

Well Name: EMERALD FEDERAL COM	Well Location: T19S / R33E / SEC 6 / SESE / 32.68305 / -103.697928	County or Parish/State: LEA / NM
Well Number: 504H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM0077002	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002550997	Operator: AVANT OPERATING LLC	

Notice of Intent

Sundry ID: 2798789

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 07/03/2024	Time Sundry Submitted: 08:30
Date proposed operation will begin: 01/10/2025	

Procedure Description: Avant Operating, LLC requests to move the BHL from what was originally permitted. Please see below updated footage calls, as well as updated plat & directional surveys to reflect this change. The dedicated acreage of this well will also be updated to 1302.98 total Ac, and the name of this well will change from the Emerald Federal Com 504H to the Emerald Federal Com 514H. Old BHL is 100' FNL & 660 FEL. New BHL is 100' FNL & 2178' FEL.

NOI Attachments

Procedure Description

Emerald_Federal_Com_514H_BHL_Sundry_Change_Attachments_20240916145600.pdf

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Conditions of Approval

Additional

6_19_33_Sundry_ID_2798789_Emerald_Federal_Com_514H_Lea_NM0077002_AVANT_OPERATING_LLC_13_22g_2_27_2024_LV_20240917091434.pdf
Emerald_Federal_Com_514H_Dr_COA_20240917091434.pdf

Operator

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

Operator Electronic Signature: MEGHAN TWELE

Signed on: SEP 16, 2024 02:56 PM

Name: AVANT OPERATING LLC

Title: Contract Regulatory Analyst

Street Address: 1515 WYNKOOP ST SUITE 700

City: DENVERState: 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: 09/17/2024

Signature: Chris Walls

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

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

SUBMIT IN TRIPLICATE - Other instructions on page 2		5. Lease Serial No.
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	
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

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

THE SPACE FOR FEDERAL OR STATE OFFICE USE

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

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

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

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

NOTICES

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

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

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

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

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

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

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

Response to this request is mandatory.

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

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

Additional Information

Location of Well

0. SHL: SESE / 350 FSL / 1280 FEL / TWSP: 19S / RANGE: 33E / SECTION: 6 / LAT: 32.68305 / LONG: -103.697928 (TVD: 0 feet, MD: 0 feet)

PPP: SWSE / 100 FSL / 2310 FEL / TWSP: 19S / RANGE: 33E / SECTION: 6 / LAT: 32.682366 / LONG: -103.701275 (TVD: 9200 feet, MD: 9643 feet)

PPP: SWSE / 100 FSL / 660 FEL / TWSP: 19S / RANGE: 33E / SECTION: 6 / LAT: 32.69654 / LONG: -103.701 (TVD: 9200 feet, MD: 14800 feet)

PPP: SESE / 0 FSL / 665 FEL / TWSP: 18S / RANGE: 33E / SECTION: 31 / LAT: 32.696651 / LONG: -103.695924 (TVD: 9200 feet, MD: 14800 feet)

BHL: NWNE / 100 FNL / 2310 FEL / TWSP: 18S / RANGE: 33E / SECTION: 31 / LAT: 32.710879 / LONG: -103.701298 (TVD: 9200 feet, MD: 20017 feet)

CONFIDENTIAL

6-19-33 Sundry ID 2798789 Emerald Federal Com 514H Lea NM0077002 AVANT OPERATING LLC 13-22g 2-27-2024 LV

Emerald Federal Com 514H

13 3/8		surface csg in a		17 1/2		inch hole.		Design Factors				Surface		
Segment	#/ft	Grade		Coupling		Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	54.50	j 55		ltc		6.35	1.63	1.06	1,485	4	1.91	3.07	80,933	
"B"				ltc					0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,270														
				Tail Cmt		does not	circ to sfc.		Totals:	1,485			80,933	
Comparison of Proposed to Minimum Required Cement Volumes														
Hole	Annular	1 Stage		1 Stage		Min	1 Stage		Drilling	Calc			Min Dist	
Size	Volume	Cmt Sx		CuFt Cmt		Cu Ft	% Excess		Mud Wt	MASP	BOPE		Hole-Cplg	
17 1/2	0.6946	865		1521		1032	47		9.00	1436	2M		2.06	
Site plot (pipe racks 3 or 4) as per O.D. 1.38 D-3.1 not found														

9 5/8		casing inside the		13 3/8		Design Factors				Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00		j 55	ltc	2.48	0.99	0.82	5,281	2	1.48	1.79	211,240
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 474								Totals:	5,281			211,240
The cement volume(s) are intended to achieve a top of								0	ft from surface or a	1485		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	1270	2248	1727	30	9.50	2662	3M				0.81
r D V Tool(s):								sum of sx	Σ CuFt			Σ%excess
t by stage % :								1270	2248			30
Class 'C' tail cmt yld > 1.35												
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.75, 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	3.29	2.31	2.63	20,020	3	4.75	4.17	400,400				
"B"									0				0				
"C"									0				0				
"D"									0				0				
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,141									Totals:	20,020	400,400						
The cement volume(s) are intended to achieve a top of												5081	ft from surface or a		200	overlap.	
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE			Min Dist Hole-Cplg						
8 3/4	0.2526	3555	6179	3775	64	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 Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE			Min Dist Hole-Cplg
0		#N/A	#N/A	0	#N/A						
#N/A Capitan Reef est top XXXX.											

**PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Avant Operating LLC
LEASE NO.:	NMNM0077002
LOCATION:	Section 6, T.19 S., R.33 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Emerald Federal Com 514H
BOTTOM HOLE FOOTAGE	100'/N & 2178'/E
ATS/API ID:	30-025-50997
APD ID:	10400084366
Sundry ID:	2798789

COA

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

A. HYDROGEN SULFIDE

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

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1485 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

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

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record),

or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Lea County

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

A. CASING

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

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke

manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be

initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and

disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

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

Long Vo (LVO) 9/17/2024

Revised August 1, 2011

Submit one copy to appropriate
District Office

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3480 Fax: (505) 476-3482

☐ AMENDED REPORT

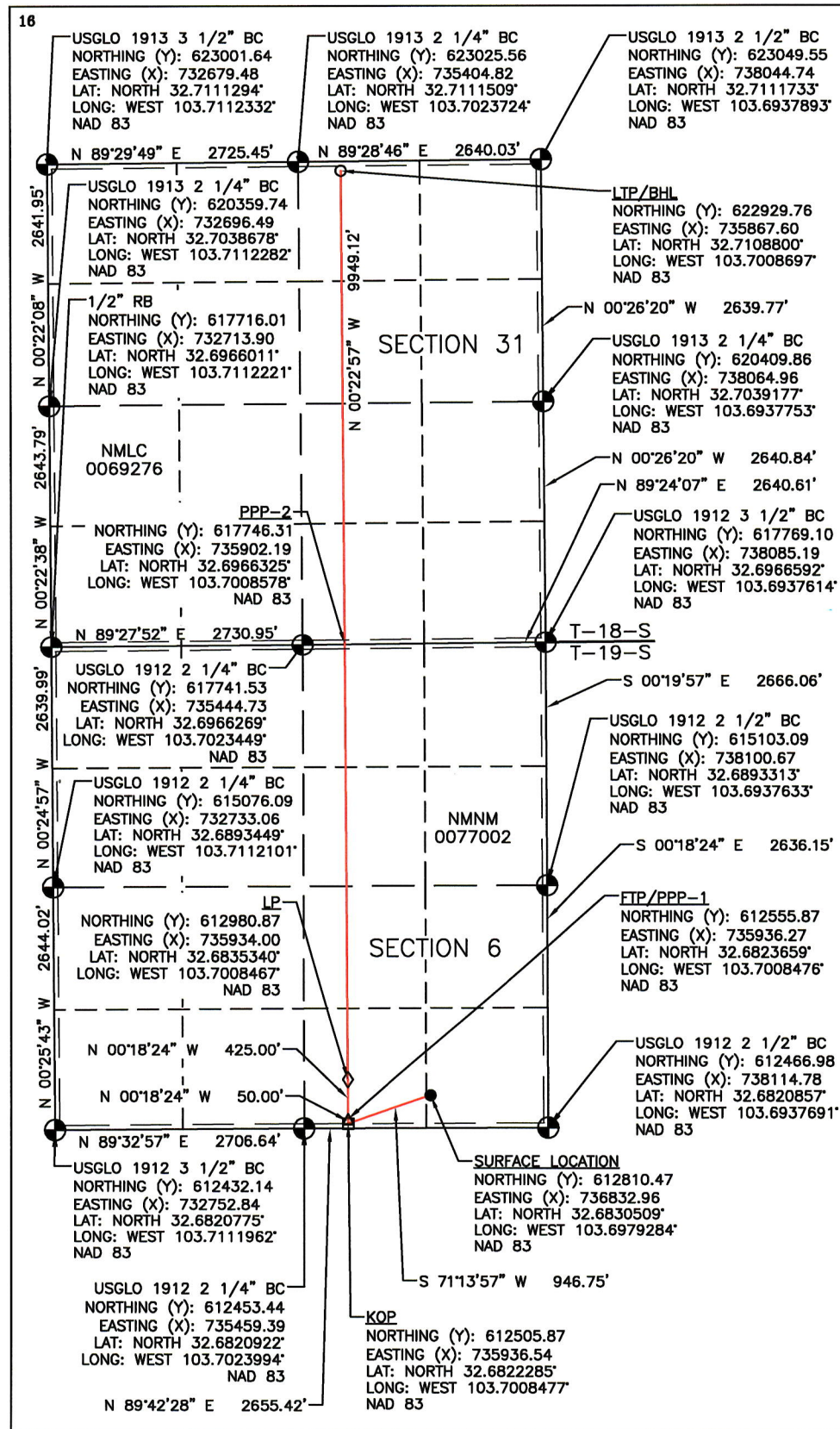
¹ API Number 30-025-50997	² Pool Code 13160	³ Pool Name CORBIN; BONE SPRING, SOUTH
⁴ Property Code 335608	⁵ Property Name EMERALD FEDERAL COM	⁶ Well Number 514H
⁷ GRID No. 330396	⁸ Operator Name AVANT OPERATING, LLC	⁹ Elevation 3683.1

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	6	19 S	33 E		350	SOUTH	1280	EAST	LEA

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	31	18 S	33 E		100	NORTH	2178	EAST	LEA

¹⁸ Dedicated Acres	¹⁹ Joint or Infill	¹⁴ Consolidation Code	¹⁰ Order No.
1302.98			R-23267

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



I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organisation either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

 7/3/2024

Signature **Date**

Printed Name Meghan Twele

E-mail Address mtwele@outlook.com

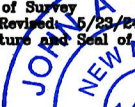
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

12/20/23

Date of Survey

Plat Revised: 5/23/24

Signature and Seal of Professional Surveyor:



Certificate Number

14831

LEGEND:

- = SURFACE LOCATION (SHL)
- = KICK OFF POINT (KOP)
- △ = FTP/PPP-1
- ◇ = LANDING POINT (LP)
- = LTP/BHL
- ⊙ = FOUND MONUMENT

FOOTAGES		
SHL	350' FSL	1280' FEL
KOP	50' FSL	2178' FEL
FTP/PPP-1	100' FSL	2178' FEL
LP	525' FSL	2178' FEL
PPP-2	0' FNL	2183' FEL
LTP/BHL	100' FNL	2178' FEL

Equipment

A minimum 5M system will be used. The minimum blowout preventer equipment (BOPE) shown in the BOP Diagram will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer, and an annular preventer (5000-psi WP). Both units will be hydraulically operated, and the ram-type will be equipped with blind rams on top and drill pipe rams on bottom. All BOPE will be tested in accordance with 43 CFR 3172.

Variance Request

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

Testing Procedure

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will always be kept on location.

Surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will always be kept on location.

Intermediate casing will be tested to 1500 psi for 30 minutes. A solid steel body pack-off will be used after running and cementing the intermediate casing. After installation, pack-off and lower flange will be pressure tested to 5000 psi.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe. This pressure test will be repeated at least once every 30 days, as per 43 CFR 3172.

Kelly cock will always be in the drill string. Full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will always be on the rig floor.

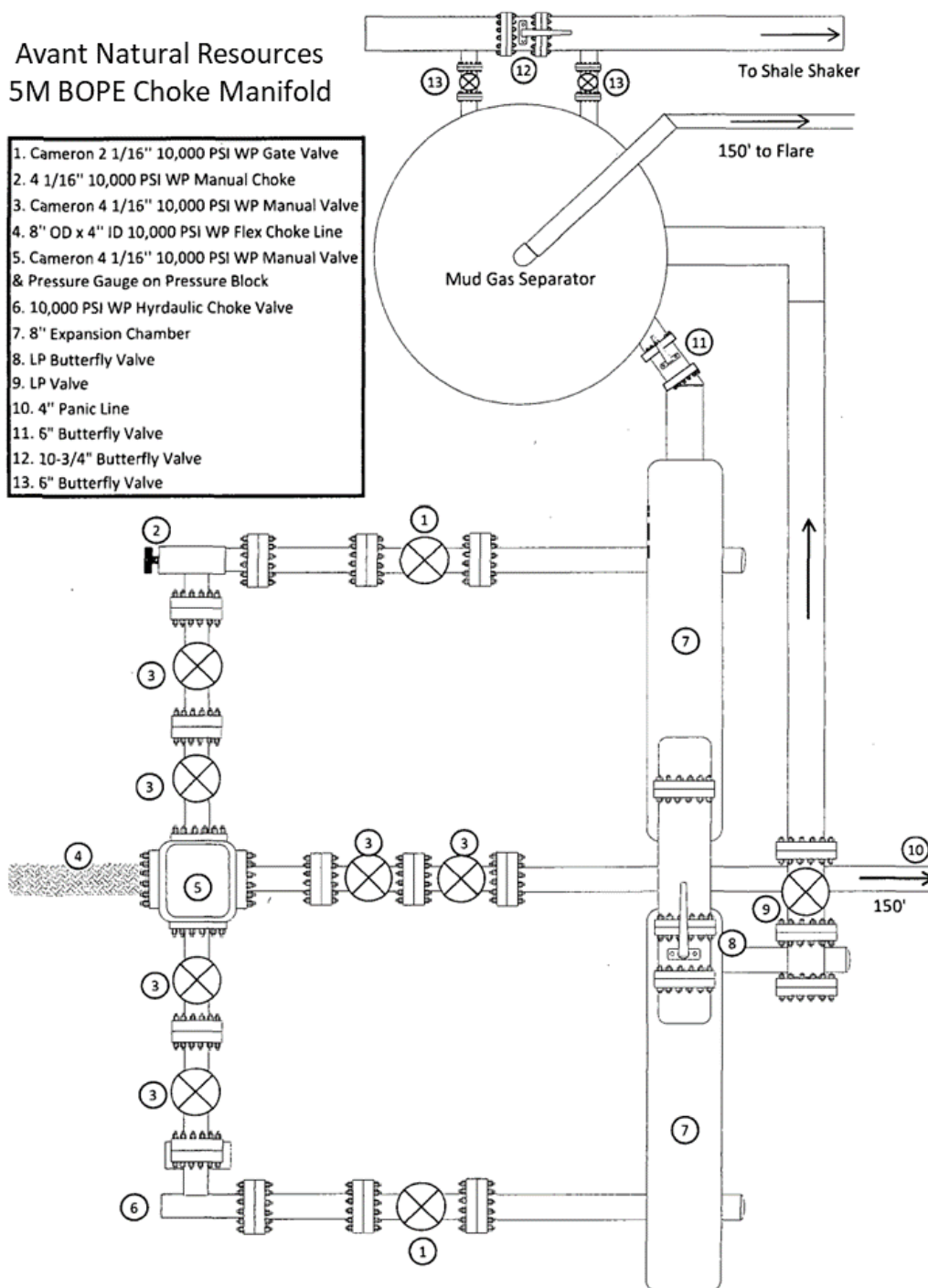
The multi-bowl wellhead will be installed by a third-party welder while being monitored by the vendors representative.

All BOP equipment will be tested using a conventional test plug - not a cup or J-packer type. Both the surface and intermediate casing strings will be tested as per 43 CFR 3172. to at least 0.22 psi/ft or 1500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield.

Choke Manifold Diagram

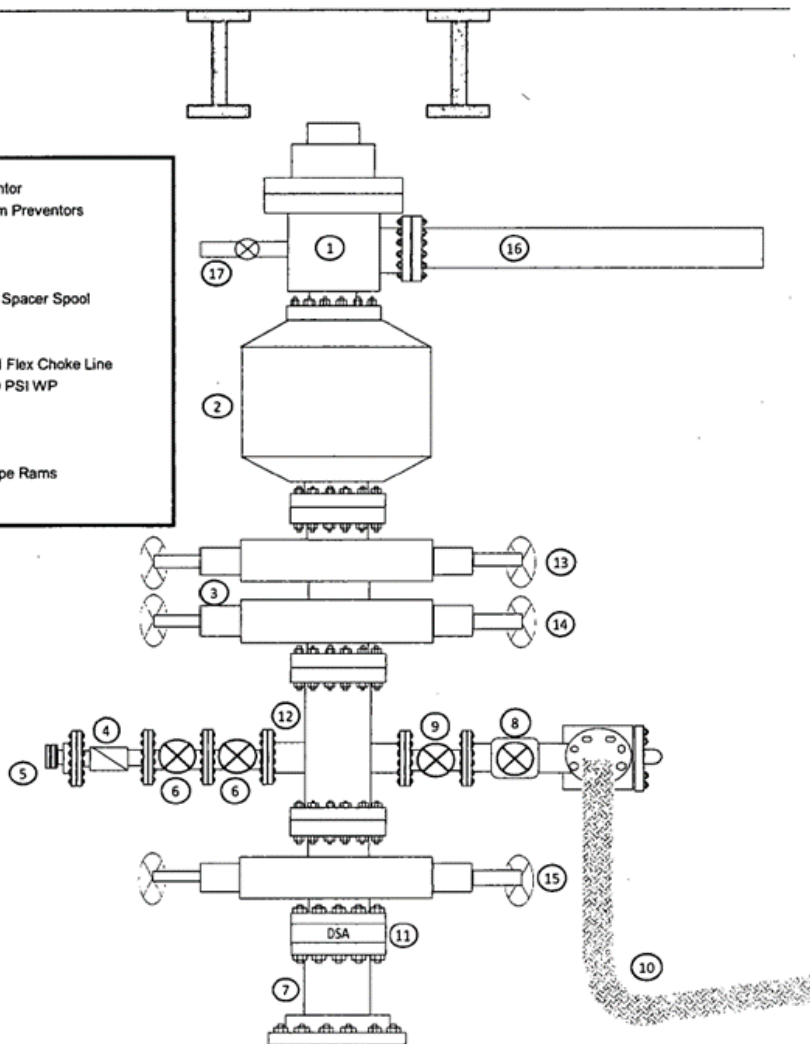
Avant Natural Resources
5M BOPE Choke Manifold

1. Cameron 2 1/16" 10,000 PSI WP Gate Valve
2. 4 1/16" 10,000 PSI WP Manual Choke
3. Cameron 4 1/16" 10,000 PSI WP Manual Valve
4. 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
5. Cameron 4 1/16" 10,000 PSI WP Manual Valve & Pressure Gauge on Pressure Block
6. 10,000 PSI WP Hydraulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line
11. 5" Butterfly Valve
12. 10-3/4" Butterfly Valve
13. 6" Butterfly Valve



Avant Natural Resources 5M BOP Diagram

1. 13 5/8" Rotating Head
2. NOV 13 5/8" 5,000 PSI WP GK Annular Preventor
3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors
4. 2 1/16" - 10,000 PSI WP Check Valve
5. 10,000 PSI WP - 1502 Union to kill line
6. 2 1/16" - 10,000 PSI WP Manual Valves
7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool
8. 4 1/16" 10,000 PSI WP HCR Valve
9. 4 1/16" 10,000 PSI WP Manual Valve
10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line
11. DSA - 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP
12. Mud Cross - 13 5/8" 10,000 PSI WP
13. Blind Rams
14. Pipe Rams
15. 13 5/8" Cameron Type "U" 10,000 PSI WP Pipe Rams
16. Flow Line
17. 2" Fill Line



AFE: 0

API:

REGULATORY: NMOCD

PERMIT #

RIG: H&P 460

KB: 3709.5 (26.5')

GL: 3683'



Emerald Federal Com 514H

Bone Spring
Lea County, NM

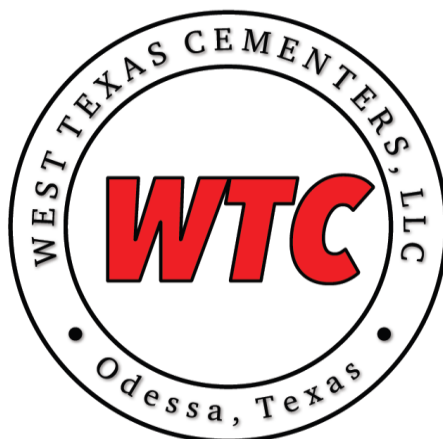
CAMERON WELLHEAD
13" x 7-1/16" NOM

SHL:
Sec. 6, T-19S, R-33E; 350 FSL, 1280 FEL
Lat: 32.6830509, Long: -103.6979284 (NAD83)

HOLE SIZE	MD	FORMATION	TVD	MUD	CASING	CEMENT	SPECIAL INSTRUCTIONS
17 1/2 "	120	20" Conductor	120	SPUD MW	13 3/8 "	LEAD: 12.8 PPG Top of Lead: 0 50% Excess	Circ cement to surface is a NMOCD requirement
	1,460	Rustler	1,460	8.4 ppg	54.5# J-55 LTC	TAIL: 14.8 PPG Top of Tail: 1185' 20% Excess	Casing must be set 25' into the Rustler
	1,485	SURF CSG PT	1,485	Fresh	+/- 12 Bowsprings	MUD: Fresh water only	
12 1/4 "				9 ppg	1 joint shoe track		
	1,754	Solado	1,754	DRLOUT MW	9 5/8 "	LEAD: 11 PPG Top of Lead: 0' 50% excess	Circ cement to surface is a NMOCD requirement
	3,465	Yates	3,453	9.5 ppg	40# J-55 LTC	TAIL: 14.8 PPG Top of Tail: 4224' 20% Excess	
	4,755	Capitan Reef	4,730	Cut Brine			
	5,181	Cherry Canyon	5,151	TD MW	+/- 9 Bowsprings		
8 3/4 " VERTICAL	5,281	INTRM CSG PT	5,251	9.5 ppg	1 joint shoe track		
	5,804	Brushy Canyon	5,768	DRLOUT MW			
	7,487	Bone Spring	7,434	9.2 ppg			
	8,233	Avalon	8,172	Cut Brine			
	8,793	1st BS Sand	8,727	KOP MW			
8 3/4 " CURVE	9,323	KOP	9,257	9.5 ppg	EOC	Float collar @ KOP	
	9,360	2nd BS Sand	9,294	Cut Brine	Lat MW 9.2 ppg	OBM	
	10,073	EOC	9,734	9.5	TD MW 9.2 ppg		
8 3/4 " LATERAL							20,020 ' MD
							10,165 ' VS
							9,734 ' TVD
DIRECTIONAL PLAN				ANNOTATION			
MD	INC	INC	TVD	5 1/2 "			
				20# P-110 HC GBCD			
				LEAD: 10.7 PPG Top of Lead: 0 50% Excess			
				TAIL: 14.8 PPG Top of Tail: 9323 20% Excess			
				All aqueous fluids (spacer and disp) left inside or outside of pipe must have biocide & corrosion inhibitor			
DIRECTIONS TO LOCAITON:				Expected Btm Hole Pressure 4672.32 psi			

Preliminary

PROPOSAL#: 240625131445-A



CEMENT PROCEDURE & PROPOSAL

PREPARED FOR:

Mr. Braden Harris

EMAIL: braden@avantnr.com

PHONE NUMBER: 406-600-3310

Avant Natural Resources

Emerald Federal Com #514H

Lea County, NM

Rig: H&P 460

Service Point

Odessa

1400 S JBS Parkway Odessa, TX 79766

432-701-8955

Technical Writer

Jonathan Smith

jonathan@wtcementers.com

432-701-3719

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Jon Reynolds

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432-257-1234

.Disclaimer Notice:

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

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

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6/25/2024 13:16

VERSION: v0.29b

Avant Natural Resources
Emerald Federal Com #514H
Lea County, NM
Rig: H&P 460

Surface



PROPOSAL#: 240625131445-A

WELL INFORMATION						
MUD	8.4# Fresh Water					
PREVIOUS PIPE	20" 94# CSG to 120					
OPEN HOLE	17.5" OH to 1485					
CASING/INJECTION	13.375" 54.5# J-55/LTC to 1485					
MD	1485					
EST BHST/BHCT	92-F / 85-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	120	19.124	13.375		0.1815	21.8
Lead	1065	17.5	13.375	50%	0.1856	197.6
Tail	300	17.5	13.375	20%	0.1485	44.5
SHOE JOINT	40	13.375	12.615		0.1546	6.2
FLUIDS						
SPACER						
Fresh Water						
VOLUME	20-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	650-SX		Slurry Volume: 220-bbls			
DENSITY	12.8-ppg		Mix Water Required: 158-bbls			
YIELD	1.9-cf/sx					
MIX WATER	10.17-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Emerald Federal Com #514H
Lea County, NM
Rig: H&P 460

Surface



PROPOSAL#: 240625131445-A

Tail		
100% Class C+1% CaCl2+0.005GPS NoFoam V1A		
VOLUME	215-SX	Slurry Volume: 50.9-bbls
DENSITY	14.8-ppg	Mix Water Required: 33-bbls
YIELD	1.33-cf/sx	
MIX WATER	6.34-gps	
TOP OF CEMENT	1185-ft	
EXCESS	20%	
DISPLACEMENT		
Displacement		
VOLUME	223.4-bbl	

Avant Natural Resources
Emerald Federal Com #514H
Lea County, NM
Rig: H&P 460

Intermediate



PROPOSAL#: 240625131445-A

WELL INFORMATION						
MUD	9.5# Cut Brine					
PREVIOUS PIPE	13.375" 54.5# CSG to 1485					
OPEN HOLE	12.25" OH to 5281					
CASING/INJECTION	9.625" 40# J-55/LTC to 5281					
MD	5281					
TVD	5251					
EST BHST/BHCT	123-F / 107-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	1485	12.615	9.625		0.0646	95.9
Lead	2739	12.25	9.625	50%	0.0837	229.2
Tail	1057	12.25	9.625	20%	0.0669	70.7
SHOE JOINT	40	9.625	8.835		0.0758	3.0
FLUIDS						
SPACER						
Fresh Water						
VOLUME	25-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.5% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	965-SX		Slurry Volume: 326.5-bbls			
DENSITY	12.8-ppg		Mix Water Required: 234-bbls			
YIELD	1.9-cf/sx					
MIX WATER	10.18-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Emerald Federal Com #514H
Lea County, NM
Rig: H&P 460

Intermediate



PROPOSAL#: 240625131445-A

Tail		
	100% Class C+5% SALT+0.005GPS NoFoam V1A	
VOLUME	305-SX	Slurry Volume: 73.9-bbls
DENSITY	14.8-ppg	Mix Water Required: 48-bbls
YIELD	1.36-cf/sx	
MIX WATER	6.51-gps	
TOP OF CEMENT	4224-ft	
EXCESS	20%	
DISPLACEMENT		
	Displacement	
VOLUME	397.4-bbl	

Avant Natural Resources
Emerald Federal Com #514H
Lea County, NM
Rig: H&P 460

Production



PROPOSAL#: 240625131445-A

WELL INFORMATION						
MUD	9.2# OBM					
PREVIOUS PIPE	9.625" 40# CSG to 5281					
OPEN HOLE	8.75" OH to 20020					
CASING/INJECTION	5.5" 20# P-110 HC/GBCD to 20020					
MD	20020					
TVD	9734					
EST BHST/BHCT	211-F / 194-F (1.34-F/100-FT)					
KOP	9323					
NOTES	Standby charges start after WTC has been on location for more than 8-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	5281	8.835	5.5		0.0464	245.2
Lead	4042	8.75	5.5	50%	0.0675	272.8
Tail	10697	8.75	5.5	20%	0.0540	577.5
SHOE JOINT	80	5.5	4.778		0.0222	1.8
FLUIDS						
SPACER						
Wt. Spacer 38.01GPB Water+8PPB PolyScrub 4320+73.29PPB Barite+1GPB HoleScrub 4311+1PPB R-1300						
VOLUME	40-bbl					
DENSITY	9.7-ppg					
Lead						
100% ProLite+5PPS Plexcrete STE+2% SMS+0.65% R-1300+0.2% FL-24+3PPS Gilsonite+0.005GPS NoFoam V1A						
VOLUME	865-SX				Slurry Volume: 520.7-bbls	
DENSITY	10.7-ppg				Mix Water Required: 434-bbls	
YIELD	3.38-cf/sx					
MIX WATER	21.06-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Emerald Federal Com #514H
Lea County, NM
Rig: H&P 460

Production



PROPOSAL#: 240625131445-A

Tail		
50% B_Poz+50% Class H+5% SALT+0.05% RCKCAS-100+0.75% FR-5+0.5% FL-24+0.005GPS NoFoam V1A		
VOLUME	2690-SX	Slurry Volume: 579.7-bbls
DENSITY	14.5-ppg	Mix Water Required: 339-bbls
YIELD	1.21-cf/sx	
MIX WATER	5.28-gps	
TOP OF CEMENT	9323-ft	
EXCESS	20%	
DISPLACEMENT		
Fresh Water+ 0.25GPT Plexicide 24L+1GPT Corplex		
VOLUME	442.2-bbl	
DENSITY	8.34-ppg	

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

CASING DESIGN CRITERIA & LOAD CASE ASSUMPTIONS

SURFACE CASING:

SIZE (in)	SURFACE CASING	ID (in)	DRIFT (in)	BURST (psi)	COLLAPSE (psi)	TENSION (k-lbs)	JOINT STRENGTH (k-lbs)	DEPTHS
13.375"	54.5# J-55 LTC	10.05	9.894	3130	1580	629	700	0' – SCP'

Collapse: $DF_c = 1.25$

- Full internal evacuation: Collapse force equal to the mud gradient in which the casing will be ran.
- Cementing: Collapse force equal to the gradient of the planned cement slurries to planned depths and an internal force equal to the fluid gradient of displacement fluid.

Burst: $DF_B = 1.25$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the gradient in which the casing will be ran.

Tension: $DF_T = 1.6$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string, without considering buoyancy.

INTERMEIDATE CASING:

SIZE (in)	INTERMEDIATE CASING	ID (in)	DRIFT (in)	BURST (psi)	COLLAPSE (psi)	TENSION (k-lbs)	JOINT STRENGTH (k-lbs)	DEPTHS
9-5/8"	40# J-55 LTC	6.875	6.75	9470	7150	940	769	0' – ICP'

Collapse: $DF_c = 1.25$

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be ran.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to fluid gradient of displacement fluid.

Burst: $DF_B = 1.25$

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be ran.
- Gas Kick Profile: Internal burst force at the shoe will be fracture pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be ran above that. External force will be equal to the mud gradient in which the casing will be ran.

- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be fracture pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be ran.

Tension: $DF_T = 1.6$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string, without considering buoyancy.

PRODUCTION CASING:

SIZE (in)	PRODUCTION CASING	ID (in)	DRIFT (in)	BURST (psi)	COLLAPSE (psi)	TENSION (k-lbs)	CONN OD (in)	JOINT TENSION (k-lbs)	DEPTHS
5-1/2"	20# HCP-110 GBCD	4.778	4.653	12,640	12,200	641	6.300	641	0' – MD'

Collapse: $DF_C = 1.25$

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be ran. Internal force equal to gas gradient over one-third of setting depth and mud gradient with which the next hole section will be ran below that.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be ran above that and an internal force equal to the fluid gradient of displacement fluid.

Burst: $DF_B = 1.25$

- Pressure Test: 80% of burst casing test with an external force equal to the mud gradient in which the casing will be ran.
- Injection Down Casing: 9800 psi surface injection pressure plus an internal pressure gradient of with an external force equal to the mud gradient in which the casing will be ran.

Tension: $DF_T = 1.6$

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string, without considering buoyancy.

