.1	65.06	14.528	
9,100.0	8,793.1	8,843.9	8,790.3	39.0	32.9	96.97	-648.6	421.0	967.2	902.0	65.15	14.847	
9,200.0	8,822.8	8,873.6	8,820.0	39.5	33.0	94.61	-648.6	421.0	999.5	934.4	65.12	15.350	
9,300.0	8,832.0	8,882.8	8,829.2	40.0	33.0	90.00	-648.6	421.0	1,041.5	976.5	64.97	16.030	
9,400.0	8,832.0	8,882.8	8,829.2	40.6	33.0	90.00	-648.6	421.0	1,091.2	1,026.4	64.80	16.840	
9,500.0	8,832.0	8,882.8	8,829.2	41.2	33.0	90.00	-648.6	421.0	1,147.6	1,082.9	64.67	17.745	
9,600.0	8,832.0	8,882.8	8,829.2	41.8	33.0	90.00	-648.6	421.0	1,209.5	1,145.0	64.58	18.731	
9,700.0	8,832.0	8,882.8	8,829.2	42.5	33.0	90.00	-648.6	421.0	1,276.4	1,211.9	64.51	19.785	
9,800.0	8,832.0	10,549.2	9,720.0	43.2	41.7	133.95	-1,629.1	428.6	1,283.5	1,215.1	68.41	18.762	
9,900.0	8,832.0	10,649.2	9,720.0	44.0	42.5	133.95	-1,729.1	429.4	1,283.5	1,213.7	69.78	18.392	
10,000.0	8,832.0	10,749.2	9,720.0	44.8	43.4	133.95	-1,829.1	430.2	1,283.5	1,212.3	71.21	18.024	
10,100.0	8,832.0	10,849.2	9,720.0	45.6	44.2	133.95	-1,929.1	431.0	1,283.5	1,210.8	72.68	17.658	
10,200.0	8,832.0	10,949.2	9,720.0	46.5	45.2	133.95	-2,029.1	431.7	1,283.5	1,209.3	74.20	17.297	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.0	8,832.0	11,049.2	9,720.0	47.4	46.1	133.95	-2,129.1	432.5	1,283.5	1,207.7	75.77	16.940	
10,400.0	8,832.0	11,149.2	9,720.0	48.3	47.1	133.95	-2,229.1	433.3	1,283.5	1,206.1	77.37	16.589	
10,500.0	8,832.0	11,249.2	9,720.0	49.2	48.0	133.95	-2,329.1	434.1	1,283.5	1,204.5	79.01	16.245	
10,600.0	8,832.0	11,349.2	9,720.0	50.2	49.1	133.95	-2,429.1	434.8	1,283.5	1,202.8	80.68	15.907	
10,700.0	8,832.0	11,449.2	9,720.0	51.2	50.1	133.95	-2,529.1	435.6	1,283.5	1,201.1	82.39	15.578	
10,800.0	8,832.0	11,549.2	9,720.0	52.2	51.1	133.95	-2,629.1	436.4	1,283.5	1,199.3	84.13	15.255	
10,900.0	8,832.0	11,649.2	9,720.0	53.2	52.2	133.95	-2,729.1	437.2	1,283.5	1,197.6	85.90	14.941	
11,000.0	8,832.0	11,749.2	9,720.0	54.2	53.3	133.95	-2,829.1	437.9	1,283.5	1,195.8	87.70	14.635	
11,100.0	8,832.0	11,849.2	9,720.0	55.3	54.4	133.95	-2,929.1	438.7	1,283.5	1,193.9	89.52	14.337	
11,200.0	8,832.0	11,949.2	9,720.0	56.4	55.5	133.95	-3,029.1	439.5	1,283.5	1,192.1	91.37	14.047	
11,300.0	8,832.0	12,049.2	9,720.0	57.5	56.7	133.95	-3,129.1	440.3	1,283.5	1,190.2	93.24	13.766	
11,400.0	8,832.0	12,149.2	9,720.0	58.6	57.8	133.95	-3,229.1	441.0	1,283.5	1,188.3	95.13	13.492	
11,500.0	8,832.0	12,249.2	9,720.0	59.7	59.0	133.95	-3,329.1	441.8	1,283.5	1,186.4	97.04	13.226	
11,600.0	8,832.0	12,349.2	9,720.0	60.9	60.1	133.95	-3,429.1	442.6	1,283.5	1,184.5	98.97	12.968	
11,700.0	8,832.0	12,449.2	9,720.0	62.0	61.3	133.95	-3,529.1	443.4	1,283.5	1,182.5	100.92	12.718	
11,800.0	8,832.0	12,549.2	9,720.0	63.2	62.5	133.95	-3,629.1	444.1	1,283.5	1,180.6	102.88	12.475	
11,900.0	8,832.0	12,649.2	9,720.0	64.4	63.7	133.95	-3,729.1	444.9	1,283.5	1,178.6	104.86	12.239	
12,000.0	8,832.0	12,749.2	9,720.0	65.6	65.0	133.95	-3,829.1	445.7	1,283.5	1,176.6	106.86	12.011	
12,100.0	8,832.0	12,849.2	9,720.0	66.8	66.2	133.95	-3,929.1	446.5	1,283.5	1,174.6	108.87	11.789	
12,200.0	8,832.0	12,949.2	9,720.0	68.0	67.4	133.95	-4,029.1	447.3	1,283.5	1,172.6	110.90	11.574	
12,300.0	8,832.0	13,049.2	9,720.0	69.2	68.7	133.95	-4,129.0	448.0	1,283.5	1,170.5	112.93	11.365	
12,400.0	8,832.0	13,149.2	9,720.0	70.4	69.9	133.95	-4,229.0	448.8	1,283.5	1,168.5	114.98	11.162	
12,500.0	8,832.0	13,249.2	9,720.0	71.7	71.2	133.95	-4,329.0	449.6	1,283.5	1,166.4	117.04	10.966	
12,600.0	8,832.0	13,349.2	9,720.0	72.9	72.4	133.95	-4,429.0	450.4	1,283.5	1,164.4	119.12	10.775	
12,700.0	8,832.0	13,449.2	9,720.0	74.2	73.7	133.95	-4,529.0	451.1	1,283.5	1,162.3	121.20	10.590	
12,800.0	8,832.0	13,549.2	9,720.0	75.4	75.0	133.95	-4,629.0	451.9	1,283.5	1,160.2	123.29	10.410	
12,900.0	8,832.0	13,649.2	9,720.0	76.7	76.3	133.95	-4,729.0	452.7	1,283.5	1,158.1	125.39	10.236	
13,000.0	8,832.0	13,749.2	9,720.0	78.0	77.6	133.95	-4,829.0	453.5	1,283.5	1,156.0	127.50	10.066	
13,100.0	8,832.0	13,849.2	9,720.0	79.2	78.9	133.95	-4,929.0	454.2	1,283.5	1,153.8	129.62	9.902	
13,200.0	8,832.0	13,949.2	9,720.0	80.5	80.2	133.95	-5,029.0	455.0	1,283.5	1,151.7	131.74	9.742	
13,300.0	8,832.0	14,049.2	9,720.0	81.8	81.5	133.95	-5,129.0	455.8	1,283.5	1,149.6	133.88	9.587	
13,400.0	8,832.0	14,149.2	9,720.0	83.1	82.8	133.95	-5,229.0	456.6	1,283.5	1,147.4	136.02	9.436	
13,500.0	8,832.0	14,249.2	9,720.0	84.4	84.1	133.95	-5,329.0	457.3	1,283.5	1,145.3	138.17	9.289	
13,600.0	8,832.0	14,349.2	9,720.0	85.7	85.4	133.95	-5,429.0	458.1	1,283.5	1,143.1	140.32	9.147	
13,700.0	8,832.0	14,449.2	9,720.0	87.0	86.7	133.95	-5,529.0	458.9	1,283.5	1,141.0	142.48	9.008	
13,800.0	8,832.0	14,549.2	9,720.0	88.3	88.1	133.95	-5,629.0	459.7	1,283.5	1,138.8	144.65	8.873	
13,900.0	8,832.0	14,649.2	9,720.0	89.7	89.4	133.95	-5,729.0	460.4	1,283.5	1,136.6	146.82	8.742	
14,000.0	8,832.0	14,749.2	9,720.0	91.0	90.7	133.95	-5,829.0	461.2	1,283.5	1,134.5	149.00	8.614	
14,100.0	8,832.0	14,849.2	9,720.0	92.3	92.1	133.95	-5,929.0	462.0	1,283.5	1,132.3	151.18	8.489	
14,200.0	8,832.0	14,949.2	9,720.0	93.6	93.4	133.95	-6,029.0	462.8	1,283.5	1,130.1	153.37	8.368	
14,300.0	8,832.0	15,049.2	9,720.0	95.0	94.8	133.95	-6,129.0	463.5	1,283.5	1,127.9	155.57	8.250	
14,400.0	8,832.0	15,149.2	9,720.0	96.3	96.1	133.95	-6,229.0	464.3	1,283.5	1,125.7	157.76	8.135	
14,500.0	8,832.0	15,249.2	9,720.0	97.6	97.5	133.95	-6,329.0	465.1	1,283.5	1,123.5	159.97	8.023	
14,600.0	8,832.0	15,349.2	9,720.0	99.0	98.8	133.95	-6,429.0	465.9	1,283.5	1,121.3	162.17	7.914	
14,700.0	8,832.0	15,449.2	9,720.0	100.3	100.2	133.95	-6,529.0	466.7	1,283.5	1,119.1	164.39	7.808	
14,800.0	8,832.0	15,549.2	9,720.0	101.7	101.5	133.95	-6,629.0	467.4	1,283.5	1,116.9	166.60	7.704	
14,900.0	8,832.0	15,649.2	9,720.0	103.0	102.9	133.95	-6,729.0	468.2	1,283.5	1,114.6	168.82	7.603	
15,000.0	8,832.0	15,749.2	9,720.0	104.4	104.3	133.95	-6,829.0	469.0	1,283.5	1,112.4	171.04	7.504	
15,100.0	8,832.0	15,849.2	9,720.0	105.7	105.6	133.95	-6,929.0	469.8	1,283.5	1,110.2	173.27	7.407	
15,200.0	8,832.0	15,949.2	9,720.0	107.1	107.0	133.95	-7,029.0	470.5	1,283.5	1,108.0	175.50	7.313	
15,300.0	8,832.0	16,049.2	9,720.0	108.5	108.4	133.95	-7,129.0	471.3	1,283.5	1,105.7	177.73	7.222	
15,400.0	8,832.0	16,149.2	9,720.0	109.8	109.7	133.95	-7,229.0	472.1	1,283.5	1,103.5	179.96	7.132	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
15,500.0	8,832.0	16,249.2	9,720.0	111.2	111.1	133.95	-7,329.0	472.9	1,283.5	1,101.3	182.20	7.044	
15,600.0	8,832.0	16,349.2	9,720.0	112.5	112.5	133.95	-7,428.9	473.6	1,283.5	1,099.0	184.44	6.959	
15,700.0	8,832.0	16,449.2	9,720.0	113.9	113.9	133.95	-7,528.9	474.4	1,283.5	1,096.8	186.69	6.875	
15,800.0	8,832.0	16,549.2	9,720.0	115.3	115.2	133.95	-7,628.9	475.2	1,283.5	1,094.5	188.93	6.793	
15,900.0	8,832.0	16,649.2	9,720.0	116.7	116.6	133.95	-7,728.9	476.0	1,283.5	1,092.3	191.18	6.713	
16,000.0	8,832.0	16,749.2	9,720.0	118.0	118.0	133.95	-7,828.9	476.7	1,283.5	1,090.0	193.43	6.635	
16,100.0	8,832.0	16,849.2	9,720.0	119.4	119.4	133.95	-7,928.9	477.5	1,283.5	1,087.8	195.69	6.559	
16,200.0	8,832.0	16,949.2	9,720.0	120.8	120.8	133.95	-8,028.9	478.3	1,283.5	1,085.5	197.94	6.484	
16,300.0	8,832.0	17,049.2	9,720.0	122.2	122.2	133.95	-8,128.9	479.1	1,283.5	1,083.3	200.20	6.411	
16,400.0	8,832.0	17,149.2	9,720.0	123.5	123.5	133.95	-8,228.9	479.8	1,283.5	1,081.0	202.46	6.339	
16,500.0	8,832.0	17,249.2	9,720.0	124.9	124.9	133.95	-8,328.9	480.6	1,283.5	1,078.7	204.73	6.269	
16,600.0	8,832.0	17,349.2	9,720.0	126.3	126.3	133.95	-8,428.9	481.4	1,283.5	1,076.5	206.99	6.201	
16,700.0	8,832.0	17,449.2	9,720.0	127.7	127.7	133.95	-8,528.9	482.2	1,283.5	1,074.2	209.26	6.133	
16,800.0	8,832.0	17,549.2	9,720.0	129.1	129.1	133.95	-8,628.9	482.9	1,283.5	1,071.9	211.53	6.068	
16,900.0	8,832.0	17,649.2	9,720.0	130.5	130.5	133.95	-8,728.9	483.7	1,283.5	1,069.7	213.80	6.003	
17,000.0	8,832.0	17,749.2	9,720.0	131.9	131.9	133.95	-8,828.9	484.5	1,283.5	1,067.4	216.07	5.940	
17,100.0	8,832.0	17,849.2	9,720.0	133.3	133.3	133.95	-8,928.9	485.3	1,283.5	1,065.1	218.34	5.878	
17,200.0	8,832.0	17,949.2	9,720.0	134.6	134.7	133.95	-9,028.9	486.1	1,283.5	1,062.8	220.62	5.818	
17,300.0	8,832.0	18,049.2	9,720.0	136.0	136.1	133.95	-9,128.9	486.8	1,283.5	1,060.6	222.90	5.758	
17,400.0	8,832.0	18,149.2	9,720.0	137.4	137.5	133.95	-9,228.9	487.6	1,283.5	1,058.3	225.18	5.700	
17,500.0	8,832.0	18,249.2	9,720.0	138.8	138.9	133.95	-9,328.9	488.4	1,283.5	1,056.0	227.46	5.643	
17,600.0	8,832.0	18,349.2	9,720.0	140.2	140.3	133.95	-9,428.9	489.2	1,283.5	1,053.7	229.74	5.587	
17,700.0	8,832.0	18,449.2	9,720.0	141.6	141.7	133.95	-9,528.9	489.9	1,283.5	1,051.4	232.02	5.532	
17,800.0	8,832.0	18,549.2	9,720.0	143.0	143.1	133.95	-9,628.9	490.7	1,283.5	1,049.2	234.31	5.478	
17,900.0	8,832.0	18,649.2	9,720.0	144.4	144.5	133.95	-9,728.9	491.5	1,283.5	1,046.9	236.59	5.425	
18,000.0	8,832.0	18,749.2	9,720.0	145.8	145.9	133.95	-9,828.9	492.3	1,283.5	1,044.6	238.88	5.373	
18,100.0	8,832.0	18,849.2	9,720.0	147.2	147.3	133.95	-9,928.9	493.0	1,283.5	1,042.3	241.17	5.322	
18,200.0	8,832.0	18,949.2	9,720.0	148.6	148.7	133.95	-10,028.9	493.8	1,283.5	1,040.0	243.46	5.272	
18,300.0	8,832.0	19,049.2	9,720.0	150.0	150.1	133.95	-10,128.9	494.6	1,283.5	1,037.7	245.75	5.223	
18,400.0	8,832.0	19,149.2	9,720.0	151.4	151.5	133.95	-10,228.9	495.4	1,283.5	1,035.4	248.04	5.174	
18,500.0	8,832.0	19,249.2	9,720.0	152.8	153.0	133.95	-10,328.9	496.1	1,283.5	1,033.1	250.34	5.127	
18,600.0	8,832.0	19,349.2	9,720.0	154.2	154.4	133.95	-10,428.9	496.9	1,283.5	1,030.8	252.63	5.080	
18,700.0	8,832.0	19,449.2	9,720.0	155.7	155.8	133.95	-10,528.9	497.7	1,283.5	1,028.5	254.93	5.035	
18,800.0	8,832.0	19,549.2	9,720.0	157.1	157.2	133.95	-10,628.9	498.5	1,283.5	1,026.2	257.22	4.990	
18,900.0	8,832.0	19,649.2	9,720.0	158.5	158.6	133.95	-10,728.8	499.2	1,283.5	1,023.9	259.52	4.945	
19,000.0	8,832.0	19,749.2	9,720.0	159.9	160.0	133.95	-10,828.8	500.0	1,283.5	1,021.6	261.82	4.902	
19,100.0	8,832.0	19,849.2	9,720.0	161.3	161.4	133.95	-10,928.8	500.8	1,283.5	1,019.3	264.12	4.859	
19,200.0	8,832.0	19,949.2	9,720.0	162.7	162.8	133.95	-11,028.8	501.6	1,283.5	1,017.0	266.42	4.817	
19,226.4	8,832.0	19,975.6	9,720.0	163.1	163.2	133.95	-11,055.3	501.8	1,283.5	1,016.4	267.03	4.806	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	-90.96	-1.7	-100.1	100.1				
100.0	100.0	96.8	96.8	0.1	0.1	-90.96	-1.7	-100.1	100.1	99.8	0.26	385.996	
200.0	200.0	196.8	196.8	0.5	0.5	-90.96	-1.7	-100.1	100.1	99.1	0.97	103.281	
300.0	300.0	296.8	296.8	0.8	0.8	-90.96	-1.7	-100.1	100.1	98.4	1.69	59.360	
400.0	400.0	396.8	396.8	1.2	1.2	-90.96	-1.7	-100.1	100.1	97.7	2.40	41.648	
500.0	500.0	496.8	496.8	1.6	1.6	-90.96	-1.7	-100.1	100.1	97.0	3.12	32.077	
600.0	600.0	596.8	596.8	1.9	1.9	-90.96	-1.7	-100.1	100.1	96.2	3.84	26.083	
700.0	700.0	696.8	696.8	2.3	2.3	-90.96	-1.7	-100.1	100.1	95.5	4.55	21.977	
800.0	800.0	796.8	796.8	2.6	2.6	-90.96	-1.7	-100.1	100.1	94.8	5.27	18.987	
900.0	900.0	896.8	896.8	3.0	3.0	-90.96	-1.7	-100.1	100.1	94.1	5.99	16.714	
1,000.0	1,000.0	996.8	996.8	3.4	3.3	-90.96	-1.7	-100.1	100.1	93.4	6.70	14.926	
1,100.0	1,100.0	1,096.8	1,096.8	3.7	3.7	-90.96	-1.7	-100.1	100.1	92.7	7.42	13.484	
1,200.0	1,200.0	1,196.8	1,196.8	4.1	4.1	-90.96	-1.7	-100.1	100.1	91.9	8.14	12.297	
1,300.0	1,300.0	1,296.8	1,296.8	4.4	4.4	-90.96	-1.7	-100.1	100.1	91.2	8.86	11.301	
1,400.0	1,400.0	1,396.8	1,396.8	4.8	4.8	-90.96	-1.7	-100.1	100.1	90.5	9.57	10.455	
1,500.0	1,500.0	1,496.8	1,496.8	5.2	5.1	-90.96	-1.7	-100.1	100.1	89.8	10.29	9.726	
1,600.0	1,600.0	1,596.8	1,596.8	5.5	5.5	-90.96	-1.7	-100.1	100.1	89.1	11.01	9.093	
1,700.0	1,700.0	1,696.8	1,696.8	5.9	5.9	-90.96	-1.7	-100.1	100.1	88.4	11.72	8.536	
1,800.0	1,800.0	1,796.8	1,796.8	6.2	6.2	-90.96	-1.7	-100.1	100.1	87.6	12.44	8.045	
1,900.0	1,900.0	1,896.8	1,896.8	6.6	6.6	-90.96	-1.7	-100.1	100.1	86.9	13.16	7.606	
2,000.0	2,000.0	1,996.8	1,996.8	6.9	6.9	-90.96	-1.7	-100.1	100.1	86.2	13.87	7.213	CC, ES
2,100.0	2,100.0	2,095.0	2,094.9	7.3	7.3	153.31	-3.0	-100.9	102.5	87.9	14.55	7.043	
2,200.0	2,199.8	2,192.7	2,192.5	7.6	7.6	152.29	-7.2	-103.4	109.9	94.7	15.20	7.230	
2,300.0	2,299.5	2,289.6	2,289.1	8.0	7.9	150.82	-14.1	-107.7	122.3	106.5	15.84	7.720	
2,400.0	2,398.7	2,385.7	2,384.6	8.3	8.2	149.17	-23.8	-113.6	139.7	123.2	16.48	8.477	
2,500.0	2,497.5	2,483.4	2,481.4	8.7	8.6	148.06	-34.7	-120.3	160.9	143.8	17.15	9.385	
2,600.0	2,595.6	2,580.5	2,577.6	9.0	8.9	147.72	-45.5	-126.9	185.0	167.2	17.82	10.384	
2,700.0	2,693.1	2,676.8	2,673.1	9.4	9.2	147.87	-56.3	-133.5	212.0	193.5	18.50	11.462	
2,800.0	2,789.7	2,772.2	2,767.7	9.8	9.6	148.45	-66.9	-140.1	241.6	222.4	19.18	12.598	
2,900.0	2,886.2	2,867.6	2,862.2	10.2	9.9	149.13	-77.6	-146.6	271.7	251.8	19.86	13.681	
3,000.0	2,982.7	2,962.9	2,956.7	10.6	10.3	149.66	-88.2	-153.1	301.9	281.3	20.55	14.687	
3,100.0	3,079.2	3,058.2	3,051.2	11.0	10.6	150.11	-98.9	-159.7	332.0	310.8	21.25	15.624	
3,200.0	3,175.8	3,153.5	3,145.7	11.5	11.0	150.47	-109.5	-166.2	362.2	340.3	21.96	16.497	
3,300.0	3,272.3	3,248.8	3,240.2	11.9	11.3	150.78	-120.1	-172.7	392.4	369.7	22.67	17.312	
3,400.0	3,368.8	3,344.1	3,334.7	12.3	11.7	151.05	-130.8	-179.2	422.6	399.2	23.38	18.074	
3,500.0	3,465.3	3,439.4	3,429.2	12.8	12.0	151.28	-141.4	-185.8	452.8	428.7	24.10	18.788	
3,600.0	3,561.8	3,534.7	3,523.7	13.2	12.4	151.48	-152.1	-192.3	483.0	458.2	24.83	19.456	
3,700.0	3,658.3	3,630.1	3,618.2	13.7	12.7	151.66	-162.7	-198.8	513.3	487.7	25.56	20.084	
3,800.0	3,754.8	3,725.4	3,712.7	14.2	13.1	151.82	-173.4	-205.3	543.5	517.2	26.29	20.674	
3,900.0	3,851.3	3,820.7	3,807.2	14.6	13.4	151.96	-184.0	-211.9	573.7	546.7	27.02	21.230	
4,000.0	3,947.8	3,916.0	3,901.6	15.1	13.8	152.09	-194.6	-218.4	604.0	576.2	27.76	21.754	
4,100.0	4,044.3	4,011.3	3,996.1	15.6	14.2	152.20	-205.3	-224.9	634.2	605.7	28.50	22.248	
4,200.0	4,140.9	4,106.6	4,090.6	16.1	14.5	152.31	-215.9	-231.4	664.4	635.2	29.25	22.716	
4,300.0	4,237.4	4,201.9	4,185.1	16.5	14.9	152.40	-226.6	-238.0	694.7	664.7	30.00	23.158	
4,400.0	4,333.9	4,297.2	4,279.6	17.0	15.3	152.49	-237.2	-244.5	724.9	694.2	30.75	23.578	
4,500.0	4,430.4	4,392.6	4,374.1	17.5	15.6	152.57	-247.9	-251.0	755.1	723.6	31.50	23.975	
4,600.0	4,526.9	4,487.9	4,468.6	18.0	16.0	152.65	-258.5	-257.5	785.4	753.1	32.25	24.353	
4,700.0	4,623.4	4,583.2	4,563.1	18.5	16.4	152.71	-269.1	-264.1	815.6	782.6	33.01	24.712	
4,800.0	4,719.9	4,678.5	4,657.6	19.0	16.8	152.78	-279.8	-270.6	845.9	812.1	33.76	25.054	
4,900.0	4,816.4	4,773.8	4,752.1	19.5	17.1	152.84	-290.4	-277.1	876.1	841.6	34.52	25.379	
5,000.0	4,912.9	4,869.1	4,846.6	20.0	17.5	152.89	-301.1	-283.6	906.4	871.1	35.28	25.690	
5,100.0	5,009.4	4,964.4	4,941.0	20.5	17.9	152.95	-311.7	-290.2	936.6	900.6	36.04	25.986	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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

