

Well Name: ROYAL OAK 25 FED COM	Well Location: T18S / R33E / SEC 24 / SWSE / 32.727608 / -103.61355	County or Parish/State: LEA / NM
Well Number: 303H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM116166	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002554153	Operator: AVANT OPERATING LLC	

Notice of Intent

Sundry ID: 2835865

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 02/07/2025	Time Sundry Submitted: 10:57
Date proposed operation will begin: 02/07/2025	

Procedure Description: Avant Operating, LLC would like to make a SHL change from 603' FSL & 1710' FEL to 603' FSL & 1750' FEL, please see attached updated drilling info to reflect this change.

NOI Attachments

Procedure Description

Royal_Oak_24_Fed_Com_303H_APD_Change_Attachments_20250207093403.pdf

Conditions of Approval

Additional

25_18_33_B_Sundry_ID_2835865_Royal_Oak_25_Fed_Com_303H_Lea_NM51842_AVANT_OPERATING_LLC_13_2g_2_27_2024_LV_20250211093236.pdf

Well Name: ROYAL OAK 25 FED COM	Well Location: T18S / R33E / SEC 24 / SWSE / 32.727608 / -103.61355	County or Parish/State: LEA / NM
Well Number: 303H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM116166	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002554153	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 10:16 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 MANAGEMENTFORM 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.
1. Type of Well ☐ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator		7. If Unit of CA/Agreement, Name and/or No.
3a. Address	3b. Phone No. (include area code)	8. Well Name and No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)		9. API Well No.
		10. Field and Pool or Exploratory Area
		11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat 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 recompleation in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)	Title
Signature	Date

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: SWSE / 603 FSL / 1710 FEL / TWSP: 18S / RANGE: 33E / SECTION: 24 / LAT: 32.727608 / LONG: -103.61355 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 0 FNL / 1651 FEL / TWSP: 18S / RANGE: 33E / SECTION: 25 / LAT: 32.711446 / LONG: -103.613336 (TVD: 8832 feet, MD: 14423 feet)

PPP: NWNE / 100 FNL / 1650 FEL / TWSP: 18S / RANGE: 33E / SECTION: 25 / LAT: 32.725676 / LONG: -103.613353 (TVD: 8832 feet, MD: 9145 feet)

PPP: SWNE / 2639 FNL / 1651 FEL / TWSP: 18S / RANGE: 33E / SECTION: 25 / LAT: 32.718797 / LONG: -103.613344 (TVD: 8832 feet, MD: 11784 feet)

BHL: SWSE / 100 FSL / 1650 FEL / TWSP: 18S / RANGE: 33E / SECTION: 36 / LAT: 32.697203 / LONG: -103.61332 (TVD: 8832 feet, MD: 19077 feet)

CONFIDENTIAL

25-18-33-B Sundry ID 2835865 Royal Oak 25 Fed Com 303H Lea NM51842 AVANT OPERATING LLC 13-22g 2-27-2024 LV

Royal Oak 25 Fed Com 303H

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.											
She plot (pipe racks 3 or 4) as per D.3.3.30.D.4.1 not found											

9 5/8		casing inside the		13 3/8		Design Factors				Int 1		
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00		j 55	btc	2.82	1.24	0.91	4,000	1	1.64	2.15	160,000
"B"	40.00		hcl 80	btc	14.48	1.47	1.32	1,582	2	2.38	2.54	63,280
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,020								Totals:	5,582	223,280		
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	1108	2115	1833	15	10.00	2416	3M	0.81			
r D V Tool(s):								sum of sx	Σ CuFt	Σ%excess		
t by stage % :								1108	2115	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	19,078	3	5.23	4.60	381,560
"B"								0				0
"C"								0				0
"D"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,943								Totals:	19,078			381,560
		The cement volume(s) are intended to achieve a top of				5382	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	3534	5784	3461	67	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 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION		Revised July 9, 2024	
	Submittal Type:	☒ Initial Submittal		
		☐ Amended Report		
		☐ As Drilled		

WELL LOCATION INFORMATION

API Number 30-025-54153	Pool Code 21650	Pool Name E-K; BONE SPRING
Property Code 335845	Property Name ROYAL OAK 24 FED COM	Well Number 303H
OGRID No. 330396	Operator Name AVANT OPERATING, LLC	Ground Level Elevation 3907.4
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	1750 FEL	32.7276066° N	103.6136800° W	LEA

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
O	36	18 S	33 E		100 FSL	1650 FEL	32.6972032° N	103.6133200° W	LEA

Dedicated Acres 1280	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N) No	Consolidation Code
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
B	25	18 S	33 E		50 FNL	1650 FEL	32.7258136° N	103.6133528° W	LEA

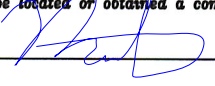
First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
B	25	18 S	33 E		100 FNL	1650 FEL	32.7256762° N	103.6133526° W	LEA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
O	36	18 S	33 E		100 FSL	1650 FEL	32.6972032° N	103.6133200° W	LEA

Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:
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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. 2/7/2025  Signature _____ Date _____ Printed Name Meghan Twele E-mail Address mtwele@outlook.com	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.  Signature and Seal of Professional Surveyor _____ 14831 1/29/25 2/5/2025 Certificate Number Date of Field Survey Date of Certification
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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

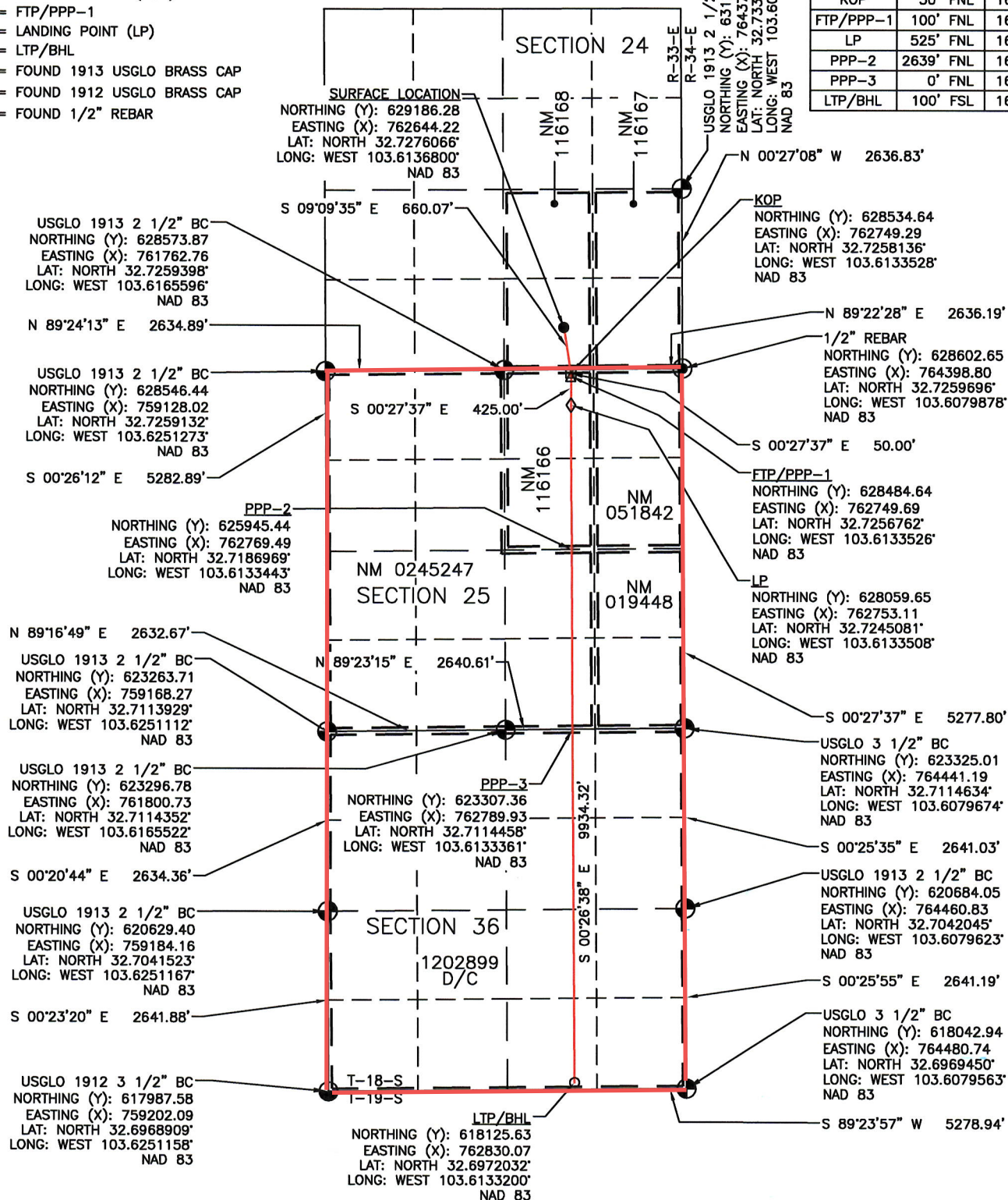
UFSI PROJECT NO. 11721

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 303H			
FOOTAGES			SEC.
SHL	603' FSL	1750' FEL	24
KOP	50' FNL	1650' FEL	25
FTP/PPP-1	100' FNL	1650' FEL	25
LP	525' FNL	1650' FEL	25
PPP-2	2639' FNL	1651' FEL	25
PPP-3	0' FNL	1651' FEL	36
LTP/BHL	100' FSL	1650' FEL	36



WELL DETAILS: Royal Oak 24 Fed Com 303H

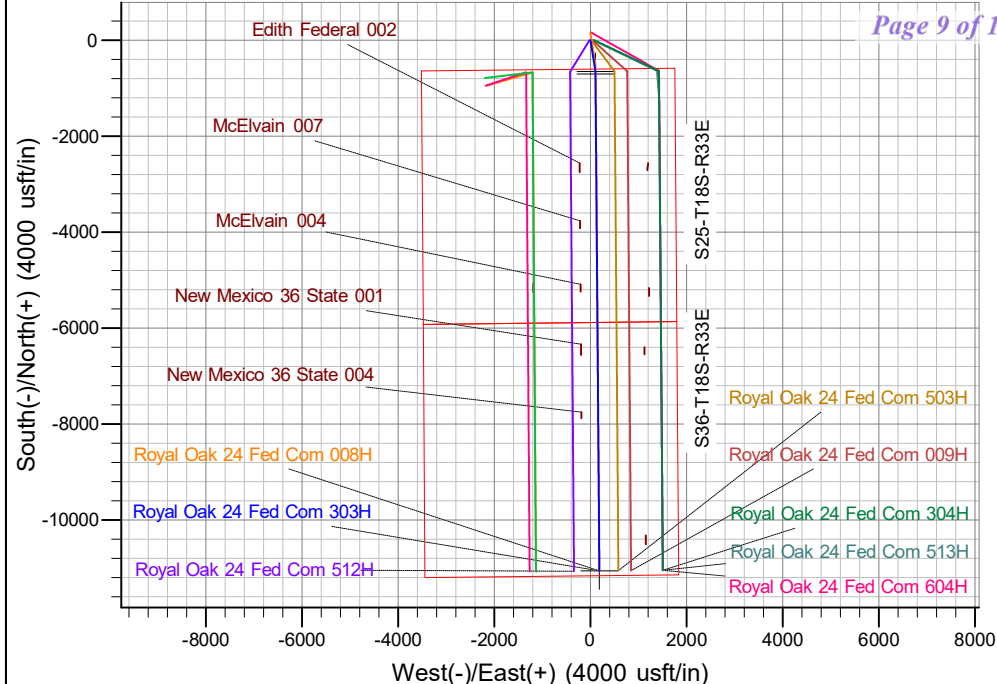
Ground Elev: 3907.4 KB: 3933.9

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	629186.27	762644.23	32.727607	-103.613680

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

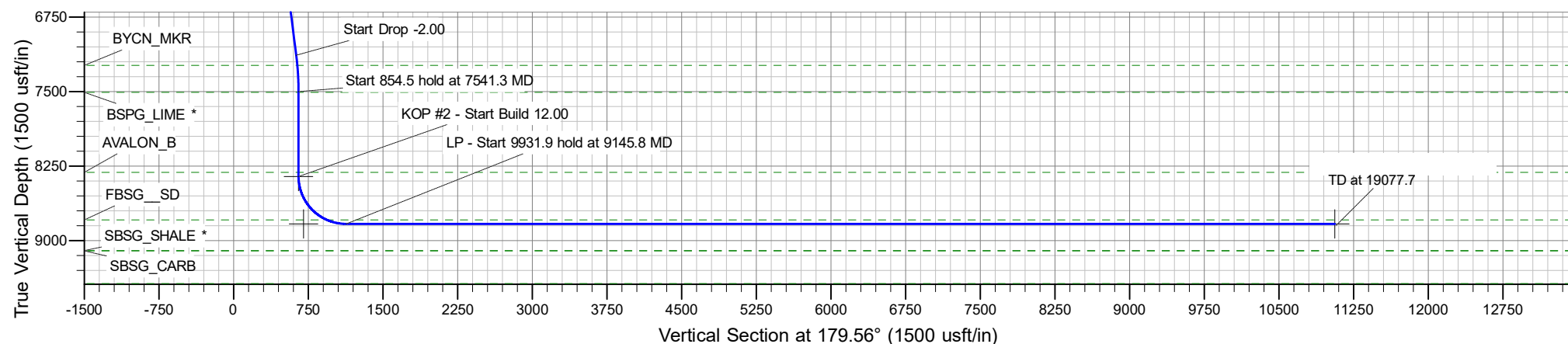
**SECTION DETAILS**

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	2366.4	7.33	170.84	2365.4	-23.1	3.7	2.00	170.84	23.1	Start 4808.5 hold at 2366.4 MD
4	7174.9	7.33	170.84	7134.6	-628.5	101.3	0.00	0.00	629.3	Start Drop -2.00
5	7541.3	0.00	0.00	7500.0	-651.6	105.1	2.00	180.00	652.4	Start 854.5 hold at 7541.3 MD
6	8395.8	0.00	0.00	8354.5	-651.6	105.1	0.00	0.00	652.4	KOP #2 - Start Build 12.00
7	9145.8	90.00	179.56	8832.0	-1129.1	108.8	12.00	179.56	1129.9	LP - Start 9931.9 hold at 9145.8 MD
8	19077.7	90.00	179.56	8832.0	-11060.6	185.8	0.00	0.00	11061.7	TD at 19077.7



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 303H

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 303H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3933.9usft (3933.9)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3933.9usft (3933.9)
Site:	Royal Oak 24 Fed Com Pad 1	North Reference:	Grid
Well:	Royal Oak 24 Fed Com 303H	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 303H				
Well Position	+N/-S	0.0 usft	Northing:	629,186.28 usft	Latitude:	32.727607
	+E/-W	0.0 usft	Easting:	762,644.22 usft	Longitude:	-103.613680
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,907.4 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	49,721.28366515

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	19,076.8	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	
2,366.4	7.33	170.84	2,365.4	-23.1	3.7	2.00	2.00	0.00	170.84	
7,174.9	7.33	170.84	7,134.6	-628.5	101.3	0.00	0.00	0.00	0.00	
7,541.3	0.00	0.00	7,500.0	-651.6	105.1	2.00	-2.00	0.00	180.00	
8,395.8	0.00	0.00	8,354.5	-651.6	105.1	0.00	0.00	0.00	0.00	
9,145.8	90.00	179.56	8,832.0	-1,129.1	108.8	12.00	12.00	0.00	179.56	
19,077.7	90.00	179.56	8,832.0	-11,060.6	185.8	0.00	0.00	0.00	0.00	LTP/BHL - Royal Oak

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Royal Oak 24 Fed Com 303H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3933.9usft (3933.9)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3933.9usft (3933.9)
Site:	Royal Oak 24 Fed Com Pad 1	North Reference:	Grid
Well:	Royal Oak 24 Fed Com 303H	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	170.84	2,100.0	-1.7	0.3	1.7	2.00	2.00	0.00
2,200.0	4.00	170.84	2,199.8	-6.9	1.1	6.9	2.00	2.00	0.00
2,300.0	6.00	170.84	2,299.5	-15.5	2.5	15.5	2.00	2.00	0.00
2,366.4	7.33	170.84	2,365.4	-23.1	3.7	23.1	2.00	2.00	0.00
Start 4808.5 hold at 2366.4 MD									
2,400.0	7.33	170.84	2,398.7	-27.3	4.4	27.4	0.00	0.00	0.00
2,500.0	7.33	170.84	2,497.9	-39.9	6.4	40.0	0.00	0.00	0.00
2,600.0	7.33	170.84	2,597.1	-52.5	8.5	52.6	0.00	0.00	0.00
2,700.0	7.33	170.84	2,696.3	-65.1	10.5	65.2	0.00	0.00	0.00
2,800.0	7.33	170.84	2,795.5	-77.7	12.5	77.8	0.00	0.00	0.00
2,900.0	7.33	170.84	2,894.6	-90.3	14.6	90.4	0.00	0.00	0.00
3,000.0	7.33	170.84	2,993.8	-102.9	16.6	103.0	0.00	0.00	0.00
3,100.0	7.33	170.84	3,093.0	-115.5	18.6	115.6	0.00	0.00	0.00
3,200.0	7.33	170.84	3,192.2	-128.1	20.6	128.2	0.00	0.00	0.00
3,300.0	7.33	170.84	3,291.4	-140.7	22.7	140.8	0.00	0.00	0.00
3,400.0	7.33	170.84	3,390.6	-153.2	24.7	153.4	0.00	0.00	0.00
3,500.0	7.33	170.84	3,489.7	-165.8	26.7	166.0	0.00	0.00	0.00
3,600.0	7.33	170.84	3,588.9	-178.4	28.8	178.6	0.00	0.00	0.00
3,652.5	7.33	170.84	3,641.0	-185.0	29.8	185.3	0.00	0.00	0.00
YATES									
3,700.0	7.33	170.84	3,688.1	-191.0	30.8	191.2	0.00	0.00	0.00
3,800.0	7.33	170.84	3,787.3	-203.6	32.8	203.9	0.00	0.00	0.00
3,900.0	7.33	170.84	3,886.5	-216.2	34.9	216.5	0.00	0.00	0.00
4,000.0	7.33	170.84	3,985.7	-228.8	36.9	229.1	0.00	0.00	0.00
4,100.0	7.33	170.84	4,084.8	-241.4	38.9	241.7	0.00	0.00	0.00
4,200.0	7.33	170.84	4,184.0	-254.0	40.9	254.3	0.00	0.00	0.00
4,300.0	7.33	170.84	4,283.2	-266.6	43.0	266.9	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 303H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3933.9usft (3933.9)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3933.9usft (3933.9)
Site:	Royal Oak 24 Fed Com Pad 1	North Reference:	Grid
Well:	Royal Oak 24 Fed Com 303H	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	7.33	170.84	4,382.4	-279.2	45.0	279.5	0.00	0.00	0.00
4,500.0	7.33	170.84	4,481.6	-291.7	47.0	292.1	0.00	0.00	0.00
4,600.0	7.33	170.84	4,580.8	-304.3	49.1	304.7	0.00	0.00	0.00
4,700.0	7.33	170.84	4,679.9	-316.9	51.1	317.3	0.00	0.00	0.00
4,800.0	7.33	170.84	4,779.1	-329.5	53.1	329.9	0.00	0.00	0.00
4,900.0	7.33	170.84	4,878.3	-342.1	55.2	342.5	0.00	0.00	0.00
5,000.0	7.33	170.84	4,977.5	-354.7	57.2	355.1	0.00	0.00	0.00
5,100.0	7.33	170.84	5,076.7	-367.3	59.2	367.7	0.00	0.00	0.00
5,200.0	7.33	170.84	5,175.9	-379.9	61.2	380.3	0.00	0.00	0.00
5,300.0	7.33	170.84	5,275.0	-392.5	63.3	392.9	0.00	0.00	0.00
5,400.0	7.33	170.84	5,374.2	-405.1	65.3	405.6	0.00	0.00	0.00
5,500.0	7.33	170.84	5,473.4	-417.7	67.3	418.2	0.00	0.00	0.00
5,600.0	7.33	170.84	5,572.6	-430.2	69.4	430.8	0.00	0.00	0.00
5,682.1	7.33	170.84	5,654.0	-440.6	71.0	441.1	0.00	0.00	0.00
CHERRY_CNYN									
5,700.0	7.33	170.84	5,671.8	-442.8	71.4	443.4	0.00	0.00	0.00
5,800.0	7.33	170.84	5,771.0	-455.4	73.4	456.0	0.00	0.00	0.00
5,900.0	7.33	170.84	5,870.1	-468.0	75.5	468.6	0.00	0.00	0.00
6,000.0	7.33	170.84	5,969.3	-480.6	77.5	481.2	0.00	0.00	0.00
6,100.0	7.33	170.84	6,068.5	-493.2	79.5	493.8	0.00	0.00	0.00
6,200.0	7.33	170.84	6,167.7	-505.8	81.5	506.4	0.00	0.00	0.00
6,300.0	7.33	170.84	6,266.9	-518.4	83.6	519.0	0.00	0.00	0.00
6,400.0	7.33	170.84	6,366.1	-531.0	85.6	531.6	0.00	0.00	0.00
6,500.0	7.33	170.84	6,465.2	-543.6	87.6	544.2	0.00	0.00	0.00
6,600.0	7.33	170.84	6,564.4	-556.2	89.7	556.8	0.00	0.00	0.00
6,700.0	7.33	170.84	6,663.6	-568.7	91.7	569.4	0.00	0.00	0.00
6,800.0	7.33	170.84	6,762.8	-581.3	93.7	582.0	0.00	0.00	0.00
6,900.0	7.33	170.84	6,862.0	-593.9	95.8	594.6	0.00	0.00	0.00
7,000.0	7.33	170.84	6,961.2	-606.5	97.8	607.2	0.00	0.00	0.00
7,100.0	7.33	170.84	7,060.3	-619.1	99.8	619.9	0.00	0.00	0.00
7,174.9	7.33	170.84	7,134.6	-628.5	101.3	629.3	0.00	0.00	0.00
Start Drop -2.00									
7,200.0	6.83	170.84	7,159.5	-631.6	101.8	632.4	2.00	-2.00	0.00
7,276.9	5.29	170.84	7,236.0	-639.6	103.1	640.4	2.00	-2.00	0.00
BYCN_MKR									
7,300.0	4.83	170.84	7,259.0	-641.6	103.4	642.4	2.00	-2.00	0.00
7,400.0	2.83	170.84	7,358.8	-648.2	104.5	649.0	2.00	-2.00	0.00
7,500.0	0.83	170.84	7,458.7	-651.3	105.0	652.1	2.00	-2.00	0.00
7,541.3	0.00	0.00	7,500.0	-651.6	105.1	652.4	2.00	-2.00	0.00
Start 854.5 hold at 7541.3 MD									
7,549.3	0.00	0.00	7,508.0	-651.6	105.1	652.4	0.00	0.00	0.00
BSPG_LIME *									
7,600.0	0.00	0.00	7,558.7	-651.6	105.1	652.4	0.00	0.00	0.00
7,700.0	0.00	0.00	7,658.7	-651.6	105.1	652.4	0.00	0.00	0.00
7,800.0	0.00	0.00	7,758.7	-651.6	105.1	652.4	0.00	0.00	0.00
7,900.0	0.00	0.00	7,858.7	-651.6	105.1	652.4	0.00	0.00	0.00
8,000.0	0.00	0.00	7,958.7	-651.6	105.1	652.4	0.00	0.00	0.00
8,100.0	0.00	0.00	8,058.7	-651.6	105.1	652.4	0.00	0.00	0.00
8,200.0	0.00	0.00	8,158.7	-651.6	105.1	652.4	0.00	0.00	0.00
8,300.0	0.00	0.00	8,258.7	-651.6	105.1	652.4	0.00	0.00	0.00
8,354.3	0.00	0.00	8,313.0	-651.6	105.1	652.4	0.00	0.00	0.00
AVALON_B									
8,395.8	0.00	0.00	8,354.5	-651.6	105.1	652.4	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 303H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3933.9usft (3933.9)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3933.9usft (3933.9)
Site:	Royal Oak 24 Fed Com Pad 1	North Reference:	Grid
Well:	Royal Oak 24 Fed Com 303H	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)
KOP #2 - Start Build 12.00 - KOP - Royal Oak 24 Fed Com 303H									
8,400.0	0.50	179.56	8,358.7	-651.7	105.1	652.4	11.90	11.90	0.00
8,425.0	3.50	179.56	8,383.7	-652.5	105.1	653.3	12.00	12.00	0.00
8,450.0	6.50	179.56	8,408.6	-654.7	105.1	655.5	12.00	12.00	0.00
8,475.0	9.50	179.56	8,433.4	-658.2	105.1	659.0	12.00	12.00	0.00
8,500.0	12.50	179.56	8,457.9	-663.0	105.2	663.7	12.00	12.00	0.00
8,525.0	15.50	179.56	8,482.2	-669.0	105.2	669.8	12.00	12.00	0.00
8,550.0	18.50	179.56	8,506.1	-676.3	105.3	677.1	12.00	12.00	0.00
8,575.0	21.50	179.56	8,529.6	-684.9	105.3	685.7	12.00	12.00	0.00
8,600.0	24.50	179.56	8,552.6	-694.6	105.4	695.4	12.00	12.00	0.00
8,625.0	27.50	179.56	8,575.0	-705.6	105.5	706.4	12.00	12.00	0.00
8,650.0	30.50	179.56	8,596.9	-717.7	105.6	718.5	12.00	12.00	0.00
8,675.0	33.50	179.56	8,618.1	-731.0	105.7	731.8	12.00	12.00	0.00
8,700.0	36.50	179.56	8,638.6	-745.3	105.8	746.1	12.00	12.00	0.00
8,725.0	39.50	179.56	8,658.3	-760.7	105.9	761.5	12.00	12.00	0.00
8,750.0	42.50	179.56	8,677.1	-777.1	106.0	777.9	12.00	12.00	0.00
8,775.0	45.50	179.56	8,695.1	-794.5	106.2	795.3	12.00	12.00	0.00
8,800.0	48.50	179.56	8,712.2	-812.7	106.3	813.5	12.00	12.00	0.00
FTP - Royal Oak 24 Fed Com 303H									
8,825.0	51.50	179.56	8,728.2	-831.9	106.5	832.7	12.00	12.00	0.00
8,850.0	54.50	179.56	8,743.3	-851.9	106.6	852.7	12.00	12.00	0.00
8,875.0	57.50	179.56	8,757.2	-872.6	106.8	873.4	12.00	12.00	0.00
8,900.0	60.50	179.56	8,770.1	-894.0	106.9	894.8	12.00	12.00	0.00
8,925.0	63.50	179.56	8,781.9	-916.1	107.1	916.9	12.00	12.00	0.00
8,949.0	66.38	179.56	8,792.0	-937.8	107.3	938.6	12.00	12.00	0.00
FBSG_SD									
8,950.0	66.50	179.56	8,792.4	-938.7	107.3	939.5	12.00	12.00	0.00
8,975.0	69.50	179.56	8,801.8	-961.9	107.5	962.7	12.00	12.00	0.00
9,000.0	72.50	179.56	8,809.9	-985.5	107.7	986.3	12.00	12.00	0.00
9,025.0	75.50	179.56	8,816.8	-1,009.6	107.8	1,010.4	12.00	12.00	0.00
9,050.0	78.50	179.56	8,822.4	-1,033.9	108.0	1,034.7	12.00	12.00	0.00
9,075.0	81.50	179.56	8,826.8	-1,058.5	108.2	1,059.3	12.00	12.00	0.00
9,100.0	84.50	179.56	8,829.8	-1,083.4	108.4	1,084.2	12.00	12.00	0.00
9,125.0	87.50	179.56	8,831.5	-1,108.3	108.6	1,109.1	12.00	12.00	0.00
9,145.8	90.00	179.56	8,832.0	-1,129.1	108.8	1,129.9	12.00	12.00	0.00
LP - Start 9931.9 hold at 9145.8 MD									
9,200.0	90.00	179.56	8,832.0	-1,183.3	109.2	1,184.1	0.00	0.00	0.00
9,300.0	90.00	179.56	8,832.0	-1,283.3	110.0	1,284.1	0.00	0.00	0.00
9,400.0	90.00	179.56	8,832.0	-1,383.3	110.7	1,384.1	0.00	0.00	0.00
9,500.0	90.00	179.56	8,832.0	-1,483.3	111.5	1,484.1	0.00	0.00	0.00
9,600.0	90.00	179.56	8,832.0	-1,583.3	112.3	1,584.1	0.00	0.00	0.00
9,700.0	90.00	179.56	8,832.0	-1,683.3	113.1	1,684.1	0.00	0.00	0.00
9,800.0	90.00	179.56	8,832.0	-1,783.3	113.8	1,784.1	0.00	0.00	0.00
9,900.0	90.00	179.56	8,832.0	-1,883.3	114.6	1,884.1	0.00	0.00	0.00
10,000.0	90.00	179.56	8,832.0	-1,983.3	115.4	1,984.1	0.00	0.00	0.00
10,100.0	90.00	179.56	8,832.0	-2,083.3	116.2	2,084.1	0.00	0.00	0.00
10,200.0	90.00	179.56	8,832.0	-2,183.3	116.9	2,184.1	0.00	0.00	0.00
10,300.0	90.00	179.56	8,832.0	-2,283.3	117.7	2,284.1	0.00	0.00	0.00
10,400.0	90.00	179.56	8,832.0	-2,383.2	118.5	2,384.1	0.00	0.00	0.00
10,500.0	90.00	179.56	8,832.0	-2,483.2	119.3	2,484.1	0.00	0.00	0.00
10,600.0	90.00	179.56	8,832.0	-2,583.2	120.1	2,584.1	0.00	0.00	0.00
10,700.0	90.00	179.56	8,832.0	-2,683.2	120.8	2,684.1	0.00	0.00	0.00
10,800.0	90.00	179.56	8,832.0	-2,783.2	121.6	2,784.1	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 303H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3933.9usft (3933.9)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3933.9usft (3933.9)
Site:	Royal Oak 24 Fed Com Pad 1	North Reference:	Grid
Well:	Royal Oak 24 Fed Com 303H	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)
10,900.0	90.00	179.56	8,832.0	-2,883.2	122.4	2,884.1	0.00	0.00	0.00
11,000.0	90.00	179.56	8,832.0	-2,983.2	123.2	2,984.1	0.00	0.00	0.00
11,100.0	90.00	179.56	8,832.0	-3,083.2	123.9	3,084.1	0.00	0.00	0.00
11,200.0	90.00	179.56	8,832.0	-3,183.2	124.7	3,184.1	0.00	0.00	0.00
11,300.0	90.00	179.56	8,832.0	-3,283.2	125.5	3,284.1	0.00	0.00	0.00
11,400.0	90.00	179.56	8,832.0	-3,383.2	126.3	3,384.1	0.00	0.00	0.00
11,500.0	90.00	179.56	8,832.0	-3,483.2	127.0	3,484.1	0.00	0.00	0.00
11,600.0	90.00	179.56	8,832.0	-3,583.2	127.8	3,584.1	0.00	0.00	0.00
11,700.0	90.00	179.56	8,832.0	-3,683.2	128.6	3,684.1	0.00	0.00	0.00
11,800.0	90.00	179.56	8,832.0	-3,783.2	129.4	3,784.1	0.00	0.00	0.00
11,900.0	90.00	179.56	8,832.0	-3,883.2	130.1	3,884.1	0.00	0.00	0.00
12,000.0	90.00	179.56	8,832.0	-3,983.2	130.9	3,984.1	0.00	0.00	0.00
12,100.0	90.00	179.56	8,832.0	-4,083.2	131.7	4,084.1	0.00	0.00	0.00
12,200.0	90.00	179.56	8,832.0	-4,183.2	132.5	4,184.1	0.00	0.00	0.00
12,300.0	90.00	179.56	8,832.0	-4,283.2	133.2	4,284.1	0.00	0.00	0.00
12,400.0	90.00	179.56	8,832.0	-4,383.2	134.0	4,384.1	0.00	0.00	0.00
12,500.0	90.00	179.56	8,832.0	-4,483.2	134.8	4,484.1	0.00	0.00	0.00
12,600.0	90.00	179.56	8,832.0	-4,583.2	135.6	4,584.1	0.00	0.00	0.00
12,700.0	90.00	179.56	8,832.0	-4,683.2	136.4	4,684.1	0.00	0.00	0.00
12,800.0	90.00	179.56	8,832.0	-4,783.2	137.1	4,784.1	0.00	0.00	0.00
12,900.0	90.00	179.56	8,832.0	-4,883.2	137.9	4,884.1	0.00	0.00	0.00
13,000.0	90.00	179.56	8,832.0	-4,983.2	138.7	4,984.1	0.00	0.00	0.00
13,100.0	90.00	179.56	8,832.0	-5,083.2	139.5	5,084.1	0.00	0.00	0.00
13,200.0	90.00	179.56	8,832.0	-5,183.2	140.2	5,184.1	0.00	0.00	0.00
13,300.0	90.00	179.56	8,832.0	-5,283.2	141.0	5,284.1	0.00	0.00	0.00
13,400.0	90.00	179.56	8,832.0	-5,383.2	141.8	5,384.1	0.00	0.00	0.00
13,500.0	90.00	179.56	8,832.0	-5,483.2	142.6	5,484.1	0.00	0.00	0.00
13,600.0	90.00	179.56	8,832.0	-5,583.2	143.3	5,584.1	0.00	0.00	0.00
13,700.0	90.00	179.56	8,832.0	-5,683.1	144.1	5,684.1	0.00	0.00	0.00
13,800.0	90.00	179.56	8,832.0	-5,783.1	144.9	5,784.1	0.00	0.00	0.00
13,900.0	90.00	179.56	8,832.0	-5,883.1	145.7	5,884.1	0.00	0.00	0.00
14,000.0	90.00	179.56	8,832.0	-5,983.1	146.4	5,984.1	0.00	0.00	0.00
14,100.0	90.00	179.56	8,832.0	-6,083.1	147.2	6,084.1	0.00	0.00	0.00
14,200.0	90.00	179.56	8,832.0	-6,183.1	148.0	6,184.1	0.00	0.00	0.00
14,300.0	90.00	179.56	8,832.0	-6,283.1	148.8	6,284.1	0.00	0.00	0.00
14,400.0	90.00	179.56	8,832.0	-6,383.1	149.5	6,384.1	0.00	0.00	0.00
14,500.0	90.00	179.56	8,832.0	-6,483.1	150.3	6,484.1	0.00	0.00	0.00
14,600.0	90.00	179.56	8,832.0	-6,583.1	151.1	6,584.1	0.00	0.00	0.00
14,700.0	90.00	179.56	8,832.0	-6,683.1	151.9	6,684.1	0.00	0.00	0.00
14,800.0	90.00	179.56	8,832.0	-6,783.1	152.6	6,784.1	0.00	0.00	0.00
14,900.0	90.00	179.56	8,832.0	-6,883.1	153.4	6,884.1	0.00	0.00	0.00
15,000.0	90.00	179.56	8,832.0	-6,983.1	154.2	6,984.1	0.00	0.00	0.00
15,100.0	90.00	179.56	8,832.0	-7,083.1	155.0	7,084.1	0.00	0.00	0.00
15,200.0	90.00	179.56	8,832.0	-7,183.1	155.8	7,184.1	0.00	0.00	0.00
15,300.0	90.00	179.56	8,832.0	-7,283.1	156.5	7,284.1	0.00	0.00	0.00
15,400.0	90.00	179.56	8,832.0	-7,383.1	157.3	7,384.1	0.00	0.00	0.00
15,500.0	90.00	179.56	8,832.0	-7,483.1	158.1	7,484.1	0.00	0.00	0.00
15,600.0	90.00	179.56	8,832.0	-7,583.1	158.9	7,584.1	0.00	0.00	0.00
15,700.0	90.00	179.56	8,832.0	-7,683.1	159.6	7,684.1	0.00	0.00	0.00
15,800.0	90.00	179.56	8,832.0	-7,783.1	160.4	7,784.1	0.00	0.00	0.00
15,900.0	90.00	179.56	8,832.0	-7,883.1	161.2	7,884.1	0.00	0.00	0.00
16,000.0	90.00	179.56	8,832.0	-7,983.1	162.0	7,984.1	0.00	0.00	0.00
16,100.0	90.00	179.56	8,832.0	-8,083.1	162.7	8,084.1	0.00	0.00	0.00
16,200.0	90.00	179.56	8,832.0	-8,183.1	163.5	8,184.1	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 303H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3933.9usft (3933.9)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3933.9usft (3933.9)
Site:	Royal Oak 24 Fed Com Pad 1	North Reference:	Grid
Well:	Royal Oak 24 Fed Com 303H	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)	
16,300.0	90.00	179.56	8,832.0	-8,283.1	164.3	8,284.1	0.00	0.00	0.00	
16,400.0	90.00	179.56	8,832.0	-8,383.1	165.1	8,384.1	0.00	0.00	0.00	
16,500.0	90.00	179.56	8,832.0	-8,483.1	165.8	8,484.1	0.00	0.00	0.00	
16,600.0	90.00	179.56	8,832.0	-8,583.1	166.6	8,584.1	0.00	0.00	0.00	
16,700.0	90.00	179.56	8,832.0	-8,683.1	167.4	8,684.1	0.00	0.00	0.00	
16,800.0	90.00	179.56	8,832.0	-8,783.1	168.2	8,784.1	0.00	0.00	0.00	
16,900.0	90.00	179.56	8,832.0	-8,883.1	168.9	8,884.1	0.00	0.00	0.00	
17,000.0	90.00	179.56	8,832.0	-8,983.1	169.7	8,984.1	0.00	0.00	0.00	
17,100.0	90.00	179.56	8,832.0	-9,083.0	170.5	9,084.1	0.00	0.00	0.00	
17,200.0	90.00	179.56	8,832.0	-9,183.0	171.3	9,184.1	0.00	0.00	0.00	
17,300.0	90.00	179.56	8,832.0	-9,283.0	172.0	9,284.1	0.00	0.00	0.00	
17,400.0	90.00	179.56	8,832.0	-9,383.0	172.8	9,384.1	0.00	0.00	0.00	
17,500.0	90.00	179.56	8,832.0	-9,483.0	173.6	9,484.1	0.00	0.00	0.00	
17,600.0	90.00	179.56	8,832.0	-9,583.0	174.4	9,584.1	0.00	0.00	0.00	
17,700.0	90.00	179.56	8,832.0	-9,683.0	175.2	9,684.1	0.00	0.00	0.00	
17,800.0	90.00	179.56	8,832.0	-9,783.0	175.9	9,784.1	0.00	0.00	0.00	
17,900.0	90.00	179.56	8,832.0	-9,883.0	176.7	9,884.1	0.00	0.00	0.00	
18,000.0	90.00	179.56	8,832.0	-9,983.0	177.5	9,984.1	0.00	0.00	0.00	
18,100.0	90.00	179.56	8,832.0	-10,083.0	178.3	10,084.1	0.00	0.00	0.00	
18,200.0	90.00	179.56	8,832.0	-10,183.0	179.0	10,184.1	0.00	0.00	0.00	
18,300.0	90.00	179.56	8,832.0	-10,283.0	179.8	10,284.1	0.00	0.00	0.00	
18,400.0	90.00	179.56	8,832.0	-10,383.0	180.6	10,384.1	0.00	0.00	0.00	
18,500.0	90.00	179.56	8,832.0	-10,483.0	181.4	10,484.1	0.00	0.00	0.00	
18,600.0	90.00	179.56	8,832.0	-10,583.0	182.1	10,584.1	0.00	0.00	0.00	
18,700.0	90.00	179.56	8,832.0	-10,683.0	182.9	10,684.1	0.00	0.00	0.00	
18,800.0	90.00	179.56	8,832.0	-10,783.0	183.7	10,784.1	0.00	0.00	0.00	
18,900.0	90.00	179.56	8,832.0	-10,883.0	184.5	10,884.1	0.00	0.00	0.00	
19,000.0	90.00	179.56	8,832.0	-10,983.0	185.2	10,984.1	0.00	0.00	0.00	
19,077.7	90.00	179.56	8,832.0	-11,060.6	185.8	11,061.7	0.00	0.00	0.00	
TD at 19077.7 - LTP/BHL - Royal Oak 24 Fed Com 303H										

Design Targets										
Target Name										
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- Shape										
KOP - Royal Oak 24 Fed - plan hits target center - Point	0.00	0.00	8,354.5	-651.6	105.1	628,534.64	762,749.29	32.725814		-103.613353
FTP - Royal Oak 24 Fed - plan misses target center by 163.4usft at 8800.0usft MD (8712.2 TVD, -812.7 N, 106.3 E) - Point	0.00	0.01	8,832.0	-701.6	105.5	628,484.64	762,749.68	32.725676		-103.613353
LTP/BHL - Royal Oak 24 - plan hits target center - Point	0.00	0.00	8,832.0	-11,060.6	185.8	618,125.63	762,830.07	32.697203		-103.613320

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Royal Oak 24 Fed Com 303H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3933.9usft (3933.9)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3933.9usft (3933.9)
Site:	Royal Oak 24 Fed Com Pad 1	North Reference:	Grid
Well:	Royal Oak 24 Fed Com 303H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
19,077.7	8,832.0	20" Casing	20	24

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				
3,652.5	3,641.0	YATES				
5,682.1	5,654.0	CHERRY_CNYN				
7,276.9	7,236.0	BYCN_MKR				
7,549.3	7,508.0	BSPG_LIME *				
8,354.3	8,313.0	AVALON_B				
8,949.0	8,792.0	FBSG__SD				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 2.00
2,366.4	2,365.4	-23.1	3.7	Start 4808.5 hold at 2366.4 MD
7,174.9	7,134.6	-628.5	101.3	Start Drop -2.00
7,541.3	7,500.0	-651.6	105.1	Start 854.5 hold at 7541.3 MD
8,395.8	8,354.5	-651.6	105.1	KOP #2 - Start Build 12.00
9,145.8	8,832.0	-1,129.1	108.8	LP - Start 9931.9 hold at 9145.8 MD
19,077.7	8,832.0	-11,060.6	185.8	TD at 19077.7

Avant Operating, LLC

Lea Co., NM (NAD 83)

Royal Oak 24 Fed Com Pad 1

Royal Oak 24 Fed Com 303H

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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	2/5/2025		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,076.8	Plan 0.1 (OH)	B001Mb_MWD+HRGM	OWSG MWD + HRGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Royal Oak 24 Fed Com Pad 1						
Dorothy Federal 001 - OH - OH	13,212.7	8,770.2	1,081.7	814.3	4.046	CC, ES
Dorothy Federal 001 - OH - OH	13,300.0	8,768.7	1,085.2	816.8	4.044	SF
Edith Federal 002 - OH - OH	10,595.7	8,798.2	342.5	97.6	1.399	Level 3, CC
Edith Federal 002 - OH - OH	10,600.0	8,798.1	342.5	97.6	1.399	Level 3, ES, SF
EK-A, 8701 JV-P 001 - OH - OH	10,608.1	8,818.8	1,079.3	848.2	4.669	CC, ES
EK-A, 8701 JV-P 001 - OH - OH	10,700.0	8,817.7	1,083.2	851.1	4.666	SF
McElvain 004 - OH - OH	13,127.4	8,798.3	345.2	82.4	1.314	Level 3, CC, ES, SF
McElvain 007 - OH - OH	11,796.5	8,787.3	343.9	96.4	1.390	Level 3, CC
McElvain 007 - OH - OH	11,800.0	8,787.3	343.9	96.4	1.389	Level 3, ES, SF
Mescalero 36 State 003 - OH - OH	18,386.4	8,725.3	971.0	629.5	2.844	CC
Mescalero 36 State 003 - OH - OH	18,400.0	8,724.9	971.1	629.5	2.843	ES, SF
New Mexico 36 State 001 - OH - OH	14,450.6	8,765.1	346.6	64.0	1.227	Level 2, CC, ES, SF
New Mexico 36 State 002 - OH - OH	14,443.8	8,760.0	974.6	692.7	3.457	CC, ES
New Mexico 36 State 002 - OH - OH	14,500.0	8,759.3	976.2	693.6	3.454	SF
New Mexico 36 State 004 - OH - OH	15,788.2	8,740.8	348.0	55.6	1.190	Level 2, CC, ES, SF
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	2,259.8	2,276.8	159.1	143.4	10.188	CC, ES
Royal Oak 24 Fed Com 008H - OH - Plan 0.1	8,439.0	8,448.7	250.1	190.8	4.216	SF
Royal Oak 24 Fed Com 009H - OH - Plan 0.1	1,916.2	1,917.5	40.0	26.7	3.008	CC
Royal Oak 24 Fed Com 009H - OH - Plan 0.1	2,000.0	2,001.3	40.0	26.1	2.878	ES
Royal Oak 24 Fed Com 009H - OH - Plan 0.1	2,100.0	2,100.0	41.0	26.5	2.818	SF
Royal Oak 24 Fed Com 304H - OH - Plan 0.1	1,915.6	1,918.7	80.0	66.8	6.022	CC
Royal Oak 24 Fed Com 304H - OH - Plan 0.1	2,000.0	2,003.0	80.0	66.1	5.760	ES
Royal Oak 24 Fed Com 304H - OH - Plan 0.1	19,077.7	19,226.4	1,320.0	995.0	4.062	SF
Royal Oak 24 Fed Com 503H - OH - Plan 0.1	2,127.7	2,128.0	19.8	5.0	1.338	Level 3, CC
Royal Oak 24 Fed Com 503H - OH - Plan 0.1	2,200.0	2,200.1	20.2	4.9	1.323	Level 3, ES, SF
Royal Oak 24 Fed Com 512H - OH - Plan 0.1	2,000.0	1,999.9	20.0	6.1	1.443	Level 3, CC, ES, SF
Royal Oak 24 Fed Com 513H - OH - Plan 0.1	2,055.4	2,058.4	60.0	45.7	4.199	CC
Royal Oak 24 Fed Com 513H - OH - Plan 0.1	2,100.0	2,102.1	60.2	45.7	4.130	ES
Royal Oak 24 Fed Com 513H - OH - Plan 0.1	2,200.0	2,200.0	62.8	47.6	4.128	SF
Royal Oak 24 Fed Com 604H - OH - Plan 0.1	2,000.0	2,003.2	161.3	147.4	11.605	CC, ES
Royal Oak 24 Fed Com 604H - OH - Plan 0.1	19,077.7	20,594.8	1,895.8	1,641.5	7.455	SF

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Royal Oak 25 Fed Com Pad 2						
Edith Federal 001 - OH - OH	13,104.3	8,779.7	1,325.9	1,051.8	4.837	CC, ES
Edith Federal 001 - OH - OH	13,200.0	8,778.1	1,329.4	1,054.3	4.832	SF
Royal Oak 25 Fed Com #302H - OH - Plan 0.1	8,200.0	8,205.8	1,308.0	1,248.6	21.995	CC
Royal Oak 25 Fed Com #302H - OH - Plan 0.1	19,077.7	18,879.5	1,333.0	1,022.5	4.294	ES, SF
Royal Oak 25 Fed Com #502H - OH - Plan 0.1	8,714.3	8,751.0	1,452.6	1,389.1	22.879	CC, ES
Royal Oak 25 Fed Com #502H - OH - Plan 0.1	19,077.7	19,981.5	1,720.8	1,438.7	6.099	SF
Royal Oak 25 Fed Com #602H - OH - Plan 0.1	8,817.3	8,945.4	1,397.0	1,332.4	21.654	CC, ES
Royal Oak 25 Fed Com #602H - OH - Plan 0.1	19,077.7	20,461.7	1,925.1	1,673.2	7.642	SF

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		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.0 usft
Reference	Vertical	Measured	Vertical	Reference	Offset	Highside			Distance	Between	Minimum	Separation	Warning		
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Between	Ellipses	Separation	Factor			
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	Centres	(usft)	(usft)	(usft)			
11,400.0	8,832.0	8,801.8	8,800.6	57.7	186.9	-91.67	-5,187.0	1,222.0	2,110.7	1,884.4	226.32	9.326			
11,500.0	8,832.0	8,800.1	8,798.8	58.9	186.9	-91.57	-5,187.0	1,222.0	2,025.5	1,798.0	227.43	8.906			
11,600.0	8,832.0	8,798.4	8,797.1	60.2	186.8	-91.48	-5,187.0	1,222.0	1,941.7	1,713.0	228.68	8.491			
11,700.0	8,832.0	8,796.6	8,795.3	61.4	186.8	-91.39	-5,187.0	1,222.0	1,859.5	1,629.4	230.08	8.082			
11,800.0	8,832.0	8,794.9	8,793.6	62.7	186.7	-91.30	-5,187.1	1,222.0	1,779.1	1,547.4	231.66	7.680			
11,900.0	8,832.0	8,793.1	8,791.9	63.9	186.7	-91.21	-5,187.1	1,222.0	1,700.8	1,467.4	233.42	7.287			
12,000.0	8,832.0	8,791.4	8,790.1	65.2	186.7	-91.11	-5,187.1	1,222.0	1,624.9	1,389.5	235.37	6.903			
12,100.0	8,832.0	8,789.6	8,788.4	66.5	186.6	-91.02	-5,187.2	1,222.0	1,551.7	1,314.2	237.54	6.532			
12,200.0	8,832.0	8,787.9	8,786.6	67.8	186.6	-90.93	-5,187.2	1,222.0	1,481.7	1,241.7	239.91	6.176			
12,300.0	8,832.0	8,786.1	8,784.9	69.1	186.6	-90.84	-5,187.2	1,222.0	1,415.2	1,172.7	242.50	5.836			
12,400.0	8,832.0	8,784.4	8,783.1	70.4	186.5	-90.74	-5,187.3	1,222.0	1,352.9	1,107.6	245.28	5.516			
12,500.0	8,832.0	8,782.6	8,781.4	71.7	186.5	-90.65	-5,187.3	1,222.0	1,295.3	1,047.1	248.23	5.218			
12,600.0	8,832.0	8,780.9	8,779.6	73.0	186.5	-90.56	-5,187.3	1,222.0	1,243.1	991.8	251.30	4.947			
12,700.0	8,832.0	8,779.2	8,777.9	74.3	186.4	-90.47	-5,187.3	1,222.0	1,197.0	942.6	254.42	4.705			
12,800.0	8,832.0	8,777.4	8,776.2	75.6	186.4	-90.37	-5,187.4	1,222.0	1,157.7	900.2	257.51	4.496			
12,900.0	8,832.0	8,775.7	8,774.4	76.9	186.3	-90.28	-5,187.4	1,222.0	1,125.9	865.5	260.45	4.323			
13,000.0	8,832.0	8,773.9	8,772.7	78.3	186.3	-90.19	-5,187.4	1,222.0	1,102.4	839.3	263.11	4.190			
13,100.0	8,832.0	8,772.2	8,770.9	79.6	186.3	-90.10	-5,187.5	1,222.0	1,087.5	822.1	265.38	4.098			
13,200.0	8,832.0	8,770.4	8,769.2	80.9	186.2	-90.00	-5,187.5	1,222.0	1,081.7	814.6	267.15	4.049			
13,212.7	8,832.0	8,770.2	8,769.0	81.1	186.2	-89.99	-5,187.5	1,222.0	1,081.7	814.3	267.34	4.046	CC, ES		
13,300.0	8,832.0	8,768.7	8,767.4	82.3	186.2	-89.91	-5,187.5	1,222.0	1,085.2	816.8	268.35	4.044	SF		
13,400.0	8,832.0	8,766.9	8,765.7	83.6	186.2	-89.82	-5,187.6	1,222.0	1,097.7	828.8	268.96	4.081			
13,500.0	8,832.0	8,765.2	8,763.9	85.0	186.1	-89.73	-5,187.6	1,222.0	1,119.1	850.1	268.99	4.160			
13,600.0	8,832.0	8,763.5	8,762.2	86.3	186.1	-89.63	-5,187.6	1,222.0	1,148.9	880.4	268.52	4.279			
13,700.0	8,832.0	8,761.7	8,760.5	87.7	186.1	-89.54	-5,187.7	1,222.0	1,186.3	918.7	267.62	4.433			
13,800.0	8,832.0	8,760.0	8,758.7	89.0	186.0	-89.45	-5,187.7	1,222.0	1,230.8	964.4	266.39	4.620			
13,900.0	8,832.0	8,758.2	8,757.0	90.4	186.0	-89.36	-5,187.7	1,222.0	1,281.5	1,016.5	264.94	4.837			
14,000.0	8,832.0	8,756.5	8,755.2	91.8	186.0	-89.26	-5,187.7	1,222.0	1,337.8	1,074.4	263.33	5.080			
14,100.0	8,832.0	8,754.7	8,753.5	93.1	185.9	-89.17	-5,187.8	1,222.0	1,398.9	1,137.3	261.64	5.347			
14,200.0	8,832.0	8,753.0	8,751.7	94.5	185.9	-89.08	-5,187.8	1,222.0	1,464.4	1,204.4	259.93	5.634			
14,300.0	8,832.0	8,751.2	8,750.0	95.9	185.8	-88.99	-5,187.8	1,222.0	1,533.5	1,275.3	258.23	5.939			
14,400.0	8,832.0	8,749.5	8,748.2	97.2	185.8	-88.89	-5,187.9	1,222.0	1,606.0	1,349.4	256.58	6.259			
14,500.0	8,832.0	8,747.7	8,746.5	98.6	185.8	-88.80	-5,187.9	1,222.0	1,681.2	1,426.2	254.99	6.593			
14,600.0	8,832.0	8,746.0	8,744.7	100.0	185.7	-88.71	-5,187.9	1,222.0	1,758.9	1,505.5	253.47	6.939			
14,700.0	8,832.0	8,744.3	8,743.0	101.4	185.7	-88.62	-5,188.0	1,222.0	1,838.8	1,586.8	252.04	7.296			