WELL DETAILS: Emerald Fed Com 514H

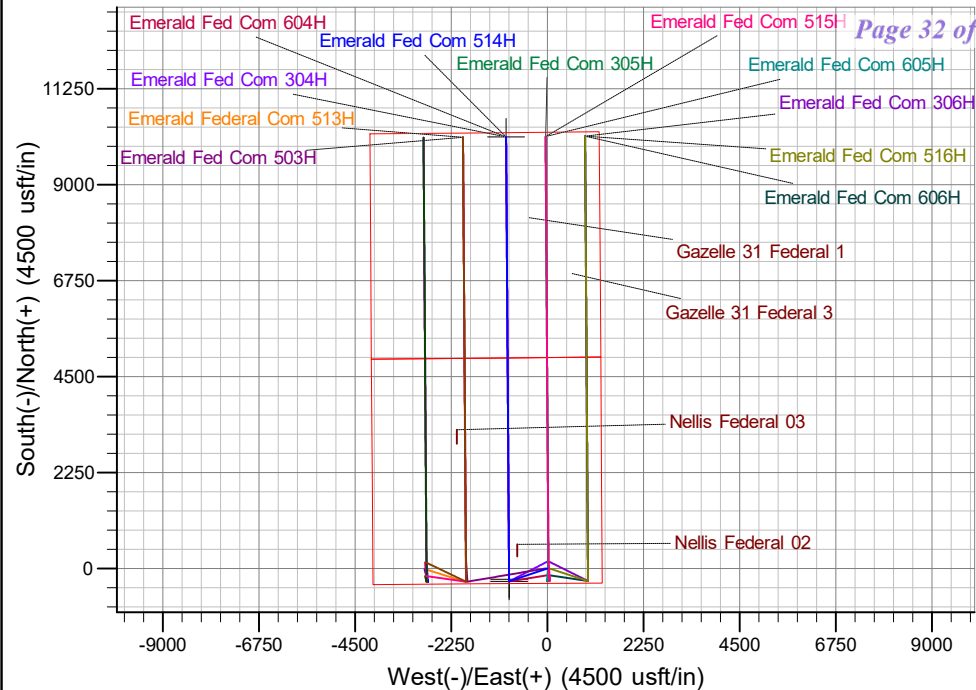
Ground Elev: 3683.1 KB: Original Well Elev

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	612810.47	736832.96	32.683051	-103.697928

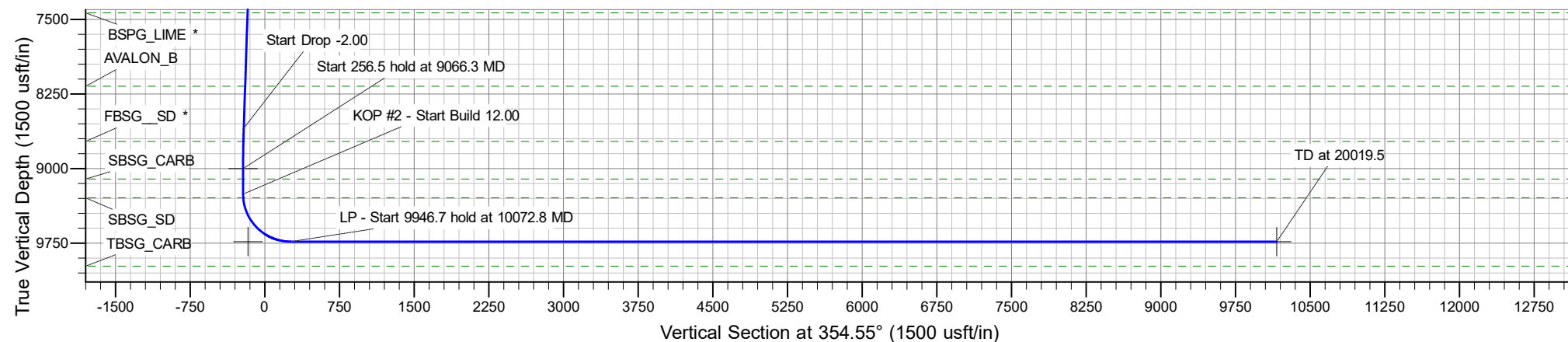
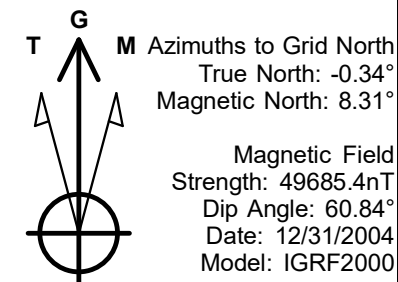
PROJECT DETAILS: Lea Co., NM (NAD 83)

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	2408.7	8.17	251.23	2407.4	-9.4	-27.6	2.00	251.23	-6.7	Start 6248.8 hold at 2408.7 MD
4	8657.5	8.17	251.23	8592.6	-295.2	-868.9	0.00	0.00	-211.4	Start Drop -2.00
5	9066.3	0.00	0.00	9000.0	-304.6	-896.4	2.00	180.00	-218.1	Start 256.5 hold at 9066.3 MD
6	9322.8	0.00	0.00	9256.5	-304.6	-896.4	0.00	0.00	-218.1	KOP #2 - Start Build 12.00
7	10072.8	90.00	359.62	9734.0	172.9	-899.6	12.00	359.62	257.5	LP - Start 9946.7 hold at 10072.8 MD
8	20019.5	90.00	359.62	9734.0	10119.3	-965.4	0.00	0.00	10165.2	TD at 20019.5



Avant Operating, LLC

Lea Co., NM (NAD 83)

Emerald Pad 2

Emerald Fed Com 514H

OH

Plan: Plan 0.1

Standard Planning Report

24 June, 2024

Planning Report

Database:	EDM 5000.16 Single User Db				Local Co-ordinate Reference:		Well Emerald Fed Com 514H			
Company:	Avant Operating, LLC				TVD Reference:		WELL @ 3709.6usft (Original Well Elev)			
Project:	Lea Co., NM (NAD 83)				MD Reference:		WELL @ 3709.6usft (Original Well Elev)			
Site:	Emerald Pad 2				North Reference:		Grid			
Well:	Emerald Fed Com 514H				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	Emerald Pad 2									
Site Position:					Northing:	612,970.48 usft		Latitude:	32.683491	
From:	Lat/Long				Easting:	736,832.01 usft		Longitude:	-103.697929	
Position Uncertainty:	0.0 usft				Slot Radius:	13-3/16 "				

Well	Emerald Fed Com 514H									
Well Position	+N/-S	0.0 usft		Northing:	612,810.47 usft		Latitude:	32.683051		
	+E/-W	0.0 usft		Easting:	736,832.96 usft		Longitude:	-103.697929		
Position Uncertainty	0.0 usft				Wellhead Elevation:	usft		Ground Level:	3,683.1 usft	
Grid Convergence:	0.34 °									

Wellbore	OH									
Magnetics	Model Name		Sample Date		Declination (°)		Dip Angle (°)		Field Strength (nT)	
	IGRF2000		12/31/2004		8.66		60.84		49,685.44850802	

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		354.55	

Plan Survey Tool Program	Date		6/24/2024							
	Depth From (usft)	Depth To (usft)	Survey (Wellbore)		Tool Name		Remarks			
1	0.0	20,019.5	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	
2,408.7	8.17	251.23	2,407.4	-9.4	-27.6	2.00	2.00	0.00	251.23	
8,657.5	8.17	251.23	8,592.6	-295.2	-868.9	0.00	0.00	0.00	0.00	
9,066.3	0.00	0.00	9,000.0	-304.6	-896.4	2.00	-2.00	0.00	180.00	KOP - Emerald Fed C
9,322.8	0.00	0.00	9,256.5	-304.6	-896.4	0.00	0.00	0.00	0.00	
10,072.8	90.00	359.62	9,734.0	172.9	-899.6	12.00	12.00	0.00	359.62	
20,019.5	90.00	359.62	9,734.0	10,119.3	-965.4	0.00	0.00	0.00	0.00	LTP/BHL - Emerald F

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Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 514H	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
1,460.0	0.00	0.00	1,460.0	0.0	0.0	0.0	0.00	0.00	0.00
RUSTLER									
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
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,754.0	0.00	0.00	1,754.0	0.0	0.0	0.0	0.00	0.00	0.00
SOLADO									
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
2,100.0	2.00	251.23	2,100.0	-0.6	-1.7	-0.4	2.00	2.00	0.00
2,200.0	4.00	251.23	2,199.8	-2.2	-6.6	-1.6	2.00	2.00	0.00
2,300.0	6.00	251.23	2,299.5	-5.0	-14.9	-3.6	2.00	2.00	0.00
2,408.7	8.17	251.23	2,407.4	-9.4	-27.6	-6.7	2.00	2.00	0.00
Start 6248.8 hold at 2408.7 MD									
2,500.0	8.17	251.23	2,497.7	-13.5	-39.8	-9.7	0.00	0.00	0.00
2,600.0	8.17	251.23	2,596.7	-18.1	-53.3	-13.0	0.00	0.00	0.00
2,700.0	8.17	251.23	2,695.7	-22.7	-66.8	-16.2	0.00	0.00	0.00
2,800.0	8.17	251.23	2,794.6	-27.3	-80.2	-19.5	0.00	0.00	0.00
2,900.0	8.17	251.23	2,893.6	-31.8	-93.7	-22.8	0.00	0.00	0.00
3,000.0	8.17	251.23	2,992.6	-36.4	-107.2	-26.1	0.00	0.00	0.00
3,100.0	8.17	251.23	3,091.6	-41.0	-120.6	-29.3	0.00	0.00	0.00
3,200.0	8.17	251.23	3,190.6	-45.6	-134.1	-32.6	0.00	0.00	0.00
3,300.0	8.17	251.23	3,289.6	-50.1	-147.6	-35.9	0.00	0.00	0.00
3,400.0	8.17	251.23	3,388.5	-54.7	-161.0	-39.2	0.00	0.00	0.00
3,465.1	8.17	251.23	3,453.0	-57.7	-169.8	-41.3	0.00	0.00	0.00
YATES									
3,500.0	8.17	251.23	3,487.5	-59.3	-174.5	-42.5	0.00	0.00	0.00
3,600.0	8.17	251.23	3,586.5	-63.9	-187.9	-45.7	0.00	0.00	0.00
3,700.0	8.17	251.23	3,685.5	-68.4	-201.4	-49.0	0.00	0.00	0.00
3,800.0	8.17	251.23	3,784.5	-73.0	-214.9	-52.3	0.00	0.00	0.00
3,900.0	8.17	251.23	3,883.5	-77.6	-228.3	-55.6	0.00	0.00	0.00
4,000.0	8.17	251.23	3,982.4	-82.2	-241.8	-58.8	0.00	0.00	0.00
4,100.0	8.17	251.23	4,081.4	-86.7	-255.3	-62.1	0.00	0.00	0.00
4,200.0	8.17	251.23	4,180.4	-91.3	-268.7	-65.4	0.00	0.00	0.00
4,300.0	8.17	251.23	4,279.4	-95.9	-282.2	-68.7	0.00	0.00	0.00
4,400.0	8.17	251.23	4,378.4	-100.5	-295.7	-71.9	0.00	0.00	0.00

Planning Report

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Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 514H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	8.17	251.23	4,477.4	-105.0	-309.1	-75.2	0.00	0.00	0.00
4,600.0	8.17	251.23	4,576.3	-109.6	-322.6	-78.5	0.00	0.00	0.00
4,700.0	8.17	251.23	4,675.3	-114.2	-336.0	-81.8	0.00	0.00	0.00
4,755.2	8.17	251.23	4,730.0	-116.7	-343.5	-83.6	0.00	0.00	0.00
CAPITAN_REEF									
4,800.0	8.17	251.23	4,774.3	-118.8	-349.5	-85.0	0.00	0.00	0.00
4,900.0	8.17	251.23	4,873.3	-123.3	-363.0	-88.3	0.00	0.00	0.00
5,000.0	8.17	251.23	4,972.3	-127.9	-376.4	-91.6	0.00	0.00	0.00
5,100.0	8.17	251.23	5,071.3	-132.5	-389.9	-94.9	0.00	0.00	0.00
5,180.6	8.17	251.23	5,151.0	-136.2	-400.7	-97.5	0.00	0.00	0.00
CHERRY_CNYN									
5,200.0	8.17	251.23	5,170.3	-137.1	-403.4	-98.1	0.00	0.00	0.00
5,300.0	8.17	251.23	5,269.2	-141.6	-416.8	-101.4	0.00	0.00	0.00
5,400.0	8.17	251.23	5,368.2	-146.2	-430.3	-104.7	0.00	0.00	0.00
5,500.0	8.17	251.23	5,467.2	-150.8	-443.7	-108.0	0.00	0.00	0.00
5,600.0	8.17	251.23	5,566.2	-155.4	-457.2	-111.2	0.00	0.00	0.00
5,700.0	8.17	251.23	5,665.2	-159.9	-470.7	-114.5	0.00	0.00	0.00
5,800.0	8.17	251.23	5,764.2	-164.5	-484.1	-117.8	0.00	0.00	0.00
5,803.9	8.17	251.23	5,768.0	-164.7	-484.7	-117.9	0.00	0.00	0.00
BRUSHY_CANYON									
5,900.0	8.17	251.23	5,863.1	-169.1	-497.6	-121.1	0.00	0.00	0.00
6,000.0	8.17	251.23	5,962.1	-173.7	-511.1	-124.3	0.00	0.00	0.00
6,100.0	8.17	251.23	6,061.1	-178.2	-524.5	-127.6	0.00	0.00	0.00
6,200.0	8.17	251.23	6,160.1	-182.8	-538.0	-130.9	0.00	0.00	0.00
6,300.0	8.17	251.23	6,259.1	-187.4	-551.5	-134.2	0.00	0.00	0.00
6,400.0	8.17	251.23	6,358.1	-192.0	-564.9	-137.4	0.00	0.00	0.00
6,500.0	8.17	251.23	6,457.0	-196.5	-578.4	-140.7	0.00	0.00	0.00
6,600.0	8.17	251.23	6,556.0	-201.1	-591.8	-144.0	0.00	0.00	0.00
6,700.0	8.17	251.23	6,655.0	-205.7	-605.3	-147.3	0.00	0.00	0.00
6,800.0	8.17	251.23	6,754.0	-210.3	-618.8	-150.5	0.00	0.00	0.00
6,900.0	8.17	251.23	6,853.0	-214.8	-632.2	-153.8	0.00	0.00	0.00
7,000.0	8.17	251.23	6,952.0	-219.4	-645.7	-157.1	0.00	0.00	0.00
7,100.0	8.17	251.23	7,050.9	-224.0	-659.2	-160.4	0.00	0.00	0.00
7,200.0	8.17	251.23	7,149.9	-228.6	-672.6	-163.6	0.00	0.00	0.00
7,300.0	8.17	251.23	7,248.9	-233.1	-686.1	-166.9	0.00	0.00	0.00
7,400.0	8.17	251.23	7,347.9	-237.7	-699.6	-170.2	0.00	0.00	0.00
7,487.0	8.17	251.23	7,434.0	-241.7	-711.3	-173.0	0.00	0.00	0.00
BSPG_LIME *									
7,500.0	8.17	251.23	7,446.9	-242.3	-713.0	-173.5	0.00	0.00	0.00
7,600.0	8.17	251.23	7,545.9	-246.9	-726.5	-176.7	0.00	0.00	0.00
7,700.0	8.17	251.23	7,644.8	-251.4	-739.9	-180.0	0.00	0.00	0.00
7,800.0	8.17	251.23	7,743.8	-256.0	-753.4	-183.3	0.00	0.00	0.00
7,900.0	8.17	251.23	7,842.8	-260.6	-766.9	-186.6	0.00	0.00	0.00
8,000.0	8.17	251.23	7,941.8	-265.2	-780.3	-189.8	0.00	0.00	0.00
8,100.0	8.17	251.23	8,040.8	-269.7	-793.8	-193.1	0.00	0.00	0.00
8,200.0	8.17	251.23	8,139.8	-274.3	-807.3	-196.4	0.00	0.00	0.00
8,232.6	8.17	251.23	8,172.0	-275.8	-811.6	-197.5	0.00	0.00	0.00
AVALON_B									
8,300.0	8.17	251.23	8,238.8	-278.9	-820.7	-199.7	0.00	0.00	0.00
8,400.0	8.17	251.23	8,337.7	-283.5	-834.2	-203.0	0.00	0.00	0.00
8,500.0	8.17	251.23	8,436.7	-288.0	-847.6	-206.2	0.00	0.00	0.00
8,600.0	8.17	251.23	8,535.7	-292.6	-861.1	-209.5	0.00	0.00	0.00
8,657.5	8.17	251.23	8,592.6	-295.2	-868.9	-211.4	0.00	0.00	0.00

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Well:	Emerald Fed Com 514H	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)
Start Drop -2.00									
8,700.0	7.33	251.23	8,634.7	-297.1	-874.3	-212.7	2.00	-2.00	0.00
8,792.9	5.47	251.23	8,727.0	-300.4	-884.1	-215.1	2.00	-2.00	0.00
FBSG_SD *									
8,800.0	5.33	251.23	8,734.1	-300.6	-884.7	-215.2	2.00	-2.00	0.00
8,900.0	3.33	251.23	8,833.8	-303.0	-891.9	-217.0	2.00	-2.00	0.00
9,000.0	1.33	251.23	8,933.7	-304.4	-895.7	-217.9	2.00	-2.00	0.00
9,066.3	0.00	0.00	9,000.0	-304.6	-896.4	-218.1	2.00	-2.00	0.00
Start 256.5 hold at 9066.3 MD - KOP - Emerald Fed Com 514H									
9,100.0	0.00	0.00	9,033.7	-304.6	-896.4	-218.1	0.00	0.00	0.00
9,170.3	0.00	0.00	9,104.0	-304.6	-896.4	-218.1	0.00	0.00	0.00
SBSG_CARB									
9,200.0	0.00	0.00	9,133.7	-304.6	-896.4	-218.1	0.00	0.00	0.00
9,300.0	0.00	0.00	9,233.7	-304.6	-896.4	-218.1	0.00	0.00	0.00
9,322.8	0.00	0.00	9,256.5	-304.6	-896.4	-218.1	0.00	0.00	0.00
KOP #2 - Start Build 12.00									
9,325.0	0.26	359.62	9,258.7	-304.6	-896.4	-218.1	12.00	12.00	0.00
9,350.0	3.26	359.62	9,283.7	-303.8	-896.4	-217.3	12.00	12.00	0.00
9,360.3	4.50	359.62	9,294.0	-303.1	-896.4	-216.6	12.00	12.00	0.00
SBSG_SD									
9,375.0	6.26	359.62	9,308.6	-301.7	-896.4	-215.3	12.00	12.00	0.00
9,400.0	9.26	359.62	9,333.4	-298.4	-896.5	-211.9	12.00	12.00	0.00
9,425.0	12.26	359.62	9,358.0	-293.7	-896.5	-207.2	12.00	12.00	0.00
9,450.0	15.26	359.62	9,382.2	-287.8	-896.5	-201.3	12.00	12.00	0.00
9,475.0	18.26	359.62	9,406.2	-280.5	-896.6	-194.1	12.00	12.00	0.00
9,500.0	21.26	359.62	9,429.7	-272.1	-896.6	-185.7	12.00	12.00	0.00
9,525.0	24.26	359.62	9,452.7	-262.4	-896.7	-176.1	12.00	12.00	0.00
9,550.0	27.26	359.62	9,475.3	-251.6	-896.8	-165.3	12.00	12.00	0.00
9,575.0	30.26	359.62	9,497.2	-239.5	-896.9	-153.3	12.00	12.00	0.00
9,600.0	33.26	359.62	9,518.4	-226.4	-896.9	-140.2	12.00	12.00	0.00
9,625.0	36.26	359.62	9,539.0	-212.1	-897.0	-126.0	12.00	12.00	0.00
9,650.0	39.26	359.62	9,558.7	-196.8	-897.1	-110.7	12.00	12.00	0.00
9,675.0	42.26	359.62	9,577.7	-180.5	-897.2	-94.5	12.00	12.00	0.00
9,700.0	45.26	359.62	9,595.7	-163.2	-897.4	-77.2	12.00	12.00	0.00
9,725.0	48.26	359.62	9,612.8	-145.0	-897.5	-59.1	12.00	12.00	0.00
FTP - Emerald Fed Com 514H									
9,750.0	51.26	359.62	9,629.0	-125.9	-897.6	-40.1	12.00	12.00	0.00
9,775.0	54.26	359.62	9,644.1	-106.0	-897.7	-20.3	12.00	12.00	0.00
9,800.0	57.26	359.62	9,658.2	-85.3	-897.9	0.3	12.00	12.00	0.00
9,825.0	60.26	359.62	9,671.1	-64.0	-898.0	21.6	12.00	12.00	0.00
9,850.0	63.26	359.62	9,683.0	-41.9	-898.2	43.5	12.00	12.00	0.00
9,875.0	66.26	359.62	9,693.6	-19.3	-898.3	66.1	12.00	12.00	0.00
9,900.0	69.26	359.62	9,703.1	3.8	-898.5	89.1	12.00	12.00	0.00
9,925.0	72.26	359.62	9,711.3	27.4	-898.6	112.6	12.00	12.00	0.00
9,950.0	75.26	359.62	9,718.3	51.4	-898.8	136.5	12.00	12.00	0.00
9,975.0	78.26	359.62	9,724.0	75.7	-898.9	160.8	12.00	12.00	0.00
10,000.0	81.26	359.62	9,728.5	100.3	-899.1	185.3	12.00	12.00	0.00
10,025.0	84.26	359.62	9,731.6	125.1	-899.3	210.0	12.00	12.00	0.00
10,050.0	87.26	359.62	9,733.5	150.1	-899.4	234.8	12.00	12.00	0.00
10,072.8	90.00	359.62	9,734.0	172.9	-899.6	257.5	12.00	12.00	0.00
LP - Start 9946.7 hold at 10072.8 MD									
10,100.0	90.00	359.62	9,734.0	200.1	-899.8	284.6	0.00	0.00	0.00
10,200.0	90.00	359.62	9,734.0	300.1	-900.4	384.2	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 514H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 514H	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)
10,300.0	90.00	359.62	9,734.0	400.0	-901.1	483.8	0.00	0.00	0.00
10,400.0	90.00	359.62	9,734.0	500.0	-901.7	583.4	0.00	0.00	0.00
10,500.0	90.00	359.62	9,734.0	600.0	-902.4	683.0	0.00	0.00	0.00
10,600.0	90.00	359.62	9,734.0	700.0	-903.1	782.6	0.00	0.00	0.00
10,700.0	90.00	359.62	9,734.0	800.0	-903.7	882.2	0.00	0.00	0.00
10,800.0	90.00	359.62	9,734.0	900.0	-904.4	981.9	0.00	0.00	0.00
10,900.0	90.00	359.62	9,734.0	1,000.0	-905.0	1,081.5	0.00	0.00	0.00
11,000.0	90.00	359.62	9,734.0	1,100.0	-905.7	1,181.1	0.00	0.00	0.00
11,100.0	90.00	359.62	9,734.0	1,200.0	-906.4	1,280.7	0.00	0.00	0.00
11,200.0	90.00	359.62	9,734.0	1,300.0	-907.0	1,380.3	0.00	0.00	0.00
11,300.0	90.00	359.62	9,734.0	1,400.0	-907.7	1,479.9	0.00	0.00	0.00
11,400.0	90.00	359.62	9,734.0	1,500.0	-908.4	1,579.5	0.00	0.00	0.00
11,500.0	90.00	359.62	9,734.0	1,600.0	-909.0	1,679.1	0.00	0.00	0.00
11,600.0	90.00	359.62	9,734.0	1,700.0	-909.7	1,778.7	0.00	0.00	0.00
11,700.0	90.00	359.62	9,734.0	1,800.0	-910.3	1,878.3	0.00	0.00	0.00
11,800.0	90.00	359.62	9,734.0	1,900.0	-911.0	1,977.9	0.00	0.00	0.00
11,900.0	90.00	359.62	9,734.0	2,000.0	-911.7	2,077.6	0.00	0.00	0.00
12,000.0	90.00	359.62	9,734.0	2,100.0	-912.3	2,177.2	0.00	0.00	0.00
12,100.0	90.00	359.62	9,734.0	2,200.0	-913.0	2,276.8	0.00	0.00	0.00
12,200.0	90.00	359.62	9,734.0	2,300.0	-913.6	2,376.4	0.00	0.00	0.00
12,300.0	90.00	359.62	9,734.0	2,400.0	-914.3	2,476.0	0.00	0.00	0.00
12,400.0	90.00	359.62	9,734.0	2,500.0	-915.0	2,575.6	0.00	0.00	0.00
12,500.0	90.00	359.62	9,734.0	2,600.0	-915.6	2,675.2	0.00	0.00	0.00
12,600.0	90.00	359.62	9,734.0	2,700.0	-916.3	2,774.8	0.00	0.00	0.00
12,700.0	90.00	359.62	9,734.0	2,800.0	-917.0	2,874.4	0.00	0.00	0.00
12,800.0	90.00	359.62	9,734.0	2,900.0	-917.6	2,974.0	0.00	0.00	0.00
12,900.0	90.00	359.62	9,734.0	3,000.0	-918.3	3,073.6	0.00	0.00	0.00
13,000.0	90.00	359.62	9,734.0	3,100.0	-918.9	3,173.2	0.00	0.00	0.00
13,100.0	90.00	359.62	9,734.0	3,200.0	-919.6	3,272.9	0.00	0.00	0.00
13,200.0	90.00	359.62	9,734.0	3,300.0	-920.3	3,372.5	0.00	0.00	0.00
13,300.0	90.00	359.62	9,734.0	3,400.0	-920.9	3,472.1	0.00	0.00	0.00
13,400.0	90.00	359.62	9,734.0	3,500.0	-921.6	3,571.7	0.00	0.00	0.00
13,500.0	90.00	359.62	9,734.0	3,600.0	-922.2	3,671.3	0.00	0.00	0.00
13,600.0	90.00	359.62	9,734.0	3,700.0	-922.9	3,770.9	0.00	0.00	0.00
13,700.0	90.00	359.62	9,734.0	3,800.0	-923.6	3,870.5	0.00	0.00	0.00
13,800.0	90.00	359.62	9,734.0	3,900.0	-924.2	3,970.1	0.00	0.00	0.00
13,900.0	90.00	359.62	9,734.0	4,000.0	-924.9	4,069.7	0.00	0.00	0.00
14,000.0	90.00	359.62	9,734.0	4,100.0	-925.6	4,169.3	0.00	0.00	0.00
14,100.0	90.00	359.62	9,734.0	4,200.0	-926.2	4,268.9	0.00	0.00	0.00
14,200.0	90.00	359.62	9,734.0	4,300.0	-926.9	4,368.6	0.00	0.00	0.00
14,300.0	90.00	359.62	9,734.0	4,400.0	-927.5	4,468.2	0.00	0.00	0.00
14,400.0	90.00	359.62	9,734.0	4,500.0	-928.2	4,567.8	0.00	0.00	0.00
14,500.0	90.00	359.62	9,734.0	4,600.0	-928.9	4,667.4	0.00	0.00	0.00
14,600.0	90.00	359.62	9,734.0	4,700.0	-929.5	4,767.0	0.00	0.00	0.00
14,700.0	90.00	359.62	9,734.0	4,800.0	-930.2	4,866.6	0.00	0.00	0.00
14,800.0	90.00	359.62	9,734.0	4,900.0	-930.8	4,966.2	0.00	0.00	0.00
14,900.0	90.00	359.62	9,734.0	4,999.9	-931.5	5,065.8	0.00	0.00	0.00
15,000.0	90.00	359.62	9,734.0	5,099.9	-932.2	5,165.4	0.00	0.00	0.00
15,100.0	90.00	359.62	9,734.0	5,199.9	-932.8	5,265.0	0.00	0.00	0.00
15,200.0	90.00	359.62	9,734.0	5,299.9	-933.5	5,364.6	0.00	0.00	0.00
15,300.0	90.00	359.62	9,734.0	5,399.9	-934.1	5,464.2	0.00	0.00	0.00
15,400.0	90.00	359.62	9,734.0	5,499.9	-934.8	5,563.9	0.00	0.00	0.00
15,500.0	90.00	359.62	9,734.0	5,599.9	-935.5	5,663.5	0.00	0.00	0.00
15,600.0	90.00	359.62	9,734.0	5,699.9	-936.1	5,763.1	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 514H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 514H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,700.0	90.00	359.62	9,734.0	5,799.9	-936.8	5,862.7	0.00	0.00	0.00
15,800.0	90.00	359.62	9,734.0	5,899.9	-937.5	5,962.3	0.00	0.00	0.00
15,900.0	90.00	359.62	9,734.0	5,999.9	-938.1	6,061.9	0.00	0.00	0.00
16,000.0	90.00	359.62	9,734.0	6,099.9	-938.8	6,161.5	0.00	0.00	0.00
16,100.0	90.00	359.62	9,734.0	6,199.9	-939.4	6,261.1	0.00	0.00	0.00
16,200.0	90.00	359.62	9,734.0	6,299.9	-940.1	6,360.7	0.00	0.00	0.00
16,300.0	90.00	359.62	9,734.0	6,399.9	-940.8	6,460.3	0.00	0.00	0.00
16,400.0	90.00	359.62	9,734.0	6,499.9	-941.4	6,559.9	0.00	0.00	0.00
16,500.0	90.00	359.62	9,734.0	6,599.9	-942.1	6,659.6	0.00	0.00	0.00
16,600.0	90.00	359.62	9,734.0	6,699.9	-942.7	6,759.2	0.00	0.00	0.00
16,700.0	90.00	359.62	9,734.0	6,799.9	-943.4	6,858.8	0.00	0.00	0.00
16,800.0	90.00	359.62	9,734.0	6,899.9	-944.1	6,958.4	0.00	0.00	0.00
16,900.0	90.00	359.62	9,734.0	6,999.9	-944.7	7,058.0	0.00	0.00	0.00
17,000.0	90.00	359.62	9,734.0	7,099.9	-945.4	7,157.6	0.00	0.00	0.00
17,100.0	90.00	359.62	9,734.0	7,199.9	-946.1	7,257.2	0.00	0.00	0.00
17,200.0	90.00	359.62	9,734.0	7,299.9	-946.7	7,356.8	0.00	0.00	0.00
17,300.0	90.00	359.62	9,734.0	7,399.9	-947.4	7,456.4	0.00	0.00	0.00
17,400.0	90.00	359.62	9,734.0	7,499.9	-948.0	7,556.0	0.00	0.00	0.00
17,500.0	90.00	359.62	9,734.0	7,599.9	-948.7	7,655.6	0.00	0.00	0.00
17,600.0	90.00	359.62	9,734.0	7,699.9	-949.4	7,755.2	0.00	0.00	0.00
17,700.0	90.00	359.62	9,734.0	7,799.9	-950.0	7,854.9	0.00	0.00	0.00
17,800.0	90.00	359.62	9,734.0	7,899.9	-950.7	7,954.5	0.00	0.00	0.00
17,900.0	90.00	359.62	9,734.0	7,999.9	-951.3	8,054.1	0.00	0.00	0.00
18,000.0	90.00	359.62	9,734.0	8,099.9	-952.0	8,153.7	0.00	0.00	0.00
18,100.0	90.00	359.62	9,734.0	8,199.9	-952.7	8,253.3	0.00	0.00	0.00
18,200.0	90.00	359.62	9,734.0	8,299.9	-953.3	8,352.9	0.00	0.00	0.00
18,300.0	90.00	359.62	9,734.0	8,399.9	-954.0	8,452.5	0.00	0.00	0.00
18,400.0	90.00	359.62	9,734.0	8,499.9	-954.6	8,552.1	0.00	0.00	0.00
18,500.0	90.00	359.62	9,734.0	8,599.9	-955.3	8,651.7	0.00	0.00	0.00
18,600.0	90.00	359.62	9,734.0	8,699.9	-956.0	8,751.3	0.00	0.00	0.00
18,700.0	90.00	359.62	9,734.0	8,799.9	-956.6	8,850.9	0.00	0.00	0.00
18,800.0	90.00	359.62	9,734.0	8,899.9	-957.3	8,950.6	0.00	0.00	0.00
18,900.0	90.00	359.62	9,734.0	8,999.9	-958.0	9,050.2	0.00	0.00	0.00
19,000.0	90.00	359.62	9,734.0	9,099.9	-958.6	9,149.8	0.00	0.00	0.00
19,100.0	90.00	359.62	9,734.0	9,199.9	-959.3	9,249.4	0.00	0.00	0.00
19,200.0	90.00	359.62	9,734.0	9,299.9	-959.9	9,349.0	0.00	0.00	0.00
19,300.0	90.00	359.62	9,734.0	9,399.9	-960.6	9,448.6	0.00	0.00	0.00
19,400.0	90.00	359.62	9,734.0	9,499.8	-961.3	9,548.2	0.00	0.00	0.00
19,500.0	90.00	359.62	9,734.0	9,599.8	-961.9	9,647.8	0.00	0.00	0.00
19,600.0	90.00	359.62	9,734.0	9,699.8	-962.6	9,747.4	0.00	0.00	0.00
19,700.0	90.00	359.62	9,734.0	9,799.8	-963.2	9,847.0	0.00	0.00	0.00
19,800.0	90.00	359.62	9,734.0	9,899.8	-963.9	9,946.6	0.00	0.00	0.00
19,900.0	90.00	359.62	9,734.0	9,999.8	-964.6	10,046.2	0.00	0.00	0.00
20,000.0	90.00	359.62	9,734.0	10,099.8	-965.2	10,145.9	0.00	0.00	0.00
20,019.5	90.00	359.62	9,734.0	10,119.3	-965.4	10,165.2	0.00	0.00	0.00
TD at 20019.5 - LTP/BHL - Emerald Fed Com 514H									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Emerald Fed Com 514H
Company:	Avant Operating, LLC	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Project:	Lea Co., NM (NAD 83)	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site:	Emerald Pad 2	North Reference:	Grid
Well:	Emerald Fed Com 514H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
KOP - Emerald Fed Con	0.00	0.00	9,000.0	-304.6	-896.4	612,505.87	735,936.54	32.682229	-103.700848
- plan hits target center									
- Point									
LTP/BHL - Emerald Fed	0.00	0.00	9,734.0	10,119.3	-965.4	622,929.76	735,867.60	32.710880	-103.700870
- plan hits target center									
- Point									
FTP - Emerald Fed Com	0.00	0.01	9,734.0	-254.6	-896.7	612,555.87	735,936.27	32.682366	-103.700848
- plan misses target center by 163.4usft at 9725.0usft MD (9612.8 TVD, -145.0 N, -897.5 E)									
- Point									

Formations						
Measured Depth	Vertical Depth					
(usft)	(usft)	Name	Lithology	Dip	Dip Direction	
				(°)	(°)	
1,460.0	1,460.0	RUSTLER				
1,754.0	1,754.0	SOLADO				
3,465.1	3,453.0	YATES				
4,755.2	4,730.0	CAPITAN_REEF				
5,180.6	5,151.0	CHERRY_CNYN				
5,803.9	5,768.0	BRUSHY_CANYON				
7,487.0	7,434.0	BSPG_LIME *				
8,232.6	8,172.0	AVALON_B				
8,792.9	8,727.0	FBSG_SD *				
9,170.3	9,104.0	SBSG_CARB				
9,360.3	9,294.0	SBSG_SD				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
		(usft)	(usft)		
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 2.00	
2,408.7	2,407.4	-9.4	-27.6	Start 6248.8 hold at 2408.7 MD	
8,657.5	8,592.6	-295.2	-868.9	Start Drop -2.00	
9,066.3	9,000.0	-304.6	-896.4	Start 256.5 hold at 9066.3 MD	
9,322.8	9,256.5	-304.6	-896.4	KOP #2 - Start Build 12.00	
10,072.8	9,734.0	172.9	-899.6	LP - Start 9946.7 hold at 10072.8 MD	
20,019.5	9,734.0	10,119.3	-965.4	TD at 20019.5	

Avant Operating, LLC

Lea Co., NM (NAD 83)

Emerald Pad 2

Emerald Fed Com 514H

OH

Plan 0.1

Anticollision Report

24 June, 2024

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.1	Offset TVD Reference:	Offset Datum