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
5,200.0	5,106.0	5,059.7	5,035.5	21.0	18.2	152.99	-322.4	-296.7	966.9	930.1	36.81	26.269	
5,300.0	5,202.5	5,155.0	5,130.0	21.5	18.6	153.04	-333.0	-303.2	997.1	959.5	37.57	26.540	
5,400.0	5,299.0	5,250.4	5,224.5	22.0	19.0	153.08	-343.6	-309.8	1,027.4	989.0	38.34	26.799	
5,500.0	5,395.5	5,345.7	5,319.0	22.5	19.4	153.12	-354.3	-316.3	1,057.6	1,018.5	39.10	27.047	
5,600.0	5,492.0	5,441.0	5,413.5	23.0	19.7	153.16	-364.9	-322.8	1,087.9	1,048.0	39.87	27.285	
5,700.0	5,588.5	5,536.3	5,508.0	23.5	20.1	153.20	-375.6	-329.3	1,118.1	1,077.5	40.64	27.514	
5,800.0	5,685.0	5,631.6	5,602.5	24.0	20.5	153.23	-386.2	-335.9	1,148.4	1,107.0	41.41	27.733	
5,900.0	5,781.5	5,726.9	5,697.0	24.5	20.9	153.27	-396.9	-342.4	1,178.6	1,136.4	42.18	27.943	
6,000.0	5,878.0	5,822.2	5,791.5	25.0	21.2	153.30	-407.5	-348.9	1,208.9	1,165.9	42.95	28.146	
6,100.0	5,974.5	5,917.5	5,886.0	25.5	21.6	153.33	-418.2	-355.4	1,239.1	1,195.4	43.72	28.340	
6,200.0	6,071.0	6,012.9	5,980.4	26.0	22.0	153.35	-428.8	-362.0	1,269.4	1,224.9	44.50	28.528	
6,300.0	6,167.6	6,108.2	6,074.9	26.5	22.4	153.38	-439.4	-368.5	1,299.6	1,254.4	45.27	28.708	
6,400.0	6,264.1	6,203.5	6,169.4	27.0	22.7	153.41	-450.1	-375.0	1,329.9	1,283.8	46.05	28.882	
6,500.0	6,360.6	6,298.8	6,263.9	27.5	23.1	153.43	-460.7	-381.5	1,360.1	1,313.3	46.82	29.050	
6,600.0	6,457.1	6,394.1	6,358.4	28.0	23.5	153.45	-471.4	-388.1	1,390.4	1,342.8	47.60	29.212	
6,700.0	6,553.6	6,489.4	6,452.9	28.5	23.9	153.48	-482.0	-394.6	1,420.6	1,372.3	48.37	29.368	
6,800.0	6,650.1	6,584.7	6,547.4	29.0	24.3	153.50	-492.7	-401.1	1,450.9	1,401.7	49.15	29.519	
6,900.0	6,746.6	6,680.0	6,641.9	29.5	24.6	153.52	-503.3	-407.6	1,481.2	1,431.2	49.93	29.665	
7,000.0	6,843.1	6,775.4	6,736.4	30.0	25.0	153.54	-513.9	-414.2	1,511.4	1,460.7	50.71	29.806	
7,100.0	6,939.6	6,870.7	6,830.9	30.6	25.4	153.56	-524.6	-420.7	1,541.7	1,490.2	51.49	29.943	
7,200.0	7,036.1	6,966.0	6,925.4	31.1	25.8	153.58	-535.2	-427.2	1,571.9	1,519.6	52.27	30.075	
7,300.0	7,132.7	7,061.3	7,019.8	31.6	26.1	153.59	-545.9	-433.8	1,602.2	1,549.1	53.05	30.203	
7,400.0	7,229.2	7,156.6	7,114.3	32.1	26.5	153.61	-556.5	-440.3	1,632.4	1,578.6	53.83	30.327	
7,500.0	7,325.7	7,251.9	7,208.8	32.6	26.9	153.63	-567.2	-446.8	1,662.7	1,608.1	54.61	30.447	
7,600.0	7,422.2	7,347.2	7,303.3	33.1	27.3	153.64	-577.8	-453.3	1,692.9	1,637.5	55.39	30.564	
7,700.0	7,518.7	7,442.6	7,397.8	33.6	27.7	153.71	-588.4	-459.9	1,723.1	1,667.0	56.17	30.676	
7,800.0	7,615.8	7,538.5	7,492.9	34.1	28.0	153.95	-599.2	-466.4	1,751.3	1,694.3	56.95	30.750	
7,900.0	7,713.7	7,635.3	7,588.9	34.6	28.4	154.10	-610.0	-473.1	1,776.4	1,718.7	57.73	30.773	
8,000.0	7,812.2	7,732.7	7,685.5	35.0	28.8	154.18	-620.8	-479.7	1,798.5	1,740.1	58.50	30.747	
8,100.0	7,911.3	7,830.7	7,782.7	35.4	29.2	154.18	-631.8	-486.4	1,817.6	1,758.3	59.26	30.672	
8,200.0	8,010.8	7,952.8	7,903.8	35.8	29.7	154.08	-644.7	-494.4	1,833.3	1,773.1	60.18	30.463	
8,300.0	8,110.6	8,103.6	8,054.0	36.1	30.3	153.98	-655.1	-500.7	1,843.5	1,782.2	61.24	30.103	
8,400.0	8,210.5	8,255.5	8,205.9	36.4	30.8	153.97	-658.7	-502.9	1,847.8	1,785.6	62.20	29.705	
8,500.0	8,310.5	8,356.9	8,307.3	36.7	31.1	-90.63	-658.7	-502.9	1,848.0	1,785.2	62.84	29.410	
8,600.0	8,410.4	8,456.8	8,407.2	37.0	31.4	89.92	-658.7	-502.9	1,848.0	1,784.5	63.47	29.118	
8,618.7	8,428.9	8,475.3	8,425.7	37.0	31.5	90.00	-658.7	-502.9	1,848.0	1,784.4	63.59	29.060	
8,700.0	8,507.8	8,554.2	8,504.6	37.3	31.7	90.57	-658.7	-502.9	1,848.1	1,784.0	64.12	28.824	
8,800.0	8,598.4	8,644.8	8,595.2	37.7	32.0	91.63	-658.7	-502.9	1,849.0	1,784.3	64.76	28.551	
8,900.0	8,678.4	8,724.9	8,675.2	38.1	32.3	92.75	-658.7	-502.9	1,851.9	1,786.6	65.38	28.327	
9,000.0	8,744.3	8,790.7	8,741.1	38.6	32.5	93.50	-658.7	-502.9	1,858.4	1,792.4	65.94	28.182	
9,100.0	8,793.1	8,839.5	8,789.9	39.0	32.6	93.46	-658.7	-502.9	1,869.5	1,803.1	66.42	28.146	
9,200.0	8,822.8	8,869.2	8,819.6	39.5	32.7	92.29	-658.7	-502.9	1,886.3	1,819.5	66.79	28.242	
9,300.0	8,832.0	9,622.3	9,300.0	40.0	36.7	104.30	-1,136.3	-499.2	1,907.1	1,835.6	71.52	26.664	
9,400.0	8,832.0	9,722.3	9,300.0	40.6	37.4	104.30	-1,236.3	-498.5	1,907.1	1,834.3	72.80	26.197	
9,500.0	8,832.0	9,822.3	9,300.0	41.2	38.0	104.30	-1,336.3	-497.7	1,907.1	1,833.0	74.16	25.718	
9,600.0	8,832.0	9,922.3	9,300.0	41.8	38.8	104.30	-1,436.3	-496.9	1,907.1	1,831.5	75.60	25.228	
9,700.0	8,832.0	10,022.3	9,300.0	42.5	39.6	104.30	-1,536.3	-496.1	1,907.1	1,830.0	77.11	24.731	
9,800.0	8,832.0	10,122.3	9,300.0	43.2	40.4	104.30	-1,636.3	-495.4	1,907.1	1,828.4	78.70	24.232	
9,900.0	8,832.0	10,222.3	9,300.0	44.0	41.2	104.30	-1,736.3	-494.6	1,907.1	1,826.8	80.36	23.731	
10,000.0	8,832.0	10,322.3	9,300.0	44.8	42.1	104.30	-1,836.3	-493.8	1,907.1	1,825.0	82.09	23.233	
10,100.0	8,832.0	10,422.3	9,300.0	45.6	43.0	104.30	-1,936.3	-493.0	1,907.1	1,823.3	83.87	22.739	
10,200.0	8,832.0	10,522.3	9,300.0	46.5	44.0	104.30	-2,036.3	-492.2	1,907.1	1,821.4	85.71	22.251	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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