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance					
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	+N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
14,800.0	8,832.0	8,742.5	8,741.3	102.7	185.7	-88.53	-5,188.0	1,222.0	1,920.6	1,669.9	250.68	7.661		
14,900.0	8,832.0	8,740.8	8,739.5	104.1	185.6	-88.43	-5,188.0	1,222.0	2,004.0	1,754.6	249.41	8.035		
15,000.0	8,832.0	8,739.0	8,737.8	105.5	185.6	-88.34	-5,188.0	1,222.0	2,088.9	1,840.6	248.22	8.415		

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Royal Oak 24 Fed Com 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 - Edith Federal 002 - OH - OH													Offset Site Error: 0.0 usft
Survey Program: 350-INC-ONLY													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,400.0	6,366.1	6,385.1	6,383.6	23.4	142.9	17.70	-2,629.0	-222.5	2,121.2	1,955.9	165.30	12.832	
6,500.0	6,465.2	6,485.5	6,483.9	23.8	145.3	17.82	-2,626.4	-222.5	2,106.5	1,938.4	168.05	12.535	
6,600.0	6,564.4	6,584.3	6,582.7	24.2	147.7	17.94	-2,623.8	-222.5	2,091.8	1,921.0	170.81	12.246	
6,700.0	6,663.6	6,683.1	6,681.5	24.6	150.1	18.06	-2,621.2	-222.5	2,077.1	1,903.4	173.61	11.964	
6,800.0	6,762.8	6,781.9	6,780.2	25.0	152.6	18.18	-2,618.6	-222.5	2,062.4	1,885.9	176.44	11.689	
6,900.0	6,862.0	6,880.7	6,879.0	25.4	155.0	18.30	-2,616.0	-222.5	2,047.7	1,868.4	179.26	11.423	
7,000.0	6,961.2	6,979.6	6,977.8	25.8	157.5	18.43	-2,613.4	-222.5	2,033.0	1,850.9	182.09	11.165	
7,100.0	7,060.3	7,078.4	7,076.6	26.2	160.0	18.55	-2,610.9	-222.5	2,018.3	1,833.4	184.91	10.915	
7,200.0	7,159.5	7,173.9	7,172.1	26.6	162.2	18.65	-2,608.4	-222.5	2,003.8	1,816.3	187.56	10.683	
7,300.0	7,259.0	7,267.5	7,265.7	27.0	164.4	18.67	-2,606.2	-222.5	1,991.9	1,801.8	190.09	10.479	
7,400.0	7,358.8	7,361.5	7,359.6	27.3	166.5	18.69	-2,604.3	-222.5	1,983.6	1,791.0	192.61	10.299	
7,500.0	7,458.7	7,457.8	7,455.9	27.7	168.6	18.69	-2,602.6	-222.5	1,978.9	1,783.8	195.05	10.146	
7,600.0	7,558.7	7,556.0	7,554.1	28.0	170.6	-170.46	-2,601.0	-222.5	1,977.0	1,779.6	197.38	10.016	
7,700.0	7,658.7	7,654.2	7,652.3	28.3	172.6	-170.46	-2,599.5	-222.5	1,975.4	1,775.7	199.72	9.891	
7,800.0	7,758.7	7,752.4	7,750.5	28.6	174.6	-170.45	-2,598.1	-222.5	1,974.0	1,771.9	202.05	9.770	
7,900.0	7,858.7	7,850.6	7,848.7	28.9	176.6	-170.44	-2,596.7	-222.5	1,972.6	1,768.2	204.39	9.651	
8,000.0	7,958.7	7,950.2	7,948.3	29.3	178.6	-170.44	-2,595.4	-222.5	1,971.3	1,764.6	206.72	9.536	
8,100.0	8,058.7	8,050.2	8,048.3	29.6	180.6	-170.43	-2,594.1	-222.5	1,970.0	1,761.0	209.04	9.424	
8,200.0	8,158.7	8,150.2	8,148.2	29.9	182.6	-170.42	-2,592.8	-222.5	1,968.7	1,757.4	211.36	9.314	
8,300.0	8,258.7	8,250.2	8,248.2	30.2	184.6	-170.42	-2,591.5	-222.5	1,967.5	1,753.8	213.69	9.207	
8,400.0	8,358.7	8,350.2	8,348.2	30.6	186.6	10.04	-2,590.2	-222.5	1,966.1	1,750.1	216.02	9.102	
8,500.0	8,457.9	8,454.3	8,452.3	30.9	188.9	10.38	-2,588.7	-222.5	1,953.6	1,734.9	218.69	8.933	
8,600.0	8,552.6	8,553.7	8,551.8	31.4	191.1	11.36	-2,587.0	-222.5	1,920.8	1,699.5	221.29	8.680	
8,700.0	8,638.6	8,643.4	8,641.4	31.9	193.1	13.26	-2,585.2	-222.5	1,869.3	1,645.7	223.66	8.358	
8,800.0	8,712.2	8,719.4	8,717.4	32.5	194.9	16.71	-2,583.5	-222.5	1,801.5	1,575.8	225.67	7.983	
8,900.0	8,770.1	8,778.2	8,776.2	33.1	196.2	23.35	-2,582.1	-222.5	1,720.4	1,493.2	227.23	7.571	
9,000.0	8,809.9	8,817.5	8,815.5	33.8	197.1	37.94	-2,581.1	-222.5	1,629.9	1,401.6	228.30	7.139	
9,100.0	8,829.8	8,825.0	8,823.0	34.5	197.2	71.55	-2,580.9	-222.5	1,533.9	1,305.3	228.65	6.709	
9,200.0	8,832.0	8,825.0	8,823.0	35.1	197.2	94.48	-2,580.9	-222.5	1,436.7	1,207.9	228.75	6.280	
9,300.0	8,832.0	8,832.4	8,830.3	35.9	197.4	95.71	-2,580.7	-222.5	1,339.8	1,110.8	228.99	5.851	
9,400.0	8,832.0	8,829.7	8,827.6	36.6	197.3	95.26	-2,580.8	-222.5	1,243.4	1,014.3	229.09	5.427	
9,500.0	8,832.0	8,826.9	8,824.9	37.4	197.3	94.81	-2,580.9	-222.5	1,147.6	918.4	229.24	5.006	
9,600.0	8,832.0	8,824.2	8,822.2	38.3	197.2	94.36	-2,580.9	-222.5	1,052.6	823.2	229.44	4.588	
9,700.0	8,832.0	8,821.6	8,819.5	39.2	197.2	93.91	-2,581.0	-222.5	958.7	728.9	229.74	4.173	
9,800.0	8,832.0	8,818.9	8,816.9	40.1	197.1	93.47	-2,581.1	-222.5	866.0	635.9	230.16	3.763	
9,900.0	8,832.0	8,816.2	8,814.2	41.0	197.0	93.03	-2,581.1	-222.5	775.2	544.5	230.76	3.359	
10,000.0	8,832.0	8,813.6	8,811.6	42.0	197.0	92.59	-2,581.2	-222.5	687.0	455.3	231.62	2.966	
10,100.0	8,832.0	8,811.0	8,808.9	43.0	196.9	92.15	-2,581.3	-222.5	602.4	369.5	232.85	2.587	
10,200.0	8,832.0	8,808.4	8,806.3	44.0	196.9	91.71	-2,581.3	-222.5	523.2	288.6	234.62	2.230	
10,300.0	8,832.0	8,805.8	8,803.7	45.0	196.8	91.28	-2,581.4	-222.5	452.4	215.4	237.05	1.908	
10,400.0	8,832.0	8,803.2	8,801.2	46.1	196.7	90.85	-2,581.5	-222.5	394.4	154.3	240.10	1.643	
10,500.0	8,832.0	8,800.6	8,798.6	47.2	196.7	90.42	-2,581.5	-222.5	355.6	112.4	243.15	1.462 Level 3	
10,595.7	8,832.0	8,798.2	8,796.2	48.3	196.6	90.01	-2,581.6	-222.5	342.5	97.6	244.86	1.399 Level 3, CC	
10,600.0	8,832.0	8,798.1	8,796.1	48.3	196.6	89.99	-2,581.6	-222.5	342.5	97.6	244.90	1.399 Level 3, ES, SF	
10,700.0	8,832.0	8,795.6	8,793.5	49.4	196.6	89.57	-2,581.7	-222.5	358.0	113.6	244.42	1.465 Level 3	
10,800.0	8,832.0	8,793.0	8,791.0	50.6	196.5	89.15	-2,581.7	-222.5	398.8	156.5	242.30	1.646	
10,900.0	8,832.0	8,790.5	8,788.5	51.7	196.5	88.73	-2,581.8	-222.5	458.1	218.3	239.76	1.911	
11,000.0	8,832.0	8,788.0	8,786.0	52.9	196.4	88.31	-2,581.9	-222.5	529.8	292.3	237.48	2.231	
11,100.0	8,832.0	8,785.6	8,783.5	54.1	196.3	87.90	-2,581.9	-222.5	609.5	373.8	235.66	2.586	
11,200.0	8,832.0	8,783.1	8,781.1	55.3	196.3	87.49	-2,582.0	-222.5	694.4	460.2	234.25	2.964	
11,300.0	8,832.0	8,780.6	8,778.6	56.5	196.2	87.08	-2,582.0	-222.5	783.0	549.8	233.17	3.358	
11,400.0	8,832.0	8,778.2	8,776.2	57.7	196.2	86.67	-2,582.1	-222.5	874.0	641.6	232.34	3.762	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 - Edith Federal 002 - OH - OH													Offset Site Error:	0.0 usft
Survey Program: 350-INC-ONLY													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
11,500.0	8,832.0	8,775.8	8,773.8	58.9	196.1	86.27	-2,582.2	-222.5	966.7	735.0	231.68	4.173		
11,600.0	8,832.0	8,773.4	8,771.3	60.2	196.1	85.87	-2,582.2	-222.5	1,060.8	829.6	231.16	4.589		
11,700.0	8,832.0	8,771.0	8,768.9	61.4	196.0	85.47	-2,582.3	-222.5	1,155.9	925.1	230.74	5.009		
11,800.0	8,832.0	8,768.6	8,766.6	62.7	196.0	85.07	-2,582.3	-222.5	1,251.7	1,021.3	230.40	5.433		
11,900.0	8,832.0	8,766.2	8,764.2	63.9	195.9	84.68	-2,582.4	-222.5	1,348.1	1,118.0	230.11	5.859		
12,000.0	8,832.0	8,763.9	8,761.8	65.2	195.9	84.29	-2,582.5	-222.5	1,445.0	1,215.2	229.87	6.286		
12,100.0	8,832.0	8,761.5	8,759.5	66.5	195.8	83.90	-2,582.5	-222.5	1,542.3	1,312.7	229.66	6.716		
12,200.0	8,832.0	8,759.2	8,757.2	67.8	195.8	83.51	-2,582.6	-222.5	1,640.0	1,410.5	229.49	7.146		
12,300.0	8,832.0	8,756.9	8,754.8	69.1	195.7	83.13	-2,582.6	-222.5	1,737.9	1,508.5	229.34	7.578		
12,400.0	8,832.0	8,754.5	8,752.5	70.4	195.6	82.75	-2,582.7	-222.5	1,836.0	1,606.8	229.20	8.010		
12,500.0	8,832.0	8,752.2	8,750.2	71.7	195.6	82.37	-2,582.7	-222.5	1,934.3	1,705.2	229.09	8.443		
12,600.0	8,832.0	8,750.0	8,747.9	73.0	195.5	82.00	-2,582.8	-222.5	2,032.8	1,803.8	228.99	8.877		

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,800.0	8,712.2	8,718.7	8,717.7	32.5	180.9	-42.80	-2,584.1	1,199.3	2,081.5	1,869.6	211.91	9.823	
8,900.0	8,770.1	8,776.6	8,775.5	33.1	182.0	-52.77	-2,583.5	1,199.4	2,012.0	1,798.6	213.37	9.429	
9,000.0	8,809.9	8,815.8	8,814.7	33.8	182.7	-66.65	-2,583.0	1,199.4	1,935.0	1,720.5	214.46	9.023	
9,100.0	8,829.8	8,834.7	8,833.7	34.5	183.1	-83.25	-2,582.8	1,199.4	1,854.4	1,639.3	215.15	8.619	
9,200.0	8,832.0	8,835.7	8,834.7	35.1	183.1	-90.83	-2,582.8	1,199.4	1,774.1	1,558.6	215.52	8.232	
9,300.0	8,832.0	8,834.5	8,833.5	35.9	183.1	-90.76	-2,582.8	1,199.4	1,695.8	1,479.9	215.93	7.854	
9,400.0	8,832.0	8,833.3	8,832.2	36.6	183.1	-90.70	-2,582.8	1,199.4	1,620.0	1,403.5	216.43	7.485	
9,500.0	8,832.0	8,832.1	8,831.0	37.4	183.0	-90.63	-2,582.8	1,199.4	1,546.8	1,329.8	217.05	7.127	
9,600.0	8,832.0	8,830.9	8,829.8	38.3	183.0	-90.57	-2,582.8	1,199.4	1,476.8	1,259.1	217.79	6.781	
9,700.0	8,832.0	8,829.7	8,828.6	39.2	183.0	-90.50	-2,582.8	1,199.4	1,410.5	1,191.8	218.67	6.450	
9,800.0	8,832.0	8,828.5	8,827.4	40.1	183.0	-90.44	-2,582.8	1,199.4	1,348.3	1,128.6	219.70	6.137	
9,900.0	8,832.0	8,827.2	8,826.2	41.0	183.0	-90.38	-2,582.9	1,199.4	1,290.8	1,070.0	220.87	5.844	
10,000.0	8,832.0	8,826.0	8,825.0	42.0	182.9	-90.31	-2,582.9	1,199.4	1,238.8	1,016.6	222.19	5.575	
10,100.0	8,832.0	8,824.8	8,823.8	43.0	182.9	-90.25	-2,582.9	1,199.4	1,192.9	969.3	223.64	5.334	
10,200.0	8,832.0	8,823.6	8,822.6	44.0	182.9	-90.18	-2,582.9	1,199.4	1,153.9	928.7	225.17	5.124	
10,300.0	8,832.0	8,822.4	8,821.4	45.0	182.9	-90.12	-2,582.9	1,199.4	1,122.4	895.7	226.75	4.950	
10,400.0	8,832.0	8,821.2	8,820.2	46.1	182.8	-90.06	-2,582.9	1,199.4	1,099.2	870.9	228.30	4.815	
10,500.0	8,832.0	8,820.0	8,819.0	47.2	182.8	-89.99	-2,583.0	1,199.4	1,084.7	855.0	229.76	4.721	
10,600.0	8,832.0	8,818.9	8,817.8	48.3	182.8	-89.93	-2,583.0	1,199.4	1,079.4	848.3	231.06	4.671	
10,608.1	8,832.0	8,818.8	8,817.7	48.4	182.8	-89.93	-2,583.0	1,199.4	1,079.3	848.2	231.16	4.669 CC, ES	
10,700.0	8,832.0	8,817.7	8,816.6	49.4	182.8	-89.87	-2,583.0	1,199.4	1,083.2	851.1	232.15	4.666 SF	
10,800.0	8,832.0	8,816.5	8,815.4	50.6	182.7	-89.80	-2,583.0	1,199.4	1,096.3	863.3	232.99	4.705	
10,900.0	8,832.0	8,815.3	8,814.2	51.7	182.7	-89.74	-2,583.0	1,199.4	1,118.1	884.5	233.57	4.787	
11,000.0	8,832.0	8,814.1	8,813.0	52.9	182.7	-89.68	-2,583.0	1,199.4	1,148.3	914.4	233.90	4.909	
11,100.0	8,832.0	8,812.9	8,811.9	54.1	182.7	-89.62	-2,583.0	1,199.4	1,186.1	952.1	234.01	5.069	
11,200.0	8,832.0	8,811.7	8,810.7	55.3	182.7	-89.55	-2,583.0	1,199.4	1,231.0	997.0	233.93	5.262	
11,300.0	8,832.0	8,810.6	8,809.5	56.5	182.6	-89.49	-2,583.1	1,199.4	1,282.0	1,048.3	233.70	5.486	
11,400.0	8,832.0	8,809.4	8,808.3	57.7	182.6	-89.43	-2,583.1	1,199.4	1,338.6	1,105.3	233.36	5.737	
11,500.0	8,832.0	8,808.2	8,807.2	58.9	182.6	-89.37	-2,583.1	1,199.4	1,400.1	1,167.2	232.94	6.011	
11,600.0	8,832.0	8,807.0	8,806.0	60.2	182.6	-89.30	-2,583.1	1,199.4	1,465.8	1,233.4	232.47	6.305	
11,700.0	8,832.0	8,805.9	8,804.8	61.4	182.5	-89.24	-2,583.1	1,199.4	1,535.3	1,303.3	231.98	6.618	
11,800.0	8,832.0	8,804.7	8,803.6	62.7	182.5	-89.18	-2,583.1	1,199.4	1,607.9	1,376.4	231.48	6.946	
11,900.0	8,832.0	8,803.5	8,802.5	63.9	182.5	-89.12	-2,583.1	1,199.4	1,683.4	1,452.4	230.98	7.288	
12,000.0	8,832.0	8,802.4	8,801.3	65.2	182.5	-89.06	-2,583.2	1,199.4	1,761.3	1,530.8	230.49	7.641	
12,100.0	8,832.0	8,801.2	8,800.2	66.5	182.5	-88.99	-2,583.2	1,199.4	1,841.3	1,611.3	230.01	8.005	
12,200.0	8,832.0	8,800.1	8,799.0	67.8	182.4	-88.93	-2,583.2	1,199.4	1,923.2	1,693.7	229.56	8.378	
12,300.0	8,832.0	8,798.9	8,797.8	69.1	182.4	-88.87	-2,583.2	1,199.4	2,006.8	1,777.6	229.13	8.758	
12,400.0	8,832.0	8,797.8	8,796.7	70.4	182.4	-88.81	-2,583.2	1,199.4	2,091.7	1,863.0	228.72	9.146	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 - McElvain 004 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 195-INC-ONLY												Offset Well Error:	0.0 usft
Reference	Offset	Rule Assigned:											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,100.0	8,832.0	8,837.0	8,835.8	54.1	183.8	96.39	-5,112.5	-205.6	2,056.2	1,839.8	216.47	9.499	
11,200.0	8,832.0	8,835.1	8,833.9	55.3	183.8	96.09	-5,112.6	-205.6	1,957.8	1,741.1	216.63	9.037	
11,300.0	8,832.0	8,833.2	8,832.0	56.5	183.7	95.78	-5,112.6	-205.6	1,859.4	1,642.6	216.82	8.576	
11,400.0	8,832.0	8,831.4	8,830.2	57.7	183.7	95.47	-5,112.6	-205.6	1,761.3	1,544.2	217.05	8.115	
11,500.0	8,832.0	8,829.5	8,828.3	58.9	183.6	95.17	-5,112.7	-205.6	1,663.3	1,446.0	217.33	7.654	
11,600.0	8,832.0	8,827.6	8,826.4	60.2	183.6	94.86	-5,112.7	-205.6	1,565.7	1,348.0	217.66	7.193	
11,700.0	8,832.0	8,825.8	8,824.6	61.4	183.5	94.55	-5,112.7	-205.6	1,468.3	1,250.3	218.06	6.733	
11,800.0	8,832.0	8,823.9	8,822.7	62.7	183.5	94.24	-5,112.8	-205.6	1,371.3	1,152.8	218.56	6.274	
11,900.0	8,832.0	8,822.0	8,820.8	63.9	183.5	93.93	-5,112.8	-205.6	1,274.8	1,055.7	219.18	5.816	
12,000.0	8,832.0	8,820.1	8,818.9	65.2	183.4	93.61	-5,112.9	-205.6	1,178.9	959.0	219.94	5.360	
12,100.0	8,832.0	8,818.2	8,817.0	66.5	183.4	93.30	-5,112.9	-205.6	1,083.7	862.8	220.91	4.906	
12,200.0	8,832.0	8,816.3	8,815.1	67.8	183.3	92.98	-5,112.9	-205.6	989.4	767.3	222.14	4.454	
12,300.0	8,832.0	8,814.4	8,813.2	69.1	183.3	92.67	-5,113.0	-205.6	896.4	672.7	223.73	4.007	
12,400.0	8,832.0	8,812.4	8,811.3	70.4	183.3	92.35	-5,113.0	-205.6	805.1	579.3	225.80	3.565	
12,500.0	8,832.0	8,810.5	8,809.3	71.7	183.2	92.03	-5,113.0	-205.6	716.0	487.5	228.53	3.133	
12,600.0	8,832.0	8,808.6	8,807.4	73.0	183.2	91.71	-5,113.1	-205.6	630.3	398.2	232.13	2.715	
12,700.0	8,832.0	8,806.7	8,805.5	74.3	183.1	91.39	-5,113.1	-205.6	549.4	312.5	236.88	2.319	
12,800.0	8,832.0	8,804.7	8,803.5	75.6	183.1	91.07	-5,113.2	-205.6	475.8	232.8	242.98	1.958	
12,900.0	8,832.0	8,802.8	8,801.6	76.9	183.1	90.75	-5,113.2	-205.6	413.4	163.1	250.28	1.652	
13,000.0	8,832.0	8,800.8	8,799.6	78.3	183.0	90.42	-5,113.2	-205.6	368.0	110.4	257.61	1.429 Level 3	
13,100.0	8,832.0	8,798.9	8,797.7	79.6	183.0	90.10	-5,113.3	-205.6	346.3	84.0	262.35	1.320 Level 3	
13,127.4	8,832.0	8,798.3	8,797.2	80.0	183.0	90.01	-5,113.3	-205.6	345.2	82.4	262.81	1.314 Level 3, CC, ES, SF	
13,200.0	8,832.0	8,796.9	8,795.7	80.9	182.9	89.77	-5,113.3	-205.6	352.8	90.7	262.05	1.346 Level 3	
13,300.0	8,832.0	8,794.9	8,793.8	82.3	182.9	89.45	-5,113.3	-205.6	385.9	128.7	257.25	1.500	
13,400.0	8,832.0	8,793.0	8,791.8	83.6	182.8	89.12	-5,113.4	-205.6	439.8	189.2	250.66	1.755	
13,500.0	8,832.0	8,791.0	8,789.8	85.0	182.8	88.79	-5,113.4	-205.6	507.9	263.5	244.36	2.078	
13,600.0	8,832.0	8,789.0	8,787.8	86.3	182.8	88.46	-5,113.5	-205.6	585.2	346.1	239.10	2.447	
13,700.0	8,832.0	8,787.0	8,785.8	87.7	182.7	88.13	-5,113.5	-205.6	668.5	433.6	234.94	2.845	
13,800.0	8,832.0	8,785.0	8,783.9	89.0	182.7	87.80	-5,113.5	-205.6	755.9	524.2	231.69	3.263	
13,900.0	8,832.0	8,783.0	8,781.9	90.4	182.6	87.47	-5,113.6	-205.6	846.1	616.9	229.15	3.692	
14,000.0	8,832.0	8,781.0	8,779.8	91.8	182.6	87.14	-5,113.6	-205.6	938.2	711.1	227.15	4.130	
14,100.0	8,832.0	8,779.0	8,777.8	93.1	182.5	86.81	-5,113.7	-205.6	1,031.8	806.3	225.57	4.574	
14,200.0	8,832.0	8,777.0	8,775.8	94.5	182.5	86.47	-5,113.7	-205.6	1,126.6	902.3	224.29	5.023	
14,300.0	8,832.0	8,775.0	8,773.8	95.9	182.5	86.14	-5,113.7	-205.6	1,222.1	998.9	223.25	5.474	
14,400.0	8,832.0	8,772.9	8,771.8	97.2	182.4	85.80	-5,113.8	-205.6	1,318.3	1,095.9	222.39	5.928	
14,500.0	8,832.0	8,770.9	8,769.7	98.6	182.4	85.47	-5,113.8	-205.6	1,415.1	1,193.4	221.68	6.383	
14,600.0	8,832.0	8,768.9	8,767.7	100.0	182.3	85.13	-5,113.9	-205.6	1,512.2	1,291.1	221.09	6.840	
14,700.0	8,832.0	8,766.8	8,765.6	101.4	182.3	84.79	-5,113.9	-205.6	1,609.7	1,389.1	220.59	7.297	
14,800.0	8,832.0	8,764.8	8,763.6	102.7	182.2	84.46	-5,113.9	-205.6	1,707.5	1,487.3	220.16	7.756	
14,900.0	8,832.0	8,762.7	8,761.5	104.1	182.2	84.12	-5,114.0	-205.6	1,805.5	1,585.7	219.80	8.215	
15,000.0	8,832.0	8,760.7	8,759.5	105.5	182.1	83.78	-5,114.0	-205.6	1,903.8	1,684.3	219.48	8.674	
15,100.0	8,832.0	8,758.6	8,757.4	106.9	182.1	83.44	-5,114.1	-205.6	2,002.2	1,783.0	219.21	9.134	
15,200.0	8,832.0	8,756.5	8,755.3	108.3	182.1	83.10	-5,114.1	-205.6	2,100.7	1,881.7	218.97	9.593	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 - McElvain 007 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 227-INC-ONLY												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,800.0	8,832.0	8,822.2	8,821.0	40.1	185.6	95.79	-3,781.8	-214.5	2,025.6	1,808.3	217.29	9.322	
9,900.0	8,832.0	8,820.4	8,819.2	41.0	185.6	95.50	-3,781.8	-214.5	1,927.1	1,709.8	217.36	8.866	
10,000.0	8,832.0	8,818.7	8,817.5	42.0	185.5	95.22	-3,781.8	-214.5	1,828.8	1,611.4	217.44	8.411	
10,100.0	8,832.0	8,816.9	8,815.7	43.0	185.5	94.93	-3,781.8	-214.5	1,730.7	1,513.2	217.55	7.956	
10,200.0	8,832.0	8,815.2	8,814.0	44.0	185.4	94.64	-3,781.9	-214.5	1,632.9	1,415.2	217.69	7.501	
10,300.0	8,832.0	8,813.4	8,812.3	45.0	185.4	94.35	-3,781.9	-214.5	1,535.3	1,317.4	217.86	7.047	
10,400.0	8,832.0	8,811.7	8,810.5	46.1	185.4	94.06	-3,781.9	-214.5	1,438.0	1,219.9	218.07	6.594	
10,500.0	8,832.0	8,810.0	8,808.8	47.2	185.3	93.77	-3,782.0	-214.5	1,341.1	1,122.8	218.34	6.142	
10,600.0	8,832.0	8,808.2	8,807.0	48.3	185.3	93.48	-3,782.0	-214.5	1,244.7	1,026.1	218.68	5.692	
10,700.0	8,832.0	8,806.5	8,805.3	49.4	185.3	93.19	-3,782.0	-214.5	1,149.0	929.9	219.13	5.243	
10,800.0	8,832.0	8,804.7	8,803.5	50.6	185.2	92.90	-3,782.1	-214.5	1,054.0	834.3	219.70	4.797	
10,900.0	8,832.0	8,803.0	8,801.8	51.7	185.2	92.61	-3,782.1	-214.5	960.0	739.6	220.45	4.355	
11,000.0	8,832.0	8,801.2	8,800.0	52.9	185.2	92.32	-3,782.1	-214.5	867.4	646.0	221.45	3.917	
11,100.0	8,832.0	8,799.5	8,798.3	54.1	185.1	92.03	-3,782.1	-214.5	776.7	553.9	222.79	3.486	
11,200.0	8,832.0	8,797.7	8,796.6	55.3	185.1	91.74	-3,782.2	-214.5	688.4	463.8	224.60	3.065	
11,300.0	8,832.0	8,796.0	8,794.8	56.5	185.0	91.45	-3,782.2	-214.5	603.9	376.8	227.08	2.659	
11,400.0	8,832.0	8,794.2	8,793.1	57.7	185.0	91.16	-3,782.2	-214.5	524.8	294.4	230.43	2.277	
11,500.0	8,832.0	8,792.5	8,791.3	58.9	185.0	90.87	-3,782.3	-214.5	454.0	219.2	234.81	1.934	
11,600.0	8,832.0	8,790.8	8,789.6	60.2	184.9	90.58	-3,782.3	-214.5	396.0	156.0	240.01	1.650	
11,700.0	8,832.0	8,789.0	8,787.8	61.4	184.9	90.29	-3,782.3	-214.5	357.2	112.2	244.93	1.458	Level 3
11,796.5	8,832.0	8,787.3	8,786.1	62.6	184.9	90.01	-3,782.4	-214.5	343.9	96.4	247.47	1.390	Level 3, CC
11,800.0	8,832.0	8,787.3	8,786.1	62.7	184.9	90.00	-3,782.4	-214.5	343.9	96.4	247.50	1.389	Level 3, ES, SF
11,900.0	8,832.0	8,785.5	8,784.3	63.9	184.8	89.71	-3,782.4	-214.5	359.1	112.7	246.37	1.458	Level 3
12,000.0	8,832.0	8,783.8	8,782.6	65.2	184.8	89.42	-3,782.4	-214.5	399.6	157.0	242.60	1.647	
12,100.0	8,832.0	8,782.0	8,780.9	66.5	184.7	89.13	-3,782.5	-214.5	458.6	220.5	238.14	1.926	
12,200.0	8,832.0	8,780.3	8,779.1	67.8	184.7	88.83	-3,782.5	-214.5	530.1	296.0	234.13	2.264	
12,300.0	8,832.0	8,778.5	8,777.4	69.1	184.7	88.54	-3,782.5	-214.5	609.7	378.8	230.89	2.641	
12,400.0	8,832.0	8,776.8	8,775.6	70.4	184.6	88.25	-3,782.5	-214.5	694.5	466.2	228.38	3.041	
12,500.0	8,832.0	8,775.1	8,773.9	71.7	184.6	87.96	-3,782.6	-214.5	783.0	556.5	226.44	3.458	
12,600.0	8,832.0	8,773.3	8,772.1	73.0	184.6	87.67	-3,782.6	-214.5	873.9	649.0	224.94	3.885	
12,700.0	8,832.0	8,771.6	8,770.4	74.3	184.5	87.38	-3,782.6	-214.5	966.6	742.9	223.76	4.320	
12,800.0	8,832.0	8,769.8	8,768.6	75.6	184.5	87.09	-3,782.7	-214.5	1,060.7	837.8	222.83	4.760	
12,900.0	8,832.0	8,768.1	8,766.9	76.9	184.4	86.80	-3,782.7	-214.5	1,155.7	933.6	222.09	5.204	
13,000.0	8,832.0	8,766.3	8,765.1	78.3	184.4	86.51	-3,782.7	-214.5	1,251.5	1,030.0	221.48	5.651	
13,100.0	8,832.0	8,764.6	8,763.4	79.6	184.4	86.22	-3,782.8	-214.5	1,347.9	1,126.9	220.99	6.100	
13,200.0	8,832.0	8,762.8	8,761.7	80.9	184.3	85.93	-3,782.8	-214.5	1,444.8	1,224.2	220.57	6.550	
13,300.0	8,832.0	8,761.1	8,759.9	82.3	184.3	85.64	-3,782.8	-214.5	1,542.1	1,321.9	220.23	7.002	
13,400.0	8,832.0	8,759.3	8,758.2	83.6	184.3	85.36	-3,782.8	-214.5	1,639.7	1,419.8	219.94	7.455	
13,500.0	8,832.0	8,757.6	8,756.4	85.0	184.2	85.07	-3,782.9	-214.5	1,737.6	1,517.9	219.69	7.909	
13,600.0	8,832.0	8,755.9	8,754.7	86.3	184.2	84.78	-3,782.9	-214.5	1,835.7	1,616.3	219.48	8.364	
13,700.0	8,832.0	8,754.1	8,752.9	87.7	184.2	84.49	-3,782.9	-214.5	1,934.0	1,714.7	219.30	8.819	
13,800.0	8,832.0	8,752.4	8,751.2	89.0	184.1	84.20	-3,783.0	-214.5	2,032.5	1,813.4	219.14	9.275	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
16,500.0	8,832.0	8,788.4	8,786.9	126.4	190.1	-93.70	-10,359.8	1,151.4	2,120.7	1,866.3	254.43	8.335	
16,600.0	8,832.0	8,785.0	8,783.5	127.8	190.0	-93.50	-10,359.9	1,151.4	2,032.4	1,775.3	257.04	7.907	
16,700.0	8,832.0	8,781.6	8,780.1	129.3	189.9	-93.30	-10,360.0	1,151.4	1,945.1	1,685.2	259.90	7.484	
16,800.0	8,832.0	8,778.2	8,776.8	130.7	189.8	-93.10	-10,360.1	1,151.4	1,859.2	1,596.2	263.04	7.068	
16,900.0	8,832.0	8,774.8	8,773.4	132.1	189.7	-92.91	-10,360.2	1,151.4	1,774.7	1,508.3	266.48	6.660	
17,000.0	8,832.0	8,771.5	8,770.0	133.5	189.6	-92.71	-10,360.3	1,151.4	1,692.0	1,421.7	270.25	6.261	
17,100.0	8,832.0	8,768.1	8,766.6	134.9	189.6	-92.51	-10,360.4	1,151.4	1,611.1	1,336.8	274.37	5.872	
17,200.0	8,832.0	8,764.7	8,763.3	136.3	189.5	-92.31	-10,360.6	1,151.4	1,532.6	1,253.7	278.87	5.496	
17,300.0	8,832.0	8,761.4	8,759.9	137.7	189.4	-92.11	-10,360.7	1,151.4	1,456.6	1,172.9	283.76	5.133	
17,400.0	8,832.0	8,758.0	8,756.6	139.1	189.3	-91.92	-10,360.8	1,151.4	1,383.7	1,094.7	289.05	4.787	
17,500.0	8,832.0	8,754.7	8,753.2	140.5	189.2	-91.72	-10,360.9	1,151.4	1,314.4	1,019.7	294.72	4.460	
17,600.0	8,832.0	8,751.4	8,749.9	141.9	189.1	-91.52	-10,361.0	1,151.4	1,249.2	948.5	300.74	4.154	
17,700.0	8,832.0	8,748.0	8,746.6	143.4	189.0	-91.33	-10,361.1	1,151.4	1,188.9	881.8	307.03	3.872	
17,800.0	8,832.0	8,744.7	8,743.2	144.8	188.9	-91.13	-10,361.2	1,151.4	1,134.1	820.7	313.47	3.618	
17,900.0	8,832.0	8,741.4	8,739.9	146.2	188.8	-90.93	-10,361.3	1,151.4	1,085.9	766.0	319.86	3.395	
18,000.0	8,832.0	8,738.1	8,736.6	147.6	188.7	-90.74	-10,361.4	1,151.4	1,045.0	719.0	325.98	3.206	
18,100.0	8,832.0	8,734.7	8,733.3	149.0	188.6	-90.54	-10,361.5	1,151.4	1,012.3	680.8	331.52	3.053	
18,200.0	8,832.0	8,731.4	8,730.0	150.4	188.6	-90.35	-10,361.7	1,151.4	988.7	652.5	336.17	2.941	
18,300.0	8,832.0	8,728.1	8,726.7	151.9	188.5	-90.15	-10,361.8	1,151.4	974.8	635.2	339.61	2.870	
18,386.4	8,832.0	8,725.3	8,723.9	153.1	188.4	-89.99	-10,361.9	1,151.4	971.0	629.5	341.44	2.844 CC	
18,400.0	8,832.0	8,724.9	8,723.4	153.3	188.4	-89.96	-10,361.9	1,151.4	971.1	629.5	341.63	2.843 ES, SF	
18,500.0	8,832.0	8,721.6	8,720.1	154.7	188.3	-89.77	-10,362.0	1,151.4	977.6	635.5	342.12	2.857	
18,600.0	8,832.0	8,718.3	8,716.8	156.1	188.2	-89.57	-10,362.1	1,151.4	994.2	653.1	341.13	2.914	
18,700.0	8,832.0	8,715.0	8,713.6	157.5	188.1	-89.38	-10,362.2	1,151.4	1,020.3	681.5	338.82	3.011	
18,800.0	8,832.0	8,711.7	8,710.3	158.9	188.0	-89.19	-10,362.3	1,151.4	1,055.3	719.9	335.45	3.146	
18,900.0	8,832.0	8,708.5	8,707.0	160.4	187.9	-88.99	-10,362.4	1,151.4	1,098.3	767.0	331.32	3.315	
19,000.0	8,832.0	8,705.2	8,703.8	161.8	187.8	-88.80	-10,362.5	1,151.4	1,148.4	821.8	326.69	3.515	
19,077.7	8,832.0	8,702.7	8,701.3	162.7	187.8	-88.65	-10,362.6	1,151.4	1,191.7	868.5	323.24	3.687	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - New Mexico 36 State 001 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 308-INC-ONLY												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,400.0	8,832.0	8,800.9	8,799.9	70.4	185.3	95.91	-6,435.7	-196.6	2,079.3	1,859.9	219.42	9.477	
12,500.0	8,832.0	8,799.1	8,798.2	71.7	185.3	95.61	-6,435.8	-196.6	1,980.8	1,761.1	219.69	9.016	
12,600.0	8,832.0	8,797.4	8,796.4	73.0	185.3	95.32	-6,435.8	-196.6	1,882.5	1,662.4	220.02	8.556	
12,700.0	8,832.0	8,795.6	8,794.6	74.3	185.2	95.03	-6,435.8	-196.6	1,784.3	1,563.9	220.40	8.096	
12,800.0	8,832.0	8,793.8	8,792.9	75.6	185.2	94.74	-6,435.9	-196.6	1,686.3	1,465.5	220.84	7.636	
12,900.0	8,832.0	8,792.1	8,791.1	76.9	185.2	94.45	-6,435.9	-196.6	1,588.6	1,367.2	221.37	7.176	
13,000.0	8,832.0	8,790.3	8,789.3	78.3	185.1	94.16	-6,435.9	-196.6	1,491.2	1,269.2	222.01	6.717	
13,100.0	8,832.0	8,788.5	8,787.6	79.6	185.1	93.87	-6,436.0	-196.6	1,394.1	1,171.3	222.77	6.258	
13,200.0	8,832.0	8,786.8	8,785.8	80.9	185.0	93.59	-6,436.0	-196.6	1,297.5	1,073.8	223.69	5.801	
13,300.0	8,832.0	8,785.0	8,784.1	82.3	185.0	93.30	-6,436.0	-196.6	1,201.4	976.6	224.82	5.344	
13,400.0	8,832.0	8,783.3	8,782.3	83.6	185.0	93.01	-6,436.1	-196.6	1,106.1	879.9	226.21	4.890	
13,500.0	8,832.0	8,781.5	8,780.6	85.0	184.9	92.72	-6,436.1	-196.6	1,011.6	783.7	227.96	4.438	
13,600.0	8,832.0	8,779.8	8,778.8	86.3	184.9	92.43	-6,436.1	-196.6	918.3	688.2	230.16	3.990	
13,700.0	8,832.0	8,778.1	8,777.1	87.7	184.9	92.15	-6,436.1	-196.6	826.6	593.6	232.97	3.548	
13,800.0	8,832.0	8,776.3	8,775.4	89.0	184.8	91.86	-6,436.2	-196.6	737.0	500.4	236.59	3.115	
13,900.0	8,832.0	8,774.6	8,773.6	90.4	184.8	91.57	-6,436.2	-196.6	650.5	409.2	241.29	2.696	
14,000.0	8,832.0	8,772.9	8,771.9	91.8	184.8	91.29	-6,436.2	-196.6	568.4	321.0	247.37	2.298	
14,100.0	8,832.0	8,771.1	8,770.2	93.1	184.7	91.00	-6,436.3	-196.6	492.9	237.8	255.10	1.932	
14,200.0	8,832.0	8,769.4	8,768.4	94.5	184.7	90.72	-6,436.3	-196.6	427.6	163.2	264.39	1.617	
14,300.0	8,832.0	8,767.7	8,766.7	95.9	184.7	90.43	-6,436.3	-196.6	377.8	103.8	274.06	1.379	Level 3
14,400.0	8,832.0	8,766.0	8,765.0	97.2	184.6	90.15	-6,436.4	-196.6	350.2	69.1	281.14	1.246	Level 2
14,450.6	8,832.0	8,765.1	8,764.1	97.9	184.6	90.01	-6,436.4	-196.6	346.6	64.0	282.53	1.227	Level 2, CC, ES, SF
14,500.0	8,832.0	8,764.3	8,763.3	98.6	184.6	89.87	-6,436.4	-196.6	350.1	67.9	282.14	1.241	Level 2
14,600.0	8,832.0	8,762.6	8,761.6	100.0	184.6	89.59	-6,436.4	-196.6	377.4	100.6	276.79	1.364	Level 3
14,700.0	8,832.0	8,760.8	8,759.9	101.4	184.5	89.30	-6,436.4	-196.6	427.0	158.7	268.30	1.591	
14,800.0	8,832.0	8,759.1	8,758.2	102.7	184.5	89.02	-6,436.5	-196.6	492.1	232.4	259.71	1.895	
14,900.0	8,832.0	8,757.4	8,756.5	104.1	184.5	88.74	-6,436.5	-196.6	567.5	315.2	252.34	2.249	
15,000.0	8,832.0	8,755.7	8,754.8	105.5	184.4	88.46	-6,436.5	-196.6	649.5	403.1	246.41	2.636	
15,100.0	8,832.0	8,754.1	8,753.1	106.9	184.4	88.18	-6,436.6	-196.6	736.0	494.3	241.73	3.045	
15,200.0	8,832.0	8,752.4	8,751.4	108.3	184.4	87.90	-6,436.6	-196.6	825.6	587.5	238.06	3.468	
15,300.0	8,832.0	8,750.7	8,749.7	109.7	184.3	87.62	-6,436.6	-196.6	917.3	682.2	235.15	3.901	
15,400.0	8,832.0	8,749.0	8,748.0	111.1	184.3	87.35	-6,436.6	-196.6	1,010.6	777.8	232.83	4.340	
15,500.0	8,832.0	8,747.3	8,746.4	112.5	184.3	87.07	-6,436.7	-196.6	1,105.0	874.1	230.97	4.784	
15,600.0	8,832.0	8,745.6	8,744.7	113.8	184.2	86.79	-6,436.7	-196.6	1,200.4	971.0	229.44	5.232	
15,700.0	8,832.0	8,744.0	8,743.0	115.2	184.2	86.52	-6,436.7	-196.6	1,296.4	1,068.3	228.19	5.681	
15,800.0	8,832.0	8,742.3	8,741.3	116.6	184.2	86.24	-6,436.8	-196.6	1,393.1	1,165.9	227.15	6.133	
15,900.0	8,832.0	8,740.6	8,739.7	118.0	184.1	85.97	-6,436.8	-196.6	1,490.1	1,263.8	226.29	6.585	
16,000.0	8,832.0	8,739.0	8,738.0	119.4	184.1	85.69	-6,436.8	-196.6	1,587.5	1,362.0	225.55	7.038	
16,100.0	8,832.0	8,737.3	8,736.3	120.8	184.1	85.42	-6,436.8	-196.6	1,685.2	1,460.3	224.93	7.492	
16,200.0	8,832.0	8,735.6	8,734.7	122.2	184.0	85.15	-6,436.9	-196.6	1,783.2	1,558.8	224.40	7.946	
16,300.0	8,832.0	8,734.0	8,733.0	123.6	184.0	84.88	-6,436.9	-196.6	1,881.4	1,657.4	223.95	8.401	
16,400.0	8,832.0	8,732.3	8,731.4	125.0	184.0	84.60	-6,436.9	-196.6	1,979.7	1,756.2	223.56	8.856	
16,500.0	8,832.0	8,730.7	8,729.7	126.4	183.9	84.33	-6,437.0	-196.6	2,078.3	1,855.0	223.22	9.310	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,600.0	8,832.0	8,784.2	8,783.2	73.0	184.6	-91.41	-6,419.0	1,124.4	2,085.4	1,857.3	228.10	9.142	
12,700.0	8,832.0	8,782.8	8,781.8	74.3	184.5	-91.34	-6,419.1	1,124.4	1,997.5	1,768.0	229.53	8.703	
12,800.0	8,832.0	8,781.5	8,780.5	75.6	184.5	-91.26	-6,419.1	1,124.4	1,910.9	1,679.7	231.12	8.268	
12,900.0	8,832.0	8,780.2	8,779.2	76.9	184.5	-91.18	-6,419.1	1,124.4	1,825.6	1,592.7	232.91	7.838	
13,000.0	8,832.0	8,778.9	8,777.9	78.3	184.5	-91.10	-6,419.1	1,124.4	1,741.8	1,506.9	234.89	7.415	
13,100.0	8,832.0	8,777.6	8,776.6	79.6	184.4	-91.03	-6,419.1	1,124.4	1,659.9	1,422.8	237.11	7.001	
13,200.0	8,832.0	8,776.3	8,775.3	80.9	184.4	-90.95	-6,419.1	1,124.4	1,580.0	1,340.5	239.57	6.595	
13,300.0	8,832.0	8,775.0	8,774.0	82.3	184.4	-90.87	-6,419.2	1,124.4	1,502.6	1,260.3	242.30	6.201	
13,400.0	8,832.0	8,773.7	8,772.7	83.6	184.3	-90.80	-6,419.2	1,124.4	1,428.0	1,182.7	245.31	5.821	
13,500.0	8,832.0	8,772.4	8,771.4	85.0	184.3	-90.72	-6,419.2	1,124.4	1,356.6	1,108.0	248.60	5.457	
13,600.0	8,832.0	8,771.0	8,770.0	86.3	184.3	-90.64	-6,419.2	1,124.4	1,289.1	1,036.9	252.16	5.112	
13,700.0	8,832.0	8,769.7	8,768.7	87.7	184.3	-90.57	-6,419.2	1,124.4	1,225.9	970.0	255.98	4.789	
13,800.0	8,832.0	8,768.4	8,767.4	89.0	184.2	-90.49	-6,419.2	1,124.4	1,168.0	908.0	260.00	4.492	
13,900.0	8,832.0	8,767.1	8,766.1	90.4	184.2	-90.41	-6,419.3	1,124.4	1,116.0	851.9	264.14	4.225	
14,000.0	8,832.0	8,765.8	8,764.8	91.8	184.2	-90.34	-6,419.3	1,124.4	1,070.8	802.6	268.27	3.992	
14,100.0	8,832.0	8,764.5	8,763.5	93.1	184.2	-90.26	-6,419.3	1,124.4	1,033.4	761.2	272.23	3.796	
14,200.0	8,832.0	8,763.2	8,762.2	94.5	184.1	-90.18	-6,419.3	1,124.4	1,004.6	728.8	275.84	3.642	
14,300.0	8,832.0	8,761.9	8,760.9	95.9	184.1	-90.10	-6,419.3	1,124.4	985.1	706.2	278.87	3.532	
14,400.0	8,832.0	8,760.6	8,759.6	97.2	184.1	-90.03	-6,419.3	1,124.4	975.6	694.4	281.17	3.470	
14,443.8	8,832.0	8,760.0	8,759.0	97.8	184.1	-89.99	-6,419.4	1,124.4	974.6	692.7	281.90	3.457 CC, ES	
14,500.0	8,832.0	8,759.3	8,758.3	98.6	184.1	-89.95	-6,419.4	1,124.4	976.2	693.6	282.59	3.454 SF	
14,600.0	8,832.0	8,758.0	8,757.0	100.0	184.0	-89.87	-6,419.4	1,124.4	987.0	703.9	283.10	3.486	
14,700.0	8,832.0	8,756.6	8,755.6	101.4	184.0	-89.80	-6,419.4	1,124.4	1,007.7	725.0	282.73	3.564	
14,800.0	8,832.0	8,755.3	8,754.3	102.7	184.0	-89.72	-6,419.4	1,124.4	1,037.6	756.0	281.60	3.685	
14,900.0	8,832.0	8,754.0	8,753.0	104.1	184.0	-89.64	-6,419.4	1,124.4	1,076.1	796.2	279.86	3.845	
15,000.0	8,832.0	8,752.7	8,751.7	105.5	183.9	-89.57	-6,419.5	1,124.4	1,122.1	844.4	277.69	4.041	
15,100.0	8,832.0	8,751.4	8,750.4	106.9	183.9	-89.49	-6,419.5	1,124.4	1,174.9	899.6	275.24	4.269	
15,200.0	8,832.0	8,750.1	8,749.1	108.3	183.9	-89.41	-6,419.5	1,124.4	1,233.5	960.9	272.65	4.524	
15,300.0	8,832.0	8,748.8	8,747.8	109.7	183.9	-89.34	-6,419.5	1,124.4	1,297.2	1,027.2	270.02	4.804	
15,400.0	8,832.0	8,747.5	8,746.5	111.1	183.8	-89.26	-6,419.5	1,124.4	1,365.3	1,097.9	267.42	5.105	
15,500.0	8,832.0	8,746.2	8,745.2	112.5	183.8	-89.18	-6,419.5	1,124.4	1,437.1	1,172.2	264.92	5.425	
15,600.0	8,832.0	8,744.9	8,743.9	113.8	183.8	-89.10	-6,419.6	1,124.4	1,512.1	1,249.6	262.53	5.760	
15,700.0	8,832.0	8,743.6	8,742.6	115.2	183.8	-89.03	-6,419.6	1,124.4	1,589.8	1,329.6	260.27	6.108	
15,800.0	8,832.0	8,742.2	8,741.3	116.6	183.7	-88.95	-6,419.6	1,124.4	1,670.0	1,411.8	258.16	6.469	
15,900.0	8,832.0	8,740.9	8,739.9	118.0	183.7	-88.87	-6,419.6	1,124.4	1,752.1	1,495.9	256.20	6.839	
16,000.0	8,832.0	8,739.6	8,738.6	119.4	183.7	-88.80	-6,419.6	1,124.4	1,836.1	1,581.7	254.37	7.218	
16,100.0	8,832.0	8,738.3	8,737.3	120.8	183.7	-88.72	-6,419.6	1,124.4	1,921.5	1,668.9	252.67	7.605	
16,200.0	8,832.0	8,737.0	8,736.0	122.2	183.6	-88.64	-6,419.7	1,124.4	2,008.4	1,757.3	251.11	7.998	
16,300.0	8,832.0	8,735.7	8,734.7	123.6	183.6	-88.57	-6,419.7	1,124.4	2,096.4	1,846.7	249.66	8.397	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,700.0	8,832.0	8,768.2	8,767.5	87.7	176.5	94.50	-7,773.6	-187.7	2,116.8	1,904.5	212.29	9.971	
13,800.0	8,832.0	8,766.8	8,766.2	89.0	176.4	94.28	-7,773.7	-187.7	2,018.3	1,805.6	212.69	9.489	
13,900.0	8,832.0	8,765.5	8,764.8	90.4	176.4	94.07	-7,773.7	-187.7	1,919.8	1,706.7	213.15	9.007	
14,000.0	8,832.0	8,764.2	8,763.5	91.8	176.4	93.85	-7,773.7	-187.7	1,821.6	1,607.9	213.69	8.525	
14,100.0	8,832.0	8,762.9	8,762.2	93.1	176.4	93.64	-7,773.7	-187.7	1,723.6	1,509.3	214.30	8.043	
14,200.0	8,832.0	8,761.6	8,760.9	94.5	176.3	93.42	-7,773.7	-187.7	1,625.7	1,410.7	215.03	7.561	
14,300.0	8,832.0	8,760.3	8,759.6	95.9	176.3	93.21	-7,773.7	-187.7	1,528.2	1,312.4	215.87	7.079	
14,400.0	8,832.0	8,759.0	8,758.3	97.2	176.3	92.99	-7,773.8	-187.7	1,431.0	1,214.2	216.88	6.598	
14,500.0	8,832.0	8,757.7	8,757.0	98.6	176.3	92.78	-7,773.8	-187.7	1,334.3	1,116.2	218.08	6.118	
14,600.0	8,832.0	8,756.4	8,755.7	100.0	176.2	92.56	-7,773.8	-187.7	1,238.0	1,018.5	219.54	5.639	
14,700.0	8,832.0	8,755.1	8,754.4	101.4	176.2	92.35	-7,773.8	-187.7	1,142.4	921.1	221.30	5.162	
14,800.0	8,832.0	8,753.8	8,753.1	102.7	176.2	92.13	-7,773.8	-187.7	1,047.6	824.1	223.47	4.688	
14,900.0	8,832.0	8,752.4	8,751.8	104.1	176.2	91.92	-7,773.8	-187.7	953.9	727.7	226.17	4.217	
15,000.0	8,832.0	8,751.1	8,750.5	105.5	176.1	91.70	-7,773.9	-187.7	861.5	632.0	229.56	3.753	
15,100.0	8,832.0	8,749.8	8,749.1	106.9	176.1	91.49	-7,773.9	-187.7	771.1	537.3	233.84	3.298	
15,200.0	8,832.0	8,748.5	8,747.8	108.3	176.1	91.27	-7,773.9	-187.7	683.4	444.1	239.32	2.856	
15,300.0	8,832.0	8,747.2	8,746.5	109.7	176.1	91.06	-7,773.9	-187.7	599.5	353.2	246.33	2.434	
15,400.0	8,832.0	8,745.9	8,745.2	111.1	176.0	90.84	-7,773.9	-187.7	521.3	266.1	255.21	2.043	
15,500.0	8,832.0	8,744.6	8,743.9	112.5	176.0	90.63	-7,773.9	-187.7	451.8	185.8	266.06	1.698	
15,600.0	8,832.0	8,743.3	8,742.6	113.8	176.0	90.41	-7,774.0	-187.7	395.6	117.6	278.01	1.423	Level 3
15,700.0	8,832.0	8,742.0	8,741.3	115.2	176.0	90.20	-7,774.0	-187.7	359.0	70.7	288.29	1.245	Level 2
15,788.2	8,832.0	8,740.8	8,740.1	116.5	175.9	90.01	-7,774.0	-187.7	348.0	55.6	292.39	1.190	Level 2, CC, ES, SF
15,800.0	8,832.0	8,740.7	8,740.0	116.6	175.9	89.98	-7,774.0	-187.7	348.2	55.7	292.45	1.191	Level 2
15,900.0	8,832.0	8,739.4	8,738.7	118.0	175.9	89.76	-7,774.0	-187.7	365.5	77.2	288.35	1.268	Level 3
16,000.0	8,832.0	8,738.0	8,737.4	119.4	175.9	89.55	-7,774.0	-187.7	407.4	128.6	278.74	1.461	Level 3
16,100.0	8,832.0	8,736.7	8,736.1	120.8	175.8	89.33	-7,774.0	-187.7	467.2	199.4	267.82	1.745	
16,200.0	8,832.0	8,735.4	8,734.7	122.2	175.8	89.12	-7,774.1	-187.7	539.1	281.1	257.97	2.090	
16,300.0	8,832.0	8,734.1	8,733.4	123.6	175.8	88.90	-7,774.1	-187.7	618.9	369.0	249.86	2.477	
16,400.0	8,832.0	8,732.8	8,732.1	125.0	175.8	88.69	-7,774.1	-187.7	703.8	460.4	243.40	2.892	
16,500.0	8,832.0	8,731.5	8,730.8	126.4	175.7	88.47	-7,774.1	-187.7	792.3	554.0	238.28	3.325	
16,600.0	8,832.0	8,730.2	8,729.5	127.8	175.7	88.26	-7,774.1	-187.7	883.2	649.0	234.23	3.771	
16,700.0	8,832.0	8,728.9	8,728.2	129.3	175.7	88.04	-7,774.1	-187.7	975.9	744.9	230.98	4.225	
16,800.0	8,832.0	8,727.6	8,726.9	130.7	175.7	87.83	-7,774.2	-187.7	1,069.9	841.5	228.36	4.685	
16,900.0	8,832.0	8,726.3	8,725.6	132.1	175.6	87.61	-7,774.2	-187.7	1,164.9	938.7	226.23	5.149	
17,000.0	8,832.0	8,725.0	8,724.3	133.5	175.6	87.40	-7,774.2	-187.7	1,260.7	1,036.2	224.47	5.616	
17,100.0	8,832.0	8,723.6	8,723.0	134.9	175.6	87.18	-7,774.2	-187.7	1,357.1	1,134.1	223.01	6.085	
17,200.0	8,832.0	8,722.3	8,721.7	136.3	175.6	86.97	-7,774.2	-187.7	1,453.9	1,232.1	221.79	6.555	
17,300.0	8,832.0	8,721.0	8,720.3	137.7	175.5	86.75	-7,774.2	-187.7	1,551.2	1,330.4	220.76	7.027	
17,400.0	8,832.0	8,719.7	8,719.0	139.1	175.5	86.54	-7,774.3	-187.7	1,648.8	1,428.9	219.89	7.498	
17,500.0	8,832.0	8,718.4	8,717.7	140.5	175.5	86.32	-7,774.3	-187.7	1,746.7	1,527.5	219.15	7.970	
17,600.0	8,832.0	8,717.1	8,716.4	141.9	175.5	86.11	-7,774.3	-187.7	1,844.8	1,626.3	218.51	8.443	
17,700.0	8,832.0	8,715.8	8,715.1	143.4	175.4	85.89	-7,774.3	-187.7	1,943.0	1,725.1	217.96	8.915	
17,800.0	8,832.0	8,714.5	8,713.8	144.8	175.4	85.68	-7,774.3	-187.7	2,041.5	1,824.0	217.48	9.387	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	2.7	2.7	0.0	0.0	-0.81	159.9	-2.3	159.9				
100.0	100.0	102.7	102.7	0.1	0.1	-0.81	159.9	-2.3	159.9	159.7	0.27	585.535	
200.0	200.0	202.7	202.7	0.5	0.5	-0.81	159.9	-2.3	159.9	159.0	0.99	161.542	
300.0	300.0	302.7	302.7	0.8	0.9	-0.81	159.9	-2.3	159.9	158.2	1.71	93.696	
400.0	400.0	402.7	402.7	1.2	1.2	-0.81	159.9	-2.3	159.9	157.5	2.42	65.983	
500.0	500.0	502.7	502.7	1.6	1.6	-0.81	159.9	-2.3	159.9	156.8	3.14	50.922	
600.0	600.0	602.7	602.7	1.9	1.9	-0.81	159.9	-2.3	159.9	156.1	3.86	41.459	
700.0	700.0	702.7	702.7	2.3	2.3	-0.81	159.9	-2.3	159.9	155.4	4.57	34.961	
800.0	800.0	802.7	802.7	2.6	2.7	-0.81	159.9	-2.3	159.9	154.7	5.29	30.225	
900.0	900.0	902.7	902.7	3.0	3.0	-0.81	159.9	-2.3	159.9	153.9	6.01	26.618	
1,000.0	1,000.0	1,002.7	1,002.7	3.4	3.4	-0.81	159.9	-2.3	159.9	153.2	6.73	23.781	
1,100.0	1,100.0	1,102.7	1,102.7	3.7	3.7	-0.81	159.9	-2.3	159.9	152.5	7.44	21.490	
1,200.0	1,200.0	1,202.7	1,202.7	4.1	4.1	-0.81	159.9	-2.3	159.9	151.8	8.16	19.602	
1,300.0	1,300.0	1,302.7	1,302.7	4.4	4.4	-0.81	159.9	-2.3	159.9	151.1	8.88	18.019	
1,400.0	1,400.0	1,402.7	1,402.7	4.8	4.8	-0.81	159.9	-2.3	159.9	150.3	9.59	16.672	
1,500.0	1,500.0	1,502.7	1,502.7	5.2	5.2	-0.81	159.9	-2.3	159.9	149.6	10.31	15.513	
1,600.0	1,600.0	1,602.7	1,602.7	5.5	5.5	-0.81	159.9	-2.3	159.9	148.9	11.03	14.504	
1,700.0	1,700.0	1,702.7	1,702.7	5.9	5.9	-0.81	159.9	-2.3	159.9	148.2	11.74	13.619	
1,800.0	1,800.0	1,802.7	1,802.7	6.2	6.2	-0.81	159.9	-2.3	159.9	147.5	12.46	12.835	
1,900.0	1,900.0	1,902.7	1,902.7	6.6	6.6	-0.81	159.9	-2.3	159.9	146.8	13.18	12.137	
2,000.0	2,000.0	2,002.9	2,002.9	6.9	7.0	-0.81	159.9	-2.3	159.9	146.0	13.90	11.511	
2,100.0	2,100.0	2,108.7	2,108.7	7.3	7.3	-171.64	157.9	-1.9	159.7	145.2	14.59	10.952	
2,200.0	2,199.8	2,214.5	2,214.3	7.6	7.7	-171.62	152.0	-1.0	159.3	144.1	15.23	10.463	
2,259.8	2,259.4	2,276.8	2,276.4	7.8	7.9	-171.61	146.8	-0.1	159.1	143.4	15.61	10.188 CC, ES	
2,300.0	2,299.5	2,317.0	2,316.4	7.9	8.0	-171.62	143.2	0.4	159.3	143.5	15.88	10.036	
2,400.0	2,398.7	2,417.0	2,416.0	8.3	8.3	-171.77	134.3	1.9	162.3	145.7	16.54	9.812	
2,500.0	2,497.9	2,516.9	2,515.5	8.6	8.7	-171.95	125.3	3.3	165.9	148.7	17.20	9.646	
2,600.0	2,597.1	2,616.8	2,615.0	8.9	9.0	-172.13	116.4	4.7	169.6	151.7	17.87	9.490	
2,700.0	2,696.3	2,716.8	2,714.5	9.3	9.3	-172.30	107.4	6.2	173.3	154.8	18.55	9.343	
2,800.0	2,795.5	2,816.7	2,814.1	9.6	9.7	-172.46	98.5	7.6	177.0	157.8	19.23	9.204	
2,900.0	2,894.6	2,916.6	2,913.6	10.0	10.0	-172.62	89.6	9.1	180.7	160.8	19.91	9.073	
3,000.0	2,993.8	3,016.6	3,013.1	10.4	10.4	-172.76	80.6	10.5	184.4	163.8	20.60	8.949	
3,100.0	3,093.0	3,116.5	3,112.6	10.7	10.7	-172.91	71.7	11.9	188.1	166.8	21.29	8.833	
3,200.0	3,192.2	3,216.4	3,212.1	11.1	11.1	-173.05	62.8	13.4	191.8	169.8	21.99	8.722	
3,300.0	3,291.4	3,316.3	3,311.7	11.5	11.5	-173.18	53.8	14.8	195.4	172.8	22.68	8.617	
3,400.0	3,390.6	3,416.3	3,411.2	11.8	11.8	-173.31	44.9	16.3	199.1	175.8	23.38	8.518	
3,500.0	3,489.7	3,516.2	3,510.7	12.2	12.2	-173.43	36.0	17.7	202.8	178.8	24.08	8.424	
3,600.0	3,588.9	3,616.1	3,610.2	12.6	12.5	-173.55	27.0	19.1	206.5	181.7	24.78	8.334	
3,700.0	3,688.1	3,716.1	3,709.7	12.9	12.9	-173.66	18.1	20.6	210.2	184.7	25.49	8.249	
3,800.0	3,787.3	3,816.0	3,809.3	13.3	13.3	-173.77	9.2	22.0	213.9	187.7	26.19	8.168	
3,900.0	3,886.5	3,915.9	3,908.8	13.7	13.6	-173.88	0.2	23.5	217.6	190.7	26.90	8.091	
4,000.0	3,985.7	4,015.9	4,008.3	14.1	14.0	-173.98	-8.7	24.9	221.3	193.7	27.61	8.017	
4,100.0	4,084.8	4,115.8	4,107.8	14.5	14.3	-174.08	-17.6	26.3	225.0	196.7	28.32	7.947	
4,200.0	4,184.0	4,215.7	4,207.3	14.8	14.7	-174.18	-26.6	27.8	228.7	199.7	29.03	7.880	
4,300.0	4,283.2	4,315.7	4,306.9	15.2	15.1	-174.27	-35.5	29.2	232.4	202.7	29.74	7.816	
4,400.0	4,382.4	4,415.6	4,406.4	15.6	15.5	-174.36	-44.4	30.6	236.1	205.7	30.45	7.754	
4,500.0	4,481.6	4,515.5	4,505.9	16.0	15.8	-174.45	-53.4	32.1	239.8	208.7	31.17	7.695	
4,600.0	4,580.8	4,615.4	4,605.4	16.4	16.2	-174.53	-62.3	33.5	243.5	211.6	31.88	7.639	
4,700.0	4,679.9	4,715.4	4,704.9	16.8	16.6	-174.62	-71.2	35.0	247.2	214.6	32.60	7.585	
4,800.0	4,779.1	4,815.3	4,804.5	17.2	16.9	-174.70	-80.2	36.4	250.9	217.6	33.31	7.533	
4,900.0	4,878.3	4,915.2	4,904.0	17.5	17.3	-174.77	-89.1	37.8	254.6	220.6	34.03	7.483	
5,000.0	4,977.5	5,015.2	5,003.5	17.9	17.7	-174.85	-98.0	39.3	258.3	223.6	34.75	7.435	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.0	5,076.7	5,115.1	5,103.0	18.3	18.0	-174.92	-107.0	40.7	262.0	226.6	35.47	7.389	
5,200.0	5,175.9	5,215.0	5,202.5	18.7	18.4	-174.99	-115.9	42.2	265.7	229.6	36.18	7.344	
5,300.0	5,275.0	5,315.0	5,302.1	19.1	18.8	-175.06	-124.8	43.6	269.5	232.6	36.90	7.302	
5,400.0	5,374.2	5,414.9	5,401.6	19.5	19.2	-175.13	-133.8	45.0	273.2	235.5	37.62	7.260	
5,500.0	5,473.4	5,514.8	5,501.1	19.9	19.5	-175.20	-142.7	46.5	276.9	238.5	38.34	7.221	
5,600.0	5,572.6	5,614.8	5,600.6	20.3	19.9	-175.26	-151.6	47.9	280.6	241.5	39.07	7.182	
5,700.0	5,671.8	5,714.7	5,700.1	20.7	20.3	-175.32	-160.6	49.3	284.3	244.5	39.79	7.145	
5,800.0	5,771.0	5,814.6	5,799.7	21.1	20.7	-175.38	-169.5	50.8	288.0	247.5	40.51	7.109	
5,900.0	5,870.1	5,914.5	5,899.2	21.4	21.0	-175.44	-178.4	52.2	291.7	250.5	41.23	7.075	
6,000.0	5,969.3	6,014.5	5,998.7	21.8	21.4	-175.50	-187.4	53.7	295.4	253.5	41.95	7.041	
6,100.0	6,068.5	6,114.4	6,098.2	22.2	21.8	-175.56	-196.3	55.1	299.1	256.4	42.68	7.009	
6,200.0	6,167.7	6,214.3	6,197.7	22.6	22.2	-175.61	-205.2	56.5	302.8	259.4	43.40	6.977	
6,300.0	6,266.9	6,314.3	6,297.3	23.0	22.5	-175.67	-214.2	58.0	306.5	262.4	44.12	6.947	
6,400.0	6,366.1	6,414.2	6,396.8	23.4	22.9	-175.72	-223.1	59.4	310.2	265.4	44.85	6.918	
6,500.0	6,465.2	6,514.1	6,496.3	23.8	23.3	-175.77	-232.0	60.9	313.9	268.4	45.57	6.889	
6,600.0	6,564.4	6,614.1	6,595.8	24.2	23.7	-175.82	-241.0	62.3	317.7	271.4	46.30	6.861	
6,700.0	6,663.6	6,714.0	6,695.3	24.6	24.0	-175.87	-249.9	63.7	321.4	274.3	47.02	6.834	
6,800.0	6,762.8	6,813.9	6,794.9	25.0	24.4	-175.91	-258.8	65.2	325.1	277.3	47.75	6.808	
6,900.0	6,862.0	6,913.9	6,894.4	25.4	24.8	-175.96	-267.8	66.6	328.8	280.3	48.47	6.783	
7,000.0	6,961.2	7,013.8	6,993.9	25.8	25.2	-176.01	-276.7	68.1	332.5	283.3	49.20	6.758	
7,100.0	7,060.3	7,113.7	7,093.4	26.2	25.5	-176.05	-285.6	69.5	336.2	286.3	49.92	6.734	
7,200.0	7,159.5	7,213.7	7,192.9	26.6	25.9	-176.09	-294.6	70.9	339.8	289.2	50.65	6.709	
7,300.0	7,259.0	7,313.6	7,292.5	27.0	26.3	-176.11	-303.5	72.4	340.9	289.5	51.37	6.636	
7,400.0	7,358.8	7,413.6	7,392.1	27.3	26.7	-176.08	-312.5	73.8	338.5	286.4	52.09	6.498	
7,500.0	7,458.7	7,513.4	7,491.5	27.7	27.0	-176.00	-321.4	75.2	332.7	279.8	52.81	6.299	
7,600.0	7,558.7	7,613.0	7,590.7	28.0	27.4	-5.05	-330.3	76.7	323.9	270.4	53.50	6.054	
7,700.0	7,658.7	7,712.6	7,689.9	28.3	27.8	-4.93	-339.2	78.1	314.9	260.7	54.19	5.810	
7,800.0	7,758.7	7,812.2	7,789.1	28.6	28.2	-4.80	-348.1	79.6	305.9	251.0	54.89	5.573	
7,900.0	7,858.7	7,911.8	7,888.2	28.9	28.5	-4.67	-357.0	81.0	296.8	241.2	55.58	5.341	
8,000.0	7,958.7	8,011.4	7,987.4	29.3	28.9	-4.53	-365.9	82.4	287.8	231.5	56.27	5.114	
8,100.0	8,058.7	8,111.0	8,086.6	29.6	29.3	-4.38	-374.8	83.9	278.8	221.8	56.97	4.894	
8,200.0	8,158.7	8,210.6	8,185.8	29.9	29.7	-4.22	-383.7	85.3	269.8	212.1	57.66	4.678	
8,300.0	8,258.7	8,310.2	8,285.0	30.2	30.1	-4.05	-392.6	86.7	260.7	202.4	58.36	4.468	
8,400.0	8,358.7	8,409.8	8,384.1	30.6	30.4	176.58	-401.5	88.2	251.7	192.7	59.05	4.263	
8,439.0	8,397.7	8,448.7	8,422.9	30.7	30.6	176.69	-405.0	88.7	250.1	190.8	59.34	4.216 SF	
8,500.0	8,457.9	8,509.5	8,483.5	30.9	30.8	176.91	-410.4	89.6	254.0	194.3	59.78	4.250	
8,600.0	8,552.6	8,606.6	8,580.2	31.4	31.2	177.31	-419.1	91.0	277.0	216.5	60.51	4.578	
8,700.0	8,638.6	8,696.8	8,670.0	31.9	31.5	177.68	-427.2	92.3	319.7	258.5	61.19	5.225	
8,800.0	8,712.2	8,776.1	8,749.0	32.5	31.8	177.94	-434.3	93.4	380.2	318.4	61.78	6.154	
8,900.0	8,770.1	8,841.1	8,813.7	33.1	32.1	178.00	-440.1	94.4	455.9	393.7	62.26	7.323	
9,000.0	8,809.9	8,889.0	8,861.4	33.8	32.2	177.70	-444.4	95.1	543.5	480.9	62.59	8.683	
9,100.0	8,829.8	8,917.5	8,889.8	34.5	32.4	176.12	-446.9	95.5	639.1	576.4	62.78	10.180	
9,200.0	8,832.0	8,928.7	8,900.9	35.1	32.4	173.23	-447.9	95.6	738.5	675.6	62.85	11.749	
9,300.0	8,832.0	8,937.6	8,909.8	35.9	32.4	174.12	-448.7	95.8	838.1	775.2	62.91	13.322	
9,400.0	8,832.0	8,946.6	8,918.7	36.6	32.5	174.83	-449.5	95.9	937.7	874.7	62.97	14.891	
9,500.0	8,832.0	8,955.5	8,927.7	37.4	32.5	175.39	-450.3	96.0	1,037.3	974.2	63.02	16.458	
9,600.0	8,832.0	8,964.5	8,936.6	38.3	32.5	175.86	-451.1	96.1	1,136.8	1,073.8	63.08	18.022	
9,700.0	8,832.0	8,973.4	8,945.5	39.2	32.6	176.26	-451.9	96.3	1,236.4	1,173.3	63.14	19.582	
9,800.0	8,832.0	8,982.4	8,954.4	40.1	32.6	176.60	-452.7	96.4	1,336.0	1,272.8	63.20	21.139	
9,900.0	8,832.0	11,415.9	10,200.0	41.0	46.4	179.96	-1,883.3	113.7	1,365.3	1,324.6	40.70	33.547	
10,000.0	8,832.0	11,515.9	10,200.0	42.0	47.3	179.96	-1,983.3	114.5	1,365.3	1,323.8	41.50	32.900	
10,100.0	8,832.0	11,615.9	10,200.0	43.0	48.3	179.96	-2,083.3	115.2	1,365.3	1,323.0	42.34	32.244	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Rule Assigned:		Distance		Offset Well Error:		0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning							
10,200.0	8,832.0	11,715.9	10,200.0	44.0	49.3	179.96	-2,183.3	116.0	1,365.3	1,322.1	43.23	31.585								
10,300.0	8,832.0	11,815.9	10,200.0	45.0	50.3	179.96	-2,283.3	116.8	1,365.3	1,321.2	44.15	30.924								
10,400.0	8,832.0	11,915.9	10,200.0	46.1	51.3	179.96	-2,383.3	117.6	1,365.3	1,320.2	45.11	30.267								
10,500.0	8,832.0	12,015.9	10,200.0	47.2	52.4	179.96	-2,483.3	118.4	1,365.3	1,319.2	46.10	29.616								
10,600.0	8,832.0	12,115.9	10,200.0	48.3	53.4	179.96	-2,583.2	119.2	1,365.3	1,318.2	47.12	28.973								
10,700.0	8,832.0	12,215.9	10,200.0	49.4	54.5	179.96	-2,683.2	120.0	1,365.3	1,317.1	48.18	28.339								
10,800.0	8,832.0	12,315.9	10,200.0	50.6	55.6	179.96	-2,783.2	120.8	1,365.3	1,316.0	49.26	27.718								
10,900.0	8,832.0	12,415.9	10,200.0	51.7	56.7	179.96	-2,883.2	121.5	1,365.3	1,314.9	50.36	27.109								
11,000.0	8,832.0	12,515.9	10,200.0	52.9	57.9	179.96	-2,983.2	122.3	1,365.3	1,313.8	51.49	26.514								
11,100.0	8,832.0	12,615.9	10,200.0	54.1	59.0	179.97	-3,083.2	123.1	1,365.3	1,312.7	52.65	25.934								
11,200.0	8,832.0	12,715.9	10,200.0	55.3	60.2	179.97	-3,183.2	123.9	1,365.3	1,311.5	53.82	25.368								
11,300.0	8,832.0	12,815.9	10,200.0	56.5	61.3	179.97	-3,283.2	124.7	1,365.3	1,310.3	55.01	24.818								
11,400.0	8,832.0	12,915.9	10,200.0	57.7	62.5	179.97	-3,383.2	125.5	1,365.3	1,309.1	56.22	24.283								
11,500.0	8,832.0	13,015.9	10,200.0	58.9	63.7	179.97	-3,483.2	126.3	1,365.3	1,307.8	57.45	23.764								
11,600.0	8,832.0	13,115.9	10,200.0	60.2	64.9	179.97	-3,583.2	127.0	1,365.3	1,306.6	58.70	23.259								
11,700.0	8,832.0	13,215.9	10,200.0	61.4	66.1	179.97	-3,683.2	127.8	1,365.3	1,305.3	59.96	22.771								
11,800.0	8,832.0	13,315.9	10,200.0	62.7	67.4	179.97	-3,783.2	128.6	1,365.3	1,304.1	61.23	22.297								
11,900.0	8,832.0	13,415.9	10,200.0	63.9	68.6	179.97	-3,883.2	129.4	1,365.3	1,302.8	62.52	21.837								
12,000.0	8,832.0	13,515.9	10,200.0	65.2	69.8	179.97	-3,983.2	130.2	1,365.3	1,301.5	63.82	21.392								
12,100.0	8,832.0	13,615.9	10,200.0	66.5	71.1	179.97	-4,083.2	131.0	1,365.3	1,300.2	65.13	20.961								
12,200.0	8,832.0	13,715.9	10,200.0	67.8	72.3	179.97	-4,183.2	131.8	1,365.3	1,298.8	66.46	20.544								
12,300.0	8,832.0	13,815.9	10,200.0	69.1	73.6	179.97	-4,283.2	132.5	1,365.3	1,297.5	67.79	20.140								
12,400.0	8,832.0	13,915.9	10,200.0	70.4	74.9	179.97	-4,383.2	133.3	1,365.3	1,296.2	69.13	19.748								
12,500.0	8,832.0	14,015.9	10,200.0	71.7	76.1	179.97	-4,483.2	134.1	1,365.3	1,294.8	70.49	19.369								
12,600.0	8,832.0	14,115.9	10,200.0	73.0	77.4	179.97	-4,583.2	134.9	1,365.3	1,293.5	71.85	19.002								
12,700.0	8,832.0	14,215.9	10,200.0	74.3	78.7	179.97	-4,683.2	135.7	1,365.3	1,292.1	73.22	18.647								
12,800.0	8,832.0	14,315.9	10,200.0	75.6	80.0	179.97	-4,783.2	136.5	1,365.3	1,290.7	74.60	18.302								
12,900.0	8,832.0	14,415.9	10,200.0	76.9	81.3	179.97	-4,883.2	137.3	1,365.3	1,289.3	75.98	17.969								
13,000.0	8,832.0	14,515.9	10,200.0	78.3	82.6	179.97	-4,983.2	138.1	1,365.3	1,287.9	77.37	17.646								
13,100.0	8,832.0	14,615.9	10,200.0	79.6	83.9	179.97	-5,083.2	138.8	1,365.3	1,286.5	78.77	17.332								
13,200.0	8,832.0	14,715.9	10,200.0	80.9	85.2	179.97	-5,183.2	139.6	1,365.3	1,285.1	80.18	17.028								
13,300.0	8,832.0	14,815.9	10,200.0	82.3	86.5	179.97	-5,283.2	140.4	1,365.3	1,283.7	81.59	16.734								
13,400.0	8,832.0	14,915.9	10,200.0	83.6	87.9	179.98	-5,383.2	141.2	1,365.3	1,282.3	83.01	16.448								
13,500.0	8,832.0	15,015.9	10,200.0	85.0	89.2	179.98	-5,483.2	142.0	1,365.3	1,280.9	84.43	16.171								
13,600.0	8,832.0	15,115.9	10,200.0	86.3	90.5	179.98	-5,583.2	142.8	1,365.3	1,279.4	85.85	15.902								
13,700.0	8,832.0	15,215.9	10,200.0	87.7	91.8	179.98	-5,683.2	143.6	1,365.3	1,278.0	87.29	15.642								
13,800.0	8,832.0	15,315.9	10,200.0	89.0	93.2	179.98	-5,783.2	144.3	1,365.3	1,276.6	88.72	15.388								
13,900.0	8,832.0	15,415.9	10,200.0	90.4	94.5	179.98	-5,883.1	145.1	1,365.3	1,275.1	90.16	15.142								
14,000.0	8,832.0	15,515.9	10,200.0	91.8	95.9	179.98	-5,983.1	145.9	1,365.3	1,273.7	91.61	14.903								
14,100.0	8,832.0	15,615.9	10,200.0	93.1	97.2	179.98	-6,083.1	146.7	1,365.3	1,272.2	93.06	14.671								
14,200.0	8,832.0	15,715.9	10,200.0	94.5	98.5	179.98	-6,183.1	147.5	1,365.3	1,270.8	94.51	14.446								
14,300.0	8,832.0	15,815.9	10,200.0	95.9	99.9	179.98	-6,283.1	148.3	1,365.3	1,269.3	95.97	14.227								
14,400.0	8,832.0	15,915.9	10,200.0	97.2	101.3	179.98	-6,383.1	149.1	1,365.3	1,267.9	97.43	14.013								
14,500.0	8,832.0	16,015.9	10,200.0	98.6	102.6	179.98	-6,483.1	149.8	1,365.3	1,266.4	98.89	13.806								
14,600.0	8,832.0	16,115.9	10,200.0	100.0	104.0	179.98	-6,583.1	150.6	1,365.3	1,264.9	100.36	13.604								
14,700.0	8,832.0	16,215.9	10,200.0	101.4	105.3	179.98	-6,683.1	151.4	1,365.3	1,263.5	101.83	13.408								
14,800.0	8,832.0	16,315.9	10,200.0	102.7	106.7	179.98	-6,783.1	152.2	1,365.3	1,262.0	103.30	13.217								
14,900.0	8,832.0	16,415.9	10,200.0	104.1	108.1	179.98	-6,883.1	153.0	1,365.3	1,260.5	104.78	13.030								
15,000.0	8,832.0	16,515.9	10,200.0	105.5	109.4	179.98	-6,983.1	153.8	1,365.3	1,259.0	106.26	12.849								
15,100.0	8,832.0	16,615.9	10,200.0	106.9	110.8	179.98	-7,083.1	154.6	1,365.3	1,257.6	107.74	12.673								
15,200.0	8,832.0	16,715.9	10,200.0	108.3	112.2	179.98	-7,183.1	155.4	1,365.3	1,256.1	109.22	12.500								
15,300.0	8,832.0	16,815.9	10,200.0	109.7	113.5	179.98	-7,283.1	156.1	1,365.3	1,254.6	110.71	12.333								