Reference	Plan 0.1		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 2,201.9usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	6/24/2024		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,019.5	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						
Emerald						
Emerald Federal Com 513H - OH - Plan 0.1	9,300.0	9,356.8	1,008.5	942.0	15.159	CC
Emerald Federal Com 513H - OH - Plan 0.1	20,019.5	20,156.3	1,012.4	709.6	3.344	ES, SF
Nellis Federal 02 - OH - OH	10,364.4	9,723.4	195.3	-54.9	0.780	Level 1, CC, ES, SF
Nellis Federal 03 - OH - OH	13,045.5	9,743.4	1,199.5	912.1	4.174	CC, ES
Nellis Federal 03 - OH - OH	13,100.0	9,745.2	1,200.7	912.5	4.165	SF
Emerald Offset Wells						
Gazelle 31 Federal 1 - OH - OH	18,119.2	9,780.8	532.4	372.6	3.333	CC, ES, SF
Gazelle 31 Federal 3 - OH - OH	16,803.0	9,769.5	1,524.2	1,187.1	4.521	CC, ES, SF
Emerald Pad 1						
Emerald Fed Com 302H - OH - Plan 0.1	8,866.0	8,743.2	1,945.3	1,882.7	31.059	CC
Emerald Fed Com 302H - OH - Plan 0.1	20,019.5	19,070.8	2,138.5	1,854.9	7.539	ES, SF
Emerald Fed Com 303H - OH - Plan 0.1	8,799.8	8,761.6	1,027.1	964.1	16.315	CC
Emerald Fed Com 303H - OH - Plan 0.1	8,800.0	8,761.7	1,027.1	964.1	16.315	ES
Emerald Fed Com 303H - OH - Plan 0.1	20,019.5	19,126.6	1,361.5	1,111.4	5.445	SF
Emerald Fed Com 502H - OH - Plan 0.1	9,099.9	9,041.6	1,899.8	1,835.4	29.509	CC
Emerald Fed Com 502H - OH - Plan 0.1	20,019.5	19,968.0	1,933.6	1,630.1	6.372	ES, SF
Emerald Fed Com 602H - OH - Plan 0.1	9,575.6	9,516.4	1,936.1	1,868.7	28.704	CC
Emerald Fed Com 602H - OH - Plan 0.1	20,019.5	20,749.4	2,095.0	1,807.4	7.284	ES, SF
Emerald Fed Com 603H - OH - Plan 0.1	9,665.6	9,717.6	1,032.2	963.3	14.976	CC, ES
Emerald Fed Com 603H - OH - Plan 0.1	20,019.5	20,803.9	1,292.2	1,031.2	4.950	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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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						
Emerald Pad 2						
Emerald Fed Com 304H - OH - Plan 0.1	8,561.7	8,588.1	43.1	-20.3	0.680	Level 1, CC, ES, SF
Emerald Fed Com 305H - OH - Plan 0.1	2,367.0	2,380.4	153.1	136.7	9.355	CC
Emerald Fed Com 305H - OH - Plan 0.1	2,400.0	2,413.2	153.3	136.7	9.239	ES
Emerald Fed Com 305H - OH - Plan 0.1	20,019.5	19,051.9	1,305.7	1,064.0	5.401	SF
Emerald Fed Com 306H - OH - Plan 0.1	2,002.0	2,004.9	164.9	151.0	11.857	CC
Emerald Fed Com 306H - OH - Plan 0.1	2,100.0	2,104.0	165.5	150.9	11.341	ES
Emerald Fed Com 306H - OH - Plan 0.1	20,019.5	19,127.2	2,065.6	1,785.5	7.374	SF
Emerald Fed Com 503H - OH - Plan 0.1	2,000.0	1,999.5	40.1	26.2	2.888	CC
Emerald Fed Com 503H - OH - Plan 0.1	2,400.0	2,394.0	41.0	24.5	2.486	ES, SF
Emerald Fed Com 515H - OH - Plan 0.1	1,916.5	1,917.1	19.9	6.6	1.498	Level 3, CC
Emerald Fed Com 515H - OH - Plan 0.1	2,000.0	2,000.6	19.9	6.0	1.434	Level 3, ES, SF
Emerald Fed Com 516H - OH - Plan 0.1	1,916.4	1,917.1	39.9	26.6	3.002	CC
Emerald Fed Com 516H - OH - Plan 0.1	2,000.0	2,000.7	39.9	26.0	2.872	ES, SF
Emerald Fed Com 604H - OH - Plan 0.1	9,430.6	9,419.4	21.6	-47.5	0.312	Level 1, CC, ES, SF
Emerald Fed Com 605H - OH - Plan 0.1	2,000.0	1,999.4	161.3	147.4	11.620	CC, ES
Emerald Fed Com 605H - OH - Plan 0.1	20,019.5	20,753.6	1,219.3	961.1	4.722	SF
Emerald Fed Com 606H - OH - Plan 0.1	2,000.0	1,998.8	164.9	151.0	11.876	CC
Emerald Fed Com 606H - OH - Plan 0.1	2,100.0	2,096.5	165.4	150.8	11.354	ES
Emerald Fed Com 606H - OH - Plan 0.1	20,019.5	20,806.1	2,012.2	1,723.9	6.979	SF

Offset Design: Emerald - Emerald Federal 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	Vertical	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)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,800.0	5,764.2	6,386.5	6,352.2	21.5	22.7	21.51	-102.1	-2,589.0	2,188.9	2,147.5	41.36	52.922
5,900.0	5,863.1	6,478.2	6,440.1	21.9	23.1	21.45	-109.9	-2,564.3	2,149.0	2,107.0	42.04	51.125
6,000.0	5,962.1	6,569.9	6,528.1	22.3	23.5	21.39	-117.7	-2,539.6	2,109.2	2,066.5	42.71	49.382
6,100.0	6,061.1	6,661.6	6,616.1	22.7	23.9	21.32	-125.5	-2,514.9	2,069.4	2,026.0	43.39	47.690
6,200.0	6,160.1	6,753.3	6,704.0	23.1	24.3	21.25	-133.4	-2,490.2	2,029.6	1,985.5	44.07	46.049
6,300.0	6,259.1	6,845.0	6,792.0	23.5	24.7	21.18	-141.2	-2,465.4	1,989.8	1,945.0	44.76	44.456
6,400.0	6,358.1	6,936.7	6,880.0	23.9	25.1	21.11	-149.0	-2,440.7	1,950.0	1,904.5	45.44	42.909
6,500.0	6,457.0	7,028.4	6,967.9	24.3	25.5	21.03	-156.8	-2,416.0	1,910.2	1,864.0	46.13	41.405
6,600.0	6,556.0	7,120.1	7,055.9	24.7	25.9	20.95	-164.7	-2,391.3	1,870.4	1,823.5	46.82	39.945
6,700.0	6,655.0	7,211.8	7,143.9	25.1	26.3	20.86	-172.5	-2,366.5	1,830.6	1,783.1	47.52	38.525
6,800.0	6,754.0	7,303.5	7,231.8	25.5	26.7	20.77	-180.3	-2,341.8	1,790.8	1,742.6	48.21	37.145
6,900.0	6,853.0	7,395.2	7,319.8	25.9	27.1	20.68	-188.1	-2,317.1	1,751.0	1,702.1	48.91	35.803
7,000.0	6,952.0	7,486.9	7,407.7	26.3	27.5	20.59	-195.9	-2,292.4	1,711.2	1,661.6	49.60	34.497
7,100.0	7,050.9	7,578.6	7,495.7	26.7	27.9	20.48	-203.8	-2,267.7	1,671.4	1,621.1	50.30	33.226
7,200.0	7,149.9	7,670.3	7,583.7	27.1	28.3	20.38	-211.6	-2,242.9	1,631.6	1,580.6	51.01	31.990
7,300.0	7,248.9	7,762.0	7,671.6	27.5	28.8	20.27	-219.4	-2,218.2	1,591.9	1,540.2	51.71	30.785
7,400.0	7,347.9	7,853.7	7,759.6	27.9	29.2	20.15	-227.2	-2,193.5	1,552.1	1,499.7	52.41	29.613
7,500.0	7,446.9	7,945.4	7,847.6	28.3	29.6	20.03	-235.1	-2,168.8	1,512.3	1,459.2	53.12	28.470
7,600.0	7,545.9	8,037.1	7,935.5	28.8	30.1	19.90	-242.9	-2,144.0	1,472.6	1,418.8	53.83	27.357
7,700.0	7,644.8	8,128.9	8,023.5	29.2	30.5	19.76	-250.7	-2,119.3	1,432.8	1,378.3	54.54	26.273
7,800.0	7,743.8	8,220.6	8,111.4	29.6	30.9	19.61	-258.5	-2,094.6	1,393.1	1,337.9	55.25	25.215
7,900.0	7,842.8	8,312.3	8,199.4	30.0	31.4	19.46	-266.4	-2,069.9	1,353.4	1,297.4	55.96	24.184
8,000.0	7,941.8	8,404.0	8,287.4	30.4	31.8	19.30	-274.2	-2,045.2	1,313.6	1,257.0	56.68	23.178
8,100.0	8,040.8	8,495.7	8,375.3	30.8	32.2	19.12	-282.0	-2,020.4	1,273.9	1,216.5	57.39	22.197

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

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald - Emerald Federal 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)				
8,200.0	8,139.8	8,565.1	8,442.1	31.2	32.6	18.99	-287.8	-2,002.2	1,234.9	1,176.7	58.24	21.205		
8,300.0	8,238.8	8,631.2	8,506.0	31.6	32.9	18.89	-292.8	-1,986.2	1,197.9	1,138.8	59.10	20.271		
8,400.0	8,337.7	8,700.0	8,573.0	32.0	33.2	18.80	-297.6	-1,971.1	1,163.0	1,103.0	59.94	19.403		
8,500.0	8,436.7	8,766.9	8,638.4	32.4	33.5	18.73	-301.8	-1,957.9	1,130.1	1,069.4	60.78	18.595		
8,600.0	8,535.7	8,836.4	8,706.7	32.8	33.8	18.69	-305.7	-1,945.7	1,099.5	1,037.9	61.59	17.851		
8,700.0	8,634.7	8,900.0	8,769.5	33.2	34.1	18.59	-308.8	-1,935.9	1,071.4	1,009.0	62.40	17.168		
8,800.0	8,734.1	8,978.9	8,847.6	33.6	34.4	18.41	-312.0	-1,925.6	1,048.2	985.0	63.16	16.595		
8,900.0	8,833.8	9,052.1	8,920.3	34.0	34.6	18.26	-314.4	-1,917.9	1,030.6	966.7	63.91	16.126		
9,000.0	8,933.7	9,126.2	8,994.2	34.3	34.9	18.12	-316.3	-1,911.9	1,018.7	954.1	64.62	15.764		
9,100.0	9,033.7	9,200.0	9,067.9	34.7	35.2	-90.74	-317.7	-1,907.8	1,012.4	947.1	65.29	15.506		
9,200.0	9,133.7	9,275.7	9,143.5	35.0	35.4	-90.78	-318.4	-1,905.4	1,009.2	943.3	65.92	15.311		
9,300.0	9,233.7	9,356.8	9,224.6	35.3	35.7	-90.79	-318.6	-1,904.9	1,008.5	942.0	66.53	15.159 CC		
9,300.1	9,233.8	9,356.9	9,224.7	35.3	35.7	-90.79	-318.6	-1,904.9	1,008.5	942.0	66.53	15.159		
9,400.0	9,333.4	9,456.5	9,324.3	35.6	36.0	-90.76	-318.6	-1,904.9	1,008.6	941.4	67.20	15.010		
9,500.0	9,429.7	9,559.9	9,426.9	35.9	36.3	-91.63	-307.0	-1,904.9	1,008.9	941.1	67.83	14.875		
9,600.0	9,518.4	9,667.0	9,527.9	36.1	36.6	-92.44	-272.2	-1,905.2	1,009.5	941.1	68.38	14.763		
9,700.0	9,595.7	9,777.7	9,621.5	36.2	36.8	-93.15	-213.4	-1,905.6	1,010.1	941.2	68.84	14.674		
9,800.0	9,658.2	9,891.8	9,701.1	36.3	37.0	-93.71	-132.1	-1,906.1	1,010.7	941.5	69.21	14.602		
9,900.0	9,703.1	10,008.5	9,760.3	36.4	37.0	-94.10	-31.8	-1,906.8	1,011.1	941.6	69.54	14.541		
10,000.0	9,728.5	10,126.8	9,793.7	36.3	37.0	-94.27	81.3	-1,907.6	1,011.4	941.5	69.85	14.480		
10,099.1	9,736.1	10,238.1	9,800.0	36.3	37.0	-94.14	192.3	-1,908.3	1,011.2	941.0	70.17	14.411		
10,100.0	9,734.0	10,239.1	9,800.0	36.3	37.0	-94.26	193.3	-1,908.3	1,011.4	941.2	70.17	14.414		
10,200.0	9,734.0	10,339.1	9,800.0	36.4	37.0	-94.26	293.3	-1,909.0	1,011.4	940.8	70.56	14.334		
10,300.0	9,734.0	10,439.1	9,800.0	36.5	37.0	-94.26	393.3	-1,909.6	1,011.4	940.3	71.06	14.232		
10,400.0	9,734.0	10,539.1	9,800.0	36.7	37.1	-94.26	493.3	-1,910.3	1,011.4	939.7	71.68	14.109		
10,500.0	9,734.0	10,639.1	9,800.0	37.0	37.2	-94.26	593.3	-1,911.0	1,011.4	939.0	72.41	13.967		
10,600.0	9,734.0	10,739.1	9,800.0	37.4	37.5	-94.26	693.3	-1,911.7	1,011.4	938.2	73.25	13.808		
10,700.0	9,734.0	10,839.1	9,800.0	37.8	37.9	-94.26	793.3	-1,912.3	1,011.4	937.2	74.19	13.633		
10,800.0	9,734.0	10,939.1	9,800.0	38.3	38.4	-94.26	893.3	-1,913.0	1,011.4	936.2	75.23	13.445		
10,900.0	9,734.0	11,039.1	9,800.0	38.9	38.9	-94.26	993.3	-1,913.7	1,011.4	935.1	76.36	13.245		
11,000.0	9,734.0	11,139.1	9,800.0	39.5	39.5	-94.26	1,093.3	-1,914.3	1,011.5	933.9	77.59	13.036		
11,100.0	9,734.0	11,239.1	9,800.0	40.2	40.2	-94.26	1,193.3	-1,915.0	1,011.5	932.6	78.90	12.820		
11,200.0	9,734.0	11,339.1	9,800.0	40.9	40.9	-94.26	1,293.3	-1,915.7	1,011.5	931.2	80.29	12.597		
11,300.0	9,734.0	11,439.1	9,800.0	41.6	41.6	-94.26	1,393.3	-1,916.4	1,011.5	929.7	81.77	12.370		
11,400.0	9,734.0	11,539.1	9,800.0	42.4	42.4	-94.26	1,493.2	-1,917.0	1,011.5	928.2	83.31	12.141		
11,500.0	9,734.0	11,639.1	9,800.0	43.2	43.2	-94.26	1,593.2	-1,917.7	1,011.5	926.6	84.93	11.910		
11,600.0	9,734.0	11,739.1	9,800.0	44.0	44.0	-94.26	1,693.2	-1,918.4	1,011.5	924.9	86.62	11.678		
11,700.0	9,734.0	11,839.1	9,800.0	44.9	44.9	-94.26	1,793.2	-1,919.1	1,011.5	923.2	88.36	11.448		
11,800.0	9,734.0	11,939.1	9,800.0	45.8	45.8	-94.26	1,893.2	-1,919.7	1,011.5	921.4	90.17	11.219		
11,900.0	9,734.0	12,039.1	9,800.0	46.7	46.7	-94.26	1,993.2	-1,920.4	1,011.5	919.5	92.03	10.992		
12,000.0	9,734.0	12,139.1	9,800.0	47.7	47.6	-94.26	2,093.2	-1,921.1	1,011.6	917.6	93.94	10.768		
12,100.0	9,734.0	12,239.1	9,800.0	48.6	48.6	-94.26	2,193.2	-1,921.7	1,011.6	915.7	95.90	10.548		
12,200.0	9,734.0	12,339.1	9,800.0	49.6	49.6	-94.26	2,293.2	-1,922.4	1,011.6	913.7	97.91	10.332		
12,300.0	9,734.0	12,439.1	9,800.0	50.7	50.6	-94.26	2,393.2	-1,923.1	1,011.6	911.6	99.96	10.120		
12,400.0	9,734.0	12,539.1	9,800.0	51.7	51.7	-94.26	2,493.2	-1,923.8	1,011.6	909.6	102.05	9.913		
12,500.0	9,734.0	12,639.1	9,800.0	52.8	52.7	-94.26	2,593.2	-1,924.4	1,011.6	907.4	104.18	9.711		
12,600.0	9,734.0	12,739.1	9,800.0	53.8	53.8	-94.26	2,693.2	-1,925.1	1,011.6	905.3	106.34	9.513		
12,700.0	9,734.0	12,839.1	9,800.0	54.9	54.9	-94.26	2,793.2	-1,925.8	1,011.6	903.1	108.54	9.320		
12,800.0	9,734.0	12,939.1	9,800.0	56.0	56.0	-94.26	2,893.2	-1,926.4	1,011.6	900.9	110.77	9.133		
12,900.0	9,734.0	13,039.1	9,800.0	57.2	57.1	-94.26	2,993.2	-1,927.1	1,011.6	898.6	113.03	8.950		
13,000.0	9,734.0	13,139.1	9,800.0	58.3	58.3	-94.26	3,093.2	-1,927.8	1,011.7	896.3	115.32	8.773		
13,100.0	9,734.0	13,239.1	9,800.0	59.5	59.4	-94.26	3,193.2	-1,928.5	1,011.7	894.0	117.63	8.600		

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald - Emerald Federal 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		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)			
13,200.0	9,734.0	13,339.1	9,800.0	60.6	60.6	-94.26	3,293.2	-1,929.1	1,011.7	891.7	119.97	8.432	
13,300.0	9,734.0	13,439.1	9,800.0	61.8	61.8	-94.26	3,393.2	-1,929.8	1,011.7	889.4	122.34	8.270	
13,400.0	9,734.0	13,539.1	9,800.0	63.0	63.0	-94.26	3,493.2	-1,930.5	1,011.7	887.0	124.72	8.112	
13,500.0	9,734.0	13,639.1	9,800.0	64.2	64.1	-94.26	3,593.2	-1,931.1	1,011.7	884.6	127.13	7.958	
13,600.0	9,734.0	13,739.1	9,800.0	65.4	65.4	-94.26	3,693.2	-1,931.8	1,011.7	882.2	129.56	7.809	
13,700.0	9,734.0	13,839.1	9,800.0	66.6	66.6	-94.26	3,793.2	-1,932.5	1,011.7	879.7	132.00	7.665	
13,800.0	9,734.0	13,939.1	9,800.0	67.8	67.8	-94.26	3,893.2	-1,933.2	1,011.7	877.3	134.46	7.524	
13,900.0	9,734.0	14,039.1	9,800.0	69.1	69.0	-94.26	3,993.2	-1,933.8	1,011.8	874.8	136.94	7.388	
14,000.0	9,734.0	14,139.1	9,800.0	70.3	70.3	-94.26	4,093.2	-1,934.5	1,011.8	872.3	139.44	7.256	
14,100.0	9,734.0	14,239.1	9,800.0	71.6	71.5	-94.26	4,193.2	-1,935.2	1,011.8	869.8	141.95	7.128	
14,200.0	9,734.0	14,339.1	9,800.0	72.8	72.8	-94.26	4,293.2	-1,935.8	1,011.8	867.3	144.47	7.003	
14,300.0	9,734.0	14,439.1	9,800.0	74.1	74.1	-94.26	4,393.2	-1,936.5	1,011.8	864.8	147.01	6.883	
14,400.0	9,734.0	14,539.1	9,800.0	75.4	75.3	-94.26	4,493.2	-1,937.2	1,011.8	862.2	149.56	6.765	
14,500.0	9,734.0	14,639.1	9,800.0	76.6	76.6	-94.26	4,593.2	-1,937.9	1,011.8	859.7	152.12	6.651	
14,600.0	9,734.0	14,739.1	9,800.0	77.9	77.9	-94.26	4,693.2	-1,938.5	1,011.8	857.1	154.69	6.541	
14,700.0	9,734.0	14,839.1	9,800.0	79.2	79.2	-94.26	4,793.2	-1,939.2	1,011.8	854.6	157.28	6.433	
14,800.0	9,734.0	14,939.1	9,800.0	80.5	80.5	-94.26	4,893.2	-1,939.9	1,011.8	852.0	159.87	6.329	
14,900.0	9,734.0	15,039.1	9,800.0	81.8	81.8	-94.26	4,993.2	-1,940.5	1,011.9	849.4	162.48	6.228	
15,000.0	9,734.0	15,139.1	9,800.0	83.1	83.1	-94.26	5,093.2	-1,941.2	1,011.9	846.8	165.09	6.129	
15,100.0	9,734.0	15,239.1	9,800.0	84.4	84.4	-94.26	5,193.2	-1,941.9	1,011.9	844.2	167.72	6.033	
15,200.0	9,734.0	15,339.1	9,800.0	85.7	85.7	-94.26	5,293.2	-1,942.6	1,011.9	841.5	170.35	5.940	
15,300.0	9,734.0	15,439.1	9,800.0	87.0	87.0	-94.26	5,393.2	-1,943.2	1,011.9	838.9	172.99	5.849	
15,400.0	9,734.0	15,539.1	9,800.0	88.4	88.3	-94.26	5,493.2	-1,943.9	1,011.9	836.3	175.64	5.761	
15,500.0	9,734.0	15,639.1	9,800.0	89.7	89.7	-94.26	5,593.2	-1,944.6	1,011.9	833.6	178.29	5.676	
15,600.0	9,734.0	15,739.1	9,800.0	91.0	91.0	-94.26	5,693.2	-1,945.2	1,011.9	831.0	180.96	5.592	
15,700.0	9,734.0	15,839.1	9,800.0	92.4	92.3	-94.26	5,793.2	-1,945.9	1,011.9	828.3	183.63	5.511	
15,800.0	9,734.0	15,939.1	9,800.0	93.7	93.7	-94.26	5,893.2	-1,946.6	1,011.9	825.6	186.30	5.432	
15,900.0	9,734.0	16,039.1	9,800.0	95.0	95.0	-94.26	5,993.1	-1,947.3	1,012.0	823.0	188.99	5.355	
16,000.0	9,734.0	16,139.1	9,800.0	96.4	96.3	-94.26	6,093.1	-1,947.9	1,012.0	820.3	191.67	5.280	
16,100.0	9,734.0	16,239.1	9,800.0	97.7	97.7	-94.26	6,193.1	-1,948.6	1,012.0	817.6	194.37	5.206	
16,200.0	9,734.0	16,339.1	9,800.0	99.1	99.0	-94.26	6,293.1	-1,949.3	1,012.0	814.9	197.07	5.135	
16,300.0	9,734.0	16,439.1	9,800.0	100.4	100.4	-94.26	6,393.1	-1,949.9	1,012.0	812.2	199.77	5.066	
16,400.0	9,734.0	16,539.1	9,800.0	101.8	101.7	-94.26	6,493.1	-1,950.6	1,012.0	809.5	202.48	4.998	
16,500.0	9,734.0	16,639.1	9,800.0	103.1	103.1	-94.26	6,593.1	-1,951.3	1,012.0	806.8	205.20	4.932	
16,600.0	9,734.0	16,739.1	9,800.0	104.5	104.5	-94.26	6,693.1	-1,952.0	1,012.0	804.1	207.92	4.867	
16,700.0	9,734.0	16,839.1	9,800.0	105.8	105.8	-94.26	6,793.1	-1,952.6	1,012.0	801.4	210.64	4.805	
16,800.0	9,734.0	16,939.1	9,800.0	107.2	107.2	-94.26	6,893.1	-1,953.3	1,012.0	798.7	213.37	4.743	
16,900.0	9,734.0	17,039.1	9,800.0	108.6	108.5	-94.26	6,993.1	-1,954.0	1,012.1	796.0	216.11	4.683	
17,000.0	9,734.0	17,139.1	9,800.0	109.9	109.9	-94.26	7,093.1	-1,954.6	1,012.1	793.2	218.84	4.625	
17,100.0	9,734.0	17,239.1	9,800.0	111.3	111.3	-94.26	7,193.1	-1,955.3	1,012.1	790.5	221.58	4.567	
17,200.0	9,734.0	17,339.1	9,800.0	112.7	112.6	-94.26	7,293.1	-1,956.0	1,012.1	787.8	224.33	4.512	
17,300.0	9,734.0	17,439.1	9,800.0	114.1	114.0	-94.26	7,393.1	-1,956.7	1,012.1	785.0	227.08	4.457	
17,400.0	9,734.0	17,539.1	9,800.0	115.4	115.4	-94.26	7,493.1	-1,957.3	1,012.1	782.3	229.83	4.404	
17,500.0	9,734.0	17,639.1	9,800.0	116.8	116.8	-94.26	7,593.1	-1,958.0	1,012.1	779.5	232.58	4.352	
17,600.0	9,734.0	17,739.1	9,800.0	118.2	118.2	-94.26	7,693.1	-1,958.7	1,012.1	776.8	235.34	4.301	
17,700.0	9,734.0	17,839.1	9,800.0	119.6	119.5	-94.26	7,793.1	-1,959.3	1,012.1	774.0	238.10	4.251	
17,800.0	9,734.0	17,939.1	9,800.0	121.0	120.9	-94.26	7,893.1	-1,960.0	1,012.2	771.3	240.87	4.202	
17,900.0	9,734.0	18,039.1	9,800.0	122.3	122.3	-94.26	7,993.1	-1,960.7	1,012.2	768.5	243.63	4.154	
18,000.0	9,734.0	18,139.1	9,800.0	123.7	123.7	-94.26	8,093.1	-1,961.4	1,012.2	765.8	246.40	4.108	
18,100.0	9,734.0	18,239.1	9,800.0	125.1	125.1	-94.26	8,193.1	-1,962.0	1,012.2	763.0	249.18	4.062	
18,200.0	9,734.0	18,339.1	9,800.0	126.5	126.5	-94.25	8,293.1	-1,962.7	1,012.2	760.2	251.95	4.017	
18,300.0	9,734.0	18,439.1	9,800.0	127.9	127.8	-94.25	8,393.1	-1,963.4	1,012.2	757.5	254.73	3.974	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald - Emerald Federal 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		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)			
18,400.0	9,734.0	18,539.1	9,800.0	129.3	129.2	-94.25	8,493.1	-1,964.0	1,012.2	754.7	257.51	3.931	
18,500.0	9,734.0	18,639.1	9,800.0	130.7	130.6	-94.25	8,593.1	-1,964.7	1,012.2	751.9	260.29	3.889	
18,600.0	9,734.0	18,739.1	9,800.0	132.1	132.0	-94.25	8,693.1	-1,965.4	1,012.2	749.2	263.08	3.848	
18,700.0	9,734.0	18,839.1	9,800.0	133.4	133.4	-94.25	8,793.1	-1,966.1	1,012.2	746.4	265.86	3.807	
18,800.0	9,734.0	18,939.1	9,800.0	134.8	134.8	-94.25	8,893.1	-1,966.7	1,012.3	743.6	268.65	3.768	
18,900.0	9,734.0	19,039.1	9,800.0	136.2	136.2	-94.25	8,993.1	-1,967.4	1,012.3	740.8	271.44	3.729	
19,000.0	9,734.0	19,139.1	9,800.0	137.6	137.6	-94.25	9,093.1	-1,968.1	1,012.3	738.0	274.24	3.691	
19,100.0	9,734.0	19,239.1	9,800.0	139.0	139.0	-94.25	9,193.1	-1,968.8	1,012.3	735.3	277.03	3.654	
19,200.0	9,734.0	19,339.1	9,800.0	140.4	140.4	-94.25	9,293.1	-1,969.4	1,012.3	732.5	279.83	3.618	
19,300.0	9,734.0	19,439.1	9,800.0	141.8	141.8	-94.25	9,393.1	-1,970.1	1,012.3	729.7	282.63	3.582	
19,400.0	9,734.0	19,539.1	9,800.0	143.2	143.2	-94.25	9,493.1	-1,970.8	1,012.3	726.9	285.43	3.547	
19,500.0	9,734.0	19,639.1	9,800.0	144.6	144.6	-94.25	9,593.1	-1,971.4	1,012.3	724.1	288.23	3.512	
19,600.0	9,734.0	19,739.1	9,800.0	146.0	146.0	-94.25	9,693.1	-1,972.1	1,012.3	721.3	291.04	3.478	
19,700.0	9,734.0	19,839.1	9,800.0	147.4	147.4	-94.25	9,793.1	-1,972.8	1,012.3	718.5	293.84	3.445	
19,800.0	9,734.0	19,939.1	9,800.0	148.8	148.8	-94.25	9,893.1	-1,973.5	1,012.4	715.7	296.65	3.413	
19,900.0	9,734.0	20,039.1	9,800.0	150.3	150.2	-94.25	9,993.1	-1,974.1	1,012.4	712.9	299.46	3.381	
20,000.0	9,734.0	20,139.1	9,800.0	151.7	151.6	-94.25	10,093.1	-1,974.8	1,012.4	710.1	302.27	3.349	
20,000.8	9,734.0	20,139.9	9,800.0	151.7	151.6	-94.25	10,093.8	-1,974.8	1,012.4	710.1	302.29	3.349	
20,019.5	9,734.0	20,156.3	9,800.0	151.9	151.9	-94.25	10,110.3	-1,974.9	1,012.4	709.6	302.79	3.344 ES, 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald - Nellis Federal 02 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 940-INC-ONLY												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:							
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	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-68.22	282.1	-706.2	760.6				
100.0	100.0	86.9	86.9	0.1	2.5	-68.22	282.2	-706.2	760.5	757.8	2.67	284.415	
200.0	200.0	186.4	186.4	0.5	5.5	-68.20	282.5	-706.2	760.6	754.6	5.94	128.024	
300.0	300.0	285.9	285.9	0.8	8.4	-68.17	282.9	-706.2	760.7	751.5	9.21	82.618	
400.0	400.0	385.4	385.4	1.2	11.3	-68.13	283.5	-706.2	761.0	748.5	12.47	61.001	
500.0	500.0	484.8	484.8	1.6	14.2	-68.07	284.3	-706.2	761.3	745.5	15.74	48.361	
600.0	600.0	584.3	584.3	1.9	17.1	-68.00	285.3	-706.2	761.6	742.6	19.01	40.069	
700.0	700.0	683.8	683.8	2.3	20.0	-67.92	286.5	-706.2	762.1	739.8	22.27	34.213	
800.0	800.0	783.2	783.2	2.6	22.9	-67.82	287.8	-706.2	762.6	737.1	25.54	29.858	
900.0	900.0	882.7	882.7	3.0	25.8	-67.72	289.4	-706.2	763.2	734.4	28.81	26.493	
1,000.0	1,000.0	982.5	982.4	3.4	28.4	-67.60	291.1	-706.2	763.8	732.1	31.71	24.086	
1,100.0	1,100.0	1,082.8	1,082.7	3.7	30.4	-67.48	292.7	-706.2	764.5	730.3	34.13	22.401	
1,200.0	1,200.0	1,183.1	1,183.0	4.1	32.5	-67.38	294.3	-706.2	765.1	728.5	36.54	20.938	
1,300.0	1,300.0	1,283.3	1,283.3	4.4	34.5	-67.28	295.7	-706.2	765.6	726.7	38.95	19.655	
1,400.0	1,400.0	1,383.6	1,383.5	4.8	36.5	-67.18	297.1	-706.2	766.1	724.8	41.34	18.534	
1,500.0	1,500.0	1,483.3	1,483.2	5.2	38.3	-67.09	298.4	-706.2	766.7	723.3	43.41	17.662	
1,600.0	1,600.0	1,583.1	1,582.9	5.5	40.0	-66.99	299.9	-706.2	767.2	721.8	45.48	16.871	
1,700.0	1,700.0	1,682.8	1,682.7	5.9	41.7	-66.89	301.4	-706.2	767.8	720.3	47.55	16.149	
1,800.0	1,800.0	1,782.5	1,782.4	6.2	43.4	-66.78	303.0	-706.2	768.5	718.8	49.62	15.488	
1,900.0	1,900.0	1,882.3	1,882.1	6.6	45.1	-66.66	304.7	-706.2	769.1	717.4	51.69	14.881	
2,000.0	2,000.0	1,982.2	1,982.1	6.9	46.8	-66.54	306.5	-706.2	769.8	716.0	53.79	14.312	
2,100.0	2,100.0	2,082.2	2,082.0	7.3	48.6	42.44	308.2	-706.2	769.2	713.3	55.88	13.765	
2,200.0	2,199.8	2,182.0	2,181.8	7.6	50.3	42.87	309.9	-706.2	766.1	708.1	57.97	13.216	
2,300.0	2,299.5	2,281.5	2,281.3	8.0	52.1	43.51	311.7	-706.2	760.4	700.4	60.04	12.665	
2,400.0	2,398.7	2,380.7	2,380.5	8.3	53.7	44.38	313.4	-706.2	752.4	690.3	62.03	12.129	
2,500.0	2,497.7	2,479.6	2,479.4	8.7	55.4	45.27	315.1	-706.2	743.0	679.0	64.02	11.607	
2,600.0	2,596.7	2,578.5	2,578.2	9.0	57.0	46.17	316.9	-706.2	733.8	667.8	66.03	11.113	
2,700.0	2,695.7	2,677.4	2,677.1	9.4	58.7	47.10	318.6	-706.2	724.8	656.7	68.07	10.648	
2,800.0	2,794.6	2,775.9	2,775.6	9.8	60.4	48.05	320.3	-706.2	716.0	645.8	70.15	10.207	
2,900.0	2,893.6	2,871.9	2,871.6	10.1	62.5	49.02	322.5	-706.2	707.6	635.1	72.54	9.755	
3,000.0	2,992.6	2,967.8	2,967.4	10.5	64.5	50.08	325.4	-706.2	699.9	625.0	74.94	9.340	
3,100.0	3,091.6	3,065.7	3,065.2	10.9	66.7	51.22	329.1	-706.2	692.8	615.3	77.54	8.936	
3,200.0	3,190.6	3,165.3	3,164.8	11.2	69.2	52.39	332.6	-706.2	685.9	605.6	80.34	8.538	
3,300.0	3,289.6	3,265.2	3,264.6	11.6	71.6	53.58	336.0	-706.2	679.2	596.1	83.11	8.173	
3,400.0	3,388.5	3,365.3	3,364.7	12.0	73.8	54.77	339.0	-706.2	672.6	586.8	85.74	7.844	
3,500.0	3,487.5	3,465.2	3,464.6	12.4	76.0	55.96	341.7	-706.2	666.1	577.7	88.34	7.540	
3,600.0	3,586.5	3,565.2	3,564.5	12.8	78.3	57.15	344.2	-706.2	659.7	568.7	90.94	7.254	
3,700.0	3,685.5	3,666.4	3,665.7	13.2	80.3	58.36	346.3	-706.2	653.3	559.9	93.38	6.996	
3,800.0	3,784.5	3,767.1	3,766.4	13.5	82.2	59.54	347.7	-706.2	646.9	551.2	95.65	6.763	
3,900.0	3,883.5	3,866.0	3,865.3	13.9	84.0	60.71	349.0	-706.2	640.6	542.7	97.84	6.547	
4,000.0	3,982.4	3,964.9	3,964.2	14.3	85.8	61.91	350.3	-706.2	634.6	534.6	100.03	6.344	
4,100.0	4,081.4	4,063.8	4,063.1	14.7	87.6	63.13	351.6	-706.2	628.9	526.7	102.22	6.152	
4,200.0	4,180.4	4,162.7	4,162.0	15.1	89.4	64.37	352.9	-706.2	623.5	519.1	104.42	5.971	
4,300.0	4,279.4	4,261.6	4,260.9	15.5	91.4	65.63	354.2	-706.2	618.4	511.5	106.85	5.787	
4,400.0	4,378.4	4,360.6	4,359.8	15.9	93.5	66.91	355.5	-706.2	613.6	504.2	109.33	5.612	
4,500.0	4,477.4	4,459.5	4,458.7	16.3	95.6	68.21	356.8	-706.2	609.1	497.3	111.80	5.448	
4,600.0	4,576.3	4,558.4	4,557.6	16.7	97.7	69.52	358.1	-706.2	604.9	490.6	114.28	5.293	
4,700.0	4,675.3	4,657.3	4,656.5	17.1	99.7	70.86	359.4	-706.2	601.1	484.3	116.77	5.148	
4,800.0	4,774.3	4,756.2	4,755.4	17.5	101.8	72.21	360.7	-706.2	597.6	478.3	119.25	5.011	
4,900.0	4,873.3	4,855.1	4,854.3	17.9	103.8	73.57	362.0	-706.2	594.4	472.8	121.58	4.889	
5,000.0	4,972.3	4,954.1	4,953.3	18.3	105.6	74.95	363.3	-706.2	591.6	467.8	123.80	4.779	
5,100.0	5,071.3	5,053.0	5,052.2	18.7	107.4	76.34	364.5	-706.2	589.2	463.1	126.06	4.674	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald - Nellis Federal 02 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 940-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)			
5,200.0	5,170.3	5,151.9	5,151.1	19.1	109.3	77.75	365.8	-706.2	587.1	458.7	128.35	4.574	
5,300.0	5,269.2	5,250.8	5,250.0	19.5	111.2	79.16	367.1	-706.2	585.3	454.7	130.63	4.481	
5,400.0	5,368.2	5,349.7	5,348.9	19.9	113.1	80.57	368.4	-706.2	584.0	451.0	132.92	4.393	
5,500.0	5,467.2	5,448.6	5,447.8	20.3	115.0	82.00	369.7	-706.2	583.0	447.8	135.21	4.311	
5,600.0	5,566.2	5,547.5	5,546.7	20.7	116.9	83.42	371.0	-706.2	582.3	444.8	137.53	4.234	
5,700.0	5,665.2	5,646.5	5,645.6	21.1	118.8	84.85	372.3	-706.2	582.1	442.2	139.91	4.160	
5,721.3	5,686.3	5,667.6	5,666.7	21.2	119.3	85.16	372.6	-706.2	582.1	441.6	140.42	4.145	
5,800.0	5,764.2	5,745.4	5,744.5	21.5	120.8	86.28	373.6	-706.2	582.2	439.9	142.29	4.092	
5,900.0	5,863.1	5,844.3	5,843.4	21.9	122.8	87.71	374.9	-706.2	582.6	438.0	144.67	4.028	
6,000.0	5,962.1	5,943.2	5,942.3	22.3	124.8	89.14	376.2	-706.2	583.5	436.4	147.04	3.968	
6,100.0	6,061.1	6,042.0	6,041.1	22.7	126.8	90.56	377.5	-706.2	584.7	435.3	149.44	3.913	
6,200.0	6,160.1	6,140.4	6,139.5	23.1	128.8	91.97	378.9	-706.2	586.4	434.5	151.86	3.861	
6,300.0	6,259.1	6,238.8	6,237.9	23.5	130.8	93.37	380.3	-706.2	588.5	434.2	154.29	3.814	
6,400.0	6,358.1	6,337.2	6,336.3	23.9	132.9	94.76	381.8	-706.2	591.0	434.3	156.71	3.771	
6,500.0	6,457.0	6,435.6	6,434.7	24.3	134.9	96.14	383.4	-706.2	594.0	434.8	159.14	3.733	
6,600.0	6,556.0	6,534.1	6,533.2	24.7	136.9	97.52	385.2	-706.2	597.4	435.8	161.59	3.697	
6,700.0	6,655.0	6,633.0	6,632.1	25.1	139.1	98.88	386.9	-706.2	601.2	437.1	164.10	3.663	
6,800.0	6,754.0	6,731.9	6,730.9	25.5	141.2	100.22	388.6	-706.2	605.3	438.7	166.61	3.633	
6,900.0	6,853.0	6,830.8	6,829.8	25.9	143.3	101.55	390.3	-706.2	609.8	440.6	169.12	3.605	
7,000.0	6,952.0	6,929.7	6,928.7	26.3	145.4	102.85	392.1	-706.2	614.5	442.9	171.63	3.581	
7,100.0	7,050.9	7,028.6	7,027.6	26.7	147.5	104.14	393.8	-706.2	619.6	445.5	174.10	3.559	
7,200.0	7,149.9	7,127.5	7,126.4	27.1	149.5	105.40	395.5	-706.2	625.1	448.6	176.50	3.541	
7,300.0	7,248.9	7,226.4	7,225.3	27.5	151.6	106.64	397.2	-706.2	630.8	451.9	178.89	3.526	
7,400.0	7,347.9	7,324.8	7,323.7	27.9	153.7	107.86	399.0	-706.2	636.8	455.4	181.38	3.511	
7,500.0	7,446.9	7,423.2	7,422.1	28.3	155.8	109.05	400.8	-706.2	643.2	459.3	183.89	3.498	
7,600.0	7,545.9	7,521.5	7,520.4	28.8	157.9	110.21	402.7	-706.2	650.0	463.6	186.40	3.487	
7,700.0	7,644.8	7,619.8	7,618.7	29.2	160.1	111.36	404.7	-706.2	657.1	468.2	188.90	3.479	
7,800.0	7,743.8	7,718.1	7,717.0	29.6	162.2	112.47	406.8	-706.2	664.6	473.2	191.41	3.472	
7,900.0	7,842.8	7,816.8	7,815.6	30.0	164.5	113.57	408.9	-706.2	672.4	478.3	194.10	3.464	
8,000.0	7,941.8	7,915.6	7,914.4	30.4	167.0	114.64	411.1	-706.2	680.4	483.5	196.91	3.456	
8,100.0	8,040.8	8,014.5	8,013.3	30.8	169.4	115.69	413.2	-706.2	688.7	489.0	199.72	3.449	
8,200.0	8,139.8	8,113.4	8,112.1	31.2	171.9	116.71	415.4	-706.2	697.2	494.7	202.52	3.443	
8,300.0	8,238.8	8,212.2	8,211.0	31.6	174.3	117.71	417.5	-706.2	705.9	500.6	205.33	3.438	
8,400.0	8,337.7	8,311.1	8,309.8	32.0	176.7	118.68	419.7	-706.2	714.9	506.7	208.13	3.435	
8,500.0	8,436.7	8,409.9	8,408.6	32.4	179.2	119.63	421.9	-706.2	724.0	513.1	210.93	3.432	
8,600.0	8,535.7	8,506.9	8,505.6	32.8	181.6	120.54	424.0	-706.2	733.4	519.7	213.70	3.432	
8,700.0	8,634.7	8,599.3	8,598.0	33.2	183.9	121.43	426.7	-706.2	743.4	527.1	216.35	3.436	
8,800.0	8,734.1	8,694.2	8,692.8	33.6	186.5	122.21	430.2	-706.2	752.9	533.7	219.19	3.435	
8,900.0	8,833.8	8,793.6	8,792.0	34.0	189.3	122.75	434.1	-706.2	760.8	538.4	222.39	3.421	
9,000.0	8,933.7	8,890.9	8,889.3	34.3	192.2	123.03	438.1	-706.2	767.0	541.4	225.58	3.400	
9,100.0	9,033.7	8,992.3	8,990.7	34.7	195.2	14.29	442.4	-706.2	771.5	542.5	228.96	3.370	
9,200.0	9,133.7	9,097.7	9,095.9	35.0	198.2	14.21	446.4	-706.2	775.2	542.9	232.28	3.337	
9,300.0	9,233.7	9,202.7	9,200.9	35.3	200.9	14.16	449.5	-706.2	778.0	542.6	235.42	3.305	
9,400.0	9,333.4	9,300.4	9,298.6	35.6	203.5	14.72	452.3	-706.2	774.7	536.4	238.24	3.252	
9,500.0	9,429.7	9,395.5	9,393.6	35.9	205.9	15.91	455.2	-706.2	752.2	511.2	240.96	3.122	
9,600.0	9,518.4	9,485.0	9,483.0	36.1	208.2	18.49	458.2	-706.2	711.0	467.5	243.51	2.920	
9,700.0	9,595.7	9,565.2	9,563.2	36.2	210.4	23.35	460.9	-706.2	653.0	407.2	245.85	2.656	
9,800.0	9,658.2	9,630.8	9,628.8	36.3	212.1	32.22	462.9	-706.2	581.0	333.3	247.72	2.346	
9,900.0	9,703.1	9,678.4	9,676.4	36.4	213.3	48.02	464.4	-706.2	499.3	250.3	249.03	2.005	
10,000.0	9,728.5	9,706.8	9,704.7	36.3	214.1	71.27	465.2	-706.2	412.9	163.1	249.81	1.653	
10,100.0	9,734.0	9,715.4	9,713.3	36.3	214.3	87.62	465.5	-706.2	328.6	78.6	250.07	1.314	Level 3
10,200.0	9,734.0	9,718.4	9,716.3	36.4	214.4	88.52	465.6	-706.2	255.3	5.1	250.18	1.020	Level 2