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
10,300.0	8,832.0	10,622.3	9,300.0	47.4	44.9	104.30	-2,136.3	-491.5	1,907.1	1,819.5	87.60	21.770	
10,400.0	8,832.0	10,722.3	9,300.0	48.3	45.9	104.30	-2,236.3	-490.7	1,907.1	1,817.6	89.55	21.298	
10,500.0	8,832.0	10,822.3	9,300.0	49.2	46.9	104.30	-2,336.3	-489.9	1,907.1	1,815.6	91.53	20.835	
10,600.0	8,832.0	10,922.3	9,300.0	50.2	48.0	104.30	-2,436.3	-489.1	1,907.1	1,813.6	93.57	20.382	
10,700.0	8,832.0	11,022.3	9,300.0	51.2	49.0	104.30	-2,536.3	-488.4	1,907.1	1,811.5	95.64	19.940	
10,800.0	8,832.0	11,122.3	9,300.0	52.2	50.1	104.30	-2,636.3	-487.6	1,907.1	1,809.4	97.75	19.510	
10,900.0	8,832.0	11,222.3	9,300.0	53.2	51.2	104.30	-2,736.3	-486.8	1,907.1	1,807.2	99.90	19.090	
11,000.0	8,832.0	11,322.3	9,300.0	54.2	52.3	104.30	-2,836.3	-486.0	1,907.1	1,805.0	102.08	18.682	
11,100.0	8,832.0	11,422.3	9,300.0	55.3	53.4	104.30	-2,936.3	-485.3	1,907.1	1,802.8	104.29	18.286	
11,200.0	8,832.0	11,522.3	9,300.0	56.4	54.6	104.30	-3,036.3	-484.5	1,907.1	1,800.6	106.54	17.901	
11,300.0	8,832.0	11,622.3	9,300.0	57.5	55.7	104.30	-3,136.2	-483.7	1,907.1	1,798.3	108.80	17.528	
11,400.0	8,832.0	11,722.3	9,300.0	58.6	56.9	104.30	-3,236.2	-482.9	1,907.1	1,796.0	111.10	17.166	
11,500.0	8,832.0	11,822.3	9,300.0	59.7	58.1	104.30	-3,336.2	-482.2	1,907.1	1,793.7	113.42	16.815	
11,600.0	8,832.0	11,922.3	9,300.0	60.9	59.3	104.30	-3,436.2	-481.4	1,907.1	1,791.4	115.76	16.475	
11,700.0	8,832.0	12,022.3	9,300.0	62.0	60.5	104.30	-3,536.2	-480.6	1,907.1	1,789.0	118.13	16.145	
11,800.0	8,832.0	12,122.3	9,300.0	63.2	61.7	104.30	-3,636.2	-479.8	1,907.1	1,786.6	120.51	15.825	
11,900.0	8,832.0	12,222.3	9,300.0	64.4	62.9	104.30	-3,736.2	-479.1	1,907.1	1,784.2	122.91	15.516	
12,000.0	8,832.0	12,322.3	9,300.0	65.6	64.2	104.30	-3,836.2	-478.3	1,907.1	1,781.8	125.34	15.216	
12,100.0	8,832.0	12,422.3	9,300.0	66.8	65.4	104.30	-3,936.2	-477.5	1,907.1	1,779.4	127.77	14.926	
12,200.0	8,832.0	12,522.3	9,300.0	68.0	66.7	104.30	-4,036.2	-476.7	1,907.1	1,776.9	130.23	14.645	
12,300.0	8,832.0	12,622.3	9,300.0	69.2	67.9	104.30	-4,136.2	-476.0	1,907.1	1,774.4	132.70	14.372	
12,400.0	8,832.0	12,722.3	9,300.0	70.4	69.2	104.30	-4,236.2	-475.2	1,907.1	1,771.9	135.18	14.108	
12,500.0	8,832.0	12,822.3	9,300.0	71.7	70.5	104.30	-4,336.2	-474.4	1,907.1	1,769.4	137.68	13.852	
12,600.0	8,832.0	12,922.3	9,300.0	72.9	71.8	104.30	-4,436.2	-473.6	1,907.1	1,766.9	140.19	13.604	
12,700.0	8,832.0	13,022.3	9,300.0	74.2	73.0	104.30	-4,536.2	-472.8	1,907.1	1,764.4	142.71	13.364	
12,800.0	8,832.0	13,122.3	9,300.0	75.4	74.3	104.30	-4,636.2	-472.1	1,907.1	1,761.9	145.24	13.131	
12,900.0	8,832.0	13,222.3	9,300.0	76.7	75.6	104.30	-4,736.2	-471.3	1,907.1	1,759.3	147.79	12.904	
13,000.0	8,832.0	13,322.3	9,300.0	78.0	76.9	104.30	-4,836.2	-470.5	1,907.1	1,756.8	150.34	12.685	
13,100.0	8,832.0	13,422.3	9,300.0	79.2	78.2	104.30	-4,936.2	-469.7	1,907.1	1,754.2	152.91	12.472	
13,200.0	8,832.0	13,522.3	9,300.0	80.5	79.6	104.30	-5,036.2	-469.0	1,907.1	1,751.6	155.48	12.266	
13,300.0	8,832.0	13,622.3	9,300.0	81.8	80.9	104.30	-5,136.2	-468.2	1,907.1	1,749.1	158.06	12.065	
13,400.0	8,832.0	13,722.3	9,300.0	83.1	82.2	104.30	-5,236.2	-467.4	1,907.1	1,746.5	160.66	11.871	
13,500.0	8,832.0	13,822.3	9,300.0	84.4	83.5	104.30	-5,336.2	-466.6	1,907.1	1,743.9	163.26	11.682	
13,600.0	8,832.0	13,922.3	9,300.0	85.7	84.9	104.30	-5,436.2	-465.9	1,907.1	1,741.3	165.86	11.498	
13,700.0	8,832.0	14,022.3	9,300.0	87.0	86.2	104.30	-5,536.2	-465.1	1,907.1	1,738.6	168.48	11.320	
13,800.0	8,832.0	14,122.3	9,300.0	88.3	87.5	104.30	-5,636.2	-464.3	1,907.1	1,736.0	171.10	11.146	
13,900.0	8,832.0	14,222.3	9,300.0	89.7	88.9	104.30	-5,736.2	-463.5	1,907.1	1,733.4	173.73	10.978	
14,000.0	8,832.0	14,322.3	9,300.0	91.0	90.2	104.30	-5,836.2	-462.8	1,907.1	1,730.8	176.36	10.814	
14,100.0	8,832.0	14,422.3	9,300.0	92.3	91.6	104.30	-5,936.2	-462.0	1,907.1	1,728.1	179.00	10.654	
14,200.0	8,832.0	14,522.3	9,300.0	93.6	92.9	104.30	-6,036.2	-461.2	1,907.1	1,725.5	181.65	10.499	
14,300.0	8,832.0	14,622.3	9,300.0	95.0	94.3	104.30	-6,136.2	-460.4	1,907.1	1,722.8	184.30	10.348	
14,400.0	8,832.0	14,722.3	9,300.0	96.3	95.6	104.30	-6,236.2	-459.7	1,907.1	1,720.2	186.96	10.201	
14,500.0	8,832.0	14,822.3	9,300.0	97.6	97.0	104.30	-6,336.2	-458.9	1,907.1	1,717.5	189.62	10.058	
14,600.0	8,832.0	14,922.3	9,300.0	99.0	98.4	104.30	-6,436.1	-458.1	1,907.1	1,714.8	192.28	9.918	
14,700.0	8,832.0	15,022.3	9,300.0	100.3	99.7	104.30	-6,536.1	-457.3	1,907.1	1,712.2	194.96	9.782	
14,800.0	8,832.0	15,122.3	9,300.0	101.7	101.1	104.30	-6,636.1	-456.5	1,907.1	1,709.5	197.63	9.650	
14,900.0	8,832.0	15,222.3	9,300.0	103.0	102.5	104.30	-6,736.1	-455.8	1,907.1	1,706.8	200.31	9.521	
15,000.0	8,832.0	15,322.3	9,300.0	104.4	103.8	104.30	-6,836.1	-455.0	1,907.1	1,704.1	203.00	9.395	
15,100.0	8,832.0	15,422.3	9,300.0	105.7	105.2	104.30	-6,936.1	-454.2	1,907.1	1,701.4	205.69	9.272	
15,200.0	8,832.0	15,522.3	9,300.0	107.1	106.6	104.30	-7,036.1	-453.4	1,907.1	1,698.7	208.38	9.152	
15,300.0	8,832.0	15,622.3	9,300.0	108.5	108.0	104.30	-7,136.1	-452.7	1,907.1	1,696.0	211.08	9.035	
15,400.0	8,832.0	15,722.3	9,300.0	109.8	109.3	104.30	-7,236.1	-451.9	1,907.1	1,693.3	213.78	8.921	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
15,500.0	8,832.0	15,822.3	9,300.0	111.2	110.7	104.30	-7,336.1	-451.1	1,907.1	1,690.6	216.48	8.810	
15,600.0	8,832.0	15,922.3	9,300.0	112.5	112.1	104.30	-7,436.1	-450.3	1,907.1	1,687.9	219.19	8.701	
15,700.0	8,832.0	16,022.3	9,300.0	113.9	113.5	104.30	-7,536.1	-449.6	1,907.1	1,685.2	221.90	8.595	
15,800.0	8,832.0	16,122.3	9,300.0	115.3	114.9	104.30	-7,636.1	-448.8	1,907.1	1,682.5	224.61	8.491	
15,900.0	8,832.0	16,222.3	9,300.0	116.7	116.2	104.30	-7,736.1	-448.0	1,907.1	1,679.8	227.32	8.389	
16,000.0	8,832.0	16,322.3	9,300.0	118.0	117.6	104.30	-7,836.1	-447.2	1,907.1	1,677.1	230.04	8.290	
16,100.0	8,832.0	16,422.3	9,300.0	119.4	119.0	104.30	-7,936.1	-446.5	1,907.1	1,674.4	232.76	8.193	
16,200.0	8,832.0	16,522.3	9,300.0	120.8	120.4	104.30	-8,036.1	-445.7	1,907.1	1,671.6	235.49	8.099	
16,300.0	8,832.0	16,622.3	9,300.0	122.2	121.8	104.30	-8,136.1	-444.9	1,907.1	1,668.9	238.21	8.006	
16,400.0	8,832.0	16,722.3	9,300.0	123.5	123.2	104.30	-8,236.1	-444.1	1,907.1	1,666.2	240.94	7.915	
16,500.0	8,832.0	16,822.3	9,300.0	124.9	124.6	104.30	-8,336.1	-443.4	1,907.1	1,663.4	243.67	7.827	
16,600.0	8,832.0	16,922.3	9,300.0	126.3	126.0	104.30	-8,436.1	-442.6	1,907.1	1,660.7	246.41	7.740	
16,700.0	8,832.0	17,022.3	9,300.0	127.7	127.4	104.30	-8,536.1	-441.8	1,907.1	1,658.0	249.14	7.655	
16,800.0	8,832.0	17,122.3	9,300.0	129.1	128.8	104.30	-8,636.1	-441.0	1,907.1	1,655.2	251.88	7.571	
16,900.0	8,832.0	17,222.3	9,300.0	130.5	130.2	104.30	-8,736.1	-440.3	1,907.1	1,652.5	254.62	7.490	
17,000.0	8,832.0	17,322.3	9,300.0	131.9	131.6	104.30	-8,836.1	-439.5	1,907.1	1,649.8	257.36	7.410	
17,100.0	8,832.0	17,422.3	9,300.0	133.3	133.0	104.30	-8,936.1	-438.7	1,907.1	1,647.0	260.11	7.332	
17,200.0	8,832.0	17,522.3	9,300.0	134.6	134.4	104.30	-9,036.1	-437.9	1,907.1	1,644.3	262.85	7.255	
17,300.0	8,832.0	17,622.3	9,300.0	136.0	135.8	104.30	-9,136.1	-437.1	1,907.1	1,641.5	265.60	7.180	
17,400.0	8,832.0	17,722.3	9,300.0	137.4	137.2	104.30	-9,236.1	-436.4	1,907.1	1,638.8	268.35	7.107	
17,500.0	8,832.0	17,822.3	9,300.0	138.8	138.6	104.30	-9,336.1	-435.6	1,907.1	1,636.0	271.10	7.035	
17,600.0	8,832.0	17,922.3	9,300.0	140.2	140.0	104.30	-9,436.1	-434.8	1,907.1	1,633.3	273.86	6.964	
17,700.0	8,832.0	18,022.3	9,300.0	141.6	141.4	104.30	-9,536.1	-434.0	1,907.1	1,630.5	276.61	6.895	
17,800.0	8,832.0	18,122.3	9,300.0	143.0	142.8	104.30	-9,636.1	-433.3	1,907.1	1,627.8	279.37	6.827	
17,900.0	8,832.0	18,222.3	9,300.0	144.4	144.2	104.30	-9,736.1	-432.5	1,907.1	1,625.0	282.13	6.760	
18,000.0	8,832.0	18,322.3	9,300.0	145.8	145.7	104.30	-9,836.0	-431.7	1,907.1	1,622.2	284.88	6.694	
18,100.0	8,832.0	18,422.3	9,300.0	147.2	147.1	104.30	-9,936.0	-430.9	1,907.1	1,619.5	287.65	6.630	
18,200.0	8,832.0	18,522.3	9,300.0	148.6	148.5	104.30	-10,036.0	-430.2	1,907.1	1,616.7	290.41	6.567	
18,300.0	8,832.0	18,622.3	9,300.0	150.0	149.9	104.30	-10,136.0	-429.4	1,907.1	1,614.0	293.17	6.505	
18,400.0	8,832.0	18,722.3	9,300.0	151.4	151.3	104.30	-10,236.0	-428.6	1,907.1	1,611.2	295.94	6.444	
18,500.0	8,832.0	18,822.3	9,300.0	152.8	152.7	104.30	-10,336.0	-427.8	1,907.1	1,608.4	298.70	6.385	
18,600.0	8,832.0	18,922.3	9,300.0	154.2	154.1	104.30	-10,436.0	-427.1	1,907.1	1,605.7	301.47	6.326	
18,700.0	8,832.0	19,022.3	9,300.0	155.7	155.5	104.30	-10,536.0	-426.3	1,907.1	1,602.9	304.24	6.269	
18,800.0	8,832.0	19,122.3	9,300.0	157.1	157.0	104.30	-10,636.0	-425.5	1,907.1	1,600.1	307.01	6.212	
18,900.0	8,832.0	19,222.3	9,300.0	158.5	158.4	104.30	-10,736.0	-424.7	1,907.1	1,597.3	309.78	6.156	
19,000.0	8,832.0	19,322.3	9,300.0	159.9	159.8	104.30	-10,836.0	-424.0	1,907.1	1,594.6	312.55	6.102	
19,100.0	8,832.0	19,422.3	9,300.0	161.3	161.2	104.30	-10,936.0	-423.2	1,907.1	1,591.8	315.32	6.048	
19,200.0	8,832.0	19,522.3	9,300.0	162.7	162.6	104.30	-11,036.0	-422.4	1,907.1	1,589.0	318.10	5.995	
19,226.4	8,832.0	19,548.7	9,300.0	163.1	163.0	104.30	-11,062.4	-422.2	1,907.1	1,588.3	318.83	5.982 SF	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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	0.0	0.0	0.0	0.0	-90.86	-0.3	-20.0	20.0				
100.0	100.0	100.0	100.0	0.1	0.1	-90.86	-0.3	-20.0	20.0	19.7	0.26	75.954	
200.0	200.0	200.0	200.0	0.5	0.5	-90.86	-0.3	-20.0	20.0	19.0	0.98	20.412	
300.0	300.0	300.0	300.0	0.8	0.8	-90.86	-0.3	-20.0	20.0	18.3	1.70	11.790	
400.0	400.0	400.0	400.0	1.2	1.2	-90.86	-0.3	-20.0	20.0	17.6	2.41	8.289	
500.0	500.0	500.0	500.0	1.6	1.6	-90.86	-0.3	-20.0	20.0	16.9	3.13	6.391	
600.0	600.0	600.0	600.0	1.9	1.9	-90.86	-0.3	-20.0	20.0	16.2	3.85	5.200	
700.0	700.0	700.0	700.0	2.3	2.3	-90.86	-0.3	-20.0	20.0	15.4	4.57	4.384	
800.0	800.0	800.0	800.0	2.6	2.6	-90.86	-0.3	-20.0	20.0	14.7	5.28	3.789	
900.0	900.0	900.0	900.0	3.0	3.0	-90.86	-0.3	-20.0	20.0	14.0	6.00	3.336	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	-90.86	-0.3	-20.0	20.0	13.3	6.72	2.980	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	-90.86	-0.3	-20.0	20.0	12.6	7.43	2.692	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	-90.86	-0.3	-20.0	20.0	11.9	8.15	2.456	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	-90.86	-0.3	-20.0	20.0	11.1	8.87	2.257	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	-90.86	-0.3	-20.0	20.0	10.4	9.58	2.088	
1,500.0	1,500.0	1,500.0	1,500.0	5.2	5.2	-90.86	-0.3	-20.0	20.0	9.7	10.30	1.943	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	-90.86	-0.3	-20.0	20.0	9.0	11.02	1.816	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	-90.86	-0.3	-20.0	20.0	8.3	11.73	1.705	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	-90.86	-0.3	-20.0	20.0	7.6	12.45	1.607	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	-90.86	-0.3	-20.0	20.0	6.8	13.17	1.520	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	-90.86	-0.3	-20.0	20.0	6.1	13.89	1.441	Level 3, CC
2,100.0	2,100.0	2,100.3	2,100.3	7.3	7.3	155.30	-0.5	-19.6	21.2	6.6	14.58	1.453	Level 3
2,200.0	2,199.8	2,201.0	2,200.9	7.6	7.6	157.06	-2.0	-16.4	22.8	7.5	15.24	1.495	Level 3
2,300.0	2,299.5	2,301.8	2,301.4	8.0	8.0	158.53	-5.1	-10.0	24.4	8.5	15.89	1.534	
2,400.0	2,398.7	2,402.6	2,401.7	8.3	8.3	159.76	-9.7	-0.5	25.9	9.4	16.52	1.571	
2,500.0	2,497.5	2,503.4	2,501.6	8.7	8.7	160.78	-15.8	12.3	27.5	10.4	17.14	1.605	
2,600.0	2,595.6	2,604.4	2,600.9	9.0	9.0	161.64	-23.5	28.2	29.1	11.3	17.75	1.638	
2,700.0	2,693.1	2,705.4	2,699.7	9.4	9.4	162.36	-32.7	47.2	30.6	12.3	18.35	1.668	
2,800.0	2,789.7	2,805.7	2,797.2	9.8	9.8	163.19	-43.0	68.6	32.5	13.5	19.01	1.712	
2,900.0	2,886.2	2,905.7	2,894.2	10.2	10.2	164.11	-53.4	90.2	34.9	15.1	19.71	1.768	
3,000.0	2,982.7	3,005.6	2,991.3	10.6	10.6	164.91	-63.7	111.7	37.2	16.8	20.42	1.821	
3,100.0	3,079.2	3,105.6	3,088.4	11.0	11.0	165.62	-74.1	133.2	39.5	18.4	21.14	1.869	
3,200.0	3,175.8	3,205.6	3,185.5	11.5	11.4	166.25	-84.5	154.7	41.8	20.0	21.87	1.914	
3,300.0	3,272.3	3,305.6	3,282.5	11.9	11.8	166.81	-94.8	176.2	44.2	21.6	22.59	1.956	
3,400.0	3,368.8	3,405.5	3,379.6	12.3	12.2	167.32	-105.2	197.7	46.5	23.2	23.33	1.995	
3,500.0	3,465.3	3,505.5	3,476.7	12.8	12.7	167.77	-115.6	219.3	48.9	24.8	24.07	2.031	
3,600.0	3,561.8	3,605.5	3,573.8	13.2	13.1	168.19	-125.9	240.8	51.2	26.4	24.81	2.065	
3,700.0	3,658.3	3,705.5	3,670.8	13.7	13.6	168.57	-136.3	262.3	53.6	28.0	25.56	2.097	
3,800.0	3,754.8	3,805.4	3,767.9	14.2	14.0	168.91	-146.6	283.8	55.9	29.6	26.31	2.126	
3,900.0	3,851.3	3,905.4	3,865.0	14.6	14.4	169.23	-157.0	305.3	58.3	31.2	27.06	2.154	
4,000.0	3,947.8	4,005.4	3,962.1	15.1	14.9	169.53	-167.4	326.9	60.7	32.8	27.82	2.180	
4,100.0	4,044.3	4,105.3	4,059.1	15.6	15.3	169.80	-177.7	348.4	63.0	34.4	28.57	2.205	
4,200.0	4,140.9	4,205.3	4,156.2	16.1	15.8	170.05	-188.1	369.9	65.4	36.0	29.33	2.229	
4,300.0	4,237.4	4,305.3	4,253.3	16.5	16.3	170.29	-198.5	391.4	67.7	37.6	30.10	2.251	
4,400.0	4,333.9	4,405.3	4,350.4	17.0	16.7	170.50	-208.8	412.9	70.1	39.2	30.86	2.271	
4,500.0	4,430.4	4,505.2	4,447.5	17.5	17.2	170.71	-219.2	434.4	72.5	40.8	31.63	2.291	
4,600.0	4,526.9	4,605.2	4,544.5	18.0	17.6	170.90	-229.6	456.0	74.8	42.4	32.40	2.310	
4,700.0	4,623.4	4,705.2	4,641.6	18.5	18.1	171.08	-239.9	477.5	77.2	44.0	33.17	2.327	
4,800.0	4,719.9	4,805.1	4,738.7	19.0	18.6	171.25	-250.3	499.0	79.6	45.6	33.94	2.344	
4,900.0	4,816.4	4,905.1	4,835.8	19.5	19.1	171.41	-260.7	520.5	81.9	47.2	34.71	2.360	
5,000.0	4,912.9	5,005.1	4,932.8	20.0	19.5	171.56	-271.0	542.0	84.3	48.8	35.48	2.376	
5,100.0	5,009.4	5,105.1	5,029.9	20.5	20.0	171.70	-281.4	563.6	86.7	50.4	36.26	2.390	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
5,200.0	5,106.0	5,205.0	5,127.0	21.0	20.5	171.84	-291.8	585.1	89.0	52.0	37.04	2.404	
5,300.0	5,202.5	5,305.0	5,224.1	21.5	20.9	171.96	-302.1	606.6	91.4	53.6	37.81	2.417	
5,400.0	5,299.0	5,405.0	5,321.1	22.0	21.4	172.09	-312.5	628.1	93.8	55.2	38.59	2.430	
5,500.0	5,395.5	5,504.9	5,418.2	22.5	21.9	172.20	-322.9	649.6	96.1	56.8	39.37	2.442	
5,600.0	5,492.0	5,604.9	5,515.3	23.0	22.4	172.31	-333.2	671.2	98.5	58.4	40.15	2.454	
5,700.0	5,588.5	5,704.9	5,612.4	23.5	22.8	172.42	-343.6	692.7	100.9	60.0	40.93	2.465	
5,800.0	5,685.0	5,804.9	5,709.4	24.0	23.3	172.52	-354.0	714.2	103.3	61.5	41.71	2.475	
5,900.0	5,781.5	5,904.8	5,806.5	24.5	23.8	172.61	-364.3	735.7	105.6	63.1	42.50	2.486	
6,000.0	5,878.0	6,004.8	5,903.6	25.0	24.3	172.70	-374.7	757.2	108.0	64.7	43.28	2.495	
6,100.0	5,974.5	6,104.8	6,000.7	25.5	24.8	172.79	-385.0	778.7	110.4	66.3	44.06	2.505	
6,200.0	6,071.0	6,204.7	6,097.8	26.0	25.2	172.87	-395.4	800.3	112.7	67.9	44.85	2.514	
6,300.0	6,167.6	6,304.7	6,194.8	26.5	25.7	172.95	-405.8	821.8	115.1	69.5	45.63	2.523	
6,400.0	6,264.1	6,404.7	6,291.9	27.0	26.2	173.03	-416.1	843.3	117.5	71.1	46.42	2.531	
6,500.0	6,360.6	6,504.7	6,389.0	27.5	26.7	173.10	-426.5	864.8	119.9	72.7	47.21	2.539	
6,600.0	6,457.1	6,604.6	6,486.1	28.0	27.2	173.17	-436.9	886.3	122.2	74.2	47.99	2.547	
6,700.0	6,553.6	6,704.6	6,583.1	28.5	27.7	173.24	-447.2	907.9	124.6	75.8	48.78	2.554	
6,800.0	6,650.1	6,804.6	6,680.2	29.0	28.1	173.31	-457.6	929.4	127.0	77.4	49.57	2.562	
6,900.0	6,746.6	6,904.5	6,777.3	29.5	28.6	173.37	-468.0	950.9	129.4	79.0	50.36	2.569	
7,000.0	6,843.1	7,004.5	6,874.4	30.0	29.1	173.43	-478.3	972.4	131.7	80.6	51.15	2.576	
7,100.0	6,939.6	7,104.5	6,971.4	30.6	29.6	173.49	-488.7	993.9	134.1	82.2	51.93	2.582	
7,200.0	7,036.1	7,204.5	7,068.5	31.1	30.1	173.55	-499.1	1,015.4	136.5	83.8	52.72	2.589	
7,300.0	7,132.7	7,304.4	7,165.6	31.6	30.6	173.60	-509.4	1,037.0	138.9	85.3	53.51	2.595	
7,400.0	7,229.2	7,404.4	7,262.7	32.1	31.1	173.66	-519.8	1,058.5	141.2	86.9	54.30	2.601	
7,500.0	7,325.7	7,504.4	7,359.8	32.6	31.5	173.71	-530.2	1,080.0	143.6	88.5	55.10	2.606	
7,600.0	7,422.2	7,604.3	7,456.8	33.1	32.0	173.76	-540.5	1,101.5	146.0	90.1	55.89	2.612	
7,700.0	7,518.7	7,704.3	7,553.9	33.6	32.5	173.80	-550.9	1,123.0	148.3	91.6	56.68	2.616	
7,800.0	7,615.8	7,804.3	7,651.0	34.1	33.0	173.75	-561.3	1,144.6	148.2	90.8	57.47	2.580	
7,900.0	7,713.7	7,904.2	7,748.0	34.6	33.5	173.54	-571.6	1,166.1	144.7	86.5	58.26	2.484	
8,000.0	7,812.2	8,004.0	7,844.9	35.0	34.0	173.13	-582.0	1,187.5	137.8	78.7	59.05	2.333	
8,100.0	7,911.3	8,103.4	7,941.5	35.4	34.5	172.48	-592.3	1,208.9	127.4	67.5	59.85	2.128	
8,200.0	8,010.8	8,202.4	8,037.6	35.8	34.9	171.45	-602.5	1,230.2	113.5	52.9	60.66	1.872	
8,300.0	8,110.6	8,297.7	8,130.5	36.1	35.4	170.01	-611.7	1,249.4	98.0	36.4	61.54	1.592	
8,400.0	8,210.5	8,393.5	8,224.5	36.4	35.8	168.01	-619.6	1,265.8	82.3	19.9	62.42	1.319	Level 3
8,500.0	8,310.5	8,489.8	8,319.7	36.7	36.2	-79.35	-626.2	1,279.4	67.3	4.0	63.33	1.063	Level 2
8,600.0	8,410.4	8,587.1	8,416.2	37.0	36.6	101.79	-631.4	1,290.2	56.0	-7.9	63.91	0.877	Level 1
8,658.8	8,468.3	8,644.1	8,472.9	37.2	36.8	111.32	-633.8	1,295.2	53.4	-10.1	63.50	0.840	Level 1, ES, SF
8,700.0	8,507.8	8,683.1	8,511.8	37.3	37.0	121.49	-635.2	1,298.0	55.3	-8.3	63.60	0.869	Level 1
8,800.0	8,598.4	8,772.8	8,601.3	37.7	37.3	144.98	-637.4	1,302.7	80.5	13.6	66.91	1.203	Level 2
8,900.0	8,678.4	8,851.3	8,679.8	38.1	37.5	156.89	-638.4	1,304.7	133.3	63.5	69.90	1.908	
9,000.0	8,744.3	8,915.8	8,744.3	38.6	37.7	161.09	-638.5	1,305.0	205.9	134.5	71.44	2.882	
9,100.0	8,793.1	8,964.6	8,793.1	39.0	37.8	160.72	-638.5	1,305.0	291.8	219.5	72.31	4.035	
9,200.0	8,822.8	8,995.5	8,823.9	39.5	37.9	152.36	-638.5	1,305.0	386.4	313.6	72.83	5.306	
9,300.0	8,832.0	9,751.9	9,300.0	40.0	41.4	179.31	-1,122.4	1,343.1	468.0	431.9	36.09	12.966	
9,400.0	8,832.0	9,851.7	9,300.0	40.6	42.0	179.93	-1,222.0	1,348.9	468.0	431.5	36.44	12.844	
9,419.0	8,832.0	9,870.7	9,300.0	40.7	42.1	180.00	-1,241.0	1,349.6	468.0	431.4	36.52	12.813	
9,500.0	8,832.0	9,951.7	9,300.0	41.2	42.6	-179.88	-1,322.0	1,351.2	468.0	431.0	36.96	12.660	
9,600.0	8,832.0	10,051.7	9,300.0	41.8	43.2	-179.88	-1,421.9	1,352.0	468.0	430.3	37.62	12.440	
9,700.0	8,832.0	10,151.7	9,300.0	42.5	43.9	-179.88	-1,521.9	1,352.8	468.0	429.6	38.32	12.211	
9,800.0	8,832.0	10,251.7	9,300.0	43.2	44.6	-179.88	-1,621.9	1,353.5	468.0	428.9	39.08	11.975	
9,900.0	8,832.0	10,351.7	9,300.0	44.0	45.4	-179.89	-1,721.9	1,354.3	468.0	428.1	39.88	11.734	
10,000.0	8,832.0	10,451.7	9,300.0	44.8	46.1	-179.89	-1,821.9	1,355.1	468.0	427.2	40.73	11.490	
10,100.0	8,832.0	10,551.7	9,300.0	45.6	46.9	-179.89	-1,921.9	1,355.8	468.0	426.3	41.62	11.244	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	8,832.0	10,651.7	9,300.0	46.5	47.8	-179.89	-2,021.9	1,356.6	468.0	425.4	42.55	10.999	
10,300.0	8,832.0	10,751.7	9,300.0	47.4	48.6	-179.89	-2,121.9	1,357.4	468.0	424.5	43.51	10.755	
10,400.0	8,832.0	10,851.7	9,300.0	48.3	49.5	-179.89	-2,221.9	1,358.1	468.0	423.5	44.51	10.513	
10,500.0	8,832.0	10,951.7	9,300.0	49.2	50.5	-179.89	-2,321.9	1,358.9	468.0	422.4	45.55	10.275	
10,600.0	8,832.0	11,051.7	9,300.0	50.2	51.4	-179.89	-2,421.9	1,359.7	468.0	421.4	46.61	10.041	
10,700.0	8,832.0	11,151.7	9,300.0	51.2	52.4	-179.90	-2,521.9	1,360.4	468.0	420.3	47.70	9.811	
10,800.0	8,832.0	11,251.7	9,300.0	52.2	53.4	-179.90	-2,621.9	1,361.2	468.0	419.2	48.81	9.587	
10,900.0	8,832.0	11,351.7	9,300.0	53.2	54.4	-179.90	-2,721.9	1,362.0	468.0	418.0	49.95	9.368	
11,000.0	8,832.0	11,451.7	9,300.0	54.2	55.4	-179.90	-2,821.9	1,362.7	468.0	416.9	51.12	9.155	
11,100.0	8,832.0	11,551.7	9,300.0	55.3	56.4	-179.90	-2,921.9	1,363.5	468.0	415.7	52.30	8.947	
11,200.0	8,832.0	11,651.7	9,300.0	56.4	57.5	-179.90	-3,021.9	1,364.3	468.0	414.5	53.51	8.746	
11,300.0	8,832.0	11,751.7	9,300.0	57.5	58.6	-179.90	-3,121.9	1,365.0	468.0	413.2	54.73	8.550	
11,400.0	8,832.0	11,851.7	9,300.0	58.6	59.7	-179.90	-3,221.9	1,365.8	468.0	412.0	55.97	8.361	
11,500.0	8,832.0	11,951.7	9,300.0	59.7	60.8	-179.91	-3,321.9	1,366.6	468.0	410.7	57.23	8.177	
11,600.0	8,832.0	12,051.7	9,300.0	60.9	61.9	-179.91	-3,421.9	1,367.3	468.0	409.5	58.50	8.000	
11,700.0	8,832.0	12,151.7	9,300.0	62.0	63.1	-179.91	-3,521.9	1,368.1	468.0	408.2	59.79	7.828	
11,800.0	8,832.0	12,251.7	9,300.0	63.2	64.2	-179.91	-3,621.9	1,368.9	468.0	406.9	61.08	7.661	
11,900.0	8,832.0	12,351.7	9,300.0	64.4	65.4	-179.91	-3,721.9	1,369.6	468.0	405.6	62.40	7.500	
12,000.0	8,832.0	12,451.7	9,300.0	65.6	66.5	-179.91	-3,821.9	1,370.4	468.0	404.3	63.72	7.344	
12,100.0	8,832.0	12,551.7	9,300.0	66.8	67.7	-179.91	-3,921.9	1,371.2	468.0	402.9	65.05	7.194	
12,200.0	8,832.0	12,651.7	9,300.0	68.0	68.9	-179.91	-4,021.9	1,371.9	468.0	401.6	66.40	7.048	
12,300.0	8,832.0	12,751.7	9,300.0	69.2	70.1	-179.92	-4,121.9	1,372.7	468.0	400.2	67.75	6.907	
12,400.0	8,832.0	12,851.7	9,300.0	70.4	71.3	-179.92	-4,221.9	1,373.4	468.0	398.9	69.12	6.771	
12,500.0	8,832.0	12,951.7	9,300.0	71.7	72.6	-179.92	-4,321.9	1,374.2	468.0	397.5	70.49	6.639	
12,600.0	8,832.0	13,051.7	9,300.0	72.9	73.8	-179.92	-4,421.9	1,375.0	468.0	396.1	71.87	6.512	
12,700.0	8,832.0	13,151.7	9,300.0	74.2	75.0	-179.92	-4,521.9	1,375.7	468.0	394.7	73.26	6.388	
12,800.0	8,832.0	13,251.7	9,300.0	75.4	76.3	-179.92	-4,621.9	1,376.5	468.0	393.3	74.65	6.269	
12,900.0	8,832.0	13,351.7	9,300.0	76.7	77.5	-179.92	-4,721.9	1,377.3	468.0	391.9	76.05	6.153	
13,000.0	8,832.0	13,451.7	9,300.0	78.0	78.8	-179.92	-4,821.8	1,378.0	468.0	390.5	77.46	6.042	
13,100.0	8,832.0	13,551.7	9,300.0	79.2	80.1	-179.93	-4,921.8	1,378.8	468.0	389.1	78.87	5.933	
13,200.0	8,832.0	13,651.7	9,300.0	80.5	81.3	-179.93	-5,021.8	1,379.6	468.0	387.7	80.29	5.828	
13,300.0	8,832.0	13,751.7	9,300.0	81.8	82.6	-179.93	-5,121.8	1,380.3	468.0	386.3	81.72	5.727	
13,400.0	8,832.0	13,851.7	9,300.0	83.1	83.9	-179.93	-5,221.8	1,381.1	468.0	384.8	83.15	5.628	
13,500.0	8,832.0	13,951.7	9,300.0	84.4	85.2	-179.93	-5,321.8	1,381.9	468.0	383.4	84.59	5.533	
13,600.0	8,832.0	14,051.7	9,300.0	85.7	86.5	-179.93	-5,421.8	1,382.6	468.0	382.0	86.03	5.440	
13,700.0	8,832.0	14,151.7	9,300.0	87.0	87.8	-179.93	-5,521.8	1,383.4	468.0	380.5	87.47	5.350	
13,800.0	8,832.0	14,251.7	9,300.0	88.3	89.1	-179.93	-5,621.8	1,384.2	468.0	379.1	88.92	5.263	
13,900.0	8,832.0	14,351.7	9,300.0	89.7	90.4	-179.93	-5,721.8	1,384.9	468.0	377.6	90.37	5.178	
14,000.0	8,832.0	14,451.7	9,300.0	91.0	91.7	-179.94	-5,821.8	1,385.7	468.0	376.2	91.83	5.096	
14,100.0	8,832.0	14,551.7	9,300.0	92.3	93.0	-179.94	-5,921.8	1,386.5	468.0	374.7	93.29	5.016	
14,200.0	8,832.0	14,651.7	9,300.0	93.6	94.3	-179.94	-6,021.8	1,387.2	468.0	373.2	94.76	4.939	
14,300.0	8,832.0	14,751.7	9,300.0	95.0	95.7	-179.94	-6,121.8	1,388.0	468.0	371.8	96.22	4.864	
14,400.0	8,832.0	14,851.7	9,300.0	96.3	97.0	-179.94	-6,221.8	1,388.8	468.0	370.3	97.69	4.790	
14,500.0	8,832.0	14,951.7	9,300.0	97.6	98.3	-179.94	-6,321.8	1,389.5	468.0	368.8	99.17	4.719	
14,600.0	8,832.0	15,051.7	9,300.0	99.0	99.7	-179.94	-6,421.8	1,390.3	468.0	367.3	100.64	4.650	
14,700.0	8,832.0	15,151.7	9,300.0	100.3	101.0	-179.94	-6,521.8	1,391.1	468.0	365.9	102.12	4.583	
14,800.0	8,832.0	15,251.7	9,300.0	101.7	102.3	-179.95	-6,621.8	1,391.8	468.0	364.4	103.61	4.517	
14,900.0	8,832.0	15,351.7	9,300.0	103.0	103.7	-179.95	-6,721.8	1,392.6	468.0	362.9	105.09	4.453	
15,000.0	8,832.0	15,451.7	9,300.0	104.4	105.0	-179.95	-6,821.8	1,393.4	468.0	361.4	106.58	4.391	
15,100.0	8,832.0	15,551.7	9,300.0	105.7	106.4	-179.95	-6,921.8	1,394.1	468.0	359.9	108.07	4.331	
15,200.0	8,832.0	15,651.7	9,300.0	107.1	107.7	-179.95	-7,021.8	1,394.9	468.0	358.4	109.56	4.272	
15,300.0	8,832.0	15,751.7	9,300.0	108.5	109.1	-179.95	-7,121.8	1,395.7	468.0	356.9	111.05	4.214	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
15,400.0	8,832.0	15,851.7	9,300.0	109.8	110.4	-179.95	-7,221.8	1,396.4	468.0	355.4	112.55	4.158	
15,500.0	8,832.0	15,951.7	9,300.0	111.2	111.8	-179.95	-7,321.8	1,397.2	468.0	353.9	114.05	4.103	
15,600.0	8,832.0	16,051.7	9,300.0	112.5	113.1	-179.96	-7,421.8	1,398.0	468.0	352.4	115.55	4.050	
15,700.0	8,832.0	16,151.7	9,300.0	113.9	114.5	-179.96	-7,521.8	1,398.7	468.0	350.9	117.05	3.998	
15,800.0	8,832.0	16,251.7	9,300.0	115.3	115.9	-179.96	-7,621.8	1,399.5	468.0	349.4	118.55	3.948	
15,900.0	8,832.0	16,351.7	9,300.0	116.7	117.2	-179.96	-7,721.8	1,400.3	468.0	347.9	120.06	3.898	
16,000.0	8,832.0	16,451.7	9,300.0	118.0	118.6	-179.96	-7,821.8	1,401.0	468.0	346.4	121.56	3.850	
16,100.0	8,832.0	16,551.7	9,300.0	119.4	120.0	-179.96	-7,921.8	1,401.8	468.0	344.9	123.07	3.803	
16,200.0	8,832.0	16,651.7	9,300.0	120.8	121.4	-179.96	-8,021.8	1,402.6	468.0	343.4	124.58	3.757	
16,300.0	8,832.0	16,751.7	9,300.0	122.2	122.7	-179.96	-8,121.8	1,403.3	468.0	341.9	126.09	3.711	
16,400.0	8,832.0	16,851.7	9,300.0	123.5	124.1	-179.97	-8,221.8	1,404.1	468.0	340.4	127.61	3.667	
16,500.0	8,832.0	16,951.7	9,300.0	124.9	125.5	-179.97	-8,321.7	1,404.9	468.0	338.9	129.12	3.624	
16,600.0	8,832.0	17,051.7	9,300.0	126.3	126.9	-179.97	-8,421.7	1,405.6	468.0	337.4	130.63	3.582	
16,700.0	8,832.0	17,151.7	9,300.0	127.7	128.2	-179.97	-8,521.7	1,406.4	468.0	335.8	132.15	3.541	
16,800.0	8,832.0	17,251.7	9,300.0	129.1	129.6	-179.97	-8,621.7	1,407.2	468.0	334.3	133.67	3.501	
16,900.0	8,832.0	17,351.7	9,300.0	130.5	131.0	-179.97	-8,721.7	1,407.9	468.0	332.8	135.19	3.462	
17,000.0	8,832.0	17,451.7	9,300.0	131.9	132.4	-179.97	-8,821.7	1,408.7	468.0	331.3	136.71	3.423	
17,100.0	8,832.0	17,551.7	9,300.0	133.3	133.8	-179.97	-8,921.7	1,409.5	468.0	329.8	138.23	3.386	
17,200.0	8,832.0	17,651.7	9,300.0	134.6	135.2	-179.98	-9,021.7	1,410.2	468.0	328.2	139.75	3.349	
17,300.0	8,832.0	17,751.7	9,300.0	136.0	136.6	-179.98	-9,121.7	1,411.0	468.0	326.7	141.28	3.313	
17,400.0	8,832.0	17,851.7	9,300.0	137.4	137.9	-179.98	-9,221.7	1,411.7	468.0	325.2	142.80	3.277	
17,500.0	8,832.0	17,951.7	9,300.0	138.8	139.3	-179.98	-9,321.7	1,412.5	468.0	323.7	144.33	3.243	
17,600.0	8,832.0	18,051.7	9,300.0	140.2	140.7	-179.98	-9,421.7	1,413.3	468.0	322.1	145.85	3.209	
17,700.0	8,832.0	18,151.7	9,300.0	141.6	142.1	-179.98	-9,521.7	1,414.0	468.0	320.6	147.38	3.175	
17,800.0	8,832.0	18,251.7	9,300.0	143.0	143.5	-179.98	-9,621.7	1,414.8	468.0	319.1	148.91	3.143	
17,900.0	8,832.0	18,351.7	9,300.0	144.4	144.9	-179.98	-9,721.7	1,415.6	468.0	317.6	150.44	3.111	
18,000.0	8,832.0	18,451.7	9,300.0	145.8	146.3	-179.99	-9,821.7	1,416.3	468.0	316.0	151.97	3.080	
18,100.0	8,832.0	18,551.7	9,300.0	147.2	147.7	-179.99	-9,921.7	1,417.1	468.0	314.5	153.50	3.049	
18,200.0	8,832.0	18,651.7	9,300.0	148.6	149.1	-179.99	-10,021.7	1,417.9	468.0	313.0	155.03	3.019	
18,300.0	8,832.0	18,751.7	9,300.0	150.0	150.5	-179.99	-10,121.7	1,418.6	468.0	311.4	156.56	2.989	
18,400.0	8,832.0	18,851.7	9,300.0	151.4	151.9	-179.99	-10,221.7	1,419.4	468.0	309.9	158.10	2.960	
18,500.0	8,832.0	18,951.7	9,300.0	152.8	153.3	-179.99	-10,321.7	1,420.2	468.0	308.4	159.63	2.932	
18,600.0	8,832.0	19,051.7	9,300.0	154.2	154.7	-179.99	-10,421.7	1,420.9	468.0	306.8	161.16	2.904	
18,700.0	8,832.0	19,151.7	9,300.0	155.7	156.1	-179.99	-10,521.7	1,421.7	468.0	305.3	162.70	2.876	
18,800.0	8,832.0	19,251.7	9,300.0	157.1	157.5	-179.99	-10,621.7	1,422.5	468.0	303.8	164.23	2.850	
18,900.0	8,832.0	19,351.7	9,300.0	158.5	158.9	-180.00	-10,721.7	1,423.2	468.0	302.2	165.77	2.823	
19,000.0	8,832.0	19,451.7	9,300.0	159.9	160.3	-180.00	-10,821.7	1,424.0	468.0	300.7	167.31	2.797	
19,100.0	8,832.0	19,551.7	9,300.0	161.3	161.7	-180.00	-10,921.7	1,424.8	468.0	299.2	168.85	2.772	
19,200.0	8,832.0	19,651.7	9,300.0	162.7	163.1	-180.00	-11,021.7	1,425.5	468.0	297.8	170.19	2.750	
19,226.4	8,832.0	19,678.1	9,300.0	163.1	163.4	-180.00	-11,048.1	1,425.7	468.0	297.5	170.49	2.745	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
0.0	0.0	0.1	0.1	0.0	0.0	-21.44	159.0	-62.4	170.8				
100.0	100.0	100.1	100.1	0.1	0.1	-21.44	159.0	-62.4	170.8	170.6	0.26	647.501	
200.0	200.0	200.1	200.1	0.5	0.5	-21.44	159.0	-62.4	170.8	169.9	0.98	174.182	
300.0	300.0	300.1	300.1	0.8	0.8	-21.44	159.0	-62.4	170.8	169.1	1.70	100.625	
400.0	400.0	400.1	400.1	1.2	1.2	-21.44	159.0	-62.4	170.8	168.4	2.41	70.748	
500.0	500.0	500.1	500.1	1.6	1.6	-21.44	159.0	-62.4	170.8	167.7	3.13	54.551	
600.0	600.0	600.1	600.1	1.9	1.9	-21.44	159.0	-62.4	170.8	167.0	3.85	44.389	
700.0	700.0	700.1	700.1	2.3	2.3	-21.44	159.0	-62.4	170.8	166.3	4.57	37.418	
800.0	800.0	800.1	800.1	2.6	2.6	-21.44	159.0	-62.4	170.8	165.6	5.28	32.340	
900.0	900.0	900.1	900.1	3.0	3.0	-21.44	159.0	-62.4	170.8	164.8	6.00	28.475	
1,000.0	1,000.0	1,000.1	1,000.1	3.4	3.4	-21.44	159.0	-62.4	170.8	164.1	6.72	25.436	
1,100.0	1,100.0	1,100.1	1,100.1	3.7	3.7	-21.44	159.0	-62.4	170.8	163.4	7.43	22.982	
1,200.0	1,200.0	1,200.1	1,200.1	4.1	4.1	-21.44	159.0	-62.4	170.8	162.7	8.15	20.961	
1,300.0	1,300.0	1,300.1	1,300.1	4.4	4.4	-21.44	159.0	-62.4	170.8	162.0	8.87	19.266	
1,400.0	1,400.0	1,400.1	1,400.1	4.8	4.8	-21.44	159.0	-62.4	170.8	161.2	9.58	17.825	
1,500.0	1,500.0	1,500.1	1,500.1	5.2	5.2	-21.44	159.0	-62.4	170.8	160.5	10.30	16.584	
1,600.0	1,600.0	1,600.1	1,600.1	5.5	5.5	-21.44	159.0	-62.4	170.8	159.8	11.02	15.505	
1,700.0	1,700.0	1,700.1	1,700.1	5.9	5.9	-21.44	159.0	-62.4	170.8	159.1	11.73	14.558	
1,800.0	1,800.0	1,800.1	1,800.1	6.2	6.2	-21.44	159.0	-62.4	170.8	158.4	12.45	13.720	
1,900.0	1,900.0	1,900.1	1,900.1	6.6	6.6	-21.44	159.0	-62.4	170.8	157.7	13.17	12.973	
2,000.0	2,000.0	2,000.1	2,000.1	6.9	6.9	-21.44	159.0	-62.4	170.8	156.9	13.89	12.303	CC
2,100.0	2,100.0	2,100.1	2,100.1	7.3	7.3	-137.22	159.0	-62.4	172.1	157.5	14.59	11.796	
2,200.0	2,199.8	2,199.9	2,199.9	7.6	7.7	-138.32	159.0	-62.4	176.0	160.7	15.28	11.515	
2,300.0	2,299.5	2,299.6	2,299.6	8.0	8.0	-140.05	159.0	-62.4	182.6	166.6	15.98	11.427	
2,400.0	2,398.7	2,398.8	2,398.8	8.3	8.4	-142.26	159.0	-62.4	192.1	175.4	16.68	11.521	
2,500.0	2,497.5	2,497.6	2,497.6	8.7	8.7	-144.79	159.0	-62.4	204.8	187.4	17.37	11.786	
2,600.0	2,595.6	2,602.7	2,602.7	9.0	9.1	-147.44	158.1	-60.8	219.2	201.1	18.08	12.126	
2,700.0	2,693.1	2,708.7	2,708.5	9.4	9.4	-149.80	155.3	-55.8	233.7	215.0	18.75	12.461	
2,800.0	2,789.7	2,815.4	2,814.8	9.8	9.8	-151.95	150.5	-47.4	248.0	228.6	19.42	12.769	
2,900.0	2,886.2	2,923.3	2,921.8	10.2	10.2	-153.67	143.6	-35.3	259.7	239.6	20.08	12.934	
3,000.0	2,982.7	3,032.1	3,029.1	10.6	10.6	-154.94	134.7	-19.6	268.1	247.4	20.73	12.935	
3,100.0	3,079.2	3,141.6	3,136.3	11.0	10.9	-155.84	123.7	-0.2	273.0	251.6	21.36	12.781	
3,200.0	3,175.8	3,247.6	3,239.2	11.5	11.3	-156.42	111.3	21.7	274.6	252.6	22.02	12.473	
3,300.0	3,272.3	3,347.6	3,336.1	11.9	11.7	-156.90	99.2	43.0	275.6	252.9	22.74	12.122	
3,400.0	3,368.8	3,447.5	3,433.1	12.3	12.1	-157.39	87.2	64.3	276.6	253.1	23.46	11.790	
3,500.0	3,465.3	3,547.5	3,530.0	12.8	12.5	-157.87	75.1	85.6	277.6	253.4	24.19	11.476	
3,600.0	3,561.8	3,647.5	3,626.9	13.2	12.9	-158.35	63.0	106.9	278.6	253.7	24.92	11.179	
3,700.0	3,658.3	3,747.4	3,723.8	13.7	13.3	-158.82	51.0	128.2	279.7	254.0	25.66	10.899	
3,800.0	3,754.8	3,847.4	3,820.8	14.2	13.7	-159.29	38.9	149.5	280.8	254.4	26.40	10.633	
3,900.0	3,851.3	3,947.4	3,917.7	14.6	14.2	-159.76	26.8	170.8	281.9	254.7	27.15	10.382	
4,000.0	3,947.8	4,047.3	4,014.6	15.1	14.6	-160.23	14.8	192.1	283.0	255.1	27.89	10.144	
4,100.0	4,044.3	4,147.3	4,111.5	15.6	15.0	-160.69	2.7	213.4	284.1	255.4	28.64	9.918	
4,200.0	4,140.9	4,247.3	4,208.5	16.1	15.5	-161.14	-9.4	234.7	285.2	255.8	29.40	9.703	
4,300.0	4,237.4	4,347.3	4,305.4	16.5	15.9	-161.59	-21.4	256.0	286.4	256.2	30.15	9.499	
4,400.0	4,333.9	4,447.2	4,402.3	17.0	16.4	-162.04	-33.5	277.3	287.6	256.7	30.90	9.305	
4,500.0	4,430.4	4,547.2	4,499.2	17.5	16.8	-162.49	-45.6	298.6	288.8	257.1	31.66	9.121	
4,600.0	4,526.9	4,647.2	4,596.2	18.0	17.3	-162.93	-57.6	319.9	290.0	257.6	32.42	8.945	
4,700.0	4,623.4	4,747.1	4,693.1	18.5	17.7	-163.37	-69.7	341.1	291.2	258.0	33.18	8.778	
4,800.0	4,719.9	4,847.1	4,790.0	19.0	18.2	-163.80	-81.8	362.4	292.5	258.5	33.94	8.618	
4,900.0	4,816.4	4,947.1	4,886.9	19.5	18.6	-164.23	-93.8	383.7	293.7	259.0	34.70	8.465	
5,000.0	4,912.9	5,047.0	4,983.9	20.0	19.1	-164.66	-105.9	405.0	295.0	259.6	35.46	8.320	
5,100.0	5,009.4	5,147.0	5,080.8	20.5	19.6	-165.08	-118.0	426.3	296.3	260.1	36.23	8.180	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
5,200.0	5,106.0	5,247.0	5,177.7	21.0	20.0	-165.50	-130.0	447.6	297.6	260.7	36.99	8.047	
5,300.0	5,202.5	5,346.9	5,274.6	21.5	20.5	-165.92	-142.1	468.9	299.0	261.2	37.75	7.919	
5,400.0	5,299.0	5,446.9	5,371.6	22.0	21.0	-166.33	-154.2	490.2	300.3	261.8	38.52	7.796	
5,500.0	5,395.5	5,546.9	5,468.5	22.5	21.4	-166.74	-166.2	511.5	301.7	262.4	39.29	7.679	
5,600.0	5,492.0	5,646.8	5,565.4	23.0	21.9	-167.14	-178.3	532.8	303.1	263.0	40.05	7.566	
5,700.0	5,588.5	5,746.8	5,662.3	23.5	22.4	-167.54	-190.4	554.1	304.5	263.6	40.82	7.458	
5,800.0	5,685.0	5,846.8	5,759.3	24.0	22.8	-167.94	-202.4	575.4	305.9	264.3	41.59	7.354	
5,900.0	5,781.5	5,946.7	5,856.2	24.5	23.3	-168.33	-214.5	596.7	307.3	264.9	42.36	7.254	
6,000.0	5,878.0	6,046.7	5,953.1	25.0	23.8	-168.72	-226.6	618.0	308.7	265.6	43.13	7.158	
6,100.0	5,974.5	6,146.7	6,050.0	25.5	24.3	-169.11	-238.6	639.3	310.2	266.3	43.90	7.065	
6,200.0	6,071.0	6,246.6	6,147.0	26.0	24.8	-169.49	-250.7	660.6	311.6	267.0	44.67	6.976	
6,300.0	6,167.6	6,346.6	6,243.9	26.5	25.2	-169.87	-262.8	681.9	313.1	267.7	45.44	6.890	
6,400.0	6,264.1	6,446.6	6,340.8	27.0	25.7	-170.25	-274.8	703.2	314.6	268.4	46.22	6.807	
6,500.0	6,360.6	6,546.5	6,437.7	27.5	26.2	-170.62	-286.9	724.5	316.1	269.1	46.99	6.727	
6,600.0	6,457.1	6,646.5	6,534.7	28.0	26.7	-170.99	-299.0	745.8	317.6	269.9	47.77	6.650	
6,700.0	6,553.6	6,746.5	6,631.6	28.5	27.2	-171.35	-311.0	767.1	319.2	270.6	48.54	6.575	
6,800.0	6,650.1	6,846.4	6,728.5	29.0	27.6	-171.71	-323.1	788.4	320.7	271.4	49.32	6.503	
6,900.0	6,746.6	6,946.4	6,825.4	29.5	28.1	-172.07	-335.2	809.6	322.3	272.2	50.09	6.433	
7,000.0	6,843.1	7,046.4	6,922.4	30.0	28.6	-172.43	-347.3	830.9	323.8	273.0	50.87	6.366	
7,100.0	6,939.6	7,146.3	7,019.3	30.6	29.1	-172.78	-359.3	852.2	325.4	273.8	51.65	6.300	
7,200.0	7,036.1	7,246.3	7,116.2	31.1	29.6	-173.12	-371.4	873.5	327.0	274.6	52.43	6.237	
7,300.0	7,132.7	7,346.3	7,213.1	31.6	30.1	-173.47	-383.5	894.8	328.6	275.4	53.21	6.176	
7,400.0	7,229.2	7,446.2	7,310.1	32.1	30.6	-173.81	-395.5	916.1	330.2	276.2	53.99	6.116	
7,500.0	7,325.7	7,546.2	7,407.0	32.6	31.0	-174.15	-407.6	937.4	331.8	277.1	54.77	6.059	
7,600.0	7,422.2	7,646.2	7,503.9	33.1	31.5	-174.48	-419.7	958.7	333.5	277.9	55.56	6.003	
7,700.0	7,518.7	7,746.2	7,600.8	33.6	32.0	-174.81	-431.7	980.0	335.1	278.7	56.34	5.947	
7,800.0	7,615.8	7,846.1	7,697.8	34.1	32.5	-175.10	-443.8	1,001.3	334.3	277.2	57.12	5.853	
7,900.0	7,713.7	7,946.0	7,794.6	34.6	33.0	-175.34	-455.9	1,022.6	330.1	272.2	57.89	5.702	
8,000.0	7,812.2	8,045.7	7,891.3	35.0	33.5	-175.53	-467.9	1,043.8	322.4	263.7	58.66	5.496	
8,100.0	7,911.3	8,145.1	7,987.6	35.4	34.0	-175.68	-479.9	1,065.0	311.2	251.8	59.41	5.239	
8,200.0	8,010.8	8,244.0	8,083.5	35.8	34.5	-175.79	-491.8	1,086.1	296.6	236.5	60.15	4.931	
8,300.0	8,110.6	8,342.4	8,178.9	36.1	34.9	-175.85	-503.7	1,107.0	278.6	217.7	60.88	4.576	
8,400.0	8,210.5	8,440.0	8,273.6	36.4	35.4	-175.87	-515.5	1,127.8	257.1	195.5	61.59	4.175	
8,500.0	8,310.5	8,537.0	8,367.7	36.7	35.9	-60.46	-527.2	1,148.5	232.9	170.6	62.29	3.739	
8,600.0	8,410.4	8,634.3	8,461.9	37.0	36.4	122.05	-538.9	1,169.2	210.1	147.1	62.99	3.335	
8,700.0	8,507.8	8,731.4	8,556.1	37.3	36.9	128.71	-550.7	1,189.9	198.1	134.2	63.84	3.102	
8,725.0	8,531.2	8,755.2	8,579.1	37.4	37.0	130.87	-553.5	1,195.0	197.5	133.4	64.13	3.079	ES, SF
8,800.0	8,598.4	8,824.4	8,646.2	37.7	37.3	137.85	-561.9	1,209.7	203.3	138.0	65.30	3.114	
8,900.0	8,678.4	8,909.3	8,728.5	38.1	37.7	146.53	-572.1	1,227.8	231.8	164.3	67.47	3.436	
9,000.0	8,744.3	8,982.3	8,799.4	38.6	38.1	152.59	-580.9	1,243.3	284.4	214.8	69.62	4.085	
9,100.0	8,793.1	9,040.3	8,855.6	39.0	38.4	155.12	-587.9	1,255.7	356.9	285.7	71.23	5.011	
9,200.0	8,822.8	9,080.7	8,894.8	39.5	38.6	152.57	-592.8	1,264.3	443.7	371.4	72.24	6.142	
9,300.0	8,832.0	9,101.8	8,915.2	40.0	38.7	137.63	-595.4	1,268.8	539.1	466.3	72.80	7.405	
9,400.0	8,832.0	9,112.7	8,925.8	40.6	38.7	141.89	-596.7	1,271.1	637.1	564.0	73.12	8.713	
9,500.0	8,832.0	9,123.2	8,936.0	41.2	38.8	145.53	-597.9	1,273.3	735.5	662.1	73.38	10.023	
9,600.0	8,832.0	9,133.4	8,945.9	41.8	38.8	148.67	-599.1	1,275.4	834.1	760.5	73.59	11.335	
9,700.0	8,832.0	9,143.3	8,955.5	42.5	38.9	151.41	-600.2	1,277.4	932.9	859.1	73.77	12.646	
9,800.0	8,832.0	9,152.9	8,964.9	43.2	38.9	153.79	-601.3	1,279.3	1,031.8	957.9	73.93	13.957	
9,900.0	8,832.0	9,162.2	8,973.9	44.0	39.0	155.88	-602.4	1,281.2	1,130.8	1,056.8	74.07	15.266	
10,000.0	8,832.0	9,171.3	8,982.8	44.8	39.0	157.71	-603.4	1,282.9	1,229.9	1,155.7	74.21	16.574	
10,100.0	8,832.0	9,180.1	8,991.4	45.6	39.1	159.34	-604.3	1,284.6	1,329.1	1,254.7	74.33	17.881	
10,200.0	8,832.0	11,568.4	10,196.0	46.5	51.5	180.00	-2,021.9	1,355.7	1,363.9	1,318.9	45.02	30.293	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
10,300.0	8,832.0	11,668.4	10,196.0	47.4	52.4	180.00	-2,121.9	1,356.5	1,363.9	1,317.9	45.95	29.680	
10,400.0	8,832.0	11,768.4	10,196.0	48.3	53.2	180.00	-2,221.9	1,357.2	1,363.9	1,317.0	46.92	29.070	
10,500.0	8,832.0	11,868.4	10,196.0	49.2	54.2	180.00	-2,321.9	1,358.0	1,363.9	1,316.0	47.91	28.466	
10,600.0	8,832.0	11,968.4	10,196.0	50.2	55.1	180.00	-2,421.9	1,358.8	1,363.9	1,315.0	48.94	27.869	
10,700.0	8,832.0	12,068.4	10,196.0	51.2	56.0	180.00	-2,521.9	1,359.6	1,363.9	1,313.9	49.99	27.282	
10,800.0	8,832.0	12,168.4	10,196.0	52.2	57.0	180.00	-2,621.9	1,360.4	1,363.9	1,312.8	51.07	26.705	
10,900.0	8,832.0	12,268.4	10,196.0	53.2	58.0	180.00	-2,721.9	1,361.1	1,363.9	1,311.7	52.18	26.139	
11,000.0	8,832.0	12,368.4	10,196.0	54.2	59.0	180.00	-2,821.9	1,361.9	1,363.9	1,310.6	53.31	25.586	
11,100.0	8,832.0	12,468.4	10,196.0	55.3	60.1	180.00	-2,921.9	1,362.7	1,363.9	1,309.4	54.46	25.046	
11,200.0	8,832.0	12,568.4	10,196.0	56.4	61.1	180.00	-3,021.9	1,363.5	1,363.9	1,308.3	55.63	24.519	
11,300.0	8,832.0	12,668.4	10,196.0	57.5	62.2	180.00	-3,121.9	1,364.2	1,363.9	1,307.1	56.82	24.006	
11,400.0	8,832.0	12,768.4	10,196.0	58.6	63.3	180.00	-3,221.9	1,365.0	1,363.9	1,305.9	58.02	23.506	
11,500.0	8,832.0	12,868.4	10,196.0	59.7	64.4	180.00	-3,321.9	1,365.8	1,363.9	1,304.7	59.25	23.021	
11,600.0	8,832.0	12,968.4	10,196.0	60.9	65.5	180.00	-3,421.9	1,366.6	1,363.9	1,303.4	60.49	22.549	
11,700.0	8,832.0	13,068.4	10,196.0	62.0	66.6	180.00	-3,521.9	1,367.3	1,363.9	1,302.2	61.74	22.090	
11,800.0	8,832.0	13,168.4	10,196.0	63.2	67.7	180.00	-3,621.9	1,368.1	1,363.9	1,300.9	63.01	21.645	
11,900.0	8,832.0	13,268.4	10,196.0	64.4	68.9	180.00	-3,721.9	1,368.9	1,363.9	1,299.6	64.29	21.214	
12,000.0	8,832.0	13,368.4	10,196.0	65.6	70.0	180.00	-3,821.9	1,369.7	1,363.9	1,298.3	65.59	20.795	
12,100.0	8,832.0	13,468.4	10,196.0	66.8	71.2	180.00	-3,921.9	1,370.4	1,363.9	1,297.0	66.89	20.389	
12,200.0	8,832.0	13,568.4	10,196.0	68.0	72.4	180.00	-4,021.9	1,371.2	1,363.9	1,295.7	68.21	19.995	
12,300.0	8,832.0	13,668.4	10,196.0	69.2	73.6	180.00	-4,121.9	1,372.0	1,363.9	1,294.4	69.54	19.613	
12,400.0	8,832.0	13,768.4	10,196.0	70.4	74.8	180.00	-4,221.9	1,372.8	1,363.9	1,293.0	70.88	19.243	
12,500.0	8,832.0	13,868.4	10,196.0	71.7	76.0	180.00	-4,321.9	1,373.5	1,363.9	1,291.7	72.22	18.884	
12,600.0	8,832.0	13,968.4	10,196.0	72.9	77.2	180.00	-4,421.9	1,374.3	1,363.9	1,290.3	73.58	18.537	
12,700.0	8,832.0	14,068.4	10,196.0	74.2	78.4	180.00	-4,521.9	1,375.1	1,363.9	1,289.0	74.94	18.199	
12,800.0	8,832.0	14,168.4	10,196.0	75.4	79.6	180.00	-4,621.9	1,375.9	1,363.9	1,287.6	76.31	17.872	
12,900.0	8,832.0	14,268.4	10,196.0	76.7	80.9	180.00	-4,721.9	1,376.6	1,363.9	1,286.2	77.69	17.555	
13,000.0	8,832.0	14,368.4	10,196.0	78.0	82.1	180.00	-4,821.9	1,377.4	1,363.9	1,284.8	79.08	17.247	
13,100.0	8,832.0	14,468.4	10,196.0	79.2	83.4	180.00	-4,921.9	1,378.2	1,363.9	1,283.4	80.47	16.948	
13,200.0	8,832.0	14,568.4	10,196.0	80.5	84.6	180.00	-5,021.9	1,379.0	1,363.9	1,282.0	81.87	16.659	
13,300.0	8,832.0	14,668.4	10,196.0	81.8	85.9	180.00	-5,121.8	1,379.8	1,363.9	1,280.6	83.28	16.378	
13,400.0	8,832.0	14,768.4	10,196.0	83.1	87.2	180.00	-5,221.8	1,380.5	1,363.9	1,279.2	84.69	16.105	
13,500.0	8,832.0	14,868.4	10,196.0	84.4	88.4	180.00	-5,321.8	1,381.3	1,363.9	1,277.8	86.11	15.840	
13,600.0	8,832.0	14,968.4	10,196.0	85.7	89.7	180.00	-5,421.8	1,382.1	1,363.9	1,276.4	87.53	15.583	
13,700.0	8,832.0	15,068.4	10,196.0	87.0	91.0	180.00	-5,521.8	1,382.9	1,363.9	1,274.9	88.95	15.333	
13,800.0	8,832.0	15,168.4	10,196.0	88.3	92.3	180.00	-5,621.8	1,383.6	1,363.9	1,273.5	90.39	15.090	
13,900.0	8,832.0	15,268.4	10,196.0	89.7	93.6	180.00	-5,721.8	1,384.4	1,363.9	1,272.1	91.82	14.854	
14,000.0	8,832.0	15,368.4	10,196.0	91.0	94.9	180.00	-5,821.8	1,385.2	1,363.9	1,270.6	93.26	14.624	
14,100.0	8,832.0	15,468.4	10,196.0	92.3	96.2	180.00	-5,921.8	1,386.0	1,363.9	1,269.2	94.71	14.401	
14,200.0	8,832.0	15,568.4	10,196.0	93.6	97.5	180.00	-6,021.8	1,386.7	1,363.9	1,267.7	96.15	14.184	
14,300.0	8,832.0	15,668.4	10,196.0	95.0	98.8	180.00	-6,121.8	1,387.5	1,363.9	1,266.3	97.61	13.973	
14,400.0	8,832.0	15,768.4	10,196.0	96.3	100.1	180.00	-6,221.8	1,388.3	1,363.9	1,264.8	99.06	13.768	
14,500.0	8,832.0	15,868.4	10,196.0	97.6	101.4	180.00	-6,321.8	1,389.1	1,363.9	1,263.4	100.52	13.568	
14,600.0	8,832.0	15,968.4	10,196.0	99.0	102.8	180.00	-6,421.8	1,389.8	1,363.9	1,261.9	101.98	13.374	
14,700.0	8,832.0	16,068.4	10,196.0	100.3	104.1	180.00	-6,521.8	1,390.6	1,363.9	1,260.5	103.45	13.184	
14,800.0	8,832.0	16,168.4	10,196.0	101.7	105.4	180.00	-6,621.8	1,391.4	1,363.9	1,259.0	104.92	13.000	
14,900.0	8,832.0	16,268.4	10,196.0	103.0	106.7	180.00	-6,721.8	1,392.2	1,363.9	1,257.5	106.39	12.820	
15,000.0	8,832.0	16,368.4	10,196.0	104.4	108.1	180.00	-6,821.8	1,392.9	1,363.9	1,256.0	107.86	12.645	
15,100.0	8,832.0	16,468.4	10,196.0	105.7	109.4	180.00	-6,921.8	1,393.7	1,363.9	1,254.6	109.34	12.474	
15,200.0	8,832.0	16,568.4	10,196.0	107.1	110.8	180.00	-7,021.8	1,394.5	1,363.9	1,253.1	110.82	12.308	
15,300.0	8,832.0	16,668.4	10,196.0	108.5	112.1	180.00	-7,121.8	1,395.3	1,363.9	1,251.6	112.30	12.145	
15,400.0	8,832.0	16,768.4	10,196.0	109.8	113.5	180.00	-7,221.8	1,396.0	1,363.9	1,250.1	113.78	11.987	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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
15,500.0	8,832.0	16,868.4	10,196.0	111.2	114.8	180.00	-7,321.8	1,396.8	1,363.9	1,248.6	115.27	11.832	
15,600.0	8,832.0	16,968.4	10,196.0	112.5	116.1	180.00	-7,421.8	1,397.6	1,363.9	1,247.1	116.76	11.681	
15,700.0	8,832.0	17,068.4	10,196.0	113.9	117.5	180.00	-7,521.8	1,398.4	1,363.9	1,245.7	118.25	11.534	
15,800.0	8,832.0	17,168.4	10,196.0	115.3	118.9	180.00	-7,621.8	1,399.2	1,363.9	1,244.2	119.74	11.390	
15,900.0	8,832.0	17,268.4	10,196.0	116.7	120.2	180.00	-7,721.8	1,399.9	1,363.9	1,242.7	121.24	11.250	
16,000.0	8,832.0	17,368.4	10,196.0	118.0	121.6	180.00	-7,821.8	1,400.7	1,363.9	1,241.2	122.73	11.113	
16,100.0	8,832.0	17,468.4	10,196.0	119.4	122.9	180.00	-7,921.8	1,401.5	1,363.9	1,239.7	124.23	10.979	
16,200.0	8,832.0	17,568.4	10,196.0	120.8	124.3	180.00	-8,021.8	1,402.3	1,363.9	1,238.2	125.73	10.848	
16,300.0	8,832.0	17,668.4	10,196.0	122.2	125.7	180.00	-8,121.8	1,403.0	1,363.9	1,236.7	127.23	10.720	
16,400.0	8,832.0	17,768.4	10,196.0	123.5	127.0	180.00	-8,221.8	1,403.8	1,363.9	1,235.2	128.74	10.595	
16,500.0	8,832.0	17,868.4	10,196.0	124.9	128.4	180.00	-8,321.8	1,404.6	1,363.9	1,233.7	130.24	10.472	
16,600.0	8,832.0	17,968.4	10,196.0	126.3	129.8	180.00	-8,421.7	1,405.4	1,363.9	1,232.2	131.75	10.352	
16,700.0	8,832.0	18,068.4	10,196.0	127.7	131.1	180.00	-8,521.7	1,406.1	1,363.9	1,230.6	133.25	10.235	
16,800.0	8,832.0	18,168.4	10,196.0	129.1	132.5	180.00	-8,621.7	1,406.9	1,363.9	1,229.1	134.76	10.121	
16,900.0	8,832.0	18,268.4	10,196.0	130.5	133.9	180.00	-8,721.7	1,407.7	1,363.9	1,227.6	136.27	10.009	
17,000.0	8,832.0	18,368.4	10,196.0	131.9	135.3	180.00	-8,821.7	1,408.5	1,363.9	1,226.1	137.79	9.899	
17,100.0	8,832.0	18,468.4	10,196.0	133.3	136.6	180.00	-8,921.7	1,409.2	1,363.9	1,224.6	139.30	9.791	
17,200.0	8,832.0	18,568.4	10,196.0	134.6	138.0	180.00	-9,021.7	1,410.0	1,363.9	1,223.1	140.81	9.686	
17,300.0	8,832.0	18,668.4	10,196.0	136.0	139.4	180.00	-9,121.7	1,410.8	1,363.9	1,221.6	142.33	9.583	
17,400.0	8,832.0	18,768.4	10,196.0	137.4	140.8	180.00	-9,221.7	1,411.6	1,363.9	1,220.1	143.84	9.482	
17,500.0	8,832.0	18,868.4	10,196.0	138.8	142.2	180.00	-9,321.7	1,412.3	1,363.9	1,218.5	145.36	9.383	
17,600.0	8,832.0	18,968.4	10,196.0	140.2	143.6	180.00	-9,421.7	1,413.1	1,363.9	1,217.0	146.88	9.286	
17,700.0	8,832.0	19,068.4	10,196.0	141.6	144.9	180.00	-9,521.7	1,413.9	1,363.9	1,215.5	148.40	9.191	
17,800.0	8,832.0	19,168.4	10,196.0	143.0	146.3	180.00	-9,621.7	1,414.7	1,363.9	1,214.0	149.92	9.097	
17,900.0	8,832.0	19,268.4	10,196.0	144.4	147.7	180.00	-9,721.7	1,415.4	1,363.9	1,212.5	151.44	9.006	
18,000.0	8,832.0	19,368.4	10,196.0	145.8	149.1	180.00	-9,821.7	1,416.2	1,363.9	1,210.9	152.97	8.916	
18,100.0	8,832.0	19,468.4	10,196.0	147.2	150.5	180.00	-9,921.7	1,417.0	1,363.9	1,209.4	154.49	8.828	
18,200.0	8,832.0	19,568.4	10,196.0	148.6	151.9	180.00	-10,021.7	1,417.8	1,363.9	1,207.9	156.02	8.742	
18,300.0	8,832.0	19,668.4	10,196.0	150.0	153.3	180.00	-10,121.7	1,418.6	1,363.9	1,206.4	157.54	8.657	
18,400.0	8,832.0	19,768.4	10,196.0	151.4	154.7	180.00	-10,221.7	1,419.3	1,363.9	1,204.8	159.07	8.574	
18,500.0	8,832.0	19,868.4	10,196.0	152.8	156.1	180.00	-10,321.7	1,420.1	1,363.9	1,203.3	160.60	8.493	
18,600.0	8,832.0	19,968.4	10,196.0	154.2	157.5	180.00	-10,421.7	1,420.9	1,363.9	1,201.8	162.12	8.413	
18,700.0	8,832.0	20,068.4	10,196.0	155.7	158.9	180.00	-10,521.7	1,421.7	1,363.9	1,200.2	163.65	8.334	
18,800.0	8,832.0	20,168.4	10,196.0	157.1	160.3	180.00	-10,621.7	1,422.4	1,363.9	1,198.7	165.18	8.257	
18,900.0	8,832.0	20,268.4	10,196.0	158.5	161.7	180.00	-10,721.7	1,423.2	1,363.9	1,197.2	166.71	8.181	
19,000.0	8,832.0	20,368.4	10,196.0	159.9	163.1	180.00	-10,821.7	1,424.0	1,363.9	1,195.7	168.24	8.107	
19,100.0	8,832.0	20,468.4	10,196.0	161.3	164.5	180.00	-10,921.7	1,424.8	1,363.9	1,194.1	169.78	8.034	
19,200.0	8,832.0	20,568.4	10,196.0	162.7	165.9	180.00	-11,021.7	1,425.5	1,363.9	1,192.6	171.31	7.962	
19,226.4	8,832.0	20,594.8	10,196.0	163.1	166.2	180.00	-11,048.1	1,425.7	1,363.9	1,192.2	171.71	7.943	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 301H - 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
5,900.0	5,781.5	5,866.2	5,804.0	24.5	22.3	-19.67	-630.2	2,935.7	2,115.3	2,073.0	42.32	49.987	
6,000.0	5,878.0	5,962.7	5,900.5	25.0	22.6	-19.91	-630.2	2,935.7	2,090.6	2,047.5	43.05	48.558	
6,100.0	5,974.5	6,059.2	5,997.0	25.5	22.9	-20.15	-630.2	2,935.7	2,065.9	2,022.1	43.79	47.176	
6,200.0	6,071.0	6,155.7	6,093.5	26.0	23.3	-20.41	-630.2	2,935.7	2,041.2	1,996.7	44.53	45.838	
6,300.0	6,167.6	6,252.2	6,190.1	26.5	23.6	-20.66	-630.2	2,935.7	2,016.6	1,971.3	45.27	44.543	
6,400.0	6,264.1	6,348.7	6,286.6	27.0	23.9	-20.93	-630.2	2,935.7	1,992.0	1,946.0	46.02	43.288	
6,500.0	6,360.6	6,445.3	6,383.1	27.5	24.2	-21.20	-630.2	2,935.7	1,967.4	1,920.7	46.76	42.073	
6,600.0	6,457.1	6,541.8	6,479.6	28.0	24.5	-21.48	-630.2	2,935.7	1,942.9	1,895.4	47.51	40.894	
6,700.0	6,553.6	6,638.3	6,576.1	28.5	24.9	-21.76	-630.2	2,935.7	1,918.5	1,870.2	48.26	39.751	
6,800.0	6,650.1	6,734.8	6,672.6	29.0	25.2	-22.06	-630.2	2,935.7	1,894.1	1,845.1	49.02	38.642	
6,900.0	6,746.6	6,831.3	6,769.1	29.5	25.5	-22.36	-630.2	2,935.7	1,869.7	1,819.9	49.77	37.566	
7,000.0	6,843.1	6,927.8	6,865.6	30.0	25.8	-22.66	-630.2	2,935.7	1,845.4	1,794.9	50.53	36.521	
7,100.0	6,939.6	7,024.3	6,962.1	30.6	26.1	-22.98	-630.2	2,935.7	1,821.1	1,769.8	51.29	35.507	
7,200.0	7,036.1	7,120.8	7,058.6	31.1	26.5	-23.30	-630.2	2,935.7	1,796.9	1,744.9	52.05	34.521	
7,300.0	7,132.7	7,217.3	7,155.2	31.6	26.8	-23.64	-630.2	2,935.7	1,772.8	1,719.9	52.82	33.563	
7,400.0	7,229.2	7,313.8	7,251.7	32.1	27.1	-23.98	-630.2	2,935.7	1,748.7	1,695.1	53.59	32.633	
7,500.0	7,325.7	7,410.4	7,348.2	32.6	27.4	-24.33	-630.2	2,935.7	1,724.6	1,670.3	54.36	31.728	
7,600.0	7,422.2	7,506.9	7,444.7	33.1	27.8	-24.69	-630.2	2,935.7	1,700.6	1,645.5	55.13	30.847	
7,700.0	7,518.7	7,603.4	7,541.2	33.6	28.1	-25.02	-630.2	2,935.7	1,676.8	1,620.9	55.91	29.992	
7,800.0	7,615.8	7,700.5	7,638.3	34.1	28.4	-25.18	-630.2	2,935.7	1,655.1	1,598.4	56.68	29.202	
7,900.0	7,713.7	7,798.4	7,736.2	34.6	28.7	-25.32	-630.2	2,935.7	1,636.6	1,579.1	57.44	28.492	
8,000.0	7,812.2	7,896.9	7,834.7	35.0	29.1	-25.44	-630.2	2,935.7	1,621.2	1,563.0	58.19	27.860	
8,100.0	7,911.3	7,996.0	7,933.8	35.4	29.4	-25.54	-630.2	2,935.7	1,608.9	1,550.0	58.93	27.304	
8,200.0	8,010.8	8,095.5	8,033.3	35.8	29.8	-25.62	-630.2	2,935.7	1,599.8	1,540.1	59.65	26.822	
8,300.0	8,110.6	8,195.3	8,133.1	36.1	30.1	-25.67	-630.2	2,935.7	1,593.8	1,533.5	60.35	26.410	
8,400.0	8,210.5	8,295.2	8,233.0	36.4	30.4	-25.69	-630.2	2,935.7	1,591.0	1,530.0	61.04	26.067	
8,499.1	8,309.6	8,394.3	8,332.1	36.7	30.8	-25.70	-630.2	2,935.7	1,590.4	1,528.7	61.69	25.781 CC	
8,500.0	8,310.5	8,395.2	8,333.0	36.7	30.8	89.70	-630.2	2,935.7	1,590.8	1,529.1	61.70	25.784	
8,600.0	8,410.4	8,495.1	8,432.9	37.0	31.1	-89.97	-630.3	2,935.7	1,590.8	1,528.4	62.37	25.504	
8,609.4	8,419.7	8,504.4	8,442.2	37.0	31.1	-90.00	-630.6	2,935.7	1,590.8	1,528.3	62.44	25.476	
8,700.0	8,507.8	8,595.5	8,532.3	37.3	31.4	-90.31	-643.0	2,935.8	1,590.8	1,527.7	63.09	25.214	
8,800.0	8,598.4	8,697.9	8,628.7	37.7	31.7	-90.64	-677.0	2,936.1	1,590.9	1,527.0	63.83	24.922	
8,900.0	8,678.4	8,802.5	8,717.3	38.1	32.0	-90.95	-732.1	2,936.5	1,591.0	1,526.4	64.59	24.632	
9,000.0	8,744.3	8,909.0	8,793.1	38.6	32.1	-91.22	-806.6	2,937.1	1,591.1	1,525.8	65.36	24.343	
9,100.0	8,793.1	9,017.2	8,851.3	39.0	32.3	-91.43	-897.6	2,937.8	1,591.2	1,525.1	66.15	24.056	
9,200.0	8,822.8	9,126.7	8,887.8	39.5	32.4	-91.57	-1,000.6	2,938.6	1,591.3	1,524.4	66.95	23.770	
9,300.0	8,832.0	9,236.8	8,900.0	40.0	32.6	-91.64	-1,109.7	2,939.4	1,591.4	1,523.6	67.76	23.487	
9,400.0	8,832.0	9,336.8	8,900.0	40.6	32.9	-91.64	-1,209.7	2,940.2	1,591.4	1,522.7	68.67	23.176	
9,500.0	8,832.0	9,436.8	8,900.0	41.2	33.2	-91.64	-1,309.7	2,940.9	1,591.4	1,521.7	69.68	22.839	
9,600.0	8,832.0	9,536.8	8,900.0	41.8	33.5	-91.64	-1,409.7	2,941.7	1,591.4	1,520.6	70.79	22.479	
9,700.0	8,832.0	9,636.8	8,900.0	42.5	34.0	-91.64	-1,509.7	2,942.5	1,591.4	1,519.3	72.01	22.100	
9,800.0	8,832.0	9,736.8	8,900.0	43.2	34.5	-91.64	-1,609.7	2,943.2	1,591.3	1,518.0	73.32	21.705	
9,900.0	8,832.0	9,836.8	8,900.0	44.0	35.0	-91.64	-1,709.7	2,944.0	1,591.3	1,516.6	74.72	21.299	
10,000.0	8,832.0	9,936.8	8,900.0	44.8	35.7	-91.64	-1,809.7	2,944.8	1,591.3	1,515.1	76.20	20.884	
10,100.0	8,832.0	10,036.8	8,900.0	45.6	36.3	-91.64	-1,909.7	2,945.5	1,591.3	1,513.6	77.76	20.464	
10,200.0	8,832.0	10,136.8	8,900.0	46.5	37.0	-91.64	-2,009.7	2,946.3	1,591.3	1,511.9	79.40	20.041	
10,300.0	8,832.0	10,236.8	8,900.0	47.4	37.8	-91.64	-2,109.7	2,947.1	1,591.3	1,510.2	81.11	19.619	
10,400.0	8,832.0	10,336.8	8,900.0	48.3	38.5	-91.64	-2,209.7	2,947.9	1,591.3	1,508.4	82.89	19.198	
10,500.0	8,832.0	10,436.8	8,900.0	49.2	39.4	-91.64	-2,309.7	2,948.6	1,591.3	1,506.6	84.73	18.782	
10,600.0	8,832.0	10,536.8	8,900.0	50.2	40.2	-91.64	-2,409.7	2,949.4	1,591.3	1,504.7	86.62	18.370	
10,700.0	8,832.0	10,636.8	8,900.0	51.2	41.1	-91.64	-2,509.7	2,950.2	1,591.3	1,502.7	88.58	17.965	
10,800.0	8,832.0	10,736.8	8,900.0	52.2	42.0	-91.64	-2,609.7	2,950.9	1,591.3	1,500.7	90.58	17.568	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 301H - 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
10,900.0	8,832.0	10,836.8	8,900.0	53.2	43.0	-91.64	-2,709.7	2,951.7	1,591.3	1,498.6	92.63	17.179	
11,000.0	8,832.0	10,936.8	8,900.0	54.2	44.0	-91.64	-2,809.7	2,952.5	1,591.3	1,496.5	94.72	16.799	
11,100.0	8,832.0	11,036.8	8,900.0	55.3	45.0	-91.64	-2,909.7	2,953.2	1,591.3	1,494.4	96.86	16.428	
11,200.0	8,832.0	11,136.8	8,900.0	56.4	46.0	-91.64	-3,009.7	2,954.0	1,591.2	1,492.2	99.04	16.067	
11,300.0	8,832.0	11,236.8	8,900.0	57.5	47.1	-91.64	-3,109.7	2,954.8	1,591.2	1,490.0	101.25	15.716	
11,400.0	8,832.0	11,336.8	8,900.0	58.6	48.1	-91.64	-3,209.7	2,955.5	1,591.2	1,487.7	103.50	15.374	
11,500.0	8,832.0	11,436.8	8,900.0	59.7	49.2	-91.64	-3,309.7	2,956.3	1,591.2	1,485.4	105.78	15.043	
11,600.0	8,832.0	11,536.8	8,900.0	60.9	50.3	-91.64	-3,409.7	2,957.1	1,591.2	1,483.1	108.09	14.722	
11,700.0	8,832.0	11,636.8	8,900.0	62.0	51.5	-91.64	-3,509.7	2,957.8	1,591.2	1,480.8	110.42	14.410	
11,800.0	8,832.0	11,736.8	8,900.0	63.2	52.6	-91.64	-3,609.7	2,958.6	1,591.2	1,478.4	112.79	14.108	
11,900.0	8,832.0	11,836.8	8,900.0	64.4	53.7	-91.64	-3,709.7	2,959.4	1,591.2	1,476.0	115.17	13.816	
12,000.0	8,832.0	11,936.8	8,900.0	65.6	54.9	-91.64	-3,809.7	2,960.1	1,591.2	1,473.6	117.58	13.532	
12,100.0	8,832.0	12,036.8	8,900.0	66.8	56.1	-91.64	-3,909.7	2,960.9	1,591.2	1,471.2	120.02	13.258	
12,200.0	8,832.0	12,136.8	8,900.0	68.0	57.3	-91.64	-4,009.7	2,961.7	1,591.2	1,468.7	122.47	12.992	
12,300.0	8,832.0	12,236.8	8,900.0	69.2	58.5	-91.64	-4,109.7	2,962.5	1,591.2	1,466.2	124.94	12.735	
12,400.0	8,832.0	12,336.8	8,900.0	70.4	59.7	-91.64	-4,209.7	2,963.2	1,591.2	1,463.7	127.43	12.486	
12,500.0	8,832.0	12,436.8	8,900.0	71.7	60.9	-91.64	-4,309.6	2,964.0	1,591.1	1,461.2	129.94	12.245	
12,600.0	8,832.0	12,536.8	8,900.0	72.9	62.2	-91.64	-4,409.6	2,964.8	1,591.1	1,458.7	132.46	12.012	
12,700.0	8,832.0	12,636.8	8,900.0	74.2	63.4	-91.64	-4,509.6	2,965.5	1,591.1	1,456.1	135.00	11.786	
12,800.0	8,832.0	12,736.8	8,900.0	75.4	64.7	-91.64	-4,609.6	2,966.3	1,591.1	1,453.6	137.55	11.567	
12,900.0	8,832.0	12,836.8	8,900.0	76.7	65.9	-91.64	-4,709.6	2,967.1	1,591.1	1,451.0	140.12	11.356	
13,000.0	8,832.0	12,936.8	8,900.0	78.0	67.2	-91.64	-4,809.6	2,967.8	1,591.1	1,448.4	142.70	11.150	
13,100.0	8,832.0	13,036.8	8,900.0	79.2	68.5	-91.64	-4,909.6	2,968.6	1,591.1	1,445.8	145.29	10.951	
13,200.0	8,832.0	13,136.8	8,900.0	80.5	69.8	-91.64	-5,009.6	2,969.4	1,591.1	1,443.2	147.89	10.759	
13,300.0	8,832.0	13,236.8	8,900.0	81.8	71.1	-91.64	-5,109.6	2,970.1	1,591.1	1,440.6	150.50	10.572	
13,400.0	8,832.0	13,336.8	8,900.0	83.1	72.3	-91.64	-5,209.6	2,970.9	1,591.1	1,438.0	153.12	10.391	
13,500.0	8,832.0	13,436.8	8,900.0	84.4	73.6	-91.64	-5,309.6	2,971.7	1,591.1	1,435.3	155.76	10.215	
13,600.0	8,832.0	13,536.8	8,900.0	85.7	75.0	-91.64	-5,409.6	2,972.4	1,591.1	1,432.7	158.40	10.045	
13,700.0	8,832.0	13,636.8	8,900.0	87.0	76.3	-91.64	-5,509.6	2,973.2	1,591.1	1,430.0	161.05	9.879	
13,800.0	8,832.0	13,736.8	8,900.0	88.3	77.6	-91.64	-5,609.6	2,974.0	1,591.1	1,427.3	163.71	9.719	
13,900.0	8,832.0	13,836.8	8,900.0	89.7	78.9	-91.64	-5,709.6	2,974.8	1,591.0	1,424.7	166.37	9.563	
14,000.0	8,832.0	13,936.8	8,900.0	91.0	80.2	-91.64	-5,809.6	2,975.5	1,591.0	1,422.0	169.05	9.412	
14,100.0	8,832.0	14,036.8	8,900.0	92.3	81.6	-91.64	-5,909.6	2,976.3	1,591.0	1,419.3	171.73	9.265	
14,200.0	8,832.0	14,136.8	8,900.0	93.6	82.9	-91.64	-6,009.6	2,977.1	1,591.0	1,416.6	174.42	9.122	
14,300.0	8,832.0	14,236.8	8,900.0	95.0	84.2	-91.64	-6,109.6	2,977.8	1,591.0	1,413.9	177.11	8.983	
14,400.0	8,832.0	14,336.8	8,900.0	96.3	85.6	-91.64	-6,209.6	2,978.6	1,591.0	1,411.2	179.82	8.848	
14,500.0	8,832.0	14,436.8	8,900.0	97.6	86.9	-91.64	-6,309.6	2,979.4	1,591.0	1,408.5	182.52	8.717	
14,600.0	8,832.0	14,536.8	8,900.0	99.0	88.3	-91.64	-6,409.6	2,980.1	1,591.0	1,405.8	185.24	8.589	
14,700.0	8,832.0	14,636.8	8,900.0	100.3	89.6	-91.64	-6,509.6	2,980.9	1,591.0	1,403.0	187.95	8.465	
14,800.0	8,832.0	14,736.8	8,900.0	101.7	91.0	-91.64	-6,609.6	2,981.7	1,591.0	1,400.3	190.68	8.344	
14,900.0	8,832.0	14,836.8	8,900.0	103.0	92.3	-91.64	-6,709.6	2,982.4	1,591.0	1,397.6	193.41	8.226	
15,000.0	8,832.0	14,936.8	8,900.0	104.4	93.7	-91.64	-6,809.6	2,983.2	1,591.0	1,394.8	196.14	8.111	
15,100.0	8,832.0	15,036.8	8,900.0	105.7	95.0	-91.64	-6,909.6	2,984.0	1,591.0	1,392.1	198.88	8.000	
15,200.0	8,832.0	15,136.8	8,900.0	107.1	96.4	-91.64	-7,009.6	2,984.7	1,590.9	1,389.3	201.62	7.891	
15,300.0	8,832.0	15,236.8	8,900.0	108.5	97.8	-91.64	-7,109.6	2,985.5	1,590.9	1,386.6	204.37	7.785	
15,400.0	8,832.0	15,336.8	8,900.0	109.8	99.1	-91.64	-7,209.6	2,986.3	1,590.9	1,383.8	207.12	7.681	
15,500.0	8,832.0	15,436.8	8,900.0	111.2	100.5	-91.64	-7,309.6	2,987.0	1,590.9	1,381.1	209.87	7.580	
15,600.0	8,832.0	15,536.8	8,900.0	112.5	101.9	-91.64	-7,409.6	2,987.8	1,590.9	1,378.3	212.63	7.482	
15,700.0	8,832.0	15,636.8	8,900.0	113.9	103.3	-91.64	-7,509.6	2,988.6	1,590.9	1,375.5	215.39	7.386	
15,800.0	8,832.0	15,736.8	8,900.0	115.3	104.6	-91.64	-7,609.5	2,989.4	1,590.9	1,372.7	218.16	7.292	
15,900.0	8,832.0	15,836.8	8,900.0	116.7	106.0	-91.64	-7,709.5	2,990.1	1,590.9	1,370.0	220.93	7.201	
16,000.0	8,832.0	15,936.8	8,900.0	118.0	107.4	-91.64	-7,809.5	2,990.9	1,590.9	1,367.2	223.70	7.112	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 301H - 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
16,100.0	8,832.0	16,036.8	8,900.0	119.4	108.8	-91.64	-7,909.5	2,991.7	1,590.9	1,364.4	226.47	7.025	
16,200.0	8,832.0	16,136.8	8,900.0	120.8	110.2	-91.64	-8,009.5	2,992.4	1,590.9	1,361.6	229.25	6.939	
16,300.0	8,832.0	16,236.8	8,900.0	122.2	111.6	-91.64	-8,109.5	2,993.2	1,590.9	1,358.8	232.03	6.856	
16,400.0	8,832.0	16,336.8	8,900.0	123.5	112.9	-91.64	-8,209.5	2,994.0	1,590.9	1,356.0	234.82	6.775	
16,500.0	8,832.0	16,436.8	8,900.0	124.9	114.3	-91.64	-8,309.5	2,994.7	1,590.8	1,353.2	237.60	6.695	
16,600.0	8,832.0	16,536.8	8,900.0	126.3	115.7	-91.64	-8,409.5	2,995.5	1,590.8	1,350.4	240.39	6.618	
16,700.0	8,832.0	16,636.8	8,900.0	127.7	117.1	-91.64	-8,509.5	2,996.3	1,590.8	1,347.7	243.18	6.542	
16,800.0	8,832.0	16,736.8	8,900.0	129.1	118.5	-91.64	-8,609.5	2,997.0	1,590.8	1,344.8	245.98	6.467	
16,900.0	8,832.0	16,836.8	8,900.0	130.5	119.9	-91.64	-8,709.5	2,997.8	1,590.8	1,342.0	248.77	6.395	
17,000.0	8,832.0	16,936.8	8,900.0	131.9	121.3	-91.64	-8,809.5	2,998.6	1,590.8	1,339.2	251.57	6.323	
17,100.0	8,832.0	17,036.8	8,900.0	133.3	122.7	-91.64	-8,909.5	2,999.3	1,590.8	1,336.4	254.37	6.254	
17,200.0	8,832.0	17,136.8	8,900.0	134.6	124.1	-91.64	-9,009.5	3,000.1	1,590.8	1,333.6	257.18	6.186	
17,300.0	8,832.0	17,236.8	8,900.0	136.0	125.5	-91.64	-9,109.5	3,000.9	1,590.8	1,330.8	259.98	6.119	
17,400.0	8,832.0	17,336.8	8,900.0	137.4	126.9	-91.64	-9,209.5	3,001.7	1,590.8	1,328.0	262.79	6.054	
17,500.0	8,832.0	17,436.8	8,900.0	138.8	128.3	-91.64	-9,309.5	3,002.4	1,590.8	1,325.2	265.60	5.989	
17,600.0	8,832.0	17,536.8	8,900.0	140.2	129.7	-91.64	-9,409.5	3,003.2	1,590.8	1,322.4	268.41	5.927	
17,700.0	8,832.0	17,636.8	8,900.0	141.6	131.1	-91.64	-9,509.5	3,004.0	1,590.8	1,319.5	271.22	5.865	
17,800.0	8,832.0	17,736.8	8,900.0	143.0	132.5	-91.64	-9,609.5	3,004.7	1,590.8	1,316.7	274.03	5.805	
17,900.0	8,832.0	17,836.8	8,900.0	144.4	133.9	-91.64	-9,709.5	3,005.5	1,590.7	1,313.9	276.85	5.746	
18,000.0	8,832.0	17,936.8	8,900.0	145.8	135.3	-91.64	-9,809.5	3,006.3	1,590.7	1,311.1	279.66	5.688	
18,100.0	8,832.0	18,036.8	8,900.0	147.2	136.7	-91.64	-9,909.5	3,007.0	1,590.7	1,308.2	282.48	5.631	
18,200.0	8,832.0	18,136.8	8,900.0	148.6	138.1	-91.64	-10,009.5	3,007.8	1,590.7	1,305.4	285.30	5.576	
18,300.0	8,832.0	18,236.8	8,900.0	150.0	139.5	-91.64	-10,109.5	3,008.6	1,590.7	1,302.6	288.13	5.521	
18,400.0	8,832.0	18,336.8	8,900.0	151.4	140.9	-91.64	-10,209.5	3,009.3	1,590.7	1,299.8	290.95	5.467	
18,500.0	8,832.0	18,436.8	8,900.0	152.8	142.4	-91.64	-10,309.5	3,010.1	1,590.7	1,296.9	293.77	5.415	
18,600.0	8,832.0	18,536.8	8,900.0	154.2	143.8	-91.64	-10,409.5	3,010.9	1,590.7	1,294.1	296.60	5.363	
18,700.0	8,832.0	18,636.8	8,900.0	155.7	145.2	-91.64	-10,509.5	3,011.6	1,590.7	1,291.3	299.43	5.312	
18,800.0	8,832.0	18,736.8	8,900.0	157.1	146.6	-91.64	-10,609.5	3,012.4	1,590.7	1,288.4	302.25	5.263	
18,900.0	8,832.0	18,836.8	8,900.0	158.5	148.0	-91.64	-10,709.5	3,013.2	1,590.7	1,285.6	305.08	5.214	
19,000.0	8,832.0	18,936.8	8,900.0	159.9	149.4	-91.64	-10,809.5	3,013.9	1,590.7	1,282.7	307.92	5.166	
19,100.0	8,832.0	19,036.8	8,900.0	161.3	150.8	-91.64	-10,909.5	3,014.7	1,590.7	1,279.9	310.75	5.119	
19,200.0	8,832.0	19,136.8	8,900.0	162.7	152.2	-91.64	-11,009.4	3,015.5	1,590.6	1,277.1	313.58	5.073	
19,226.4	8,832.0	19,163.2	8,900.0	163.1	152.6	-91.64	-11,035.9	3,015.7	1,590.6	1,276.3	314.33	5.060	ES, SF