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,400.0	8,832.0	16,915.9	10,200.0	111.1	114.9	179.98	-7,383.1	156.9	1,365.3	1,253.1	112.19	12.169	
15,500.0	8,832.0	17,015.9	10,200.0	112.5	116.3	179.98	-7,483.1	157.7	1,365.3	1,251.6	113.68	12.010	
15,600.0	8,832.0	17,115.9	10,200.0	113.8	117.7	179.98	-7,583.1	158.5	1,365.3	1,250.1	115.18	11.854	
15,700.0	8,832.0	17,215.9	10,200.0	115.2	119.0	179.99	-7,683.1	159.3	1,365.3	1,248.6	116.67	11.702	
15,800.0	8,832.0	17,315.9	10,200.0	116.6	120.4	179.99	-7,783.1	160.1	1,365.3	1,247.1	118.17	11.554	
15,900.0	8,832.0	17,415.9	10,200.0	118.0	121.8	179.99	-7,883.1	160.9	1,365.3	1,245.6	119.66	11.409	
16,000.0	8,832.0	17,515.9	10,200.0	119.4	123.2	179.99	-7,983.1	161.6	1,365.3	1,244.1	121.16	11.268	
16,100.0	8,832.0	17,615.9	10,200.0	120.8	124.6	179.99	-8,083.1	162.4	1,365.3	1,242.6	122.67	11.130	
16,200.0	8,832.0	17,715.9	10,200.0	122.2	126.0	179.99	-8,183.1	163.2	1,365.3	1,241.1	124.17	10.996	
16,300.0	8,832.0	17,815.9	10,200.0	123.6	127.4	179.99	-8,283.1	164.0	1,365.3	1,239.6	125.67	10.864	
16,400.0	8,832.0	17,915.9	10,200.0	125.0	128.7	179.99	-8,383.1	164.8	1,365.3	1,238.1	127.18	10.735	
16,500.0	8,832.0	18,015.9	10,200.0	126.4	130.1	179.99	-8,483.1	165.6	1,365.3	1,236.6	128.69	10.609	
16,600.0	8,832.0	18,115.9	10,200.0	127.8	131.5	179.99	-8,583.1	166.4	1,365.3	1,235.1	130.20	10.486	
16,700.0	8,832.0	18,215.9	10,200.0	129.3	132.9	179.99	-8,683.1	167.1	1,365.3	1,233.6	131.71	10.366	
16,800.0	8,832.0	18,315.9	10,200.0	130.7	134.3	179.99	-8,783.1	167.9	1,365.3	1,232.1	133.22	10.248	
16,900.0	8,832.0	18,415.9	10,200.0	132.1	135.7	179.99	-8,883.1	168.7	1,365.3	1,230.6	134.73	10.133	
17,000.0	8,832.0	18,515.9	10,200.0	133.5	137.1	179.99	-8,983.1	169.5	1,365.3	1,229.1	136.25	10.021	
17,100.0	8,832.0	18,615.9	10,200.0	134.9	138.5	179.99	-9,083.0	170.3	1,365.3	1,227.5	137.76	9.910	
17,200.0	8,832.0	18,715.9	10,200.0	136.3	139.9	179.99	-9,183.0	171.1	1,365.3	1,226.0	139.28	9.802	
17,300.0	8,832.0	18,815.9	10,200.0	137.7	141.3	179.99	-9,283.0	171.9	1,365.3	1,224.5	140.80	9.697	
17,400.0	8,832.0	18,915.9	10,200.0	139.1	142.7	179.99	-9,383.0	172.7	1,365.3	1,223.0	142.32	9.593	
17,500.0	8,832.0	19,015.9	10,200.0	140.5	144.1	179.99	-9,483.0	173.4	1,365.3	1,221.5	143.84	9.492	
17,600.0	8,832.0	19,115.9	10,200.0	141.9	145.5	179.99	-9,583.0	174.2	1,365.3	1,219.9	145.36	9.392	
17,700.0	8,832.0	19,215.9	10,200.0	143.4	146.9	179.99	-9,683.0	175.0	1,365.3	1,218.4	146.88	9.295	
17,800.0	8,832.0	19,315.9	10,200.0	144.8	148.3	179.99	-9,783.0	175.8	1,365.3	1,216.9	148.41	9.200	
17,900.0	8,832.0	19,415.9	10,200.0	146.2	149.7	179.99	-9,883.0	176.6	1,365.3	1,215.4	149.93	9.106	
18,000.0	8,832.0	19,515.9	10,200.0	147.6	151.1	180.00	-9,983.0	177.4	1,365.3	1,213.8	151.46	9.014	
18,100.0	8,832.0	19,615.9	10,200.0	149.0	152.5	180.00	-10,083.0	178.2	1,365.3	1,212.3	152.98	8.925	
18,200.0	8,832.0	19,715.9	10,200.0	150.4	154.0	180.00	-10,183.0	178.9	1,365.3	1,210.8	154.51	8.836	
18,300.0	8,832.0	19,815.9	10,200.0	151.9	155.4	180.00	-10,283.0	179.7	1,365.3	1,209.3	156.04	8.750	
18,400.0	8,832.0	19,915.9	10,200.0	153.3	156.8	180.00	-10,383.0	180.5	1,365.3	1,207.7	157.57	8.665	
18,500.0	8,832.0	20,015.9	10,200.0	154.7	158.2	180.00	-10,483.0	181.3	1,365.3	1,206.2	159.10	8.582	
18,600.0	8,832.0	20,115.9	10,200.0	156.1	159.6	180.00	-10,583.0	182.1	1,365.3	1,204.7	160.63	8.500	
18,700.0	8,832.0	20,215.9	10,200.0	157.5	161.0	180.00	-10,683.0	182.9	1,365.3	1,203.1	162.16	8.420	
18,800.0	8,832.0	20,315.9	10,200.0	158.9	162.4	180.00	-10,783.0	183.7	1,365.3	1,201.6	163.69	8.341	
18,900.0	8,832.0	20,415.9	10,200.0	160.4	163.8	180.00	-10,883.0	184.4	1,365.3	1,200.1	165.22	8.263	
19,000.0	8,832.0	20,515.9	10,200.0	161.8	165.2	180.00	-10,983.0	185.2	1,365.3	1,198.5	166.75	8.187	
19,077.7	8,832.0	20,593.6	10,200.0	162.7	166.3	180.00	-11,060.6	185.8	1,365.3	1,197.7	167.65	8.144	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.3	1.3	0.0	0.0	89.04	0.7	40.0	40.0				
100.0	100.0	101.3	101.3	0.1	0.1	89.04	0.7	40.0	40.0	39.7	0.27	149.107	
200.0	200.0	201.3	201.3	0.5	0.5	89.04	0.7	40.0	40.0	39.0	0.99	40.587	
300.0	300.0	301.3	301.3	0.8	0.9	89.04	0.7	40.0	40.0	38.3	1.70	23.490	
400.0	400.0	401.3	401.3	1.2	1.2	89.04	0.7	40.0	40.0	37.6	2.42	16.528	
500.0	500.0	501.3	501.3	1.6	1.6	89.04	0.7	40.0	40.0	36.8	3.14	12.749	
600.0	600.0	601.3	601.3	1.9	1.9	89.04	0.7	40.0	40.0	36.1	3.85	10.377	
700.0	700.0	701.3	701.3	2.3	2.3	89.04	0.7	40.0	40.0	35.4	4.57	8.749	
800.0	800.0	801.3	801.3	2.6	2.6	89.04	0.7	40.0	40.0	34.7	5.29	7.563	
900.0	900.0	901.3	901.3	3.0	3.0	89.04	0.7	40.0	40.0	34.0	6.00	6.659	
1,000.0	1,000.0	1,001.3	1,001.3	3.4	3.4	89.04	0.7	40.0	40.0	33.3	6.72	5.949	
1,100.0	1,100.0	1,101.3	1,101.3	3.7	3.7	89.04	0.7	40.0	40.0	32.5	7.44	5.376	
1,200.0	1,200.0	1,201.3	1,201.3	4.1	4.1	89.04	0.7	40.0	40.0	31.8	8.15	4.903	
1,300.0	1,300.0	1,301.3	1,301.3	4.4	4.4	89.04	0.7	40.0	40.0	31.1	8.87	4.507	
1,400.0	1,400.0	1,401.3	1,401.3	4.8	4.8	89.04	0.7	40.0	40.0	30.4	9.59	4.170	
1,500.0	1,500.0	1,501.3	1,501.3	5.2	5.2	89.04	0.7	40.0	40.0	29.7	10.31	3.880	
1,600.0	1,600.0	1,601.3	1,601.3	5.5	5.5	89.04	0.7	40.0	40.0	29.0	11.02	3.627	
1,700.0	1,700.0	1,701.3	1,701.3	5.9	5.9	89.04	0.7	40.0	40.0	28.2	11.74	3.406	
1,800.0	1,800.0	1,801.3	1,801.3	6.2	6.2	89.04	0.7	40.0	40.0	27.5	12.46	3.210	
1,900.0	1,900.0	1,901.3	1,901.3	6.6	6.6	89.04	0.7	40.0	40.0	26.8	13.17	3.035	
1,916.2	1,916.2	1,917.5	1,917.5	6.6	6.6	89.04	0.7	40.0	40.0	26.7	13.29	3.008 CC	
2,000.0	2,000.0	2,001.3	2,001.3	6.9	6.9	89.04	0.7	40.0	40.0	26.1	13.89	2.878 ES	
2,100.0	2,100.0	2,100.0	2,100.0	7.3	7.3	-82.51	-0.5	41.3	41.0	26.5	14.56	2.818 SF	
2,200.0	2,199.8	2,199.1	2,199.0	7.6	7.6	-84.51	-3.9	45.1	44.2	29.0	15.20	2.906	
2,300.0	2,299.5	2,297.9	2,297.3	7.9	7.9	-87.28	-9.6	51.5	49.5	33.7	15.84	3.124	
2,400.0	2,398.7	2,397.5	2,396.4	8.3	8.3	-91.33	-16.7	59.4	56.2	39.7	16.52	3.402	
2,500.0	2,497.9	2,497.2	2,495.5	8.6	8.6	-95.27	-23.7	67.4	63.2	46.0	17.20	3.673	
2,600.0	2,597.1	2,596.8	2,594.6	8.9	9.0	-98.41	-30.8	75.3	70.4	52.5	17.89	3.935	
2,700.0	2,696.3	2,696.5	2,693.7	9.3	9.3	-100.96	-37.8	83.2	77.8	59.2	18.59	4.185	
2,800.0	2,795.5	2,796.2	2,792.8	9.6	9.7	-103.07	-44.9	91.1	85.3	66.0	19.29	4.422	
2,900.0	2,894.6	2,895.8	2,891.9	10.0	10.0	-104.84	-51.9	99.1	92.9	72.9	20.00	4.646	
3,000.0	2,993.8	2,995.5	2,991.0	10.4	10.4	-106.33	-59.0	107.0	100.6	79.9	20.71	4.857	
3,100.0	3,093.0	3,095.2	3,090.1	10.7	10.7	-107.61	-66.0	114.9	108.3	86.9	21.43	5.055	
3,200.0	3,192.2	3,194.9	3,189.2	11.1	11.1	-108.73	-73.1	122.9	116.1	94.0	22.16	5.242	
3,300.0	3,291.4	3,294.5	3,288.3	11.5	11.5	-109.70	-80.1	130.8	124.0	101.1	22.88	5.418	
3,400.0	3,390.6	3,394.2	3,387.4	11.8	11.8	-110.55	-87.2	138.7	131.8	108.2	23.61	5.583	
3,500.0	3,489.7	3,493.9	3,486.6	12.2	12.2	-111.31	-94.2	146.6	139.7	115.4	24.35	5.739	
3,600.0	3,588.9	3,593.6	3,585.7	12.6	12.6	-111.99	-101.3	154.6	147.6	122.6	25.08	5.886	
3,700.0	3,688.1	3,693.2	3,684.8	12.9	12.9	-112.60	-108.3	162.5	155.6	129.7	25.82	6.025	
3,800.0	3,787.3	3,792.9	3,783.9	13.3	13.3	-113.15	-115.4	170.4	163.5	136.9	26.56	6.156	
3,900.0	3,886.5	3,892.6	3,883.0	13.7	13.7	-113.65	-122.4	178.3	171.5	144.2	27.30	6.280	
4,000.0	3,985.7	3,992.2	3,982.1	14.1	14.0	-114.10	-129.5	186.3	179.4	151.4	28.05	6.398	
4,100.0	4,084.8	4,091.9	4,081.2	14.5	14.4	-114.52	-136.5	194.2	187.4	158.6	28.79	6.509	
4,200.0	4,184.0	4,191.6	4,180.3	14.8	14.8	-114.90	-143.6	202.1	195.4	165.9	29.54	6.615	
4,300.0	4,283.2	4,291.3	4,279.4	15.2	15.2	-115.25	-150.6	210.0	203.4	173.1	30.29	6.715	
4,400.0	4,382.4	4,390.9	4,378.5	15.6	15.5	-115.58	-157.7	218.0	211.4	180.4	31.04	6.810	
4,500.0	4,481.6	4,490.6	4,477.6	16.0	15.9	-115.88	-164.7	225.9	219.4	187.6	31.79	6.901	
4,600.0	4,580.8	4,590.3	4,576.7	16.4	16.3	-116.16	-171.8	233.8	227.4	194.9	32.55	6.988	
4,700.0	4,679.9	4,689.9	4,675.8	16.8	16.7	-116.42	-178.8	241.7	235.5	202.2	33.30	7.070	
4,800.0	4,779.1	4,789.6	4,774.9	17.2	17.0	-116.66	-185.9	249.7	243.5	209.4	34.06	7.149	
4,900.0	4,878.3	4,889.3	4,874.0	17.5	17.4	-116.89	-192.9	257.6	251.5	216.7	34.81	7.224	
5,000.0	4,977.5	4,989.0	4,973.1	17.9	17.8	-117.11	-200.0	265.5	259.5	224.0	35.57	7.296	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.0	5,076.7	5,088.6	5,072.2	18.3	18.2	-117.31	-207.0	273.4	267.6	231.3	36.33	7.365	
5,200.0	5,175.9	5,188.3	5,171.4	18.7	18.6	-117.50	-214.1	281.4	275.6	238.5	37.09	7.431	
5,300.0	5,275.0	5,288.0	5,270.5	19.1	18.9	-117.68	-221.1	289.3	283.7	245.8	37.85	7.494	
5,400.0	5,374.2	5,387.7	5,369.6	19.5	19.3	-117.84	-228.2	297.2	291.7	253.1	38.61	7.555	
5,500.0	5,473.4	5,487.3	5,468.7	19.9	19.7	-118.00	-235.2	305.1	299.8	260.4	39.37	7.613	
5,600.0	5,572.6	5,587.0	5,567.8	20.3	20.1	-118.16	-242.3	313.1	307.8	267.7	40.13	7.669	
5,700.0	5,671.8	5,686.7	5,666.9	20.7	20.4	-118.30	-249.4	321.0	315.9	275.0	40.90	7.723	
5,800.0	5,771.0	5,786.3	5,766.0	21.1	20.8	-118.44	-256.4	328.9	323.9	282.3	41.66	7.775	
5,900.0	5,870.1	5,886.0	5,865.1	21.4	21.2	-118.57	-263.5	336.8	332.0	289.5	42.42	7.825	
6,000.0	5,969.3	5,985.7	5,964.2	21.8	21.6	-118.69	-270.5	344.8	340.0	296.8	43.19	7.873	
6,100.0	6,068.5	6,085.4	6,063.3	22.2	22.0	-118.81	-277.6	352.7	348.1	304.1	43.95	7.919	
6,200.0	6,167.7	6,185.0	6,162.4	22.6	22.4	-118.92	-284.6	360.6	356.1	311.4	44.72	7.964	
6,300.0	6,266.9	6,284.7	6,261.5	23.0	22.7	-119.03	-291.7	368.5	364.2	318.7	45.48	8.007	
6,400.0	6,366.1	6,384.4	6,360.6	23.4	23.1	-119.13	-298.7	376.5	372.3	326.0	46.25	8.049	
6,500.0	6,465.2	6,484.0	6,459.7	23.8	23.5	-119.23	-305.8	384.4	380.3	333.3	47.02	8.089	
6,600.0	6,564.4	6,583.7	6,558.8	24.2	23.9	-119.33	-312.8	392.3	388.4	340.6	47.78	8.128	
6,700.0	6,663.6	6,683.4	6,657.9	24.6	24.3	-119.42	-319.9	400.2	396.5	347.9	48.55	8.166	
6,800.0	6,762.8	6,783.1	6,757.1	25.0	24.6	-119.50	-326.9	408.2	404.5	355.2	49.32	8.202	
6,900.0	6,862.0	6,882.7	6,856.2	25.4	25.0	-119.59	-334.0	416.1	412.6	362.5	50.09	8.238	
7,000.0	6,961.2	6,982.4	6,955.3	25.8	25.4	-119.67	-341.0	424.0	420.7	369.8	50.86	8.272	
7,100.0	7,060.3	7,082.1	7,054.4	26.2	25.8	-119.75	-348.1	431.9	428.7	377.1	51.62	8.305	
7,200.0	7,159.5	7,181.8	7,153.5	26.6	26.2	-119.84	-355.1	439.9	436.8	384.4	52.39	8.336	
7,300.0	7,259.0	7,281.5	7,252.7	27.0	26.6	-119.74	-362.2	447.8	443.5	390.4	53.16	8.344	
7,400.0	7,358.8	7,381.3	7,351.9	27.3	26.9	-119.22	-369.2	455.7	448.6	394.7	53.91	8.321	
7,500.0	7,458.7	7,480.9	7,450.9	27.7	27.3	-118.31	-376.3	463.7	452.1	397.4	54.66	8.271	
7,600.0	7,558.7	7,580.4	7,549.8	28.0	27.7	53.79	-383.3	471.6	454.3	399.0	55.38	8.204	
7,700.0	7,658.7	7,679.8	7,648.7	28.3	28.1	55.09	-390.4	479.5	456.7	400.6	56.10	8.141	
7,800.0	7,758.7	7,779.2	7,747.6	28.6	28.5	56.38	-397.4	487.4	459.3	402.5	56.81	8.085	
7,900.0	7,858.7	7,878.7	7,846.4	28.9	28.9	57.65	-404.4	495.3	462.1	404.6	57.52	8.034	
8,000.0	7,958.7	7,978.1	7,945.3	29.3	29.2	58.90	-411.5	503.2	465.2	407.0	58.23	7.989	
8,100.0	8,058.7	8,077.5	8,044.2	29.6	29.6	60.14	-418.5	511.1	468.5	409.5	58.94	7.948	
8,200.0	8,158.7	8,177.0	8,143.0	29.9	30.0	61.36	-425.5	519.0	472.0	412.3	59.65	7.913	
8,300.0	8,258.7	8,276.4	8,241.9	30.2	30.4	62.56	-432.6	526.9	475.7	415.3	60.35	7.882	
8,400.0	8,358.7	8,375.8	8,340.8	30.6	30.8	-115.80	-439.6	534.8	479.6	418.6	61.05	7.855	
8,500.0	8,457.9	8,475.2	8,439.6	30.9	31.2	-114.87	-446.6	542.7	488.5	426.7	61.82	7.903	
8,600.0	8,552.6	8,571.6	8,535.4	31.4	31.5	-115.03	-453.5	550.4	506.5	443.8	62.63	8.086	
8,700.0	8,638.6	8,660.7	8,624.1	31.9	31.9	-115.58	-459.8	557.5	534.6	471.2	63.45	8.426	
8,800.0	8,712.2	8,738.7	8,701.6	32.5	32.2	-115.45	-465.3	563.7	574.5	510.3	64.19	8.951	
8,900.0	8,770.1	8,802.2	8,764.7	33.1	32.4	-113.40	-469.8	568.7	627.1	562.3	64.79	9.680	
9,000.0	8,809.9	8,848.3	8,810.5	33.8	32.6	-108.00	-473.0	572.4	691.8	626.6	65.20	10.611	
9,100.0	8,829.8	8,875.0	8,837.1	34.5	32.7	-97.73	-474.9	574.5	766.5	701.1	65.42	11.716	
9,200.0	8,832.0	8,884.3	8,846.4	35.1	32.7	-91.59	-475.6	575.2	847.5	782.0	65.48	12.944	
9,300.0	8,832.0	8,891.5	8,853.5	35.9	32.8	-92.45	-476.1	575.8	932.2	866.7	65.50	14.232	
9,400.0	8,832.0	8,898.6	8,860.6	36.6	32.8	-93.30	-476.6	576.4	1,019.6	954.1	65.51	15.564	
9,500.0	8,832.0	8,905.7	8,867.7	37.4	32.8	-94.15	-477.1	577.0	1,109.2	1,043.6	65.52	16.928	
9,600.0	8,832.0	8,912.9	8,874.8	38.3	32.8	-95.00	-477.6	577.5	1,200.3	1,134.8	65.53	18.316	
9,700.0	8,832.0	8,920.0	8,881.9	39.2	32.9	-95.85	-478.1	578.1	1,292.7	1,227.1	65.54	19.723	
9,800.0	8,832.0	8,927.1	8,889.0	40.1	32.9	-96.68	-478.6	578.7	1,386.1	1,320.5	65.56	21.143	
9,900.0	8,832.0	8,934.3	8,896.1	41.0	32.9	-97.52	-479.1	579.2	1,480.4	1,414.8	65.58	22.574	
10,000.0	8,832.0	8,941.4	8,903.1	42.0	33.0	-98.35	-479.6	579.8	1,575.3	1,509.7	65.60	24.014	
10,100.0	8,832.0	8,948.6	8,910.2	43.0	33.0	-99.17	-480.1	580.4	1,670.8	1,605.1	65.62	25.460	
10,200.0	8,832.0	8,955.7	8,917.3	44.0	33.0	-99.99	-480.6	580.9	1,766.7	1,701.1	65.65	26.911	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,300.0	8,832.0	8,962.8	8,924.4	45.0	33.0	-100.80	-481.1	581.5	1,863.1	1,797.4	65.68	28.365		
10,400.0	8,832.0	8,970.0	8,931.5	46.1	33.1	-101.61	-481.6	582.1	1,959.8	1,894.0	65.72	29.821		
10,500.0	8,832.0	8,977.1	8,938.6	47.2	33.1	-102.40	-482.1	582.6	2,056.7	1,991.0	65.75	31.280		