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald - Nellis Federal 02 - OH - OH													Offset Site Error:	0.0 usft
Survey Program: 940-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)				
10,300.0	9,734.0	9,721.5	9,719.4	36.5	214.4	89.41	465.7	-706.2	205.7	-44.6	250.26	0.822	Level 1	
10,364.4	9,734.0	9,723.4	9,721.4	36.6	214.5	89.99	465.7	-706.2	195.3	-54.9	250.27	0.780	Level 1, CC, ES, SF	
10,400.0	9,734.0	9,724.5	9,722.4	36.7	214.5	90.31	465.8	-706.2	198.5	-51.7	250.25	0.793	Level 1	
10,500.0	9,734.0	9,727.6	9,725.5	37.0	214.6	91.20	465.9	-706.2	237.7	-12.5	250.24	0.950	Level 1	
10,600.0	9,734.0	9,730.6	9,728.6	37.4	214.7	92.10	466.0	-706.2	306.0	55.7	250.29	1.222	Level 2	
10,700.0	9,734.0	9,733.7	9,731.6	37.8	214.8	92.99	466.1	-706.2	388.2	137.8	250.37	1.550		
10,800.0	9,734.0	9,736.7	9,734.7	38.3	214.8	93.88	466.1	-706.2	477.2	226.7	250.46	1.905		
10,900.0	9,734.0	9,739.8	9,737.7	38.9	214.9	94.77	466.2	-706.2	569.9	319.3	250.55	2.275		
11,000.0	9,734.0	9,742.8	9,740.8	39.5	215.0	95.66	466.3	-706.2	664.7	414.0	250.64	2.652		
11,100.0	9,734.0	9,745.9	9,743.8	40.2	215.1	96.55	466.4	-706.2	760.8	510.0	250.73	3.034		
11,200.0	9,734.0	9,748.9	9,746.9	40.9	215.2	97.43	466.5	-706.2	857.7	606.9	250.82	3.420		
11,300.0	9,734.0	9,752.0	9,749.9	41.6	215.2	98.31	466.6	-706.2	955.3	704.4	250.92	3.807		
11,400.0	9,734.0	9,755.1	9,753.0	42.4	215.3	99.18	466.7	-706.2	1,053.4	802.4	251.01	4.197		
11,500.0	9,734.0	9,758.1	9,756.0	43.2	215.4	100.05	466.8	-706.2	1,151.8	900.6	251.11	4.587		
11,600.0	9,734.0	9,761.2	9,759.1	44.0	215.5	100.92	466.9	-706.2	1,250.4	999.2	251.20	4.978		
11,700.0	9,734.0	9,764.2	9,762.1	44.9	215.5	101.78	467.0	-706.2	1,349.2	1,097.9	251.30	5.369		
11,800.0	9,734.0	9,767.3	9,765.2	45.8	215.6	102.63	467.1	-706.2	1,448.2	1,196.8	251.39	5.761		
11,900.0	9,734.0	9,770.3	9,768.2	46.7	215.7	103.48	467.2	-706.2	1,547.3	1,295.8	251.49	6.152		
12,000.0	9,734.0	9,773.4	9,771.3	47.7	215.8	104.33	467.3	-706.2	1,646.5	1,394.9	251.59	6.544		
12,100.0	9,734.0	9,776.4	9,774.3	48.6	215.9	105.16	467.4	-706.2	1,745.8	1,494.1	251.69	6.936		
12,200.0	9,734.0	9,779.5	9,777.4	49.6	215.9	105.99	467.5	-706.2	1,845.1	1,593.3	251.79	7.328		
12,300.0	9,734.0	9,782.5	9,780.4	50.7	216.0	106.82	467.5	-706.2	1,944.5	1,692.6	251.89	7.720		
12,400.0	9,734.0	9,785.6	9,783.5	51.7	216.1	107.63	467.6	-706.2	2,044.0	1,792.0	251.99	8.111		
12,500.0	9,734.0	9,788.6	9,786.5	52.8	216.2	108.44	467.7	-706.2	2,143.5	1,891.4	252.10	8.503		

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald - Nellis Federal 03 - OH - OH													Offset Site Error:	0.0 usft	
Survey Program: 471-INC-ONLY				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)				
11,200.0	9,734.0	9,682.2	9,679.5	40.9	227.4	-87.09	3,135.5	-2,118.7	2,200.2	1,937.0	263.19	8.360			
11,300.0	9,734.0	9,685.5	9,682.8	41.6	227.5	-87.25	3,135.6	-2,118.7	2,117.1	1,853.7	263.47	8.036			
11,400.0	9,734.0	9,688.8	9,686.1	42.4	227.5	-87.41	3,135.7	-2,118.7	2,035.6	1,771.7	263.81	7.716			
11,500.0	9,734.0	9,692.0	9,689.3	43.2	227.6	-87.56	3,135.8	-2,118.7	1,955.7	1,691.5	264.23	7.401			
11,600.0	9,734.0	9,695.3	9,692.6	44.0	227.7	-87.72	3,135.9	-2,118.7	1,877.8	1,613.0	264.76	7.092			
11,700.0	9,734.0	9,698.6	9,695.9	44.9	227.8	-87.87	3,136.1	-2,118.7	1,802.0	1,536.6	265.39	6.790			
11,800.0	9,734.0	9,701.9	9,699.2	45.8	227.9	-88.03	3,136.2	-2,118.7	1,728.7	1,462.5	266.15	6.495			
11,900.0	9,734.0	9,705.2	9,702.5	46.7	228.0	-88.19	3,136.3	-2,118.7	1,658.2	1,391.1	267.06	6.209			
12,000.0	9,734.0	9,708.5	9,705.8	47.7	228.1	-88.35	3,136.4	-2,118.7	1,590.8	1,322.7	268.13	5.933			
12,100.0	9,734.0	9,711.8	9,709.1	48.6	228.2	-88.50	3,136.5	-2,118.7	1,527.0	1,257.6	269.38	5.669			
12,200.0	9,734.0	9,715.1	9,712.4	49.6	228.3	-88.66	3,136.6	-2,118.7	1,467.3	1,196.5	270.81	5.418			
12,300.0	9,734.0	9,718.4	9,715.7	50.7	228.4	-88.82	3,136.7	-2,118.7	1,412.1	1,139.7	272.43	5.183			
12,400.0	9,734.0	9,721.8	9,719.0	51.7	228.5	-88.98	3,136.8	-2,118.7	1,362.0	1,087.8	274.22	4.967			
12,500.0	9,734.0	9,725.1	9,722.4	52.8	228.6	-89.14	3,136.9	-2,118.7	1,317.6	1,041.4	276.17	4.771			
12,600.0	9,734.0	9,728.4	9,725.7	53.8	228.7	-89.30	3,137.1	-2,118.7	1,279.5	1,001.2	278.24	4.598			
12,700.0	9,734.0	9,731.8	9,729.1	54.9	228.8	-89.46	3,137.2	-2,118.7	1,248.2	967.8	280.38	4.452			
12,800.0	9,734.0	9,735.1	9,732.4	56.0	228.8	-89.62	3,137.3	-2,118.7	1,224.3	941.8	282.52	4.334			
12,900.0	9,734.0	9,738.5	9,735.8	57.2	228.9	-89.78	3,137.4	-2,118.7	1,208.3	923.7	284.60	4.246			
13,000.0	9,734.0	9,741.9	9,739.1	58.3	229.0	-89.94	3,137.5	-2,118.7	1,200.4	913.8	286.55	4.189			
13,045.5	9,734.0	9,743.4	9,740.7	58.8	229.1	-90.01	3,137.6	-2,118.7	1,199.5	912.1	287.37	4.174 CC, ES			
13,100.0	9,734.0	9,745.2	9,742.5	59.5	229.1	-90.10	3,137.6	-2,118.7	1,200.7	912.5	288.29	4.165 SF			
13,200.0	9,734.0	9,748.6	9,745.9	60.6	229.2	-90.26	3,137.7	-2,118.7	1,209.4	919.6	289.80	4.173			
13,300.0	9,734.0	9,752.0	9,749.3	61.8	229.3	-90.42	3,137.9	-2,118.7	1,226.2	935.2	291.03	4.213			
13,400.0	9,734.0	9,755.4	9,752.6	63.0	229.4	-90.59	3,138.0	-2,118.7	1,250.7	958.8	291.97	4.284			
13,500.0	9,734.0	9,758.8	9,756.0	64.2	229.5	-90.75	3,138.1	-2,118.7	1,282.6	990.0	292.65	4.383			
13,600.0	9,734.0	9,762.2	9,759.4	65.4	229.6	-90.91	3,138.2	-2,118.7	1,321.3	1,028.3	293.07	4.509			
13,700.0	9,734.0	9,765.6	9,762.8	66.6	229.7	-91.07	3,138.3	-2,118.7	1,366.3	1,073.0	293.29	4.658			
13,800.0	9,734.0	9,769.0	9,766.3	67.8	229.8	-91.24	3,138.4	-2,118.7	1,416.8	1,123.5	293.32	4.830			
13,900.0	9,734.0	9,772.4	9,769.7	69.1	229.9	-91.40	3,138.5	-2,118.7	1,472.5	1,179.2	293.22	5.022			
14,000.0	9,734.0	9,775.9	9,773.1	70.3	230.0	-91.56	3,138.7	-2,118.7	1,532.6	1,239.6	293.01	5.231			
14,100.0	9,734.0	9,779.3	9,776.5	71.6	230.1	-91.73	3,138.8	-2,118.7	1,596.7	1,304.0	292.72	5.455			
14,200.0	9,734.0	9,782.7	9,780.0	72.8	230.2	-91.89	3,138.9	-2,118.7	1,664.4	1,372.0	292.37	5.693			
14,300.0	9,734.0	9,786.2	9,783.4	74.1	230.3	-92.05	3,139.0	-2,118.7	1,735.2	1,443.2	291.99	5.942			
14,400.0	9,734.0	9,789.6	9,786.9	75.4	230.4	-92.22	3,139.1	-2,118.7	1,808.7	1,517.1	291.60	6.203			
14,500.0	9,734.0	9,793.1	9,790.3	76.6	230.5	-92.38	3,139.2	-2,118.7	1,884.7	1,593.5	291.20	6.472			
14,600.0	9,734.0	9,796.5	9,793.8	77.9	230.6	-92.55	3,139.4	-2,118.7	1,962.8	1,672.0	290.80	6.750			
14,700.0	9,734.0	9,800.0	9,797.3	79.2	230.7	-92.71	3,139.5	-2,118.7	2,042.8	1,752.4	290.41	7.034			
14,800.0	9,734.0	9,803.5	9,800.7	80.5	230.8	-92.88	3,139.6	-2,118.7	2,124.5	1,834.5	290.03	7.325			

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Offset Wells - Gazelle 31 Federal 1 - OH - OH													Offset Site Error: 0.0 usft
Survey Program: 230-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)			
16,000.0	9,734.0	9,780.8	9,778.4	96.4	34.7	90.00	8,222.6	-420.4	2,185.1	2,102.9	82.16	26.594	
16,100.0	9,734.0	9,780.8	9,778.4	97.7	34.7	90.00	8,222.6	-420.4	2,088.2	2,005.2	83.06	25.142	
16,200.0	9,734.0	9,780.8	9,778.4	99.1	34.7	90.00	8,222.6	-420.4	1,991.7	1,907.6	84.06	23.695	
16,300.0	9,734.0	9,780.8	9,778.4	100.4	34.7	90.00	8,222.6	-420.4	1,895.5	1,810.3	85.17	22.255	
16,400.0	9,734.0	9,780.8	9,778.4	101.8	34.7	90.00	8,222.6	-420.4	1,799.8	1,713.3	86.43	20.823	
16,500.0	9,734.0	9,780.8	9,778.4	103.1	34.7	90.00	8,222.6	-420.4	1,704.5	1,616.6	87.85	19.402	
16,600.0	9,734.0	9,780.8	9,778.4	104.5	34.7	90.00	8,222.6	-420.4	1,609.8	1,520.3	89.47	17.993	
16,700.0	9,734.0	9,780.8	9,778.4	105.8	34.7	90.00	8,222.6	-420.4	1,515.8	1,424.5	91.31	16.600	
16,800.0	9,734.0	9,780.8	9,778.4	107.2	34.7	90.00	8,222.6	-420.4	1,422.6	1,329.2	93.43	15.227	
16,900.0	9,734.0	9,780.8	9,778.4	108.6	34.7	90.00	8,222.6	-420.4	1,330.4	1,234.5	95.86	13.878	
17,000.0	9,734.0	9,780.8	9,778.4	109.9	34.7	90.00	8,222.6	-420.4	1,239.4	1,140.7	98.69	12.559	
17,100.0	9,734.0	9,780.8	9,778.4	111.3	34.7	90.00	8,222.6	-420.4	1,149.9	1,047.9	101.97	11.277	
17,200.0	9,734.0	9,780.8	9,778.4	112.7	34.7	90.00	8,222.6	-420.4	1,062.3	956.5	105.80	10.040	
17,300.0	9,734.0	9,780.8	9,778.4	114.1	34.7	90.00	8,222.6	-420.4	977.0	866.7	110.27	8.860	
17,400.0	9,734.0	9,780.8	9,778.4	115.4	34.7	90.00	8,222.6	-420.4	894.8	779.3	115.49	7.748	
17,500.0	9,734.0	9,780.8	9,778.4	116.8	34.7	90.00	8,222.6	-420.4	816.6	695.1	121.54	6.719	
17,600.0	9,734.0	9,780.8	9,778.4	118.2	34.7	90.00	8,222.6	-420.4	743.6	615.2	128.43	5.790	
17,700.0	9,734.0	9,780.8	9,778.4	119.6	34.7	90.00	8,222.6	-420.4	677.6	541.6	136.05	4.981	
17,800.0	9,734.0	9,780.8	9,778.4	121.0	34.7	90.00	8,222.6	-420.4	620.7	476.7	143.99	4.311	
17,900.0	9,734.0	9,780.8	9,778.4	122.3	34.7	90.00	8,222.6	-420.4	575.7	424.3	151.44	3.802	
18,000.0	9,734.0	9,780.8	9,778.4	123.7	34.7	90.00	8,222.6	-420.4	545.6	388.4	157.13	3.472	
18,100.0	9,734.0	9,780.8	9,778.4	125.1	34.7	90.00	8,222.6	-420.4	532.7	373.0	159.69	3.336	
18,119.2	9,734.0	9,780.8	9,778.4	125.4	34.7	90.00	8,222.6	-420.4	532.4	372.6	159.75	3.333 CC, ES, SF	
18,200.0	9,734.0	9,780.8	9,778.4	126.5	34.7	90.00	8,222.6	-420.4	538.5	380.1	158.39	3.400	
18,300.0	9,734.0	9,780.8	9,778.4	127.9	34.7	90.00	8,222.6	-420.4	562.2	408.6	153.59	3.661	
18,400.0	9,734.0	9,780.8	9,778.4	129.3	34.7	90.00	8,222.6	-420.4	601.9	455.3	146.53	4.108	
18,500.0	9,734.0	9,780.8	9,778.4	130.7	34.7	90.00	8,222.6	-420.4	654.5	515.9	138.58	4.723	
18,600.0	9,734.0	9,780.8	9,778.4	132.1	34.7	90.00	8,222.6	-420.4	717.3	586.6	130.75	5.486	
18,700.0	9,734.0	9,780.8	9,778.4	133.4	34.7	90.00	8,222.6	-420.4	787.9	664.3	123.57	6.376	
18,800.0	9,734.0	9,780.8	9,778.4	134.8	34.7	90.00	8,222.6	-420.4	864.2	747.0	117.25	7.371	
18,900.0	9,734.0	9,780.8	9,778.4	136.2	34.7	90.00	8,222.6	-420.4	945.0	833.2	111.80	8.452	
19,000.0	9,734.0	9,780.8	9,778.4	137.6	34.7	90.00	8,222.6	-420.4	1,029.2	922.0	107.16	9.604	
19,100.0	9,734.0	9,780.8	9,778.4	139.0	34.7	90.00	8,222.6	-420.4	1,115.9	1,012.7	103.22	10.812	
19,200.0	9,734.0	9,780.8	9,778.4	140.4	34.7	90.00	8,222.6	-420.4	1,204.8	1,104.9	99.87	12.063	
19,300.0	9,734.0	9,780.8	9,778.4	141.8	34.7	90.00	8,222.6	-420.4	1,295.2	1,198.2	97.03	13.349	
19,400.0	9,734.0	9,780.8	9,778.4	143.2	34.7	90.00	8,222.6	-420.4	1,387.0	1,292.4	94.61	14.661	
19,500.0	9,734.0	9,780.8	9,778.4	144.6	34.7	90.00	8,222.6	-420.4	1,479.9	1,387.3	92.54	15.992	
19,600.0	9,734.0	9,780.8	9,778.4	146.0	34.7	90.00	8,222.6	-420.4	1,573.6	1,482.8	90.76	17.337	
19,700.0	9,734.0	9,780.8	9,778.4	147.4	34.7	90.00	8,222.6	-420.4	1,668.0	1,578.8	89.24	18.692	
19,800.0	9,734.0	9,780.8	9,778.4	148.8	34.7	90.00	8,222.6	-420.4	1,763.1	1,675.2	87.92	20.053	
19,900.0	9,734.0	9,780.8	9,778.4	150.3	34.7	90.00	8,222.6	-420.4	1,858.7	1,771.9	86.78	21.418	
20,000.0	9,734.0	9,780.8	9,778.4	151.7	34.7	90.00	8,222.6	-420.4	1,954.7	1,868.9	85.79	22.785	
20,019.5	9,734.0	9,780.8	9,778.4	151.9	34.7	90.00	8,222.6	-420.4	1,973.4	1,887.8	85.61	23.051	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Offset Wells - Gazelle 31 Federal 3 - OH - OH												Offset Site Error:	0.0 usft
Survey Program: 252-INC-ONLY												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)			
15,300.0	9,734.0	9,769.5	9,766.4	87.0	230.2	90.00	6,913.0	580.1	2,140.6	1,838.6	301.99	7.088	
15,400.0	9,734.0	9,769.5	9,766.4	88.4	230.2	90.00	6,913.0	580.1	2,071.6	1,767.3	304.36	6.806	
15,500.0	9,734.0	9,769.5	9,766.4	89.7	230.2	90.00	6,913.0	580.1	2,005.3	1,698.4	306.85	6.535	
15,600.0	9,734.0	9,769.5	9,766.4	91.0	230.2	90.00	6,913.0	580.1	1,941.8	1,632.3	309.43	6.275	
15,700.0	9,734.0	9,769.5	9,766.4	92.4	230.2	90.00	6,913.0	580.1	1,881.5	1,569.4	312.10	6.028	
15,800.0	9,734.0	9,769.5	9,766.4	93.7	230.2	90.00	6,913.0	580.1	1,824.6	1,509.8	314.84	5.795	
15,900.0	9,734.0	9,769.5	9,766.4	95.0	230.2	90.00	6,913.0	580.1	1,771.6	1,454.0	317.61	5.578	
16,000.0	9,734.0	9,769.5	9,766.4	96.4	230.2	90.00	6,913.0	580.1	1,722.8	1,402.4	320.40	5.377	
16,100.0	9,734.0	9,769.5	9,766.4	97.7	230.2	90.00	6,913.0	580.1	1,678.5	1,355.4	323.15	5.194	
16,200.0	9,734.0	9,769.5	9,766.4	99.1	230.2	90.00	6,913.0	580.1	1,639.2	1,313.3	325.82	5.031	
16,300.0	9,734.0	9,769.5	9,766.4	100.4	230.2	90.00	6,913.0	580.1	1,605.1	1,276.7	328.35	4.888	
16,400.0	9,734.0	9,769.5	9,766.4	101.8	230.2	90.00	6,913.0	580.1	1,576.6	1,245.9	330.70	4.767	
16,500.0	9,734.0	9,769.5	9,766.4	103.1	230.2	90.00	6,913.0	580.1	1,554.0	1,221.2	332.80	4.670	
16,600.0	9,734.0	9,769.5	9,766.4	104.5	230.2	90.00	6,913.0	580.1	1,537.7	1,203.1	334.60	4.596	
16,700.0	9,734.0	9,769.5	9,766.4	105.8	230.2	90.00	6,913.0	580.1	1,527.7	1,191.6	336.05	4.546	
16,800.0	9,734.0	9,769.5	9,766.4	107.2	230.2	90.00	6,913.0	580.1	1,524.2	1,187.1	337.12	4.521	
16,803.0	9,734.0	9,769.5	9,766.4	107.3	230.2	90.00	6,913.0	580.1	1,524.2	1,187.1	337.15	4.521	CC, ES, SF
16,900.0	9,734.0	9,769.5	9,766.4	108.6	230.2	90.00	6,913.0	580.1	1,527.3	1,189.5	337.79	4.521	
17,000.0	9,734.0	9,769.5	9,766.4	109.9	230.2	90.00	6,913.0	580.1	1,536.9	1,198.8	338.05	4.546	
17,100.0	9,734.0	9,769.5	9,766.4	111.3	230.2	90.00	6,913.0	580.1	1,552.9	1,215.0	337.93	4.595	
17,200.0	9,734.0	9,769.5	9,766.4	112.7	230.2	90.00	6,913.0	580.1	1,575.1	1,237.6	337.43	4.668	
17,300.0	9,734.0	9,769.5	9,766.4	114.1	230.2	90.00	6,913.0	580.1	1,603.2	1,266.6	336.60	4.763	
17,400.0	9,734.0	9,769.5	9,766.4	115.4	230.2	90.00	6,913.0	580.1	1,637.0	1,301.5	335.49	4.879	
17,500.0	9,734.0	9,769.5	9,766.4	116.8	230.2	90.00	6,913.0	580.1	1,676.0	1,341.9	334.14	5.016	
17,600.0	9,734.0	9,769.5	9,766.4	118.2	230.2	90.00	6,913.0	580.1	1,720.0	1,387.4	332.60	5.171	
17,700.0	9,734.0	9,769.5	9,766.4	119.6	230.2	90.00	6,913.0	580.1	1,768.6	1,437.6	330.92	5.344	
17,800.0	9,734.0	9,769.5	9,766.4	121.0	230.2	90.00	6,913.0	580.1	1,821.3	1,492.2	329.15	5.533	
17,900.0	9,734.0	9,769.5	9,766.4	122.3	230.2	90.00	6,913.0	580.1	1,877.9	1,550.6	327.31	5.737	
18,000.0	9,734.0	9,769.5	9,766.4	123.7	230.2	90.00	6,913.0	580.1	1,938.0	1,612.6	325.45	5.955	
18,100.0	9,734.0	9,769.5	9,766.4	125.1	230.2	90.00	6,913.0	580.1	2,001.3	1,677.8	323.58	6.185	
18,200.0	9,734.0	9,769.5	9,766.4	126.5	230.2	90.00	6,913.0	580.1	2,067.6	1,745.8	321.73	6.426	
18,300.0	9,734.0	9,769.5	9,766.4	127.9	230.2	90.00	6,913.0	580.1	2,136.4	1,816.5	319.92	6.678	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)				
7,000.0	6,952.0	7,021.3	6,996.6	26.3	24.6	21.30	-132.6	-2,841.7	2,198.3	2,148.7	49.62	44.301		
7,100.0	7,050.9	7,119.1	7,092.7	26.7	25.0	20.94	-151.1	-2,840.2	2,182.8	2,132.4	50.35	43.352		
7,200.0	7,149.9	7,217.0	7,188.8	27.1	25.4	20.58	-169.6	-2,838.7	2,167.3	2,116.2	51.08	42.429		
7,300.0	7,248.9	7,314.8	7,284.8	27.5	25.7	20.21	-188.1	-2,837.2	2,152.0	2,100.1	51.81	41.532		
7,400.0	7,347.9	7,412.6	7,380.9	27.9	26.1	19.84	-206.6	-2,835.7	2,136.7	2,084.1	52.55	40.661		
7,500.0	7,446.9	7,510.5	7,477.0	28.3	26.5	19.46	-225.1	-2,834.1	2,121.5	2,068.2	53.29	39.813		
7,600.0	7,545.9	7,608.3	7,573.0	28.8	26.8	19.08	-243.6	-2,832.6	2,106.4	2,052.4	54.03	38.990		
7,700.0	7,644.8	7,706.2	7,669.1	29.2	27.2	18.69	-262.1	-2,831.1	2,091.4	2,036.7	54.77	38.188		
7,800.0	7,743.8	7,800.0	7,761.4	29.6	27.6	18.34	-279.0	-2,829.8	2,076.6	2,021.1	55.50	37.418		
7,900.0	7,842.8	7,894.2	7,854.5	30.0	27.9	18.06	-293.0	-2,828.6	2,062.1	2,005.9	56.22	36.676		
8,000.0	7,941.8	7,988.5	7,948.2	30.4	28.3	17.87	-304.0	-2,827.7	2,047.8	1,990.8	56.95	35.961		
8,100.0	8,040.8	8,083.3	8,042.6	30.8	28.6	17.76	-311.9	-2,827.1	2,033.7	1,976.1	57.66	35.270		
8,200.0	8,139.8	8,178.3	8,137.5	31.2	28.9	17.74	-316.8	-2,826.7	2,019.9	1,961.5	58.37	34.604		
8,300.0	8,238.8	8,273.2	8,232.4	31.6	29.3	17.81	-318.5	-2,826.5	2,006.2	1,947.1	59.08	33.959		
8,400.0	8,337.7	8,372.1	8,331.2	32.0	29.6	17.93	-318.5	-2,826.5	1,992.7	1,932.9	59.79	33.326		
8,500.0	8,436.7	8,473.1	8,431.7	32.4	29.9	18.34	-308.9	-2,826.6	1,979.1	1,918.6	60.50	32.712		
8,600.0	8,535.7	8,564.8	8,519.2	32.8	30.2	19.24	-282.1	-2,826.8	1,965.7	1,904.6	61.16	32.141		
8,700.0	8,634.7	8,642.7	8,588.5	33.2	30.4	20.35	-246.6	-2,827.0	1,953.8	1,892.0	61.77	31.631		
8,800.0	8,734.1	8,707.2	8,640.7	33.6	30.5	21.46	-209.0	-2,827.3	1,946.7	1,884.4	62.32	31.239		
8,866.0	8,799.9	8,743.2	8,667.6	33.9	30.6	22.18	-185.1	-2,827.5	1,945.3	1,882.7	62.63	31.059 CC		
8,900.0	8,833.8	8,759.9	8,679.5	34.0	30.6	22.54	-173.2	-2,827.5	1,945.7	1,882.9	62.78	30.991		
9,000.0	8,933.7	8,800.0	8,706.1	34.3	30.7	23.48	-143.3	-2,827.8	1,951.3	1,888.2	63.14	30.906		
9,100.0	9,033.7	8,838.8	8,729.4	34.7	30.7	-84.32	-112.3	-2,828.0	1,963.8	1,900.4	63.39	30.979		
9,200.0	9,133.7	8,868.2	8,745.4	35.0	30.8	-83.59	-87.6	-2,828.1	1,981.0	1,917.5	63.52	31.187		
9,300.0	9,233.7	8,892.6	8,757.4	35.3	30.8	-82.97	-66.4	-2,828.3	2,002.4	1,938.8	63.54	31.512		
9,400.0	9,333.4	8,915.5	8,767.8	35.6	30.8	-79.67	-46.0	-2,828.4	2,027.0	1,963.6	63.46	31.942		
9,500.0	9,429.7	8,942.0	8,778.5	35.9	30.9	-76.06	-21.8	-2,828.6	2,052.0	1,988.7	63.29	32.425		
9,600.0	9,518.4	8,975.0	8,789.9	36.1	30.9	-72.63	9.2	-2,828.8	2,075.8	2,012.7	63.08	32.909		
9,700.0	9,595.7	9,000.0	8,797.1	36.2	31.0	-69.81	33.1	-2,829.0	2,096.9	2,034.1	62.83	33.377		
9,800.0	9,658.2	9,035.0	8,805.1	36.3	31.0	-67.45	67.2	-2,829.2	2,114.3	2,051.6	62.66	33.741		
9,900.0	9,703.1	9,075.0	8,811.1	36.4	31.1	-65.76	106.7	-2,829.5	2,126.8	2,064.2	62.61	33.971		
10,000.0	9,728.5	9,100.0	8,813.2	36.3	31.1	-64.88	131.7	-2,829.7	2,134.0	2,071.3	62.66	34.057		
10,100.0	9,734.0	9,155.0	8,814.0	36.3	31.2	-64.67	186.7	-2,830.0	2,135.6	2,072.7	62.92	33.943		
10,200.0	9,734.0	9,255.0	8,814.0	36.4	31.4	-64.68	286.7	-2,830.7	2,135.6	2,072.3	63.35	33.711		
10,300.0	9,734.0	9,355.0	8,814.0	36.5	31.6	-64.68	386.6	-2,831.4	2,135.6	2,071.7	63.89	33.426		
10,400.0	9,734.0	9,455.0	8,814.0	36.7	31.9	-64.68	486.6	-2,832.1	2,135.7	2,071.1	64.54	33.089		
10,500.0	9,734.0	9,555.0	8,814.0	37.0	32.3	-64.68	586.6	-2,832.8	2,135.7	2,070.4	65.30	32.706		
10,600.0	9,734.0	9,655.0	8,814.0	37.4	32.8	-64.68	686.6	-2,833.5	2,135.7	2,069.6	66.16	32.281		
10,700.0	9,734.0	9,755.0	8,814.0	37.8	33.2	-64.68	786.6	-2,834.2	2,135.8	2,068.6	67.12	31.821		
10,800.0	9,734.0	9,855.0	8,814.0	38.3	33.8	-64.68	886.6	-2,834.9	2,135.8	2,067.6	68.17	31.330		
10,900.0	9,734.0	9,955.0	8,814.0	38.9	34.4	-64.68	986.6	-2,835.6	2,135.8	2,066.5	69.31	30.814		
11,000.0	9,734.0	10,055.0	8,814.0	39.5	35.0	-64.68	1,086.6	-2,836.3	2,135.8	2,065.3	70.54	30.279		
11,100.0	9,734.0	10,155.0	8,814.0	40.2	35.7	-64.68	1,186.6	-2,837.0	2,135.9	2,064.0	71.85	29.728		
11,200.0	9,734.0	10,255.0	8,814.0	40.9	36.5	-64.68	1,286.6	-2,837.7	2,135.9	2,062.7	73.23	29.166		
11,300.0	9,734.0	10,355.0	8,814.0	41.6	37.3	-64.68	1,386.6	-2,838.4	2,135.9	2,061.2	74.69	28.597		
11,400.0	9,734.0	10,455.0	8,814.0	42.4	38.1	-64.68	1,486.6	-2,839.1	2,136.0	2,059.7	76.22	28.025		
11,500.0	9,734.0	10,555.0	8,814.0	43.2	39.0	-64.68	1,586.6	-2,839.8	2,136.0	2,058.2	77.81	27.453		
11,600.0	9,734.0	10,655.0	8,814.0	44.0	39.8	-64.68	1,686.6	-2,840.5	2,136.0	2,056.6	79.46	26.883		
11,700.0	9,734.0	10,755.0	8,814.0	44.9	40.8	-64.68	1,786.6	-2,841.2	2,136.0	2,054.9	81.16	26.319		
11,800.0	9,734.0	10,855.0	8,814.0	45.8	41.7	-64.68	1,886.6	-2,841.8	2,136.1	2,053.2	82.92	25.761		
11,900.0	9,734.0	10,955.0	8,814.0	46.7	42.7	-64.68	1,986.6	-2,842.5	2,136.1	2,051.4	84.73	25.211		
12,000.0	9,734.0	11,055.0	8,814.0	47.7	43.7	-64.68	2,086.6	-2,843.2	2,136.1	2,049.6	86.58	24.671		