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 501H - 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
3,400.0	3,368.8	3,390.3	3,390.3	12.3	11.9	-8.47	-740.6	2,260.7	2,113.6	2,089.9	23.68	89.265	
3,500.0	3,465.3	3,486.8	3,486.8	12.8	12.3	-8.57	-740.6	2,260.7	2,087.6	2,063.3	24.38	85.619	
3,600.0	3,561.8	3,583.3	3,583.3	13.2	12.6	-8.68	-740.6	2,260.7	2,061.7	2,036.6	25.09	82.170	
3,700.0	3,658.3	3,679.8	3,679.8	13.7	13.0	-8.79	-740.6	2,260.7	2,035.8	2,010.0	25.80	78.905	
3,800.0	3,754.8	3,776.3	3,776.3	14.2	13.3	-8.90	-740.6	2,260.7	2,009.9	1,983.4	26.51	75.809	
3,900.0	3,851.3	3,872.8	3,872.8	14.6	13.7	-9.02	-740.6	2,260.7	1,984.0	1,956.8	27.23	72.870	
4,000.0	3,947.8	3,969.3	3,969.3	15.1	14.0	-9.14	-740.6	2,260.7	1,958.1	1,930.2	27.94	70.077	
4,100.0	4,044.3	4,065.8	4,065.8	15.6	14.3	-9.27	-740.6	2,260.7	1,932.3	1,903.6	28.66	67.419	
4,200.0	4,140.9	4,162.4	4,162.4	16.1	14.7	-9.39	-740.6	2,260.7	1,906.4	1,877.0	29.38	64.889	
4,300.0	4,237.4	4,258.9	4,258.9	16.5	15.0	-9.52	-740.6	2,260.7	1,880.5	1,850.4	30.10	62.476	
4,400.0	4,333.9	4,355.4	4,355.4	17.0	15.4	-9.66	-740.6	2,260.7	1,854.7	1,823.9	30.82	60.174	
4,500.0	4,430.4	4,451.9	4,451.9	17.5	15.7	-9.79	-740.6	2,260.7	1,828.9	1,797.3	31.55	57.974	
4,600.0	4,526.9	4,548.4	4,548.4	18.0	16.1	-9.93	-740.6	2,260.7	1,803.0	1,770.8	32.27	55.872	
4,700.0	4,623.4	4,644.9	4,644.9	18.5	16.4	-10.08	-740.6	2,260.7	1,777.2	1,744.2	33.00	53.860	
4,800.0	4,719.9	4,741.4	4,741.4	19.0	16.8	-10.23	-740.6	2,260.7	1,751.4	1,717.7	33.72	51.933	
4,900.0	4,816.4	4,837.9	4,837.9	19.5	17.1	-10.38	-740.6	2,260.7	1,725.6	1,691.2	34.45	50.086	
5,000.0	4,912.9	4,934.4	4,934.4	20.0	17.5	-10.54	-740.6	2,260.7	1,699.8	1,664.6	35.18	48.314	
5,100.0	5,009.4	5,030.9	5,030.9	20.5	17.8	-10.71	-740.6	2,260.7	1,674.1	1,638.1	35.91	46.613	
5,200.0	5,106.0	5,127.5	5,127.5	21.0	18.2	-10.88	-740.6	2,260.7	1,648.3	1,611.6	36.65	44.979	
5,300.0	5,202.5	5,224.0	5,224.0	21.5	18.5	-11.05	-740.6	2,260.7	1,622.6	1,585.2	37.38	43.408	
5,400.0	5,299.0	5,320.5	5,320.5	22.0	18.8	-11.23	-740.6	2,260.7	1,596.8	1,558.7	38.11	41.897	
5,500.0	5,395.5	5,417.0	5,417.0	22.5	19.2	-11.42	-740.6	2,260.7	1,571.1	1,532.3	38.85	40.441	
5,600.0	5,492.0	5,514.8	5,514.8	23.0	19.5	-11.61	-740.6	2,260.7	1,545.4	1,505.8	39.59	39.037	
5,700.0	5,588.5	5,618.5	5,618.5	23.5	19.9	-11.92	-738.3	2,260.9	1,519.4	1,479.0	40.34	37.664	
5,800.0	5,685.0	5,714.7	5,714.6	24.0	20.3	-12.25	-734.9	2,261.2	1,493.2	1,452.1	41.08	36.348	
5,900.0	5,781.5	5,810.8	5,810.6	24.5	20.6	-12.60	-731.6	2,261.5	1,467.1	1,425.2	41.82	35.079	
6,000.0	5,878.0	5,906.9	5,906.7	25.0	20.9	-12.97	-728.2	2,261.8	1,441.0	1,398.4	42.57	33.853	
6,100.0	5,974.5	6,003.0	6,002.8	25.5	21.3	-13.34	-724.9	2,262.0	1,415.0	1,371.6	43.31	32.669	
6,200.0	6,071.0	6,099.2	6,098.8	26.0	21.6	-13.73	-721.5	2,262.3	1,389.0	1,344.9	44.06	31.525	
6,300.0	6,167.6	6,195.3	6,194.9	26.5	22.0	-14.14	-718.2	2,262.6	1,363.1	1,318.3	44.81	30.419	
6,400.0	6,264.1	6,291.4	6,291.0	27.0	22.3	-14.56	-714.9	2,262.9	1,337.3	1,291.7	45.56	29.349	
6,500.0	6,360.6	6,387.6	6,387.1	27.5	22.7	-14.99	-711.5	2,263.1	1,311.5	1,265.2	46.32	28.314	
6,600.0	6,457.1	6,483.7	6,483.1	28.0	23.0	-15.45	-708.2	2,263.4	1,285.8	1,238.7	47.08	27.313	
6,700.0	6,553.6	6,579.8	6,579.2	28.5	23.4	-15.92	-704.8	2,263.7	1,260.2	1,212.4	47.84	26.343	
6,800.0	6,650.1	6,675.9	6,675.3	29.0	23.7	-16.41	-701.5	2,263.9	1,234.7	1,186.1	48.60	25.403	
6,900.0	6,746.6	6,772.1	6,771.3	29.5	24.0	-16.92	-698.1	2,264.2	1,209.3	1,159.9	49.37	24.493	
7,000.0	6,843.1	6,868.2	6,867.4	30.0	24.4	-17.45	-694.8	2,264.5	1,183.9	1,133.8	50.14	23.611	
7,100.0	6,939.6	6,964.3	6,963.5	30.6	24.7	-18.01	-691.4	2,264.8	1,158.7	1,107.8	50.92	22.756	
7,200.0	7,036.1	7,060.4	7,059.5	31.1	25.1	-18.59	-688.1	2,265.0	1,133.6	1,081.9	51.70	21.927	
7,300.0	7,132.7	7,156.6	7,155.6	31.6	25.4	-19.20	-684.8	2,265.3	1,108.5	1,056.1	52.48	21.123	
7,400.0	7,229.2	7,252.7	7,251.7	32.1	25.8	-19.83	-681.4	2,265.6	1,083.6	1,030.4	53.27	20.342	
7,500.0	7,325.7	7,348.8	7,347.7	32.6	26.1	-20.49	-678.1	2,265.9	1,058.9	1,004.8	54.06	19.586	
7,600.0	7,422.2	7,445.0	7,443.8	33.1	26.5	-21.19	-674.7	2,266.1	1,034.3	979.4	54.86	18.851	
7,700.0	7,518.7	7,541.1	7,539.9	33.6	26.8	-21.88	-671.4	2,266.4	1,009.9	954.2	55.67	18.140	
7,800.0	7,615.8	7,637.9	7,636.6	34.1	27.1	-22.42	-668.0	2,266.7	987.8	931.3	56.47	17.490	
7,900.0	7,713.7	7,735.4	7,734.1	34.6	27.5	-22.93	-664.6	2,267.0	968.9	911.7	57.27	16.919	
8,000.0	7,812.2	7,833.7	7,832.3	35.0	27.9	-23.41	-661.2	2,267.2	953.4	895.3	58.06	16.422	
8,100.0	7,911.3	7,932.5	7,931.1	35.4	28.2	-23.84	-657.8	2,267.5	941.1	882.3	58.83	15.998	
8,200.0	8,010.8	8,031.8	8,030.3	35.8	28.6	-24.23	-654.3	2,267.8	932.1	872.5	59.58	15.644	
8,300.0	8,110.6	8,131.5	8,129.9	36.1	28.9	-24.57	-650.8	2,268.1	926.3	866.0	60.32	15.356	
8,400.0	8,210.5	8,231.3	8,229.7	36.4	29.3	-24.84	-647.4	2,268.4	923.7	862.7	61.04	15.133	
8,479.0	8,289.5	8,310.2	8,308.6	36.6	29.6	-25.03	-644.6	2,268.6	923.3	861.7	61.58	14.993 CC	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 501H - 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
8,500.0	8,310.5	8,331.3	8,329.6	36.7	29.6	90.33	-643.9	2,268.7	923.7	862.0	61.73	14.965	
8,600.0	8,410.4	8,431.0	8,429.2	37.0	30.0	-89.62	-640.4	2,268.9	924.0	861.5	62.44	14.798	
8,700.0	8,507.8	8,527.5	8,525.7	37.3	30.3	-91.08	-637.1	2,269.2	924.5	861.1	63.31	14.602	
8,800.0	8,598.4	8,616.7	8,614.8	37.7	30.7	-93.26	-634.0	2,269.5	926.8	862.4	64.34	14.404	
8,900.0	8,678.4	8,697.1	8,695.2	38.1	30.9	-95.55	-631.4	2,269.7	933.4	867.9	65.52	14.246	
9,000.0	8,744.3	8,767.7	8,765.8	38.6	31.2	-97.20	-630.6	2,269.7	946.7	879.9	66.81	14.169	
9,100.0	8,793.1	8,816.5	8,814.6	39.0	31.4	-97.05	-630.6	2,269.7	969.1	900.9	68.17	14.216	
9,200.0	8,822.8	8,846.2	8,844.3	39.5	31.5	-94.65	-630.6	2,269.7	1,001.7	932.2	69.48	14.416	
9,300.0	8,832.0	8,855.4	8,853.5	40.0	31.5	-90.00	-630.6	2,269.7	1,043.9	973.2	70.66	14.774	
9,400.0	8,832.0	8,855.4	8,853.5	40.6	31.5	-90.00	-630.6	2,269.7	1,093.9	1,022.2	71.68	15.260	
9,500.0	8,832.0	9,981.2	9,500.0	41.2	34.6	-124.96	-1,314.9	2,275.0	1,128.3	1,068.6	59.75	18.885	
9,600.0	8,832.0	10,081.2	9,500.0	41.8	35.0	-124.96	-1,414.9	2,275.8	1,128.3	1,067.7	60.63	18.610	
9,700.0	8,832.0	10,181.2	9,500.0	42.5	35.4	-124.96	-1,514.9	2,276.5	1,128.3	1,066.7	61.60	18.316	
9,800.0	8,832.0	10,281.2	9,500.0	43.2	35.9	-124.96	-1,614.8	2,277.3	1,128.3	1,065.7	62.66	18.006	
9,900.0	8,832.0	10,381.2	9,500.0	44.0	36.5	-124.96	-1,714.8	2,278.1	1,128.3	1,064.5	63.81	17.683	
10,000.0	8,832.0	10,481.2	9,500.0	44.8	37.0	-124.96	-1,814.8	2,278.8	1,128.3	1,063.3	65.03	17.351	
10,100.0	8,832.0	10,581.2	9,500.0	45.6	37.7	-124.96	-1,914.8	2,279.6	1,128.3	1,062.0	66.32	17.012	
10,200.0	8,832.0	10,681.2	9,500.0	46.5	38.3	-124.96	-2,014.8	2,280.4	1,128.3	1,060.6	67.69	16.669	
10,300.0	8,832.0	10,781.2	9,500.0	47.4	39.1	-124.96	-2,114.8	2,281.1	1,128.3	1,059.2	69.12	16.324	
10,400.0	8,832.0	10,881.2	9,500.0	48.3	39.8	-124.96	-2,214.8	2,281.9	1,128.3	1,057.7	70.61	15.978	
10,500.0	8,832.0	10,981.2	9,500.0	49.2	40.6	-124.96	-2,314.8	2,282.7	1,128.3	1,056.1	72.16	15.635	
10,600.0	8,832.0	11,081.2	9,500.0	50.2	41.4	-124.96	-2,414.8	2,283.5	1,128.3	1,054.5	73.77	15.295	
10,700.0	8,832.0	11,181.2	9,500.0	51.2	42.3	-124.96	-2,514.8	2,284.2	1,128.3	1,052.8	75.43	14.959	
10,800.0	8,832.0	11,281.2	9,500.0	52.2	43.2	-124.96	-2,614.8	2,285.0	1,128.3	1,051.1	77.13	14.628	
10,900.0	8,832.0	11,381.2	9,500.0	53.2	44.1	-124.96	-2,714.8	2,285.8	1,128.3	1,049.4	78.88	14.303	
11,000.0	8,832.0	11,481.2	9,500.0	54.2	45.1	-124.96	-2,814.8	2,286.5	1,128.2	1,047.6	80.67	13.986	
11,100.0	8,832.0	11,581.2	9,500.0	55.3	46.0	-124.96	-2,914.8	2,287.3	1,128.2	1,045.7	82.50	13.676	
11,200.0	8,832.0	11,681.2	9,500.0	56.4	47.0	-124.96	-3,014.8	2,288.1	1,128.2	1,043.9	84.37	13.373	
11,300.0	8,832.0	11,781.2	9,500.0	57.5	48.1	-124.96	-3,114.8	2,288.8	1,128.2	1,042.0	86.27	13.078	
11,400.0	8,832.0	11,881.2	9,500.0	58.6	49.1	-124.96	-3,214.8	2,289.6	1,128.2	1,040.0	88.20	12.792	
11,500.0	8,832.0	11,981.2	9,500.0	59.7	50.2	-124.96	-3,314.8	2,290.4	1,128.2	1,038.0	90.16	12.513	
11,600.0	8,832.0	12,081.2	9,500.0	60.9	51.3	-124.96	-3,414.8	2,291.1	1,128.2	1,036.1	92.15	12.243	
11,700.0	8,832.0	12,181.2	9,500.0	62.0	52.4	-124.96	-3,514.8	2,291.9	1,128.2	1,034.0	94.17	11.980	
11,800.0	8,832.0	12,281.2	9,500.0	63.2	53.5	-124.96	-3,614.8	2,292.7	1,128.2	1,032.0	96.21	11.726	
11,900.0	8,832.0	12,381.2	9,500.0	64.4	54.6	-124.96	-3,714.8	2,293.4	1,128.2	1,029.9	98.28	11.480	
12,000.0	8,832.0	12,481.2	9,500.0	65.6	55.8	-124.96	-3,814.8	2,294.2	1,128.2	1,027.8	100.36	11.241	
12,100.0	8,832.0	12,581.2	9,500.0	66.8	56.9	-124.96	-3,914.8	2,295.0	1,128.2	1,025.7	102.47	11.010	
12,200.0	8,832.0	12,681.2	9,500.0	68.0	58.1	-124.96	-4,014.8	2,295.7	1,128.2	1,023.6	104.60	10.786	
12,300.0	8,832.0	12,781.2	9,500.0	69.2	59.3	-124.96	-4,114.8	2,296.5	1,128.2	1,021.4	106.74	10.569	
12,400.0	8,832.0	12,881.2	9,500.0	70.4	60.5	-124.96	-4,214.8	2,297.3	1,128.2	1,019.3	108.90	10.359	
12,500.0	8,832.0	12,981.2	9,500.0	71.7	61.7	-124.96	-4,314.8	2,298.0	1,128.1	1,017.1	111.08	10.156	
12,600.0	8,832.0	13,081.2	9,500.0	72.9	62.9	-124.96	-4,414.8	2,298.8	1,128.1	1,014.9	113.27	9.960	
12,700.0	8,832.0	13,181.2	9,500.0	74.2	64.2	-124.96	-4,514.8	2,299.6	1,128.1	1,012.7	115.48	9.769	
12,800.0	8,832.0	13,281.2	9,500.0	75.4	65.4	-124.96	-4,614.8	2,300.4	1,128.1	1,010.4	117.69	9.585	
12,900.0	8,832.0	13,381.2	9,500.0	76.7	66.6	-124.96	-4,714.8	2,301.1	1,128.1	1,008.2	119.93	9.407	
13,000.0	8,832.0	13,481.2	9,500.0	78.0	67.9	-124.97	-4,814.8	2,301.9	1,128.1	1,005.9	122.17	9.234	
13,100.0	8,832.0	13,581.2	9,500.0	79.2	69.1	-124.97	-4,914.8	2,302.7	1,128.1	1,003.7	124.43	9.067	
13,200.0	8,832.0	13,681.2	9,500.0	80.5	70.4	-124.97	-5,014.7	2,303.4	1,128.1	1,001.4	126.69	8.904	
13,300.0	8,832.0	13,781.2	9,500.0	81.8	71.7	-124.97	-5,114.7	2,304.2	1,128.1	999.1	128.97	8.747	
13,400.0	8,832.0	13,881.2	9,500.0	83.1	73.0	-124.97	-5,214.7	2,305.0	1,128.1	996.8	131.25	8.595	
13,500.0	8,832.0	13,981.2	9,500.0	84.4	74.3	-124.97	-5,314.7	2,305.7	1,128.1	994.5	133.55	8.447	
13,600.0	8,832.0	14,081.2	9,500.0	85.7	75.6	-124.97	-5,414.7	2,306.5	1,128.1	992.2	135.85	8.304	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 501H - 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
13,700.0	8,832.0	14,181.2	9,500.0	87.0	76.9	-124.97	-5,514.7	2,307.3	1,128.1	989.9	138.16	8.165	
13,800.0	8,832.0	14,281.2	9,500.0	88.3	78.2	-124.97	-5,614.7	2,308.0	1,128.1	987.6	140.48	8.030	
13,900.0	8,832.0	14,381.2	9,500.0	89.7	79.5	-124.97	-5,714.7	2,308.8	1,128.1	985.3	142.81	7.899	
14,000.0	8,832.0	14,481.2	9,500.0	91.0	80.8	-124.97	-5,814.7	2,309.6	1,128.1	982.9	145.14	7.772	
14,100.0	8,832.0	14,581.2	9,500.0	92.3	82.1	-124.97	-5,914.7	2,310.3	1,128.0	980.6	147.48	7.649	
14,200.0	8,832.0	14,681.2	9,500.0	93.6	83.4	-124.97	-6,014.7	2,311.1	1,128.0	978.2	149.83	7.529	
14,300.0	8,832.0	14,781.2	9,500.0	95.0	84.8	-124.97	-6,114.7	2,311.9	1,128.0	975.9	152.18	7.412	
14,400.0	8,832.0	14,881.2	9,500.0	96.3	86.1	-124.97	-6,214.7	2,312.6	1,128.0	973.5	154.54	7.299	
14,500.0	8,832.0	14,981.2	9,500.0	97.6	87.4	-124.97	-6,314.7	2,313.4	1,128.0	971.1	156.90	7.189	
14,600.0	8,832.0	15,081.2	9,500.0	99.0	88.8	-124.97	-6,414.7	2,314.2	1,128.0	968.7	159.27	7.082	
14,700.0	8,832.0	15,181.2	9,500.0	100.3	90.1	-124.97	-6,514.7	2,314.9	1,128.0	966.4	161.65	6.978	
14,800.0	8,832.0	15,281.2	9,500.0	101.7	91.4	-124.97	-6,614.7	2,315.7	1,128.0	964.0	164.03	6.877	
14,900.0	8,832.0	15,381.2	9,500.0	103.0	92.8	-124.97	-6,714.7	2,316.5	1,128.0	961.6	166.41	6.778	
15,000.0	8,832.0	15,481.2	9,500.0	104.4	94.1	-124.97	-6,814.7	2,317.3	1,128.0	959.2	168.80	6.682	
15,100.0	8,832.0	15,581.2	9,500.0	105.7	95.5	-124.97	-6,914.7	2,318.0	1,128.0	956.8	171.19	6.589	
15,200.0	8,832.0	15,681.2	9,500.0	107.1	96.9	-124.97	-7,014.7	2,318.8	1,128.0	954.4	173.59	6.498	
15,300.0	8,832.0	15,781.2	9,500.0	108.5	98.2	-124.97	-7,114.7	2,319.6	1,128.0	952.0	175.99	6.409	
15,400.0	8,832.0	15,881.2	9,500.0	109.8	99.6	-124.97	-7,214.7	2,320.3	1,128.0	949.6	178.39	6.323	
15,500.0	8,832.0	15,981.2	9,500.0	111.2	100.9	-124.97	-7,314.7	2,321.1	1,128.0	947.2	180.80	6.239	
15,600.0	8,832.0	16,081.2	9,500.0	112.5	102.3	-124.97	-7,414.7	2,321.9	1,128.0	944.7	183.21	6.157	
15,700.0	8,832.0	16,181.2	9,500.0	113.9	103.7	-124.97	-7,514.7	2,322.6	1,127.9	942.3	185.63	6.076	
15,800.0	8,832.0	16,281.2	9,500.0	115.3	105.0	-124.97	-7,614.7	2,323.4	1,127.9	939.9	188.05	5.998	
15,900.0	8,832.0	16,381.2	9,500.0	116.7	106.4	-124.97	-7,714.7	2,324.2	1,127.9	937.5	190.47	5.922	
16,000.0	8,832.0	16,481.2	9,500.0	118.0	107.8	-124.97	-7,814.7	2,324.9	1,127.9	935.0	192.89	5.848	
16,100.0	8,832.0	16,581.2	9,500.0	119.4	109.2	-124.97	-7,914.7	2,325.7	1,127.9	932.6	195.32	5.775	
16,200.0	8,832.0	16,681.2	9,500.0	120.8	110.5	-124.97	-8,014.7	2,326.5	1,127.9	930.2	197.75	5.704	
16,300.0	8,832.0	16,781.2	9,500.0	122.2	111.9	-124.97	-8,114.7	2,327.2	1,127.9	927.7	200.18	5.634	
16,400.0	8,832.0	16,881.2	9,500.0	123.5	113.3	-124.97	-8,214.7	2,328.0	1,127.9	925.3	202.61	5.567	
16,500.0	8,832.0	16,981.2	9,500.0	124.9	114.7	-124.97	-8,314.7	2,328.8	1,127.9	922.8	205.05	5.501	
16,600.0	8,832.0	17,081.2	9,500.0	126.3	116.1	-124.97	-8,414.6	2,329.5	1,127.9	920.4	207.49	5.436	
16,700.0	8,832.0	17,181.2	9,500.0	127.7	117.5	-124.97	-8,514.6	2,330.3	1,127.9	917.9	209.93	5.373	
16,800.0	8,832.0	17,281.2	9,500.0	129.1	118.9	-124.97	-8,614.6	2,331.1	1,127.9	915.5	212.38	5.311	
16,900.0	8,832.0	17,381.2	9,500.0	130.5	120.2	-124.97	-8,714.6	2,331.8	1,127.9	913.0	214.82	5.250	
17,000.0	8,832.0	17,481.2	9,500.0	131.9	121.6	-124.97	-8,814.6	2,332.6	1,127.9	910.6	217.27	5.191	
17,100.0	8,832.0	17,581.2	9,500.0	133.3	123.0	-124.97	-8,914.6	2,333.4	1,127.9	908.1	219.72	5.133	
17,200.0	8,832.0	17,681.2	9,500.0	134.6	124.4	-124.97	-9,014.6	2,334.2	1,127.8	905.7	222.17	5.076	
17,300.0	8,832.0	17,781.2	9,500.0	136.0	125.8	-124.97	-9,114.6	2,334.9	1,127.8	903.2	224.63	5.021	
17,400.0	8,832.0	17,881.2	9,500.0	137.4	127.2	-124.98	-9,214.6	2,335.7	1,127.8	900.8	227.08	4.967	
17,500.0	8,832.0	17,981.2	9,500.0	138.8	128.6	-124.98	-9,314.6	2,336.5	1,127.8	898.3	229.54	4.913	
17,600.0	8,832.0	18,081.2	9,500.0	140.2	130.0	-124.98	-9,414.6	2,337.2	1,127.8	895.8	232.00	4.861	
17,700.0	8,832.0	18,181.2	9,500.0	141.6	131.4	-124.98	-9,514.6	2,338.0	1,127.8	893.4	234.46	4.810	
17,800.0	8,832.0	18,281.2	9,500.0	143.0	132.8	-124.98	-9,614.6	2,338.8	1,127.8	890.9	236.92	4.760	
17,900.0	8,832.0	18,381.2	9,500.0	144.4	134.2	-124.98	-9,714.6	2,339.5	1,127.8	888.4	239.39	4.711	
18,000.0	8,832.0	18,481.2	9,500.0	145.8	135.6	-124.98	-9,814.6	2,340.3	1,127.8	885.9	241.85	4.663	
18,100.0	8,832.0	18,581.2	9,500.0	147.2	137.0	-124.98	-9,914.6	2,341.1	1,127.8	883.5	244.32	4.616	
18,200.0	8,832.0	18,681.2	9,500.0	148.6	138.4	-124.98	-10,014.6	2,341.8	1,127.8	881.0	246.79	4.570	
18,300.0	8,832.0	18,781.2	9,500.0	150.0	139.8	-124.98	-10,114.6	2,342.6	1,127.8	878.5	249.26	4.525	
18,400.0	8,832.0	18,881.2	9,500.0	151.4	141.2	-124.98	-10,214.6	2,343.4	1,127.8	876.0	251.73	4.480	
18,500.0	8,832.0	18,981.2	9,500.0	152.8	142.6	-124.98	-10,314.6	2,344.1	1,127.8	873.6	254.20	4.437	
18,600.0	8,832.0	19,081.2	9,500.0	154.2	144.0	-124.98	-10,414.6	2,344.9	1,127.8	871.1	256.68	4.394	
18,700.0	8,832.0	19,181.2	9,500.0	155.7	145.5	-124.98	-10,514.6	2,345.7	1,127.8	868.6	259.15	4.352	
18,800.0	8,832.0	19,281.2	9,500.0	157.1	146.9	-124.98	-10,614.6	2,346.4	1,127.7	866.1	261.63	4.311	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 501H - 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
18,900.0	8,832.0	19,381.2	9,500.0	158.5	148.3	-124.98	-10,714.6	2,347.2	1,127.7	863.6	264.10	4.270	
19,000.0	8,832.0	19,481.2	9,500.0	159.9	149.7	-124.98	-10,814.6	2,348.0	1,127.7	861.2	266.58	4.230	
19,100.0	8,832.0	19,581.2	9,500.0	161.3	151.1	-124.98	-10,914.6	2,348.7	1,127.7	858.7	269.06	4.191	
19,200.0	8,832.0	19,681.2	9,500.0	162.7	152.5	-124.98	-11,014.6	2,349.5	1,127.7	856.2	271.54	4.153	
19,219.5	8,832.0	19,700.7	9,500.0	163.0	152.8	-124.98	-11,034.0	2,349.7	1,127.7	855.7	272.02	4.146	
19,226.4	8,832.0	19,707.2	9,500.0	163.1	152.9	-124.98	-11,040.6	2,349.7	1,127.7	855.5	272.20	4.143	ES, SF