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Royal Oak 24 Fed Com 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	3.1	3.1	0.0	0.0	89.07	1.3	80.0	80.0				
100.0	100.0	103.1	103.1	0.1	0.1	89.07	1.3	80.0	80.0	79.8	0.27	291.504	
200.0	200.0	203.1	203.1	0.5	0.5	89.07	1.3	80.0	80.0	79.1	0.99	80.728	
300.0	300.0	303.1	303.1	0.8	0.9	89.07	1.3	80.0	80.0	78.3	1.71	46.851	
400.0	400.0	403.1	403.1	1.2	1.2	89.07	1.3	80.0	80.0	77.6	2.43	33.002	
500.0	500.0	503.1	503.1	1.6	1.6	89.07	1.3	80.0	80.0	76.9	3.14	25.473	
600.0	600.0	603.1	603.1	1.9	1.9	89.07	1.3	80.0	80.0	76.2	3.86	20.741	
700.0	700.0	703.1	703.1	2.3	2.3	89.07	1.3	80.0	80.0	75.5	4.58	17.491	
800.0	800.0	803.1	803.1	2.6	2.7	89.07	1.3	80.0	80.0	74.8	5.29	15.122	
900.0	900.0	903.1	903.1	3.0	3.0	89.07	1.3	80.0	80.0	74.0	6.01	13.318	
1,000.0	1,000.0	1,003.1	1,003.1	3.4	3.4	89.07	1.3	80.0	80.0	73.3	6.73	11.899	
1,100.0	1,100.0	1,103.1	1,103.1	3.7	3.7	89.07	1.3	80.0	80.0	72.6	7.44	10.753	
1,200.0	1,200.0	1,203.1	1,203.1	4.1	4.1	89.07	1.3	80.0	80.0	71.9	8.16	9.808	
1,300.0	1,300.0	1,303.1	1,303.1	4.4	4.4	89.07	1.3	80.0	80.0	71.2	8.88	9.016	
1,400.0	1,400.0	1,403.1	1,403.1	4.8	4.8	89.07	1.3	80.0	80.0	70.4	9.59	8.342	
1,500.0	1,500.0	1,503.1	1,503.1	5.2	5.2	89.07	1.3	80.0	80.0	69.7	10.31	7.762	
1,600.0	1,600.0	1,603.1	1,603.1	5.5	5.5	89.07	1.3	80.0	80.0	69.0	11.03	7.258	
1,700.0	1,700.0	1,703.1	1,703.1	5.9	5.9	89.07	1.3	80.0	80.0	68.3	11.75	6.815	
1,800.0	1,800.0	1,803.1	1,803.1	6.2	6.2	89.07	1.3	80.0	80.0	67.6	12.46	6.423	
1,900.0	1,900.0	1,903.1	1,903.1	6.6	6.6	89.07	1.3	80.0	80.0	66.9	13.18	6.073	
1,915.6	1,915.6	1,918.7	1,918.7	6.6	6.7	89.07	1.3	80.0	80.0	66.8	13.29	6.022 CC	
2,000.0	2,000.0	2,003.0	2,003.0	6.9	7.0	89.07	1.3	80.0	80.0	66.1	13.90	5.760 ES	
2,100.0	2,100.0	2,100.0	2,100.0	7.3	7.3	-82.37	0.5	81.6	81.4	66.9	14.56	5.591	
2,200.0	2,199.8	2,197.9	2,197.8	7.6	7.6	-84.15	-1.6	86.2	85.4	70.2	15.20	5.620	
2,300.0	2,299.5	2,295.0	2,294.5	7.9	7.9	-86.76	-5.2	93.7	92.2	76.3	15.83	5.824	
2,400.0	2,398.7	2,391.7	2,390.4	8.3	8.3	-89.77	-10.2	104.2	101.9	85.4	16.45	6.192	
2,500.0	2,497.9	2,487.8	2,485.5	8.6	8.6	-91.74	-16.5	117.5	114.5	97.5	17.08	6.706	
2,600.0	2,597.1	2,583.4	2,579.4	8.9	9.0	-92.43	-24.1	133.5	129.9	112.2	17.70	7.340	
2,700.0	2,696.3	2,678.1	2,671.8	9.3	9.3	-92.20	-33.0	152.2	147.9	129.6	18.31	8.077	
2,800.0	2,795.5	2,772.4	2,763.1	9.6	9.7	-91.38	-43.1	173.5	168.4	149.5	18.92	8.901	
2,900.0	2,894.6	2,870.1	2,857.3	10.0	10.1	-90.49	-54.0	196.6	190.0	170.3	19.62	9.682	
3,000.0	2,993.8	2,967.7	2,951.5	10.4	10.5	-89.78	-65.0	219.7	211.5	191.2	20.33	10.405	
3,100.0	3,093.0	3,065.3	3,045.8	10.7	10.9	-89.21	-76.0	242.8	233.1	212.1	21.05	11.077	
3,200.0	3,192.2	3,162.9	3,140.0	11.1	11.3	-88.73	-86.9	265.9	254.7	233.0	21.77	11.700	
3,300.0	3,291.4	3,260.5	3,234.2	11.5	11.7	-88.33	-97.9	289.0	276.4	253.9	22.51	12.280	
3,400.0	3,390.6	3,358.1	3,328.4	11.8	12.1	-87.98	-108.9	312.1	298.0	274.8	23.24	12.821	
3,500.0	3,489.7	3,455.8	3,422.6	12.2	12.6	-87.68	-119.8	335.2	319.7	295.7	23.99	13.326	
3,600.0	3,588.9	3,553.4	3,516.8	12.6	13.0	-87.42	-130.8	358.3	341.3	316.6	24.74	13.797	
3,700.0	3,688.1	3,651.0	3,611.0	12.9	13.5	-87.19	-141.8	381.4	363.0	337.5	25.49	14.239	
3,800.0	3,787.3	3,748.6	3,705.2	13.3	13.9	-86.99	-152.7	404.5	384.6	358.4	26.25	14.653	
3,900.0	3,886.5	3,846.2	3,799.4	13.7	14.4	-86.81	-163.7	427.6	406.3	379.3	27.01	15.042	
4,000.0	3,985.7	3,943.8	3,893.6	14.1	14.8	-86.64	-174.7	450.6	428.0	400.2	27.78	15.408	
4,100.0	4,084.8	4,041.5	3,987.8	14.5	15.3	-86.50	-185.6	473.7	449.7	421.1	28.55	15.752	
4,200.0	4,184.0	4,139.1	4,082.0	14.8	15.8	-86.36	-196.6	496.8	471.4	442.0	29.32	16.077	
4,300.0	4,283.2	4,236.7	4,176.3	15.2	16.2	-86.24	-207.6	519.9	493.0	462.9	30.09	16.384	
4,400.0	4,382.4	4,334.3	4,270.5	15.6	16.7	-86.13	-218.5	543.0	514.7	483.8	30.87	16.674	
4,500.0	4,481.6	4,431.9	4,364.7	16.0	17.2	-86.03	-229.5	566.1	536.4	504.8	31.65	16.949	
4,600.0	4,580.8	4,529.5	4,458.9	16.4	17.7	-85.93	-240.4	589.2	558.1	525.7	32.43	17.209	
4,700.0	4,679.9	4,627.1	4,553.1	16.8	18.1	-85.84	-251.4	612.3	579.8	546.6	33.21	17.456	
4,800.0	4,779.1	4,724.8	4,647.3	17.2	18.6	-85.76	-262.4	635.4	601.5	567.5	34.00	17.691	
4,900.0	4,878.3	4,822.4	4,741.5	17.5	19.1	-85.69	-273.3	658.5	623.2	588.4	34.79	17.914	
5,000.0	4,977.5	4,920.0	4,835.7	17.9	19.6	-85.62	-284.3	681.6	644.9	609.3	35.57	18.127	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	5,076.7	5,017.6	4,929.9	18.3	20.1	-85.55	-295.3	704.7	666.5	630.2	36.36	18.330	
5,200.0	5,175.9	5,115.2	5,024.1	18.7	20.5	-85.49	-306.2	727.8	688.2	651.1	37.16	18.523	
5,300.0	5,275.0	5,212.8	5,118.3	19.1	21.0	-85.43	-317.2	750.9	709.9	672.0	37.95	18.708	
5,400.0	5,374.2	5,310.5	5,212.6	19.5	21.5	-85.37	-328.2	774.0	731.6	692.9	38.74	18.885	
5,500.0	5,473.4	5,408.1	5,306.8	19.9	22.0	-85.32	-339.1	797.1	753.3	713.8	39.54	19.054	
5,600.0	5,572.6	5,505.7	5,401.0	20.3	22.5	-85.27	-350.1	820.2	775.0	734.7	40.33	19.215	
5,700.0	5,671.8	5,603.3	5,495.2	20.7	23.0	-85.23	-361.1	843.3	796.7	755.6	41.13	19.370	
5,800.0	5,771.0	5,700.9	5,589.4	21.1	23.5	-85.18	-372.0	866.4	818.4	776.5	41.93	19.519	
5,900.0	5,870.1	5,798.5	5,683.6	21.4	24.0	-85.14	-383.0	889.5	840.1	797.4	42.73	19.662	
6,000.0	5,969.3	5,896.2	5,777.8	21.8	24.4	-85.10	-393.9	912.5	861.8	818.3	43.53	19.799	
6,100.0	6,068.5	5,993.8	5,872.0	22.2	24.9	-85.07	-404.9	935.6	883.5	839.2	44.33	19.930	
6,200.0	6,167.7	6,091.4	5,966.2	22.6	25.4	-85.03	-415.9	958.7	905.2	860.1	45.13	20.057	
6,300.0	6,266.9	6,189.0	6,060.4	23.0	25.9	-85.00	-426.8	981.8	926.9	881.0	45.93	20.179	
6,400.0	6,366.1	6,286.6	6,154.6	23.4	26.4	-84.97	-437.8	1,004.9	948.6	901.9	46.74	20.296	
6,500.0	6,465.2	6,384.2	6,248.8	23.8	26.9	-84.93	-448.8	1,028.0	970.3	922.8	47.54	20.410	
6,600.0	6,564.4	6,481.9	6,343.1	24.2	27.4	-84.90	-459.7	1,051.1	992.0	943.7	48.35	20.519	
6,700.0	6,663.6	6,579.5	6,437.3	24.6	27.9	-84.88	-470.7	1,074.2	1,013.7	964.5	49.15	20.624	
6,800.0	6,762.8	6,677.1	6,531.5	25.0	28.4	-84.85	-481.7	1,097.3	1,035.4	985.4	49.96	20.726	
6,900.0	6,862.0	6,774.7	6,625.7	25.4	28.9	-84.82	-492.6	1,120.4	1,057.1	1,006.3	50.76	20.824	
7,000.0	6,961.2	6,872.3	6,719.9	25.8	29.4	-84.80	-503.6	1,143.5	1,078.8	1,027.2	51.57	20.919	
7,100.0	7,060.3	6,969.9	6,814.1	26.2	29.9	-84.77	-514.6	1,166.6	1,100.5	1,048.1	52.38	21.011	
7,200.0	7,159.5	7,067.5	6,908.3	26.6	30.4	-84.86	-525.5	1,189.7	1,122.2	1,069.0	53.19	21.100	
7,300.0	7,259.0	7,165.1	7,002.4	27.0	30.9	-85.15	-536.5	1,212.8	1,144.1	1,090.2	53.97	21.199	
7,400.0	7,358.8	7,262.3	7,096.3	27.3	31.4	-85.28	-547.4	1,235.8	1,166.4	1,111.7	54.73	21.313	
7,500.0	7,458.7	7,359.3	7,189.8	27.7	31.9	-85.26	-558.3	1,258.7	1,189.0	1,133.5	55.45	21.442	
7,600.0	7,558.7	7,455.8	7,283.0	28.0	32.4	-85.99	-569.1	1,281.5	1,211.9	1,155.7	56.13	21.590	
7,700.0	7,658.7	7,552.3	7,376.2	28.3	32.9	-86.58	-580.0	1,304.4	1,234.9	1,178.1	56.81	21.740	
7,800.0	7,758.7	7,648.8	7,469.3	28.6	33.4	-87.15	-590.8	1,327.2	1,258.1	1,200.7	57.48	21.887	
7,900.0	7,858.7	7,788.5	7,604.6	28.9	34.1	-87.90	-605.6	1,358.5	1,280.4	1,221.8	58.53	21.875	
8,000.0	7,958.7	7,952.4	7,765.3	29.3	34.8	-88.57	-619.5	1,387.7	1,298.0	1,238.3	59.67	21.754	
8,100.0	8,058.7	8,119.7	7,930.9	29.6	35.5	-89.03	-629.6	1,408.9	1,310.6	1,249.9	60.67	21.601	
8,200.0	8,158.7	8,289.2	8,099.7	29.9	36.1	-89.30	-635.5	1,421.4	1,317.9	1,256.4	61.53	21.420	
8,300.0	8,258.7	8,451.3	8,261.8	30.2	36.6	-89.37	-637.2	1,425.0	1,320.0	1,257.8	62.23	21.213	
8,400.0	8,358.7	8,551.4	8,361.9	30.6	36.8	-90.18	-637.3	1,425.0	1,320.0	1,257.2	62.86	21.001	
8,500.0	8,457.9	8,652.2	8,461.8	30.9	37.2	-90.15	-649.4	1,425.1	1,320.0	1,256.4	63.59	20.759	
8,600.0	8,552.6	8,752.8	8,556.7	31.4	37.5	-90.11	-682.2	1,425.3	1,320.0	1,255.5	64.46	20.478	
8,700.0	8,638.6	8,853.2	8,642.6	31.9	37.9	-90.06	-733.9	1,425.7	1,320.0	1,254.6	65.45	20.168	
8,800.0	8,712.2	8,953.4	8,715.6	32.5	38.3	-90.02	-802.2	1,426.3	1,320.0	1,253.5	66.55	19.835	
8,841.0	8,738.0	8,994.4	8,741.0	32.8	38.5	-90.00	-834.4	1,426.5	1,320.0	1,253.0	67.03	19.692	
8,900.0	8,770.1	9,053.4	8,772.6	33.1	38.8	-89.97	-884.1	1,426.9	1,320.0	1,252.3	67.74	19.487	
9,000.0	8,809.9	9,153.1	8,811.4	33.8	39.3	-89.92	-975.8	1,427.6	1,320.0	1,251.0	68.99	19.133	
9,100.0	8,829.8	9,252.6	8,830.2	34.5	39.8	-89.88	-1,073.3	1,428.4	1,320.0	1,249.7	70.27	18.784	
9,200.0	8,832.0	9,352.4	8,832.0	35.1	40.3	-89.87	-1,173.0	1,429.2	1,320.0	1,248.4	71.57	18.443	
9,300.0	8,832.0	9,452.4	8,832.0	35.9	40.9	-89.87	-1,273.0	1,429.9	1,320.0	1,247.1	72.95	18.096	
9,400.0	8,832.0	9,552.4	8,832.0	36.6	41.5	-89.87	-1,373.0	1,430.7	1,320.0	1,245.6	74.41	17.740	
9,500.0	8,832.0	9,652.4	8,832.0	37.4	42.2	-89.87	-1,473.0	1,431.5	1,320.0	1,244.1	75.95	17.380	
9,600.0	8,832.0	9,752.4	8,832.0	38.3	42.9	-89.87	-1,573.0	1,432.3	1,320.0	1,242.4	77.57	17.016	
9,700.0	8,832.0	9,852.4	8,832.0	39.2	43.6	-89.87	-1,673.0	1,433.0	1,320.0	1,240.7	79.27	16.653	
9,800.0	8,832.0	9,952.4	8,832.0	40.1	44.4	-89.87	-1,773.0	1,433.8	1,320.0	1,239.0	81.03	16.291	
9,900.0	8,832.0	10,052.4	8,832.0	41.0	45.2	-89.87	-1,873.0	1,434.6	1,320.0	1,237.2	82.85	15.932	
10,000.0	8,832.0	10,152.4	8,832.0	42.0	46.1	-89.87	-1,973.0	1,435.4	1,320.0	1,235.3	84.74	15.577	
10,100.0	8,832.0	10,252.4	8,832.0	43.0	46.9	-89.87	-2,073.0	1,436.1	1,320.0	1,233.3	86.68	15.228	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,200.0	8,832.0	10,352.4	8,832.0	44.0	47.8	-89.87	-2,173.0	1,436.9	1,320.0	1,231.3	88.67	14.886	
10,300.0	8,832.0	10,452.4	8,832.0	45.0	48.8	-89.87	-2,273.0	1,437.7	1,320.0	1,229.3	90.72	14.551	
10,400.0	8,832.0	10,552.4	8,832.0	46.1	49.7	-89.87	-2,373.0	1,438.5	1,320.0	1,227.2	92.80	14.224	
10,500.0	8,832.0	10,652.4	8,832.0	47.2	50.7	-89.87	-2,473.0	1,439.2	1,320.0	1,225.1	94.93	13.905	
10,600.0	8,832.0	10,752.4	8,832.0	48.3	51.7	-89.87	-2,573.0	1,440.0	1,320.0	1,222.9	97.10	13.594	
10,700.0	8,832.0	10,852.4	8,832.0	49.4	52.7	-89.87	-2,673.0	1,440.8	1,320.0	1,220.7	99.31	13.292	
10,800.0	8,832.0	10,952.4	8,832.0	50.6	53.7	-89.87	-2,773.0	1,441.6	1,320.0	1,218.5	101.55	12.999	
10,900.0	8,832.0	11,052.4	8,832.0	51.7	54.8	-89.87	-2,873.0	1,442.3	1,320.0	1,216.2	103.82	12.714	
11,000.0	8,832.0	11,152.4	8,832.0	52.9	55.9	-89.87	-2,973.0	1,443.1	1,320.0	1,213.9	106.13	12.438	
11,100.0	8,832.0	11,252.4	8,832.0	54.1	57.0	-89.87	-3,073.0	1,443.9	1,320.0	1,211.5	108.46	12.171	
11,200.0	8,832.0	11,352.4	8,832.0	55.3	58.1	-89.87	-3,173.0	1,444.7	1,320.0	1,209.2	110.82	11.912	
11,300.0	8,832.0	11,452.4	8,832.0	56.5	59.2	-89.87	-3,273.0	1,445.4	1,320.0	1,206.8	113.20	11.661	
11,400.0	8,832.0	11,552.4	8,832.0	57.7	60.3	-89.87	-3,373.0	1,446.2	1,320.0	1,204.4	115.61	11.418	
11,500.0	8,832.0	11,652.4	8,832.0	58.9	61.5	-89.87	-3,473.0	1,447.0	1,320.0	1,202.0	118.04	11.183	
11,600.0	8,832.0	11,752.4	8,832.0	60.2	62.6	-89.87	-3,573.0	1,447.8	1,320.0	1,199.5	120.49	10.956	
11,700.0	8,832.0	11,852.4	8,832.0	61.4	63.8	-89.87	-3,673.0	1,448.6	1,320.0	1,197.1	122.95	10.736	
11,800.0	8,832.0	11,952.4	8,832.0	62.7	65.0	-89.87	-3,773.0	1,449.3	1,320.0	1,194.6	125.44	10.523	
11,900.0	8,832.0	12,052.4	8,832.0	63.9	66.2	-89.87	-3,873.0	1,450.1	1,320.0	1,192.1	127.95	10.317	
12,000.0	8,832.0	12,152.4	8,832.0	65.2	67.4	-89.87	-3,973.0	1,450.9	1,320.0	1,189.5	130.47	10.118	
12,100.0	8,832.0	12,252.4	8,832.0	66.5	68.6	-89.87	-4,073.0	1,451.7	1,320.0	1,187.0	133.00	9.925	
12,200.0	8,832.0	12,352.4	8,832.0	67.8	69.8	-89.87	-4,173.0	1,452.4	1,320.0	1,184.5	135.55	9.738	
12,300.0	8,832.0	12,452.4	8,832.0	69.1	71.1	-89.87	-4,272.9	1,453.2	1,320.0	1,181.9	138.12	9.557	
12,400.0	8,832.0	12,552.4	8,832.0	70.4	72.3	-89.87	-4,372.9	1,454.0	1,320.0	1,179.3	140.69	9.382	
12,500.0	8,832.0	12,652.4	8,832.0	71.7	73.6	-89.87	-4,472.9	1,454.8	1,320.0	1,176.7	143.28	9.213	
12,600.0	8,832.0	12,752.4	8,832.0	73.0	74.8	-89.87	-4,572.9	1,455.5	1,320.0	1,174.1	145.88	9.048	
12,700.0	8,832.0	12,852.4	8,832.0	74.3	76.1	-89.87	-4,672.9	1,456.3	1,320.0	1,171.5	148.49	8.889	
12,800.0	8,832.0	12,952.4	8,832.0	75.6	77.4	-89.87	-4,772.9	1,457.1	1,320.0	1,168.9	151.12	8.735	
12,900.0	8,832.0	13,052.4	8,832.0	76.9	78.6	-89.87	-4,872.9	1,457.9	1,320.0	1,166.3	153.75	8.585	
13,000.0	8,832.0	13,152.4	8,832.0	78.3	79.9	-89.87	-4,972.9	1,458.6	1,320.0	1,163.6	156.39	8.441	
13,100.0	8,832.0	13,252.4	8,832.0	79.6	81.2	-89.87	-5,072.9	1,459.4	1,320.0	1,161.0	159.04	8.300	
13,200.0	8,832.0	13,352.4	8,832.0	80.9	82.5	-89.87	-5,172.9	1,460.2	1,320.0	1,158.3	161.70	8.163	
13,300.0	8,832.0	13,452.4	8,832.0	82.3	83.8	-89.87	-5,272.9	1,461.0	1,320.0	1,155.6	164.36	8.031	
13,400.0	8,832.0	13,552.4	8,832.0	83.6	85.1	-89.87	-5,372.9	1,461.7	1,320.0	1,153.0	167.04	7.902	
13,500.0	8,832.0	13,652.4	8,832.0	85.0	86.4	-89.87	-5,472.9	1,462.5	1,320.0	1,150.3	169.72	7.778	
13,600.0	8,832.0	13,752.4	8,832.0	86.3	87.7	-89.87	-5,572.9	1,463.3	1,320.0	1,147.6	172.41	7.656	
13,700.0	8,832.0	13,852.4	8,832.0	87.7	89.0	-89.87	-5,672.9	1,464.1	1,320.0	1,144.9	175.10	7.538	
13,800.0	8,832.0	13,952.4	8,832.0	89.0	90.3	-89.87	-5,772.9	1,464.8	1,320.0	1,142.2	177.80	7.424	
13,900.0	8,832.0	14,052.4	8,832.0	90.4	91.7	-89.87	-5,872.9	1,465.6	1,320.0	1,139.5	180.51	7.313	
14,000.0	8,832.0	14,152.4	8,832.0	91.8	93.0	-89.87	-5,972.9	1,466.4	1,320.0	1,136.8	183.22	7.204	
14,100.0	8,832.0	14,252.4	8,832.0	93.1	94.3	-89.87	-6,072.9	1,467.2	1,320.0	1,134.1	185.94	7.099	
14,200.0	8,832.0	14,352.4	8,832.0	94.5	95.7	-89.87	-6,172.9	1,468.0	1,320.0	1,131.3	188.67	6.997	
14,300.0	8,832.0	14,452.4	8,832.0	95.9	97.0	-89.87	-6,272.9	1,468.7	1,320.0	1,128.6	191.40	6.897	
14,400.0	8,832.0	14,552.4	8,832.0	97.2	98.3	-89.87	-6,372.9	1,469.5	1,320.0	1,125.9	194.13	6.800	
14,500.0	8,832.0	14,652.4	8,832.0	98.6	99.7	-89.87	-6,472.9	1,470.3	1,320.0	1,123.1	196.87	6.705	
14,600.0	8,832.0	14,752.4	8,832.0	100.0	101.0	-89.87	-6,572.9	1,471.1	1,320.0	1,120.4	199.61	6.613	
14,700.0	8,832.0	14,852.4	8,832.0	101.4	102.4	-89.87	-6,672.9	1,471.8	1,320.0	1,117.6	202.36	6.523	
14,800.0	8,832.0	14,952.4	8,832.0	102.7	103.7	-89.87	-6,772.9	1,472.6	1,320.0	1,114.9	205.11	6.436	
14,900.0	8,832.0	15,052.4	8,832.0	104.1	105.1	-89.87	-6,872.9	1,473.4	1,320.0	1,112.1	207.86	6.350	
15,000.0	8,832.0	15,152.4	8,832.0	105.5	106.4	-89.87	-6,972.9	1,474.2	1,320.0	1,109.4	210.62	6.267	
15,100.0	8,832.0	15,252.4	8,832.0	106.9	107.8	-89.87	-7,072.9	1,474.9	1,320.0	1,106.6	213.38	6.186	
15,200.0	8,832.0	15,352.4	8,832.0	108.3	109.2	-89.87	-7,172.9	1,475.7	1,320.0	1,103.9	216.15	6.107	
15,300.0	8,832.0	15,452.4	8,832.0	109.7	110.5	-89.87	-7,272.9	1,476.5	1,320.0	1,101.1	218.92	6.030	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Offset Design: Royal Oak 24 Fed Com Pad 1 - Royal Oak 24 Fed Com 304H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,400.0	8,832.0	15,552.4	8,832.0	111.1	111.9	-89.87	-7,372.9	1,477.3	1,320.0	1,098.3	221.69	5.954	
15,500.0	8,832.0	15,652.4	8,832.0	112.5	113.3	-89.87	-7,472.9	1,478.0	1,320.0	1,095.5	224.47	5.881	
15,600.0	8,832.0	15,752.4	8,832.0	113.8	114.6	-89.87	-7,572.8	1,478.8	1,320.0	1,092.8	227.25	5.809	
15,700.0	8,832.0	15,852.4	8,832.0	115.2	116.0	-89.87	-7,672.8	1,479.6	1,320.0	1,090.0	230.03	5.738	
15,800.0	8,832.0	15,952.4	8,832.0	116.6	117.4	-89.87	-7,772.8	1,480.4	1,320.0	1,087.2	232.81	5.670	
15,900.0	8,832.0	16,052.4	8,832.0	118.0	118.8	-89.87	-7,872.8	1,481.1	1,320.0	1,084.4	235.60	5.603	
16,000.0	8,832.0	16,152.4	8,832.0	119.4	120.1	-89.87	-7,972.8	1,481.9	1,320.0	1,081.6	238.39	5.537	
16,100.0	8,832.0	16,252.4	8,832.0	120.8	121.5	-89.87	-8,072.8	1,482.7	1,320.0	1,078.8	241.18	5.473	
16,200.0	8,832.0	16,352.4	8,832.0	122.2	122.9	-89.87	-8,172.8	1,483.5	1,320.0	1,076.0	243.98	5.410	
16,300.0	8,832.0	16,452.4	8,832.0	123.6	124.3	-89.87	-8,272.8	1,484.2	1,320.0	1,073.2	246.77	5.349	
16,400.0	8,832.0	16,552.4	8,832.0	125.0	125.7	-89.87	-8,372.8	1,485.0	1,320.0	1,070.4	249.57	5.289	
16,500.0	8,832.0	16,652.4	8,832.0	126.4	127.0	-89.87	-8,472.8	1,485.8	1,320.0	1,067.6	252.37	5.230	
16,600.0	8,832.0	16,752.4	8,832.0	127.8	128.4	-89.87	-8,572.8	1,486.6	1,320.0	1,064.8	255.18	5.173	
16,700.0	8,832.0	16,852.4	8,832.0	129.3	129.8	-89.87	-8,672.8	1,487.4	1,320.0	1,062.0	257.98	5.117	
16,800.0	8,832.0	16,952.4	8,832.0	130.7	131.2	-89.87	-8,772.8	1,488.1	1,320.0	1,059.2	260.79	5.062	
16,900.0	8,832.0	17,052.4	8,832.0	132.1	132.6	-89.87	-8,872.8	1,488.9	1,320.0	1,056.4	263.60	5.008	
17,000.0	8,832.0	17,152.4	8,832.0	133.5	134.0	-89.87	-8,972.8	1,489.7	1,320.0	1,053.6	266.41	4.955	
17,100.0	8,832.0	17,252.4	8,832.0	134.9	135.4	-89.87	-9,072.8	1,490.5	1,320.0	1,050.8	269.22	4.903	
17,200.0	8,832.0	17,352.4	8,832.0	136.3	136.8	-89.87	-9,172.8	1,491.2	1,320.0	1,048.0	272.04	4.852	
17,300.0	8,832.0	17,452.4	8,832.0	137.7	138.2	-89.87	-9,272.8	1,492.0	1,320.0	1,045.1	274.86	4.803	
17,400.0	8,832.0	17,552.4	8,832.0	139.1	139.6	-89.87	-9,372.8	1,492.8	1,320.0	1,042.3	277.67	4.754	
17,500.0	8,832.0	17,652.4	8,832.0	140.5	141.0	-89.87	-9,472.8	1,493.6	1,320.0	1,039.5	280.49	4.706	
17,600.0	8,832.0	17,752.4	8,832.0	141.9	142.4	-89.87	-9,572.8	1,494.3	1,320.0	1,036.7	283.31	4.659	
17,700.0	8,832.0	17,852.4	8,832.0	143.4	143.8	-89.87	-9,672.8	1,495.1	1,320.0	1,033.9	286.14	4.613	
17,800.0	8,832.0	17,952.4	8,832.0	144.8	145.2	-89.87	-9,772.8	1,495.9	1,320.0	1,031.0	288.96	4.568	
17,900.0	8,832.0	18,052.4	8,832.0	146.2	146.6	-89.87	-9,872.8	1,496.7	1,320.0	1,028.2	291.79	4.524	
18,000.0	8,832.0	18,152.4	8,832.0	147.6	148.0	-89.87	-9,972.8	1,497.4	1,320.0	1,025.4	294.61	4.480	
18,100.0	8,832.0	18,252.4	8,832.0	149.0	149.4	-89.87	-10,072.8	1,498.2	1,320.0	1,022.6	297.44	4.438	
18,200.0	8,832.0	18,352.4	8,832.0	150.4	150.8	-89.87	-10,172.8	1,499.0	1,320.0	1,019.7	300.27	4.396	
18,300.0	8,832.0	18,452.4	8,832.0	151.9	152.2	-89.87	-10,272.8	1,499.8	1,320.0	1,016.9	303.10	4.355	
18,400.0	8,832.0	18,552.4	8,832.0	153.3	153.6	-89.87	-10,372.8	1,500.5	1,320.0	1,014.1	305.94	4.315	
18,500.0	8,832.0	18,652.4	8,832.0	154.7	155.0	-89.87	-10,472.8	1,501.3	1,320.0	1,011.2	308.77	4.275	
18,600.0	8,832.0	18,752.4	8,832.0	156.1	156.4	-89.87	-10,572.8	1,502.1	1,320.0	1,008.4	311.60	4.236	
18,700.0	8,832.0	18,852.4	8,832.0	157.5	157.8	-89.87	-10,672.8	1,502.9	1,320.0	1,005.6	314.44	4.198	
18,800.0	8,832.0	18,952.4	8,832.0	158.9	159.2	-89.87	-10,772.8	1,503.6	1,320.0	1,002.7	317.28	4.160	
18,900.0	8,832.0	19,052.4	8,832.0	160.4	160.6	-89.87	-10,872.7	1,504.4	1,320.0	999.9	320.11	4.124	
19,000.0	8,832.0	19,152.4	8,832.0	161.8	162.0	-89.87	-10,972.7	1,505.2	1,320.0	997.0	322.95	4.087	
19,074.0	8,832.0	19,226.4	8,832.0	162.7	163.1	-89.87	-11,046.8	1,505.8	1,320.0	995.1	324.89	4.063	
19,077.7	8,832.0	19,226.4	8,832.0	162.7	163.1	-89.87	-11,046.8	1,505.8	1,320.0	995.0	324.98	4.062 SF	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.3	0.3	0.0	0.0	89.04	0.3	20.0	20.0				
100.0	100.0	100.3	100.3	0.1	0.1	89.04	0.3	20.0	20.0	19.7	0.26	75.510	
200.0	200.0	200.3	200.3	0.5	0.5	89.04	0.3	20.0	20.0	19.0	0.98	20.353	
300.0	300.0	300.3	300.3	0.8	0.8	89.04	0.3	20.0	20.0	18.3	1.70	11.762	
400.0	400.0	400.3	400.3	1.2	1.2	89.04	0.3	20.0	20.0	17.6	2.42	8.270	
500.0	500.0	500.3	500.3	1.6	1.6	89.04	0.3	20.0	20.0	16.8	3.13	6.377	
600.0	600.0	600.3	600.3	1.9	1.9	89.04	0.3	20.0	20.0	16.1	3.85	5.190	
700.0	700.0	700.3	700.3	2.3	2.3	89.04	0.3	20.0	20.0	15.4	4.57	4.375	
800.0	800.0	800.3	800.3	2.6	2.6	89.04	0.3	20.0	20.0	14.7	5.28	3.781	
900.0	900.0	900.3	900.3	3.0	3.0	89.04	0.3	20.0	20.0	14.0	6.00	3.329	
1,000.0	1,000.0	1,000.3	1,000.3	3.4	3.4	89.04	0.3	20.0	20.0	13.3	6.72	2.974	
1,100.0	1,100.0	1,100.3	1,100.3	3.7	3.7	89.04	0.3	20.0	20.0	12.5	7.43	2.687	
1,200.0	1,200.0	1,200.3	1,200.3	4.1	4.1	89.04	0.3	20.0	20.0	11.8	8.15	2.451	
1,300.0	1,300.0	1,300.3	1,300.3	4.4	4.4	89.04	0.3	20.0	20.0	11.1	8.87	2.253	
1,400.0	1,400.0	1,400.3	1,400.3	4.8	4.8	89.04	0.3	20.0	20.0	10.4	9.58	2.084	
1,500.0	1,500.0	1,500.3	1,500.3	5.2	5.2	89.04	0.3	20.0	20.0	9.7	10.30	1.939	
1,600.0	1,600.0	1,600.3	1,600.3	5.5	5.5	89.04	0.3	20.0	20.0	9.0	11.02	1.813	
1,700.0	1,700.0	1,700.3	1,700.3	5.9	5.9	89.04	0.3	20.0	20.0	8.2	11.74	1.702	
1,800.0	1,800.0	1,800.3	1,800.3	6.2	6.2	89.04	0.3	20.0	20.0	7.5	12.45	1.604	
1,900.0	1,900.0	1,900.3	1,900.3	6.6	6.6	89.04	0.3	20.0	20.0	6.8	13.17	1.517	
2,000.0	2,000.0	2,000.3	2,000.3	6.9	6.9	89.04	0.3	20.0	20.0	6.1	13.89	1.439 Level 3	
2,100.0	2,100.0	2,100.3	2,100.3	7.3	7.3	-86.81	0.3	20.0	19.8	5.2	14.58	1.358 Level 3	
2,127.7	2,127.7	2,128.0	2,128.0	7.4	7.4	-90.00	0.3	20.0	19.8	5.0	14.77	1.338 Level 3, CC	
2,200.0	2,199.8	2,200.1	2,200.1	7.6	7.7	-101.77	0.3	20.0	20.2	4.9	15.27	1.323 Level 3, ES, SF	
2,300.0	2,299.5	2,299.8	2,299.8	7.9	8.0	-118.66	-1.1	21.0	23.5	7.5	15.94	1.473 Level 3	
2,400.0	2,398.7	2,399.6	2,399.4	8.3	8.3	-128.94	-5.2	24.1	29.6	13.0	16.59	1.784	
2,500.0	2,497.9	2,499.7	2,499.1	8.6	8.7	-131.19	-12.2	29.3	35.9	18.7	17.26	2.082	
2,600.0	2,597.1	2,599.7	2,598.5	8.9	9.0	-128.12	-22.0	36.6	41.5	23.6	17.94	2.313	
2,700.0	2,696.3	2,699.5	2,697.3	9.3	9.3	-124.13	-32.8	44.6	47.0	28.3	18.62	2.522	
2,800.0	2,795.5	2,799.3	2,796.2	9.6	9.7	-120.98	-43.7	52.7	52.6	33.3	19.32	2.723	
2,900.0	2,894.6	2,899.2	2,895.1	10.0	10.0	-118.45	-54.5	60.7	58.4	38.4	20.02	2.916	
3,000.0	2,993.8	2,999.0	2,994.0	10.4	10.4	-116.38	-65.3	68.8	64.3	43.5	20.73	3.100	
3,100.0	3,093.0	3,098.8	3,092.9	10.7	10.7	-114.65	-76.2	76.8	70.2	48.8	21.45	3.273	
3,200.0	3,192.2	3,198.6	3,191.8	11.1	11.1	-113.20	-87.0	84.9	76.2	54.0	22.17	3.437	
3,300.0	3,291.4	3,298.4	3,290.7	11.5	11.5	-111.96	-97.8	92.9	82.2	59.3	22.90	3.591	
3,400.0	3,390.6	3,398.2	3,389.5	11.8	11.8	-110.89	-108.7	101.0	88.3	64.7	23.64	3.737	
3,500.0	3,489.7	3,498.0	3,488.4	12.2	12.2	-109.95	-119.5	109.0	94.4	70.0	24.37	3.874	
3,600.0	3,588.9	3,597.8	3,587.3	12.6	12.6	-109.13	-130.4	117.0	100.5	75.4	25.12	4.003	
3,700.0	3,688.1	3,697.6	3,686.2	12.9	13.0	-108.41	-141.2	125.1	106.7	80.8	25.86	4.125	
3,800.0	3,787.3	3,797.4	3,785.1	13.3	13.3	-107.76	-152.0	133.1	112.8	86.2	26.61	4.240	
3,900.0	3,886.5	3,897.2	3,884.0	13.7	13.7	-107.18	-162.9	141.2	119.0	91.6	27.36	4.349	
4,000.0	3,985.7	3,997.0	3,982.9	14.1	14.1	-106.66	-173.7	149.2	125.2	97.1	28.12	4.452	
4,100.0	4,084.8	4,096.8	4,081.7	14.5	14.5	-106.19	-184.5	157.3	131.4	102.5	28.87	4.550	
4,200.0	4,184.0	4,196.6	4,180.6	14.8	14.8	-105.76	-195.4	165.3	137.6	107.9	29.63	4.642	
4,300.0	4,283.2	4,296.4	4,279.5	15.2	15.2	-105.36	-206.2	173.4	143.8	113.4	30.39	4.730	
4,400.0	4,382.4	4,396.2	4,378.4	15.6	15.6	-105.00	-217.0	181.4	150.0	118.8	31.16	4.813	
4,500.0	4,481.6	4,496.0	4,477.3	16.0	16.0	-104.67	-227.9	189.5	156.2	124.3	31.92	4.892	
4,600.0	4,580.8	4,595.8	4,576.2	16.4	16.4	-104.36	-238.7	197.5	162.4	129.7	32.69	4.967	
4,700.0	4,679.9	4,695.6	4,675.1	16.8	16.8	-104.08	-249.5	205.6	168.6	135.2	33.46	5.039	
4,800.0	4,779.1	4,795.4	4,773.9	17.2	17.2	-103.81	-260.4	213.6	174.8	140.6	34.23	5.108	
4,900.0	4,878.3	4,895.2	4,872.8	17.5	17.5	-103.57	-271.2	221.7	181.1	146.1	35.01	5.173	
5,000.0	4,977.5	4,995.0	4,971.7	17.9	17.9	-103.34	-282.0	229.7	187.3	151.5	35.78	5.235	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	5,076.7	5,094.8	5,070.6	18.3	18.3	-103.12	-292.9	237.8	193.5	157.0	36.55	5.295	
5,200.0	5,175.9	5,194.6	5,169.5	18.7	18.7	-102.92	-303.7	245.8	199.8	162.5	37.33	5.352	
5,300.0	5,275.0	5,294.4	5,268.4	19.1	19.1	-102.73	-314.5	253.9	206.0	167.9	38.11	5.406	
5,400.0	5,374.2	5,394.2	5,367.3	19.5	19.5	-102.56	-325.4	261.9	212.3	173.4	38.89	5.459	
5,500.0	5,473.4	5,494.0	5,466.1	19.9	19.9	-102.39	-336.2	270.0	218.5	178.8	39.67	5.509	
5,600.0	5,572.6	5,593.8	5,565.0	20.3	20.3	-102.23	-347.1	278.0	224.8	184.3	40.45	5.557	
5,700.0	5,671.8	5,693.6	5,663.9	20.7	20.7	-102.08	-357.9	286.1	231.0	189.8	41.23	5.603	
5,800.0	5,771.0	5,793.4	5,762.8	21.1	21.1	-101.94	-368.7	294.1	237.3	195.2	42.01	5.648	
5,900.0	5,870.1	5,893.2	5,861.7	21.4	21.5	-101.80	-379.6	302.2	243.5	200.7	42.79	5.690	
6,000.0	5,969.3	5,993.0	5,960.6	21.8	21.9	-101.67	-390.4	310.2	249.8	206.2	43.58	5.732	
6,100.0	6,068.5	6,092.8	6,059.5	22.2	22.3	-101.55	-401.2	318.3	256.0	211.7	44.36	5.771	
6,200.0	6,167.7	6,192.6	6,158.3	22.6	22.6	-101.44	-412.1	326.3	262.3	217.1	45.14	5.809	
6,300.0	6,266.9	6,292.4	6,257.2	23.0	23.0	-101.33	-422.9	334.4	268.5	222.6	45.93	5.846	
6,400.0	6,366.1	6,392.3	6,356.1	23.4	23.4	-101.22	-433.7	342.4	274.8	228.1	46.72	5.882	
6,500.0	6,465.2	6,492.1	6,455.0	23.8	23.8	-101.12	-444.6	350.4	281.0	233.5	47.50	5.916	
6,600.0	6,564.4	6,591.9	6,553.9	24.2	24.2	-101.02	-455.4	358.5	287.3	239.0	48.29	5.949	
6,700.0	6,663.6	6,691.7	6,652.8	24.6	24.6	-100.93	-466.2	366.5	293.5	244.5	49.08	5.981	
6,800.0	6,762.8	6,791.5	6,751.7	25.0	25.0	-100.84	-477.1	374.6	299.8	249.9	49.87	6.012	
6,900.0	6,862.0	6,891.3	6,850.5	25.4	25.4	-100.76	-487.9	382.6	306.1	255.4	50.65	6.042	
7,000.0	6,961.2	6,991.1	6,949.4	25.8	25.8	-100.68	-498.7	390.7	312.3	260.9	51.44	6.071	
7,100.0	7,060.3	7,090.9	7,048.3	26.2	26.2	-100.60	-509.6	398.7	318.6	266.4	52.23	6.099	
7,200.0	7,159.5	7,190.7	7,147.2	26.6	26.6	-100.54	-520.4	406.8	324.8	271.8	53.02	6.126	
7,300.0	7,259.0	7,290.5	7,246.1	27.0	27.0	-100.13	-531.2	414.8	330.6	276.8	53.80	6.146	
7,400.0	7,358.8	7,390.1	7,344.8	27.3	27.4	-99.15	-542.1	422.9	335.9	281.3	54.56	6.157	
7,500.0	7,458.7	7,489.5	7,443.3	27.7	27.8	-97.62	-552.9	430.9	340.8	285.5	55.29	6.164	
7,600.0	7,558.7	7,588.6	7,541.5	28.0	28.2	75.23	-563.6	438.9	345.7	289.7	55.98	6.175	
7,700.0	7,658.7	7,687.7	7,639.7	28.3	28.6	77.26	-574.4	446.9	351.0	294.3	56.66	6.194	
7,800.0	7,758.7	7,786.8	7,737.9	28.6	29.0	79.24	-585.1	454.9	356.7	299.4	57.33	6.221	
7,900.0	7,858.7	7,885.9	7,836.0	28.9	29.4	81.14	-595.9	462.8	362.8	304.8	58.00	6.255	
8,000.0	7,958.7	7,985.0	7,934.2	29.3	29.8	82.99	-606.6	470.8	369.4	310.7	58.67	6.296	
8,100.0	8,058.7	8,084.0	8,032.4	29.6	30.2	84.77	-617.4	478.8	376.3	316.9	59.33	6.342	
8,200.0	8,158.7	8,184.6	8,132.0	29.9	30.6	86.50	-628.3	486.9	383.5	323.5	60.01	6.391	
8,300.0	8,258.7	8,292.1	8,238.8	30.2	31.0	87.95	-637.7	493.9	389.6	328.9	60.73	6.416	
8,400.0	8,358.7	8,400.3	8,346.8	30.6	31.4	-90.65	-644.0	498.6	393.8	332.4	61.43	6.411	
8,500.0	8,457.9	8,508.3	8,454.7	30.9	31.8	-91.71	-647.0	500.8	396.0	333.8	62.22	6.365	
8,600.0	8,552.6	8,606.5	8,552.9	31.4	32.1	-95.81	-647.3	501.1	398.5	335.4	63.12	6.313	
8,700.0	8,638.6	8,692.5	8,638.9	31.9	32.4	-100.90	-647.3	501.1	407.2	343.2	64.06	6.357	
8,800.0	8,712.2	8,766.1	8,712.5	32.5	32.6	-105.20	-647.3	501.1	428.0	363.1	64.91	6.594	
8,900.0	8,770.1	8,824.0	8,770.4	33.1	32.8	-106.85	-647.3	501.1	464.9	399.4	65.52	7.096	
9,000.0	8,809.9	8,863.8	8,810.2	33.8	32.9	-104.28	-647.3	501.1	518.8	453.0	65.84	7.880	
9,100.0	8,829.8	8,883.7	8,830.1	34.5	33.0	-95.98	-647.3	501.1	586.8	520.9	65.90	8.904	
9,200.0	8,832.0	8,885.9	8,832.3	35.1	33.0	-90.00	-647.3	501.1	663.9	598.2	65.78	10.093	
9,300.0	8,832.0	8,885.9	8,832.3	35.9	33.0	-90.00	-647.3	501.1	746.6	680.9	65.64	11.374	
9,400.0	8,832.0	8,885.9	8,832.3	36.6	33.0	-90.00	-647.3	501.1	833.1	767.5	65.51	12.717	
9,500.0	8,832.0	8,885.9	8,832.3	37.4	33.0	-90.00	-647.3	501.1	922.3	856.9	65.39	14.104	
9,600.0	8,832.0	10,501.6	9,720.0	38.3	41.3	-155.96	-1,580.2	508.3	972.0	926.7	45.37	21.422	
9,700.0	8,832.0	10,601.6	9,720.0	39.2	42.1	-155.96	-1,680.2	509.1	972.0	925.8	46.24	21.020	
9,800.0	8,832.0	10,701.6	9,720.0	40.1	43.0	-155.96	-1,780.2	509.8	972.0	924.9	47.17	20.608	
9,900.0	8,832.0	10,801.6	9,720.0	41.0	43.8	-155.96	-1,880.2	510.6	972.0	923.9	48.15	20.189	
10,000.0	8,832.0	10,901.6	9,720.0	42.0	44.7	-155.96	-1,980.2	511.4	972.0	922.9	49.18	19.767	
10,100.0	8,832.0	11,001.6	9,720.0	43.0	45.6	-155.96	-2,080.2	512.2	972.0	921.8	50.25	19.343	
10,200.0	8,832.0	11,101.6	9,720.0	44.0	46.6	-155.96	-2,180.2	512.9	972.0	920.7	51.37	18.921	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	8,832.0	11,201.6	9,720.0	45.0	47.6	-155.96	-2,280.2	513.7	972.0	919.5	52.53	18.503	
10,400.0	8,832.0	11,301.6	9,720.0	46.1	48.6	-155.96	-2,380.2	514.5	972.0	918.3	53.74	18.089	
10,500.0	8,832.0	11,401.6	9,720.0	47.2	49.6	-155.96	-2,480.2	515.3	972.0	917.1	54.97	17.682	
10,600.0	8,832.0	11,501.6	9,720.0	48.3	50.6	-155.96	-2,580.2	516.1	972.0	915.8	56.24	17.282	
10,700.0	8,832.0	11,601.6	9,720.0	49.4	51.7	-155.96	-2,680.2	516.8	972.0	914.5	57.55	16.891	
10,800.0	8,832.0	11,701.6	9,720.0	50.6	52.8	-155.96	-2,780.2	517.6	972.0	913.1	58.88	16.509	
10,900.0	8,832.0	11,801.6	9,720.0	51.7	53.9	-155.96	-2,880.2	518.4	972.0	911.8	60.24	16.136	
11,000.0	8,832.0	11,901.6	9,720.0	52.9	55.0	-155.96	-2,980.2	519.2	972.0	910.4	61.62	15.773	
11,100.0	8,832.0	12,001.6	9,720.0	54.1	56.1	-155.96	-3,080.2	519.9	972.0	909.0	63.03	15.421	
11,200.0	8,832.0	12,101.6	9,720.0	55.3	57.3	-155.96	-3,180.2	520.7	972.0	907.6	64.47	15.078	
11,300.0	8,832.0	12,201.6	9,720.0	56.5	58.4	-155.96	-3,280.1	521.5	972.0	906.1	65.92	14.745	
11,400.0	8,832.0	12,301.6	9,720.0	57.7	59.6	-155.96	-3,380.1	522.3	972.0	904.6	67.39	14.423	
11,500.0	8,832.0	12,401.6	9,720.0	58.9	60.8	-155.96	-3,480.1	523.0	972.0	903.1	68.88	14.111	
11,600.0	8,832.0	12,501.6	9,720.0	60.2	62.0	-155.96	-3,580.1	523.8	972.0	901.6	70.39	13.808	
11,700.0	8,832.0	12,601.6	9,720.0	61.4	63.2	-155.96	-3,680.1	524.6	972.0	900.1	71.92	13.516	
11,800.0	8,832.0	12,701.6	9,720.0	62.7	64.4	-155.96	-3,780.1	525.4	972.0	898.6	73.46	13.232	
11,900.0	8,832.0	12,801.6	9,720.0	63.9	65.6	-155.96	-3,880.1	526.1	972.0	897.0	75.01	12.958	
12,000.0	8,832.0	12,901.6	9,720.0	65.2	66.8	-155.96	-3,980.1	526.9	972.0	895.4	76.58	12.693	
12,100.0	8,832.0	13,001.6	9,720.0	66.5	68.1	-155.96	-4,080.1	527.7	972.0	893.9	78.16	12.436	
12,200.0	8,832.0	13,101.6	9,720.0	67.8	69.3	-155.96	-4,180.1	528.5	972.0	892.3	79.75	12.188	
12,300.0	8,832.0	13,201.6	9,720.0	69.1	70.6	-155.96	-4,280.1	529.2	972.0	890.7	81.36	11.948	
12,400.0	8,832.0	13,301.6	9,720.0	70.4	71.8	-155.96	-4,380.1	530.0	972.0	889.1	82.97	11.715	
12,500.0	8,832.0	13,401.6	9,720.0	71.7	73.1	-155.96	-4,480.1	530.8	972.0	887.4	84.59	11.491	
12,600.0	8,832.0	13,501.6	9,720.0	73.0	74.4	-155.96	-4,580.1	531.6	972.0	885.8	86.23	11.273	
12,700.0	8,832.0	13,601.6	9,720.0	74.3	75.7	-155.96	-4,680.1	532.3	972.0	884.2	87.87	11.062	
12,800.0	8,832.0	13,701.6	9,720.0	75.6	76.9	-155.96	-4,780.1	533.1	972.0	882.5	89.52	10.858	
12,900.0	8,832.0	13,801.6	9,720.0	76.9	78.2	-155.96	-4,880.1	533.9	972.0	880.8	91.18	10.661	
13,000.0	8,832.0	13,901.6	9,720.0	78.3	79.5	-155.96	-4,980.1	534.7	972.0	879.2	92.84	10.470	
13,100.0	8,832.0	14,001.6	9,720.0	79.6	80.8	-155.96	-5,080.1	535.5	972.0	877.5	94.51	10.284	
13,200.0	8,832.0	14,101.6	9,720.0	80.9	82.2	-155.96	-5,180.1	536.2	972.0	875.8	96.19	10.105	
13,300.0	8,832.0	14,201.6	9,720.0	82.3	83.5	-155.96	-5,280.1	537.0	972.0	874.1	97.88	9.931	
13,400.0	8,832.0	14,301.6	9,720.0	83.6	84.8	-155.96	-5,380.1	537.8	972.0	872.5	99.57	9.762	
13,500.0	8,832.0	14,401.6	9,720.0	85.0	86.1	-155.96	-5,480.1	538.6	972.0	870.8	101.27	9.599	
13,600.0	8,832.0	14,501.6	9,720.0	86.3	87.4	-155.96	-5,580.1	539.3	972.0	869.1	102.97	9.440	
13,700.0	8,832.0	14,601.6	9,720.0	87.7	88.8	-155.96	-5,680.1	540.1	972.0	867.3	104.68	9.286	
13,800.0	8,832.0	14,701.6	9,720.0	89.0	90.1	-155.96	-5,780.1	540.9	972.0	865.6	106.39	9.136	
13,900.0	8,832.0	14,801.6	9,720.0	90.4	91.4	-155.96	-5,880.1	541.7	972.0	863.9	108.11	8.991	
14,000.0	8,832.0	14,901.6	9,720.0	91.8	92.8	-155.96	-5,980.1	542.4	972.0	862.2	109.83	8.850	
14,100.0	8,832.0	15,001.6	9,720.0	93.1	94.1	-155.96	-6,080.1	543.2	972.0	860.5	111.56	8.713	
14,200.0	8,832.0	15,101.6	9,720.0	94.5	95.5	-155.96	-6,180.1	544.0	972.0	858.7	113.29	8.580	
14,300.0	8,832.0	15,201.6	9,720.0	95.9	96.8	-155.96	-6,280.1	544.8	972.0	857.0	115.02	8.451	
14,400.0	8,832.0	15,301.6	9,720.0	97.2	98.2	-155.96	-6,380.1	545.5	972.0	855.3	116.76	8.325	
14,500.0	8,832.0	15,401.6	9,720.0	98.6	99.5	-155.96	-6,480.1	546.3	972.0	853.5	118.50	8.203	
14,600.0	8,832.0	15,501.6	9,720.0	100.0	100.9	-155.96	-6,580.1	547.1	972.0	851.8	120.25	8.084	
14,700.0	8,832.0	15,601.6	9,720.0	101.4	102.2	-155.96	-6,680.0	547.9	972.0	850.0	121.99	7.968	
14,800.0	8,832.0	15,701.6	9,720.0	102.7	103.6	-155.96	-6,780.0	548.6	972.0	848.3	123.74	7.855	
14,900.0	8,832.0	15,801.6	9,720.0	104.1	105.0	-155.96	-6,880.0	549.4	972.0	846.5	125.50	7.745	
15,000.0	8,832.0	15,901.6	9,720.0	105.5	106.3	-155.96	-6,980.0	550.2	972.0	844.8	127.26	7.638	
15,100.0	8,832.0	16,001.6	9,720.0	106.9	107.7	-155.96	-7,080.0	551.0	972.0	843.0	129.02	7.534	
15,200.0	8,832.0	16,101.6	9,720.0	108.3	109.1	-155.96	-7,180.0	551.7	972.0	841.2	130.78	7.433	
15,300.0	8,832.0	16,201.6	9,720.0	109.7	110.4	-155.96	-7,280.0	552.5	972.0	839.5	132.54	7.334	
15,400.0	8,832.0	16,301.6	9,720.0	111.1	111.8	-155.96	-7,380.0	553.3	972.0	837.7	134.31	7.237	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	
15,500.0	8,832.0	16,401.6	9,720.0	112.5	113.2	-155.96	-7,480.0	554.1	972.0	835.9	136.08	7.143
15,600.0	8,832.0	16,501.6	9,720.0	113.8	114.6	-155.96	-7,580.0	554.9	972.0	834.2	137.85	7.051
15,700.0	8,832.0	16,601.6	9,720.0	115.2	116.0	-155.96	-7,680.0	555.6	972.0	832.4	139.63	6.962
15,800.0	8,832.0	16,701.6	9,720.0	116.6	117.3	-155.96	-7,780.0	556.4	972.0	830.6	141.40	6.874
15,900.0	8,832.0	16,801.6	9,720.0	118.0	118.7	-155.96	-7,880.0	557.2	972.0	828.8	143.18	6.789
16,000.0	8,832.0	16,901.6	9,720.0	119.4	120.1	-155.96	-7,980.0	558.0	972.0	827.1	144.96	6.705
16,100.0	8,832.0	17,001.6	9,720.0	120.8	121.5	-155.96	-8,080.0	558.7	972.0	825.3	146.74	6.624
16,200.0	8,832.0	17,101.6	9,720.0	122.2	122.9	-155.96	-8,180.0	559.5	972.0	823.5	148.53	6.544
16,300.0	8,832.0	17,201.6	9,720.0	123.6	124.3	-155.96	-8,280.0	560.3	972.0	821.7	150.31	6.467
16,400.0	8,832.0	17,301.6	9,720.0	125.0	125.7	-155.96	-8,380.0	561.1	972.0	819.9	152.10	6.391
16,500.0	8,832.0	17,401.6	9,720.0	126.4	127.1	-155.96	-8,480.0	561.8	972.0	818.1	153.89	6.316
16,600.0	8,832.0	17,501.6	9,720.0	127.8	128.4	-155.96	-8,580.0	562.6	972.0	816.3	155.68	6.244
16,700.0	8,832.0	17,601.6	9,720.0	129.3	129.8	-155.96	-8,680.0	563.4	972.0	814.6	157.47	6.173
16,800.0	8,832.0	17,701.6	9,720.0	130.7	131.2	-155.96	-8,780.0	564.2	972.0	812.8	159.26	6.103
16,900.0	8,832.0	17,801.6	9,720.0	132.1	132.6	-155.96	-8,880.0	564.9	972.0	811.0	161.06	6.035
17,000.0	8,832.0	17,901.6	9,720.0	133.5	134.0	-155.96	-8,980.0	565.7	972.0	809.2	162.85	5.969
17,100.0	8,832.0	18,001.6	9,720.0	134.9	135.4	-155.96	-9,080.0	566.5	972.0	807.4	164.65	5.904
17,200.0	8,832.0	18,101.6	9,720.0	136.3	136.8	-155.96	-9,180.0	567.3	972.0	805.6	166.45	5.840
17,300.0	8,832.0	18,201.6	9,720.0	137.7	138.2	-155.96	-9,280.0	568.0	972.0	803.8	168.25	5.777
17,400.0	8,832.0	18,301.6	9,720.0	139.1	139.6	-155.96	-9,380.0	568.8	972.0	802.0	170.05	5.716
17,500.0	8,832.0	18,401.6	9,720.0	140.5	141.0	-155.96	-9,480.0	569.6	972.0	800.2	171.85	5.656
17,600.0	8,832.0	18,501.6	9,720.0	141.9	142.4	-155.96	-9,580.0	570.4	972.0	798.4	173.66	5.597
17,700.0	8,832.0	18,601.6	9,720.0	143.4	143.8	-155.96	-9,680.0	571.1	972.0	796.6	175.46	5.540
17,800.0	8,832.0	18,701.6	9,720.0	144.8	145.2	-155.96	-9,780.0	571.9	972.0	794.8	177.27	5.483
17,900.0	8,832.0	18,801.6	9,720.0	146.2	146.7	-155.96	-9,880.0	572.7	972.0	793.0	179.07	5.428
18,000.0	8,832.0	18,901.6	9,720.0	147.6	148.1	-155.96	-9,979.9	573.5	972.0	791.1	180.88	5.374
18,100.0	8,832.0	19,001.6	9,720.0	149.0	149.5	-155.96	-10,079.9	574.2	972.0	789.3	182.69	5.321
18,200.0	8,832.0	19,101.6	9,720.0	150.4	150.9	-155.96	-10,179.9	575.0	972.0	787.5	184.50	5.269
18,300.0	8,832.0	19,201.6	9,720.0	151.9	152.3	-155.96	-10,279.9	575.8	972.0	785.7	186.31	5.217
18,400.0	8,832.0	19,301.6	9,720.0	153.3	153.7	-155.96	-10,379.9	576.6	972.0	783.9	188.12	5.167
18,500.0	8,832.0	19,401.6	9,720.0	154.7	155.1	-155.96	-10,479.9	577.4	972.0	782.1	189.93	5.118
18,600.0	8,832.0	19,501.6	9,720.0	156.1	156.5	-155.96	-10,579.9	578.1	972.0	780.3	191.74	5.069
18,700.0	8,832.0	19,601.6	9,720.0	157.5	157.9	-155.96	-10,679.9	578.9	972.0	778.5	193.56	5.022
18,800.0	8,832.0	19,701.6	9,720.0	158.9	159.3	-155.96	-10,779.9	579.7	972.0	776.7	195.37	4.975
18,900.0	8,832.0	19,801.6	9,720.0	160.4	160.8	-155.96	-10,879.9	580.5	972.0	774.8	197.19	4.929
19,000.0	8,832.0	19,901.6	9,720.0	161.8	162.2	-155.96	-10,979.9	581.2	972.0	773.0	199.00	4.884
19,074.7	8,832.0	19,976.3	9,720.0	162.7	163.2	-155.96	-11,054.6	581.8	972.0	771.9	200.12	4.857
19,077.7	8,832.0	19,978.2	9,720.0	162.7	163.3	-155.96	-11,056.5	581.8	972.0	771.9	200.17	4.856