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)			
12,100.0	9,734.0	11,155.0	8,814.0	48.6	44.7	-64.68	2,186.6	-2,843.9	2,136.2	2,047.7	88.48	24.142	
12,200.0	9,734.0	11,255.0	8,814.0	49.6	45.8	-64.68	2,286.6	-2,844.6	2,136.2	2,045.8	90.42	23.624	
12,300.0	9,734.0	11,355.0	8,814.0	50.7	46.9	-64.68	2,386.6	-2,845.3	2,136.2	2,043.8	92.40	23.119	
12,400.0	9,734.0	11,455.0	8,814.0	51.7	48.0	-64.68	2,486.6	-2,846.0	2,136.3	2,041.8	94.42	22.626	
12,500.0	9,734.0	11,555.0	8,814.0	52.8	49.1	-64.68	2,586.6	-2,846.7	2,136.3	2,039.8	96.46	22.146	
12,600.0	9,734.0	11,655.0	8,814.0	53.8	50.2	-64.68	2,686.6	-2,847.4	2,136.3	2,037.8	98.54	21.679	
12,700.0	9,734.0	11,755.0	8,814.0	54.9	51.4	-64.68	2,786.6	-2,848.1	2,136.3	2,035.7	100.65	21.225	
12,800.0	9,734.0	11,855.0	8,814.0	56.0	52.5	-64.69	2,886.6	-2,848.8	2,136.4	2,033.6	102.79	20.785	
12,900.0	9,734.0	11,955.0	8,814.0	57.2	53.7	-64.69	2,986.6	-2,849.5	2,136.4	2,031.5	104.95	20.357	
13,000.0	9,734.0	12,055.0	8,814.0	58.3	54.9	-64.69	3,086.6	-2,850.2	2,136.4	2,029.3	107.13	19.942	
13,100.0	9,734.0	12,155.0	8,814.0	59.5	56.1	-64.69	3,186.6	-2,850.9	2,136.5	2,027.1	109.34	19.539	
13,200.0	9,734.0	12,255.0	8,814.0	60.6	57.3	-64.69	3,286.6	-2,851.6	2,136.5	2,024.9	111.58	19.148	
13,300.0	9,734.0	12,355.0	8,814.0	61.8	58.5	-64.69	3,386.6	-2,852.3	2,136.5	2,022.7	113.83	18.770	
13,400.0	9,734.0	12,455.0	8,814.0	63.0	59.8	-64.69	3,486.6	-2,853.0	2,136.6	2,020.5	116.10	18.403	
13,500.0	9,734.0	12,555.0	8,814.0	64.2	61.0	-64.69	3,586.6	-2,853.6	2,136.6	2,018.2	118.39	18.048	
13,600.0	9,734.0	12,655.0	8,814.0	65.4	62.3	-64.69	3,686.6	-2,854.3	2,136.6	2,015.9	120.69	17.703	
13,700.0	9,734.0	12,755.0	8,814.0	66.6	63.5	-64.69	3,786.6	-2,855.0	2,136.6	2,013.6	123.01	17.369	
13,800.0	9,734.0	12,855.0	8,814.0	67.8	64.8	-64.69	3,886.6	-2,855.7	2,136.7	2,011.3	125.35	17.046	
13,900.0	9,734.0	12,955.0	8,814.0	69.1	66.1	-64.69	3,986.6	-2,856.4	2,136.7	2,009.0	127.70	16.732	
14,000.0	9,734.0	13,055.0	8,814.0	70.3	67.3	-64.69	4,086.6	-2,857.1	2,136.7	2,006.7	130.07	16.428	
14,100.0	9,734.0	13,155.0	8,814.0	71.6	68.6	-64.69	4,186.6	-2,857.8	2,136.8	2,004.3	132.44	16.133	
14,200.0	9,734.0	13,255.0	8,814.0	72.8	69.9	-64.69	4,286.6	-2,858.5	2,136.8	2,002.0	134.83	15.848	
14,300.0	9,734.0	13,355.0	8,814.0	74.1	71.2	-64.69	4,386.6	-2,859.2	2,136.8	1,999.6	137.23	15.571	
14,400.0	9,734.0	13,455.0	8,814.0	75.4	72.5	-64.69	4,486.5	-2,859.9	2,136.9	1,997.2	139.65	15.302	
14,500.0	9,734.0	13,555.0	8,814.0	76.6	73.8	-64.69	4,586.5	-2,860.6	2,136.9	1,994.8	142.07	15.041	
14,600.0	9,734.0	13,655.0	8,814.0	77.9	75.2	-64.69	4,686.5	-2,861.3	2,136.9	1,992.4	144.50	14.788	
14,700.0	9,734.0	13,755.0	8,814.0	79.2	76.5	-64.69	4,786.5	-2,862.0	2,136.9	1,990.0	146.94	14.543	
14,800.0	9,734.0	13,855.0	8,814.0	80.5	77.8	-64.69	4,886.5	-2,862.7	2,137.0	1,987.6	149.39	14.304	
14,900.0	9,734.0	13,955.0	8,814.0	81.8	79.1	-64.69	4,986.5	-2,863.4	2,137.0	1,985.1	151.85	14.073	
15,000.0	9,734.0	14,055.0	8,814.0	83.1	80.5	-64.69	5,086.5	-2,864.1	2,137.0	1,982.7	154.32	13.848	
15,100.0	9,734.0	14,155.0	8,814.0	84.4	81.8	-64.69	5,186.5	-2,864.8	2,137.1	1,980.3	156.79	13.630	
15,200.0	9,734.0	14,255.0	8,814.0	85.7	83.1	-64.69	5,286.5	-2,865.4	2,137.1	1,977.8	159.28	13.417	
15,300.0	9,734.0	14,355.0	8,814.0	87.0	84.5	-64.69	5,386.5	-2,866.1	2,137.1	1,975.4	161.77	13.211	
15,400.0	9,734.0	14,455.0	8,814.0	88.4	85.8	-64.69	5,486.5	-2,866.8	2,137.1	1,972.9	164.26	13.011	
15,500.0	9,734.0	14,555.0	8,814.0	89.7	87.2	-64.70	5,586.5	-2,867.5	2,137.2	1,970.4	166.76	12.816	
15,600.0	9,734.0	14,655.0	8,814.0	91.0	88.5	-64.70	5,686.5	-2,868.2	2,137.2	1,967.9	169.27	12.626	
15,700.0	9,734.0	14,755.0	8,814.0	92.4	89.9	-64.70	5,786.5	-2,868.9	2,137.2	1,965.4	171.79	12.441	
15,800.0	9,734.0	14,855.0	8,814.0	93.7	91.3	-64.70	5,886.5	-2,869.6	2,137.3	1,963.0	174.31	12.262	
15,900.0	9,734.0	14,955.0	8,814.0	95.0	92.6	-64.70	5,986.5	-2,870.3	2,137.3	1,960.5	176.83	12.087	
16,000.0	9,734.0	15,055.0	8,814.0	96.4	94.0	-64.70	6,086.5	-2,871.0	2,137.3	1,958.0	179.36	11.916	
16,100.0	9,734.0	15,155.0	8,814.0	97.7	95.4	-64.70	6,186.5	-2,871.7	2,137.4	1,955.5	181.90	11.750	
16,200.0	9,734.0	15,255.0	8,814.0	99.1	96.7	-64.70	6,286.5	-2,872.4	2,137.4	1,952.9	184.44	11.589	
16,300.0	9,734.0	15,355.0	8,814.0	100.4	98.1	-64.70	6,386.5	-2,873.1	2,137.4	1,950.4	186.98	11.431	
16,400.0	9,734.0	15,455.0	8,814.0	101.8	99.5	-64.70	6,486.5	-2,873.8	2,137.4	1,947.9	189.53	11.278	
16,500.0	9,734.0	15,555.0	8,814.0	103.1	100.8	-64.70	6,586.5	-2,874.5	2,137.5	1,945.4	192.08	11.128	
16,600.0	9,734.0	15,655.0	8,814.0	104.5	102.2	-64.70	6,686.5	-2,875.2	2,137.5	1,942.9	194.64	10.982	
16,700.0	9,734.0	15,755.0	8,814.0	105.8	103.6	-64.70	6,786.5	-2,875.9	2,137.5	1,940.3	197.20	10.839	
16,800.0	9,734.0	15,855.0	8,814.0	107.2	105.0	-64.70	6,886.5	-2,876.6	2,137.6	1,937.8	199.77	10.700	
16,900.0	9,734.0	15,955.0	8,814.0	108.6	106.4	-64.70	6,986.5	-2,877.3	2,137.6	1,935.3	202.33	10.565	
17,000.0	9,734.0	16,055.0	8,814.0	109.9	107.8	-64.70	7,086.5	-2,877.9	2,137.6	1,932.7	204.90	10.432	
17,100.0	9,734.0	16,155.0	8,814.0	111.3	109.1	-64.70	7,186.5	-2,878.6	2,137.7	1,930.2	207.48	10.303	
17,200.0	9,734.0	16,255.0	8,814.0	112.7	110.5	-64.70	7,286.5	-2,879.3	2,137.7	1,927.6	210.06	10.177	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)			
17,300.0	9,734.0	16,355.0	8,814.0	114.1	111.9	-64.70	7,386.5	-2,880.0	2,137.7	1,925.1	212.64	10.053	
17,400.0	9,734.0	16,455.0	8,814.0	115.4	113.3	-64.70	7,486.5	-2,880.7	2,137.7	1,922.5	215.22	9.933	
17,500.0	9,734.0	16,555.0	8,814.0	116.8	114.7	-64.70	7,586.5	-2,881.4	2,137.8	1,920.0	217.81	9.815	
17,600.0	9,734.0	16,655.0	8,814.0	118.2	116.1	-64.70	7,686.5	-2,882.1	2,137.8	1,917.4	220.40	9.700	
17,700.0	9,734.0	16,755.0	8,814.0	119.6	117.5	-64.70	7,786.5	-2,882.8	2,137.8	1,914.8	222.99	9.587	
17,800.0	9,734.0	16,855.0	8,814.0	121.0	118.9	-64.70	7,886.5	-2,883.5	2,137.9	1,912.3	225.59	9.477	
17,900.0	9,734.0	16,955.0	8,814.0	122.3	120.3	-64.70	7,986.5	-2,884.2	2,137.9	1,909.7	228.18	9.369	
18,000.0	9,734.0	17,055.0	8,814.0	123.7	121.7	-64.70	8,086.5	-2,884.9	2,137.9	1,907.1	230.78	9.264	
18,100.0	9,734.0	17,155.0	8,814.0	125.1	123.1	-64.71	8,186.5	-2,885.6	2,137.9	1,904.6	233.38	9.161	
18,200.0	9,734.0	17,255.0	8,814.0	126.5	124.5	-64.71	8,286.5	-2,886.3	2,138.0	1,902.0	235.99	9.060	
18,300.0	9,734.0	17,355.0	8,814.0	127.9	125.9	-64.71	8,386.5	-2,887.0	2,138.0	1,899.4	238.59	8.961	
18,400.0	9,734.0	17,455.0	8,814.0	129.3	127.3	-64.71	8,486.5	-2,887.7	2,138.0	1,896.8	241.20	8.864	
18,500.0	9,734.0	17,555.0	8,814.0	130.7	128.7	-64.71	8,586.4	-2,888.4	2,138.1	1,894.3	243.81	8.769	
18,600.0	9,734.0	17,655.0	8,814.0	132.1	130.1	-64.71	8,686.4	-2,889.1	2,138.1	1,891.7	246.43	8.676	
18,700.0	9,734.0	17,755.0	8,814.0	133.4	131.5	-64.71	8,786.4	-2,889.7	2,138.1	1,889.1	249.04	8.585	
18,800.0	9,734.0	17,855.0	8,814.0	134.8	132.9	-64.71	8,886.4	-2,890.4	2,138.2	1,886.5	251.66	8.496	
18,900.0	9,734.0	17,955.0	8,814.0	136.2	134.3	-64.71	8,986.4	-2,891.1	2,138.2	1,883.9	254.27	8.409	
19,000.0	9,734.0	18,055.0	8,814.0	137.6	135.7	-64.71	9,086.4	-2,891.8	2,138.2	1,881.3	256.89	8.323	
19,100.0	9,734.0	18,155.0	8,814.0	139.0	137.1	-64.71	9,186.4	-2,892.5	2,138.2	1,878.7	259.52	8.239	
19,200.0	9,734.0	18,255.0	8,814.0	140.4	138.6	-64.71	9,286.4	-2,893.2	2,138.3	1,876.1	262.14	8.157	
19,300.0	9,734.0	18,355.0	8,814.0	141.8	140.0	-64.71	9,386.4	-2,893.9	2,138.3	1,873.5	264.76	8.076	
19,400.0	9,734.0	18,455.0	8,814.0	143.2	141.4	-64.71	9,486.4	-2,894.6	2,138.3	1,870.9	267.39	7.997	
19,500.0	9,734.0	18,555.0	8,814.0	144.6	142.8	-64.71	9,586.4	-2,895.3	2,138.4	1,868.3	270.02	7.919	
19,600.0	9,734.0	18,655.0	8,814.0	146.0	144.2	-64.71	9,686.4	-2,896.0	2,138.4	1,865.7	272.65	7.843	
19,700.0	9,734.0	18,755.0	8,814.0	147.4	145.6	-64.71	9,786.4	-2,896.7	2,138.4	1,863.1	275.28	7.768	
19,800.0	9,734.0	18,855.0	8,814.0	148.8	147.0	-64.71	9,886.4	-2,897.4	2,138.5	1,860.5	277.91	7.695	
19,900.0	9,734.0	18,955.0	8,814.0	150.3	148.4	-64.71	9,986.4	-2,898.1	2,138.5	1,857.9	280.54	7.623	
20,000.0	9,734.0	19,055.0	8,814.0	151.7	149.9	-64.71	10,086.4	-2,898.8	2,138.5	1,855.3	283.18	7.552	
20,019.5	9,734.0	19,070.8	8,814.0	151.9	150.1	-64.71	10,102.2	-2,898.9	2,138.5	1,854.9	283.66	7.539 ES, 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error: 0.0 usft
Reference		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)			
4,300.0	4,279.4	4,688.9	4,647.4	15.5	17.5	20.53	-55.7	-2,434.1	2,184.7	2,153.3	31.33	69.730	
4,400.0	4,378.4	4,784.2	4,741.0	15.9	17.9	20.45	-63.4	-2,418.0	2,154.5	2,122.5	32.05	67.225	
4,500.0	4,477.4	4,879.5	4,834.6	16.3	18.3	20.38	-71.2	-2,401.8	2,124.4	2,091.6	32.77	64.827	
4,600.0	4,576.3	4,974.9	4,928.2	16.7	18.7	20.30	-79.0	-2,385.7	2,094.2	2,060.7	33.49	62.531	
4,700.0	4,675.3	5,070.2	5,021.9	17.1	19.1	20.22	-86.7	-2,369.5	2,064.1	2,029.9	34.21	60.330	
4,800.0	4,774.3	5,165.5	5,115.5	17.5	19.5	20.14	-94.5	-2,353.4	2,034.0	1,999.0	34.94	58.218	
4,900.0	4,873.3	5,260.8	5,209.1	17.9	19.9	20.05	-102.2	-2,337.2	2,003.8	1,968.2	35.66	56.191	
5,000.0	4,972.3	5,356.1	5,302.7	18.3	20.3	19.96	-110.0	-2,321.1	1,973.7	1,937.3	36.39	54.242	
5,100.0	5,071.3	5,451.4	5,396.3	18.7	20.8	19.87	-117.8	-2,304.9	1,943.6	1,906.5	37.11	52.369	
5,200.0	5,170.3	5,546.7	5,489.9	19.1	21.2	19.78	-125.5	-2,288.8	1,913.5	1,875.6	37.84	50.567	
5,300.0	5,269.2	5,642.0	5,583.5	19.5	21.6	19.68	-133.3	-2,272.6	1,883.3	1,844.8	38.57	48.831	
5,400.0	5,368.2	5,737.3	5,677.1	19.9	22.0	19.59	-141.1	-2,256.5	1,853.2	1,813.9	39.30	47.159	
5,500.0	5,467.2	5,832.6	5,770.7	20.3	22.4	19.48	-148.8	-2,240.3	1,823.1	1,783.1	40.03	45.547	
5,600.0	5,566.2	5,928.0	5,864.3	20.7	22.8	19.38	-156.6	-2,224.2	1,793.0	1,752.3	40.76	43.992	
5,700.0	5,665.2	6,023.3	5,958.0	21.1	23.2	19.27	-164.4	-2,208.0	1,762.9	1,721.5	41.49	42.492	
5,800.0	5,764.2	6,118.6	6,051.6	21.5	23.7	19.15	-172.1	-2,191.9	1,732.9	1,690.6	42.22	41.042	
5,900.0	5,863.1	6,213.9	6,145.2	21.9	24.1	19.04	-179.9	-2,175.7	1,702.8	1,659.8	42.95	39.642	
6,000.0	5,962.1	6,309.2	6,238.8	22.3	24.5	18.91	-187.7	-2,159.6	1,672.7	1,629.0	43.69	38.288	
6,100.0	6,061.1	6,404.5	6,332.4	22.7	24.9	18.79	-195.4	-2,143.4	1,642.6	1,598.2	44.42	36.978	
6,200.0	6,160.1	6,499.8	6,426.0	23.1	25.3	18.66	-203.2	-2,127.3	1,612.6	1,567.4	45.16	35.710	
6,300.0	6,259.1	6,595.1	6,519.6	23.5	25.7	18.52	-210.9	-2,111.1	1,582.5	1,536.6	45.89	34.483	
6,400.0	6,358.1	6,690.4	6,613.2	23.9	26.1	18.38	-218.7	-2,095.0	1,552.5	1,505.9	46.63	33.294	
6,500.0	6,457.0	6,785.7	6,706.8	24.3	26.6	18.23	-226.5	-2,078.8	1,522.5	1,475.1	47.37	32.141	
6,600.0	6,556.0	6,881.1	6,800.4	24.7	27.0	18.08	-234.2	-2,062.6	1,492.4	1,444.3	48.11	31.024	
6,700.0	6,655.0	6,976.4	6,894.1	25.1	27.4	17.92	-242.0	-2,046.5	1,462.4	1,413.6	48.84	29.940	
6,800.0	6,754.0	7,071.7	6,987.7	25.5	27.8	17.76	-249.8	-2,030.3	1,432.4	1,382.8	49.58	28.888	
6,900.0	6,853.0	7,167.0	7,081.3	25.9	28.2	17.58	-257.5	-2,014.2	1,402.4	1,352.1	50.33	27.867	
7,000.0	6,952.0	7,262.3	7,174.9	26.3	28.7	17.40	-265.3	-1,998.0	1,372.5	1,321.4	51.07	26.876	
7,100.0	7,050.9	7,357.6	7,268.5	26.7	29.1	17.22	-273.1	-1,981.9	1,342.5	1,290.7	51.81	25.912	
7,200.0	7,149.9	7,452.9	7,362.1	27.1	29.5	17.02	-280.8	-1,965.7	1,312.5	1,260.0	52.55	24.976	
7,300.0	7,248.9	7,548.2	7,455.7	27.5	29.9	16.81	-288.6	-1,949.6	1,282.6	1,229.3	53.30	24.066	
7,400.0	7,347.9	7,618.6	7,524.9	27.9	30.2	16.67	-294.0	-1,938.3	1,253.6	1,199.5	54.06	23.188	
7,500.0	7,446.9	7,700.0	7,605.4	28.3	30.6	16.55	-299.4	-1,927.2	1,226.7	1,171.9	54.81	22.382	
7,600.0	7,545.9	7,758.7	7,663.6	28.8	30.8	16.49	-302.6	-1,920.4	1,201.7	1,146.2	55.54	21.637	
7,700.0	7,644.8	7,830.0	7,734.5	29.2	31.1	16.46	-305.8	-1,913.7	1,178.9	1,122.7	56.25	20.959	
7,800.0	7,743.8	7,900.0	7,804.3	29.6	31.3	16.47	-308.3	-1,908.6	1,158.3	1,101.4	56.93	20.345	
7,900.0	7,842.8	7,974.6	7,878.8	30.0	31.6	16.52	-310.1	-1,904.9	1,139.9	1,082.3	57.60	19.791	
8,000.0	7,941.8	8,047.7	7,951.9	30.4	31.8	16.62	-311.0	-1,902.9	1,123.7	1,065.4	58.23	19.297	
8,100.0	8,040.8	8,130.0	8,034.2	30.8	32.1	16.79	-311.2	-1,902.6	1,109.5	1,050.7	58.86	18.849	
8,200.0	8,139.8	8,229.0	8,133.2	31.2	32.4	17.00	-311.2	-1,902.6	1,095.9	1,036.4	59.55	18.404	
8,300.0	8,238.8	8,328.0	8,232.2	31.6	32.7	17.22	-311.2	-1,902.6	1,082.3	1,022.1	60.24	17.968	
8,400.0	8,337.7	8,427.0	8,331.1	32.0	33.0	17.45	-311.2	-1,902.6	1,068.7	1,007.8	60.92	17.543	
8,500.0	8,436.7	8,527.9	8,431.4	32.4	33.3	18.20	-301.7	-1,902.6	1,055.1	993.5	61.59	17.132	
8,600.0	8,535.7	8,619.4	8,518.8	32.8	33.5	19.89	-275.0	-1,902.8	1,041.9	979.7	62.16	16.761	
8,700.0	8,634.7	8,697.3	8,588.1	33.2	33.6	22.02	-239.6	-1,903.1	1,031.2	968.5	62.64	16.463	
8,799.8	8,733.9	8,761.6	8,640.3	33.6	33.7	24.20	-202.1	-1,903.3	1,027.1	964.1	62.95	16.315 CC	
8,800.0	8,734.1	8,761.7	8,640.4	33.6	33.7	24.20	-202.0	-1,903.3	1,027.1	964.1	62.95	16.315 ES	
8,900.0	8,833.8	8,814.5	8,679.1	34.0	33.8	26.29	-166.3	-1,903.6	1,031.6	968.6	63.04	16.363	
9,000.0	8,933.7	8,857.7	8,707.8	34.3	33.8	28.23	-134.0	-1,903.8	1,045.7	982.8	62.85	16.638	
9,100.0	9,033.7	8,893.4	8,729.2	34.7	33.8	-78.82	-105.4	-1,904.0	1,069.4	1,007.1	62.35	17.153	
9,200.0	9,133.7	8,925.0	8,746.3	35.0	33.8	-77.37	-78.8	-1,904.2	1,100.7	1,039.1	61.59	17.871	
9,300.0	9,233.7	8,950.0	8,758.6	35.3	33.8	-76.20	-57.0	-1,904.3	1,138.7	1,078.1	60.60	18.791	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1											Offset Site Error:	0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM											Offset Well Error:	0.0 usft	
Reference		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)			
9,400.0	9,333.4	8,975.0	8,769.7	35.6	33.8	-70.49	-34.6	-1,904.5	1,181.6	1,122.1	59.47	19.867	
9,500.0	9,429.7	9,000.0	8,779.6	35.9	33.8	-64.39	-11.7	-1,904.6	1,223.9	1,165.7	58.24	21.015	
9,600.0	9,518.4	9,025.0	8,788.3	36.1	33.8	-59.13	11.7	-1,904.8	1,263.3	1,206.3	57.02	22.158	
9,700.0	9,595.7	9,050.0	8,795.8	36.2	33.8	-54.86	35.6	-1,905.0	1,297.8	1,241.8	55.92	23.208	
9,800.0	9,658.2	9,089.7	8,805.0	36.3	33.7	-51.45	74.1	-1,905.2	1,325.5	1,270.3	55.15	24.034	
9,900.0	9,703.1	9,125.0	8,810.6	36.4	33.7	-49.22	109.0	-1,905.5	1,345.4	1,290.7	54.64	24.624	
10,000.0	9,728.5	9,150.0	8,812.9	36.3	33.7	-48.05	133.9	-1,905.7	1,356.6	1,302.2	54.48	24.903	
10,100.0	9,734.0	9,209.2	8,814.0	36.3	33.6	-47.77	193.1	-1,906.1	1,359.0	1,304.3	54.70	24.846	
10,200.0	9,734.0	9,309.2	8,814.0	36.4	33.6	-47.77	293.1	-1,906.8	1,359.1	1,304.0	55.04	24.694	
10,300.0	9,734.0	9,409.2	8,814.0	36.5	33.5	-47.77	393.1	-1,907.5	1,359.1	1,303.6	55.47	24.500	
10,400.0	9,734.0	9,509.2	8,814.0	36.7	33.5	-47.77	493.1	-1,908.2	1,359.1	1,303.1	56.01	24.265	
10,500.0	9,734.0	9,609.2	8,814.0	37.0	33.6	-47.78	593.1	-1,908.8	1,359.1	1,302.5	56.65	23.993	
10,600.0	9,734.0	9,709.2	8,814.0	37.4	34.0	-47.78	693.1	-1,909.5	1,359.2	1,301.8	57.38	23.688	
10,700.0	9,734.0	9,809.2	8,814.0	37.8	34.4	-47.78	793.1	-1,910.2	1,359.2	1,301.0	58.20	23.355	
10,800.0	9,734.0	9,909.2	8,814.0	38.3	34.9	-47.78	893.0	-1,910.9	1,359.2	1,300.1	59.11	22.997	
10,900.0	9,734.0	10,009.2	8,814.0	38.9	35.5	-47.78	993.0	-1,911.6	1,359.2	1,299.1	60.10	22.618	
11,000.0	9,734.0	10,109.2	8,814.0	39.5	36.1	-47.78	1,093.0	-1,912.3	1,359.3	1,298.1	61.16	22.223	
11,100.0	9,734.0	10,209.2	8,814.0	40.2	36.8	-47.78	1,193.0	-1,913.0	1,359.3	1,297.0	62.31	21.816	
11,200.0	9,734.0	10,309.2	8,814.0	40.9	37.5	-47.78	1,293.0	-1,913.7	1,359.3	1,295.8	63.52	21.399	
11,300.0	9,734.0	10,409.2	8,814.0	41.6	38.3	-47.78	1,393.0	-1,914.4	1,359.3	1,294.5	64.80	20.977	
11,400.0	9,734.0	10,509.2	8,814.0	42.4	39.1	-47.78	1,493.0	-1,915.1	1,359.4	1,293.2	66.15	20.551	
11,500.0	9,734.0	10,609.2	8,814.0	43.2	39.9	-47.78	1,593.0	-1,915.8	1,359.4	1,291.8	67.55	20.125	
11,600.0	9,734.0	10,709.2	8,814.0	44.0	40.8	-47.79	1,693.0	-1,916.5	1,359.4	1,290.4	69.00	19.701	
11,700.0	9,734.0	10,809.2	8,814.0	44.9	41.7	-47.79	1,793.0	-1,917.2	1,359.4	1,288.9	70.51	19.279	
11,800.0	9,734.0	10,909.2	8,814.0	45.8	42.6	-47.79	1,893.0	-1,917.9	1,359.5	1,287.4	72.07	18.863	
11,900.0	9,734.0	11,009.2	8,814.0	46.7	43.6	-47.79	1,993.0	-1,918.6	1,359.5	1,285.8	73.67	18.453	
12,000.0	9,734.0	11,109.2	8,814.0	47.7	44.6	-47.79	2,093.0	-1,919.3	1,359.5	1,284.2	75.32	18.051	
12,100.0	9,734.0	11,209.2	8,814.0	48.6	45.6	-47.79	2,193.0	-1,920.0	1,359.5	1,282.5	77.00	17.657	
12,200.0	9,734.0	11,309.2	8,814.0	49.6	46.6	-47.79	2,293.0	-1,920.6	1,359.6	1,280.8	78.72	17.271	
12,300.0	9,734.0	11,409.2	8,814.0	50.7	47.7	-47.79	2,393.0	-1,921.3	1,359.6	1,279.1	80.47	16.895	
12,400.0	9,734.0	11,509.2	8,814.0	51.7	48.7	-47.79	2,493.0	-1,922.0	1,359.6	1,277.3	82.26	16.528	
12,500.0	9,734.0	11,609.2	8,814.0	52.8	49.8	-47.79	2,593.0	-1,922.7	1,359.6	1,275.6	84.08	16.171	
12,600.0	9,734.0	11,709.2	8,814.0	53.8	50.9	-47.79	2,693.0	-1,923.4	1,359.7	1,273.7	85.92	15.824	
12,700.0	9,734.0	11,809.2	8,814.0	54.9	52.0	-47.80	2,793.0	-1,924.1	1,359.7	1,271.9	87.79	15.487	
12,800.0	9,734.0	11,909.2	8,814.0	56.0	53.2	-47.80	2,893.0	-1,924.8	1,359.7	1,270.0	89.69	15.160	
12,900.0	9,734.0	12,009.2	8,814.0	57.2	54.3	-47.80	2,993.0	-1,925.5	1,359.7	1,268.1	91.61	14.843	
13,000.0	9,734.0	12,109.2	8,814.0	58.3	55.5	-47.80	3,093.0	-1,926.2	1,359.8	1,266.2	93.55	14.535	
13,100.0	9,734.0	12,209.2	8,814.0	59.5	56.7	-47.80	3,193.0	-1,926.9	1,359.8	1,264.3	95.51	14.237	
13,200.0	9,734.0	12,309.2	8,814.0	60.6	57.9	-47.80	3,293.0	-1,927.6	1,359.8	1,262.3	97.49	13.948	
13,300.0	9,734.0	12,409.2	8,814.0	61.8	59.1	-47.80	3,393.0	-1,928.3	1,359.8	1,260.3	99.49	13.668	
13,400.0	9,734.0	12,509.2	8,814.0	63.0	60.3	-47.80	3,493.0	-1,929.0	1,359.9	1,258.3	101.51	13.397	
13,500.0	9,734.0	12,609.2	8,814.0	64.2	61.5	-47.80	3,593.0	-1,929.7	1,359.9	1,256.3	103.54	13.134	
13,600.0	9,734.0	12,709.2	8,814.0	65.4	62.7	-47.80	3,693.0	-1,930.4	1,359.9	1,254.3	105.59	12.880	
13,700.0	9,734.0	12,809.2	8,814.0	66.6	64.0	-47.81	3,793.0	-1,931.1	1,359.9	1,252.3	107.65	12.633	
13,800.0	9,734.0	12,909.2	8,814.0	67.8	65.2	-47.81	3,893.0	-1,931.8	1,359.9	1,250.2	109.72	12.395	
13,900.0	9,734.0	13,009.2	8,814.0	69.1	66.5	-47.81	3,993.0	-1,932.5	1,360.0	1,248.2	111.81	12.164	
14,000.0	9,734.0	13,109.2	8,814.0	70.3	67.7	-47.81	4,093.0	-1,933.1	1,360.0	1,246.1	113.90	11.940	
14,100.0	9,734.0	13,209.2	8,814.0	71.6	69.0	-47.81	4,193.0	-1,933.8	1,360.0	1,244.0	116.01	11.723	
14,200.0	9,734.0	13,309.2	8,814.0	72.8	70.3	-47.81	4,293.0	-1,934.5	1,360.0	1,241.9	118.13	11.513	
14,300.0	9,734.0	13,409.2	8,814.0	74.1	71.6	-47.81	4,393.0	-1,935.2	1,360.1	1,239.8	120.26	11.309	
14,400.0	9,734.0	13,509.2	8,814.0	75.4	72.9	-47.81	4,493.0	-1,935.9	1,360.1	1,237.7	122.40	11.111	
14,500.0	9,734.0	13,609.2	8,814.0	76.6	74.2	-47.81	4,593.0	-1,936.6	1,360.1	1,235.6	124.55	10.920	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM												Offset Well Error:	0.0 usft
Reference		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)			
14,600.0	9,734.0	13,709.2	8,814.0	77.9	75.5	-47.81	4,693.0	-1,937.3	1,360.1	1,233.4	126.71	10.734	
14,700.0	9,734.0	13,809.2	8,814.0	79.2	76.8	-47.81	4,793.0	-1,938.0	1,360.2	1,231.3	128.88	10.554	
14,800.0	9,734.0	13,909.2	8,814.0	80.5	78.1	-47.82	4,893.0	-1,938.7	1,360.2	1,229.1	131.05	10.379	
14,900.0	9,734.0	14,009.2	8,814.0	81.8	79.4	-47.82	4,993.0	-1,939.4	1,360.2	1,227.0	133.23	10.209	
15,000.0	9,734.0	14,109.2	8,814.0	83.1	80.7	-47.82	5,092.9	-1,940.1	1,360.2	1,224.8	135.42	10.045	
15,100.0	9,734.0	14,209.2	8,814.0	84.4	82.0	-47.82	5,192.9	-1,940.8	1,360.3	1,222.7	137.61	9.885	
15,200.0	9,734.0	14,309.2	8,814.0	85.7	83.4	-47.82	5,292.9	-1,941.5	1,360.3	1,220.5	139.82	9.729	
15,300.0	9,734.0	14,409.2	8,814.0	87.0	84.7	-47.82	5,392.9	-1,942.2	1,360.3	1,218.3	142.02	9.578	
15,400.0	9,734.0	14,509.2	8,814.0	88.4	86.0	-47.82	5,492.9	-1,942.9	1,360.3	1,216.1	144.24	9.431	
15,500.0	9,734.0	14,609.2	8,814.0	89.7	87.4	-47.82	5,592.9	-1,943.6	1,360.4	1,213.9	146.45	9.289	
15,600.0	9,734.0	14,709.2	8,814.0	91.0	88.7	-47.82	5,692.9	-1,944.3	1,360.4	1,211.7	148.68	9.150	
15,700.0	9,734.0	14,809.2	8,814.0	92.4	90.1	-47.82	5,792.9	-1,944.9	1,360.4	1,209.5	150.91	9.015	
15,800.0	9,734.0	14,909.2	8,814.0	93.7	91.4	-47.82	5,892.9	-1,945.6	1,360.4	1,207.3	153.14	8.884	
15,900.0	9,734.0	15,009.2	8,814.0	95.0	92.8	-47.83	5,992.9	-1,946.3	1,360.5	1,205.1	155.38	8.756	
16,000.0	9,734.0	15,109.2	8,814.0	96.4	94.1	-47.83	6,092.9	-1,947.0	1,360.5	1,202.9	157.62	8.631	
16,100.0	9,734.0	15,209.2	8,814.0	97.7	95.5	-47.83	6,192.9	-1,947.7	1,360.5	1,200.6	159.87	8.510	
16,200.0	9,734.0	15,309.2	8,814.0	99.1	96.8	-47.83	6,292.9	-1,948.4	1,360.5	1,198.4	162.12	8.392	
16,300.0	9,734.0	15,409.2	8,814.0	100.4	98.2	-47.83	6,392.9	-1,949.1	1,360.6	1,196.2	164.38	8.277	
16,400.0	9,734.0	15,509.2	8,814.0	101.8	99.6	-47.83	6,492.9	-1,949.8	1,360.6	1,193.9	166.64	8.165	
16,500.0	9,734.0	15,609.2	8,814.0	103.1	100.9	-47.83	6,592.9	-1,950.5	1,360.6	1,191.7	168.90	8.056	
16,600.0	9,734.0	15,709.2	8,814.0	104.5	102.3	-47.83	6,692.9	-1,951.2	1,360.6	1,189.5	171.16	7.949	
16,700.0	9,734.0	15,809.2	8,814.0	105.8	103.7	-47.83	6,792.9	-1,951.9	1,360.7	1,187.2	173.43	7.845	
16,800.0	9,734.0	15,909.2	8,814.0	107.2	105.1	-47.83	6,892.9	-1,952.6	1,360.7	1,185.0	175.71	7.744	
16,900.0	9,734.0	16,009.2	8,814.0	108.6	106.4	-47.83	6,992.9	-1,953.3	1,360.7	1,182.7	177.98	7.645	
17,000.0	9,734.0	16,109.2	8,814.0	109.9	107.8	-47.84	7,092.9	-1,954.0	1,360.7	1,180.5	180.26	7.549	
17,100.0	9,734.0	16,209.2	8,814.0	111.3	109.2	-47.84	7,192.9	-1,954.7	1,360.8	1,178.2	182.54	7.454	
17,200.0	9,734.0	16,309.2	8,814.0	112.7	110.6	-47.84	7,292.9	-1,955.4	1,360.8	1,176.0	184.83	7.362	
17,300.0	9,734.0	16,409.2	8,814.0	114.1	112.0	-47.84	7,392.9	-1,956.1	1,360.8	1,173.7	187.11	7.273	
17,400.0	9,734.0	16,509.2	8,814.0	115.4	113.3	-47.84	7,492.9	-1,956.7	1,360.8	1,171.4	189.40	7.185	
17,500.0	9,734.0	16,609.2	8,814.0	116.8	114.7	-47.84	7,592.9	-1,957.4	1,360.9	1,169.2	191.70	7.099	
17,600.0	9,734.0	16,709.2	8,814.0	118.2	116.1	-47.84	7,692.9	-1,958.1	1,360.9	1,166.9	193.99	7.015	
17,700.0	9,734.0	16,809.2	8,814.0	119.6	117.5	-47.84	7,792.9	-1,958.8	1,360.9	1,164.6	196.29	6.933	
17,800.0	9,734.0	16,909.2	8,814.0	121.0	118.9	-47.84	7,892.9	-1,959.5	1,360.9	1,162.3	198.59	6.853	
17,900.0	9,734.0	17,009.2	8,814.0	122.3	120.3	-47.84	7,992.9	-1,960.2	1,360.9	1,160.1	200.89	6.775	
18,000.0	9,734.0	17,109.2	8,814.0	123.7	121.7	-47.85	8,092.9	-1,960.9	1,361.0	1,157.8	203.19	6.698	
18,100.0	9,734.0	17,209.2	8,814.0	125.1	123.1	-47.85	8,192.9	-1,961.6	1,361.0	1,155.5	205.50	6.623	
18,200.0	9,734.0	17,309.2	8,814.0	126.5	124.5	-47.85	8,292.9	-1,962.3	1,361.0	1,153.2	207.80	6.550	