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 511H (fka 007H) - 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
4,600.0	4,526.9	4,291.3	4,271.7	18.0	15.5	-12.86	-703.8	2,569.5	2,111.7	2,080.3	31.41	67.223	
4,700.0	4,623.4	4,390.0	4,369.3	18.5	15.9	-13.15	-702.1	2,583.1	2,099.1	2,066.9	32.17	65.253	
4,800.0	4,719.9	4,488.6	4,467.0	19.0	16.3	-13.44	-700.3	2,596.7	2,086.5	2,053.6	32.92	63.372	
4,900.0	4,816.4	4,587.3	4,564.7	19.5	16.7	-13.73	-698.6	2,610.4	2,074.0	2,040.3	33.68	61.574	
5,000.0	4,912.9	4,685.9	4,662.4	20.0	17.1	-14.03	-696.9	2,624.0	2,061.5	2,027.0	34.44	59.853	
5,100.0	5,009.4	4,784.5	4,760.1	20.5	17.5	-14.33	-695.1	2,637.6	2,049.1	2,013.9	35.20	58.205	
5,200.0	5,106.0	4,883.2	4,857.7	21.0	17.8	-14.63	-693.4	2,651.2	2,036.7	2,000.7	35.97	56.626	
5,300.0	5,202.5	4,981.8	4,955.4	21.5	18.2	-14.94	-691.7	2,664.8	2,024.4	1,987.7	36.73	55.111	
5,400.0	5,299.0	5,080.5	5,053.1	22.0	18.6	-15.25	-689.9	2,678.4	2,012.2	1,974.7	37.50	53.657	
5,500.0	5,395.5	5,179.1	5,150.8	22.5	19.0	-15.57	-688.2	2,692.0	2,000.0	1,961.7	38.27	52.261	
5,600.0	5,492.0	5,277.7	5,248.5	23.0	19.4	-15.89	-686.5	2,705.6	1,987.8	1,948.8	39.04	50.919	
5,700.0	5,588.5	5,376.4	5,346.1	23.5	19.8	-16.21	-684.7	2,719.2	1,975.8	1,936.0	39.81	49.629	
5,800.0	5,685.0	5,475.0	5,443.8	24.0	20.2	-16.54	-683.0	2,732.9	1,963.8	1,923.2	40.58	48.387	
5,900.0	5,781.5	5,573.6	5,541.5	24.5	20.6	-16.87	-681.3	2,746.5	1,951.9	1,910.5	41.36	47.192	
6,000.0	5,878.0	5,672.3	5,639.2	25.0	21.0	-17.21	-679.6	2,760.1	1,940.0	1,897.8	42.14	46.040	
6,100.0	5,974.5	5,770.9	5,736.9	25.5	21.4	-17.55	-677.8	2,773.7	1,928.2	1,885.3	42.92	44.929	
6,200.0	6,071.0	5,869.6	5,834.5	26.0	21.8	-17.89	-676.1	2,787.3	1,916.5	1,872.8	43.70	43.858	
6,300.0	6,167.6	5,968.2	5,932.2	26.5	22.1	-18.24	-674.4	2,800.9	1,904.8	1,860.3	44.48	42.824	
6,400.0	6,264.1	6,066.8	6,029.9	27.0	22.5	-18.59	-672.6	2,814.5	1,893.2	1,847.9	45.26	41.826	
6,500.0	6,360.6	6,165.5	6,127.6	27.5	22.9	-18.94	-670.9	2,828.1	1,881.7	1,835.6	46.05	40.862	
6,600.0	6,457.1	6,264.1	6,225.2	28.0	23.3	-19.31	-669.2	2,841.8	1,870.2	1,823.4	46.84	39.930	
6,700.0	6,553.6	6,362.8	6,322.9	28.5	23.7	-19.67	-667.4	2,855.4	1,858.9	1,811.2	47.63	39.029	
6,800.0	6,650.1	6,461.4	6,420.6	29.0	24.1	-20.04	-665.7	2,869.0	1,847.6	1,799.1	48.42	38.157	
6,900.0	6,746.6	6,560.0	6,518.3	29.5	24.5	-20.41	-664.0	2,882.6	1,836.4	1,787.1	49.21	37.314	
7,000.0	6,843.1	6,658.7	6,616.0	30.0	24.9	-20.79	-662.2	2,896.2	1,825.2	1,775.2	50.01	36.497	
7,100.0	6,939.6	6,757.3	6,713.6	30.6	25.3	-21.17	-660.5	2,909.8	1,814.2	1,763.4	50.81	35.706	
7,200.0	7,036.1	6,856.0	6,811.3	31.1	25.7	-21.56	-658.8	2,923.4	1,803.2	1,751.6	51.61	34.940	
7,300.0	7,132.7	6,954.6	6,909.0	31.6	26.1	-21.95	-657.0	2,937.0	1,792.3	1,739.9	52.41	34.198	
7,400.0	7,229.2	7,053.2	7,006.7	32.1	26.5	-22.35	-655.3	2,950.6	1,781.5	1,728.3	53.21	33.477	
7,500.0	7,325.7	7,151.9	7,104.4	32.6	26.9	-22.75	-653.6	2,964.3	1,770.8	1,716.7	54.02	32.779	
7,600.0	7,422.2	7,250.5	7,202.0	33.1	27.3	-23.16	-651.9	2,977.9	1,760.1	1,705.3	54.83	32.101	
7,700.0	7,518.7	7,349.2	7,299.7	33.6	27.7	-23.55	-650.1	2,991.5	1,749.7	1,694.0	55.64	31.445	
7,800.0	7,615.8	7,448.1	7,397.7	34.1	28.1	-23.87	-648.4	3,005.1	1,741.4	1,685.0	56.45	30.851	
7,900.0	7,713.7	7,547.4	7,496.1	34.6	28.5	-24.17	-646.6	3,018.9	1,736.4	1,679.2	57.24	30.337	
8,000.0	7,812.2	7,647.0	7,594.7	35.0	28.9	-24.45	-644.9	3,032.6	1,734.7	1,676.7	58.02	29.900	
8,004.1	7,816.3	7,651.1	7,598.7	35.0	28.9	-24.46	-644.8	3,033.2	1,734.7	1,676.6	58.05	29.884	CC, ES
8,100.0	7,911.3	7,746.7	7,693.4	35.4	29.3	-24.71	-643.1	3,046.3	1,736.2	1,677.4	58.78	29.538	
8,200.0	8,010.8	7,846.4	7,792.2	35.8	29.7	-24.95	-641.4	3,060.1	1,740.8	1,681.3	59.52	29.247	
8,300.0	8,110.6	7,946.0	7,890.8	36.1	30.1	-25.17	-639.6	3,073.8	1,748.7	1,688.4	60.25	29.025	
8,400.0	8,210.5	8,045.3	7,989.1	36.4	30.5	-25.37	-637.9	3,087.6	1,759.7	1,698.7	60.95	28.869	
8,500.0	8,310.5	8,144.4	8,087.2	36.7	30.9	89.92	-636.2	3,101.2	1,773.2	1,711.6	61.63	28.771	
8,600.0	8,410.4	8,243.2	8,185.1	37.0	31.3	-88.86	-634.4	3,114.9	1,787.0	1,724.7	62.33	28.672	
8,700.0	8,507.8	8,339.3	8,280.3	37.3	31.7	-87.96	-632.7	3,128.1	1,800.5	1,737.4	63.12	28.526	
8,800.0	8,598.4	8,428.4	8,368.5	37.7	32.0	-87.56	-631.2	3,140.4	1,814.0	1,750.0	64.00	28.342	
8,900.0	8,678.4	8,506.6	8,446.0	38.1	32.3	-87.37	-629.8	3,151.2	1,828.1	1,763.1	64.97	28.137	
9,000.0	8,744.3	8,570.6	8,509.3	38.6	32.6	-86.99	-628.7	3,160.0	1,843.7	1,777.7	66.01	27.933	
9,100.0	8,793.1	8,635.0	8,573.1	39.0	32.8	-86.58	-627.6	3,168.8	1,861.8	1,794.7	67.16	27.722	
9,200.0	8,822.8	8,715.8	8,653.4	39.5	33.2	-86.49	-626.4	3,178.1	1,882.3	1,813.8	68.45	27.497	
9,300.0	8,832.0	8,739.2	8,676.7	40.0	33.2	-84.50	-626.1	3,180.4	1,905.8	1,836.2	69.57	27.393	
9,400.0	8,832.0	8,735.9	8,673.4	40.6	33.2	-84.39	-626.1	3,180.1	1,933.5	1,862.9	70.63	27.376	
9,500.0	8,832.0	8,680.2	8,618.0	41.2	33.0	-82.66	-626.9	3,174.0	1,965.9	1,894.4	71.50	27.495	
9,600.0	8,832.0	8,678.7	8,616.5	41.8	33.0	-82.62	-626.9	3,173.9	2,002.7	1,930.2	72.56	27.599	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 511H (fka 007H) - 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
9,700.0	8,832.0	8,677.3	8,615.1	42.5	33.0	-82.57	-626.9	3,173.7	2,043.8	1,970.2	73.61	27.766	
9,800.0	8,832.0	10,571.2	9,730.0	43.2	38.4	-115.38	-1,607.6	3,200.5	2,045.3	1,977.6	67.64	30.236	
9,900.0	8,832.0	10,671.2	9,730.0	44.0	38.9	-115.38	-1,707.6	3,201.3	2,045.3	1,976.5	68.83	29.713	
10,000.0	8,832.0	10,771.2	9,730.0	44.8	39.5	-115.38	-1,807.6	3,202.0	2,045.3	1,975.2	70.11	29.174	
10,100.0	8,832.0	10,871.2	9,730.0	45.6	40.1	-115.38	-1,907.6	3,202.8	2,045.3	1,973.8	71.46	28.622	
10,200.0	8,832.0	10,971.2	9,730.0	46.5	40.7	-115.38	-2,007.6	3,203.6	2,045.3	1,972.4	72.89	28.062	
10,300.0	8,832.0	11,071.2	9,730.0	47.4	41.4	-115.38	-2,107.6	3,204.4	2,045.3	1,970.9	74.38	27.497	
10,400.0	8,832.0	11,171.2	9,730.0	48.3	42.1	-115.38	-2,207.6	3,205.2	2,045.3	1,969.3	75.95	26.931	
10,500.0	8,832.0	11,271.2	9,730.0	49.2	42.9	-115.38	-2,307.6	3,205.9	2,045.3	1,967.7	77.57	26.366	
10,600.0	8,832.0	11,371.2	9,730.0	50.2	43.7	-115.38	-2,407.6	3,206.7	2,045.3	1,966.0	79.26	25.806	
10,700.0	8,832.0	11,471.2	9,730.0	51.2	44.5	-115.38	-2,507.6	3,207.5	2,045.3	1,964.3	81.00	25.252	
10,800.0	8,832.0	11,571.2	9,730.0	52.2	45.4	-115.38	-2,607.6	3,208.3	2,045.3	1,962.5	82.79	24.706	
10,900.0	8,832.0	11,671.2	9,730.0	53.2	46.3	-115.38	-2,707.6	3,209.0	2,045.3	1,960.7	84.63	24.169	
11,000.0	8,832.0	11,771.2	9,730.0	54.2	47.2	-115.38	-2,807.6	3,209.8	2,045.3	1,958.8	86.51	23.642	
11,100.0	8,832.0	11,871.2	9,730.0	55.3	48.1	-115.38	-2,907.6	3,210.6	2,045.3	1,956.9	88.44	23.127	
11,200.0	8,832.0	11,971.2	9,730.0	56.4	49.1	-115.38	-3,007.6	3,211.4	2,045.3	1,954.9	90.40	22.624	
11,300.0	8,832.0	12,071.2	9,730.0	57.5	50.1	-115.38	-3,107.6	3,212.1	2,045.3	1,952.9	92.41	22.133	
11,400.0	8,832.0	12,171.2	9,730.0	58.6	51.1	-115.38	-3,207.6	3,212.9	2,045.3	1,950.8	94.45	21.656	
11,500.0	8,832.0	12,271.2	9,730.0	59.7	52.1	-115.38	-3,307.6	3,213.7	2,045.3	1,948.8	96.52	21.191	
11,600.0	8,832.0	12,371.2	9,730.0	60.9	53.2	-115.38	-3,407.5	3,214.5	2,045.3	1,946.7	98.62	20.739	
11,700.0	8,832.0	12,471.2	9,730.0	62.0	54.3	-115.38	-3,507.5	3,215.2	2,045.3	1,944.5	100.75	20.300	
11,800.0	8,832.0	12,571.2	9,730.0	63.2	55.4	-115.38	-3,607.5	3,216.0	2,045.3	1,942.4	102.91	19.875	
11,900.0	8,832.0	12,671.2	9,730.0	64.4	56.5	-115.38	-3,707.5	3,216.8	2,045.3	1,940.2	105.09	19.462	
12,000.0	8,832.0	12,771.2	9,730.0	65.6	57.6	-115.38	-3,807.5	3,217.6	2,045.3	1,938.0	107.30	19.062	
12,100.0	8,832.0	12,871.2	9,730.0	66.8	58.7	-115.38	-3,907.5	3,218.4	2,045.3	1,935.8	109.53	18.674	
12,200.0	8,832.0	12,971.2	9,730.0	68.0	59.9	-115.38	-4,007.5	3,219.1	2,045.3	1,933.5	111.78	18.298	
12,300.0	8,832.0	13,071.2	9,730.0	69.2	61.0	-115.38	-4,107.5	3,219.9	2,045.3	1,931.2	114.05	17.934	
12,400.0	8,832.0	13,171.2	9,730.0	70.4	62.2	-115.38	-4,207.5	3,220.7	2,045.3	1,929.0	116.34	17.581	
12,500.0	8,832.0	13,271.2	9,730.0	71.7	63.4	-115.38	-4,307.5	3,221.5	2,045.3	1,926.7	118.64	17.239	
12,600.0	8,832.0	13,371.2	9,730.0	72.9	64.6	-115.38	-4,407.5	3,222.2	2,045.3	1,924.3	120.96	16.908	
12,700.0	8,832.0	13,471.2	9,730.0	74.2	65.8	-115.38	-4,507.5	3,223.0	2,045.3	1,922.0	123.30	16.588	
12,800.0	8,832.0	13,571.2	9,730.0	75.4	67.0	-115.38	-4,607.5	3,223.8	2,045.3	1,919.6	125.65	16.277	
12,900.0	8,832.0	13,671.2	9,730.0	76.7	68.2	-115.38	-4,707.5	3,224.6	2,045.3	1,917.3	128.02	15.976	
13,000.0	8,832.0	13,771.2	9,730.0	78.0	69.4	-115.38	-4,807.5	3,225.3	2,045.3	1,914.9	130.40	15.685	
13,100.0	8,832.0	13,871.2	9,730.0	79.2	70.7	-115.38	-4,907.5	3,226.1	2,045.3	1,912.5	132.79	15.402	
13,200.0	8,832.0	13,971.2	9,730.0	80.5	71.9	-115.38	-5,007.5	3,226.9	2,045.3	1,910.1	135.19	15.129	
13,300.0	8,832.0	14,071.2	9,730.0	81.8	73.2	-115.38	-5,107.5	3,227.7	2,045.3	1,907.7	137.61	14.863	
13,400.0	8,832.0	14,171.2	9,730.0	83.1	74.5	-115.38	-5,207.5	3,228.4	2,045.3	1,905.3	140.03	14.606	
13,500.0	8,832.0	14,271.2	9,730.0	84.4	75.7	-115.38	-5,307.5	3,229.2	2,045.3	1,902.8	142.47	14.356	
13,600.0	8,832.0	14,371.2	9,730.0	85.7	77.0	-115.38	-5,407.5	3,230.0	2,045.3	1,900.4	144.91	14.114	
13,700.0	8,832.0	14,471.2	9,730.0	87.0	78.3	-115.38	-5,507.5	3,230.8	2,045.3	1,897.9	147.37	13.879	
13,800.0	8,832.0	14,571.2	9,730.0	88.3	79.6	-115.38	-5,607.5	3,231.6	2,045.3	1,895.5	149.83	13.651	
13,900.0	8,832.0	14,671.2	9,730.0	89.7	80.9	-115.38	-5,707.5	3,232.3	2,045.3	1,893.0	152.30	13.429	
14,000.0	8,832.0	14,771.2	9,730.0	91.0	82.2	-115.38	-5,807.5	3,233.1	2,045.3	1,890.5	154.78	13.214	
14,100.0	8,832.0	14,871.2	9,730.0	92.3	83.5	-115.38	-5,907.5	3,233.9	2,045.3	1,888.0	157.26	13.006	
14,200.0	8,832.0	14,971.2	9,730.0	93.6	84.8	-115.38	-6,007.5	3,234.7	2,045.3	1,885.6	159.76	12.803	
14,300.0	8,832.0	15,071.2	9,730.0	95.0	86.1	-115.38	-6,107.5	3,235.4	2,045.3	1,883.1	162.25	12.606	
14,400.0	8,832.0	15,171.2	9,730.0	96.3	87.4	-115.38	-6,207.5	3,236.2	2,045.3	1,880.5	164.76	12.414	
14,500.0	8,832.0	15,271.2	9,730.0	97.6	88.7	-115.38	-6,307.5	3,237.0	2,045.3	1,878.0	167.27	12.227	
14,600.0	8,832.0	15,371.2	9,730.0	99.0	90.0	-115.38	-6,407.5	3,237.8	2,045.3	1,875.5	169.79	12.046	
14,700.0	8,832.0	15,471.2	9,730.0	100.3	91.4	-115.38	-6,507.5	3,238.5	2,045.3	1,873.0	172.31	11.870	
14,800.0	8,832.0	15,571.2	9,730.0	101.7	92.7	-115.38	-6,607.5	3,239.3	2,045.3	1,870.5	174.84	11.698	