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-91.07	-0.4	-20.0	20.0				
100.0	100.0	99.9	99.9	0.1	0.1	-91.07	-0.4	-20.0	20.0	19.8	0.26	76.060	
200.0	200.0	199.9	199.9	0.5	0.5	-91.07	-0.4	-20.0	20.0	19.0	0.98	20.438	
300.0	300.0	299.9	299.9	0.8	0.8	-91.07	-0.4	-20.0	20.0	18.3	1.70	11.803	
400.0	400.0	399.9	399.9	1.2	1.2	-91.07	-0.4	-20.0	20.0	17.6	2.41	8.298	
500.0	500.0	499.9	499.9	1.6	1.6	-91.07	-0.4	-20.0	20.0	16.9	3.13	6.398	
600.0	600.0	599.9	599.9	1.9	1.9	-91.07	-0.4	-20.0	20.0	16.2	3.85	5.206	
700.0	700.0	699.9	699.9	2.3	2.3	-91.07	-0.4	-20.0	20.0	15.5	4.56	4.388	
800.0	800.0	799.9	799.9	2.6	2.6	-91.07	-0.4	-20.0	20.0	14.7	5.28	3.792	
900.0	900.0	899.9	899.9	3.0	3.0	-91.07	-0.4	-20.0	20.0	14.0	6.00	3.339	
1,000.0	1,000.0	999.9	999.9	3.4	3.4	-91.07	-0.4	-20.0	20.0	13.3	6.72	2.983	
1,100.0	1,100.0	1,099.9	1,099.9	3.7	3.7	-91.07	-0.4	-20.0	20.0	12.6	7.43	2.695	
1,200.0	1,200.0	1,199.9	1,199.9	4.1	4.1	-91.07	-0.4	-20.0	20.0	11.9	8.15	2.458	
1,300.0	1,300.0	1,299.9	1,299.9	4.4	4.4	-91.07	-0.4	-20.0	20.0	11.2	8.87	2.259	
1,400.0	1,400.0	1,399.9	1,399.9	4.8	4.8	-91.07	-0.4	-20.0	20.0	10.4	9.58	2.090	
1,500.0	1,500.0	1,499.9	1,499.9	5.2	5.1	-91.07	-0.4	-20.0	20.0	9.7	10.30	1.945	
1,600.0	1,600.0	1,599.9	1,599.9	5.5	5.5	-91.07	-0.4	-20.0	20.0	9.0	11.02	1.818	
1,700.0	1,700.0	1,699.9	1,699.9	5.9	5.9	-91.07	-0.4	-20.0	20.0	8.3	11.73	1.707	
1,800.0	1,800.0	1,799.9	1,799.9	6.2	6.2	-91.07	-0.4	-20.0	20.0	7.6	12.45	1.609	
1,900.0	1,900.0	1,899.9	1,899.9	6.6	6.6	-91.07	-0.4	-20.0	20.0	6.9	13.17	1.521	
2,000.0	2,000.0	1,999.9	1,999.9	6.9	6.9	-91.07	-0.4	-20.0	20.0	6.1	13.89	1.443 Level 3, CC, ES, SF	
2,100.0	2,100.0	2,099.5	2,099.5	7.3	7.3	98.78	-1.8	-20.9	21.2	6.6	14.56	1.457 Level 3	
2,200.0	2,199.8	2,199.0	2,198.9	7.6	7.6	100.44	-6.3	-23.6	24.8	9.6	15.21	1.629	
2,300.0	2,299.5	2,298.4	2,297.8	7.9	7.9	102.32	-13.6	-28.1	30.7	14.9	15.85	1.939	
2,400.0	2,398.7	2,397.6	2,396.3	8.3	8.3	103.84	-23.8	-34.4	39.0	22.5	16.51	2.364	
2,500.0	2,497.9	2,497.2	2,495.1	8.6	8.6	104.64	-34.9	-41.2	48.0	30.8	17.18	2.793	
2,600.0	2,597.1	2,596.8	2,593.8	8.9	9.0	105.18	-46.0	-48.0	57.0	39.1	17.87	3.188	
2,700.0	2,696.3	2,696.4	2,692.6	9.3	9.3	105.58	-57.2	-54.8	65.9	47.4	18.56	3.552	
2,800.0	2,795.5	2,796.0	2,791.3	9.6	9.7	105.88	-68.3	-61.7	74.9	55.6	19.26	3.889	
2,900.0	2,894.6	2,895.6	2,890.0	10.0	10.0	106.12	-79.4	-68.5	83.9	63.9	19.97	4.201	
3,000.0	2,993.8	2,995.2	2,988.8	10.4	10.4	106.31	-90.5	-75.3	92.8	72.2	20.68	4.490	
3,100.0	3,093.0	3,094.8	3,087.5	10.7	10.7	106.47	-101.6	-82.1	101.8	80.4	21.40	4.758	
3,200.0	3,192.2	3,194.4	3,186.2	11.1	11.1	106.60	-112.8	-88.9	110.8	88.7	22.13	5.008	
3,300.0	3,291.4	3,294.0	3,285.0	11.5	11.5	106.71	-123.9	-95.8	119.8	96.9	22.86	5.241	
3,400.0	3,390.6	3,393.6	3,383.7	11.8	11.8	106.81	-135.0	-102.6	128.8	105.2	23.59	5.458	
3,500.0	3,489.7	3,493.2	3,482.5	12.2	12.2	106.89	-146.1	-109.4	137.7	113.4	24.33	5.662	
3,600.0	3,588.9	3,592.8	3,581.2	12.6	12.6	106.97	-157.3	-116.2	146.7	121.7	25.07	5.853	
3,700.0	3,688.1	3,692.4	3,679.9	12.9	13.0	107.03	-168.4	-123.0	155.7	129.9	25.81	6.032	
3,800.0	3,787.3	3,792.0	3,778.7	13.3	13.3	107.09	-179.5	-129.9	164.7	138.1	26.56	6.200	
3,900.0	3,886.5	3,891.5	3,877.4	13.7	13.7	107.14	-190.6	-136.7	173.7	146.4	27.31	6.358	
4,000.0	3,985.7	3,991.1	3,976.1	14.1	14.1	107.19	-201.7	-143.5	182.6	154.6	28.07	6.508	
4,100.0	4,084.8	4,090.7	4,074.9	14.5	14.5	107.23	-212.9	-150.3	191.6	162.8	28.82	6.649	
4,200.0	4,184.0	4,190.3	4,173.6	14.8	14.9	107.27	-224.0	-157.1	200.6	171.0	29.58	6.782	
4,300.0	4,283.2	4,289.9	4,272.4	15.2	15.2	107.31	-235.1	-164.0	209.6	179.3	30.34	6.908	
4,400.0	4,382.4	4,389.5	4,371.1	15.6	15.6	107.34	-246.2	-170.8	218.6	187.5	31.10	7.028	
4,500.0	4,481.6	4,489.1	4,469.8	16.0	16.0	107.37	-257.3	-177.6	227.6	195.7	31.86	7.142	
4,600.0	4,580.8	4,588.7	4,568.6	16.4	16.4	107.40	-268.5	-184.4	236.5	203.9	32.63	7.250	
4,700.0	4,679.9	4,688.3	4,667.3	16.8	16.8	107.42	-279.6	-191.2	245.5	212.1	33.39	7.352	
4,800.0	4,779.1	4,787.9	4,766.1	17.2	17.2	107.45	-290.7	-198.1	254.5	220.3	34.16	7.450	
4,900.0	4,878.3	4,887.5	4,864.8	17.5	17.6	107.47	-301.8	-204.9	263.5	228.5	34.93	7.543	
5,000.0	4,977.5	4,987.1	4,963.5	17.9	18.0	107.49	-313.0	-211.7	272.5	236.8	35.70	7.632	
5,100.0	5,076.7	5,086.7	5,062.3	18.3	18.3	107.51	-324.1	-218.5	281.4	245.0	36.47	7.717	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.0	5,175.9	5,186.3	5,161.0	18.7	18.7	107.53	-335.2	-225.3	290.4	253.2	37.24	7.798	
5,300.0	5,275.0	5,285.9	5,259.7	19.1	19.1	107.55	-346.3	-232.2	299.4	261.4	38.02	7.876	
5,400.0	5,374.2	5,385.5	5,358.5	19.5	19.5	107.56	-357.4	-239.0	308.4	269.6	38.79	7.950	
5,500.0	5,473.4	5,485.1	5,457.2	19.9	19.9	107.58	-368.6	-245.8	317.4	277.8	39.56	8.022	
5,600.0	5,572.6	5,584.7	5,556.0	20.3	20.3	107.59	-379.7	-252.6	326.3	286.0	40.34	8.090	
5,700.0	5,671.8	5,684.3	5,654.7	20.7	20.7	107.60	-390.8	-259.4	335.3	294.2	41.12	8.156	
5,800.0	5,771.0	5,783.9	5,753.4	21.1	21.1	107.62	-401.9	-266.3	344.3	302.4	41.89	8.219	
5,900.0	5,870.1	5,883.5	5,852.2	21.4	21.5	107.63	-413.0	-273.1	353.3	310.6	42.67	8.279	
6,000.0	5,969.3	5,983.1	5,950.9	21.8	21.9	107.64	-424.2	-279.9	362.3	318.8	43.45	8.338	
6,100.0	6,068.5	6,082.7	6,049.6	22.2	22.3	107.65	-435.3	-286.7	371.3	327.0	44.23	8.394	
6,200.0	6,167.7	6,182.3	6,148.4	22.6	22.7	107.66	-446.4	-293.5	380.2	335.2	45.01	8.448	
6,300.0	6,266.9	6,281.8	6,247.1	23.0	23.1	107.67	-457.5	-300.3	389.2	343.4	45.79	8.500	
6,400.0	6,366.1	6,381.4	6,345.9	23.4	23.4	107.68	-468.7	-307.2	398.2	351.6	46.57	8.550	
6,500.0	6,465.2	6,481.0	6,444.6	23.8	23.8	107.69	-479.8	-314.0	407.2	359.8	47.35	8.599	
6,600.0	6,564.4	6,580.6	6,543.3	24.2	24.2	107.70	-490.9	-320.8	416.2	368.0	48.13	8.646	
6,700.0	6,663.6	6,680.2	6,642.1	24.6	24.6	107.71	-502.0	-327.6	425.1	376.2	48.92	8.691	
6,800.0	6,762.8	6,779.8	6,740.8	25.0	25.0	107.72	-513.1	-334.4	434.1	384.4	49.70	8.735	
6,900.0	6,862.0	6,879.4	6,839.5	25.4	25.4	107.73	-524.3	-341.3	443.1	392.6	50.48	8.777	
7,000.0	6,961.2	6,979.0	6,938.3	25.8	25.8	107.73	-535.4	-348.1	452.1	400.8	51.27	8.818	
7,100.0	7,060.3	7,078.6	7,037.0	26.2	26.2	107.74	-546.5	-354.9	461.1	409.0	52.05	8.858	
7,200.0	7,159.5	7,178.2	7,135.8	26.6	26.6	107.78	-557.6	-361.7	470.0	417.2	52.83	8.896	
7,300.0	7,259.0	7,277.8	7,234.5	27.0	27.0	107.64	-568.8	-368.5	478.2	424.6	53.61	8.921	
7,400.0	7,358.8	7,377.4	7,333.2	27.3	27.4	107.10	-579.9	-375.4	485.4	431.0	54.36	8.929	
7,500.0	7,458.7	7,476.8	7,431.8	27.7	27.8	106.18	-591.0	-382.2	491.6	436.6	55.10	8.923	
7,600.0	7,558.7	7,576.0	7,530.1	28.0	28.2	-84.27	-602.0	-389.0	497.3	441.5	55.80	8.913	
7,700.0	7,658.7	7,675.1	7,628.4	28.3	28.6	-85.60	-613.1	-395.8	503.2	446.7	56.49	8.908	
7,800.0	7,758.7	7,774.3	7,726.7	28.6	29.0	-86.91	-624.2	-402.5	509.3	452.2	57.18	8.908	
7,900.0	7,858.7	7,873.4	7,825.0	28.9	29.4	-88.18	-635.3	-409.3	515.8	457.9	57.87	8.913	
8,000.0	7,958.7	7,981.8	7,932.6	29.3	29.8	-89.37	-645.9	-415.9	521.6	463.0	58.62	8.899	
8,100.0	8,058.7	8,092.0	8,042.5	29.6	30.2	-90.17	-653.2	-420.3	525.7	466.3	59.35	8.856	
8,200.0	8,158.7	8,202.7	8,153.1	29.9	30.6	-90.57	-656.9	-422.6	527.7	467.7	60.06	8.786	
8,300.0	8,258.7	8,308.2	8,258.6	30.2	30.9	-90.63	-657.4	-422.9	528.0	467.3	60.72	8.695	
8,400.0	8,358.7	8,408.2	8,358.6	30.6	31.3	89.82	-657.4	-422.9	528.0	466.6	61.36	8.605	
8,435.1	8,393.8	8,443.3	8,393.7	30.7	31.4	89.99	-657.4	-422.9	528.0	466.4	61.61	8.570	
8,500.0	8,457.9	8,507.4	8,457.8	30.9	31.6	91.02	-657.4	-422.9	528.1	466.0	62.09	8.506	
8,600.0	8,552.6	8,602.1	8,552.5	31.4	31.9	94.07	-657.4	-422.9	529.6	466.7	62.90	8.420	
8,700.0	8,638.6	8,688.1	8,638.5	31.9	32.1	97.97	-657.4	-422.9	536.0	472.2	63.74	8.409	
8,800.0	8,712.2	8,761.7	8,712.1	32.5	32.4	101.31	-657.4	-422.9	551.5	487.0	64.52	8.549	
8,900.0	8,770.1	8,819.6	8,770.0	33.1	32.6	102.65	-657.4	-422.9	580.3	515.1	65.14	8.908	
9,000.0	8,809.9	8,859.4	8,809.8	33.8	32.7	100.71	-657.4	-422.9	623.8	558.3	65.53	9.520	
9,100.0	8,829.8	8,943.8	8,893.9	34.5	33.0	101.21	-662.8	-422.9	680.6	614.7	65.89	10.329	
9,200.0	8,832.0	9,674.7	9,300.0	35.1	37.0	131.56	-1,187.4	-418.8	705.6	648.0	57.61	12.247	
9,300.0	8,832.0	9,774.7	9,300.0	35.9	37.7	131.56	-1,287.4	-418.0	705.6	647.0	58.67	12.028	
9,400.0	8,832.0	9,874.7	9,300.0	36.6	38.4	131.56	-1,387.4	-417.2	705.6	645.8	59.79	11.801	
9,500.0	8,832.0	9,974.7	9,300.0	37.4	39.2	131.56	-1,487.4	-416.5	705.6	644.6	61.00	11.568	
9,600.0	8,832.0	10,074.7	9,300.0	38.3	40.0	131.56	-1,587.4	-415.7	705.6	643.4	62.27	11.332	
9,700.0	8,832.0	10,174.7	9,300.0	39.2	40.8	131.56	-1,687.4	-414.9	705.6	642.0	63.61	11.093	
9,800.0	8,832.0	10,274.7	9,300.0	40.1	41.7	131.56	-1,787.4	-414.1	705.6	640.6	65.01	10.855	
9,900.0	8,832.0	10,374.7	9,300.0	41.0	42.6	131.56	-1,887.4	-413.4	705.6	639.2	66.46	10.617	
10,000.0	8,832.0	10,474.7	9,300.0	42.0	43.5	131.56	-1,987.4	-412.6	705.6	637.6	67.98	10.381	
10,100.0	8,832.0	10,574.7	9,300.0	43.0	44.5	131.56	-2,087.4	-411.8	705.6	636.1	69.54	10.147	
10,200.0	8,832.0	10,674.7	9,300.0	44.0	45.4	131.56	-2,187.4	-411.0	705.6	634.5	71.14	9.918	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
10,300.0	8,832.0	10,774.7	9,300.0	45.0	46.4	131.56	-2,287.3	-410.3	705.6	632.8	72.80	9.693
10,400.0	8,832.0	10,874.7	9,300.0	46.1	47.5	131.56	-2,387.3	-409.5	705.6	631.1	74.49	9.473
10,500.0	8,832.0	10,974.7	9,300.0	47.2	48.5	131.56	-2,487.3	-408.7	705.6	629.4	76.22	9.257
10,600.0	8,832.0	11,074.7	9,300.0	48.3	49.6	131.56	-2,587.3	-407.9	705.6	627.6	77.99	9.048
10,700.0	8,832.0	11,174.7	9,300.0	49.4	50.7	131.56	-2,687.3	-407.2	705.6	625.8	79.79	8.843
10,800.0	8,832.0	11,274.7	9,300.0	50.6	51.8	131.56	-2,787.3	-406.4	705.6	624.0	81.62	8.645
10,900.0	8,832.0	11,374.7	9,300.0	51.7	52.9	131.56	-2,887.3	-405.6	705.6	622.1	83.48	8.452
11,000.0	8,832.0	11,474.7	9,300.0	52.9	54.0	131.56	-2,987.3	-404.8	705.6	620.2	85.37	8.265
11,100.0	8,832.0	11,574.7	9,300.0	54.1	55.2	131.56	-3,087.3	-404.0	705.6	618.3	87.29	8.084
11,200.0	8,832.0	11,674.7	9,300.0	55.3	56.4	131.56	-3,187.3	-403.3	705.6	616.4	89.22	7.908
11,300.0	8,832.0	11,774.7	9,300.0	56.5	57.5	131.56	-3,287.3	-402.5	705.6	614.4	91.18	7.739
11,400.0	8,832.0	11,874.7	9,300.0	57.7	58.7	131.56	-3,387.3	-401.7	705.6	612.5	93.16	7.574
11,500.0	8,832.0	11,974.7	9,300.0	58.9	59.9	131.56	-3,487.3	-400.9	705.6	610.5	95.16	7.415
11,600.0	8,832.0	12,074.7	9,300.0	60.2	61.1	131.56	-3,587.3	-400.2	705.6	608.4	97.18	7.261
11,700.0	8,832.0	12,174.7	9,300.0	61.4	62.4	131.56	-3,687.3	-399.4	705.6	606.4	99.22	7.112
11,800.0	8,832.0	12,274.7	9,300.0	62.7	63.6	131.56	-3,787.3	-398.6	705.6	604.3	101.27	6.968
11,900.0	8,832.0	12,374.7	9,300.0	63.9	64.8	131.56	-3,887.3	-397.8	705.6	602.3	103.34	6.828
12,000.0	8,832.0	12,474.7	9,300.0	65.2	66.1	131.56	-3,987.3	-397.1	705.6	600.2	105.42	6.693
12,100.0	8,832.0	12,574.7	9,300.0	66.5	67.3	131.56	-4,087.3	-396.3	705.6	598.1	107.52	6.563
12,200.0	8,832.0	12,674.7	9,300.0	67.8	68.6	131.56	-4,187.3	-395.5	705.6	596.0	109.62	6.437
12,300.0	8,832.0	12,774.7	9,300.0	69.1	69.9	131.56	-4,287.3	-394.7	705.6	593.9	111.74	6.315
12,400.0	8,832.0	12,874.7	9,300.0	70.4	71.1	131.56	-4,387.3	-394.0	705.6	591.7	113.88	6.196
12,500.0	8,832.0	12,974.7	9,300.0	71.7	72.4	131.56	-4,487.3	-393.2	705.6	589.6	116.02	6.082
12,600.0	8,832.0	13,074.7	9,300.0	73.0	73.7	131.56	-4,587.3	-392.4	705.6	587.4	118.17	5.971
12,700.0	8,832.0	13,174.7	9,300.0	74.3	75.0	131.56	-4,687.3	-391.6	705.6	585.3	120.33	5.864
12,800.0	8,832.0	13,274.7	9,300.0	75.6	76.3	131.56	-4,787.3	-390.9	705.6	583.1	122.50	5.760
12,900.0	8,832.0	13,374.7	9,300.0	76.9	77.6	131.56	-4,887.3	-390.1	705.6	580.9	124.68	5.659
13,000.0	8,832.0	13,474.7	9,300.0	78.3	78.9	131.56	-4,987.3	-389.3	705.6	578.7	126.87	5.562
13,100.0	8,832.0	13,574.7	9,300.0	79.6	80.3	131.56	-5,087.3	-388.5	705.6	576.6	129.07	5.467
13,200.0	8,832.0	13,674.7	9,300.0	80.9	81.6	131.56	-5,187.3	-387.8	705.6	574.4	131.27	5.375
13,300.0	8,832.0	13,774.7	9,300.0	82.3	82.9	131.56	-5,287.3	-387.0	705.6	572.1	133.48	5.286
13,400.0	8,832.0	13,874.7	9,300.0	83.6	84.2	131.56	-5,387.3	-386.2	705.6	569.9	135.70	5.200
13,500.0	8,832.0	13,974.7	9,300.0	85.0	85.6	131.56	-5,487.3	-385.4	705.6	567.7	137.92	5.116
13,600.0	8,832.0	14,074.7	9,300.0	86.3	86.9	131.56	-5,587.3	-384.6	705.6	565.5	140.15	5.035
13,700.0	8,832.0	14,174.7	9,300.0	87.7	88.2	131.56	-5,687.2	-383.9	705.6	563.2	142.38	4.956
13,800.0	8,832.0	14,274.7	9,300.0	89.0	89.6	131.56	-5,787.2	-383.1	705.6	561.0	144.62	4.879
13,900.0	8,832.0	14,374.7	9,300.0	90.4	90.9	131.56	-5,887.2	-382.3	705.6	558.8	146.87	4.804
14,000.0	8,832.0	14,474.7	9,300.0	91.8	92.3	131.56	-5,987.2	-381.5	705.6	556.5	149.12	4.732
14,100.0	8,832.0	14,574.7	9,300.0	93.1	93.6	131.56	-6,087.2	-380.8	705.6	554.2	151.37	4.661
14,200.0	8,832.0	14,674.7	9,300.0	94.5	95.0	131.56	-6,187.2	-380.0	705.6	552.0	153.63	4.593
14,300.0	8,832.0	14,774.7	9,300.0	95.9	96.3	131.56	-6,287.2	-379.2	705.6	549.7	155.90	4.526
14,400.0	8,832.0	14,874.7	9,300.0	97.2	97.7	131.56	-6,387.2	-378.4	705.6	547.5	158.17	4.461
14,500.0	8,832.0	14,974.7	9,300.0	98.6	99.1	131.56	-6,487.2	-377.7	705.6	545.2	160.44	4.398
14,600.0	8,832.0	15,074.7	9,300.0	100.0	100.4	131.56	-6,587.2	-376.9	705.6	542.9	162.71	4.337
14,700.0	8,832.0	15,174.7	9,300.0	101.4	101.8	131.56	-6,687.2	-376.1	705.6	540.6	164.99	4.277
14,800.0	8,832.0	15,274.7	9,300.0	102.7	103.2	131.56	-6,787.2	-375.3	705.6	538.3	167.28	4.218
14,900.0	8,832.0	15,374.7	9,300.0	104.1	104.5	131.56	-6,887.2	-374.6	705.6	536.1	169.56	4.161
15,000.0	8,832.0	15,474.7	9,300.0	105.5	105.9	131.56	-6,987.2	-373.8	705.6	533.8	171.85	4.106
15,100.0	8,832.0	15,574.7	9,300.0	106.9	107.3	131.56	-7,087.2	-373.0	705.6	531.5	174.15	4.052
15,200.0	8,832.0	15,674.7	9,300.0	108.3	108.7	131.56	-7,187.2	-372.2	705.6	529.2	176.44	3.999
15,300.0	8,832.0	15,774.7	9,300.0	109.7	110.1	131.56	-7,287.2	-371.5	705.6	526.9	178.74	3.948
15,400.0	8,832.0	15,874.7	9,300.0	111.1	111.4	131.56	-7,387.2	-370.7	705.6	524.6	181.04	3.898

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,500.0	8,832.0	15,974.7	9,300.0	112.5	112.8	131.56	-7,487.2	-369.9	705.6	522.3	183.35	3.849	
15,600.0	8,832.0	16,074.7	9,300.0	113.8	114.2	131.56	-7,587.2	-369.1	705.6	520.0	185.66	3.801	
15,700.0	8,832.0	16,174.7	9,300.0	115.2	115.6	131.56	-7,687.2	-368.3	705.6	517.7	187.96	3.754	
15,800.0	8,832.0	16,274.7	9,300.0	116.6	117.0	131.56	-7,787.2	-367.6	705.6	515.3	190.28	3.708	
15,900.0	8,832.0	16,374.7	9,300.0	118.0	118.4	131.56	-7,887.2	-366.8	705.6	513.0	192.59	3.664	
16,000.0	8,832.0	16,474.7	9,300.0	119.4	119.8	131.56	-7,987.2	-366.0	705.6	510.7	194.91	3.620	
16,100.0	8,832.0	16,574.7	9,300.0	120.8	121.1	131.56	-8,087.2	-365.2	705.6	508.4	197.23	3.578	
16,200.0	8,832.0	16,674.7	9,300.0	122.2	122.5	131.56	-8,187.2	-364.5	705.6	506.1	199.55	3.536	
16,300.0	8,832.0	16,774.7	9,300.0	123.6	123.9	131.56	-8,287.2	-363.7	705.6	503.8	201.87	3.495	
16,400.0	8,832.0	16,874.7	9,300.0	125.0	125.3	131.56	-8,387.2	-362.9	705.6	501.4	204.19	3.456	
16,500.0	8,832.0	16,974.7	9,300.0	126.4	126.7	131.56	-8,487.2	-362.1	705.6	499.1	206.52	3.417	
16,600.0	8,832.0	17,074.7	9,300.0	127.8	128.1	131.56	-8,587.2	-361.4	705.6	496.8	208.85	3.379	
16,700.0	8,832.0	17,174.7	9,300.0	129.3	129.5	131.56	-8,687.2	-360.6	705.6	494.4	211.18	3.341	
16,800.0	8,832.0	17,274.7	9,300.0	130.7	130.9	131.56	-8,787.2	-359.8	705.6	492.1	213.51	3.305	
16,900.0	8,832.0	17,374.7	9,300.0	132.1	132.3	131.56	-8,887.2	-359.0	705.6	489.8	215.84	3.269	
17,000.0	8,832.0	17,474.7	9,300.0	133.5	133.7	131.56	-8,987.1	-358.3	705.6	487.4	218.18	3.234	
17,100.0	8,832.0	17,574.7	9,300.0	134.9	135.1	131.56	-9,087.1	-357.5	705.6	485.1	220.51	3.200	
17,200.0	8,832.0	17,674.7	9,300.0	136.3	136.5	131.56	-9,187.1	-356.7	705.6	482.8	222.85	3.166	
17,300.0	8,832.0	17,774.7	9,300.0	137.7	137.9	131.56	-9,287.1	-355.9	705.6	480.4	225.19	3.133	
17,400.0	8,832.0	17,874.7	9,300.0	139.1	139.3	131.56	-9,387.1	-355.2	705.6	478.1	227.53	3.101	
17,500.0	8,832.0	17,974.7	9,300.0	140.5	140.8	131.56	-9,487.1	-354.4	705.6	475.7	229.87	3.070	
17,600.0	8,832.0	18,074.7	9,300.0	141.9	142.2	131.56	-9,587.1	-353.6	705.6	473.4	232.22	3.039	
17,700.0	8,832.0	18,174.7	9,300.0	143.4	143.6	131.56	-9,687.1	-352.8	705.6	471.1	234.56	3.008	
17,800.0	8,832.0	18,274.7	9,300.0	144.8	145.0	131.56	-9,787.1	-352.1	705.6	468.7	236.91	2.978	
17,900.0	8,832.0	18,374.7	9,300.0	146.2	146.4	131.56	-9,887.1	-351.3	705.6	466.4	239.25	2.949	
18,000.0	8,832.0	18,474.7	9,300.0	147.6	147.8	131.56	-9,987.1	-350.5	705.6	464.0	241.60	2.921	
18,100.0	8,832.0	18,574.7	9,300.0	149.0	149.2	131.56	-10,087.1	-349.7	705.6	461.7	243.95	2.892	
18,200.0	8,832.0	18,674.7	9,300.0	150.4	150.6	131.56	-10,187.1	-348.9	705.6	459.3	246.30	2.865	
18,300.0	8,832.0	18,774.7	9,300.0	151.9	152.0	131.56	-10,287.1	-348.2	705.6	457.0	248.65	2.838	
18,400.0	8,832.0	18,874.7	9,300.0	153.3	153.5	131.56	-10,387.1	-347.4	705.6	454.6	251.00	2.811	
18,500.0	8,832.0	18,974.7	9,300.0	154.7	154.9	131.56	-10,487.1	-346.6	705.6	452.3	253.36	2.785	
18,600.0	8,832.0	19,074.7	9,300.0	156.1	156.3	131.56	-10,587.1	-345.8	705.6	449.9	255.71	2.759	
18,700.0	8,832.0	19,174.7	9,300.0	157.5	157.7	131.56	-10,687.1	-345.1	705.6	447.6	258.07	2.734	
18,800.0	8,832.0	19,274.7	9,300.0	158.9	159.1	131.56	-10,787.1	-344.3	705.6	445.2	260.42	2.710	
18,900.0	8,832.0	19,374.7	9,300.0	160.4	160.5	131.56	-10,887.1	-343.5	705.6	442.8	262.78	2.685	
19,000.0	8,832.0	19,474.7	9,300.0	161.8	161.9	131.56	-10,987.1	-342.7	705.6	440.5	265.14	2.661	
19,077.7	8,832.0	19,552.3	9,300.0	162.7	163.0	131.56	-11,064.7	-342.1	705.6	438.8	266.77	2.645	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	3.1	3.1	0.0	0.0	89.05	1.0	60.0	60.0				
100.0	100.0	103.1	103.1	0.1	0.1	89.05	1.0	60.0	60.0	59.8	0.27	218.624	
200.0	200.0	203.1	203.1	0.5	0.5	89.05	1.0	60.0	60.0	59.0	0.99	60.544	
300.0	300.0	303.1	303.1	0.8	0.9	89.05	1.0	60.0	60.0	58.3	1.71	35.138	
400.0	400.0	403.1	403.1	1.2	1.2	89.05	1.0	60.0	60.0	57.6	2.43	24.751	
500.0	500.0	503.1	503.1	1.6	1.6	89.05	1.0	60.0	60.0	56.9	3.14	19.104	
600.0	600.0	603.1	603.1	1.9	1.9	89.05	1.0	60.0	60.0	56.2	3.86	15.555	
700.0	700.0	703.1	703.1	2.3	2.3	89.05	1.0	60.0	60.0	55.5	4.58	13.118	
800.0	800.0	803.1	803.1	2.6	2.7	89.05	1.0	60.0	60.0	54.7	5.29	11.341	
900.0	900.0	903.1	903.1	3.0	3.0	89.05	1.0	60.0	60.0	54.0	6.01	9.988	
1,000.0	1,000.0	1,003.1	1,003.1	3.4	3.4	89.05	1.0	60.0	60.0	53.3	6.73	8.924	
1,100.0	1,100.0	1,103.1	1,103.1	3.7	3.7	89.05	1.0	60.0	60.0	52.6	7.44	8.064	
1,200.0	1,200.0	1,203.1	1,203.1	4.1	4.1	89.05	1.0	60.0	60.0	51.9	8.16	7.356	
1,300.0	1,300.0	1,303.1	1,303.1	4.4	4.4	89.05	1.0	60.0	60.0	51.2	8.88	6.762	
1,400.0	1,400.0	1,403.1	1,403.1	4.8	4.8	89.05	1.0	60.0	60.0	50.4	9.59	6.257	
1,500.0	1,500.0	1,503.1	1,503.1	5.2	5.2	89.05	1.0	60.0	60.0	49.7	10.31	5.822	
1,600.0	1,600.0	1,603.1	1,603.1	5.5	5.5	89.05	1.0	60.0	60.0	49.0	11.03	5.443	
1,700.0	1,700.0	1,703.1	1,703.1	5.9	5.9	89.05	1.0	60.0	60.0	48.3	11.75	5.111	
1,800.0	1,800.0	1,803.1	1,803.1	6.2	6.2	89.05	1.0	60.0	60.0	47.6	12.46	4.817	
1,900.0	1,900.0	1,903.1	1,903.1	6.6	6.6	89.05	1.0	60.0	60.0	46.9	13.18	4.555	
2,000.0	2,000.0	2,003.1	2,003.1	6.9	7.0	89.05	1.0	60.0	60.0	46.1	13.90	4.320	
2,055.4	2,055.4	2,058.4	2,058.4	7.1	7.2	-82.29	1.0	60.0	60.0	45.7	14.28	4.199 CC	
2,100.0	2,100.0	2,102.1	2,102.1	7.3	7.3	-83.20	0.8	60.5	60.2	45.7	14.58	4.130 ES	
2,200.0	2,199.8	2,200.0	2,199.9	7.6	7.6	-86.31	-0.7	63.6	62.8	47.6	15.22	4.128 SF	
2,300.0	2,299.5	2,298.1	2,297.7	7.9	8.0	-90.40	-3.7	69.7	68.4	52.5	15.86	4.313	
2,400.0	2,398.7	2,395.6	2,394.7	8.3	8.3	-94.67	-8.0	78.8	77.2	60.7	16.50	4.677	
2,500.0	2,497.9	2,492.7	2,490.9	8.6	8.6	-97.15	-13.8	90.8	88.9	71.7	17.14	5.186	
2,600.0	2,597.1	2,589.3	2,586.1	8.9	9.0	-97.76	-21.0	105.6	103.1	85.3	17.77	5.803	
2,700.0	2,696.3	2,685.2	2,680.0	9.3	9.3	-97.14	-29.4	123.2	119.8	101.4	18.40	6.512	
2,800.0	2,795.5	2,781.5	2,773.6	9.6	9.7	-95.84	-39.2	143.5	138.7	119.7	19.04	7.286	
2,900.0	2,894.6	2,879.6	2,868.9	10.0	10.1	-94.70	-49.4	164.6	158.1	138.4	19.74	8.012	
3,000.0	2,993.8	2,977.6	2,964.1	10.4	10.5	-93.81	-59.5	185.7	177.6	157.2	20.45	8.686	
3,100.0	3,093.0	3,075.7	3,059.3	10.7	10.9	-93.09	-69.7	206.8	197.1	175.9	21.17	9.313	
3,200.0	3,192.2	3,173.7	3,154.5	11.1	11.3	-92.50	-79.9	227.9	216.6	194.7	21.89	9.896	
3,300.0	3,291.4	3,271.8	3,249.7	11.5	11.7	-92.01	-90.0	249.0	236.2	213.6	22.62	10.440	
3,400.0	3,390.6	3,369.8	3,344.9	11.8	12.1	-91.60	-100.2	270.1	255.7	232.4	23.36	10.947	
3,500.0	3,489.7	3,467.9	3,440.1	12.2	12.5	-91.24	-110.4	291.2	275.3	251.2	24.10	11.421	
3,600.0	3,588.9	3,565.9	3,535.4	12.6	12.9	-90.93	-120.5	312.3	294.9	270.0	24.85	11.865	
3,700.0	3,688.1	3,664.0	3,630.6	12.9	13.4	-90.66	-130.7	333.4	314.5	288.9	25.61	12.281	
3,800.0	3,787.3	3,762.0	3,725.8	13.3	13.8	-90.42	-140.9	354.5	334.1	307.7	26.36	12.672	
3,900.0	3,886.5	3,860.1	3,821.0	13.7	14.2	-90.21	-151.0	375.6	353.7	326.5	27.12	13.039	
4,000.0	3,985.7	3,958.1	3,916.2	14.1	14.7	-90.02	-161.2	396.7	373.2	345.4	27.89	13.385	
4,100.0	4,084.8	4,056.2	4,011.4	14.5	15.1	-89.85	-171.4	417.8	392.9	364.2	28.65	13.711	
4,200.0	4,184.0	4,154.3	4,106.6	14.8	15.6	-89.69	-181.5	438.9	412.5	383.0	29.42	14.019	
4,300.0	4,283.2	4,252.3	4,201.9	15.2	16.0	-89.55	-191.7	460.0	432.1	401.9	30.19	14.309	
4,400.0	4,382.4	4,350.4	4,297.1	15.6	16.5	-89.43	-201.9	481.1	451.7	420.7	30.97	14.585	
4,500.0	4,481.6	4,448.4	4,392.3	16.0	16.9	-89.31	-212.0	502.3	471.3	439.5	31.75	14.846	
4,600.0	4,580.8	4,546.5	4,487.5	16.4	17.4	-89.20	-222.2	523.4	490.9	458.4	32.52	15.093	
4,700.0	4,679.9	4,644.5	4,582.7	16.8	17.8	-89.10	-232.4	544.5	510.5	477.2	33.31	15.328	
4,800.0	4,779.1	4,742.6	4,677.9	17.2	18.3	-89.01	-242.5	565.6	530.1	496.0	34.09	15.552	
4,900.0	4,878.3	4,840.6	4,773.1	17.5	18.7	-88.92	-252.7	586.7	549.8	514.9	34.87	15.765	
5,000.0	4,977.5	4,938.7	4,868.4	17.9	19.2	-88.84	-262.8	607.8	569.4	533.7	35.66	15.968	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.0	5,076.7	5,036.7	4,963.6	18.3	19.7	-88.77	-273.0	628.9	589.0	552.5	36.44	16.161	
5,200.0	5,175.9	5,134.8	5,058.8	18.7	20.1	-88.70	-283.2	650.0	608.6	571.4	37.23	16.346	
5,300.0	5,275.0	5,232.8	5,154.0	19.1	20.6	-88.63	-293.3	671.1	628.2	590.2	38.02	16.522	
5,400.0	5,374.2	5,330.9	5,249.2	19.5	21.1	-88.57	-303.5	692.2	647.9	609.0	38.81	16.691	
5,500.0	5,473.4	5,428.9	5,344.4	19.9	21.5	-88.51	-313.7	713.3	667.5	627.9	39.61	16.853	
5,600.0	5,572.6	5,527.0	5,439.6	20.3	22.0	-88.46	-323.8	734.4	687.1	646.7	40.40	17.008	
5,700.0	5,671.8	5,625.1	5,534.9	20.7	22.5	-88.40	-334.0	755.5	706.7	665.5	41.19	17.156	
5,800.0	5,771.0	5,723.1	5,630.1	21.1	22.9	-88.35	-344.2	776.6	726.4	684.4	41.99	17.299	
5,900.0	5,870.1	5,821.2	5,725.3	21.4	23.4	-88.31	-354.3	797.7	746.0	703.2	42.79	17.436	
6,000.0	5,969.3	5,919.2	5,820.5	21.8	23.9	-88.26	-364.5	818.8	765.6	722.0	43.58	17.567	
6,100.0	6,068.5	6,017.3	5,915.7	22.2	24.3	-88.22	-374.7	839.9	785.2	740.9	44.38	17.694	
6,200.0	6,167.7	6,115.3	6,010.9	22.6	24.8	-88.18	-384.8	861.0	804.9	759.7	45.18	17.815	
6,300.0	6,266.9	6,213.4	6,106.1	23.0	25.3	-88.15	-395.0	882.2	824.5	778.5	45.98	17.932	
6,400.0	6,366.1	6,311.4	6,201.4	23.4	25.8	-88.11	-405.2	903.3	844.1	797.3	46.78	18.045	
6,500.0	6,465.2	6,409.5	6,296.6	23.8	26.2	-88.07	-415.3	924.4	863.7	816.2	47.58	18.154	
6,600.0	6,564.4	6,507.5	6,391.8	24.2	26.7	-88.04	-425.5	945.5	883.4	835.0	48.38	18.259	
6,700.0	6,663.6	6,605.6	6,487.0	24.6	27.2	-88.01	-435.7	966.6	903.0	853.8	49.18	18.361	
6,800.0	6,762.8	6,703.6	6,582.2	25.0	27.7	-87.98	-445.8	987.7	922.6	872.6	49.98	18.459	
6,900.0	6,862.0	6,801.7	6,677.4	25.4	28.1	-87.95	-456.0	1,008.8	942.3	891.5	50.79	18.553	
7,000.0	6,961.2	6,899.8	6,772.6	25.8	28.6	-87.92	-466.2	1,029.9	961.9	910.3	51.59	18.645	
7,100.0	7,060.3	6,997.8	6,867.8	26.2	29.1	-87.90	-476.3	1,051.0	981.5	929.1	52.39	18.733	
7,200.0	7,159.5	7,095.9	6,963.1	26.6	29.6	-87.97	-486.5	1,072.1	1,001.2	948.0	53.20	18.819	
7,300.0	7,259.0	7,193.8	7,058.2	27.0	30.0	-88.19	-496.7	1,093.2	1,020.9	966.9	53.98	18.912	
7,400.0	7,358.8	7,291.6	7,153.2	27.3	30.5	-88.24	-506.8	1,114.2	1,040.7	986.0	54.73	19.014	
7,500.0	7,458.7	7,389.1	7,247.8	27.7	31.0	-88.11	-516.9	1,135.2	1,060.8	1,005.3	55.46	19.128	
7,600.0	7,558.7	7,486.3	7,342.2	28.0	31.5	83.24	-527.0	1,156.1	1,081.0	1,024.9	56.14	19.257	
7,700.0	7,658.7	7,583.4	7,436.5	28.3	31.9	83.90	-537.0	1,177.0	1,101.4	1,044.6	56.81	19.387	
7,800.0	7,758.7	7,680.5	7,530.7	28.6	32.4	84.54	-547.1	1,197.9	1,121.9	1,064.4	57.48	19.517	
7,900.0	7,858.7	7,777.6	7,625.0	28.9	32.9	85.15	-557.2	1,218.8	1,142.6	1,084.4	58.16	19.645	
8,000.0	7,958.7	7,874.7	7,719.3	29.3	33.3	85.75	-567.3	1,239.7	1,163.4	1,104.5	58.84	19.772	
8,100.0	8,058.7	7,971.8	7,813.6	29.6	33.8	86.32	-577.3	1,260.6	1,184.3	1,124.8	59.52	19.898	
8,200.0	8,158.7	8,068.9	7,907.9	29.9	34.3	86.87	-587.4	1,281.5	1,205.3	1,145.1	60.20	20.023	
8,300.0	8,258.7	8,166.0	8,002.2	30.2	34.8	87.41	-597.5	1,302.4	1,226.4	1,165.5	60.88	20.146	
8,400.0	8,358.7	8,301.5	8,134.2	30.6	35.4	-91.37	-610.8	1,330.1	1,246.7	1,184.8	61.88	20.147	
8,500.0	8,457.9	8,462.8	8,292.9	30.9	36.1	-89.68	-623.2	1,355.9	1,262.6	1,199.5	63.08	20.016	
8,600.0	8,552.6	8,620.0	8,448.9	31.4	36.7	-90.19	-631.6	1,373.3	1,273.9	1,209.6	64.28	19.819	
8,700.0	8,638.6	8,762.8	8,591.3	31.9	37.2	-92.24	-635.9	1,382.3	1,282.2	1,216.8	65.45	19.592	
8,800.0	8,712.2	8,882.7	8,711.2	32.5	37.6	-94.76	-637.2	1,385.0	1,290.7	1,224.1	66.58	19.384	
8,900.0	8,770.1	8,944.7	8,773.2	33.1	37.8	-95.42	-637.2	1,385.0	1,303.6	1,235.9	67.70	19.256	
9,000.0	8,809.9	8,984.5	8,813.0	33.8	37.9	-94.54	-637.2	1,385.0	1,324.0	1,255.2	68.79	19.248	
9,100.0	8,829.8	9,017.8	8,846.2	34.5	38.0	-92.46	-638.0	1,385.1	1,352.2	1,282.4	69.79	19.374	
9,200.0	8,832.0	9,167.2	8,991.9	35.1	38.5	-96.97	-668.2	1,387.5	1,387.0	1,316.4	70.59	19.649	
9,300.0	8,832.0	9,867.5	9,300.0	35.9	42.1	-109.40	-1,236.5	1,429.5	1,399.8	1,330.2	69.59	20.117	
9,400.0	8,832.0	10,004.2	9,300.0	36.6	42.9	-109.39	-1,373.2	1,431.7	1,400.4	1,329.5	70.85	19.764	
9,500.0	8,832.0	10,104.2	9,300.0	37.4	43.6	-109.39	-1,473.2	1,432.4	1,400.4	1,328.1	72.26	19.380	
9,600.0	8,832.0	10,204.2	9,300.0	38.3	44.3	-109.39	-1,573.2	1,433.2	1,400.4	1,326.6	73.74	18.991	
9,700.0	8,832.0	10,304.2	9,300.0	39.2	45.0	-109.39	-1,673.1	1,434.0	1,400.3	1,325.1	75.30	18.598	
9,800.0	8,832.0	10,404.2	9,300.0	40.1	45.8	-109.39	-1,773.1	1,434.7	1,400.3	1,323.4	76.92	18.205	
9,900.0	8,832.0	10,504.2	9,300.0	41.0	46.6	-109.39	-1,873.1	1,435.5	1,400.3	1,321.7	78.61	17.814	
10,000.0	8,832.0	10,604.2	9,300.0	42.0	47.4	-109.39	-1,973.1	1,436.3	1,400.3	1,320.0	80.36	17.426	
10,100.0	8,832.0	10,704.2	9,300.0	43.0	48.2	-109.39	-2,073.1	1,437.0	1,400.3	1,318.1	82.16	17.043	
10,200.0	8,832.0	10,804.2	9,300.0	44.0	49.1	-109.39	-2,173.1	1,437.8	1,400.3	1,316.3	84.02	16.666	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
10,300.0	8,832.0	10,904.2	9,300.0	45.0	50.0	-109.39	-2,273.1	1,438.6	1,400.3	1,314.4	85.93	16.295	
10,400.0	8,832.0	11,004.2	9,300.0	46.1	50.9	-109.39	-2,373.1	1,439.3	1,400.3	1,312.4	87.89	15.933	
10,500.0	8,832.0	11,104.2	9,300.0	47.2	51.9	-109.39	-2,473.1	1,440.1	1,400.3	1,310.4	89.89	15.578	
10,600.0	8,832.0	11,204.2	9,300.0	48.3	52.9	-109.39	-2,573.1	1,440.9	1,400.3	1,308.3	91.93	15.233	
10,700.0	8,832.0	11,304.2	9,300.0	49.4	53.9	-109.39	-2,673.1	1,441.6	1,400.3	1,306.3	94.00	14.896	
10,800.0	8,832.0	11,404.2	9,300.0	50.6	54.9	-109.39	-2,773.1	1,442.4	1,400.2	1,304.1	96.12	14.568	
10,900.0	8,832.0	11,504.2	9,300.0	51.7	55.9	-109.39	-2,873.1	1,443.2	1,400.2	1,302.0	98.26	14.250	
11,000.0	8,832.0	11,604.2	9,300.0	52.9	57.0	-109.39	-2,973.1	1,443.9	1,400.2	1,299.8	100.44	13.941	
11,100.0	8,832.0	11,704.2	9,300.0	54.1	58.1	-109.39	-3,073.1	1,444.7	1,400.2	1,297.6	102.64	13.641	
11,200.0	8,832.0	11,804.2	9,300.0	55.3	59.2	-109.39	-3,173.1	1,445.5	1,400.2	1,295.3	104.88	13.351	
11,300.0	8,832.0	11,904.2	9,300.0	56.5	60.3	-109.39	-3,273.1	1,446.2	1,400.2	1,293.1	107.14	13.069	
11,400.0	8,832.0	12,004.2	9,300.0	57.7	61.4	-109.39	-3,373.1	1,447.0	1,400.2	1,290.8	109.42	12.797	
11,500.0	8,832.0	12,104.2	9,300.0	58.9	62.5	-109.39	-3,473.1	1,447.8	1,400.2	1,288.5	111.72	12.532	
11,600.0	8,832.0	12,204.2	9,300.0	60.2	63.7	-109.39	-3,573.1	1,448.5	1,400.2	1,286.1	114.05	12.277	
11,700.0	8,832.0	12,304.2	9,300.0	61.4	64.8	-109.39	-3,673.1	1,449.3	1,400.2	1,283.8	116.40	12.029	
11,800.0	8,832.0	12,404.2	9,300.0	62.7	66.0	-109.39	-3,773.1	1,450.1	1,400.2	1,281.4	118.76	11.790	
11,900.0	8,832.0	12,504.2	9,300.0	63.9	67.2	-109.39	-3,873.1	1,450.8	1,400.1	1,279.0	121.14	11.558	
12,000.0	8,832.0	12,604.2	9,300.0	65.2	68.4	-109.39	-3,973.1	1,451.6	1,400.1	1,276.6	123.54	11.333	
12,100.0	8,832.0	12,704.2	9,300.0	66.5	69.6	-109.39	-4,073.1	1,452.4	1,400.1	1,274.2	125.96	11.116	
12,200.0	8,832.0	12,804.2	9,300.0	67.8	70.8	-109.39	-4,173.1	1,453.1	1,400.1	1,271.7	128.39	10.905	
12,300.0	8,832.0	12,904.2	9,300.0	69.1	72.0	-109.39	-4,273.1	1,453.9	1,400.1	1,269.3	130.83	10.702	
12,400.0	8,832.0	13,004.2	9,300.0	70.4	73.2	-109.39	-4,373.1	1,454.7	1,400.1	1,266.8	133.29	10.504	
12,500.0	8,832.0	13,104.2	9,300.0	71.7	74.5	-109.39	-4,473.1	1,455.4	1,400.1	1,264.3	135.76	10.313	
12,600.0	8,832.0	13,204.2	9,300.0	73.0	75.7	-109.39	-4,573.1	1,456.2	1,400.1	1,261.8	138.24	10.128	
12,700.0	8,832.0	13,304.2	9,300.0	74.3	76.9	-109.39	-4,673.1	1,456.9	1,400.1	1,259.3	140.73	9.948	
12,800.0	8,832.0	13,404.2	9,300.0	75.6	78.2	-109.39	-4,773.1	1,457.7	1,400.1	1,256.8	143.23	9.775	
12,900.0	8,832.0	13,504.2	9,300.0	76.9	79.5	-109.39	-4,873.1	1,458.5	1,400.0	1,254.3	145.75	9.606	
13,000.0	8,832.0	13,604.2	9,300.0	78.3	80.7	-109.39	-4,973.1	1,459.2	1,400.0	1,251.8	148.27	9.442	
13,100.0	8,832.0	13,704.2	9,300.0	79.6	82.0	-109.39	-5,073.0	1,460.0	1,400.0	1,249.2	150.80	9.284	
13,200.0	8,832.0	13,804.2	9,300.0	80.9	83.3	-109.39	-5,173.0	1,460.8	1,400.0	1,246.7	153.34	9.130	
13,300.0	8,832.0	13,904.2	9,300.0	82.3	84.6	-109.39	-5,273.0	1,461.5	1,400.0	1,244.1	155.89	8.981	
13,400.0	8,832.0	14,004.2	9,300.0	83.6	85.9	-109.39	-5,373.0	1,462.3	1,400.0	1,241.6	158.45	8.836	
13,500.0	8,832.0	14,104.2	9,300.0	85.0	87.2	-109.39	-5,473.0	1,463.1	1,400.0	1,239.0	161.01	8.695	
13,600.0	8,832.0	14,204.2	9,300.0	86.3	88.5	-109.39	-5,573.0	1,463.8	1,400.0	1,236.4	163.58	8.558	
13,700.0	8,832.0	14,304.2	9,300.0	87.7	89.8	-109.39	-5,673.0	1,464.6	1,400.0	1,233.8	166.16	8.426	
13,800.0	8,832.0	14,404.2	9,300.0	89.0	91.1	-109.39	-5,773.0	1,465.4	1,400.0	1,231.2	168.74	8.297	
13,900.0	8,832.0	14,504.2	9,300.0	90.4	92.4	-109.39	-5,873.0	1,466.1	1,400.0	1,228.6	171.33	8.171	
14,000.0	8,832.0	14,604.2	9,300.0	91.8	93.7	-109.39	-5,973.0	1,466.9	1,399.9	1,226.0	173.93	8.049	
14,100.0	8,832.0	14,704.2	9,300.0	93.1	95.0	-109.39	-6,073.0	1,467.7	1,399.9	1,223.4	176.53	7.930	
14,200.0	8,832.0	14,804.2	9,300.0	94.5	96.4	-109.39	-6,173.0	1,468.4	1,399.9	1,220.8	179.14	7.815	
14,300.0	8,832.0	14,904.2	9,300.0	95.9	97.7	-109.39	-6,273.0	1,469.2	1,399.9	1,218.2	181.75	7.703	
14,400.0	8,832.0	15,004.2	9,300.0	97.2	99.0	-109.40	-6,373.0	1,470.0	1,399.9	1,215.5	184.36	7.593	
14,500.0	8,832.0	15,104.2	9,300.0	98.6	100.4	-109.40	-6,473.0	1,470.7	1,399.9	1,212.9	186.99	7.487	
14,600.0	8,832.0	15,204.2	9,300.0	100.0	101.7	-109.40	-6,573.0	1,471.5	1,399.9	1,210.3	189.61	7.383	
14,700.0	8,832.0	15,304.2	9,300.0	101.4	103.0	-109.40	-6,673.0	1,472.3	1,399.9	1,207.6	192.24	7.282	
14,800.0	8,832.0	15,404.2	9,300.0	102.7	104.4	-109.40	-6,773.0	1,473.0	1,399.9	1,205.0	194.88	7.183	
14,900.0	8,832.0	15,504.2	9,300.0	104.1	105.7	-109.40	-6,873.0	1,473.8	1,399.9	1,202.3	197.51	7.087	
15,000.0	8,832.0	15,604.2	9,300.0	105.5	107.1	-109.40	-6,973.0	1,474.6	1,399.9	1,199.7	200.16	6.994	
15,100.0	8,832.0	15,704.2	9,300.0	106.9	108.4	-109.40	-7,073.0	1,475.3	1,399.8	1,197.0	202.80	6.902	
15,200.0	8,832.0	15,804.2	9,300.0	108.3	109.8	-109.40	-7,173.0	1,476.1	1,399.8	1,194.4	205.45	6.813	
15,300.0	8,832.0	15,904.2	9,300.0	109.7	111.1	-109.40	-7,273.0	1,476.9	1,399.8	1,191.7	208.10	6.727	
15,400.0	8,832.0	16,004.2	9,300.0	111.1	112.5	-109.40	-7,373.0	1,477.6	1,399.8	1,189.1	210.76	6.642	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)			
15,500.0	8,832.0	16,104.2	9,300.0	112.5	113.9	-109.40	-7,473.0	1,478.4	1,399.8	1,186.4	213.42	6.559		
15,600.0	8,832.0	16,204.2	9,300.0	113.8	115.2	-109.40	-7,573.0	1,479.2	1,399.8	1,183.7	216.08	6.478		
15,700.0	8,832.0	16,304.2	9,300.0	115.2	116.6	-109.40	-7,673.0	1,479.9	1,399.8	1,181.0	218.75	6.399		
15,800.0	8,832.0	16,404.2	9,300.0	116.6	118.0	-109.40	-7,773.0	1,480.7	1,399.8	1,178.4	221.42	6.322		
15,900.0	8,832.0	16,504.2	9,300.0	118.0	119.3	-109.40	-7,873.0	1,481.5	1,399.8	1,175.7	224.09	6.247		
16,000.0	8,832.0	16,604.2	9,300.0	119.4	120.7	-109.40	-7,973.0	1,482.2	1,399.8	1,173.0	226.76	6.173		
16,100.0	8,832.0	16,704.2	9,300.0	120.8	122.1	-109.40	-8,073.0	1,483.0	1,399.8	1,170.3	229.44	6.101		
16,200.0	8,832.0	16,804.2	9,300.0	122.2	123.5	-109.40	-8,173.0	1,483.8	1,399.7	1,167.6	232.11	6.030		
16,300.0	8,832.0	16,904.2	9,300.0	123.6	124.8	-109.40	-8,273.0	1,484.5	1,399.7	1,164.9	234.80	5.961		
16,400.0	8,832.0	17,004.2	9,300.0	125.0	126.2	-109.40	-8,373.0	1,485.3	1,399.7	1,162.2	237.48	5.894		
16,500.0	8,832.0	17,104.2	9,300.0	126.4	127.6	-109.40	-8,473.0	1,486.1	1,399.7	1,159.5	240.16	5.828		
16,600.0	8,832.0	17,204.2	9,300.0	127.8	129.0	-109.40	-8,572.9	1,486.8	1,399.7	1,156.9	242.85	5.764		
16,700.0	8,832.0	17,304.2	9,300.0	129.3	130.3	-109.40	-8,672.9	1,487.6	1,399.7	1,154.2	245.54	5.700		
16,800.0	8,832.0	17,404.2	9,300.0	130.7	131.7	-109.40	-8,772.9	1,488.4	1,399.7	1,151.5	248.23	5.639		
16,900.0	8,832.0	17,504.2	9,300.0	132.1	133.1	-109.40	-8,872.9	1,489.1	1,399.7	1,148.8	250.93	5.578		
17,000.0	8,832.0	17,604.2	9,300.0	133.5	134.5	-109.40	-8,972.9	1,489.9	1,399.7	1,146.0	253.62	5.519		
17,100.0	8,832.0	17,704.2	9,300.0	134.9	135.9	-109.40	-9,072.9	1,490.7	1,399.7	1,143.3	256.32	5.461		
17,200.0	8,832.0	17,804.2	9,300.0	136.3	137.3	-109.40	-9,172.9	1,491.4	1,399.6	1,140.6	259.02	5.404		
17,300.0	8,832.0	17,904.2	9,300.0	137.7	138.7	-109.40	-9,272.9	1,492.2	1,399.6	1,137.9	261.72	5.348		
17,400.0	8,832.0	18,004.2	9,300.0	139.1	140.1	-109.40	-9,372.9	1,493.0	1,399.6	1,135.2	264.42	5.293		
17,500.0	8,832.0	18,104.2	9,300.0	140.5	141.5	-109.40	-9,472.9	1,493.7	1,399.6	1,132.5	267.12	5.240		
17,600.0	8,832.0	18,204.2	9,300.0	141.9	142.9	-109.40	-9,572.9	1,494.5	1,399.6	1,129.8	269.83	5.187		
17,700.0	8,832.0	18,304.2	9,300.0	143.4	144.2	-109.40	-9,672.9	1,495.2	1,399.6	1,127.1	272.53	5.136		
17,800.0	8,832.0	18,404.2	9,300.0	144.8	145.6	-109.40	-9,772.9	1,496.0	1,399.6	1,124.3	275.24	5.085		
17,900.0	8,832.0	18,504.2	9,300.0	146.2	147.0	-109.40	-9,872.9	1,496.8	1,399.6	1,121.6	277.95	5.035		
18,000.0	8,832.0	18,604.2	9,300.0	147.6	148.4	-109.40	-9,972.9	1,497.5	1,399.6	1,118.9	280.66	4.987		
18,100.0	8,832.0	18,704.2	9,300.0	149.0	149.8	-109.40	-10,072.9	1,498.3	1,399.6	1,116.2	283.38	4.939		
18,200.0	8,832.0	18,804.2	9,300.0	150.4	151.2	-109.40	-10,172.9	1,499.1	1,399.6	1,113.5	286.09	4.892		
18,300.0	8,832.0	18,904.2	9,300.0	151.9	152.6	-109.40	-10,272.9	1,499.8	1,399.5	1,110.7	288.80	4.846		
18,400.0	8,832.0	19,004.2	9,300.0	153.3	154.0	-109.40	-10,372.9	1,500.6	1,399.5	1,108.0	291.52	4.801		
18,500.0	8,832.0	19,104.2	9,300.0	154.7	155.4	-109.40	-10,472.9	1,501.4	1,399.5	1,105.3	294.24	4.756		
18,600.0	8,832.0	19,204.2	9,300.0	156.1	156.8	-109.40	-10,572.9	1,502.1	1,399.5	1,102.6	296.96	4.713		
18,700.0	8,832.0	19,304.2	9,300.0	157.5	158.2	-109.40	-10,672.9	1,502.9	1,399.5	1,099.8	299.67	4.670		
18,800.0	8,832.0	19,404.2	9,300.0	158.9	159.7	-109.40	-10,772.9	1,503.7	1,399.5	1,097.1	302.40	4.628		
18,900.0	8,832.0	19,504.2	9,300.0	160.4	161.1	-109.40	-10,872.9	1,504.4	1,399.5	1,094.4	305.12	4.587		
19,000.0	8,832.0	19,604.2	9,300.0	161.8	162.5	-109.40	-10,972.9	1,505.2	1,399.5	1,091.6	307.83	4.546		
19,074.8	8,832.0	19,678.1	9,300.0	162.7	163.4	-109.40	-11,046.8	1,505.8	1,399.5	1,089.9	309.54	4.521		
19,077.7	8,832.0	19,678.1	9,300.0	162.7	163.4	-109.40	-11,046.8	1,505.8	1,399.5	1,089.9	309.62	4.520		