18,300.0	9,734.0	17,409.2	8,814.0	127.9	125.9	-47.85	8,392.9	-1,963.0	1,361.0	1,150.9	210.11	6.478	
18,400.0	9,734.0	17,509.2	8,814.0	129.3	127.3	-47.85	8,492.9	-1,963.7	1,361.1	1,148.6	212.43	6.407	
18,500.0	9,734.0	17,609.2	8,814.0	130.7	128.7	-47.85	8,592.9	-1,964.4	1,361.1	1,146.4	214.74	6.338	
18,600.0	9,734.0	17,709.2	8,814.0	132.1	130.1	-47.85	8,692.9	-1,965.1	1,361.1	1,144.1	217.05	6.271	
18,700.0	9,734.0	17,809.2	8,814.0	133.4	131.5	-47.85	8,792.9	-1,965.8	1,361.1	1,141.8	219.37	6.205	
18,800.0	9,734.0	17,909.2	8,814.0	134.8	132.9	-47.85	8,892.9	-1,966.5	1,361.2	1,139.5	221.69	6.140	
18,900.0	9,734.0	18,009.2	8,814.0	136.2	134.3	-47.85	8,992.9	-1,967.2	1,361.2	1,137.2	224.01	6.077	
19,000.0	9,734.0	18,109.2	8,814.0	137.6	135.7	-47.85	9,092.9	-1,967.9	1,361.2	1,134.9	226.33	6.014	
19,100.0	9,734.0	18,209.2	8,814.0	139.0	137.1	-47.86	9,192.8	-1,968.6	1,361.2	1,132.6	228.65	5.953	
19,200.0	9,734.0	18,309.2	8,814.0	140.4	138.5	-47.86	9,292.8	-1,969.2	1,361.3	1,130.3	230.97	5.894	
19,300.0	9,734.0	18,409.2	8,814.0	141.8	139.9	-47.86	9,392.8	-1,969.9	1,361.3	1,128.0	233.30	5.835	
19,400.0	9,734.0	18,509.2	8,814.0	143.2	141.3	-47.86	9,492.8	-1,970.6	1,361.3	1,125.7	235.63	5.777	
19,500.0	9,734.0	18,609.2	8,814.0	144.6	142.7	-47.86	9,592.8	-1,971.3	1,361.3	1,123.4	237.95	5.721	
19,600.0	9,734.0	18,709.2	8,814.0	146.0	144.1	-47.86	9,692.8	-1,972.0	1,361.4	1,121.1	240.28	5.666	
19,700.0	9,734.0	18,809.2	8,814.0	147.4	145.5	-47.86	9,792.8	-1,972.7	1,361.4	1,118.8	242.61	5.611	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 303H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM													Offset Well Error:	0.0 usft
Reference		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	
19,800.0	9,734.0	18,909.2	8,814.0	148.8	146.9	-47.86	9,892.8	-1,973.4	1,361.4	1,116.5	244.94	5.558		
19,900.0	9,734.0	19,009.2	8,814.0	150.3	148.3	-47.86	9,992.8	-1,974.1	1,361.4	1,114.2	247.28	5.506		
20,000.0	9,734.0	19,109.2	8,814.0	151.7	149.8	-47.86	10,092.8	-1,974.8	1,361.5	1,111.8	249.61	5.454		
20,000.0	9,734.0	19,109.2	8,814.0	151.7	149.8	-47.86	10,092.9	-1,974.8	1,361.5	1,111.8	249.61	5.454		
20,019.5	9,734.0	19,126.6	8,814.0	151.9	150.0	-47.86	10,110.3	-1,974.9	1,361.5	1,111.4	250.05	5.445 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)			
6,700.0	6,655.0	6,663.0	6,645.9	25.1	23.4	15.98	-318.4	-2,796.6	2,194.2	2,146.9	47.21	46.473	
6,800.0	6,754.0	6,762.0	6,744.9	25.5	23.7	16.08	-318.4	-2,796.6	2,180.5	2,132.6	47.93	45.497	
6,900.0	6,853.0	6,861.0	6,843.9	25.9	24.1	16.18	-318.4	-2,796.6	2,166.8	2,118.2	48.64	44.550	
7,000.0	6,952.0	6,960.0	6,942.9	26.3	24.4	16.29	-318.4	-2,796.6	2,153.1	2,103.8	49.35	43.629	
7,100.0	7,050.9	7,059.0	7,041.8	26.7	24.8	16.40	-318.4	-2,796.6	2,139.5	2,089.4	50.06	42.734	
7,200.0	7,149.9	7,157.9	7,140.8	27.1	25.1	16.50	-318.4	-2,796.6	2,125.8	2,075.1	50.78	41.865	
7,300.0	7,248.9	7,256.9	7,239.8	27.5	25.4	16.61	-318.4	-2,796.6	2,112.2	2,060.7	51.49	41.018	
7,400.0	7,347.9	7,355.9	7,338.8	27.9	25.8	16.72	-318.4	-2,796.6	2,098.6	2,046.4	52.21	40.195	
7,500.0	7,446.9	7,454.9	7,437.8	28.3	26.1	16.84	-318.4	-2,796.6	2,084.9	2,032.0	52.93	39.394	
7,600.0	7,545.9	7,553.9	7,536.8	28.8	26.5	16.95	-318.4	-2,796.6	2,071.3	2,017.7	53.64	38.614	
7,700.0	7,644.8	7,652.9	7,635.7	29.2	26.8	17.07	-318.4	-2,796.6	2,057.7	2,003.4	54.36	37.854	
7,800.0	7,743.8	7,751.8	7,734.7	29.6	27.2	17.18	-318.4	-2,796.6	2,044.1	1,989.0	55.08	37.114	
7,900.0	7,842.8	7,850.8	7,833.7	30.0	27.5	17.30	-318.4	-2,796.6	2,030.5	1,974.7	55.80	36.392	
8,000.0	7,941.8	7,949.8	7,932.7	30.4	27.9	17.42	-318.4	-2,796.6	2,016.9	1,960.4	56.51	35.689	
8,100.0	8,040.8	8,048.8	8,031.7	30.8	28.2	17.54	-318.4	-2,796.6	2,003.4	1,946.1	57.23	35.003	
8,200.0	8,139.8	8,147.8	8,130.7	31.2	28.5	17.67	-318.4	-2,796.6	1,989.8	1,931.8	57.95	34.335	
8,300.0	8,238.8	8,246.8	8,229.7	31.6	28.9	17.79	-318.4	-2,796.6	1,976.2	1,917.6	58.67	33.682	
8,400.0	8,337.7	8,345.7	8,328.6	32.0	29.2	17.92	-318.4	-2,796.6	1,962.7	1,903.3	59.39	33.045	
8,500.0	8,436.7	8,444.7	8,427.6	32.4	29.6	18.05	-318.4	-2,796.6	1,949.2	1,889.0	60.12	32.423	
8,600.0	8,535.7	8,543.7	8,526.6	32.8	29.9	18.18	-318.4	-2,796.6	1,935.6	1,874.8	60.84	31.816	
8,700.0	8,634.7	8,642.7	8,625.6	33.2	30.3	18.27	-318.4	-2,796.6	1,922.4	1,860.8	61.56	31.229	
8,800.0	8,734.1	8,742.1	8,725.0	33.6	30.6	18.31	-318.4	-2,796.6	1,911.9	1,849.7	62.28	30.701	
8,900.0	8,833.8	8,841.8	8,824.7	34.0	31.0	18.33	-318.4	-2,796.6	1,904.8	1,841.8	62.99	30.240	
9,000.0	8,933.7	8,941.7	8,924.6	34.3	31.3	18.35	-318.4	-2,796.6	1,900.9	1,837.2	63.69	29.845	
9,099.9	9,033.6	9,041.6	9,024.5	34.7	31.7	-90.41	-318.4	-2,796.6	1,899.8	1,835.4	64.38	29.509 CC	
9,100.0	9,033.7	9,041.7	9,024.6	34.7	31.7	-90.42	-318.4	-2,796.6	1,900.2	1,835.8	64.38	29.515	
9,200.0	9,133.7	9,141.7	9,124.6	35.0	32.0	-90.42	-318.4	-2,796.6	1,900.2	1,835.1	65.06	29.205	
9,300.0	9,233.7	9,241.7	9,224.6	35.3	32.4	-90.42	-318.4	-2,796.6	1,900.2	1,834.5	65.75	28.902	
9,400.0	9,333.4	9,329.8	9,312.6	35.6	32.7	-90.07	-315.1	-2,796.8	1,900.4	1,834.0	66.38	28.628	
9,500.0	9,429.7	9,412.7	9,393.6	35.9	32.9	-90.09	-298.3	-2,797.8	1,901.5	1,834.6	66.94	28.404	
9,600.0	9,518.4	9,496.5	9,471.4	36.1	33.2	-90.09	-267.4	-2,799.7	1,903.6	1,836.1	67.44	28.227	
9,700.0	9,595.7	9,581.7	9,543.7	36.2	33.4	-90.07	-222.6	-2,802.4	1,906.5	1,838.6	67.87	28.091	
9,800.0	9,658.2	9,668.8	9,608.1	36.3	33.6	-90.04	-164.3	-2,806.0	1,910.2	1,841.9	68.25	27.988	
9,900.0	9,703.1	9,758.2	9,662.1	36.4	33.8	-90.00	-93.3	-2,810.3	1,914.6	1,846.0	68.60	27.908	
10,000.0	9,728.5	9,850.7	9,703.0	36.3	34.0	-89.96	-10.7	-2,815.4	1,919.6	1,850.6	68.94	27.845	
10,100.0	9,734.0	9,947.0	9,727.8	36.3	34.1	-90.09	82.1	-2,821.1	1,924.9	1,855.7	69.26	27.793	
10,200.0	9,734.0	10,097.4	9,734.0	36.4	34.4	-90.27	231.9	-2,829.3	1,930.1	1,860.3	69.74	27.677	
10,300.0	9,734.0	10,252.2	9,734.0	36.5	34.8	-90.27	386.7	-2,831.5	1,930.5	1,860.1	70.39	27.425	
10,400.0	9,734.0	10,352.2	9,734.0	36.7	35.2	-90.27	486.7	-2,832.2	1,930.5	1,859.5	71.04	27.175	
10,500.0	9,734.0	10,452.2	9,734.0	37.0	35.6	-90.27	586.7	-2,832.9	1,930.6	1,858.8	71.80	26.888	
10,600.0	9,734.0	10,552.2	9,734.0	37.4	36.0	-90.27	686.7	-2,833.6	1,930.6	1,857.9	72.67	26.568	
10,700.0	9,734.0	10,652.2	9,734.0	37.8	36.5	-90.27	786.7	-2,834.3	1,930.6	1,857.0	73.64	26.218	
10,800.0	9,734.0	10,752.2	9,734.0	38.3	37.1	-90.27	886.6	-2,835.0	1,930.7	1,855.9	74.71	25.843	
10,900.0	9,734.0	10,852.2	9,734.0	38.9	37.6	-90.27	986.6	-2,835.7	1,930.7	1,854.8	75.87	25.447	
11,000.0	9,734.0	10,952.2	9,734.0	39.5	38.3	-90.27	1,086.6	-2,836.4	1,930.7	1,853.6	77.13	25.032	
11,100.0	9,734.0	11,052.2	9,734.0	40.2	39.0	-90.27	1,186.6	-2,837.1	1,930.7	1,852.3	78.47	24.604	
11,200.0	9,734.0	11,152.2	9,734.0	40.9	39.7	-90.27	1,286.6	-2,837.7	1,930.8	1,850.9	79.90	24.166	
11,300.0	9,734.0	11,252.2	9,734.0	41.6	40.5	-90.27	1,386.6	-2,838.4	1,930.8	1,849.4	81.40	23.720	
11,400.0	9,734.0	11,352.2	9,734.0	42.4	41.3	-90.27	1,486.6	-2,839.1	1,930.8	1,847.9	82.98	23.269	
11,500.0	9,734.0	11,452.2	9,734.0	43.2	42.1	-90.27	1,586.6	-2,839.8	1,930.9	1,846.3	84.63	22.817	
11,600.0	9,734.0	11,552.2	9,734.0	44.0	43.0	-90.27	1,686.6	-2,840.5	1,930.9	1,844.6	86.34	22.365	
11,700.0	9,734.0	11,652.2	9,734.0	44.9	43.9	-90.27	1,786.6	-2,841.2	1,930.9	1,842.8	88.11	21.915	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)			
11,800.0	9,734.0	11,752.2	9,734.0	45.8	44.8	-90.27	1,886.6	-2,841.9	1,931.0	1,841.0	89.94	21.468	
11,900.0	9,734.0	11,852.2	9,734.0	46.7	45.8	-90.27	1,986.6	-2,842.6	1,931.0	1,839.2	91.83	21.028	
12,000.0	9,734.0	11,952.2	9,734.0	47.7	46.7	-90.27	2,086.6	-2,843.3	1,931.0	1,837.3	93.77	20.593	
12,100.0	9,734.0	12,052.2	9,734.0	48.6	47.7	-90.27	2,186.6	-2,844.0	1,931.1	1,835.3	95.76	20.166	
12,200.0	9,734.0	12,152.2	9,734.0	49.6	48.8	-90.27	2,286.6	-2,844.7	1,931.1	1,833.3	97.79	19.747	
12,300.0	9,734.0	12,252.2	9,734.0	50.7	49.8	-90.27	2,386.6	-2,845.4	1,931.1	1,831.3	99.86	19.337	
12,400.0	9,734.0	12,352.2	9,734.0	51.7	50.9	-90.27	2,486.6	-2,846.1	1,931.2	1,829.2	101.98	18.937	
12,500.0	9,734.0	12,452.2	9,734.0	52.8	52.0	-90.27	2,586.6	-2,846.8	1,931.2	1,827.1	104.13	18.546	
12,600.0	9,734.0	12,552.2	9,734.0	53.8	53.1	-90.27	2,686.6	-2,847.5	1,931.2	1,824.9	106.32	18.164	
12,700.0	9,734.0	12,652.2	9,734.0	54.9	54.2	-90.27	2,786.6	-2,848.1	1,931.3	1,822.7	108.54	17.793	
12,800.0	9,734.0	12,752.2	9,734.0	56.0	55.3	-90.27	2,886.6	-2,848.8	1,931.3	1,820.5	110.79	17.432	
12,900.0	9,734.0	12,852.2	9,734.0	57.2	56.5	-90.27	2,986.6	-2,849.5	1,931.3	1,818.3	113.07	17.080	
13,000.0	9,734.0	12,952.2	9,734.0	58.3	57.6	-90.27	3,086.6	-2,850.2	1,931.4	1,816.0	115.38	16.739	
13,100.0	9,734.0	13,052.2	9,734.0	59.5	58.8	-90.27	3,186.6	-2,850.9	1,931.4	1,813.7	117.72	16.407	
13,200.0	9,734.0	13,152.2	9,734.0	60.6	60.0	-90.27	3,286.6	-2,851.6	1,931.4	1,811.3	120.08	16.085	
13,300.0	9,734.0	13,252.2	9,734.0	61.8	61.2	-90.27	3,386.6	-2,852.3	1,931.5	1,809.0	122.46	15.772	
13,400.0	9,734.0	13,352.2	9,734.0	63.0	62.4	-90.27	3,486.6	-2,853.0	1,931.5	1,806.6	124.86	15.469	
13,500.0	9,734.0	13,452.2	9,734.0	64.2	63.6	-90.27	3,586.6	-2,853.7	1,931.5	1,804.2	127.29	15.175	
13,600.0	9,734.0	13,552.2	9,734.0	65.4	64.8	-90.27	3,686.6	-2,854.4	1,931.6	1,801.8	129.73	14.889	
13,700.0	9,734.0	13,652.2	9,734.0	66.6	66.1	-90.27	3,786.6	-2,855.1	1,931.6	1,799.4	132.19	14.612	
13,800.0	9,734.0	13,752.2	9,734.0	67.8	67.3	-90.27	3,886.6	-2,855.8	1,931.6	1,796.9	134.67	14.343	
13,900.0	9,734.0	13,852.2	9,734.0	69.1	68.6	-90.27	3,986.6	-2,856.5	1,931.6	1,794.5	137.16	14.083	
14,000.0	9,734.0	13,952.2	9,734.0	70.3	69.8	-90.27	4,086.6	-2,857.2	1,931.7	1,792.0	139.67	13.830	
14,100.0	9,734.0	14,052.2	9,734.0	71.6	71.1	-90.27	4,186.6	-2,857.9	1,931.7	1,789.5	142.20	13.584	
14,200.0	9,734.0	14,152.2	9,734.0	72.8	72.4	-90.27	4,286.6	-2,858.5	1,931.7	1,787.0	144.74	13.346	
14,300.0	9,734.0	14,252.2	9,734.0	74.1	73.7	-90.27	4,386.6	-2,859.2	1,931.8	1,784.5	147.29	13.115	
14,400.0	9,734.0	14,352.2	9,734.0	75.4	75.0	-90.27	4,486.6	-2,859.9	1,931.8	1,782.0	149.86	12.891	
14,500.0	9,734.0	14,452.2	9,734.0	76.6	76.2	-90.27	4,586.6	-2,860.6	1,931.8	1,779.4	152.43	12.673	
14,600.0	9,734.0	14,552.2	9,734.0	77.9	77.5	-90.27	4,686.6	-2,861.3	1,931.9	1,776.9	155.02	12.462	
14,700.0	9,734.0	14,652.2	9,734.0	79.2	78.8	-90.27	4,786.6	-2,862.0	1,931.9	1,774.3	157.62	12.257	
14,800.0	9,734.0	14,752.2	9,734.0	80.5	80.2	-90.27	4,886.6	-2,862.7	1,931.9	1,771.7	160.23	12.058	
14,900.0	9,734.0	14,852.2	9,734.0	81.8	81.5	-90.27	4,986.6	-2,863.4	1,932.0	1,769.1	162.84	11.864	
15,000.0	9,734.0	14,952.2	9,734.0	83.1	82.8	-90.27	5,086.6	-2,864.1	1,932.0	1,766.5	165.47	11.676	
15,100.0	9,734.0	15,052.2	9,734.0	84.4	84.1	-90.27	5,186.5	-2,864.8	1,932.0	1,763.9	168.11	11.493	
15,200.0	9,734.0	15,152.2	9,734.0	85.7	85.4	-90.27	5,286.5	-2,865.5	1,932.1	1,761.3	170.75	11.315	
15,300.0	9,734.0	15,252.2	9,734.0	87.0	86.8	-90.27	5,386.5	-2,866.2	1,932.1	1,758.7	173.41	11.142	
15,400.0	9,734.0	15,352.2	9,734.0	88.4	88.1	-90.27	5,486.5	-2,866.9	1,932.1	1,756.1	176.07	10.974	
15,500.0	9,734.0	15,452.2	9,734.0	89.7	89.4	-90.27	5,586.5	-2,867.6	1,932.2	1,753.4	178.73	10.810	
15,600.0	9,734.0	15,552.2	9,734.0	91.0	90.8	-90.27	5,686.5	-2,868.3	1,932.2	1,750.8	181.41	10.651	
15,700.0	9,734.0	15,652.2	9,734.0	92.4	92.1	-90.27	5,786.5	-2,869.0	1,932.2	1,748.1	184.09	10.496	
15,800.0	9,734.0	15,752.2	9,734.0	93.7	93.5	-90.27	5,886.5	-2,869.6	1,932.3	1,745.5	186.78	10.345	
15,900.0	9,734.0	15,852.2	9,734.0	95.0	94.8	-90.27	5,986.5	-2,870.3	1,932.3	1,742.8	189.47	10.198	
16,000.0	9,734.0	15,952.2	9,734.0	96.4	96.2	-90.27	6,086.5	-2,871.0	1,932.3	1,740.2	192.17	10.055	
16,100.0	9,734.0	16,052.2	9,734.0	97.7	97.5	-90.27	6,186.5	-2,871.7	1,932.4	1,737.5	194.87	9.916	
16,200.0	9,734.0	16,152.2	9,734.0	99.1	98.9	-90.27	6,286.5	-2,872.4	1,932.4	1,734.8	197.58	9.780	
16,300.0	9,734.0	16,252.2	9,734.0	100.4	100.2	-90.27	6,386.5	-2,873.1	1,932.4	1,732.1	200.30	9.648	
16,400.0	9,734.0	16,352.2	9,734.0	101.8	101.6	-90.27	6,486.5	-2,873.8	1,932.5	1,729.4	203.02	9.518	
16,500.0	9,734.0	16,452.2	9,734.0	103.1	103.0	-90.27	6,586.5	-2,874.5	1,932.5	1,726.7	205.75	9.393	
16,600.0	9,734.0	16,552.2	9,734.0	104.5	104.3	-90.27	6,686.5	-2,875.2	1,932.5	1,724.0	208.48	9.270	
16,700.0	9,734.0	16,652.2	9,734.0	105.8	105.7	-90.27	6,786.5	-2,875.9	1,932.5	1,721.3	211.21	9.150	
16,800.0	9,734.0	16,752.2	9,734.0	107.2	107.1	-90.27	6,886.5	-2,876.6	1,932.6	1,718.6	213.95	9.033	
16,900.0	9,734.0	16,852.2	9,734.0	108.6	108.4	-90.27	6,986.5	-2,877.3	1,932.6	1,715.9	216.69	8.919	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)			
17,000.0	9,734.0	16,952.2	9,734.0	109.9	109.8	-90.27	7,086.5	-2,878.0	1,932.6	1,713.2	219.44	8.807	
17,100.0	9,734.0	17,052.2	9,734.0	111.3	111.2	-90.27	7,186.5	-2,878.7	1,932.7	1,710.5	222.19	8.698	
17,200.0	9,734.0	17,152.2	9,734.0	112.7	112.6	-90.27	7,286.5	-2,879.4	1,932.7	1,707.8	224.94	8.592	
17,300.0	9,734.0	17,252.2	9,734.0	114.1	114.0	-90.27	7,386.5	-2,880.0	1,932.7	1,705.0	227.70	8.488	
17,400.0	9,734.0	17,352.2	9,734.0	115.4	115.3	-90.27	7,486.5	-2,880.7	1,932.8	1,702.3	230.46	8.387	
17,500.0	9,734.0	17,452.2	9,734.0	116.8	116.7	-90.27	7,586.5	-2,881.4	1,932.8	1,699.6	233.22	8.287	
17,600.0	9,734.0	17,552.2	9,734.0	118.2	118.1	-90.27	7,686.5	-2,882.1	1,932.8	1,696.8	235.99	8.190	
17,700.0	9,734.0	17,652.2	9,734.0	119.6	119.5	-90.27	7,786.5	-2,882.8	1,932.9	1,694.1	238.76	8.095	
17,800.0	9,734.0	17,752.2	9,734.0	121.0	120.9	-90.27	7,886.5	-2,883.5	1,932.9	1,691.4	241.53	8.003	
17,900.0	9,734.0	17,852.2	9,734.0	122.3	122.3	-90.27	7,986.5	-2,884.2	1,932.9	1,688.6	244.31	7.912	
18,000.0	9,734.0	17,952.2	9,734.0	123.7	123.7	-90.27	8,086.5	-2,884.9	1,933.0	1,685.9	247.09	7.823	
18,100.0	9,734.0	18,052.2	9,734.0	125.1	125.1	-90.27	8,186.5	-2,885.6	1,933.0	1,683.1	249.87	7.736	
18,200.0	9,734.0	18,152.2	9,734.0	126.5	126.5	-90.27	8,286.5	-2,886.3	1,933.0	1,680.4	252.65	7.651	
18,300.0	9,734.0	18,252.2	9,734.0	127.9	127.8	-90.27	8,386.5	-2,887.0	1,933.1	1,677.6	255.44	7.568	
18,400.0	9,734.0	18,352.2	9,734.0	129.3	129.2	-90.27	8,486.5	-2,887.7	1,933.1	1,674.9	258.23	7.486	
18,500.0	9,734.0	18,452.2	9,734.0	130.7	130.6	-90.27	8,586.5	-2,888.4	1,933.1	1,672.1	261.02	7.406	
18,600.0	9,734.0	18,552.2	9,734.0	132.1	132.0	-90.27	8,686.5	-2,889.1	1,933.2	1,669.3	263.81	7.328	
18,700.0	9,734.0	18,652.2	9,734.0	133.4	133.4	-90.27	8,786.5	-2,889.8	1,933.2	1,666.6	266.61	7.251	
18,800.0	9,734.0	18,752.2	9,734.0	134.8	134.8	-90.27	8,886.5	-2,890.4	1,933.2	1,663.8	269.41	7.176	
18,900.0	9,734.0	18,852.2	9,734.0	136.2	136.2	-90.27	8,986.5	-2,891.1	1,933.3	1,661.0	272.20	7.102	
19,000.0	9,734.0	18,952.2	9,734.0	137.6	137.6	-90.27	9,086.5	-2,891.8	1,933.3	1,658.3	275.01	7.030	
19,100.0	9,734.0	19,052.2	9,734.0	139.0	139.0	-90.27	9,186.4	-2,892.5	1,933.3	1,655.5	277.81	6.959	
19,200.0	9,734.0	19,152.2	9,734.0	140.4	140.4	-90.27	9,286.4	-2,893.2	1,933.4	1,652.7	280.62	6.890	
19,300.0	9,734.0	19,252.2	9,734.0	141.8	141.9	-90.27	9,386.4	-2,893.9	1,933.4	1,650.0	283.42	6.822	
19,400.0	9,734.0	19,352.2	9,734.0	143.2	143.3	-90.27	9,486.4	-2,894.6	1,933.4	1,647.2	286.23	6.755	
19,500.0	9,734.0	19,452.2	9,734.0	144.6	144.7	-90.27	9,586.4	-2,895.3	1,933.4	1,644.4	289.04	6.689	
19,600.0	9,734.0	19,552.2	9,734.0	146.0	146.1	-90.27	9,686.4	-2,896.0	1,933.5	1,641.6	291.85	6.625	
19,700.0	9,734.0	19,652.2	9,734.0	147.4	147.5	-90.27	9,786.4	-2,896.7	1,933.5	1,638.8	294.67	6.562	
19,800.0	9,734.0	19,752.2	9,734.0	148.8	148.9	-90.27	9,886.4	-2,897.4	1,933.5	1,636.1	297.48	6.500	
19,900.0	9,734.0	19,852.2	9,734.0	150.3	150.3	-90.27	9,986.4	-2,898.1	1,933.6	1,633.3	300.30	6.439	
20,000.0	9,734.0	19,952.2	9,734.0	151.7	151.6	-90.27	10,086.4	-2,898.8	1,933.6	1,630.6	303.00	6.382	
20,019.5	9,734.0	19,968.0	9,734.0	151.9	151.8	-90.27	10,102.2	-2,898.9	1,933.6	1,630.1	303.48	6.372 ES, 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)			
7,200.0	7,149.9	7,138.4	7,138.4	27.1	25.4	20.26	-178.7	-2,861.6	2,189.6	2,138.5	51.12	42.831	
7,300.0	7,248.9	7,237.4	7,237.4	27.5	25.7	20.39	-178.7	-2,861.6	2,176.2	2,124.4	51.85	41.971	
7,400.0	7,347.9	7,336.4	7,336.4	27.9	26.1	20.52	-178.7	-2,861.6	2,162.9	2,110.3	52.58	41.134	
7,500.0	7,446.9	7,435.4	7,435.4	28.3	26.4	20.66	-178.7	-2,861.6	2,149.6	2,096.3	53.31	40.320	
7,600.0	7,545.9	7,543.2	7,543.2	28.8	26.8	20.79	-179.0	-2,861.6	2,136.2	2,082.1	54.06	39.517	
7,700.0	7,644.8	7,667.5	7,667.5	29.2	27.2	20.84	-183.4	-2,860.4	2,121.9	2,067.1	54.81	38.712	
7,800.0	7,743.8	7,769.3	7,769.0	29.6	27.5	20.82	-189.7	-2,858.9	2,106.8	2,051.3	55.51	37.957	
7,900.0	7,842.8	7,868.1	7,867.6	30.0	27.9	20.79	-195.7	-2,857.4	2,091.8	2,035.6	56.20	37.222	
8,000.0	7,941.8	7,967.0	7,966.3	30.4	28.2	20.76	-201.8	-2,855.8	2,076.8	2,019.9	56.89	36.505	
8,100.0	8,040.8	8,065.9	8,065.0	30.8	28.5	20.73	-207.9	-2,854.3	2,061.7	2,004.2	57.58	35.804	
8,200.0	8,139.8	8,164.7	8,163.6	31.2	28.8	20.70	-214.0	-2,852.8	2,046.7	1,988.4	58.28	35.119	
8,300.0	8,238.8	8,263.6	8,262.3	31.6	29.2	20.67	-220.0	-2,851.3	2,031.7	1,972.7	58.97	34.450	
8,400.0	8,337.7	8,362.4	8,360.9	32.0	29.5	20.64	-226.1	-2,849.7	2,016.7	1,957.0	59.67	33.796	
8,500.0	8,436.7	8,461.3	8,459.6	32.4	29.8	20.61	-232.2	-2,848.2	2,001.6	1,941.3	60.37	33.156	
8,600.0	8,535.7	8,560.2	8,558.3	32.8	30.1	20.58	-238.3	-2,846.7	1,986.6	1,925.5	61.07	32.531	
8,700.0	8,634.7	8,659.0	8,657.0	33.2	30.5	20.50	-244.4	-2,845.2	1,971.9	1,910.1	61.77	31.924	
8,800.0	8,734.1	8,758.3	8,756.0	33.6	30.8	20.35	-250.5	-2,843.6	1,959.8	1,897.4	62.46	31.376	
8,900.0	8,833.8	8,857.8	8,855.4	34.0	31.1	20.18	-256.6	-2,842.1	1,951.1	1,887.9	63.15	30.894	
9,000.0	8,933.7	8,957.6	8,954.9	34.3	31.5	20.01	-262.7	-2,840.5	1,945.6	1,881.7	63.84	30.478	
9,100.0	9,033.7	9,057.4	9,054.5	34.7	31.8	-88.95	-268.8	-2,839.0	1,943.2	1,878.7	64.50	30.126	
9,200.0	9,133.7	9,157.2	9,154.1	35.0	32.1	-89.13	-275.0	-2,837.5	1,941.5	1,876.4	65.16	29.795	
9,300.0	9,233.7	9,257.0	9,253.7	35.3	32.5	-89.31	-281.1	-2,835.9	1,939.9	1,874.1	65.83	29.470	
9,400.0	9,333.4	9,356.0	9,352.6	35.6	32.8	-89.45	-287.2	-2,834.4	1,938.2	1,871.7	66.47	29.158	
9,500.0	9,429.7	9,450.5	9,446.9	35.9	33.1	-90.53	-293.0	-2,832.9	1,936.6	1,869.6	67.06	28.879	
9,575.6	9,497.7	9,516.4	9,512.6	36.0	33.3	-91.54	-297.1	-2,831.9	1,936.1	1,868.7	67.45	28.704 CC	
9,600.0	9,518.4	9,536.3	9,532.4	36.1	33.4	-91.88	-298.3	-2,831.6	1,936.2	1,868.6	67.57	28.653	
9,700.0	9,595.7	9,609.5	9,605.5	36.2	33.6	-93.09	-302.8	-2,830.5	1,938.3	1,870.3	68.01	28.499	
9,800.0	9,658.2	9,667.0	9,662.9	36.3	33.8	-93.74	-306.3	-2,829.6	1,944.4	1,876.0	68.39	28.432	
9,900.0	9,703.1	9,706.4	9,702.2	36.4	34.0	-93.44	-308.7	-2,829.0	1,955.7	1,887.0	68.71	28.463	
10,000.0	9,728.5	9,725.8	9,721.5	36.3	34.0	-91.92	-309.9	-2,828.7	1,972.7	1,903.7	68.99	28.592	
10,100.0	9,734.0	9,725.2	9,720.9	36.3	34.0	-89.95	-309.9	-2,828.7	1,995.2	1,926.0	69.24	28.814	
10,200.0	9,734.0	9,719.0	9,714.8	36.4	34.0	-89.77	-309.5	-2,828.8	2,022.4	1,952.9	69.54	29.083	
10,300.0	9,734.0	9,712.8	9,708.6	36.5	34.0	-89.59	-309.1	-2,828.9	2,054.2	1,984.2	69.91	29.385	
10,400.0	9,734.0	9,706.7	9,702.5	36.7	34.0	-89.41	-308.8	-2,829.0	2,090.2	2,019.8	70.32	29.722	
10,500.0	9,734.0	11,233.6	10,529.0	37.0	38.5	-112.67	586.6	-2,832.8	2,092.2	2,022.7	69.50	30.102	
10,600.0	9,734.0	11,333.6	10,529.0	37.4	39.0	-112.67	686.6	-2,833.5	2,092.2	2,021.9	70.29	29.763	
10,700.0	9,734.0	11,433.6	10,529.0	37.8	39.5	-112.67	786.6	-2,834.2	2,092.2	2,021.0	71.18	29.392	
10,800.0	9,734.0	11,533.6	10,529.0	38.3	40.0	-112.67	886.6	-2,834.9	2,092.3	2,020.1	72.17	28.993	
10,900.0	9,734.0	11,633.6	10,529.0	38.9	40.6	-112.67	986.6	-2,835.6	2,092.3	2,019.0	73.24	28.569	
11,000.0	9,734.0	11,733.6	10,529.0	39.5	41.3	-112.67	1,086.6	-2,836.3	2,092.3	2,017.9	74.39	28.125	
11,100.0	9,734.0	11,833.6	10,529.0	40.2	41.9	-112.67	1,186.6	-2,837.0	2,092.3	2,016.7	75.63	27.664	
11,200.0	9,734.0	11,933.6	10,529.0	40.9	42.6	-112.67	1,286.6	-2,837.7	2,092.4	2,015.4	76.95	27.191	
11,300.0	9,734.0	12,033.6	10,529.0	41.6	43.4	-112.67	1,386.6	-2,838.4	2,092.4	2,014.1	78.34	26.708	
11,400.0	9,734.0	12,133.6	10,529.0	42.4	44.2	-112.67	1,486.6	-2,839.1	2,092.4	2,012.6	79.80	26.220	
11,500.0	9,734.0	12,233.6	10,529.0	43.2	45.0	-112.67	1,586.6	-2,839.8	2,092.5	2,011.1	81.33	25.728	
11,600.0	9,734.0	12,333.6	10,529.0	44.0	45.8	-112.67	1,686.6	-2,840.5	2,092.5	2,009.6	82.92	25.235	
11,700.0	9,734.0	12,433.6	10,529.0	44.9	46.7	-112.67	1,786.6	-2,841.2	2,092.5	2,008.0	84.57	24.743	
11,800.0	9,734.0	12,533.6	10,529.0	45.8	47.6	-112.67	1,886.6	-2,841.8	2,092.6	2,006.3	86.28	24.254	
11,900.0	9,734.0	12,633.6	10,529.0	46.7	48.6	-112.67	1,986.6	-2,842.5	2,092.6	2,004.6	88.03	23.770	
12,000.0	9,734.0	12,733.6	10,529.0	47.7	49.5	-112.67	2,086.6	-2,843.2	2,092.6	2,002.8	89.84	23.293	
12,100.0	9,734.0	12,833.6	10,529.0	48.6	50.5	-112.67	2,186.6	-2,843.9	2,092.6	2,001.0	91.69	22.822	
12,200.0	9,734.0	12,933.6	10,529.0	49.6	51.5	-112.67	2,286.6	-2,844.6	2,092.7	1,999.1	93.59	22.360	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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)			
12,300.0	9,734.0	13,033.6	10,529.0	50.7	52.5	-112.67	2,386.6	-2,845.3	2,092.7	1,997.2	95.53	21.907	
12,400.0	9,734.0	13,133.6	10,529.0	51.7	53.6	-112.67	2,486.6	-2,846.0	2,092.7	1,995.2	97.50	21.463	
12,500.0	9,734.0	13,233.6	10,529.0	52.8	54.6	-112.67	2,586.6	-2,846.7	2,092.8	1,993.3	99.52	21.029	
12,600.0	9,734.0	13,333.6	10,529.0	53.8	55.7	-112.67	2,686.6	-2,847.4	2,092.8	1,991.2	101.56	20.606	
12,700.0	9,734.0	13,433.6	10,529.0	54.9	56.8	-112.67	2,786.6	-2,848.1	2,092.8	1,989.2	103.64	20.193	
12,800.0	9,734.0	13,533.6	10,529.0	56.0	57.9	-112.67	2,886.6	-2,848.8	2,092.9	1,987.1	105.75	19.791	
12,900.0	9,734.0	13,633.6	10,529.0	57.2	59.0	-112.67	2,986.6	-2,849.5	2,092.9	1,985.0	107.89	19.399	
13,000.0	9,734.0	13,733.6	10,529.0	58.3	60.2	-112.67	3,086.6	-2,850.2	2,092.9	1,982.9	110.05	19.018	
13,100.0	9,734.0	13,833.6	10,529.0	59.5	61.3	-112.66	3,186.6	-2,850.9	2,093.0	1,980.7	112.24	18.647	
13,200.0	9,734.0	13,933.6	10,529.0	60.6	62.5	-112.66	3,286.6	-2,851.6	2,093.0	1,978.5	114.45	18.287	
13,300.0	9,734.0	14,033.6	10,529.0	61.8	63.6	-112.66	3,386.6	-2,852.3	2,093.0	1,976.3	116.69	17.937	
13,400.0	9,734.0	14,133.6	10,529.0	63.0	64.8	-112.66	3,486.6	-2,853.0	2,093.0	1,974.1	118.95	17.597	
13,500.0	9,734.0	14,233.6	10,529.0	64.2	66.0	-112.66	3,586.6	-2,853.6	2,093.1	1,971.8	121.22	17.267	
13,600.0	9,734.0	14,333.6	10,529.0	65.4	67.2	-112.66	3,686.6	-2,854.3	2,093.1	1,969.6	123.52	16.946	
13,700.0	9,734.0	14,433.6	10,529.0	66.6	68.5	-112.66	3,786.6	-2,855.0	2,093.1	1,967.3	125.83	16.635	