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 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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: Speedmaster 30 Fed Com Pad 1B - Speedmaster 30 Fed Com 511H (fka 007H) - 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
14,900.0	8,832.0	15,671.2	9,730.0	103.0	94.0	-115.38	-6,707.4	3,240.1	2,045.3	1,867.9	177.37	11.531	
15,000.0	8,832.0	15,771.2	9,730.0	104.4	95.4	-115.38	-6,807.4	3,240.9	2,045.3	1,865.4	179.91	11.368	
15,100.0	8,832.0	15,871.2	9,730.0	105.7	96.7	-115.38	-6,907.4	3,241.6	2,045.3	1,862.9	182.46	11.210	
15,200.0	8,832.0	15,971.2	9,730.0	107.1	98.1	-115.38	-7,007.4	3,242.4	2,045.3	1,860.3	185.00	11.056	
15,300.0	8,832.0	16,071.2	9,730.0	108.5	99.4	-115.37	-7,107.4	3,243.2	2,045.3	1,857.8	187.55	10.905	
15,400.0	8,832.0	16,171.2	9,730.0	109.8	100.8	-115.37	-7,207.4	3,244.0	2,045.3	1,855.2	190.11	10.759	
15,500.0	8,832.0	16,271.2	9,730.0	111.2	102.1	-115.37	-7,307.4	3,244.8	2,045.3	1,852.6	192.67	10.616	
15,600.0	8,832.0	16,371.2	9,730.0	112.5	103.5	-115.37	-7,407.4	3,245.5	2,045.3	1,850.1	195.23	10.476	
15,700.0	8,832.0	16,471.2	9,730.0	113.9	104.8	-115.37	-7,507.4	3,246.3	2,045.3	1,847.5	197.80	10.340	
15,800.0	8,832.0	16,571.2	9,730.0	115.3	106.2	-115.37	-7,607.4	3,247.1	2,045.3	1,844.9	200.37	10.208	
15,900.0	8,832.0	16,671.2	9,730.0	116.7	107.5	-115.37	-7,707.4	3,247.9	2,045.3	1,842.4	202.95	10.078	
16,000.0	8,832.0	16,771.2	9,730.0	118.0	108.9	-115.37	-7,807.4	3,248.6	2,045.3	1,839.8	205.52	9.952	
16,100.0	8,832.0	16,871.2	9,730.0	119.4	110.3	-115.37	-7,907.4	3,249.4	2,045.3	1,837.2	208.10	9.828	
16,200.0	8,832.0	16,971.2	9,730.0	120.8	111.6	-115.37	-8,007.4	3,250.2	2,045.3	1,834.6	210.69	9.708	
16,300.0	8,832.0	17,071.2	9,730.0	122.2	113.0	-115.37	-8,107.4	3,251.0	2,045.3	1,832.0	213.28	9.590	
16,400.0	8,832.0	17,171.2	9,730.0	123.5	114.4	-115.37	-8,207.4	3,251.7	2,045.3	1,829.5	215.86	9.475	
16,500.0	8,832.0	17,271.2	9,730.0	124.9	115.8	-115.37	-8,307.4	3,252.5	2,045.3	1,826.9	218.46	9.363	
16,600.0	8,832.0	17,371.2	9,730.0	126.3	117.1	-115.37	-8,407.4	3,253.3	2,045.3	1,824.3	221.05	9.253	
16,700.0	8,832.0	17,471.2	9,730.0	127.7	118.5	-115.37	-8,507.4	3,254.1	2,045.3	1,821.7	223.65	9.145	
16,800.0	8,832.0	17,571.2	9,730.0	129.1	119.9	-115.37	-8,607.4	3,254.8	2,045.3	1,819.1	226.25	9.040	
16,900.0	8,832.0	17,671.2	9,730.0	130.5	121.3	-115.37	-8,707.4	3,255.6	2,045.3	1,816.5	228.85	8.937	
17,000.0	8,832.0	17,771.2	9,730.0	131.9	122.7	-115.37	-8,807.4	3,256.4	2,045.3	1,813.9	231.45	8.837	
17,100.0	8,832.0	17,871.2	9,730.0	133.3	124.0	-115.37	-8,907.4	3,257.2	2,045.3	1,811.3	234.06	8.738	
17,200.0	8,832.0	17,971.2	9,730.0	134.6	125.4	-115.37	-9,007.4	3,258.0	2,045.3	1,808.7	236.67	8.642	
17,300.0	8,832.0	18,071.2	9,730.0	136.0	126.8	-115.37	-9,107.4	3,258.7	2,045.3	1,806.0	239.28	8.548	
17,400.0	8,832.0	18,171.2	9,730.0	137.4	128.2	-115.37	-9,207.4	3,259.5	2,045.3	1,803.4	241.89	8.455	
17,500.0	8,832.0	18,271.2	9,730.0	138.8	129.6	-115.37	-9,307.4	3,260.3	2,045.3	1,800.8	244.51	8.365	
17,600.0	8,832.0	18,371.2	9,730.0	140.2	131.0	-115.37	-9,407.4	3,261.1	2,045.3	1,798.2	247.12	8.277	
17,700.0	8,832.0	18,471.2	9,730.0	141.6	132.4	-115.37	-9,507.4	3,261.8	2,045.3	1,795.6	249.74	8.190	
17,800.0	8,832.0	18,571.2	9,730.0	143.0	133.8	-115.37	-9,607.4	3,262.6	2,045.3	1,793.0	252.36	8.105	
17,900.0	8,832.0	18,671.2	9,730.0	144.4	135.2	-115.37	-9,707.4	3,263.4	2,045.3	1,790.3	254.98	8.021	
18,000.0	8,832.0	18,771.2	9,730.0	145.8	136.6	-115.37	-9,807.4	3,264.2	2,045.3	1,787.7	257.61	7.940	
18,100.0	8,832.0	18,871.2	9,730.0	147.2	138.0	-115.37	-9,907.4	3,264.9	2,045.3	1,785.1	260.23	7.860	
18,200.0	8,832.0	18,971.2	9,730.0	148.6	139.4	-115.37	-10,007.3	3,265.7	2,045.3	1,782.5	262.86	7.781	
18,300.0	8,832.0	19,071.2	9,730.0	150.0	140.8	-115.37	-10,107.3	3,266.5	2,045.3	1,779.8	265.49	7.704	
18,400.0	8,832.0	19,171.2	9,730.0	151.4	142.2	-115.37	-10,207.3	3,267.3	2,045.3	1,777.2	268.12	7.629	
18,500.0	8,832.0	19,271.2	9,730.0	152.8	143.6	-115.37	-10,307.3	3,268.1	2,045.3	1,774.6	270.75	7.554	
18,600.0	8,832.0	19,371.2	9,730.0	154.2	145.0	-115.37	-10,407.3	3,268.8	2,045.3	1,772.0	273.38	7.482	
18,700.0	8,832.0	19,471.2	9,730.0	155.7	146.4	-115.37	-10,507.3	3,269.6	2,045.3	1,769.3	276.01	7.410	
18,800.0	8,832.0	19,571.2	9,730.0	157.1	147.8	-115.37	-10,607.3	3,270.4	2,045.3	1,766.7	278.65	7.340	
18,900.0	8,832.0	19,671.2	9,730.0	158.5	149.2	-115.37	-10,707.3	3,271.2	2,045.3	1,764.0	281.28	7.271	
19,000.0	8,832.0	19,771.2	9,730.0	159.9	150.6	-115.37	-10,807.3	3,271.9	2,045.3	1,761.4	283.92	7.204	
19,100.0	8,832.0	19,871.2	9,730.0	161.3	152.0	-115.37	-10,907.3	3,272.7	2,045.3	1,758.8	286.56	7.138	
19,200.0	8,832.0	19,971.2	9,730.0	162.7	153.4	-115.37	-11,007.3	3,273.5	2,045.3	1,756.1	289.20	7.072	
19,226.4	8,832.0	19,997.6	9,730.0	163.1	153.8	-115.37	-11,033.7	3,273.7	2,045.3	1,755.4	289.90	7.055 SF	

Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
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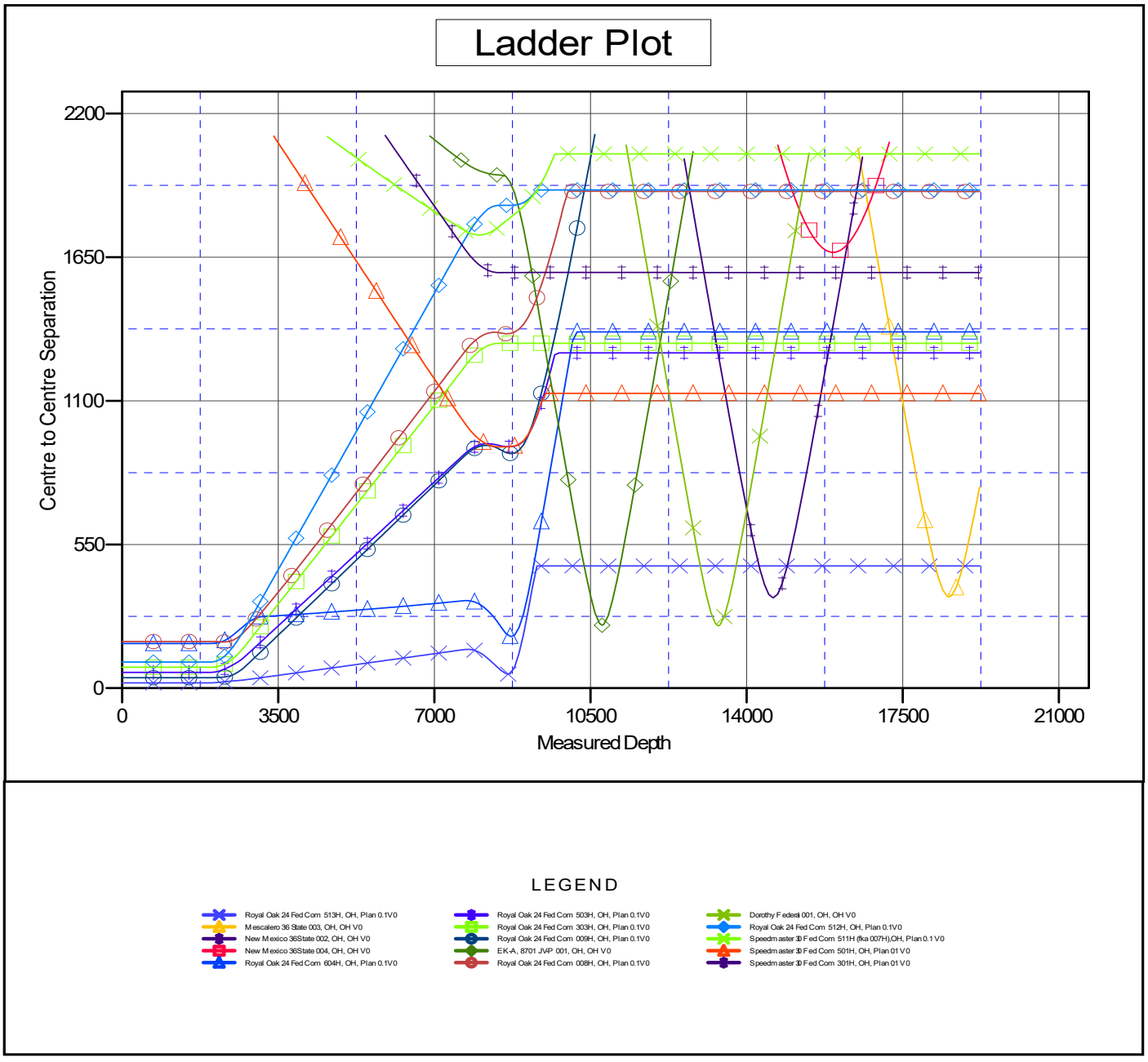
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 3937.0usft (3937)	Coordinates are relative to: Royal Oak 24 Fed Com 304H
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°