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	3.2	3.2	0.0	0.0	6.26	160.3	17.6	161.3				
100.0	100.0	103.2	103.2	0.1	0.1	6.26	160.3	17.6	161.3	161.0	0.27	586.539	
200.0	200.0	203.2	203.2	0.5	0.5	6.26	160.3	17.6	161.3	160.3	0.99	162.586	
300.0	300.0	303.2	303.2	0.8	0.9	6.26	160.3	17.6	161.3	159.6	1.71	94.373	
400.0	400.0	403.2	403.2	1.2	1.2	6.26	160.3	17.6	161.3	158.8	2.43	66.481	
500.0	500.0	503.2	503.2	1.6	1.6	6.26	160.3	17.6	161.3	158.1	3.14	51.315	
600.0	600.0	603.2	603.2	1.9	1.9	6.26	160.3	17.6	161.3	157.4	3.86	41.783	
700.0	700.0	703.2	703.2	2.3	2.3	6.26	160.3	17.6	161.3	156.7	4.58	35.237	
800.0	800.0	803.2	803.2	2.6	2.7	6.26	160.3	17.6	161.3	156.0	5.29	30.465	
900.0	900.0	903.2	903.2	3.0	3.0	6.26	160.3	17.6	161.3	155.3	6.01	26.831	
1,000.0	1,000.0	1,003.2	1,003.2	3.4	3.4	6.26	160.3	17.6	161.3	154.5	6.73	23.972	
1,100.0	1,100.0	1,103.2	1,103.2	3.7	3.7	6.26	160.3	17.6	161.3	153.8	7.44	21.663	
1,200.0	1,200.0	1,203.2	1,203.2	4.1	4.1	6.26	160.3	17.6	161.3	153.1	8.16	19.760	
1,300.0	1,300.0	1,303.2	1,303.2	4.4	4.4	6.26	160.3	17.6	161.3	152.4	8.88	18.164	
1,400.0	1,400.0	1,403.2	1,403.2	4.8	4.8	6.26	160.3	17.6	161.3	151.7	9.60	16.807	
1,500.0	1,500.0	1,503.2	1,503.2	5.2	5.2	6.26	160.3	17.6	161.3	151.0	10.31	15.639	
1,600.0	1,600.0	1,603.2	1,603.2	5.5	5.5	6.26	160.3	17.6	161.3	150.2	11.03	14.622	
1,700.0	1,700.0	1,703.2	1,703.2	5.9	5.9	6.26	160.3	17.6	161.3	149.5	11.75	13.730	
1,800.0	1,800.0	1,803.2	1,803.2	6.2	6.2	6.26	160.3	17.6	161.3	148.8	12.46	12.940	
1,900.0	1,900.0	1,903.2	1,903.2	6.6	6.6	6.26	160.3	17.6	161.3	148.1	13.18	12.236	
2,000.0	2,000.0	2,003.2	2,003.2	6.9	7.0	6.26	160.3	17.6	161.3	147.4	13.90	11.605 CC, ES	
2,100.0	2,100.0	2,103.2	2,103.2	7.3	7.3	-164.74	160.3	17.6	163.0	148.4	14.60	11.164	
2,200.0	2,199.8	2,203.0	2,203.0	7.6	7.7	-165.18	160.3	17.6	168.0	152.7	15.28	10.996	
2,300.0	2,299.5	2,302.7	2,302.7	7.9	8.0	-165.86	160.3	17.6	176.4	160.5	15.96	11.053	
2,400.0	2,398.7	2,401.9	2,401.9	8.3	8.4	-166.72	160.3	17.6	188.1	171.4	16.65	11.297	
2,500.0	2,497.9	2,501.1	2,501.1	8.6	8.7	-167.56	160.3	17.6	200.5	183.2	17.34	11.567	
2,600.0	2,597.1	2,603.8	2,603.7	8.9	9.1	-167.87	159.4	19.2	212.2	194.2	18.02	11.773	
2,700.0	2,696.3	2,706.7	2,706.5	9.3	9.4	-167.29	156.6	24.1	222.3	203.6	18.70	11.885	
2,800.0	2,795.5	2,809.7	2,809.1	9.6	9.8	-165.93	152.1	32.1	230.8	211.4	19.38	11.909	
2,900.0	2,894.6	2,912.5	2,911.1	10.0	10.1	-163.87	145.7	43.4	238.1	218.0	20.07	11.863	
3,000.0	2,993.8	3,014.8	3,012.1	10.4	10.5	-161.14	137.6	57.7	244.4	223.6	20.77	11.767	
3,100.0	3,093.0	3,116.4	3,111.7	10.7	10.9	-157.78	127.7	75.1	250.1	228.7	21.48	11.644	
3,200.0	3,192.2	3,216.9	3,209.4	11.1	11.2	-153.87	116.3	95.2	255.9	233.7	22.21	11.520	
3,300.0	3,291.4	3,315.0	3,304.6	11.5	11.6	-149.91	104.5	116.1	262.5	239.6	22.95	11.437	
3,400.0	3,390.6	3,413.1	3,399.7	11.8	12.0	-146.17	92.6	137.0	270.4	246.7	23.70	11.408	
3,500.0	3,489.7	3,511.2	3,494.8	12.2	12.4	-142.64	80.8	157.9	279.3	254.9	24.45	11.423	
3,600.0	3,588.9	3,609.4	3,590.0	12.6	12.8	-139.33	68.9	178.8	289.3	264.1	25.21	11.474	
3,700.0	3,688.1	3,707.5	3,685.1	12.9	13.2	-136.25	57.1	199.7	300.2	274.2	25.98	11.556	
3,800.0	3,787.3	3,805.6	3,780.2	13.3	13.6	-133.39	45.3	220.6	311.9	285.2	26.75	11.662	
3,900.0	3,886.5	3,903.7	3,875.4	13.7	14.0	-130.74	33.4	241.5	324.4	296.9	27.52	11.787	
4,000.0	3,985.7	4,001.8	3,970.5	14.1	14.4	-128.28	21.6	262.4	337.5	309.2	28.29	11.927	
4,100.0	4,084.8	4,099.9	4,065.6	14.5	14.8	-126.01	9.7	283.3	351.1	322.0	29.07	12.077	
4,200.0	4,184.0	4,198.1	4,160.7	14.8	15.3	-123.91	-2.1	304.2	365.3	335.4	29.85	12.237	
4,300.0	4,283.2	4,296.2	4,255.9	15.2	15.7	-121.96	-14.0	325.1	379.9	349.3	30.63	12.402	
4,400.0	4,382.4	4,394.3	4,351.0	15.6	16.1	-120.16	-25.8	346.0	395.0	363.5	31.42	12.571	
4,500.0	4,481.6	4,492.4	4,446.1	16.0	16.6	-118.49	-37.7	366.9	410.3	378.1	32.20	12.742	
4,600.0	4,580.8	4,590.5	4,541.3	16.4	17.0	-116.94	-49.5	387.8	426.1	393.1	32.99	12.914	
4,700.0	4,679.9	4,688.6	4,636.4	16.8	17.4	-115.50	-61.3	408.7	442.0	408.3	33.78	13.086	
4,800.0	4,779.1	4,786.8	4,731.5	17.2	17.9	-114.16	-73.2	429.6	458.3	423.7	34.57	13.257	
4,900.0	4,878.3	4,884.9	4,826.7	17.5	18.3	-112.92	-85.0	450.5	474.8	439.4	35.36	13.427	
5,000.0	4,977.5	4,983.0	4,921.8	17.9	18.8	-111.75	-96.9	471.4	491.5	455.3	36.15	13.594	
5,100.0	5,076.7	5,081.1	5,016.9	18.3	19.2	-110.66	-108.7	492.3	508.3	471.4	36.95	13.759	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,200.0	5,175.9	5,179.2	5,112.0	18.7	19.7	-109.64	-120.6	513.2	525.4	487.6	37.74	13.921	
5,300.0	5,275.0	5,277.3	5,207.2	19.1	20.2	-108.69	-132.4	534.1	542.6	504.0	38.53	14.080	
5,400.0	5,374.2	5,375.5	5,302.3	19.5	20.6	-107.79	-144.3	555.0	559.9	520.6	39.33	14.236	
5,500.0	5,473.4	5,473.6	5,397.4	19.9	21.1	-106.95	-156.1	575.9	577.4	537.2	40.13	14.388	
5,600.0	5,572.6	5,571.7	5,492.6	20.3	21.5	-106.16	-167.9	596.8	594.9	554.0	40.93	14.537	
5,700.0	5,671.8	5,669.8	5,587.7	20.7	22.0	-105.41	-179.8	617.7	612.6	570.9	41.72	14.683	
5,800.0	5,771.0	5,767.9	5,682.8	21.1	22.5	-104.70	-191.6	638.6	630.4	587.9	42.52	14.825	
5,900.0	5,870.1	5,866.0	5,778.0	21.4	22.9	-104.03	-203.5	659.5	648.3	604.9	43.32	14.963	
6,000.0	5,969.3	5,964.2	5,873.1	21.8	23.4	-103.40	-215.3	680.4	666.2	622.1	44.12	15.099	
6,100.0	6,068.5	6,062.3	5,968.2	22.2	23.9	-102.80	-227.2	701.3	684.2	639.3	44.92	15.230	
6,200.0	6,167.7	6,160.4	6,063.3	22.6	24.3	-102.23	-239.0	722.2	702.3	656.6	45.73	15.359	
6,300.0	6,266.9	6,258.5	6,158.5	23.0	24.8	-101.69	-250.8	743.1	720.5	673.9	46.53	15.484	
6,400.0	6,366.1	6,356.6	6,253.6	23.4	25.3	-101.18	-262.7	764.0	738.7	691.3	47.33	15.606	
6,500.0	6,465.2	6,454.7	6,348.7	23.8	25.8	-100.69	-274.5	784.9	756.9	708.8	48.14	15.725	
6,600.0	6,564.4	6,552.9	6,443.9	24.2	26.2	-100.23	-286.4	805.8	775.2	726.3	48.94	15.841	
6,700.0	6,663.6	6,651.0	6,539.0	24.6	26.7	-99.78	-298.2	826.7	793.6	743.9	49.74	15.954	
6,800.0	6,762.8	6,749.1	6,634.1	25.0	27.2	-99.36	-310.1	847.7	812.0	761.5	50.55	16.064	
6,900.0	6,862.0	6,847.2	6,729.3	25.4	27.6	-98.95	-321.9	868.6	830.5	779.1	51.36	16.171	
7,000.0	6,961.2	6,945.3	6,824.4	25.8	28.1	-98.56	-333.8	889.5	849.0	796.8	52.16	16.276	
7,100.0	7,060.3	7,043.4	6,919.5	26.2	28.6	-98.19	-345.6	910.4	867.5	814.5	52.97	16.378	
7,200.0	7,159.5	7,141.6	7,014.6	26.6	29.1	-97.92	-357.4	931.3	886.0	832.2	53.77	16.477	
7,300.0	7,259.0	7,239.6	7,109.7	27.0	29.5	-97.78	-369.3	952.1	904.3	849.7	54.56	16.574	
7,400.0	7,358.8	7,337.3	7,204.4	27.3	30.0	-97.44	-381.1	973.0	922.2	866.8	55.31	16.671	
7,500.0	7,458.7	7,434.7	7,298.9	27.7	30.5	-96.91	-392.8	993.7	939.8	883.7	56.04	16.771	
7,600.0	7,558.7	7,531.7	7,392.9	28.0	31.0	-96.40	-404.5	1,014.4	957.3	900.6	56.72	16.879	
7,700.0	7,658.7	7,628.7	7,486.9	28.3	31.4	-95.80	-416.2	1,035.0	975.1	917.7	57.39	16.992	
7,800.0	7,758.7	7,725.6	7,580.9	28.6	31.9	-95.20	-428.0	1,055.7	993.2	935.1	58.06	17.107	
7,900.0	7,858.7	7,822.6	7,674.9	28.9	32.4	-94.60	-439.7	1,076.3	1,011.6	952.8	58.73	17.223	
8,000.0	7,958.7	7,919.5	7,768.9	29.3	32.9	-94.00	-451.4	1,097.0	1,030.2	970.8	59.40	17.342	
8,100.0	8,058.7	8,016.5	7,862.9	29.6	33.3	-93.40	-463.1	1,117.6	1,049.0	989.0	60.08	17.462	
8,200.0	8,158.7	8,113.4	7,956.9	29.9	33.8	-92.80	-474.8	1,138.3	1,068.1	1,007.4	60.75	17.582	
8,300.0	8,258.7	8,210.4	8,051.0	30.2	34.3	-92.20	-486.5	1,158.9	1,087.4	1,026.0	61.42	17.704	
8,400.0	8,358.7	8,307.4	8,145.0	30.6	34.8	-91.60	-498.2	1,179.6	1,106.9	1,044.8	62.10	17.826	
8,500.0	8,457.9	8,404.9	8,239.5	30.9	35.2	-91.00	-509.9	1,200.4	1,127.8	1,065.0	62.88	17.935	
8,600.0	8,552.6	8,500.6	8,332.3	31.4	35.7	-90.40	-521.5	1,220.8	1,150.6	1,086.8	63.83	18.027	
8,700.0	8,638.6	8,590.1	8,419.1	31.9	36.2	-89.80	-532.3	1,239.8	1,175.2	1,110.3	64.89	18.109	
8,800.0	8,712.2	8,669.7	8,496.3	32.5	36.5	-89.20	-541.9	1,256.8	1,202.1	1,136.0	66.04	18.203	
8,900.0	8,770.1	8,735.9	8,560.4	33.1	36.9	-88.60	-549.9	1,270.9	1,232.3	1,165.1	67.20	18.336	
9,000.0	8,809.9	8,785.7	8,608.7	33.8	37.1	-88.00	-555.9	1,281.5	1,266.6	1,198.3	68.33	18.537	
9,100.0	8,829.8	8,816.9	8,639.0	34.5	37.3	-87.40	-559.7	1,288.1	1,305.2	1,235.9	69.33	18.826	
9,200.0	8,832.0	8,831.3	8,652.9	35.1	37.3	-86.80	-561.4	1,291.2	1,348.0	1,277.8	70.17	19.209	
9,300.0	8,832.0	8,843.5	8,664.8	35.9	37.4	-86.20	-562.9	1,293.8	1,396.2	1,325.3	70.93	19.684	
9,400.0	8,832.0	8,855.7	8,676.7	36.6	37.5	-85.60	-564.4	1,296.4	1,449.7	1,378.1	71.61	20.243	
9,500.0	8,832.0	8,868.0	8,688.5	37.4	37.5	-85.00	-565.8	1,299.0	1,507.8	1,435.5	72.22	20.878	
9,600.0	8,832.0	8,880.2	8,700.4	38.3	37.6	-84.40	-567.3	1,301.6	1,570.0	1,497.2	72.75	21.580	
9,700.0	8,832.0	8,892.5	8,712.2	39.2	37.6	-83.80	-568.8	1,304.2	1,635.9	1,562.6	73.22	22.342	
9,800.0	8,832.0	8,904.7	8,724.1	40.1	37.7	-83.20	-570.3	1,306.8	1,705.0	1,631.3	73.63	23.156	
9,900.0	8,832.0	8,916.9	8,736.0	41.0	37.8	-82.60	-571.8	1,309.4	1,776.9	1,702.9	73.99	24.016	
10,000.0	8,832.0	8,929.2	8,747.8	42.0	37.8	-82.00	-573.2	1,312.1	1,851.4	1,777.1	74.31	24.916	
10,100.0	8,832.0	11,620.7	10,196.0	43.0	51.9	-135.87	-2,073.0	1,436.1	1,895.8	1,828.6	67.28	28.177	
10,200.0	8,832.0	11,720.7	10,196.0	44.0	52.8	-135.87	-2,173.0	1,436.9	1,895.8	1,827.1	68.74	27.580	
10,300.0	8,832.0	11,820.7	10,196.0	45.0	53.7	-135.87	-2,273.0	1,437.7	1,895.8	1,825.6	70.24	26.989	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,400.0	8,832.0	11,920.7	10,196.0	46.1	54.6	-135.87	-2,373.0	1,438.5	1,895.8	1,824.0	71.79	26.408	
10,500.0	8,832.0	12,020.7	10,196.0	47.2	55.6	-135.87	-2,473.0	1,439.2	1,895.8	1,822.5	73.38	25.837	
10,600.0	8,832.0	12,120.7	10,196.0	48.3	56.6	-135.87	-2,573.0	1,440.0	1,895.8	1,820.8	75.00	25.278	
10,700.0	8,832.0	12,220.7	10,196.0	49.4	57.5	-135.87	-2,673.0	1,440.8	1,895.8	1,819.2	76.66	24.731	
10,800.0	8,832.0	12,320.7	10,196.0	50.6	58.5	-135.87	-2,773.0	1,441.6	1,895.8	1,817.5	78.35	24.197	
10,900.0	8,832.0	12,420.7	10,196.0	51.7	59.6	-135.87	-2,873.0	1,442.3	1,895.8	1,815.8	80.07	23.677	
11,000.0	8,832.0	12,520.7	10,196.0	52.9	60.6	-135.87	-2,973.0	1,443.1	1,895.8	1,814.0	81.82	23.170	
11,100.0	8,832.0	12,620.7	10,196.0	54.1	61.7	-135.87	-3,073.0	1,443.9	1,895.8	1,812.2	83.60	22.678	
11,200.0	8,832.0	12,720.7	10,196.0	55.3	62.7	-135.87	-3,173.0	1,444.7	1,895.8	1,810.4	85.40	22.199	
11,300.0	8,832.0	12,820.7	10,196.0	56.5	63.8	-135.87	-3,273.0	1,445.4	1,895.8	1,808.6	87.23	21.734	
11,400.0	8,832.0	12,920.7	10,196.0	57.7	64.9	-135.87	-3,373.0	1,446.2	1,895.8	1,806.8	89.08	21.283	
11,500.0	8,832.0	13,020.7	10,196.0	58.9	66.1	-135.87	-3,473.0	1,447.0	1,895.8	1,804.9	90.95	20.846	
11,600.0	8,832.0	13,120.7	10,196.0	60.2	67.2	-135.87	-3,573.0	1,447.8	1,895.8	1,803.0	92.84	20.421	
11,700.0	8,832.0	13,220.7	10,196.0	61.4	68.3	-135.87	-3,673.0	1,448.6	1,895.8	1,801.1	94.74	20.010	
11,800.0	8,832.0	13,320.7	10,196.0	62.7	69.5	-135.87	-3,773.0	1,449.3	1,895.8	1,799.2	96.67	19.612	
11,900.0	8,832.0	13,420.7	10,196.0	63.9	70.6	-135.87	-3,873.0	1,450.1	1,895.8	1,797.2	98.61	19.225	
12,000.0	8,832.0	13,520.7	10,196.0	65.2	71.8	-135.87	-3,973.0	1,450.9	1,895.8	1,795.3	100.57	18.851	
12,100.0	8,832.0	13,620.7	10,196.0	66.5	73.0	-135.87	-4,073.0	1,451.7	1,895.8	1,793.3	102.54	18.489	
12,200.0	8,832.0	13,720.7	10,196.0	67.8	74.2	-135.87	-4,173.0	1,452.4	1,895.8	1,791.3	104.53	18.138	
12,300.0	8,832.0	13,820.7	10,196.0	69.1	75.4	-135.87	-4,272.9	1,453.2	1,895.8	1,789.3	106.52	17.797	
12,400.0	8,832.0	13,920.7	10,196.0	70.4	76.6	-135.87	-4,372.9	1,454.0	1,895.8	1,787.3	108.53	17.468	
12,500.0	8,832.0	14,020.7	10,196.0	71.7	77.8	-135.87	-4,472.9	1,454.8	1,895.8	1,785.3	110.56	17.148	
12,600.0	8,832.0	14,120.7	10,196.0	73.0	79.1	-135.87	-4,572.9	1,455.5	1,895.8	1,783.2	112.59	16.838	
12,700.0	8,832.0	14,220.7	10,196.0	74.3	80.3	-135.87	-4,672.9	1,456.3	1,895.8	1,781.2	114.63	16.538	
12,800.0	8,832.0	14,320.7	10,196.0	75.6	81.5	-135.87	-4,772.9	1,457.1	1,895.8	1,779.1	116.69	16.247	
12,900.0	8,832.0	14,420.7	10,196.0	76.9	82.8	-135.87	-4,872.9	1,457.9	1,895.8	1,777.1	118.75	15.965	
13,000.0	8,832.0	14,520.7	10,196.0	78.3	84.0	-135.87	-4,972.9	1,458.6	1,895.8	1,775.0	120.82	15.691	
13,100.0	8,832.0	14,620.7	10,196.0	79.6	85.3	-135.87	-5,072.9	1,459.4	1,895.8	1,772.9	122.90	15.426	
13,200.0	8,832.0	14,720.7	10,196.0	80.9	86.6	-135.87	-5,172.9	1,460.2	1,895.8	1,770.8	124.99	15.168	
13,300.0	8,832.0	14,820.7	10,196.0	82.3	87.8	-135.87	-5,272.9	1,461.0	1,895.8	1,768.7	127.09	14.918	
13,400.0	8,832.0	14,920.7	10,196.0	83.6	89.1	-135.87	-5,372.9	1,461.7	1,895.8	1,766.6	129.19	14.675	
13,500.0	8,832.0	15,020.7	10,196.0	85.0	90.4	-135.87	-5,472.9	1,462.5	1,895.8	1,764.5	131.30	14.439	
13,600.0	8,832.0	15,120.7	10,196.0	86.3	91.7	-135.87	-5,572.9	1,463.3	1,895.8	1,762.4	133.41	14.210	
13,700.0	8,832.0	15,220.7	10,196.0	87.7	93.0	-135.87	-5,672.9	1,464.1	1,895.8	1,760.3	135.54	13.987	
13,800.0	8,832.0	15,320.7	10,196.0	89.0	94.3	-135.87	-5,772.9	1,464.8	1,895.8	1,758.2	137.67	13.771	
13,900.0	8,832.0	15,420.7	10,196.0	90.4	95.6	-135.87	-5,872.9	1,465.6	1,895.8	1,756.0	139.80	13.561	
14,000.0	8,832.0	15,520.7	10,196.0	91.8	96.9	-135.87	-5,972.9	1,466.4	1,895.8	1,753.9	141.94	13.357	
14,100.0	8,832.0	15,620.7	10,196.0	93.1	98.2	-135.87	-6,072.9	1,467.2	1,895.8	1,751.7	144.09	13.158	
14,200.0	8,832.0	15,720.7	10,196.0	94.5	99.5	-135.87	-6,172.9	1,468.0	1,895.8	1,749.6	146.24	12.964	
14,300.0	8,832.0	15,820.7	10,196.0	95.9	100.8	-135.87	-6,272.9	1,468.7	1,895.8	1,747.4	148.39	12.776	
14,400.0	8,832.0	15,920.7	10,196.0	97.2	102.1	-135.87	-6,372.9	1,469.5	1,895.8	1,745.3	150.55	12.593	
14,500.0	8,832.0	16,020.7	10,196.0	98.6	103.5	-135.87	-6,472.9	1,470.3	1,895.8	1,743.1	152.71	12.414	
14,600.0	8,832.0	16,120.7	10,196.0	100.0	104.8	-135.87	-6,572.9	1,471.1	1,895.8	1,741.0	154.88	12.241	
14,700.0	8,832.0	16,220.7	10,196.0	101.4	106.1	-135.87	-6,672.9	1,471.8	1,895.8	1,738.8	157.05	12.071	
14,800.0	8,832.0	16,320.7	10,196.0	102.7	107.4	-135.87	-6,772.9	1,472.6	1,895.8	1,736.6	159.23	11.906	
14,900.0	8,832.0	16,420.7	10,196.0	104.1	108.8	-135.87	-6,872.9	1,473.4	1,895.8	1,734.4	161.41	11.746	
15,000.0	8,832.0	16,520.7	10,196.0	105.5	110.1	-135.87	-6,972.9	1,474.2	1,895.8	1,732.2	163.59	11.589	
15,100.0	8,832.0	16,620.7	10,196.0	106.9	111.5	-135.87	-7,072.9	1,474.9	1,895.8	1,730.1	165.78	11.436	
15,200.0	8,832.0	16,720.7	10,196.0	108.3	112.8	-135.87	-7,172.9	1,475.7	1,895.8	1,727.9	167.97	11.287	
15,300.0	8,832.0	16,820.7	10,196.0	109.7	114.2	-135.87	-7,272.9	1,476.5	1,895.8	1,725.7	170.16	11.142	
15,400.0	8,832.0	16,920.7	10,196.0	111.1	115.5	-135.87	-7,372.9	1,477.3	1,895.8	1,723.5	172.35	11.000	
15,500.0	8,832.0	17,020.7	10,196.0	112.5	116.9	-135.87	-7,472.9	1,478.0	1,895.8	1,721.3	174.55	10.861	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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		Offset		Semi Major Axis			Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,600.0	8,832.0	17,120.7	10,196.0	113.8	118.2	-135.87	-7,572.8	1,478.8	1,895.8	1,719.1	176.75	10.726	
15,700.0	8,832.0	17,220.7	10,196.0	115.2	119.6	-135.87	-7,672.8	1,479.6	1,895.8	1,716.9	178.96	10.594	
15,800.0	8,832.0	17,320.7	10,196.0	116.6	120.9	-135.87	-7,772.8	1,480.4	1,895.8	1,714.7	181.16	10.465	
15,900.0	8,832.0	17,420.7	10,196.0	118.0	122.3	-135.87	-7,872.8	1,481.1	1,895.8	1,712.5	183.37	10.339	
16,000.0	8,832.0	17,520.7	10,196.0	119.4	123.6	-135.87	-7,972.8	1,481.9	1,895.8	1,710.2	185.59	10.215	
16,100.0	8,832.0	17,620.7	10,196.0	120.8	125.0	-135.87	-8,072.8	1,482.7	1,895.8	1,708.0	187.80	10.095	
16,200.0	8,832.0	17,720.7	10,196.0	122.2	126.4	-135.87	-8,172.8	1,483.5	1,895.8	1,705.8	190.02	9.977	
16,300.0	8,832.0	17,820.7	10,196.0	123.6	127.7	-135.87	-8,272.8	1,484.2	1,895.8	1,703.6	192.23	9.862	
16,400.0	8,832.0	17,920.7	10,196.0	125.0	129.1	-135.87	-8,372.8	1,485.0	1,895.8	1,701.4	194.45	9.750	
16,500.0	8,832.0	18,020.7	10,196.0	126.4	130.5	-135.87	-8,472.8	1,485.8	1,895.8	1,699.2	196.68	9.639	
16,600.0	8,832.0	18,120.7	10,196.0	127.8	131.9	-135.87	-8,572.8	1,486.6	1,895.8	1,696.9	198.90	9.532	
16,700.0	8,832.0	18,220.7	10,196.0	129.3	133.2	-135.87	-8,672.8	1,487.4	1,895.8	1,694.7	201.13	9.426	
16,800.0	8,832.0	18,320.7	10,196.0	130.7	134.6	-135.87	-8,772.8	1,488.1	1,895.8	1,692.5	203.36	9.323	
16,900.0	8,832.0	18,420.7	10,196.0	132.1	136.0	-135.87	-8,872.8	1,488.9	1,895.8	1,690.2	205.58	9.222	
17,000.0	8,832.0	18,520.7	10,196.0	133.5	137.4	-135.87	-8,972.8	1,489.7	1,895.8	1,688.0	207.82	9.123	
17,100.0	8,832.0	18,620.7	10,196.0	134.9	138.8	-135.87	-9,072.8	1,490.5	1,895.8	1,685.8	210.05	9.026	
17,200.0	8,832.0	18,720.7	10,196.0	136.3	140.1	-135.87	-9,172.8	1,491.2	1,895.8	1,683.5	212.28	8.931	
17,300.0	8,832.0	18,820.7	10,196.0	137.7	141.5	-135.87	-9,272.8	1,492.0	1,895.8	1,681.3	214.52	8.838	
17,400.0	8,832.0	18,920.7	10,196.0	139.1	142.9	-135.87	-9,372.8	1,492.8	1,895.8	1,679.1	216.76	8.746	
17,500.0	8,832.0	19,020.7	10,196.0	140.5	144.3	-135.87	-9,472.8	1,493.6	1,895.8	1,676.8	219.00	8.657	
17,600.0	8,832.0	19,120.7	10,196.0	141.9	145.7	-135.87	-9,572.8	1,494.3	1,895.8	1,674.6	221.24	8.569	
17,700.0	8,832.0	19,220.7	10,196.0	143.4	147.1	-135.87	-9,672.8	1,495.1	1,895.8	1,672.3	223.48	8.483	
17,800.0	8,832.0	19,320.7	10,196.0	144.8	148.5	-135.87	-9,772.8	1,495.9	1,895.8	1,670.1	225.72	8.399	
17,900.0	8,832.0	19,420.7	10,196.0	146.2	149.8	-135.87	-9,872.8	1,496.7	1,895.8	1,667.9	227.97	8.316	
18,000.0	8,832.0	19,520.7	10,196.0	147.6	151.2	-135.87	-9,972.8	1,497.4	1,895.8	1,665.6	230.22	8.235	
18,100.0	8,832.0	19,620.7	10,196.0	149.0	152.6	-135.87	-10,072.8	1,498.2	1,895.8	1,663.4	232.46	8.155	
18,200.0	8,832.0	19,720.7	10,196.0	150.4	154.0	-135.87	-10,172.8	1,499.0	1,895.8	1,661.1	234.71	8.077	
18,300.0	8,832.0	19,820.7	10,196.0	151.9	155.4	-135.87	-10,272.8	1,499.8	1,895.8	1,658.9	236.96	8.001	
18,400.0	8,832.0	19,920.7	10,196.0	153.3	156.8	-135.87	-10,372.8	1,500.5	1,895.8	1,656.6	239.21	7.925	
18,500.0	8,832.0	20,020.7	10,196.0	154.7	158.2	-135.87	-10,472.8	1,501.3	1,895.8	1,654.4	241.46	7.851	
18,600.0	8,832.0	20,120.7	10,196.0	156.1	159.6	-135.87	-10,572.8	1,502.1	1,895.8	1,652.1	243.72	7.779	
18,700.0	8,832.0	20,220.7	10,196.0	157.5	161.0	-135.87	-10,672.8	1,502.9	1,895.8	1,649.9	245.97	7.708	
18,800.0	8,832.0	20,320.7	10,196.0	158.9	162.4	-135.87	-10,772.8	1,503.6	1,895.8	1,647.6	248.22	7.638	
18,900.0	8,832.0	20,420.7	10,196.0	160.4	163.8	-135.87	-10,872.7	1,504.4	1,895.8	1,645.3	250.48	7.569	
19,000.0	8,832.0	20,520.7	10,196.0	161.8	165.2	-135.87	-10,972.7	1,505.2	1,895.8	1,643.1	252.74	7.501	
19,074.0	8,832.0	20,594.8	10,196.0	162.7	166.2	-135.87	-11,046.8	1,505.8	1,895.8	1,641.6	254.21	7.458	
19,077.7	8,832.0	20,594.8	10,196.0	162.7	166.2	-135.87	-11,046.8	1,505.8	1,895.8	1,641.5	254.29	7.455 SF	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Edith Federal 001 - OH - OH													Offset Site Error: 0.0 usft
Survey Program: 360-INC-ONLY													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,500.0	8,832.0	8,807.7	8,806.3	58.9	195.1	91.22	-5,097.3	-1,186.4	2,081.1	1,840.6	240.55	8.651	
11,600.0	8,832.0	8,806.0	8,804.5	60.2	195.0	91.14	-5,097.3	-1,186.4	2,005.1	1,763.0	242.09	8.282	
11,700.0	8,832.0	8,804.2	8,802.8	61.4	195.0	91.07	-5,097.3	-1,186.4	1,931.2	1,687.4	243.77	7.922	
11,800.0	8,832.0	8,802.5	8,801.0	62.7	194.9	90.99	-5,097.4	-1,186.4	1,859.8	1,614.2	245.59	7.573	
11,900.0	8,832.0	8,800.7	8,799.3	63.9	194.9	90.92	-5,097.4	-1,186.4	1,791.1	1,543.5	247.55	7.235	
12,000.0	8,832.0	8,799.0	8,797.5	65.2	194.9	90.84	-5,097.4	-1,186.4	1,725.5	1,475.8	249.65	6.911	
12,100.0	8,832.0	8,797.3	8,795.8	66.5	194.8	90.76	-5,097.5	-1,186.4	1,663.3	1,411.4	251.89	6.603	
12,200.0	8,832.0	8,795.5	8,794.1	67.8	194.8	90.69	-5,097.5	-1,186.4	1,604.9	1,350.6	254.24	6.312	
12,300.0	8,832.0	8,793.8	8,792.3	69.1	194.8	90.61	-5,097.5	-1,186.4	1,550.7	1,294.1	256.69	6.041	
12,400.0	8,832.0	8,792.0	8,790.6	70.4	194.7	90.54	-5,097.6	-1,186.4	1,501.3	1,242.1	259.20	5.792	
12,500.0	8,832.0	8,790.3	8,788.8	71.7	194.7	90.46	-5,097.6	-1,186.4	1,457.1	1,195.4	261.73	5.567	
12,600.0	8,832.0	8,788.5	8,787.1	73.0	194.7	90.39	-5,097.6	-1,186.4	1,418.6	1,154.3	264.23	5.369	
12,700.0	8,832.0	8,786.8	8,785.3	74.3	194.6	90.31	-5,097.7	-1,186.4	1,386.2	1,119.5	266.64	5.199	
12,800.0	8,832.0	8,785.0	8,783.6	75.6	194.6	90.24	-5,097.7	-1,186.4	1,360.4	1,091.5	268.90	5.059	
12,900.0	8,832.0	8,783.3	8,781.8	76.9	194.5	90.16	-5,097.7	-1,186.4	1,341.6	1,070.6	270.92	4.952	
13,000.0	8,832.0	8,781.5	8,780.1	78.3	194.5	90.09	-5,097.7	-1,186.4	1,330.0	1,057.4	272.67	4.878	
13,100.0	8,832.0	8,779.8	8,778.4	79.6	194.5	90.01	-5,097.8	-1,186.4	1,325.9	1,051.9	274.07	4.838	
13,104.3	8,832.0	8,779.7	8,778.3	79.7	194.5	90.01	-5,097.8	-1,186.4	1,325.9	1,051.8	274.12	4.837	CC, ES
13,200.0	8,832.0	8,778.1	8,776.6	80.9	194.4	89.94	-5,097.8	-1,186.4	1,329.4	1,054.3	275.10	4.832	SF
13,300.0	8,832.0	8,776.3	8,774.9	82.3	194.4	89.86	-5,097.8	-1,186.4	1,340.3	1,064.5	275.74	4.861	
13,400.0	8,832.0	8,774.6	8,773.1	83.6	194.4	89.78	-5,097.9	-1,186.4	1,358.5	1,082.5	276.01	4.922	
13,500.0	8,832.0	8,772.8	8,771.4	85.0	194.3	89.71	-5,097.9	-1,186.4	1,383.7	1,107.8	275.91	5.015	
13,600.0	8,832.0	8,771.1	8,769.6	86.3	194.3	89.63	-5,097.9	-1,186.4	1,415.5	1,140.0	275.50	5.138	
13,700.0	8,832.0	8,769.3	8,767.9	87.7	194.3	89.56	-5,098.0	-1,186.4	1,453.5	1,178.7	274.82	5.289	
13,800.0	8,832.0	8,767.6	8,766.1	89.0	194.2	89.48	-5,098.0	-1,186.4	1,497.3	1,223.4	273.92	5.466	
13,900.0	8,832.0	8,765.8	8,764.4	90.4	194.2	89.41	-5,098.0	-1,186.4	1,546.3	1,273.4	272.85	5.667	
14,000.0	8,832.0	8,764.1	8,762.7	91.8	194.1	89.33	-5,098.0	-1,186.4	1,600.0	1,328.4	271.65	5.890	
14,100.0	8,832.0	8,762.3	8,760.9	93.1	194.1	89.26	-5,098.1	-1,186.4	1,658.1	1,387.7	270.38	6.132	
14,200.0	8,832.0	8,760.6	8,759.2	94.5	194.1	89.18	-5,098.1	-1,186.4	1,720.0	1,450.9	269.07	6.392	
14,300.0	8,832.0	8,758.9	8,757.4	95.9	194.0	89.11	-5,098.1	-1,186.4	1,785.3	1,517.6	267.73	6.668	
14,400.0	8,832.0	8,757.1	8,755.7	97.2	194.0	89.03	-5,098.2	-1,186.4	1,853.7	1,587.3	266.40	6.958	
14,500.0	8,832.0	8,755.4	8,753.9	98.6	194.0	88.96	-5,098.2	-1,186.4	1,924.9	1,659.9	265.09	7.261	
14,600.0	8,832.0	8,753.6	8,752.2	100.0	193.9	88.88	-5,098.2	-1,186.4	1,998.6	1,734.8	263.81	7.576	
14,700.0	8,832.0	8,751.9	8,750.4	101.4	193.9	88.80	-5,098.3	-1,186.4	2,074.5	1,811.9	262.58	7.900	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #302H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
3,300.0	3,291.4	3,644.7	3,624.2	11.5	13.2	79.75	-877.5	-1,917.8	2,108.6	2,084.6	23.99	87.900	
3,400.0	3,390.6	3,742.1	3,720.0	11.8	13.5	80.05	-872.7	-1,901.3	2,088.6	2,063.9	24.71	84.533	
3,500.0	3,489.7	3,839.4	3,815.8	12.2	13.9	80.37	-867.9	-1,884.8	2,068.7	2,043.3	25.43	81.350	
3,600.0	3,588.9	3,936.8	3,911.7	12.6	14.3	80.69	-863.1	-1,868.3	2,048.9	2,022.7	26.15	78.337	
3,700.0	3,688.1	4,034.1	4,007.5	12.9	14.7	81.02	-858.4	-1,851.7	2,029.1	2,002.2	26.88	75.483	
3,800.0	3,787.3	4,131.5	4,103.3	13.3	15.1	81.35	-853.6	-1,835.2	2,009.4	1,981.8	27.61	72.776	
3,900.0	3,886.5	4,228.8	4,199.1	13.7	15.5	81.69	-848.8	-1,818.7	1,989.8	1,961.4	28.34	70.205	
4,000.0	3,985.7	4,326.2	4,294.9	14.1	15.9	82.03	-844.0	-1,802.2	1,970.2	1,941.1	29.08	67.761	
4,100.0	4,084.8	4,423.5	4,390.8	14.5	16.3	82.39	-839.3	-1,785.7	1,950.7	1,920.9	29.81	65.436	
4,200.0	4,184.0	4,520.9	4,486.6	14.8	16.7	82.75	-834.5	-1,769.2	1,931.2	1,900.7	30.55	63.222	
4,300.0	4,283.2	4,618.2	4,582.4	15.2	17.1	83.11	-829.7	-1,752.6	1,911.9	1,880.6	31.29	61.112	
4,400.0	4,382.4	4,715.6	4,678.2	15.6	17.6	83.49	-824.9	-1,736.1	1,892.6	1,860.6	32.02	59.099	
4,500.0	4,481.6	4,812.9	4,774.0	16.0	18.0	83.87	-820.2	-1,719.6	1,873.4	1,840.7	32.77	57.176	
4,600.0	4,580.8	4,910.3	4,869.9	16.4	18.4	84.26	-815.4	-1,703.1	1,854.3	1,820.8	33.51	55.339	
4,700.0	4,679.9	5,007.6	4,965.7	16.8	18.8	84.66	-810.6	-1,686.6	1,835.3	1,801.0	34.25	53.582	
4,800.0	4,779.1	5,105.0	5,061.5	17.2	19.2	85.06	-805.8	-1,670.1	1,816.3	1,781.4	35.00	51.900	
4,900.0	4,878.3	5,202.3	5,157.3	17.5	19.6	85.48	-801.1	-1,653.5	1,797.5	1,761.8	35.74	50.289	
5,000.0	4,977.5	5,299.7	5,253.1	17.9	20.0	85.90	-796.3	-1,637.0	1,778.8	1,742.3	36.49	48.746	
5,100.0	5,076.7	5,397.0	5,349.0	18.3	20.4	86.33	-791.5	-1,620.5	1,760.1	1,722.9	37.24	47.265	
5,200.0	5,175.9	5,494.4	5,444.8	18.7	20.8	86.77	-786.7	-1,604.0	1,741.5	1,703.6	37.99	45.844	
5,300.0	5,275.0	5,591.7	5,540.6	19.1	21.2	87.22	-782.0	-1,587.5	1,723.1	1,684.4	38.74	44.479	
5,400.0	5,374.2	5,689.1	5,636.4	19.5	21.6	87.68	-777.2	-1,570.9	1,704.7	1,665.3	39.49	43.168	
5,500.0	5,473.4	5,786.4	5,732.2	19.9	22.0	88.15	-772.4	-1,554.4	1,686.5	1,646.3	40.24	41.908	
5,600.0	5,572.6	5,883.8	5,828.1	20.3	22.5	88.63	-767.6	-1,537.9	1,668.4	1,627.4	41.00	40.695	
5,700.0	5,671.8	5,981.1	5,923.9	20.7	22.9	89.12	-762.8	-1,521.4	1,650.4	1,608.6	41.75	39.529	
5,800.0	5,771.0	6,078.5	6,019.7	21.1	23.3	89.62	-758.1	-1,504.9	1,632.5	1,590.0	42.51	38.405	
5,900.0	5,870.1	6,175.8	6,115.5	21.4	23.7	90.13	-753.3	-1,488.4	1,614.8	1,571.5	43.26	37.323	
6,000.0	5,969.3	6,273.2	6,211.4	21.8	24.1	90.66	-748.5	-1,471.8	1,597.1	1,553.1	44.02	36.280	
6,100.0	6,068.5	6,370.6	6,307.2	22.2	24.5	91.19	-743.7	-1,455.3	1,579.6	1,534.9	44.78	35.275	
6,200.0	6,167.7	6,467.9	6,403.0	22.6	24.9	91.74	-739.0	-1,438.8	1,562.3	1,516.8	45.54	34.305	
6,300.0	6,266.9	6,565.3	6,498.8	23.0	25.3	92.29	-734.2	-1,422.3	1,545.1	1,498.8	46.30	33.370	
6,400.0	6,366.1	6,662.6	6,594.6	23.4	25.8	92.86	-729.4	-1,405.8	1,528.0	1,481.0	47.06	32.467	
6,500.0	6,465.2	6,760.0	6,690.5	23.8	26.2	93.44	-724.6	-1,389.3	1,511.1	1,463.3	47.83	31.596	
6,600.0	6,564.4	6,857.3	6,786.3	24.2	26.6	94.04	-719.9	-1,372.7	1,494.4	1,445.8	48.59	30.754	
6,700.0	6,663.6	6,954.7	6,882.1	24.6	27.0	94.65	-715.1	-1,356.2	1,477.8	1,428.4	49.36	29.941	
6,800.0	6,762.8	7,052.0	6,977.9	25.0	27.4	95.27	-710.3	-1,339.7	1,461.4	1,411.3	50.12	29.156	
6,900.0	6,862.0	7,149.4	7,073.7	25.4	27.8	95.90	-705.5	-1,323.2	1,445.1	1,394.3	50.89	28.397	
7,000.0	6,961.2	7,246.7	7,169.6	25.8	28.2	96.55	-700.8	-1,306.7	1,429.1	1,377.4	51.66	27.664	
7,100.0	7,060.3	7,344.1	7,265.4	26.2	28.7	97.21	-696.0	-1,290.2	1,413.2	1,360.8	52.43	26.955	
7,200.0	7,159.5	7,441.4	7,361.2	26.6	29.1	97.81	-691.2	-1,273.6	1,397.5	1,344.3	53.20	26.269	
7,300.0	7,259.0	7,539.1	7,457.4	27.0	29.5	98.08	-686.4	-1,257.1	1,381.7	1,327.7	53.96	25.605	
7,400.0	7,358.8	7,626.6	7,543.5	27.3	29.9	98.17	-682.1	-1,242.3	1,365.6	1,310.9	54.70	24.966	
7,500.0	7,458.7	7,700.0	7,616.0	27.7	30.2	98.09	-679.0	-1,231.3	1,350.8	1,295.4	55.40	24.383	
7,600.0	7,558.7	7,762.4	7,677.9	28.0	30.4	-91.08	-676.7	-1,223.3	1,337.9	1,281.9	56.03	23.878	
7,700.0	7,658.7	7,831.0	7,746.0	28.3	30.7	-90.99	-674.6	-1,216.1	1,327.3	1,270.7	56.64	23.433	
7,800.0	7,758.7	7,900.0	7,814.8	28.6	30.9	-90.93	-672.9	-1,210.4	1,319.0	1,261.8	57.23	23.048	
7,900.0	7,858.7	7,969.1	7,883.7	28.9	31.2	-90.88	-671.7	-1,206.3	1,313.0	1,255.2	57.79	22.722	
8,000.0	7,958.7	8,038.4	7,953.0	29.3	31.4	-90.85	-671.0	-1,203.7	1,309.4	1,251.0	58.32	22.452	
8,100.0	8,058.7	8,107.8	8,022.4	29.6	31.7	-90.84	-670.7	-1,202.8	1,308.0	1,249.2	58.82	22.237	
8,135.7	8,094.5	8,141.5	8,056.1	29.7	31.8	-90.84	-670.7	-1,202.8	1,308.0	1,249.0	59.05	22.153	
8,200.0	8,158.7	8,205.8	8,120.3	29.9	32.0	-90.84	-670.7	-1,202.8	1,308.0	1,248.6	59.47	21.995 CC	
8,300.0	8,258.7	8,302.5	8,216.4	30.2	32.2	-91.24	-680.0	-1,202.8	1,308.1	1,248.1	60.07	21.776	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #302H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,400.0	8,358.7	8,391.9	8,302.0	30.6	32.5	88.07	-705.7	-1,202.6	1,308.9	1,248.3	60.59	21.602	
8,500.0	8,457.9	8,475.0	8,375.9	30.9	32.6	86.58	-743.5	-1,202.3	1,310.7	1,249.6	61.09	21.454	
8,600.0	8,552.6	8,552.7	8,438.1	31.4	32.8	85.24	-789.8	-1,202.0	1,313.1	1,251.5	61.60	21.318	
8,700.0	8,638.6	8,628.6	8,490.8	31.9	32.9	84.04	-844.3	-1,201.7	1,315.7	1,253.6	62.12	21.182	
8,800.0	8,712.2	8,700.0	8,532.0	32.5	32.9	83.07	-902.6	-1,201.3	1,318.3	1,255.7	62.64	21.045	
8,900.0	8,770.1	8,775.0	8,565.4	33.1	33.0	82.29	-969.7	-1,200.8	1,320.5	1,257.2	63.23	20.883	
9,000.0	8,809.9	8,850.0	8,587.8	33.8	33.0	81.79	-1,041.1	-1,200.3	1,322.0	1,258.1	63.88	20.695	
9,100.0	8,829.8	8,918.1	8,598.3	34.5	33.0	81.58	-1,108.3	-1,199.9	1,322.7	1,258.1	64.56	20.488	
9,200.0	8,832.0	9,001.9	8,600.0	35.1	33.1	81.58	-1,192.1	-1,199.3	1,322.8	1,257.4	65.35	20.242	
9,300.0	8,832.0	9,101.9	8,600.0	35.9	33.3	81.58	-1,292.1	-1,198.7	1,322.9	1,256.6	66.28	19.959	
9,400.0	8,832.0	9,201.9	8,600.0	36.6	33.5	81.59	-1,392.1	-1,198.0	1,323.0	1,255.7	67.32	19.652	
9,500.0	8,832.0	9,301.9	8,600.0	37.4	33.8	81.59	-1,492.1	-1,197.3	1,323.1	1,254.6	68.47	19.325	
9,600.0	8,832.0	9,401.9	8,600.0	38.3	34.1	81.59	-1,592.1	-1,196.6	1,323.2	1,253.5	69.71	18.981	
9,700.0	8,832.0	9,501.9	8,600.0	39.2	34.6	81.59	-1,692.1	-1,196.0	1,323.3	1,252.3	71.05	18.625	
9,800.0	8,832.0	9,601.9	8,600.0	40.1	35.1	81.59	-1,792.1	-1,195.3	1,323.4	1,250.9	72.48	18.260	
9,900.0	8,832.0	9,701.9	8,600.0	41.0	35.7	81.59	-1,892.1	-1,194.6	1,323.5	1,249.5	73.99	17.888	
10,000.0	8,832.0	9,801.9	8,600.0	42.0	36.3	81.59	-1,992.1	-1,193.9	1,323.6	1,248.0	75.58	17.513	
10,100.0	8,832.0	9,901.9	8,600.0	43.0	36.9	81.59	-2,092.1	-1,193.3	1,323.7	1,246.5	77.24	17.137	
10,200.0	8,832.0	10,001.9	8,600.0	44.0	37.6	81.59	-2,192.1	-1,192.6	1,323.8	1,244.8	78.98	16.761	
10,300.0	8,832.0	10,101.9	8,600.0	45.0	38.4	81.59	-2,292.1	-1,191.9	1,323.9	1,243.1	80.78	16.389	
10,400.0	8,832.0	10,201.9	8,600.0	46.1	39.2	81.59	-2,392.1	-1,191.3	1,324.0	1,241.4	82.65	16.020	
10,500.0	8,832.0	10,301.9	8,600.0	47.2	40.0	81.59	-2,492.0	-1,190.6	1,324.1	1,239.6	84.57	15.658	
10,600.0	8,832.0	10,401.9	8,600.0	48.3	40.9	81.59	-2,592.0	-1,189.9	1,324.2	1,237.7	86.54	15.301	
10,700.0	8,832.0	10,501.9	8,600.0	49.4	41.8	81.59	-2,692.0	-1,189.2	1,324.3	1,235.8	88.57	14.953	
10,800.0	8,832.0	10,601.9	8,600.0	50.6	42.7	81.59	-2,792.0	-1,188.6	1,324.4	1,233.8	90.64	14.612	
10,900.0	8,832.0	10,701.9	8,600.0	51.7	43.7	81.60	-2,892.0	-1,187.9	1,324.5	1,231.8	92.76	14.280	
11,000.0	8,832.0	10,801.9	8,600.0	52.9	44.7	81.60	-2,992.0	-1,187.2	1,324.6	1,229.7	94.91	13.956	
11,100.0	8,832.0	10,901.9	8,600.0	54.1	45.7	81.60	-3,092.0	-1,186.6	1,324.7	1,227.6	97.11	13.642	
11,200.0	8,832.0	11,001.9	8,600.0	55.3	46.7	81.60	-3,192.0	-1,185.9	1,324.8	1,225.5	99.34	13.337	
11,300.0	8,832.0	11,101.9	8,600.0	56.5	47.7	81.60	-3,292.0	-1,185.2	1,324.9	1,223.3	101.60	13.041	
11,400.0	8,832.0	11,201.9	8,600.0	57.7	48.8	81.60	-3,392.0	-1,184.5	1,325.0	1,221.2	103.90	12.754	
11,500.0	8,832.0	11,301.9	8,600.0	58.9	49.9	81.60	-3,492.0	-1,183.9	1,325.2	1,218.9	106.22	12.476	
11,600.0	8,832.0	11,401.9	8,600.0	60.2	51.0	81.60	-3,592.0	-1,183.2	1,325.3	1,216.7	108.57	12.207	
11,700.0	8,832.0	11,501.9	8,600.0	61.4	52.1	81.60	-3,692.0	-1,182.5	1,325.4	1,214.4	110.94	11.946	
11,800.0	8,832.0	11,601.9	8,600.0	62.7	53.3	81.60	-3,792.0	-1,181.9	1,325.5	1,212.1	113.34	11.694	
11,900.0	8,832.0	11,701.9	8,600.0	63.9	54.4	81.60	-3,892.0	-1,181.2	1,325.6	1,209.8	115.76	11.451	
12,000.0	8,832.0	11,801.9	8,600.0	65.2	55.6	81.60	-3,992.0	-1,180.5	1,325.7	1,207.5	118.20	11.215	
12,100.0	8,832.0	11,901.9	8,600.0	66.5	56.8	81.60	-4,092.0	-1,179.8	1,325.8	1,205.1	120.67	10.987	
12,200.0	8,832.0	12,001.9	8,600.0	67.8	58.0	81.60	-4,192.0	-1,179.2	1,325.9	1,202.7	123.15	10.767	
12,300.0	8,832.0	12,101.9	8,600.0	69.1	59.2	81.60	-4,292.0	-1,178.5	1,326.0	1,200.3	125.64	10.554	
12,400.0	8,832.0	12,201.9	8,600.0	70.4	60.4	81.61	-4,392.0	-1,177.8	1,326.1	1,197.9	128.15	10.347	
12,500.0	8,832.0	12,301.9	8,600.0	71.7	61.6	81.61	-4,492.0	-1,177.1	1,326.2	1,195.5	130.68	10.148	
12,600.0	8,832.0	12,401.9	8,600.0	73.0	62.9	81.61	-4,592.0	-1,176.5	1,326.3	1,193.1	133.22	9.955	
12,700.0	8,832.0	12,501.9	8,600.0	74.3	64.1	81.61	-4,692.0	-1,175.8	1,326.4	1,190.6	135.78	9.769	
12,800.0	8,832.0	12,601.9	8,600.0	75.6	65.4	81.61	-4,792.0	-1,175.1	1,326.5	1,188.1	138.35	9.588	
12,900.0	8,832.0	12,701.9	8,600.0	76.9	66.6	81.61	-4,892.0	-1,174.5	1,326.6	1,185.7	140.93	9.413	
13,000.0	8,832.0	12,801.9	8,600.0	78.3	67.9	81.61	-4,992.0	-1,173.8	1,326.7	1,183.2	143.52	9.244	
13,100.0	8,832.0	12,901.9	8,600.0	79.6	69.2	81.61	-5,092.0	-1,173.1	1,326.8	1,180.7	146.12	9.080	
13,200.0	8,832.0	13,001.9	8,600.0	80.9	70.5	81.61	-5,192.0	-1,172.4	1,326.9	1,178.2	148.74	8.921	
13,300.0	8,832.0	13,101.9	8,600.0	82.3	71.8	81.61	-5,292.0	-1,171.8	1,327.0	1,175.6	151.36	8.767	
13,400.0	8,832.0	13,201.9	8,600.0	83.6	73.0	81.61	-5,392.0	-1,171.1	1,327.1	1,173.1	153.99	8.618	
13,500.0	8,832.0	13,301.9	8,600.0	85.0	74.3	81.61	-5,492.0	-1,170.4	1,327.2	1,170.6	156.63	8.474	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #302H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,600.0	8,832.0	13,401.9	8,600.0	86.3	75.6	81.61	-5,592.0	-1,169.8	1,327.3	1,168.0	159.28	8.333	
13,700.0	8,832.0	13,501.9	8,600.0	87.7	77.0	81.61	-5,692.0	-1,169.1	1,327.4	1,165.5	161.93	8.197	
13,800.0	8,832.0	13,601.9	8,600.0	89.0	78.3	81.61	-5,792.0	-1,168.4	1,327.5	1,162.9	164.60	8.065	
13,900.0	8,832.0	13,701.9	8,600.0	90.4	79.6	81.61	-5,892.0	-1,167.7	1,327.6	1,160.4	167.27	7.937	
14,000.0	8,832.0	13,801.9	8,600.0	91.8	80.9	81.62	-5,992.0	-1,167.1	1,327.7	1,157.8	169.94	7.813	
14,100.0	8,832.0	13,901.9	8,600.0	93.1	82.2	81.62	-6,092.0	-1,166.4	1,327.8	1,155.2	172.63	7.692	
14,200.0	8,832.0	14,001.9	8,600.0	94.5	83.6	81.62	-6,192.0	-1,165.7	1,327.9	1,152.6	175.32	7.574	
14,300.0	8,832.0	14,101.9	8,600.0	95.9	84.9	81.62	-6,292.0	-1,165.0	1,328.0	1,150.0	178.01	7.460	
14,400.0	8,832.0	14,201.9	8,600.0	97.2	86.3	81.62	-6,392.0	-1,164.4	1,328.1	1,147.4	180.71	7.349	
14,500.0	8,832.0	14,301.9	8,600.0	98.6	87.6	81.62	-6,492.0	-1,163.7	1,328.2	1,144.8	183.42	7.242	
14,600.0	8,832.0	14,401.9	8,600.0	100.0	88.9	81.62	-6,592.0	-1,163.0	1,328.3	1,142.2	186.13	7.137	
14,700.0	8,832.0	14,501.9	8,600.0	101.4	90.3	81.62	-6,692.0	-1,162.4	1,328.4	1,139.6	188.85	7.034	
14,800.0	8,832.0	14,601.9	8,600.0	102.7	91.6	81.62	-6,791.9	-1,161.7	1,328.5	1,137.0	191.57	6.935	
14,900.0	8,832.0	14,701.9	8,600.0	104.1	93.0	81.62	-6,891.9	-1,161.0	1,328.7	1,134.4	194.29	6.838	
15,000.0	8,832.0	14,801.9	8,600.0	105.5	94.4	81.62	-6,991.9	-1,160.3	1,328.8	1,131.7	197.02	6.744	
15,100.0	8,832.0	14,901.9	8,600.0	106.9	95.7	81.62	-7,091.9	-1,159.7	1,328.9	1,129.1	199.76	6.652	
15,200.0	8,832.0	15,001.9	8,600.0	108.3	97.1	81.62	-7,191.9	-1,159.0	1,329.0	1,126.5	202.50	6.563	
15,300.0	8,832.0	15,101.9	8,600.0	109.7	98.4	81.62	-7,291.9	-1,158.3	1,329.1	1,123.8	205.24	6.476	
15,400.0	8,832.0	15,201.9	8,600.0	111.1	99.8	81.62	-7,391.9	-1,157.7	1,329.2	1,121.2	207.98	6.391	
15,500.0	8,832.0	15,301.9	8,600.0	112.5	101.2	81.63	-7,491.9	-1,157.0	1,329.3	1,118.5	210.73	6.308	
15,600.0	8,832.0	15,401.9	8,600.0	113.8	102.6	81.63	-7,591.9	-1,156.3	1,329.4	1,115.9	213.48	6.227	
15,700.0	8,832.0	15,501.9	8,600.0	115.2	103.9	81.63	-7,691.9	-1,155.6	1,329.5	1,113.2	216.24	6.148	
15,800.0	8,832.0	15,601.9	8,600.0	116.6	105.3	81.63	-7,791.9	-1,155.0	1,329.6	1,110.6	219.00	6.071	
15,900.0	8,832.0	15,701.9	8,600.0	118.0	106.7	81.63	-7,891.9	-1,154.3	1,329.7	1,107.9	221.76	5.996	
16,000.0	8,832.0	15,801.9	8,600.0	119.4	108.1	81.63	-7,991.9	-1,153.6	1,329.8	1,105.3	224.52	5.923	
16,100.0	8,832.0	15,901.9	8,600.0	120.8	109.4	81.63	-8,091.9	-1,153.0	1,329.9	1,102.6	227.29	5.851	
16,200.0	8,832.0	16,001.9	8,600.0	122.2	110.8	81.63	-8,191.9	-1,152.3	1,330.0	1,099.9	230.06	5.781	
16,300.0	8,832.0	16,101.9	8,600.0	123.6	112.2	81.63	-8,291.9	-1,151.6	1,330.1	1,097.3	232.83	5.713	
16,400.0	8,832.0	16,201.9	8,600.0	125.0	113.6	81.63	-8,391.9	-1,150.9	1,330.2	1,094.6	235.60	5.646	
16,500.0	8,832.0	16,301.9	8,600.0	126.4	115.0	81.63	-8,491.9	-1,150.3	1,330.3	1,091.9	238.38	5.581	
16,600.0	8,832.0	16,401.9	8,600.0	127.8	116.4	81.63	-8,591.9	-1,149.6	1,330.4	1,089.2	241.16	5.517	
16,700.0	8,832.0	16,501.9	8,600.0	129.3	117.8	81.63	-8,691.9	-1,148.9	1,330.5	1,086.6	243.94	5.454	
16,800.0	8,832.0	16,601.9	8,600.0	130.7	119.2	81.63	-8,791.9	-1,148.2	1,330.6	1,083.9	246.72	5.393	
16,900.0	8,832.0	16,701.9	8,600.0	132.1	120.6	81.63	-8,891.9	-1,147.6	1,330.7	1,081.2	249.51	5.333	
17,000.0	8,832.0	16,801.9	8,600.0	133.5	121.9	81.64	-8,991.9	-1,146.9	1,330.8	1,078.5	252.30	5.275	
17,100.0	8,832.0	16,901.9	8,600.0	134.9	123.3	81.64	-9,091.9	-1,146.2	1,330.9	1,075.8	255.09	5.217	
17,200.0	8,832.0	17,001.9	8,600.0	136.3	124.7	81.64	-9,191.9	-1,145.6	1,331.0	1,073.1	257.88	5.161	
17,300.0	8,832.0	17,101.9	8,600.0	137.7	126.1	81.64	-9,291.9	-1,144.9	1,331.1	1,070.4	260.67	5.107	
17,400.0	8,832.0	17,201.9	8,600.0	139.1	127.5	81.64	-9,391.9	-1,144.2	1,331.2	1,067.8	263.47	5.053	
17,500.0	8,832.0	17,301.9	8,600.0	140.5	128.9	81.64	-9,491.9	-1,143.5	1,331.3	1,065.1	266.26	5.000	
17,600.0	8,832.0	17,401.9	8,600.0	141.9	130.3	81.64	-9,591.9	-1,142.9	1,331.4	1,062.4	269.06	4.948	
17,700.0	8,832.0	17,501.9	8,600.0	143.4	131.7	81.64	-9,691.9	-1,142.2	1,331.5	1,059.7	271.86	4.898	
17,800.0	8,832.0	17,601.9	8,600.0	144.8	133.1	81.64	-9,791.9	-1,141.5	1,331.6	1,057.0	274.66	4.848	
17,900.0	8,832.0	17,701.9	8,600.0	146.2	134.5	81.64	-9,891.9	-1,140.9	1,331.7	1,054.3	277.47	4.800	
18,000.0	8,832.0	17,801.9	8,600.0	147.6	136.0	81.64	-9,991.9	-1,140.2	1,331.8	1,051.6	280.27	4.752	
18,100.0	8,832.0	17,901.9	8,600.0	149.0	137.4	81.64	-10,091.9	-1,139.5	1,331.9	1,048.9	283.08	4.705	
18,200.0	8,832.0	18,001.9	8,600.0	150.4	138.8	81.64	-10,191.9	-1,138.8	1,332.0	1,046.2	285.88	4.659	
18,300.0	8,832.0	18,101.9	8,600.0	151.9	140.2	81.64	-10,291.9	-1,138.2	1,332.2	1,043.5	288.69	4.614	
18,400.0	8,832.0	18,201.9	8,600.0	153.3	141.6	81.64	-10,391.9	-1,137.5	1,332.3	1,040.8	291.50	4.570	
18,500.0	8,832.0	18,301.9	8,600.0	154.7	143.0	81.64	-10,491.9	-1,136.8	1,332.4	1,038.0	294.31	4.527	
18,600.0	8,832.0	18,401.9	8,600.0	156.1	144.4	81.65	-10,591.9	-1,136.2	1,332.5	1,035.3	297.12	4.485	
18,700.0	8,832.0	18,501.9	8,600.0	157.5	145.8	81.65	-10,691.9	-1,135.5	1,332.6	1,032.6	299.94	4.443	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #302H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
18,800.0	8,832.0	18,601.9	8,600.0	158.9	147.2	81.65	-10,791.9	-1,134.8	1,332.7	1,029.9	302.75	4.402		
18,900.0	8,832.0	18,701.9	8,600.0	160.4	148.6	81.65	-10,891.9	-1,134.1	1,332.8	1,027.2	305.57	4.362		
19,000.0	8,832.0	18,801.9	8,600.0	161.8	150.1	81.65	-10,991.9	-1,133.5	1,332.9	1,024.5	308.38	4.322		
19,077.7	8,832.0	18,879.5	8,600.0	162.7	151.1	81.65	-11,069.5	-1,132.9	1,333.0	1,022.5	310.40	4.294 ES, SF		