13,800.0	9,734.0	14,533.6	10,529.0	67.8	69.7	-112.66	3,886.6	-2,855.7	2,093.2	1,965.0	128.16	16.332	
13,900.0	9,734.0	14,633.6	10,529.0	69.1	70.9	-112.66	3,986.6	-2,856.4	2,093.2	1,962.7	130.51	16.039	
14,000.0	9,734.0	14,733.6	10,529.0	70.3	72.1	-112.66	4,086.6	-2,857.1	2,093.2	1,960.4	132.87	15.754	
14,100.0	9,734.0	14,833.6	10,529.0	71.6	73.4	-112.66	4,186.6	-2,857.8	2,093.3	1,958.0	135.24	15.478	
14,200.0	9,734.0	14,933.6	10,529.0	72.8	74.7	-112.66	4,286.6	-2,858.5	2,093.3	1,955.7	137.63	15.209	
14,300.0	9,734.0	15,033.6	10,529.0	74.1	75.9	-112.66	4,386.6	-2,859.2	2,093.3	1,953.3	140.03	14.949	
14,400.0	9,734.0	15,133.6	10,529.0	75.4	77.2	-112.66	4,486.5	-2,859.9	2,093.3	1,950.9	142.45	14.696	
14,500.0	9,734.0	15,233.6	10,529.0	76.6	78.5	-112.66	4,586.5	-2,860.6	2,093.4	1,948.5	144.87	14.450	
14,600.0	9,734.0	15,333.6	10,529.0	77.9	79.7	-112.66	4,686.5	-2,861.3	2,093.4	1,946.1	147.31	14.211	
14,700.0	9,734.0	15,433.6	10,529.0	79.2	81.0	-112.66	4,786.5	-2,862.0	2,093.4	1,943.7	149.76	13.979	
14,800.0	9,734.0	15,533.6	10,529.0	80.5	82.3	-112.66	4,886.5	-2,862.7	2,093.5	1,941.3	152.21	13.754	
14,900.0	9,734.0	15,633.6	10,529.0	81.8	83.6	-112.66	4,986.5	-2,863.4	2,093.5	1,938.8	154.68	13.534	
15,000.0	9,734.0	15,733.6	10,529.0	83.1	84.9	-112.66	5,086.5	-2,864.1	2,093.5	1,936.4	157.15	13.321	
15,100.0	9,734.0	15,833.6	10,529.0	84.4	86.2	-112.66	5,186.5	-2,864.8	2,093.6	1,933.9	159.64	13.114	
15,200.0	9,734.0	15,933.6	10,529.0	85.7	87.5	-112.66	5,286.5	-2,865.4	2,093.6	1,931.5	162.13	12.913	
15,300.0	9,734.0	16,033.6	10,529.0	87.0	88.9	-112.66	5,386.5	-2,866.1	2,093.6	1,929.0	164.63	12.717	
15,400.0	9,734.0	16,133.6	10,529.0	88.4	90.2	-112.66	5,486.5	-2,866.8	2,093.6	1,926.5	167.14	12.526	
15,500.0	9,734.0	16,233.6	10,529.0	89.7	91.5	-112.66	5,586.5	-2,867.5	2,093.7	1,924.0	169.65	12.341	
15,600.0	9,734.0	16,333.6	10,529.0	91.0	92.8	-112.66	5,686.5	-2,868.2	2,093.7	1,921.5	172.18	12.160	
15,700.0	9,734.0	16,433.6	10,529.0	92.4	94.2	-112.66	5,786.5	-2,868.9	2,093.7	1,919.0	174.70	11.984	
15,800.0	9,734.0	16,533.6	10,529.0	93.7	95.5	-112.66	5,886.5	-2,869.6	2,093.8	1,916.5	177.24	11.813	
15,900.0	9,734.0	16,633.6	10,529.0	95.0	96.8	-112.66	5,986.5	-2,870.3	2,093.8	1,914.0	179.78	11.646	
16,000.0	9,734.0	16,733.6	10,529.0	96.4	98.2	-112.65	6,086.5	-2,871.0	2,093.8	1,911.5	182.33	11.484	
16,100.0	9,734.0	16,833.6	10,529.0	97.7	99.5	-112.65	6,186.5	-2,871.7	2,093.9	1,909.0	184.88	11.326	
16,200.0	9,734.0	16,933.6	10,529.0	99.1	100.9	-112.65	6,286.5	-2,872.4	2,093.9	1,906.5	187.44	11.171	
16,300.0	9,734.0	17,033.6	10,529.0	100.4	102.2	-112.65	6,386.5	-2,873.1	2,093.9	1,903.9	190.00	11.021	
16,400.0	9,734.0	17,133.6	10,529.0	101.8	103.6	-112.65	6,486.5	-2,873.8	2,094.0	1,901.4	192.57	10.874	
16,500.0	9,734.0	17,233.6	10,529.0	103.1	104.9	-112.65	6,586.5	-2,874.5	2,094.0	1,898.8	195.14	10.731	
16,600.0	9,734.0	17,333.6	10,529.0	104.5	106.3	-112.65	6,686.5	-2,875.2	2,094.0	1,896.3	197.72	10.591	
16,700.0	9,734.0	17,433.6	10,529.0	105.8	107.6	-112.65	6,786.5	-2,875.9	2,094.0	1,893.7	200.30	10.455	
16,800.0	9,734.0	17,533.6	10,529.0	107.2	109.0	-112.65	6,886.5	-2,876.6	2,094.1	1,891.2	202.88	10.322	
16,900.0	9,734.0	17,633.6	10,529.0	108.6	110.3	-112.65	6,986.5	-2,877.3	2,094.1	1,888.6	205.47	10.192	
17,000.0	9,734.0	17,733.6	10,529.0	109.9	111.7	-112.65	7,086.5	-2,877.9	2,094.1	1,886.1	208.06	10.065	
17,100.0	9,734.0	17,833.6	10,529.0	111.3	113.1	-112.65	7,186.5	-2,878.6	2,094.2	1,883.5	210.66	9.941	
17,200.0	9,734.0	17,933.6	10,529.0	112.7	114.4	-112.65	7,286.5	-2,879.3	2,094.2	1,880.9	213.26	9.820	
17,300.0	9,734.0	18,033.6	10,529.0	114.1	115.8	-112.65	7,386.5	-2,880.0	2,094.2	1,878.4	215.87	9.701	
17,400.0	9,734.0	18,133.6	10,529.0	115.4	117.2	-112.65	7,486.5	-2,880.7	2,094.3	1,875.8	218.47	9.586	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald 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		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	
17,500.0	9,734.0	18,233.6	10,529.0	116.8	118.6	-112.65	7,586.5	-2,881.4	2,094.3	1,873.2	221.08	9.473		
17,600.0	9,734.0	18,333.6	10,529.0	118.2	119.9	-112.65	7,686.5	-2,882.1	2,094.3	1,870.6	223.70	9.362		
17,700.0	9,734.0	18,433.6	10,529.0	119.6	121.3	-112.65	7,786.5	-2,882.8	2,094.3	1,868.0	226.31	9.254		
17,800.0	9,734.0	18,533.6	10,529.0	121.0	122.7	-112.65	7,886.5	-2,883.5	2,094.4	1,865.4	228.93	9.148		
17,900.0	9,734.0	18,633.6	10,529.0	122.3	124.1	-112.65	7,986.5	-2,884.2	2,094.4	1,862.8	231.56	9.045		
18,000.0	9,734.0	18,733.6	10,529.0	123.7	125.5	-112.65	8,086.5	-2,884.9	2,094.4	1,860.3	234.18	8.944		
18,100.0	9,734.0	18,833.6	10,529.0	125.1	126.9	-112.65	8,186.5	-2,885.6	2,094.5	1,857.7	236.81	8.845		
18,200.0	9,734.0	18,933.6	10,529.0	126.5	128.2	-112.65	8,286.5	-2,886.3	2,094.5	1,855.1	239.44	8.748		
18,300.0	9,734.0	19,033.6	10,529.0	127.9	129.6	-112.65	8,386.5	-2,887.0	2,094.5	1,852.5	242.07	8.652		
18,400.0	9,734.0	19,133.6	10,529.0	129.3	131.0	-112.65	8,486.5	-2,887.7	2,094.6	1,849.8	244.71	8.559		
18,500.0	9,734.0	19,233.6	10,529.0	130.7	132.4	-112.65	8,586.4	-2,888.4	2,094.6	1,847.2	247.34	8.468		
18,600.0	9,734.0	19,333.6	10,529.0	132.1	133.8	-112.65	8,686.4	-2,889.1	2,094.6	1,844.6	249.98	8.379		
18,700.0	9,734.0	19,433.6	10,529.0	133.4	135.2	-112.65	8,786.4	-2,889.7	2,094.6	1,842.0	252.63	8.292		
18,800.0	9,734.0	19,533.6	10,529.0	134.8	136.6	-112.65	8,886.4	-2,890.4	2,094.7	1,839.4	255.27	8.206		
18,900.0	9,734.0	19,633.6	10,529.0	136.2	138.0	-112.64	8,986.4	-2,891.1	2,094.7	1,836.8	257.92	8.122		
19,000.0	9,734.0	19,733.6	10,529.0	137.6	139.4	-112.64	9,086.4	-2,891.8	2,094.7	1,834.2	260.56	8.039		
19,100.0	9,734.0	19,833.6	10,529.0	139.0	140.8	-112.64	9,186.4	-2,892.5	2,094.8	1,831.6	263.21	7.958		
19,200.0	9,734.0	19,933.6	10,529.0	140.4	142.2	-112.64	9,286.4	-2,893.2	2,094.8	1,828.9	265.86	7.879		
19,300.0	9,734.0	20,033.6	10,529.0	141.8	143.6	-112.64	9,386.4	-2,893.9	2,094.8	1,826.3	268.52	7.801		
19,400.0	9,734.0	20,133.6	10,529.0	143.2	145.0	-112.64	9,486.4	-2,894.6	2,094.9	1,823.7	271.17	7.725		
19,500.0	9,734.0	20,233.6	10,529.0	144.6	146.4	-112.64	9,586.4	-2,895.3	2,094.9	1,821.1	273.83	7.650		
19,600.0	9,734.0	20,333.6	10,529.0	146.0	147.8	-112.64	9,686.4	-2,896.0	2,094.9	1,818.4	276.49	7.577		
19,700.0	9,734.0	20,433.6	10,529.0	147.4	149.2	-112.64	9,786.4	-2,896.7	2,094.9	1,815.8	279.15	7.505		
19,800.0	9,734.0	20,533.6	10,529.0	148.8	150.6	-112.64	9,886.4	-2,897.4	2,095.0	1,813.2	281.81	7.434		
19,900.0	9,734.0	20,633.6	10,529.0	150.3	152.0	-112.64	9,986.4	-2,898.1	2,095.0	1,810.5	284.47	7.365		
20,000.0	9,734.0	20,733.6	10,529.0	151.7	153.4	-112.64	10,086.4	-2,898.8	2,095.0	1,807.9	287.14	7.296		
20,019.5	9,734.0	20,749.4	10,529.0	151.9	153.6	-112.64	10,102.2	-2,898.9	2,095.0	1,807.4	287.62	7.284 ES, 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 603H - 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	Warning
4,700.0	4,675.3	4,950.4	4,929.5	17.1	17.9	16.23	-226.6	-2,501.3	2,184.4	2,150.8	33.64	64.931	
4,800.0	4,774.3	5,047.0	5,025.4	17.5	18.3	16.27	-228.3	-2,489.4	2,158.8	2,124.4	34.35	62.843	
4,900.0	4,873.3	5,143.7	5,121.3	17.9	18.7	16.32	-229.9	-2,477.6	2,133.2	2,098.1	35.06	60.837	
5,000.0	4,972.3	5,240.3	5,217.2	18.3	19.0	16.36	-231.6	-2,465.7	2,107.5	2,071.8	35.77	58.911	
5,100.0	5,071.3	5,337.0	5,313.1	18.7	19.4	16.41	-233.3	-2,453.9	2,081.9	2,045.4	36.49	57.058	
5,200.0	5,170.3	5,433.6	5,409.0	19.1	19.8	16.46	-235.0	-2,442.0	2,056.3	2,019.1	37.20	55.276	
5,300.0	5,269.2	5,530.3	5,504.9	19.5	20.2	16.51	-236.6	-2,430.1	2,030.7	1,992.8	37.91	53.560	
5,400.0	5,368.2	5,626.9	5,600.8	19.9	20.6	16.56	-238.3	-2,418.3	2,005.1	1,966.4	38.63	51.907	
5,500.0	5,467.2	5,723.6	5,696.7	20.3	20.9	16.61	-240.0	-2,406.4	1,979.5	1,940.1	39.34	50.313	
5,600.0	5,566.2	5,820.2	5,792.6	20.7	21.3	16.66	-241.7	-2,394.6	1,953.8	1,913.8	40.06	48.776	
5,700.0	5,665.2	5,916.9	5,888.5	21.1	21.7	16.72	-243.3	-2,382.7	1,928.2	1,887.5	40.77	47.291	
5,800.0	5,764.2	6,013.5	5,984.4	21.5	22.1	16.77	-245.0	-2,370.9	1,902.6	1,861.1	41.49	45.858	
5,900.0	5,863.1	6,110.2	6,080.3	21.9	22.4	16.83	-246.7	-2,359.0	1,877.0	1,834.8	42.21	44.473	
6,000.0	5,962.1	6,206.8	6,176.2	22.3	22.8	16.89	-248.4	-2,347.1	1,851.4	1,808.5	42.92	43.133	
6,100.0	6,061.1	6,303.5	6,272.1	22.7	23.2	16.95	-250.1	-2,335.3	1,825.8	1,782.2	43.64	41.838	
6,200.0	6,160.1	6,400.1	6,368.0	23.1	23.6	17.01	-251.7	-2,323.4	1,800.2	1,755.8	44.36	40.584	
6,300.0	6,259.1	6,496.8	6,463.9	23.5	24.0	17.08	-253.4	-2,311.6	1,774.6	1,729.5	45.08	39.369	
6,400.0	6,358.1	6,593.4	6,559.9	23.9	24.3	17.14	-255.1	-2,299.7	1,749.0	1,703.2	45.79	38.192	
6,500.0	6,457.0	6,690.1	6,655.8	24.3	24.7	17.21	-256.8	-2,287.9	1,723.4	1,676.9	46.51	37.052	
6,600.0	6,556.0	6,786.7	6,751.7	24.7	25.1	17.28	-258.4	-2,276.0	1,697.8	1,650.6	47.23	35.946	
6,700.0	6,655.0	6,883.4	6,847.6	25.1	25.5	17.35	-260.1	-2,264.1	1,672.2	1,624.3	47.95	34.873	
6,800.0	6,754.0	6,980.0	6,943.5	25.5	25.8	17.43	-261.8	-2,252.3	1,646.6	1,598.0	48.67	33.831	
6,900.0	6,853.0	7,076.7	7,039.4	25.9	26.2	17.50	-263.5	-2,240.4	1,621.1	1,571.7	49.39	32.820	
7,000.0	6,952.0	7,173.3	7,135.3	26.3	26.6	17.58	-265.1	-2,228.6	1,595.5	1,545.4	50.11	31.837	
7,100.0	7,050.9	7,270.0	7,231.2	26.7	27.0	17.67	-266.8	-2,216.7	1,569.9	1,519.1	50.83	30.882	
7,200.0	7,149.9	7,366.6	7,327.1	27.1	27.4	17.75	-268.5	-2,204.8	1,544.3	1,492.8	51.56	29.954	
7,300.0	7,248.9	7,463.3	7,423.0	27.5	27.7	17.84	-270.2	-2,193.0	1,518.7	1,466.5	52.28	29.052	
7,400.0	7,347.9	7,559.9	7,518.9	27.9	28.1	17.93	-271.8	-2,181.1	1,493.2	1,440.2	53.00	28.173	
7,500.0	7,446.9	7,656.6	7,614.8	28.3	28.5	18.02	-273.5	-2,169.3	1,467.6	1,413.9	53.72	27.319	
7,600.0	7,545.9	7,753.2	7,710.7	28.8	28.9	18.12	-275.2	-2,157.4	1,442.1	1,387.6	54.44	26.486	
7,700.0	7,644.8	7,849.9	7,806.6	29.2	29.3	18.22	-276.9	-2,145.6	1,416.5	1,361.3	55.17	25.676	
7,800.0	7,743.8	7,946.5	7,902.5	29.6	29.6	18.32	-278.5	-2,133.7	1,390.9	1,335.0	55.89	24.886	
7,900.0	7,842.8	8,043.2	7,998.4	30.0	30.0	18.43	-280.2	-2,121.8	1,365.4	1,308.8	56.62	24.117	
8,000.0	7,941.8	8,139.8	8,094.3	30.4	30.4	18.54	-281.9	-2,110.0	1,339.8	1,282.5	57.34	23.367	
8,100.0	8,040.8	8,236.4	8,190.2	30.8	30.8	18.66	-283.6	-2,098.1	1,314.3	1,256.2	58.06	22.635	
8,200.0	8,139.8	8,333.1	8,286.1	31.2	31.2	18.78	-285.2	-2,086.3	1,288.8	1,230.0	58.79	21.922	
8,300.0	8,238.8	8,429.7	8,382.0	31.6	31.5	18.91	-286.9	-2,074.4	1,263.2	1,203.7	59.51	21.226	
8,400.0	8,337.7	8,526.4	8,477.9	32.0	31.9	19.04	-288.6	-2,062.6	1,237.7	1,177.5	60.24	20.547	
8,500.0	8,436.7	8,623.0	8,573.8	32.4	32.3	19.17	-290.3	-2,050.7	1,212.2	1,151.2	60.97	19.883	
8,600.0	8,535.7	8,719.7	8,669.7	32.8	32.7	19.32	-291.9	-2,038.8	1,186.7	1,125.0	61.69	19.236	
8,700.0	8,634.7	8,816.4	8,765.7	33.2	33.1	19.39	-293.6	-2,027.0	1,161.5	1,099.1	62.42	18.608	
8,800.0	8,734.1	8,913.8	8,862.4	33.6	33.5	19.33	-295.3	-2,015.0	1,138.9	1,075.8	63.14	18.038	
8,900.0	8,833.8	9,011.9	8,959.7	34.0	33.8	19.24	-297.0	-2,003.0	1,119.6	1,055.8	63.86	17.532	
9,000.0	8,933.7	9,110.6	9,057.7	34.3	34.2	19.12	-298.7	-1,990.9	1,103.5	1,039.0	64.58	17.089	
9,100.0	9,033.7	9,209.8	9,156.0	34.7	34.6	-89.78	-300.4	-1,978.7	1,090.5	1,025.3	65.28	16.706	
9,200.0	9,133.7	9,309.0	9,254.5	35.0	35.0	-89.87	-302.2	-1,966.5	1,078.3	1,012.3	65.97	16.344	
9,300.0	9,233.7	9,408.2	9,353.0	35.3	35.4	-89.96	-303.9	-1,954.4	1,066.0	999.3	66.67	15.989	
9,400.0	9,333.4	9,507.0	9,451.0	35.6	35.8	-91.16	-305.6	-1,942.2	1,053.8	986.4	67.35	15.646	
9,500.0	9,429.7	9,602.1	9,545.3	35.9	36.2	-94.01	-307.2	-1,930.6	1,042.3	974.4	67.97	15.334	
9,600.0	9,518.4	9,679.6	9,622.3	36.1	36.5	-97.03	-308.6	-1,921.2	1,034.0	965.5	68.56	15.082	
9,665.6	9,570.6	9,717.6	9,660.0	36.2	36.6	-98.55	-309.1	-1,917.1	1,032.2	963.3	68.92	14.976 CC, ES	
9,700.0	9,595.7	9,735.9	9,678.2	36.2	36.7	-99.20	-309.4	-1,915.4	1,032.7	963.6	69.11	14.943	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 603H - 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)			
9,800.0	9,658.2	9,781.4	9,723.6	36.3	36.9	-100.20	-309.9	-1,911.4	1,041.0	971.4	69.63	14.950	
9,900.0	9,703.1	9,814.2	9,756.3	36.4	37.0	-99.50	-310.3	-1,909.1	1,060.3	990.1	70.15	15.114	
10,000.0	9,728.5	9,832.6	9,774.6	36.3	37.0	-96.68	-310.4	-1,907.9	1,090.7	1,020.1	70.66	15.436	
10,100.0	9,734.0	9,836.1	9,778.1	36.3	37.1	-93.15	-310.5	-1,907.7	1,131.2	1,060.1	71.16	15.898	
10,200.0	9,734.0	9,835.4	9,777.4	36.4	37.1	-93.11	-310.5	-1,907.7	1,179.2	1,107.5	71.67	16.452	
10,300.0	9,734.0	9,834.7	9,776.8	36.5	37.1	-93.08	-310.5	-1,907.8	1,233.4	1,161.1	72.21	17.080	
10,400.0	9,734.0	11,186.4	10,529.0	36.7	39.9	-128.71	493.1	-1,908.2	1,289.8	1,226.1	63.70	20.247	
10,500.0	9,734.0	11,286.4	10,529.0	37.0	40.3	-128.71	593.1	-1,908.8	1,289.8	1,225.4	64.37	20.037	
10,600.0	9,734.0	11,386.4	10,529.0	37.4	40.7	-128.71	693.1	-1,909.5	1,289.8	1,224.7	65.12	19.805	
10,700.0	9,734.0	11,486.4	10,529.0	37.8	41.2	-128.71	793.1	-1,910.2	1,289.9	1,223.9	65.96	19.554	
10,800.0	9,734.0	11,586.4	10,529.0	38.3	41.7	-128.71	893.0	-1,910.9	1,289.9	1,223.0	66.89	19.285	
10,900.0	9,734.0	11,686.4	10,529.0	38.9	42.3	-128.71	993.0	-1,911.6	1,289.9	1,222.0	67.88	19.002	
11,000.0	9,734.0	11,786.4	10,529.0	39.5	42.9	-128.70	1,093.0	-1,912.3	1,289.9	1,221.0	68.96	18.706	
11,100.0	9,734.0	11,886.4	10,529.0	40.2	43.5	-128.70	1,193.0	-1,913.0	1,290.0	1,219.9	70.10	18.401	
11,200.0	9,734.0	11,986.4	10,529.0	40.9	44.2	-128.70	1,293.0	-1,913.7	1,290.0	1,218.7	71.32	18.088	
11,300.0	9,734.0	12,086.4	10,529.0	41.6	45.0	-128.70	1,393.0	-1,914.4	1,290.0	1,217.4	72.59	17.771	
11,400.0	9,734.0	12,186.4	10,529.0	42.4	45.7	-128.70	1,493.0	-1,915.1	1,290.0	1,216.1	73.93	17.449	
11,500.0	9,734.0	12,286.4	10,529.0	43.2	46.5	-128.70	1,593.0	-1,915.8	1,290.1	1,214.7	75.33	17.126	
11,600.0	9,734.0	12,386.4	10,529.0	44.0	47.3	-128.70	1,693.0	-1,916.5	1,290.1	1,213.3	76.78	16.803	
11,700.0	9,734.0	12,486.4	10,529.0	44.9	48.2	-128.70	1,793.0	-1,917.2	1,290.1	1,211.8	78.28	16.481	
11,800.0	9,734.0	12,586.4	10,529.0	45.8	49.1	-128.70	1,893.0	-1,917.9	1,290.1	1,210.3	79.83	16.162	
11,900.0	9,734.0	12,686.4	10,529.0	46.7	50.0	-128.70	1,993.0	-1,918.6	1,290.2	1,208.7	81.42	15.845	
12,000.0	9,734.0	12,786.4	10,529.0	47.7	50.9	-128.70	2,093.0	-1,919.3	1,290.2	1,207.1	83.06	15.533	
12,100.0	9,734.0	12,886.4	10,529.0	48.6	51.9	-128.69	2,193.0	-1,920.0	1,290.2	1,205.5	84.74	15.225	
12,200.0	9,734.0	12,986.4	10,529.0	49.6	52.9	-128.69	2,293.0	-1,920.6	1,290.2	1,203.8	86.46	14.923	
12,300.0	9,734.0	13,086.4	10,529.0	50.7	53.9	-128.69	2,393.0	-1,921.3	1,290.3	1,202.1	88.21	14.627	
12,400.0	9,734.0	13,186.4	10,529.0	51.7	54.9	-128.69	2,493.0	-1,922.0	1,290.3	1,200.3	90.00	14.337	
12,500.0	9,734.0	13,286.4	10,529.0	52.8	55.9	-128.69	2,593.0	-1,922.7	1,290.3	1,198.5	91.82	14.053	
12,600.0	9,734.0	13,386.4	10,529.0	53.8	57.0	-128.69	2,693.0	-1,923.4	1,290.3	1,196.7	93.66	13.776	
12,700.0	9,734.0	13,486.4	10,529.0	54.9	58.0	-128.69	2,793.0	-1,924.1	1,290.4	1,194.8	95.54	13.506	
12,800.0	9,734.0	13,586.4	10,529.0	56.0	59.1	-128.69	2,893.0	-1,924.8	1,290.4	1,192.9	97.44	13.243	
12,900.0	9,734.0	13,686.4	10,529.0	57.2	60.2	-128.69	2,993.0	-1,925.5	1,290.4	1,191.0	99.37	12.986	
13,000.0	9,734.0	13,786.4	10,529.0	58.3	61.4	-128.69	3,093.0	-1,926.2	1,290.4	1,189.1	101.32	12.736	
13,100.0	9,734.0	13,886.4	10,529.0	59.5	62.5	-128.69	3,193.0	-1,926.9	1,290.5	1,187.2	103.29	12.493	
13,200.0	9,734.0	13,986.4	10,529.0	60.6	63.6	-128.68	3,293.0	-1,927.6	1,290.5	1,185.2	105.29	12.257	
13,300.0	9,734.0	14,086.4	10,529.0	61.8	64.8	-128.68	3,393.0	-1,928.3	1,290.5	1,183.2	107.30	12.027	
13,400.0	9,734.0	14,186.4	10,529.0	63.0	66.0	-128.68	3,493.0	-1,929.0	1,290.5	1,181.2	109.33	11.804	
13,500.0	9,734.0	14,286.4	10,529.0	64.2	67.1	-128.68	3,593.0	-1,929.7	1,290.6	1,179.2	111.38	11.587	
13,600.0	9,734.0	14,386.4	10,529.0	65.4	68.3	-128.68	3,693.0	-1,930.4	1,290.6	1,177.1	113.45	11.376	
13,700.0	9,734.0	14,486.4	10,529.0	66.6	69.5	-128.68	3,793.0	-1,931.1	1,290.6	1,175.1	115.53	11.171	
13,800.0	9,734.0	14,586.4	10,529.0	67.8	70.7	-128.68	3,893.0	-1,931.8	1,290.6	1,173.0	117.63	10.972	
13,900.0	9,734.0	14,686.4	10,529.0	69.1	71.9	-128.68	3,993.0	-1,932.5	1,290.7	1,170.9	119.74	10.779	
14,000.0	9,734.0	14,786.4	10,529.0	70.3	73.2	-128.68	4,093.0	-1,933.1	1,290.7	1,168.8	121.86	10.591	
14,100.0	9,734.0	14,886.4	10,529.0	71.6	74.4	-128.68	4,193.0	-1,933.8	1,290.7	1,166.7	124.00	10.409	
14,200.0	9,734.0	14,986.4	10,529.0	72.8	75.6	-128.68	4,293.0	-1,934.5	1,290.7	1,164.6	126.15	10.232	
14,300.0	9,734.0	15,086.4	10,529.0	74.1	76.9	-128.67	4,393.0	-1,935.2	1,290.8	1,162.5	128.31	10.060	
14,400.0	9,734.0	15,186.4	10,529.0	75.4	78.1	-128.67	4,493.0	-1,935.9	1,290.8	1,160.3	130.48	9.893	
14,500.0	9,734.0	15,286.4	10,529.0	76.6	79.4	-128.67	4,593.0	-1,936.6	1,290.8	1,158.2	132.66	9.730	
14,600.0	9,734.0	15,386.4	10,529.0	77.9	80.7	-128.67	4,693.0	-1,937.3	1,290.9	1,156.0	134.85	9.572	
14,700.0	9,734.0	15,486.4	10,529.0	79.2	81.9	-128.67	4,793.0	-1,938.0	1,290.9	1,153.8	137.05	9.419	
14,800.0	9,734.0	15,586.4	10,529.0	80.5	83.2	-128.67	4,893.0	-1,938.7	1,290.9	1,151.6	139.26	9.270	
14,900.0	9,734.0	15,686.4	10,529.0	81.8	84.5	-128.67	4,993.0	-1,939.4	1,290.9	1,149.4	141.48	9.124	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 603H - 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
15,000.0	9,734.0	15,786.4	10,529.0	83.1	85.8	-128.67	5,092.9	-1,940.1	1,291.0	1,147.2	143.71	8.983
15,100.0	9,734.0	15,886.4	10,529.0	84.4	87.1	-128.67	5,192.9	-1,940.8	1,291.0	1,145.0	145.94	8.846
15,200.0	9,734.0	15,986.4	10,529.0	85.7	88.4	-128.67	5,292.9	-1,941.5	1,291.0	1,142.8	148.18	8.712
15,300.0	9,734.0	16,086.4	10,529.0	87.0	89.7	-128.67	5,392.9	-1,942.2	1,291.0	1,140.6	150.43	8.582
15,400.0	9,734.0	16,186.4	10,529.0	88.4	91.0	-128.66	5,492.9	-1,942.9	1,291.1	1,138.4	152.69	8.456
15,500.0	9,734.0	16,286.4	10,529.0	89.7	92.3	-128.66	5,592.9	-1,943.6	1,291.1	1,136.1	154.95	8.332
15,600.0	9,734.0	16,386.4	10,529.0	91.0	93.6	-128.66	5,692.9	-1,944.3	1,291.1	1,133.9	157.22	8.212
15,700.0	9,734.0	16,486.4	10,529.0	92.4	94.9	-128.66	5,792.9	-1,944.9	1,291.1	1,131.6	159.49	8.095
15,800.0	9,734.0	16,586.4	10,529.0	93.7	96.3	-128.66	5,892.9	-1,945.6	1,291.2	1,129.4	161.77	7.981
15,900.0	9,734.0	16,686.4	10,529.0	95.0	97.6	-128.66	5,992.9	-1,946.3	1,291.2	1,127.1	164.05	7.870
16,000.0	9,734.0	16,786.4	10,529.0	96.4	98.9	-128.66	6,092.9	-1,947.0	1,291.2	1,124.9	166.34	7.762
16,100.0	9,734.0	16,886.4	10,529.0	97.7	100.3	-128.66	6,192.9	-1,947.7	1,291.2	1,122.6	168.64	7.657
16,200.0	9,734.0	16,986.4	10,529.0	99.1	101.6	-128.66	6,292.9	-1,948.4	1,291.3	1,120.3	170.94	7.554
16,300.0	9,734.0	17,086.4	10,529.0	100.4	102.9	-128.66	6,392.9	-1,949.1	1,291.3	1,118.0	173.24	7.454
16,400.0	9,734.0	17,186.4	10,529.0	101.8	104.3	-128.66	6,492.9	-1,949.8	1,291.3	1,115.8	175.55	7.356
16,500.0	9,734.0	17,286.4	10,529.0	103.1	105.6	-128.65	6,592.9	-1,950.5	1,291.3	1,113.5	177.87	7.260
16,600.0	9,734.0	17,386.4	10,529.0	104.5	107.0	-128.65	6,692.9	-1,951.2	1,291.4	1,111.2	180.18	7.167
16,700.0	9,734.0	17,486.4	10,529.0	105.8	108.3	-128.65	6,792.9	-1,951.9	1,291.4	1,108.9	182.50	7.076
16,800.0	9,734.0	17,586.4	10,529.0	107.2	109.7	-128.65	6,892.9	-1,952.6	1,291.4	1,106.6	184.83	6.987
16,900.0	9,734.0	17,686.4	10,529.0	108.6	111.0	-128.65	6,992.9	-1,953.3	1,291.4	1,104.3	187.16	6.900
17,000.0	9,734.0	17,786.4	10,529.0	109.9	112.4	-128.65	7,092.9	-1,954.0	1,291.5	1,102.0	189.49	6.815
17,100.0	9,734.0	17,886.4	10,529.0	111.3	113.8	-128.65	7,192.9	-1,954.7	1,291.5	1,099.7	191.83	6.733
17,200.0	9,734.0	17,986.4	10,529.0	112.7	115.1	-128.65	7,292.9	-1,955.4	1,291.5	1,097.4	194.16	6.652
17,300.0	9,734.0	18,086.4	10,529.0	114.1	116.5	-128.65	7,392.9	-1,956.1	1,291.5	1,095.0	196.51	6.573
17,400.0	9,734.0	18,186.4	10,529.0	115.4	117.8	-128.65	7,492.9	-1,956.7	1,291.6	1,092.7	198.85	6.495
17,500.0	9,734.0	18,286.4	10,529.0	116.8	119.2	-128.65	7,592.9	-1,957.4	1,291.6	1,090.4	201.20	6.419
17,600.0	9,734.0	18,386.4	10,529.0	118.2	120.6	-128.64	7,692.9	-1,958.1	1,291.6	1,088.1	203.55	6.345
17,700.0	9,734.0	18,486.4	10,529.0	119.6	122.0	-128.64	7,792.9	-1,958.8	1,291.6	1,085.7	205.90	6.273
17,800.0	9,734.0	18,586.4	10,529.0	121.0	123.3	-128.64	7,892.9	-1,959.5	1,291.7	1,083.4	208.26	6.202
17,900.0	9,734.0	18,686.4	10,529.0	122.3	124.7	-128.64	7,992.9	-1,960.2	1,291.7	1,081.1	210.62	6.133
18,000.0	9,734.0	18,786.4	10,529.0	123.7	126.1	-128.64	8,092.9	-1,960.9	1,291.7	1,078.7	212.98	6.065
18,100.0	9,734.0	18,886.4	10,529.0	125.1	127.5	-128.64	8,192.9	-1,961.6	1,291.8	1,076.4	215.34	5.999
18,200.0	9,734.0	18,986.4	10,529.0	126.5	128.8	-128.64	8,292.9	-1,962.3	1,291.8	1,074.1	217.71	5.933
18,300.0	9,734.0	19,086.4	10,529.0	127.9	130.2	-128.64	8,392.9	-1,963.0	1,291.8	1,071.7	220.08	5.870
18,400.0	9,734.0	19,186.4	10,529.0	129.3	131.6	-128.64	8,492.9	-1,963.7	1,291.8	1,069.4	222.45	5.807
18,500.0	9,734.0	19,286.4	10,529.0	130.7	133.0	-128.64	8,592.9	-1,964.4	1,291.9	1,067.0	224.82	5.746
18,600.0	9,734.0	19,386.4	10,529.0	132.1	134.4	-128.64	8,692.9	-1,965.1	1,291.9	1,064.7	227.20	5.686
18,700.0	9,734.0	19,486.4	10,529.0	133.4	135.8	-128.63	8,792.9	-1,965.8	1,291.9	1,062.3	229.57	5.627
18,800.0	9,734.0	19,586.4	10,529.0	134.8	137.1	-128.63	8,892.9	-1,966.5	1,291.9	1,060.0	231.95	5.570
18,900.0	9,734.0	19,686.4	10,529.0	136.2	138.5	-128.63	8,992.9	-1,967.2	1,292.0	1,057.6	234.33	5.513
19,000.0	9,734.0	19,786.4	10,529.0	137.6	139.9	-128.63	9,092.9	-1,967.9	1,292.0	1,055.3	236.71	5.458
19,100.0	9,734.0	19,886.4	10,529.0	139.0	141.3	-128.63	9,192.8	-1,968.6	1,292.0	1,052.9	239.10	5.404
19,200.0	9,734.0	19,986.4	10,529.0	140.4	142.7	-128.63	9,292.8	-1,969.2	1,292.0	1,050.5	241.48	5.350
19,300.0	9,734.0	20,086.4	10,529.0	141.8	144.1	-128.63	9,392.8	-1,969.9	1,292.1	1,048.2	243.87	5.298
19,400.0	9,734.0	20,186.4	10,529.0	143.2	145.5	-128.63	9,492.8	-1,970.6	1,292.1	1,045.8	246.26	5.247
19,500.0	9,734.0	20,286.4	10,529.0	144.6	146.9	-128.63	9,592.8	-1,971.3	1,292.1	1,043.5	248.65	5.196
19,600.0	9,734.0	20,386.4	10,529.0	146.0	148.3	-128.63	9,692.8	-1,972.0	1,292.1	1,041.1	251.04	5.147
19,700.0	9,734.0	20,486.4	10,529.0	147.4	149.7	-128.63	9,792.8	-1,972.7	1,292.2	1,038.7	253.44	5.099
19,800.0	9,734.0	20,586.4	10,529.0	148.8	151.1	-128.62	9,892.8	-1,973.4	1,292.2	1,036.4	255.83	5.051
19,900.0	9,734.0	20,686.4	10,529.0	150.3	152.5	-128.62	9,992.8	-1,974.1	1,292.2	1,034.0	258.23	5.004
20,000.0	9,734.0	20,786.4	10,529.0	151.7	153.9	-128.62	10,092.8	-1,974.8	1,292.2	1,031.6	260.63	4.958
20,000.0	9,734.0	20,786.4	10,529.0	151.7	153.9	-128.62	10,092.9	-1,974.8	1,292.2	1,031.6	260.63	4.958