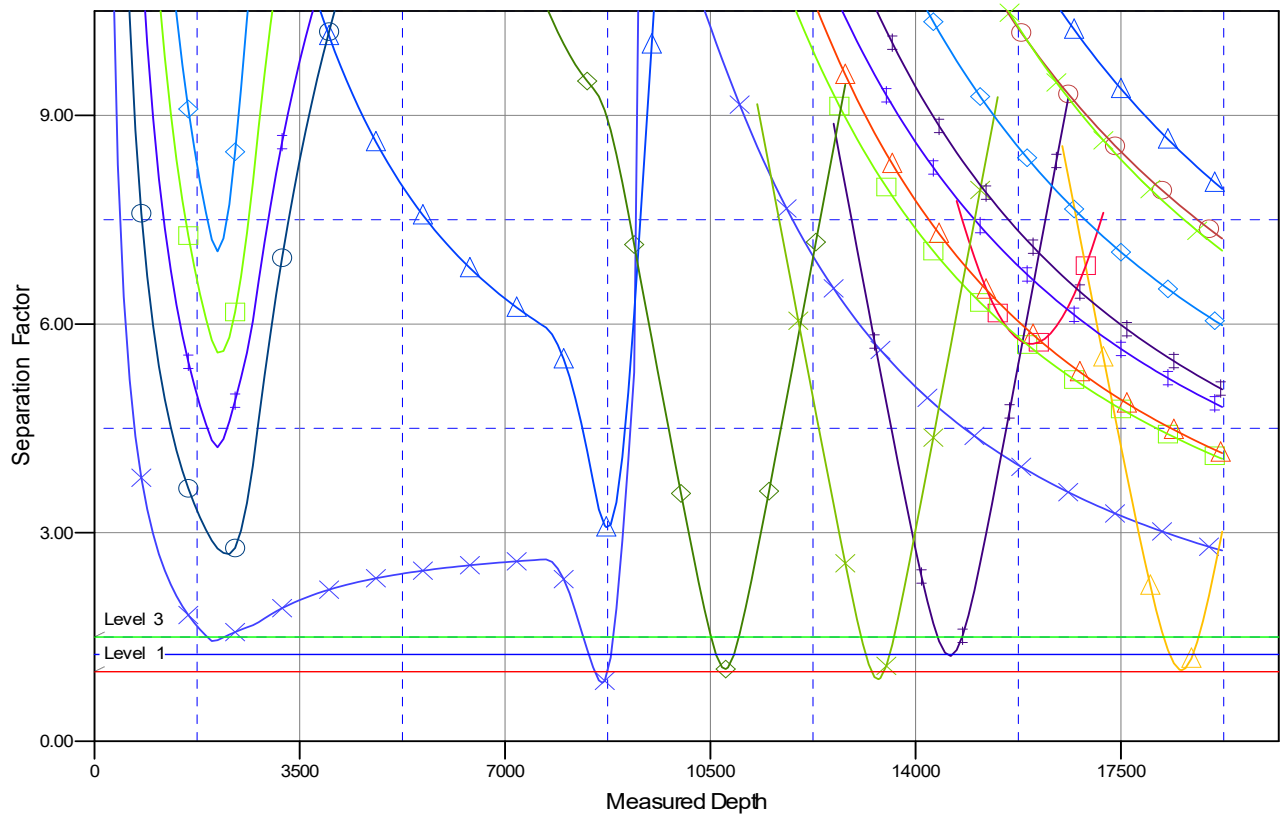


Anticollision Report

Company:	Avant Operating, LLC	**Local Co-ordinate Reference:**	Well Royal Oak 24 Fed Com 304H
Project:	Lea Co., NM (NAD 83)	**TVD Reference:**	Well @ 3937.0usft (3937)
Reference Site:	Royal Oak 24 Fed Com Pad 1	**MD Reference:**	Well @ 3937.0usft (3937)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Royal Oak 24 Fed Com 304H	**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 @ 3937.0usft (3937)	Coordinates are relative to: Royal Oak 24 Fed Com 304H
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°

Separation Factor Plot



AFE:

API:

REGULATORY:

PERMIT #

RIG: H&P 460

KB: 3937.5 (26.5')

GL: 3911'

Royal Oak 24 Fed Com #304H

Bone Springs

Lea County, NM

CAMERON WELLHEAD
9-5/8" x 7"11"
5K SSD-II

SHL: *Sec. 24, T-18S, R-33E; 603 FSL, 1670 FEL*

Lat: 32.7276087, Long: -103.6134197 (NAD83)

HOLE SIZE	MD	FORMATION	TVD	MUD	CASING	CEMENT	SPECIAL INSTRUCTIONS
	120	20" Conductor	120	SPUD MW 8.4 ppg	13 3/8 " 54.5# J-55 BTC +/- 13 Bowsprings 1 20' pup jt *1 joint shoe track*	LEAD: 12.8 PPG Top of Lead: 0 50% Excess TAIL: 14.8 PPG Top of Tail: 1339 20% Excess	Circ cement to surface is a NMOCD requirement Casing must be set 25' into the Rustler MUD: Fresh water only
17 1/2 "	1,628	Rustler	1,628	Fresh 9.9 ppg			
	1,653	SURF CSG PT	1,653				
	1,951	Solado	1,951	DRLOUT MW 10 ppg	*SPLIT STRING* 9 5/8 " 40# J-55 BTC *0' - 4000'* 1 20' pup jt 40# L-80 HC BTC *4000' - 5668'* +/- 9 Bowsprings *1 joint shoe track*	LEAD: 12.5 PPG Top of Lead: 0' 20% excess TAIL: 14.8 PPG Top of Tail: 4534' 20% Excess	Circ cement to surface is a NMOCD requirement
	3,682	Yates	3,641	Brine			
12 1/4 "	5,668	INTRM CSG PT	5,554	TD MW 10 ppg			
	5,768	Cherry Canyon	5,654	DRLOUT MW 9.2			
	7,407	Brushy Canyon	7,236	Cut Brine			
8 3/4 " VERTICAL	7,689	Bone Springs	7,508	KOP MW 9.5			
8 3/4 " CURVE	**8,544**	**KOP**	**8,355**	EOC MW 9.5			
	9,097	1st BS Sand	8,792	CUT BRINE	Lat MW 9.2	OBM	TD MW 9.2
	9,294	**EOC**	**8,832**				
8 3/4 " LATERAL					5 1/2 " 20# P-110 HC GBCD 1 20' pup jt 2 20' Marker Jts +/- 24 Bowsprings +/- 27 Doublebows +/- 236 Solid Bodies	LEAD: 11 PPG Top of Lead: 0 50% Excess TAIL: 14.8 PPG Top of Tail: 8544 20% Excess All aqueous fluids (spacer and disp) left inside or outside of pipe must have biocide & corrision inhibitor	

12°/ 100'

WET SHOE

19,226 ' MD

11,059 ' VS

8,832 ' TVD

BHL: 100 FSL, 330 FEL

EOC VS = 1126' *Lat. Azi = VS Azi. = 179.56°* Est BHST = 153°F, Est BHCT = 17°F

DIRECTIONAL PLAN

MD	INC	INC	TVD	ANNOTATION

PRELIMINARY

DIRECTIONS TO LOCAITON:

Drilling Engineer: Ryan Harris

Royal Oak 24 Fed Com #304H (H&P 460)

Date: 2/5/2025

Coterra Energy Inc.
CEMENT PROPOSAL #81445

Surface Proposal

Royal Oak 24 Fed Com #304H 30-025-54154
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 #304H**
Well API: **30-025-54154**
Latitude: **32.728048**
Longitude: **-103.613554**
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		17.500			n/a	120	1353	50.0
3	OpenHole	Outer		17.500			n/a	1353	1653	20.0
1	Casing	Inner	13.375	12.615	54.50		n/a	0	1653	0.0

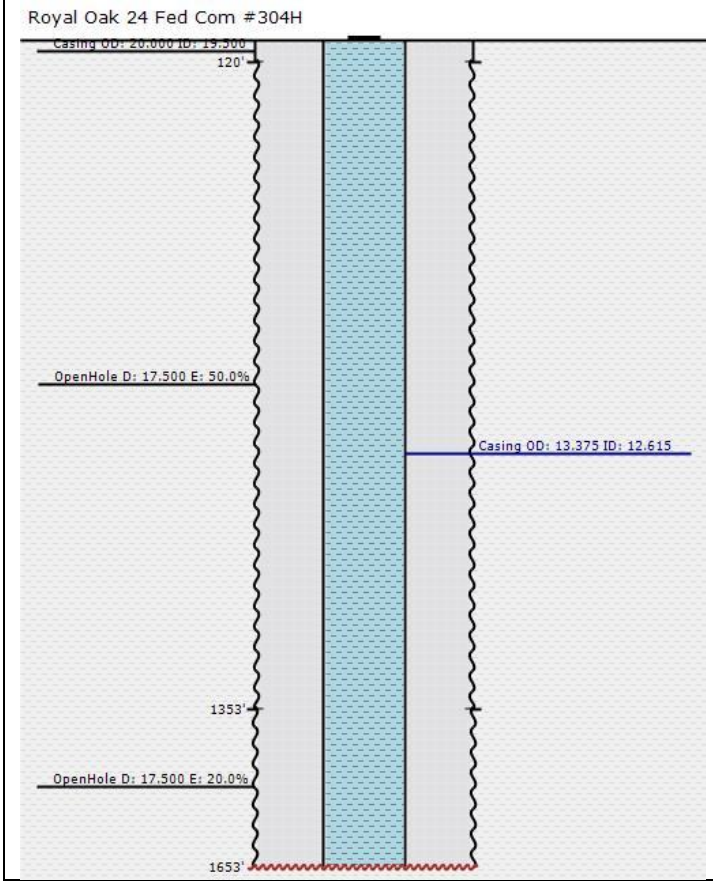
Capacities

Excess added to Capacity Factor

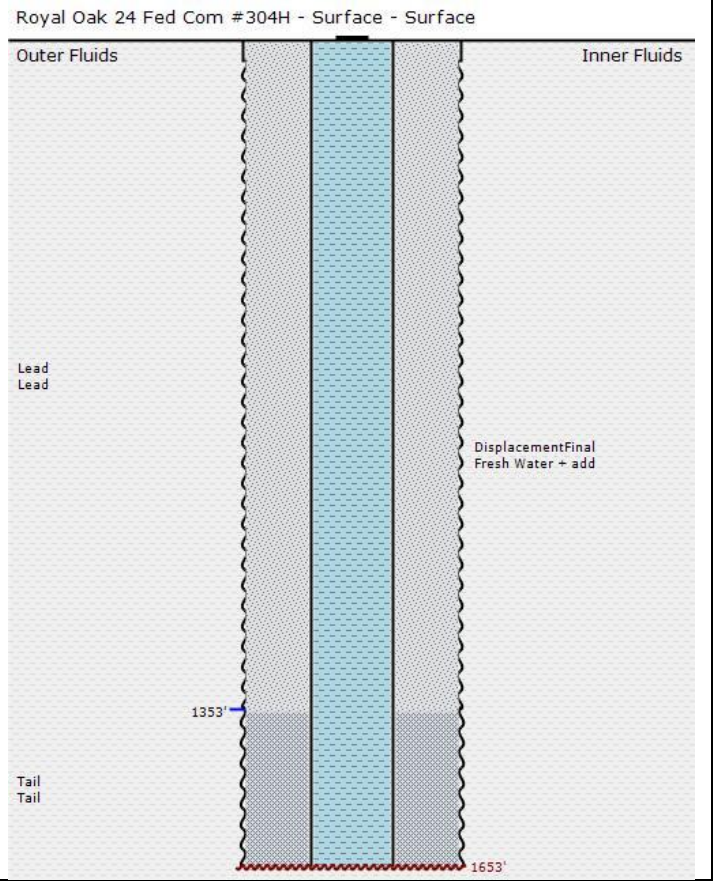
Type	TopDepth (ft)	Length (ft)	OD (in)	ID (in)	Capacity (bbl/ft)	Capacity ($ft^{3/ft}$)	Fill (ft/bbl)	Fill (ft/ft^{3})
DisplacementFinal	0	1568	12.615	0.000	0.1546	0.8679	6.47	1.15
ShoeJoint	1568	85	12.615	0.000	0.1546	0.8679	6.47	1.15
Casing to OpenHole	1353	300	17.500	13.375	0.1485	0.8335	6.74	1.20
Casing to OpenHole	120	1233	17.500	13.375	0.1856	1.0419	5.39	0.96
Casing to Casing	0	120	19.500	13.375	0.1956	1.0982	5.11	0.91

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	721	252.57
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	244	57.82
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		243.00

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	252.57	721	272.57	50.51	54.51
3	Tail	Tail	14.80	5.00	57.82	244	330.39	11.56	66.07
4	DisplacementFinal	Fresh Water + add	8.34	5.00	243.00		573.39	48.60	114.67

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 #81467

Intermediate Proposal

Royal Oak 24 Fed Com #304H 30-025-54154
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 #304H**
Well API: **30-025-54154**
Latitude: **32.728048**
Longitude: **-103.613554**
Section: **24**
Township: **18S**
Range: **33E**
County: **Lea, NM**

Job: Intermediate (Intermediate) - Well Information

Drilling Fluid Density: **10.00 lb/gal**
Drilling Fluid: **WBM**
Total Measured Depth: **5668 ft**
Total Vertical Depth: **5668 ft**
BHCT: **109 °F**
BHST: **130 °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	13.375	12.615	54.50		n/a	0	1653	0.0
2	OpenHole	Outer		12.250			n/a	1653	4534	20.0
3	OpenHole	Outer		12.250			n/a	4534	5668	20.0
1	Casing	Inner	9.625	8.835	40.00		n/a	0	5668	0.0

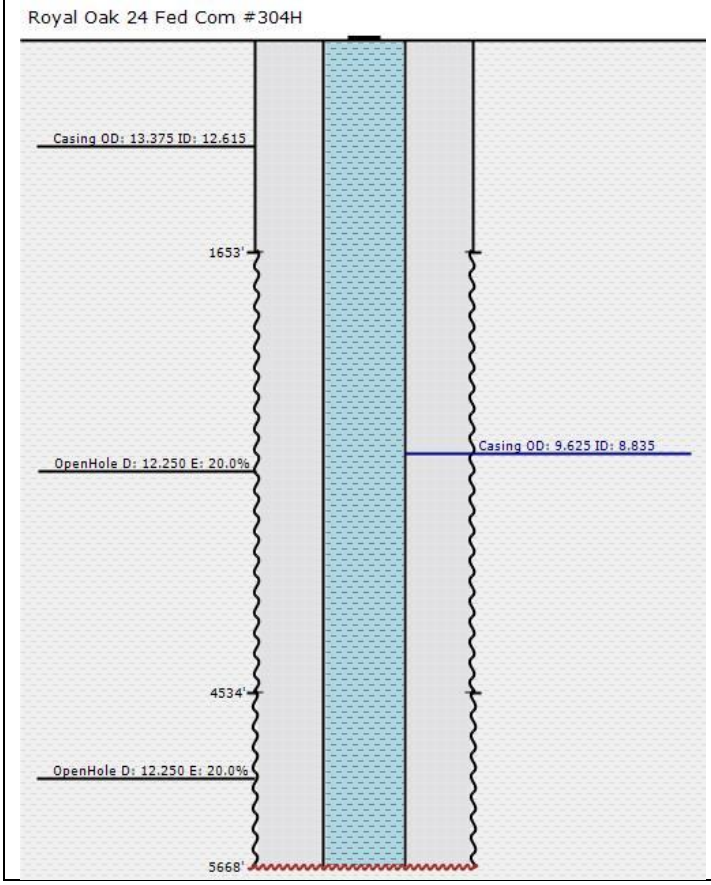
Capacities

Excess added to Capacity Factor

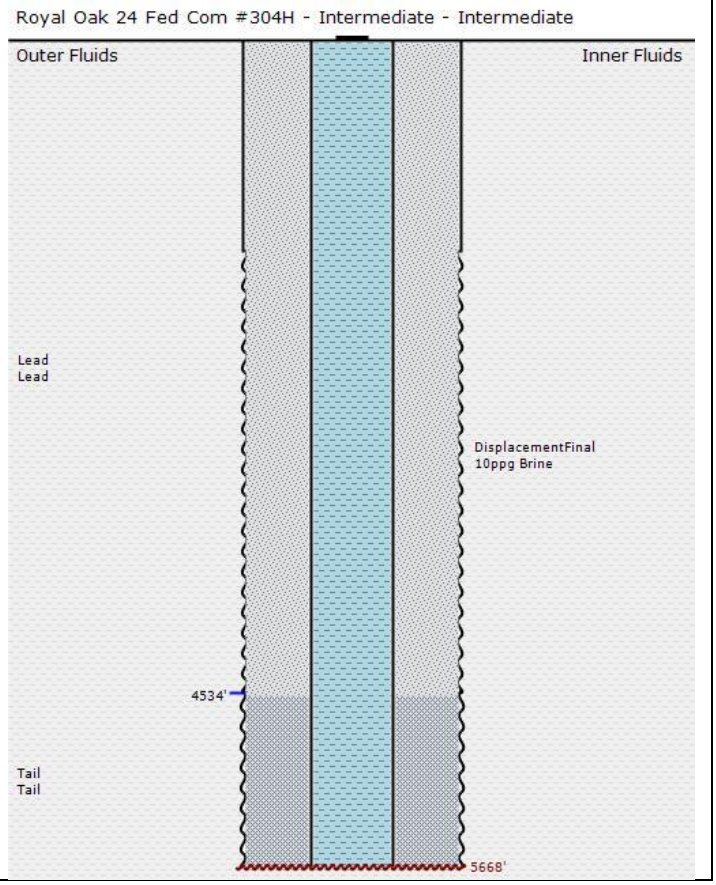
Type	TopDepth (ft)	Length (ft)	OD (in)	ID (in)	Capacity (bbl/ft)	Capacity ($ft^{3/ft}$)	Fill (ft/bbl)	Fill (ft/ft^{3})
DisplacementFinal	0	5583	8.835	0.000	0.0758	0.4257	13.19	2.35
ShoeJoint	5583	85	8.835	0.000	0.0758	0.4257	13.19	2.35
Casing to OpenHole	4534	1134	12.250	9.625	0.0669	0.3758	14.94	2.66
Casing to OpenHole	1653	2881	12.250	9.625	0.0669	0.3758	14.94	2.66
Casing to Casing	0	1653	12.615	9.625	0.0646	0.3627	15.48	2.76

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	12.50	12.4	2.17	776	299.67
CEMENT, CLASS C, HSR - Cement - 100.000 %								
Cement Additive, Sodium Metasilicate A-2 - Accelerator - 2.000 %BWOB								
SALT,SODIUM CHLORIDE, A-5 - Accelerator - 3.000 %BWOW								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
RETARDER, R-7C - Retarder - 0.430 %BWOB								
ANTI STATIC ADDITIVE, STATIC FREE - Other - 0.005 lb/sk								

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	4534.00	14.80	6.3	1.33	349	82.59
CEMENT, CLASS C, HSR - Cement - 100.000 %								
Cement Additive, Sodium Metasilicate A-2 - Accelerator - 0.250 %BWOB								
FOAM PREVENTER, FP-28L - Defoamer - 0.005 gal/sk								
RETARDER, R-7C - Retarder - 0.050 %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		424.00

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	12.50	5.00	299.67	776	319.67	59.93	63.93
3	Tail	Tail	14.80	5.00	82.59	349	402.26	16.52	80.45
4	DisplacementFinal	10ppg Brine	8.34	5.00	424.00		826.26	84.80	165.25

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 #81481

Long String Proposal

Royal Oak 24 Fed Com #304H 30-025-54154
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 #304H**
Well API: **30-025-54154**
Latitude: **32.728048**
Longitude: **-103.613554**
Section: **24**
Township: **18S**
Range: **33E**
County: **Lea, NM**

Job: Long String (Long String) - Well Information

Drilling Fluid Density: **9.20 lb/gal**
Drilling Fluid: **OBM**
Total Measured Depth: **19226 ft**
Total Vertical Depth: **8832 ft**
BHCT: **167 °F**
BHST: **167 °F**
Temperature Gradient: **0.98 °F/100ft**
Surface Temp: **80 °F**

Geometry

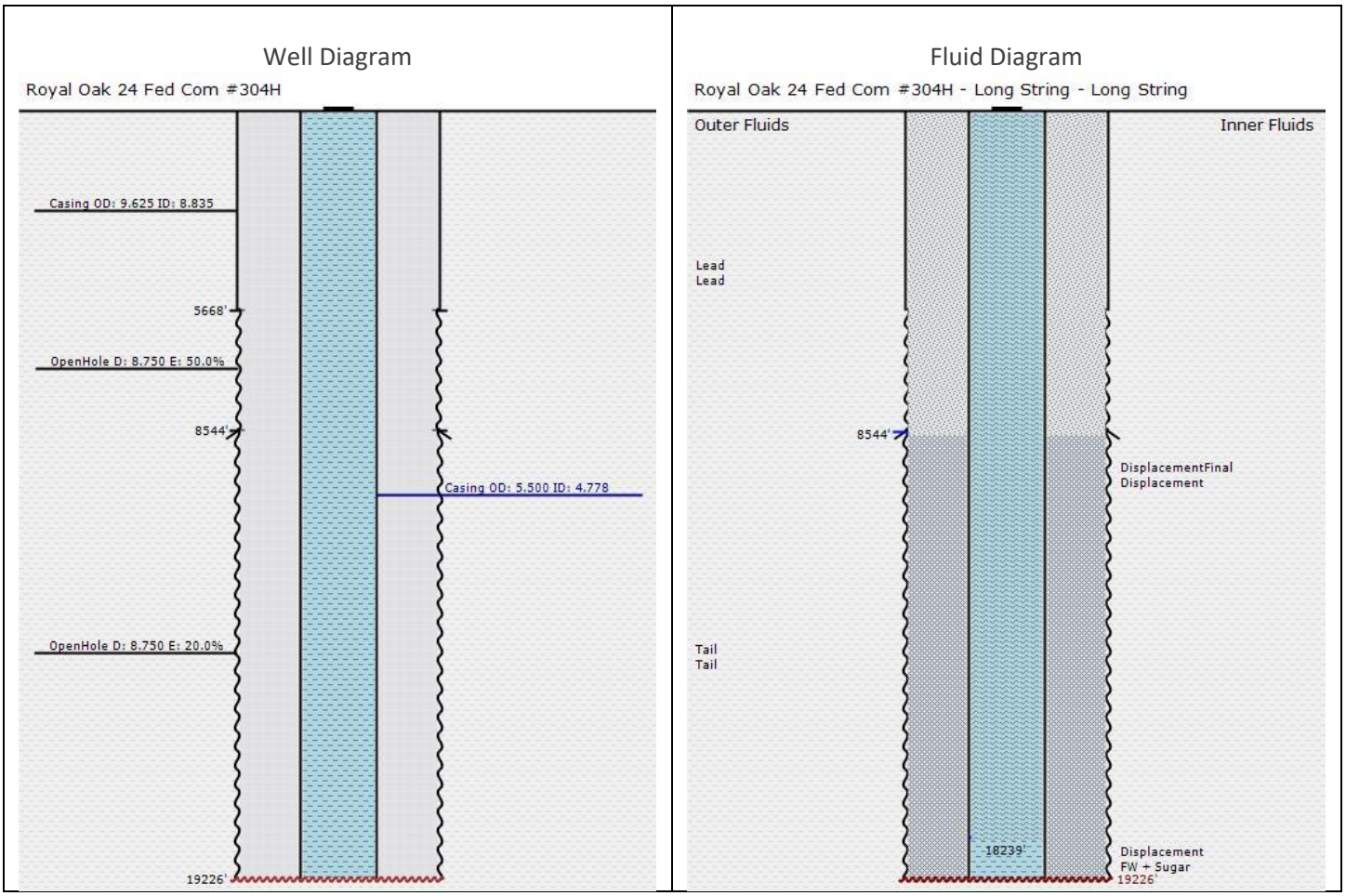
#	Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Grade	Thread	Top	Bottom	Excess (%)
1	Casing	Outer	9.625	8.835	40.00		n/a	0	5668	0.0
2	OpenHole	Outer		8.750			n/a	5668	8544	50.0
3	OpenHole	Outer		8.750			n/a	8544	19226	20.0
1	Casing	Inner	5.500	4.778	20.00		n/a	0	19226	0.0

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	19141	4.778	0.000	0.0222	0.1245	45.09	8.03
ShoeJoint	19141	85	4.778	0.000	0.0222	0.1245	45.09	8.03
Casing to OpenHole	8544	10682	8.750	5.500	0.0540	0.3031	18.52	3.30
Casing to OpenHole	5668	2876	8.750	5.500	0.0675	0.3789	14.82	2.64
Casing to Casing	0	5668	8.835	5.500	0.0464	0.2607	21.53	3.84

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



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	9.70	38.5	n/a		40.00
WEIGHTING ADDITIVE, BARITE - Heavyweight - 65.072 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	Lead	0.00	11.00	21.2	3.48	739	457.59
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	8544.00	14.80	4.9	1.16	2808	578.64
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	18239.00	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		405.00
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	9.70	5.00	40.00		40.00	8.00	8.00
2	Lead	Lead	11.00	5.00	457.59	739	497.59	91.52	99.52
3	Tail	Tail	14.80	5.00	578.64	2808	1076.24	115.73	215.25
4	Displacement	FW + Sugar	8.36	5.00	20.00		1096.24	4.00	219.25
5	DisplacementFinal	Displacement	8.34	5.00	405.00		1501.24	81.00	300.25

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: 431504
	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.	2/14/2025
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing.	2/14/2025