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Royal Oak 24 Fed Com 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #502H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
3,900.0	3,886.5	4,171.5	4,155.8	13.7	14.9	82.02	-874.5	-1,959.5	2,122.5	2,094.4	28.13	75.449	
4,000.0	3,985.7	4,269.4	4,252.7	14.1	15.3	82.37	-870.0	-1,946.1	2,106.2	2,077.3	28.86	72.978	
4,100.0	4,084.8	4,367.2	4,349.5	14.5	15.7	82.72	-865.5	-1,932.7	2,090.0	2,060.4	29.59	70.626	
4,200.0	4,184.0	4,465.1	4,446.3	14.8	16.1	83.08	-861.1	-1,919.3	2,073.8	2,043.5	30.33	68.387	
4,300.0	4,283.2	4,562.9	4,543.1	15.2	16.4	83.44	-856.6	-1,905.9	2,057.8	2,026.7	31.06	66.252	
4,400.0	4,382.4	4,660.8	4,639.9	15.6	16.8	83.80	-852.1	-1,892.4	2,041.8	2,010.0	31.80	64.216	
4,500.0	4,481.6	4,758.6	4,736.7	16.0	17.2	84.18	-847.6	-1,879.0	2,025.9	1,993.4	32.53	62.271	
4,600.0	4,580.8	4,856.4	4,833.6	16.4	17.6	84.56	-843.2	-1,865.6	2,010.1	1,976.8	33.27	60.413	
4,700.0	4,679.9	4,954.3	4,930.4	16.8	18.0	84.94	-838.7	-1,852.2	1,994.4	1,960.4	34.01	58.636	
4,800.0	4,779.1	5,052.1	5,027.2	17.2	18.4	85.33	-834.2	-1,838.8	1,978.8	1,944.0	34.75	56.935	
4,900.0	4,878.3	5,150.0	5,124.0	17.5	18.7	85.73	-829.7	-1,825.4	1,963.2	1,927.7	35.50	55.306	
5,000.0	4,977.5	5,247.8	5,220.8	17.9	19.1	86.13	-825.3	-1,812.0	1,947.8	1,911.6	36.24	53.745	
5,100.0	5,076.7	5,345.7	5,317.6	18.3	19.5	86.54	-820.8	-1,798.5	1,932.5	1,895.5	36.99	52.248	
5,200.0	5,175.9	5,443.5	5,414.5	18.7	19.9	86.96	-816.3	-1,785.1	1,917.2	1,879.5	37.73	50.811	
5,300.0	5,275.0	5,541.4	5,511.3	19.1	20.3	87.38	-811.8	-1,771.7	1,902.1	1,863.6	38.48	49.431	
5,400.0	5,374.2	5,639.2	5,608.1	19.5	20.7	87.81	-807.4	-1,758.3	1,887.1	1,847.8	39.23	48.106	
5,500.0	5,473.4	5,737.0	5,704.9	19.9	21.1	88.24	-802.9	-1,744.9	1,872.1	1,832.1	39.98	46.831	
5,600.0	5,572.6	5,834.9	5,801.7	20.3	21.5	88.68	-798.4	-1,731.5	1,857.3	1,816.6	40.73	45.605	
5,700.0	5,671.8	5,932.7	5,898.5	20.7	21.8	89.13	-793.9	-1,718.0	1,842.6	1,801.1	41.48	44.425	
5,800.0	5,771.0	6,030.6	5,995.4	21.1	22.2	89.59	-789.5	-1,704.6	1,828.0	1,785.8	42.23	43.289	
5,900.0	5,870.1	6,128.4	6,092.2	21.4	22.6	90.05	-785.0	-1,691.2	1,813.5	1,770.6	42.98	42.195	
6,000.0	5,969.3	6,226.3	6,189.0	21.8	23.0	90.52	-780.5	-1,677.8	1,799.2	1,755.5	43.73	41.140	
6,100.0	6,068.5	6,324.1	6,285.8	22.2	23.4	91.00	-776.0	-1,664.4	1,785.0	1,740.5	44.49	40.123	
6,200.0	6,167.7	6,422.0	6,382.6	22.6	23.8	91.49	-771.6	-1,651.0	1,770.9	1,725.6	45.24	39.142	
6,300.0	6,266.9	6,519.8	6,479.5	23.0	24.2	91.98	-767.1	-1,637.6	1,756.9	1,710.9	46.00	38.195	
6,400.0	6,366.1	6,617.6	6,576.3	23.4	24.6	92.48	-762.6	-1,624.1	1,743.1	1,696.3	46.75	37.282	
6,500.0	6,465.2	6,715.5	6,673.1	23.8	25.0	92.99	-758.1	-1,610.7	1,729.3	1,681.8	47.51	36.399	
6,600.0	6,564.4	6,813.3	6,769.9	24.2	25.4	93.50	-753.7	-1,597.3	1,715.8	1,667.5	48.27	35.547	
6,700.0	6,663.6	6,911.2	6,866.7	24.6	25.8	94.03	-749.2	-1,583.9	1,702.4	1,653.3	49.03	34.723	
6,800.0	6,762.8	7,009.0	6,963.5	25.0	26.1	94.56	-744.7	-1,570.5	1,689.1	1,639.3	49.79	33.927	
6,900.0	6,862.0	7,106.9	7,060.4	25.4	26.5	95.10	-740.3	-1,557.1	1,676.0	1,625.4	50.55	33.158	
7,000.0	6,961.2	7,204.7	7,157.2	25.8	26.9	95.65	-735.8	-1,543.7	1,663.0	1,611.7	51.31	32.413	
7,100.0	7,060.3	7,302.6	7,254.0	26.2	27.3	96.21	-731.3	-1,530.2	1,650.2	1,598.1	52.07	31.693	
7,200.0	7,159.5	7,400.4	7,350.8	26.6	27.7	96.70	-726.8	-1,516.8	1,637.5	1,584.7	52.83	30.997	
7,300.0	7,259.0	7,498.6	7,448.0	27.0	28.1	96.93	-722.3	-1,503.4	1,624.7	1,571.1	53.58	30.323	
7,400.0	7,358.8	7,597.2	7,545.5	27.3	28.5	97.04	-717.8	-1,489.8	1,611.5	1,557.2	54.31	29.670	
7,500.0	7,458.7	7,696.0	7,643.3	27.7	28.9	97.03	-713.3	-1,476.3	1,598.0	1,543.0	55.03	29.037	
7,600.0	7,558.7	7,794.9	7,741.2	28.0	29.3	-92.09	-708.8	-1,462.7	1,584.2	1,528.4	55.72	28.429	
7,700.0	7,658.7	7,893.9	7,839.1	28.3	29.7	-91.94	-704.3	-1,449.2	1,570.3	1,513.9	56.41	27.839	
7,800.0	7,758.7	7,992.8	7,937.0	28.6	30.1	-91.79	-699.7	-1,435.6	1,556.4	1,499.3	57.09	27.262	
7,900.0	7,858.7	8,091.8	8,034.9	28.9	30.5	-91.63	-695.2	-1,422.0	1,542.6	1,484.8	57.78	26.698	
8,000.0	7,958.7	8,190.7	8,132.9	29.3	30.9	-91.48	-690.7	-1,408.5	1,528.7	1,470.3	58.47	26.147	
8,100.0	8,058.7	8,289.7	8,230.8	29.6	31.3	-91.32	-686.2	-1,394.9	1,514.9	1,455.8	59.16	25.609	
8,200.0	8,158.7	8,388.6	8,328.7	29.9	31.7	-91.16	-681.6	-1,381.3	1,501.1	1,441.2	59.84	25.083	
8,300.0	8,258.7	8,487.6	8,426.6	30.2	32.1	-90.99	-677.1	-1,367.8	1,487.3	1,426.7	60.54	24.569	
8,400.0	8,358.7	8,587.1	8,495.4	30.6	32.4	89.62	-674.1	-1,358.8	1,474.4	1,413.2	61.19	24.096	
8,500.0	8,457.9	8,623.0	8,561.0	30.9	32.6	91.29	-671.8	-1,351.8	1,463.7	1,401.9	61.88	23.655	
8,600.0	8,552.6	8,700.0	8,637.6	31.4	32.9	93.31	-669.7	-1,345.4	1,456.2	1,393.5	62.65	23.242	
8,700.0	8,638.6	8,743.4	8,681.0	31.9	33.1	94.66	-668.7	-1,342.7	1,452.7	1,389.3	63.38	22.921	
8,714.3	8,649.9	8,751.0	8,688.5	32.0	33.1	94.85	-668.6	-1,342.3	1,452.6	1,389.1	63.49	22.879 CC, ES	
8,800.0	8,712.2	8,800.0	8,737.5	32.5	33.3	95.94	-667.9	-1,340.0	1,454.9	1,390.8	64.18	22.670	
8,900.0	8,770.1	8,831.9	8,769.3	33.1	33.4	95.89	-667.5	-1,339.0	1,464.0	1,399.1	64.91	22.554	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #502H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,000.0	8,809.9	8,858.9	8,796.3	33.8	33.5	94.82	-667.3	-1,338.4	1,480.9	1,415.2	65.64	22.561	
9,100.0	8,829.8	8,872.4	8,809.8	34.5	33.5	92.31	-667.3	-1,338.2	1,505.4	1,439.1	66.29	22.710	
9,200.0	8,832.0	8,873.6	8,811.0	35.1	33.5	90.65	-667.2	-1,338.2	1,536.7	1,469.9	66.84	22.990	
9,300.0	8,832.0	8,873.3	8,810.8	35.9	33.5	90.64	-667.2	-1,338.2	1,573.8	1,506.5	67.37	23.362	
9,400.0	8,832.0	8,873.0	8,810.4	36.6	33.5	90.63	-667.3	-1,338.2	1,616.3	1,548.4	67.86	23.818	
9,500.0	8,832.0	8,872.7	8,810.1	37.4	33.5	90.62	-667.3	-1,338.2	1,663.7	1,595.4	68.31	24.353	
9,600.0	8,832.0	10,503.9	9,720.0	38.3	37.2	122.66	-1,593.4	-1,331.4	1,714.9	1,647.2	67.67	25.341	
9,700.0	8,832.0	10,603.9	9,720.0	39.2	37.6	122.66	-1,693.4	-1,330.7	1,714.9	1,646.1	68.89	24.893	
9,800.0	8,832.0	10,703.9	9,720.0	40.1	38.1	122.66	-1,793.4	-1,330.0	1,715.0	1,644.8	70.18	24.436	
9,900.0	8,832.0	10,803.9	9,720.0	41.0	38.6	122.65	-1,893.4	-1,329.3	1,715.1	1,643.5	71.55	23.972	
10,000.0	8,832.0	10,903.9	9,720.0	42.0	39.2	122.65	-1,993.4	-1,328.6	1,715.1	1,642.2	72.97	23.504	
10,100.0	8,832.0	11,003.9	9,720.0	43.0	39.8	122.65	-2,093.4	-1,327.9	1,715.2	1,640.7	74.46	23.035	
10,200.0	8,832.0	11,103.9	9,720.0	44.0	40.5	122.65	-2,193.4	-1,327.2	1,715.3	1,639.3	76.00	22.568	
10,300.0	8,832.0	11,203.9	9,720.0	45.0	41.2	122.65	-2,293.4	-1,326.5	1,715.3	1,637.7	77.61	22.103	
10,400.0	8,832.0	11,303.9	9,720.0	46.1	41.9	122.65	-2,393.4	-1,325.8	1,715.4	1,636.1	79.26	21.643	
10,500.0	8,832.0	11,403.9	9,720.0	47.2	42.7	122.65	-2,493.4	-1,325.1	1,715.4	1,634.5	80.96	21.190	
10,600.0	8,832.0	11,503.9	9,720.0	48.3	43.5	122.64	-2,593.4	-1,324.4	1,715.5	1,632.8	82.70	20.743	
10,700.0	8,832.0	11,603.9	9,720.0	49.4	44.4	122.64	-2,693.4	-1,323.7	1,715.6	1,631.1	84.49	20.305	
10,800.0	8,832.0	11,703.9	9,720.0	50.6	45.2	122.64	-2,793.4	-1,323.0	1,715.6	1,629.3	86.32	19.875	
10,900.0	8,832.0	11,803.9	9,720.0	51.7	46.1	122.64	-2,893.4	-1,322.3	1,715.7	1,627.5	88.19	19.456	
11,000.0	8,832.0	11,903.9	9,720.0	52.9	47.1	122.64	-2,993.4	-1,321.6	1,715.8	1,625.7	90.09	19.046	
11,100.0	8,832.0	12,003.9	9,720.0	54.1	48.0	122.64	-3,093.4	-1,320.9	1,715.8	1,623.8	92.02	18.646	
11,200.0	8,832.0	12,103.9	9,720.0	55.3	49.0	122.64	-3,193.4	-1,320.2	1,715.9	1,621.9	93.99	18.257	
11,300.0	8,832.0	12,203.9	9,720.0	56.5	50.0	122.64	-3,293.4	-1,319.5	1,716.0	1,620.0	95.98	17.878	
11,400.0	8,832.0	12,303.9	9,720.0	57.7	51.0	122.63	-3,393.4	-1,318.8	1,716.0	1,618.0	98.01	17.509	
11,500.0	8,832.0	12,403.9	9,720.0	58.9	52.1	122.63	-3,493.4	-1,318.1	1,716.1	1,616.0	100.05	17.151	
11,600.0	8,832.0	12,503.9	9,720.0	60.2	53.2	122.63	-3,593.4	-1,317.4	1,716.1	1,614.0	102.13	16.804	
11,700.0	8,832.0	12,603.9	9,720.0	61.4	54.2	122.63	-3,693.3	-1,316.7	1,716.2	1,612.0	104.22	16.467	
11,800.0	8,832.0	12,703.9	9,720.0	62.7	55.3	122.63	-3,793.3	-1,316.0	1,716.3	1,609.9	106.34	16.139	
11,900.0	8,832.0	12,803.9	9,720.0	63.9	56.5	122.63	-3,893.3	-1,315.3	1,716.3	1,607.8	108.48	15.822	
12,000.0	8,832.0	12,903.9	9,720.0	65.2	57.6	122.63	-3,993.3	-1,314.6	1,716.4	1,605.8	110.64	15.514	
12,100.0	8,832.0	13,003.9	9,720.0	66.5	58.7	122.62	-4,093.3	-1,313.9	1,716.5	1,603.6	112.81	15.215	
12,200.0	8,832.0	13,103.9	9,720.0	67.8	59.9	122.62	-4,193.3	-1,313.2	1,716.5	1,601.5	115.00	14.926	
12,300.0	8,832.0	13,203.9	9,720.0	69.1	61.0	122.62	-4,293.3	-1,312.5	1,716.6	1,599.4	117.21	14.645	
12,400.0	8,832.0	13,303.9	9,720.0	70.4	62.2	122.62	-4,393.3	-1,311.8	1,716.6	1,597.2	119.43	14.373	
12,500.0	8,832.0	13,403.9	9,720.0	71.7	63.4	122.62	-4,493.3	-1,311.1	1,716.7	1,595.0	121.67	14.109	
12,600.0	8,832.0	13,503.9	9,720.0	73.0	64.6	122.62	-4,593.3	-1,310.4	1,716.8	1,592.8	123.92	13.853	
12,700.0	8,832.0	13,603.9	9,720.0	74.3	65.8	122.62	-4,693.3	-1,309.7	1,716.8	1,590.6	126.19	13.605	
12,800.0	8,832.0	13,703.9	9,720.0	75.6	67.1	122.62	-4,793.3	-1,309.0	1,716.9	1,588.4	128.46	13.365	
12,900.0	8,832.0	13,803.9	9,720.0	76.9	68.3	122.61	-4,893.3	-1,308.3	1,717.0	1,586.2	130.75	13.131	
13,000.0	8,832.0	13,903.9	9,720.0	78.3	69.5	122.61	-4,993.3	-1,307.6	1,717.0	1,584.0	133.05	12.905	
13,100.0	8,832.0	14,003.9	9,720.0	79.6	70.8	122.61	-5,093.3	-1,306.9	1,717.1	1,581.7	135.36	12.685	
13,200.0	8,832.0	14,103.9	9,720.0	80.9	72.0	122.61	-5,193.3	-1,306.2	1,717.1	1,579.5	137.68	12.472	
13,300.0	8,832.0	14,203.9	9,720.0	82.3	73.3	122.61	-5,293.3	-1,305.5	1,717.2	1,577.2	140.01	12.265	
13,400.0	8,832.0	14,303.9	9,720.0	83.6	74.5	122.61	-5,393.3	-1,304.8	1,717.3	1,574.9	142.35	12.064	
13,500.0	8,832.0	14,403.9	9,720.0	85.0	75.8	122.61	-5,493.3	-1,304.1	1,717.3	1,572.6	144.69	11.869	
13,600.0	8,832.0	14,503.9	9,720.0	86.3	77.1	122.60	-5,593.3	-1,303.4	1,717.4	1,570.3	147.05	11.679	
13,700.0	8,832.0	14,603.9	9,720.0	87.7	78.4	122.60	-5,693.3	-1,302.7	1,717.5	1,568.0	149.41	11.495	
13,800.0	8,832.0	14,703.9	9,720.0	89.0	79.7	122.60	-5,793.3	-1,302.0	1,717.5	1,565.7	151.78	11.316	
13,900.0	8,832.0	14,803.9	9,720.0	90.4	81.0	122.60	-5,893.3	-1,301.3	1,717.6	1,563.4	154.15	11.142	
14,000.0	8,832.0	14,903.9	9,720.0	91.8	82.3	122.60	-5,993.3	-1,300.6	1,717.6	1,561.1	156.54	10.973	
14,100.0	8,832.0	15,003.9	9,720.0	93.1	83.6	122.60	-6,093.3	-1,299.9	1,717.7	1,558.8	158.92	10.808	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #502H - 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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			Minimum Separation (usft)	
14,200.0	8,832.0	15,103.9	9,720.0	94.5	84.9	122.60	-6,193.3	-1,299.2	1,717.8	1,556.4	161.32	10.648		
14,300.0	8,832.0	15,203.9	9,720.0	95.9	86.2	122.60	-6,293.3	-1,298.5	1,717.8	1,554.1	163.72	10.492		
14,400.0	8,832.0	15,303.9	9,720.0	97.2	87.5	122.59	-6,393.3	-1,297.8	1,717.9	1,551.8	166.13	10.341		
14,500.0	8,832.0	15,403.9	9,720.0	98.6	88.9	122.59	-6,493.3	-1,297.1	1,718.0	1,549.4	168.54	10.193		
14,600.0	8,832.0	15,503.9	9,720.0	100.0	90.2	122.59	-6,593.3	-1,296.4	1,718.0	1,547.1	170.96	10.049		
14,700.0	8,832.0	15,603.9	9,720.0	101.4	91.5	122.59	-6,693.3	-1,295.7	1,718.1	1,544.7	173.38	9.909		
14,800.0	8,832.0	15,703.9	9,720.0	102.7	92.8	122.59	-6,793.3	-1,295.0	1,718.1	1,542.3	175.81	9.773		
14,900.0	8,832.0	15,803.9	9,720.0	104.1	94.2	122.59	-6,893.3	-1,294.3	1,718.2	1,540.0	178.24	9.640		
15,000.0	8,832.0	15,903.9	9,720.0	105.5	95.5	122.59	-6,993.3	-1,293.6	1,718.3	1,537.6	180.67	9.510		
15,100.0	8,832.0	16,003.9	9,720.0	106.9	96.9	122.58	-7,093.3	-1,292.9	1,718.3	1,535.2	183.11	9.384		
15,200.0	8,832.0	16,103.9	9,720.0	108.3	98.2	122.58	-7,193.3	-1,292.2	1,718.4	1,532.8	185.56	9.261		
15,300.0	8,832.0	16,203.9	9,720.0	109.7	99.6	122.58	-7,293.3	-1,291.4	1,718.5	1,530.5	188.01	9.140		
15,400.0	8,832.0	16,303.9	9,720.0	111.1	100.9	122.58	-7,393.3	-1,290.7	1,718.5	1,528.1	190.46	9.023		
15,500.0	8,832.0	16,403.9	9,720.0	112.5	102.3	122.58	-7,493.3	-1,290.0	1,718.6	1,525.7	192.91	8.909		
15,600.0	8,832.0	16,503.9	9,720.0	113.8	103.6	122.58	-7,593.3	-1,289.3	1,718.6	1,523.3	195.37	8.797		
15,700.0	8,832.0	16,603.9	9,720.0	115.2	105.0	122.58	-7,693.3	-1,288.6	1,718.7	1,520.9	197.83	8.688		
15,800.0	8,832.0	16,703.9	9,720.0	116.6	106.4	122.58	-7,793.2	-1,287.9	1,718.8	1,518.5	200.30	8.581		
15,900.0	8,832.0	16,803.9	9,720.0	118.0	107.7	122.57	-7,893.2	-1,287.2	1,718.8	1,516.1	202.76	8.477		
16,000.0	8,832.0	16,903.9	9,720.0	119.4	109.1	122.57	-7,993.2	-1,286.5	1,718.9	1,513.7	205.24	8.375		
16,100.0	8,832.0	17,003.9	9,720.0	120.8	110.5	122.57	-8,093.2	-1,285.8	1,719.0	1,511.3	207.71	8.276		
16,200.0	8,832.0	17,103.9	9,720.0	122.2	111.8	122.57	-8,193.2	-1,285.1	1,719.0	1,508.8	210.19	8.179		
16,300.0	8,832.0	17,203.9	9,720.0	123.6	113.2	122.57	-8,293.2	-1,284.4	1,719.1	1,506.4	212.67	8.084		
16,400.0	8,832.0	17,303.9	9,720.0	125.0	114.6	122.57	-8,393.2	-1,283.7	1,719.2	1,504.0	215.15	7.991		
16,500.0	8,832.0	17,403.9	9,720.0	126.4	115.9	122.57	-8,493.2	-1,283.0	1,719.2	1,501.6	217.63	7.900		
16,600.0	8,832.0	17,503.9	9,720.0	127.8	117.3	122.56	-8,593.2	-1,282.3	1,719.3	1,499.2	220.12	7.811		
16,700.0	8,832.0	17,603.9	9,720.0	129.3	118.7	122.56	-8,693.2	-1,281.6	1,719.3	1,496.7	222.61	7.724		
16,800.0	8,832.0	17,703.9	9,720.0	130.7	120.1	122.56	-8,793.2	-1,280.9	1,719.4	1,494.3	225.10	7.638		
16,900.0	8,832.0	17,803.9	9,720.0	132.1	121.5	122.56	-8,893.2	-1,280.2	1,719.5	1,491.9	227.59	7.555		
17,000.0	8,832.0	17,903.9	9,720.0	133.5	122.9	122.56	-8,993.2	-1,279.5	1,719.5	1,489.4	230.09	7.473		
17,100.0	8,832.0	18,003.9	9,720.0	134.9	124.2	122.56	-9,093.2	-1,278.8	1,719.6	1,487.0	232.58	7.393		
17,200.0	8,832.0	18,103.9	9,720.0	136.3	125.6	122.56	-9,193.2	-1,278.1	1,719.7	1,484.6	235.08	7.315		
17,300.0	8,832.0	18,203.9	9,720.0	137.7	127.0	122.56	-9,293.2	-1,277.4	1,719.7	1,482.1	237.59	7.238		
17,400.0	8,832.0	18,303.9	9,720.0	139.1	128.4	122.55	-9,393.2	-1,276.7	1,719.8	1,479.7	240.09	7.163		
17,500.0	8,832.0	18,403.9	9,720.0	140.5	129.8	122.55	-9,493.2	-1,276.0	1,719.8	1,477.2	242.59	7.089		
17,600.0	8,832.0	18,503.9	9,720.0	141.9	131.2	122.55	-9,593.2	-1,275.3	1,719.9	1,474.8	245.10	7.017		
17,700.0	8,832.0	18,603.9	9,720.0	143.4	132.6	122.55	-9,693.2	-1,274.6	1,720.0	1,472.4	247.61	6.946		
17,800.0	8,832.0	18,703.9	9,720.0	144.8	134.0	122.55	-9,793.2	-1,273.9	1,720.0	1,469.9	250.12	6.877		
17,900.0	8,832.0	18,803.9	9,720.0	146.2	135.4	122.55	-9,893.2	-1,273.2	1,720.1	1,467.5	252.63	6.809		
18,000.0	8,832.0	18,903.9	9,720.0	147.6	136.8	122.55	-9,993.2	-1,272.5	1,720.2	1,465.0	255.14	6.742		
18,100.0	8,832.0	19,003.9	9,720.0	149.0	138.2	122.54	-10,093.2	-1,271.8	1,720.2	1,462.6	257.66	6.676		
18,200.0	8,832.0	19,103.9	9,720.0	150.4	139.6	122.54	-10,193.2	-1,271.1	1,720.3	1,460.1	260.18	6.612		
18,300.0	8,832.0	19,203.9	9,720.0	151.9	141.0	122.54	-10,293.2	-1,270.4	1,720.3	1,457.6	262.69	6.549		
18,400.0	8,832.0	19,303.9	9,720.0	153.3	142.4	122.54	-10,393.2	-1,269.7	1,720.4	1,455.2	265.21	6.487		
18,500.0	8,832.0	19,403.9	9,720.0	154.7	143.8	122.54	-10,493.2	-1,269.0	1,720.5	1,452.7	267.73	6.426		
18,600.0	8,832.0	19,503.9	9,720.0	156.1	145.2	122.54	-10,593.2	-1,268.3	1,720.5	1,450.3	270.25	6.366		
18,700.0	8,832.0	19,603.9	9,720.0	157.5	146.6	122.54	-10,693.2	-1,267.6	1,720.6	1,447.8	272.78	6.308		
18,800.0	8,832.0	19,703.9	9,720.0	158.9	148.0	122.54	-10,793.2	-1,266.9	1,720.7	1,445.4	275.30	6.250		
18,900.0	8,832.0	19,803.9	9,720.0	160.4	149.4	122.53	-10,893.2	-1,266.2	1,720.7	1,442.9	277.83	6.194		
19,000.0	8,832.0	19,903.9	9,720.0	161.8	150.8	122.53	-10,993.2	-1,265.5	1,720.8	1,440.4	280.35	6.138		
19,077.7	8,832.0	19,981.5	9,720.0	162.7	151.9	122.53	-11,070.8	-1,264.9	1,720.8	1,438.7	282.13	6.099 SF		

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #602H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
3,600.0	3,588.9	3,863.2	3,849.0	12.6	13.8	84.12	-761.8	-1,988.6	2,121.1	2,095.2	25.92	81.842	
3,700.0	3,688.1	3,961.4	3,946.2	12.9	14.2	84.40	-760.2	-1,974.7	2,105.7	2,079.0	26.64	79.030	
3,800.0	3,787.3	4,059.7	4,043.5	13.3	14.5	84.69	-758.5	-1,960.8	2,090.2	2,062.9	27.37	76.364	
3,900.0	3,886.5	4,157.9	4,140.7	13.7	14.9	84.98	-756.9	-1,946.8	2,074.9	2,046.8	28.10	73.832	
4,000.0	3,985.7	4,256.2	4,238.0	14.1	15.3	85.28	-755.2	-1,932.9	2,059.6	2,030.7	28.83	71.427	
4,100.0	4,084.8	4,354.4	4,335.2	14.5	15.7	85.58	-753.6	-1,919.0	2,044.3	2,014.8	29.57	69.138	
4,200.0	4,184.0	4,452.7	4,432.4	14.8	16.1	85.89	-752.0	-1,905.1	2,029.1	1,998.8	30.30	66.959	
4,300.0	4,283.2	4,550.9	4,529.7	15.2	16.5	86.20	-750.3	-1,891.2	2,014.0	1,983.0	31.04	64.881	
4,400.0	4,382.4	4,649.2	4,626.9	15.6	16.8	86.51	-748.7	-1,877.3	1,998.9	1,967.2	31.78	62.900	
4,500.0	4,481.6	4,747.4	4,724.2	16.0	17.2	86.83	-747.0	-1,863.4	1,983.9	1,951.4	32.52	61.008	
4,600.0	4,580.8	4,845.7	4,821.4	16.4	17.6	87.16	-745.4	-1,849.5	1,969.0	1,935.7	33.26	59.199	
4,700.0	4,679.9	4,943.9	4,918.7	16.8	18.0	87.49	-743.8	-1,835.5	1,954.1	1,920.1	34.00	57.470	
4,800.0	4,779.1	5,042.2	5,015.9	17.2	18.4	87.82	-742.1	-1,821.6	1,939.3	1,904.5	34.74	55.815	
4,900.0	4,878.3	5,140.4	5,113.1	17.5	18.8	88.16	-740.5	-1,807.7	1,924.5	1,889.0	35.49	54.229	
5,000.0	4,977.5	5,238.6	5,210.4	17.9	19.2	88.50	-738.8	-1,793.8	1,909.8	1,873.6	36.23	52.709	
5,100.0	5,076.7	5,336.9	5,307.6	18.3	19.6	88.85	-737.2	-1,779.9	1,895.2	1,858.2	36.98	51.251	
5,200.0	5,175.9	5,435.1	5,404.9	18.7	19.9	89.21	-735.6	-1,766.0	1,880.6	1,842.9	37.72	49.851	
5,300.0	5,275.0	5,533.4	5,502.1	19.1	20.3	89.57	-733.9	-1,752.1	1,866.2	1,827.7	38.47	48.507	
5,400.0	5,374.2	5,631.6	5,599.4	19.5	20.7	89.94	-732.3	-1,738.2	1,851.8	1,812.5	39.22	47.215	
5,500.0	5,473.4	5,729.9	5,696.6	19.9	21.1	90.31	-730.6	-1,724.3	1,837.4	1,797.5	39.97	45.972	
5,600.0	5,572.6	5,828.1	5,793.9	20.3	21.5	90.68	-729.0	-1,710.3	1,823.2	1,782.5	40.72	44.777	
5,700.0	5,671.8	5,926.4	5,891.1	20.7	21.9	91.07	-727.4	-1,696.4	1,809.0	1,767.6	41.47	43.626	
5,800.0	5,771.0	6,024.6	5,988.3	21.1	22.3	91.46	-725.7	-1,682.5	1,794.9	1,752.7	42.22	42.517	
5,900.0	5,870.1	6,122.9	6,085.6	21.4	22.7	91.85	-724.1	-1,668.6	1,780.9	1,738.0	42.97	41.448	
6,000.0	5,969.3	6,221.1	6,182.8	21.8	23.1	92.25	-722.4	-1,654.7	1,767.0	1,723.3	43.72	40.417	
6,100.0	6,068.5	6,319.4	6,280.1	22.2	23.5	92.66	-720.8	-1,640.8	1,753.2	1,708.7	44.47	39.423	
6,200.0	6,167.7	6,417.6	6,377.3	22.6	23.9	93.07	-719.2	-1,626.9	1,739.5	1,694.2	45.22	38.464	
6,300.0	6,266.9	6,515.9	6,474.6	23.0	24.3	93.50	-717.5	-1,613.0	1,725.8	1,679.8	45.98	37.537	
6,400.0	6,366.1	6,614.1	6,571.8	23.4	24.7	93.92	-715.9	-1,599.0	1,712.3	1,665.5	46.73	36.642	
6,500.0	6,465.2	6,712.4	6,669.0	23.8	25.1	94.36	-714.2	-1,585.1	1,698.8	1,651.3	47.48	35.777	
6,600.0	6,564.4	6,810.6	6,766.3	24.2	25.4	94.80	-712.6	-1,571.2	1,685.5	1,637.2	48.24	34.941	
6,700.0	6,663.6	6,908.8	6,863.5	24.6	25.8	95.24	-710.9	-1,557.3	1,672.2	1,623.2	48.99	34.132	
6,800.0	6,762.8	7,007.1	6,960.8	25.0	26.2	95.70	-709.3	-1,543.4	1,659.0	1,609.3	49.75	33.350	
6,900.0	6,862.0	7,105.3	7,058.0	25.4	26.6	96.16	-707.7	-1,529.5	1,646.0	1,595.5	50.50	32.593	
7,000.0	6,961.2	7,203.6	7,155.3	25.8	27.0	96.63	-706.0	-1,515.6	1,633.1	1,581.8	51.26	31.860	
7,100.0	7,060.3	7,301.8	7,252.5	26.2	27.4	97.10	-704.4	-1,501.7	1,620.2	1,568.2	52.01	31.151	
7,200.0	7,159.5	7,400.1	7,349.8	26.6	27.8	97.52	-702.7	-1,487.7	1,607.5	1,554.7	52.77	30.464	
7,300.0	7,259.0	7,498.6	7,447.3	27.0	28.2	97.66	-701.1	-1,473.8	1,594.6	1,541.0	53.51	29.797	
7,400.0	7,358.8	7,597.4	7,545.1	27.3	28.6	97.68	-699.4	-1,459.8	1,581.2	1,526.9	54.24	29.149	
7,500.0	7,458.7	7,696.4	7,643.0	27.7	29.0	97.56	-697.8	-1,445.8	1,567.4	1,512.4	54.96	28.519	
7,600.0	7,558.7	7,795.3	7,741.0	28.0	29.4	-91.66	-696.1	-1,431.8	1,553.2	1,497.6	55.65	27.913	
7,700.0	7,658.7	7,894.3	7,838.9	28.3	29.8	-91.61	-694.5	-1,417.8	1,539.0	1,482.7	56.33	27.323	
7,800.0	7,758.7	7,993.3	7,936.9	28.6	30.2	-91.56	-692.8	-1,403.7	1,524.8	1,467.8	57.01	26.748	
7,900.0	7,858.7	8,092.3	8,034.9	28.9	30.6	-91.52	-691.2	-1,389.7	1,510.6	1,452.9	57.69	26.185	
8,000.0	7,958.7	8,191.2	8,132.8	29.3	31.0	-91.47	-689.5	-1,375.7	1,496.4	1,438.1	58.37	25.635	
8,100.0	8,058.7	8,290.2	8,230.8	29.6	31.4	-91.42	-687.9	-1,361.7	1,482.2	1,423.2	59.06	25.097	
8,200.0	8,158.7	8,389.2	8,328.8	29.9	31.8	-91.36	-686.2	-1,347.7	1,468.0	1,408.3	59.75	24.572	
8,300.0	8,258.7	8,488.2	8,426.7	30.2	32.2	-91.31	-684.6	-1,333.7	1,453.8	1,393.4	60.43	24.057	
8,400.0	8,358.7	8,587.2	8,524.7	30.6	32.6	89.26	-682.9	-1,319.7	1,439.6	1,378.5	61.12	23.554	
8,500.0	8,457.9	8,685.1	8,621.7	30.9	33.0	91.48	-681.3	-1,305.8	1,425.5	1,363.6	61.87	23.041	
8,600.0	8,552.6	8,778.3	8,713.9	31.4	33.4	94.35	-679.7	-1,292.6	1,412.3	1,349.6	62.67	22.534	
8,700.0	8,638.6	8,862.7	8,797.4	31.9	33.7	97.39	-678.3	-1,280.6	1,402.0	1,338.5	63.51	22.075	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #602H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,800.0	8,712.2	8,934.5	8,868.4	32.5	34.0	100.01	-677.1	-1,270.5	1,397.1	1,332.7	64.36	21.706	
8,817.3	8,723.4	8,945.4	8,879.2	32.6	34.1	100.37	-676.9	-1,268.9	1,397.0	1,332.4	64.51	21.654	CC, ES
8,900.0	8,770.1	8,990.6	8,924.0	33.1	34.2	101.56	-676.2	-1,262.5	1,400.0	1,334.8	65.20	21.473	
9,000.0	8,809.9	9,028.5	8,961.5	33.8	34.4	101.52	-675.5	-1,257.2	1,412.4	1,346.4	65.98	21.408	
9,100.0	8,829.8	9,046.7	8,979.5	34.5	34.5	99.49	-675.2	-1,254.6	1,435.2	1,368.5	66.65	21.532	
9,200.0	8,832.0	9,047.3	8,980.1	35.1	34.5	97.81	-675.2	-1,254.5	1,467.2	1,399.9	67.21	21.831	
9,300.0	8,832.0	9,045.7	8,978.6	35.9	34.5	97.75	-675.3	-1,254.7	1,505.4	1,437.7	67.72	22.229	
9,400.0	8,832.0	9,044.2	8,977.0	36.6	34.5	97.68	-675.3	-1,254.9	1,549.2	1,481.0	68.21	22.712	
9,500.0	8,832.0	9,042.6	8,975.5	37.4	34.4	97.62	-675.3	-1,255.2	1,598.0	1,529.4	68.66	23.275	
9,600.0	8,832.0	9,041.1	8,973.9	38.3	34.4	97.55	-675.3	-1,255.4	1,651.5	1,582.4	69.07	23.911	
9,700.0	8,832.0	9,039.5	8,972.4	39.2	34.4	97.49	-675.4	-1,255.6	1,709.1	1,639.7	69.44	24.614	
9,800.0	8,832.0	9,037.9	8,970.9	40.1	34.4	97.42	-675.4	-1,255.8	1,770.5	1,700.8	69.77	25.378	
9,900.0	8,832.0	9,036.4	8,969.3	41.0	34.4	97.36	-675.4	-1,256.0	1,835.3	1,765.3	70.06	26.198	
10,000.0	8,832.0	9,034.8	8,967.8	42.0	34.4	97.29	-675.4	-1,256.3	1,903.2	1,832.9	70.32	27.067	
10,100.0	8,832.0	11,484.1	10,196.0	43.0	42.7	136.91	-2,092.4	-1,195.7	1,920.4	1,852.2	68.14	28.182	
10,200.0	8,832.0	11,584.1	10,196.0	44.0	43.4	136.91	-2,192.4	-1,195.0	1,920.4	1,850.9	69.52	27.622	
10,300.0	8,832.0	11,684.1	10,196.0	45.0	44.1	136.91	-2,292.4	-1,194.3	1,920.5	1,849.5	70.96	27.066	
10,400.0	8,832.0	11,784.1	10,196.0	46.1	44.8	136.90	-2,392.4	-1,193.6	1,920.5	1,848.1	72.43	26.516	
10,500.0	8,832.0	11,884.1	10,196.0	47.2	45.6	136.90	-2,492.4	-1,192.9	1,920.6	1,846.6	73.94	25.973	
10,600.0	8,832.0	11,984.1	10,196.0	48.3	46.4	136.90	-2,592.4	-1,192.2	1,920.6	1,845.1	75.50	25.439	
10,700.0	8,832.0	12,084.1	10,196.0	49.4	47.3	136.90	-2,692.4	-1,191.5	1,920.7	1,843.6	77.09	24.915	
10,800.0	8,832.0	12,184.1	10,196.0	50.6	48.1	136.90	-2,792.4	-1,190.8	1,920.7	1,842.0	78.71	24.402	
10,900.0	8,832.0	12,284.1	10,196.0	51.7	49.0	136.90	-2,892.4	-1,190.1	1,920.8	1,840.4	80.37	23.899	
11,000.0	8,832.0	12,384.1	10,196.0	52.9	49.9	136.89	-2,992.4	-1,189.4	1,920.8	1,838.8	82.06	23.409	
11,100.0	8,832.0	12,484.1	10,196.0	54.1	50.9	136.89	-3,092.4	-1,188.7	1,920.9	1,837.1	83.77	22.930	
11,200.0	8,832.0	12,584.1	10,196.0	55.3	51.9	136.89	-3,192.4	-1,188.0	1,920.9	1,835.4	85.51	22.464	
11,300.0	8,832.0	12,684.1	10,196.0	56.5	52.9	136.89	-3,292.4	-1,187.3	1,921.0	1,833.7	87.28	22.010	
11,400.0	8,832.0	12,784.1	10,196.0	57.7	53.9	136.89	-3,392.4	-1,186.6	1,921.0	1,832.0	89.07	21.568	
11,500.0	8,832.0	12,884.1	10,196.0	58.9	54.9	136.89	-3,492.4	-1,185.9	1,921.1	1,830.2	90.88	21.138	
11,600.0	8,832.0	12,984.1	10,196.0	60.2	56.0	136.88	-3,592.4	-1,185.2	1,921.1	1,828.4	92.72	20.721	
11,700.0	8,832.0	13,084.1	10,196.0	61.4	57.0	136.88	-3,692.4	-1,184.5	1,921.2	1,826.6	94.57	20.315	
11,800.0	8,832.0	13,184.1	10,196.0	62.7	58.1	136.88	-3,792.4	-1,183.8	1,921.3	1,824.8	96.44	19.921	
11,900.0	8,832.0	13,284.1	10,196.0	63.9	59.2	136.88	-3,892.4	-1,183.1	1,921.3	1,823.0	98.33	19.539	
12,000.0	8,832.0	13,384.1	10,196.0	65.2	60.3	136.88	-3,992.4	-1,182.4	1,921.4	1,821.1	100.24	19.168	
12,100.0	8,832.0	13,484.1	10,196.0	66.5	61.5	136.88	-4,092.4	-1,181.7	1,921.4	1,819.3	102.16	18.808	
12,200.0	8,832.0	13,584.1	10,196.0	67.8	62.6	136.87	-4,192.4	-1,181.0	1,921.5	1,817.4	104.10	18.458	
12,300.0	8,832.0	13,684.1	10,196.0	69.1	63.8	136.87	-4,292.4	-1,180.3	1,921.5	1,815.5	106.05	18.119	
12,400.0	8,832.0	13,784.1	10,196.0	70.4	64.9	136.87	-4,392.4	-1,179.6	1,921.6	1,813.6	108.01	17.790	
12,500.0	8,832.0	13,884.1	10,196.0	71.7	66.1	136.87	-4,492.4	-1,178.9	1,921.6	1,811.6	109.99	17.471	
12,600.0	8,832.0	13,984.1	10,196.0	73.0	67.3	136.87	-4,592.4	-1,178.2	1,921.7	1,809.7	111.98	17.161	
12,700.0	8,832.0	14,084.1	10,196.0	74.3	68.5	136.87	-4,692.4	-1,177.5	1,921.7	1,807.7	113.98	16.860	
12,800.0	8,832.0	14,184.1	10,196.0	75.6	69.7	136.86	-4,792.4	-1,176.8	1,921.8	1,805.8	115.99	16.568	
12,900.0	8,832.0	14,284.1	10,196.0	76.9	70.9	136.86	-4,892.4	-1,176.1	1,921.8	1,803.8	118.01	16.285	
13,000.0	8,832.0	14,384.1	10,196.0	78.3	72.1	136.86	-4,992.4	-1,175.4	1,921.9	1,801.8	120.04	16.010	
13,100.0	8,832.0	14,484.1	10,196.0	79.6	73.4	136.86	-5,092.4	-1,174.7	1,921.9	1,799.9	122.08	15.743	
13,200.0	8,832.0	14,584.1	10,196.0	80.9	74.6	136.86	-5,192.3	-1,174.0	1,922.0	1,797.9	124.13	15.483	
13,300.0	8,832.0	14,684.1	10,196.0	82.3	75.9	136.86	-5,292.3	-1,173.3	1,922.0	1,795.9	126.19	15.231	
13,400.0	8,832.0	14,784.1	10,196.0	83.6	77.1	136.85	-5,392.3	-1,172.6	1,922.1	1,793.8	128.26	14.986	
13,500.0	8,832.0	14,884.1	10,196.0	85.0	78.4	136.85	-5,492.3	-1,171.9	1,922.2	1,791.8	130.33	14.748	
13,600.0	8,832.0	14,984.1	10,196.0	86.3	79.7	136.85	-5,592.3	-1,171.2	1,922.2	1,789.8	132.41	14.517	
13,700.0	8,832.0	15,084.1	10,196.0	87.7	80.9	136.85	-5,692.3	-1,170.5	1,922.3	1,787.8	134.50	14.292	
13,800.0	8,832.0	15,184.1	10,196.0	89.0	82.2	136.85	-5,792.3	-1,169.8	1,922.3	1,785.7	136.59	14.073	

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #602H - 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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
13,900.0	8,832.0	15,284.1	10,196.0	90.4	83.5	136.85	-5,892.3	-1,169.1	1,922.4	1,783.7	138.69	13.861			
14,000.0	8,832.0	15,384.1	10,196.0	91.8	84.8	136.84	-5,992.3	-1,168.4	1,922.4	1,781.6	140.80	13.654			
14,100.0	8,832.0	15,484.1	10,196.0	93.1	86.1	136.84	-6,092.3	-1,167.7	1,922.5	1,779.6	142.91	13.452			
14,200.0	8,832.0	15,584.1	10,196.0	94.5	87.4	136.84	-6,192.3	-1,167.0	1,922.5	1,777.5	145.03	13.256			
14,300.0	8,832.0	15,684.1	10,196.0	95.9	88.7	136.84	-6,292.3	-1,166.3	1,922.6	1,775.4	147.15	13.065			
14,400.0	8,832.0	15,784.1	10,196.0	97.2	90.0	136.84	-6,392.3	-1,165.6	1,922.6	1,773.3	149.28	12.879			
14,500.0	8,832.0	15,884.1	10,196.0	98.6	91.3	136.84	-6,492.3	-1,164.9	1,922.7	1,771.3	151.41	12.698			
14,600.0	8,832.0	15,984.1	10,196.0	100.0	92.6	136.83	-6,592.3	-1,164.2	1,922.7	1,769.2	153.55	12.522			
14,700.0	8,832.0	16,084.1	10,196.0	101.4	94.0	136.83	-6,692.3	-1,163.5	1,922.8	1,767.1	155.69	12.350			
14,800.0	8,832.0	16,184.1	10,196.0	102.7	95.3	136.83	-6,792.3	-1,162.8	1,922.8	1,765.0	157.84	12.182			
14,900.0	8,832.0	16,284.1	10,196.0	104.1	96.6	136.83	-6,892.3	-1,162.1	1,922.9	1,762.9	159.99	12.019			
15,000.0	8,832.0	16,384.1	10,196.0	105.5	97.9	136.83	-6,992.3	-1,161.4	1,922.9	1,760.8	162.14	11.860			
15,100.0	8,832.0	16,484.1	10,196.0	106.9	99.3	136.83	-7,092.3	-1,160.7	1,923.0	1,758.7	164.30	11.704			
15,200.0	8,832.0	16,584.1	10,196.0	108.3	100.6	136.82	-7,192.3	-1,160.0	1,923.0	1,756.6	166.46	11.553			
15,300.0	8,832.0	16,684.1	10,196.0	109.7	102.0	136.82	-7,292.3	-1,159.3	1,923.1	1,754.5	168.63	11.405			
15,400.0	8,832.0	16,784.1	10,196.0	111.1	103.3	136.82	-7,392.3	-1,158.6	1,923.2	1,752.4	170.79	11.260			
15,500.0	8,832.0	16,884.1	10,196.0	112.5	104.6	136.82	-7,492.3	-1,157.9	1,923.2	1,750.2	172.97	11.119			
15,600.0	8,832.0	16,984.1	10,196.0	113.8	106.0	136.82	-7,592.3	-1,157.2	1,923.3	1,748.1	175.14	10.981			
15,700.0	8,832.0	17,084.1	10,196.0	115.2	107.4	136.82	-7,692.3	-1,156.5	1,923.3	1,746.0	177.32	10.847			
15,800.0	8,832.0	17,184.1	10,196.0	116.6	108.7	136.81	-7,792.3	-1,155.8	1,923.4	1,743.9	179.50	10.715			
15,900.0	8,832.0	17,284.1	10,196.0	118.0	110.1	136.81	-7,892.3	-1,155.1	1,923.4	1,741.7	181.68	10.587			
16,000.0	8,832.0	17,384.1	10,196.0	119.4	111.4	136.81	-7,992.3	-1,154.5	1,923.5	1,739.6	183.87	10.461			
16,100.0	8,832.0	17,484.1	10,196.0	120.8	112.8	136.81	-8,092.3	-1,153.8	1,923.5	1,737.5	186.06	10.338			
16,200.0	8,832.0	17,584.1	10,196.0	122.2	114.1	136.81	-8,192.3	-1,153.1	1,923.6	1,735.3	188.25	10.218			
16,300.0	8,832.0	17,684.1	10,196.0	123.6	115.5	136.81	-8,292.3	-1,152.4	1,923.6	1,733.2	190.45	10.101			
16,400.0	8,832.0	17,784.1	10,196.0	125.0	116.9	136.80	-8,392.3	-1,151.7	1,923.7	1,731.0	192.64	9.986			
16,500.0	8,832.0	17,884.1	10,196.0	126.4	118.3	136.80	-8,492.3	-1,151.0	1,923.7	1,728.9	194.84	9.873			
16,600.0	8,832.0	17,984.1	10,196.0	127.8	119.6	136.80	-8,592.3	-1,150.3	1,923.8	1,726.7	197.04	9.763			
16,700.0	8,832.0	18,084.1	10,196.0	129.3	121.0	136.80	-8,692.3	-1,149.6	1,923.8	1,724.6	199.25	9.656			
16,800.0	8,832.0	18,184.1	10,196.0	130.7	122.4	136.80	-8,792.3	-1,148.9	1,923.9	1,722.4	201.45	9.550			
16,900.0	8,832.0	18,284.1	10,196.0	132.1	123.7	136.80	-8,892.3	-1,148.2	1,923.9	1,720.3	203.66	9.447			
17,000.0	8,832.0	18,384.1	10,196.0	133.5	125.1	136.79	-8,992.3	-1,147.5	1,924.0	1,718.1	205.87	9.346			
17,100.0	8,832.0	18,484.1	10,196.0	134.9	126.5	136.79	-9,092.3	-1,146.8	1,924.1	1,716.0	208.08	9.247			
17,200.0	8,832.0	18,584.1	10,196.0	136.3	127.9	136.79	-9,192.3	-1,146.1	1,924.1	1,713.8	210.29	9.150			
17,300.0	8,832.0	18,684.1	10,196.0	137.7	129.3	136.79	-9,292.2	-1,145.4	1,924.2	1,711.7	212.51	9.055			
17,400.0	8,832.0	18,784.1	10,196.0	139.1	130.7	136.79	-9,392.2	-1,144.7	1,924.2	1,709.5	214.72	8.961			
17,500.0	8,832.0	18,884.1	10,196.0	140.5	132.0	136.79	-9,492.2	-1,144.0	1,924.3	1,707.3	216.94	8.870			
17,600.0	8,832.0	18,984.1	10,196.0	141.9	133.4	136.78	-9,592.2	-1,143.3	1,924.3	1,705.2	219.16	8.780			
17,700.0	8,832.0	19,084.1	10,196.0	143.4	134.8	136.78	-9,692.2	-1,142.6	1,924.4	1,703.0	221.38	8.692			
17,800.0	8,832.0	19,184.1	10,196.0	144.8	136.2	136.78	-9,792.2	-1,141.9	1,924.4	1,700.8	223.61	8.606			
17,900.0	8,832.0	19,284.1	10,196.0	146.2	137.6	136.78	-9,892.2	-1,141.2	1,924.5	1,698.6	225.83	8.522			
18,000.0	8,832.0	19,384.1	10,196.0	147.6	139.0	136.78	-9,992.2	-1,140.5	1,924.5	1,696.5	228.06	8.439			
18,100.0	8,832.0	19,484.1	10,196.0	149.0	140.4	136.78	-10,092.2	-1,139.8	1,924.6	1,694.3	230.28	8.357			
18,200.0	8,832.0	19,584.1	10,196.0	150.4	141.8	136.77	-10,192.2	-1,139.1	1,924.6	1,692.1	232.51	8.278			
18,300.0	8,832.0	19,684.1	10,196.0	151.9	143.2	136.77	-10,292.2	-1,138.4	1,924.7	1,689.9	234.74	8.199			
18,400.0	8,832.0	19,784.1	10,196.0	153.3	144.6	136.77	-10,392.2	-1,137.7	1,924.7	1,687.8	236.98	8.122			
18,500.0	8,832.0	19,884.1	10,196.0	154.7	146.0	136.77	-10,492.2	-1,137.0	1,924.8	1,685.6	239.21	8.047			
18,600.0	8,832.0	19,984.1	10,196.0	156.1	147.4	136.77	-10,592.2	-1,136.3	1,924.8	1,683.4	241.44	7.972			
18,700.0	8,832.0	20,084.1	10,196.0	157.5	148.8	136.77	-10,692.2	-1,135.6	1,924.9	1,681.2	243.68	7.899			
18,800.0	8,832.0	20,184.1	10,196.0	158.9	150.2	136.76	-10,792.2	-1,134.9	1,925.0	1,679.0	245.91	7.828			
18,900.0	8,832.0	20,284.1	10,196.0	160.4	151.6	136.76	-10,892.2	-1,134.2	1,925.0	1,676.9	248.15	7.757			
19,000.0	8,832.0	20,384.1	10,196.0	161.8	153.0	136.76	-10,992.2	-1,133.5	1,925.1	1,674.7	250.39	7.688			

CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 25 Fed Com Pad 2 - Royal Oak 25 Fed Com #602H - OH - Plan 0.1											Offset Site Error:	0.0 usft
Survey Program:	0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,077.7	8,832.0	20,461.7	10,196.0	162.7	154.0	136.76	-11,069.9	-1,132.9	1,925.1	1,673.2	251.92	7.642 SF	

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Royal Oak 24 Fed Com 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 @ 3933.9usft (3933.9)

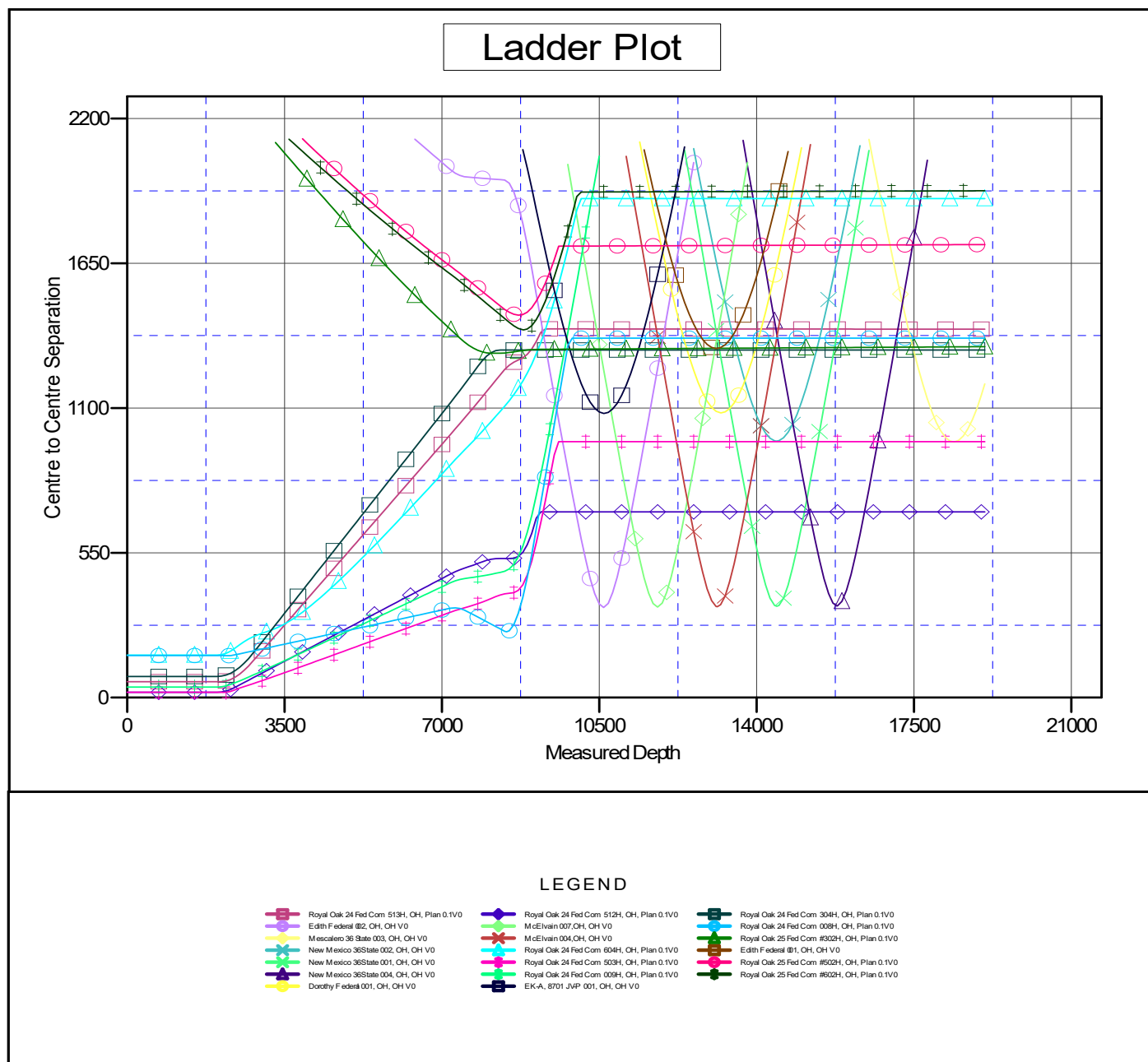
Offset Depths are relative to Offset Datum

Central Meridian is -104.333334

Coordinates are relative to: Royal Oak 24 Fed Com 303H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.39°



CC - Min centre to center distance or convergent 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 303H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3933.9usft (3933.9)
Reference Site:	Royal Oak 24 Fed Com Pad 1	MD Reference:	Well @ 3933.9usft (3933.9)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Royal Oak 24 Fed Com 303H	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 @ 3933.9usft (3933.9)

Offset Depths are relative to Offset Datum

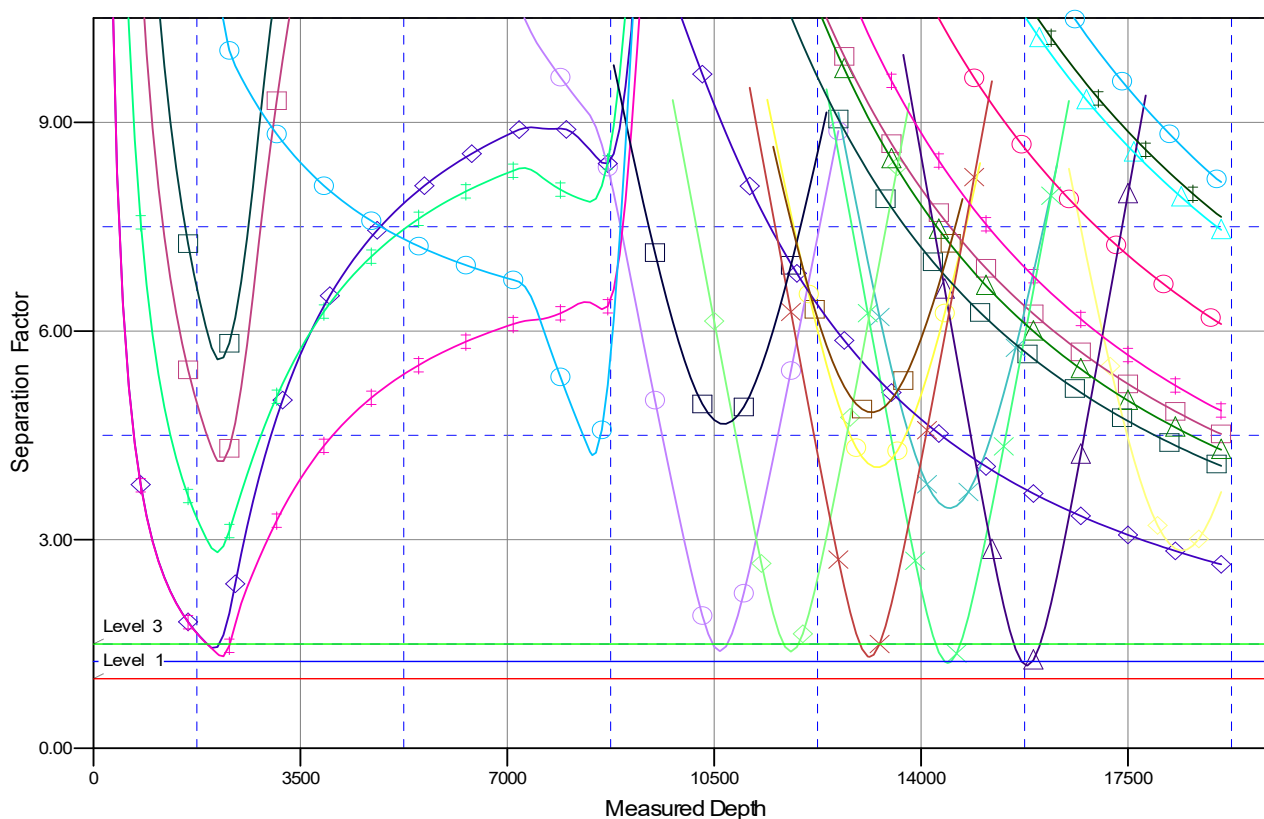
Central Meridian is -104.333334

Coordinates are relative to: Royal Oak 24 Fed Com 303H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.39°

Separation Factor Plot



LEGEND

Royal Oak 24 Fed Com 513H, OH, Plan 0.1V0	Royal Oak 24 Fed Com 512H, OH, Plan 0.1V0	Royal Oak 24 Fed Com 304H, OH, Plan 0.1V0
Edith Federal 002, OH, OH V0	McElvain 007, OH, OH V0	Royal Oak 24 Fed Com 008H, OH, Plan 0.1V0
Mescalero 36 State 003, OH, OH V0	McElvain 004, OH, OH V0	Royal Oak 25 Fed Com 8502H, OH, Plan 0.1V0
New Mexico 36 State 002, OH, OH V0	Royal Oak 24 Fed Com 604H, OH, Plan 0.1V0	Edith Federal 001, OH, OH V0
New Mexico 36 State 001, OH, OH V0	Royal Oak 24 Fed Com 503H, OH, Plan 0.1V0	Royal Oak 25 Fed Com 8502H, OH, Plan 0.1V0
New Mexico 36 State 004, OH, OH V0	Royal Oak 24 Fed Com 008H, OH, Plan 0.1V0	Royal Oak 25 Fed Com 8602H, OH, Plan 0.1V0
Dorothy Federal 001, OH, OH V0	EK-A, 8701 JVP 001, OH, OH V0	

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

AFE:



Royal Oak 24 Fed Com #303H

API:
REGULATORY:
PERMIT #

Bone Springs

Lea County, NM

RIG: H&P 460

CAMERON WELLHEAD

KB: 3933.5 (26.5')

9-5/8" x 7"11"

SHL:

Sec. 24, T-18S, R-33E; 603 FSL, 1750 FEL

GL: 3907'

5K SSD-II

Lat: 32.7276066, Long: -103.61368 (NAD83)

HOLE SIZE	MD	FORMATION	TVD	MUD	CASING	CEMENT	SPECIAL INSTRUCTIONS
	120	20" Conductor	120				
17 1/2 "	1,628	Rustler	1,628	SPUD MW 8.4 ppg	13 3/8 " 54.5# J-55 BTC +/- 13 Bowsprings 1 20' pup jt	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
	1,653	SURF CSG PT	1,653	Fresh 9.9 ppg	1 joint shoe track		
12 1/4 "	1,951	Solado	1,951	DRLOUT MW 10 ppg	SPLIT STRING 9 5/8 " 40# J-55 BTC 0' - 4000'	LEAD: 12.5 PPG Top of Lead: 0' 20% excess TAIL: 14.8 PPG Top of Tail: 4465' 20% Excess	Circ cement to surface is a NMOCD requirement
	3,653	Yates	3,641	Brine TD MW 10 ppg	1 20' pup jt 40# L-80 HC BTC 4000' - 5582' +/- 9 Bowsprings 1 joint shoe track		
8 3/4 " VERTICAL	5,682	Cherry Canyon	5,654	DRLOUT MW 9.2			
	7,277	Brushy Canyon	7,236	Cut Brine KOP MW 9.5			
8 3/4 " CURVE	7,549	Bone Springs	7,508	EOC CUT MW 9.5			
	8,396	KOP	8,355	BRINE	Lat MW 9.2	OBM	TD MW 9.2
8 3/4 " LATERAL	8,949	1st BS Sand	8,792				
	9,146	EOC	8,832				
DIRECTIONAL PLAN				12°/ 100'			
MD INC INC TVD ANNOTATION				EOC VS = 1130' Lat. Azi = VS Azi. = 179.56° Est BHST = 153°F, Est BHCT = 17°F			
5 1/2 " 20# P-110 HC GBCD				LEAD: 11 PPG Top of Lead: 0 50% Excess TAIL: 14.8 PPG Top of Tail: 8396 20% Excess All aqueous fluids (spacer and disp) left inside or outside of pipe must have biocide & corrosion inhibitor			
1 20' pup jt 2 20' Marker Jts +/- 23 Bowsprings +/- 27 Doublebows +/- 236 Solid Bodies				BHL: 100 FSL, 1650 FEL			

DIRECTIONS TO LOCATION:



Coterra Energy Inc. CEMENT PROPOSAL #81448

Surface Proposal

Royal Oak 24 Fed Com #303H 30-025-54153
S:24 T:18S R:33E Lea NM

February 06, 2025



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



Surface Proposal

Well Information

Well Name: **Royal Oak 24 Fed Com #303H**

Well API: **30-025-54153**

Latitude: **32.727608**

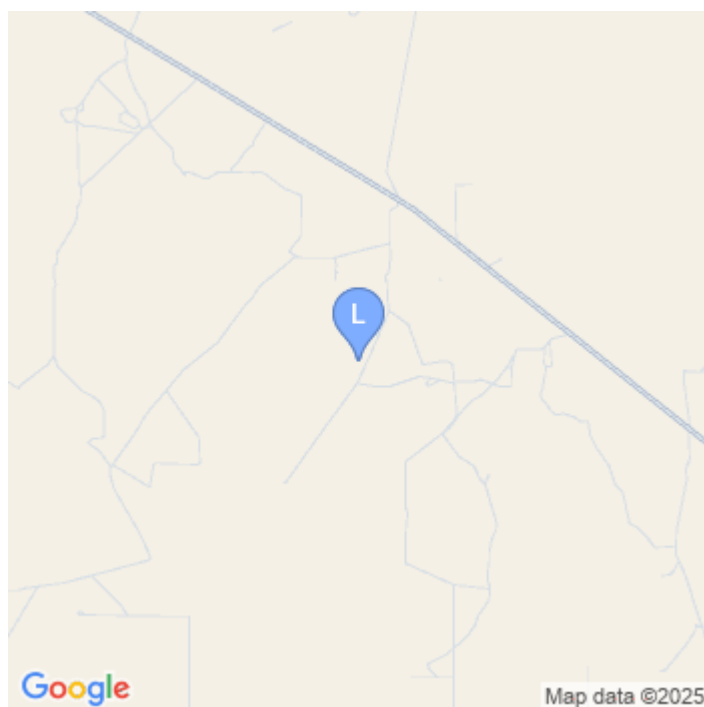
Longitude: **-103.613550**

Section: **24**

Township: **18S**

Range: **33E**

County: **Lea, NM**





Surface Proposal

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

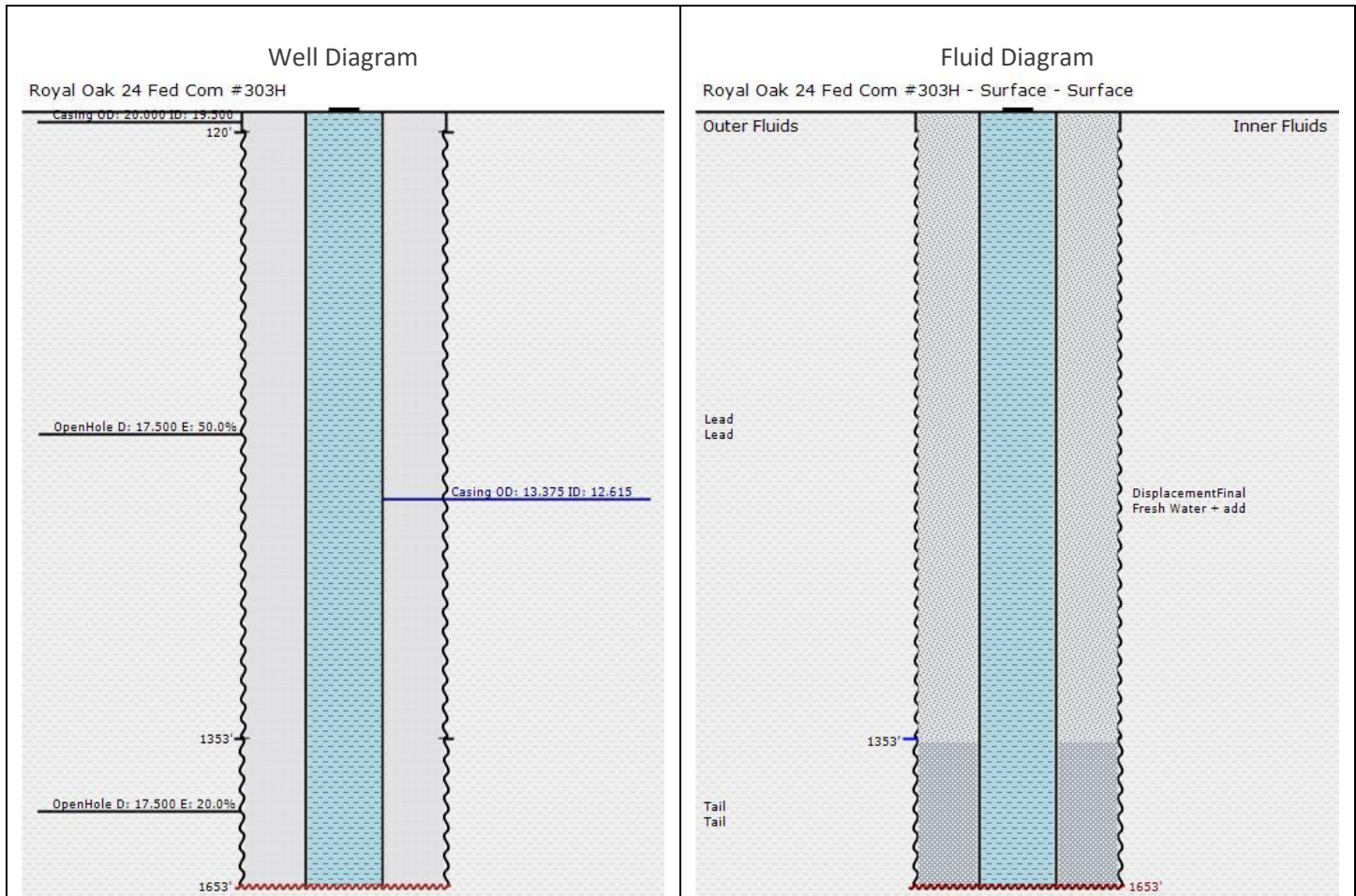
Excess added to Capacity Factor

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



Surface Proposal

Job: Surface (Surface) - Well & Fluid Diagrams





Surface Proposal

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



Surface Proposal

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 any and all 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 11.2 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



Surface Proposal

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 #81468

Intermediate Proposal

Royal Oak 24 Fed Com #303H 30-025-54153
S:24 T:18S R:33E Lea NM

February 06, 2025



Intermediate 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



Intermediate Proposal

Well Information

Well Name: **Royal Oak 24 Fed Com #303H**

Well API: **30-025-54153**

Latitude: **32.727608**

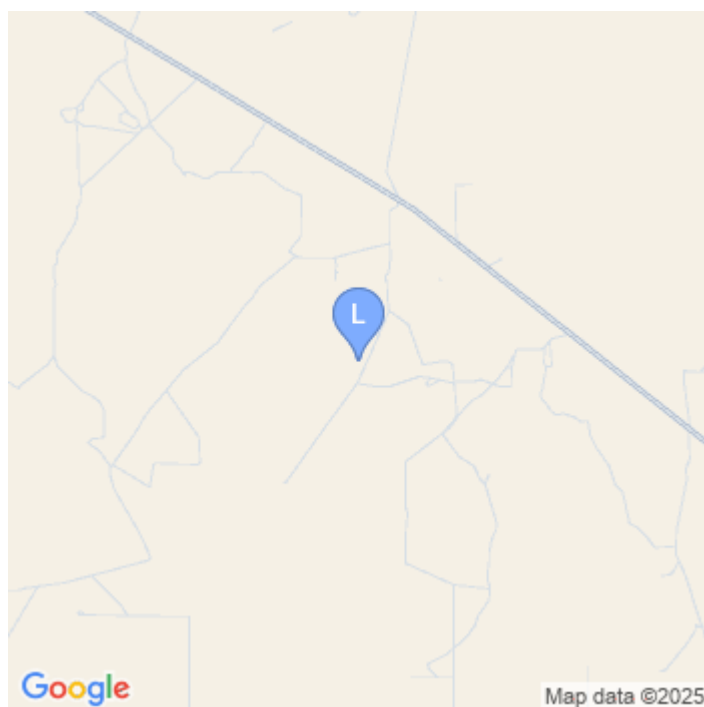
Longitude: **-103.613550**

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: **5582 ft**

Total Vertical Depth: **5582 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	4465	20.0
3	OpenHole	Outer		12.250			n/a	4465	5582	20.0
1	Casing	Inner	9.625	8.835	40.00		n/a	0	5582	0.0

Capacities

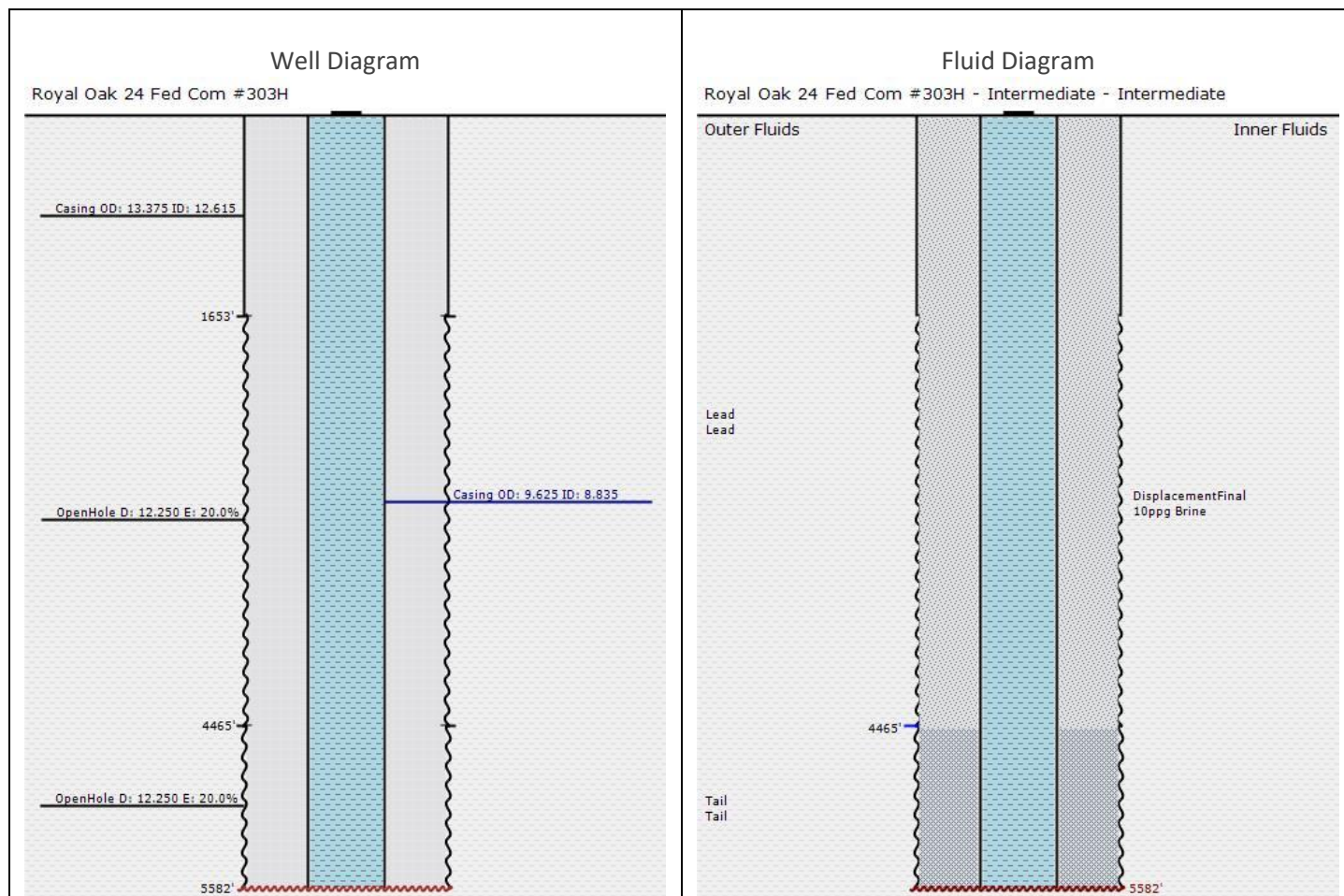
Excess added to Capacity Factor

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	5497	8.835	0.000	0.0758	0.4257	13.19	2.35
ShoeJoint	5497	85	8.835	0.000	0.0758	0.4257	13.19	2.35
Casing to OpenHole	4465	1117	12.250	9.625	0.0669	0.3758	14.94	2.66
Casing to OpenHole	1653	2812	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



Intermediate Proposal

Job: Intermediate (Intermediate) - Well & Fluid Diagrams





Intermediate Proposal

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	764	295.04

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	4465.00	14.80	6.3	1.33	344	81.41

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		417.00

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	295.04	764	315.04	59.01	63.01
3	Tail	Tail	14.80	5.00	81.41	344	396.44	16.28	79.29
4	DisplacementFinal	10ppg Brine	8.34	5.00	417.00		813.44	83.40	162.69



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



Intermediate Proposal

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 any and all 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 11.2 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



Intermediate Proposal

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 #81478

Long String Proposal

Royal Oak 24 Fed Com #303H 30-025-54153
S:24 T:18S R:33E Lea NM

February 06, 2025



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 #303H**

Well API: **30-025-54153**

Latitude: **32.727608**

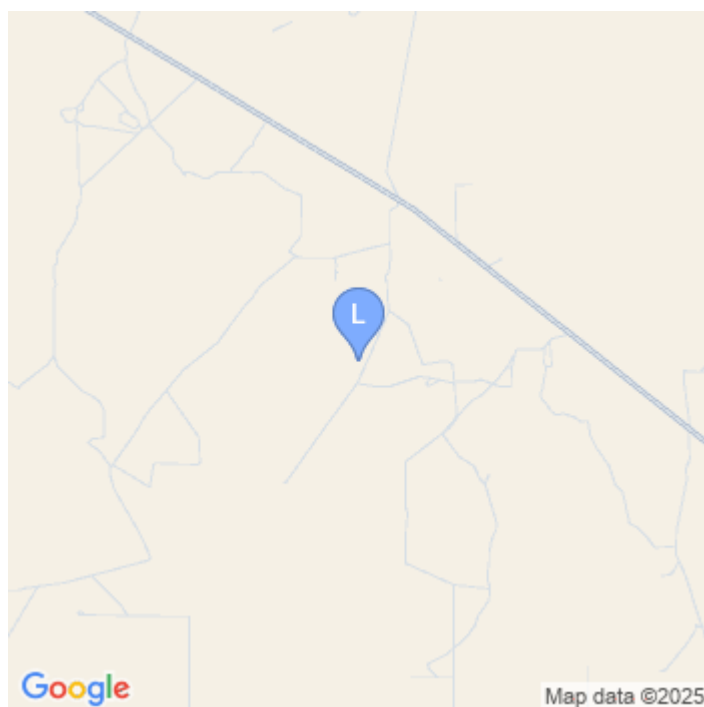
Longitude: **-103.613550**

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: **19078 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	5582	0.0
2	OpenHole	Outer		8.750			n/a	5582	8396	50.0
3	OpenHole	Outer		8.750			n/a	8396	19078	20.0
1	Casing	Inner	5.500	4.778	20.00		n/a	0	19078	0.0

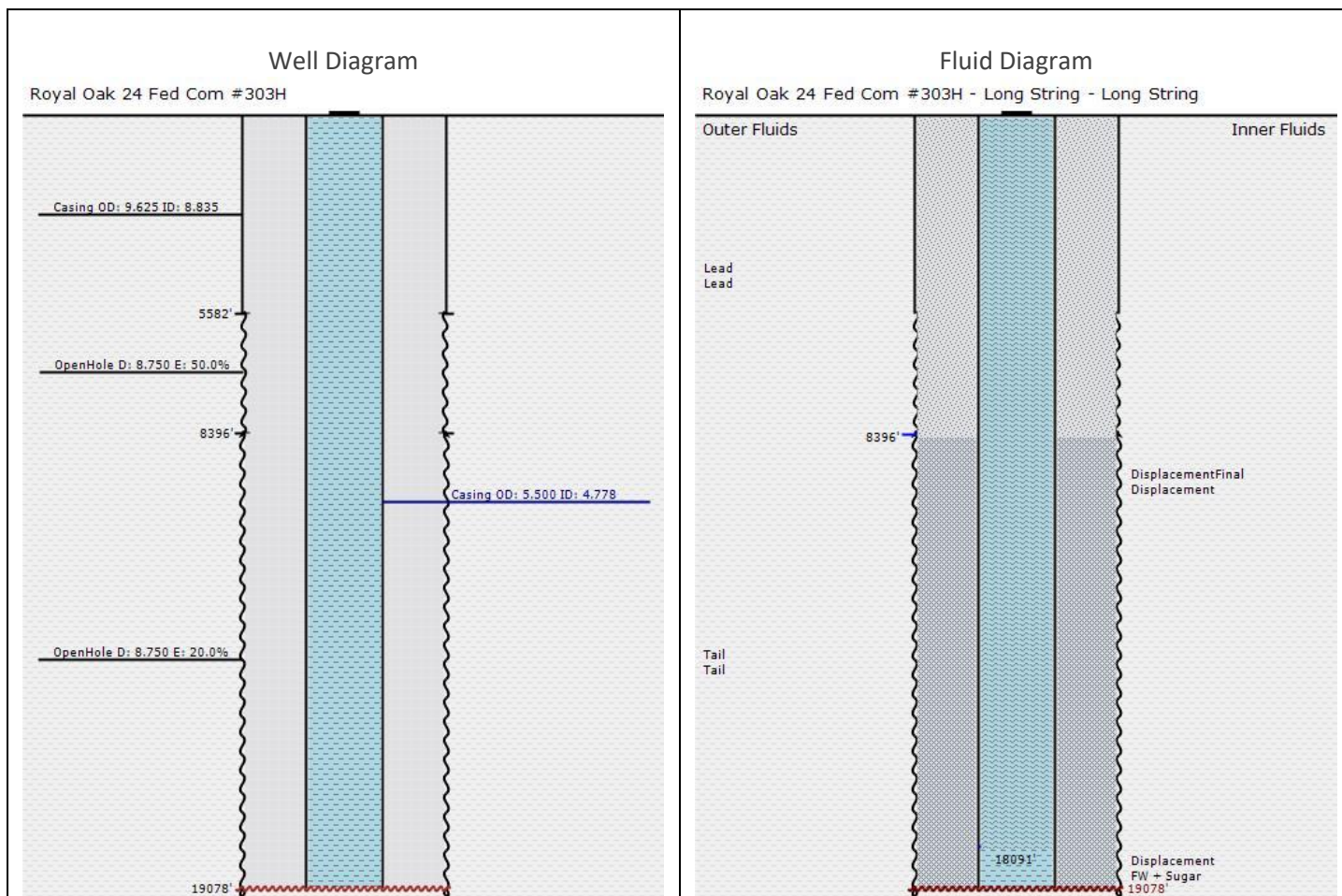
Capacities

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	18993	4.778	0.000	0.0222	0.1245	45.09	8.03
ShoeJoint	18993	85	4.778	0.000	0.0222	0.1245	45.09	8.03
Casing to OpenHole	8396	10682	8.750	5.500	0.0540	0.3031	18.52	3.30
Casing to OpenHole	5582	2814	8.750	5.500	0.0675	0.3789	14.82	2.64
Casing to Casing	0	5582	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	726	449.54

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	8396.00	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	18091.00	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		402.00

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	449.54	726	489.54	89.91	97.91
3	Tail	Tail	14.80	5.00	578.64	2808	1068.19	115.73	213.64
4	Displacement	FW + Sugar	8.36	5.00	20.00		1088.19	4.00	217.64
5	DisplacementFinal	Displacement	8.34	5.00	402.00		1490.19	80.40	298.04



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



Long String Proposal

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 11.2 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



Long String Proposal

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

Action 431452

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 431452
	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