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 1 - Emerald Fed Com 603H - 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		
20,019.5	9,734.0	20,803.9	10,529.0	151.9	154.1	-128.62	10,110.3	-1,974.9	1,292.2	1,031.2	261.06	4.950 SF		

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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)			
0.0	0.0	2.9	2.9	0.0	0.0	-0.34	160.0	-0.9	160.0				
100.0	100.0	102.9	102.9	0.1	0.1	-0.34	160.0	-0.9	160.0	159.7	0.27	584.260	
200.0	200.0	202.9	202.9	0.5	0.5	-0.34	160.0	-0.9	160.0	159.0	0.99	161.496	
300.0	300.0	302.9	302.9	0.8	0.9	-0.34	160.0	-0.9	160.0	158.3	1.71	93.698	
400.0	400.0	402.9	402.9	1.2	1.2	-0.34	160.0	-0.9	160.0	157.6	2.42	65.993	
500.0	500.0	502.9	502.9	1.6	1.6	-0.34	160.0	-0.9	160.0	156.9	3.14	50.933	
600.0	600.0	602.9	602.9	1.9	1.9	-0.34	160.0	-0.9	160.0	156.2	3.86	41.469	
700.0	700.0	702.9	702.9	2.3	2.3	-0.34	160.0	-0.9	160.0	155.4	4.58	34.971	
800.0	800.0	802.9	802.9	2.6	2.7	-0.34	160.0	-0.9	160.0	154.7	5.29	30.234	
900.0	900.0	902.9	902.9	3.0	3.0	-0.34	160.0	-0.9	160.0	154.0	6.01	26.627	
1,000.0	1,000.0	1,002.9	1,002.9	3.4	3.4	-0.34	160.0	-0.9	160.0	153.3	6.73	23.789	
1,100.0	1,100.0	1,102.9	1,102.9	3.7	3.7	-0.34	160.0	-0.9	160.0	152.6	7.44	21.498	
1,200.0	1,200.0	1,202.9	1,202.9	4.1	4.1	-0.34	160.0	-0.9	160.0	151.9	8.16	19.609	
1,300.0	1,300.0	1,302.9	1,302.9	4.4	4.4	-0.34	160.0	-0.9	160.0	151.1	8.88	18.025	
1,400.0	1,400.0	1,402.9	1,402.9	4.8	4.8	-0.34	160.0	-0.9	160.0	150.4	9.59	16.678	
1,500.0	1,500.0	1,502.9	1,502.9	5.2	5.2	-0.34	160.0	-0.9	160.0	149.7	10.31	15.519	
1,600.0	1,600.0	1,602.9	1,602.9	5.5	5.5	-0.34	160.0	-0.9	160.0	149.0	11.03	14.510	
1,700.0	1,700.0	1,702.9	1,702.9	5.9	5.9	-0.34	160.0	-0.9	160.0	148.3	11.74	13.624	
1,800.0	1,800.0	1,802.9	1,802.9	6.2	6.2	-0.34	160.0	-0.9	160.0	147.6	12.46	12.840	
1,900.0	1,900.0	1,902.9	1,902.9	6.6	6.6	-0.34	160.0	-0.9	160.0	146.8	13.18	12.142	
2,000.0	2,000.0	2,003.0	2,003.0	6.9	7.0	-0.34	160.0	-1.0	160.0	146.1	13.90	11.515	
2,100.0	2,100.0	2,105.6	2,105.6	7.3	7.3	108.42	159.1	-2.7	159.7	145.1	14.59	10.942	
2,200.0	2,199.8	2,208.2	2,208.0	7.6	7.7	108.47	156.5	-7.7	158.9	143.6	15.27	10.403	
2,300.0	2,299.5	2,310.8	2,310.1	8.0	8.0	108.58	152.3	-15.9	157.5	141.5	15.95	9.874	
2,400.0	2,398.7	2,413.3	2,411.9	8.3	8.4	108.74	146.3	-27.4	155.6	139.0	16.64	9.353	
2,500.0	2,497.7	2,515.8	2,513.0	8.7	8.7	108.40	138.7	-42.1	152.7	135.4	17.33	8.813	
2,600.0	2,596.7	2,615.8	2,611.4	9.0	9.1	107.36	130.3	-58.1	149.0	131.0	18.05	8.256	
2,700.0	2,695.7	2,715.7	2,709.6	9.4	9.4	106.28	122.0	-74.2	145.3	126.5	18.78	7.739	
2,800.0	2,794.6	2,815.6	2,807.9	9.8	9.8	105.13	113.7	-90.3	141.7	122.2	19.51	7.260	
2,900.0	2,893.6	2,915.5	2,906.1	10.1	10.2	103.93	105.3	-106.3	138.1	117.8	20.26	6.816	
3,000.0	2,992.6	3,015.4	3,004.3	10.5	10.6	102.66	97.0	-122.4	134.6	113.6	21.02	6.403	
3,100.0	3,091.6	3,115.3	3,102.6	10.9	11.0	101.33	88.7	-138.4	131.1	109.3	21.78	6.021	
3,200.0	3,190.6	3,215.2	3,200.8	11.2	11.4	99.92	80.3	-154.5	127.8	105.2	22.55	5.666	
3,300.0	3,289.6	3,315.1	3,299.1	11.6	11.7	98.44	72.0	-170.6	124.5	101.1	23.33	5.336	
3,400.0	3,388.5	3,415.0	3,397.3	12.0	12.1	96.88	63.7	-186.6	121.3	97.2	24.11	5.030	
3,500.0	3,487.5	3,514.8	3,495.5	12.4	12.5	95.24	55.3	-202.7	118.2	93.3	24.90	4.745	
3,600.0	3,586.5	3,614.7	3,593.8	12.8	12.9	93.51	47.0	-218.8	115.1	89.5	25.69	4.482	
3,700.0	3,685.5	3,714.6	3,692.0	13.2	13.4	91.69	38.7	-234.8	112.3	85.8	26.49	4.237	
3,800.0	3,784.5	3,814.5	3,790.3	13.5	13.8	89.77	30.3	-250.9	109.5	82.2	27.29	4.011	
3,900.0	3,883.5	3,914.4	3,888.5	13.9	14.2	87.76	22.0	-266.9	106.8	78.7	28.10	3.802	
4,000.0	3,982.4	4,014.3	3,986.7	14.3	14.6	85.65	13.7	-283.0	104.3	75.4	28.90	3.610	
4,100.0	4,081.4	4,114.2	4,085.0	14.7	15.0	83.44	5.3	-299.1	102.0	72.3	29.71	3.432	
4,200.0	4,180.4	4,214.1	4,183.2	15.1	15.4	81.12	-3.0	-315.1	99.8	69.3	30.51	3.270	
4,300.0	4,279.4	4,314.0	4,281.5	15.5	15.8	78.71	-11.3	-331.2	97.7	66.4	31.31	3.121	
4,400.0	4,378.4	4,413.9	4,379.7	15.9	16.2	76.20	-19.7	-347.3	95.9	63.8	32.11	2.986	
4,500.0	4,477.4	4,513.8	4,477.9	16.3	16.7	73.60	-28.0	-363.3	94.2	61.3	32.90	2.864	
4,600.0	4,576.3	4,613.7	4,576.2	16.7	17.1	70.90	-36.3	-379.4	92.8	59.1	33.68	2.754	
4,700.0	4,675.3	4,713.6	4,674.4	17.1	17.5	68.13	-44.7	-395.5	91.5	57.1	34.46	2.656	
4,800.0	4,774.3	4,813.5	4,772.7	17.5	17.9	65.29	-53.0	-411.5	90.5	55.3	35.23	2.569	
4,900.0	4,873.3	4,913.3	4,870.9	17.9	18.3	62.39	-61.3	-427.6	89.7	53.7	35.98	2.493	
5,000.0	4,972.3	5,013.2	4,969.1	18.3	18.8	59.45	-69.7	-443.6	89.1	52.4	36.72	2.427	
5,100.0	5,071.3	5,113.1	5,067.4	18.7	19.2	56.48	-78.0	-459.7	88.8	51.4	37.45	2.371	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1											Offset Site Error:	0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM							Rule Assigned:				Offset Well Error:	0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis 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
5,185.2	5,155.6	5,198.3	5,151.1	19.0	19.6	53.94	-85.1	-473.4	88.7	50.7	38.06	2.331	
5,200.0	5,170.3	5,213.0	5,165.6	19.1	19.6	53.49	-86.3	-475.8	88.7	50.6	38.17	2.324	
5,300.0	5,269.2	5,312.9	5,263.9	19.5	20.0	50.51	-94.7	-491.8	88.9	50.0	38.87	2.286	
5,400.0	5,368.2	5,412.8	5,362.1	19.9	20.5	47.55	-103.0	-507.9	89.3	49.7	39.57	2.256	
5,500.0	5,467.2	5,512.7	5,460.3	20.3	20.9	44.62	-111.3	-524.0	89.9	49.7	40.25	2.234	
5,600.0	5,566.2	5,612.6	5,558.6	20.7	21.3	41.73	-119.7	-540.0	90.8	49.9	40.92	2.218	
5,700.0	5,665.2	5,712.5	5,656.8	21.1	21.7	38.91	-128.0	-556.1	91.9	50.3	41.59	2.209	
5,800.0	5,764.2	5,812.4	5,755.1	21.5	22.2	36.16	-136.3	-572.1	93.2	50.9	42.25	2.205	
5,900.0	5,863.1	5,912.3	5,853.3	21.9	22.6	33.50	-144.7	-588.2	94.7	51.8	42.91	2.207	
6,000.0	5,962.1	6,012.2	5,951.5	22.3	23.0	30.92	-153.0	-604.3	96.4	52.8	43.56	2.213	
6,100.0	6,061.1	6,112.1	6,049.8	22.7	23.5	28.44	-161.4	-620.3	98.3	54.1	44.22	2.223	
6,200.0	6,160.1	6,212.0	6,148.0	23.1	23.9	26.05	-169.7	-636.4	100.4	55.5	44.88	2.237	
6,300.0	6,259.1	6,311.8	6,246.3	23.5	24.3	23.77	-178.0	-652.5	102.6	57.1	45.54	2.254	
6,400.0	6,358.1	6,411.7	6,344.5	23.9	24.8	21.59	-186.4	-668.5	105.0	58.8	46.20	2.274	
6,500.0	6,457.0	6,511.6	6,442.7	24.3	25.2	19.50	-194.7	-684.6	107.6	60.7	46.86	2.296	
6,600.0	6,556.0	6,611.5	6,541.0	24.7	25.6	17.52	-203.0	-700.6	110.3	62.7	47.54	2.320	
6,700.0	6,655.0	6,711.4	6,639.2	25.1	26.0	15.63	-211.4	-716.7	113.1	64.9	48.21	2.346	
6,800.0	6,754.0	6,811.3	6,737.5	25.5	26.5	13.84	-219.7	-732.8	116.0	67.1	48.89	2.373	
6,900.0	6,853.0	6,911.2	6,835.7	25.9	26.9	12.14	-228.0	-748.8	119.1	69.5	49.58	2.402	
7,000.0	6,952.0	7,011.1	6,933.9	26.3	27.3	10.52	-236.4	-764.9	122.2	71.9	50.27	2.431	
7,100.0	7,050.9	7,111.0	7,032.2	26.7	27.8	8.98	-244.7	-781.0	125.4	74.5	50.96	2.461	
7,200.0	7,149.9	7,210.9	7,130.4	27.1	28.2	7.53	-253.0	-797.0	128.7	77.1	51.67	2.492	
7,300.0	7,248.9	7,310.8	7,228.7	27.5	28.6	6.14	-261.4	-813.1	132.1	79.8	52.37	2.523	
7,400.0	7,347.9	7,410.7	7,326.9	27.9	29.1	4.83	-269.7	-829.1	135.6	82.5	53.08	2.555	
7,500.0	7,446.9	7,510.6	7,425.1	28.3	29.5	3.58	-278.0	-845.2	139.1	85.3	53.79	2.587	
7,600.0	7,545.9	7,612.7	7,525.6	28.8	29.9	2.40	-286.4	-861.3	142.4	87.8	54.56	2.610	
7,700.0	7,644.8	7,717.8	7,629.6	29.2	30.4	1.45	-293.5	-875.1	142.7	87.4	55.35	2.578	
7,800.0	7,743.8	7,822.8	7,734.0	29.6	30.8	0.77	-298.9	-885.4	139.4	83.3	56.08	2.486	
7,900.0	7,842.8	7,927.5	7,838.3	30.0	31.2	0.30	-302.5	-892.4	132.5	75.8	56.74	2.335	
8,000.0	7,941.8	8,031.5	7,942.3	30.4	31.5	0.04	-304.3	-895.9	122.1	64.7	57.34	2.128	
8,100.0	8,040.8	8,132.9	8,043.7	30.8	31.8	0.00	-304.6	-896.4	108.4	50.4	57.96	1.870	
8,200.0	8,139.8	8,231.9	8,142.7	31.2	32.1	0.00	-304.6	-896.4	94.2	35.5	58.65	1.606	
8,300.0	8,238.8	8,330.9	8,241.7	31.6	32.4	0.00	-304.6	-896.4	79.9	20.6	59.34	1.347 Level 3	
8,400.0	8,337.7	8,430.1	8,340.8	32.0	32.8	0.02	-304.6	-896.4	65.7	5.7	60.02	1.095 Level 2	
8,500.0	8,436.7	8,530.8	8,440.7	32.4	33.0	13.00	-293.1	-896.5	49.1	-11.9	61.07	0.804 Level 1	
8,561.7	8,497.8	8,588.1	8,495.8	32.7	33.2	36.97	-277.3	-896.6	43.1	-20.3	63.47	0.680 Level 1, CC, ES, SF	
8,600.0	8,535.7	8,621.2	8,526.6	32.8	33.3	54.92	-265.1	-896.7	46.5	-17.5	63.99	0.727 Level 1	
8,700.0	8,634.7	8,697.8	8,594.1	33.2	33.4	85.88	-229.2	-896.9	83.8	24.8	58.96	1.421 Level 3	
8,800.0	8,734.1	8,760.9	8,644.8	33.6	33.5	97.76	-191.7	-897.2	143.2	89.1	54.12	2.646	
8,900.0	8,833.8	8,812.6	8,682.4	34.0	33.5	103.17	-156.3	-897.4	213.0	162.5	50.48	4.220	
9,000.0	8,933.7	8,855.0	8,710.2	34.3	33.5	106.56	-124.3	-897.6	289.3	241.6	47.62	6.074	
9,100.0	9,033.7	8,890.0	8,731.0	34.7	33.5	-0.38	-96.2	-897.8	369.9	324.6	45.35	8.157	
9,200.0	9,133.7	8,918.9	8,746.5	35.0	33.5	-0.38	-71.8	-898.0	454.3	410.7	43.57	10.427	
9,300.0	9,233.7	8,942.9	8,758.3	35.3	33.5	-0.38	-50.9	-898.1	541.4	499.3	42.17	12.840	
9,400.0	9,333.4	8,965.5	8,768.4	35.6	33.5	0.00	-30.7	-898.2	627.8	586.9	40.92	15.341	
9,500.0	9,429.7	8,991.7	8,778.9	35.9	33.5	0.00	-6.7	-898.4	705.5	665.9	39.53	17.848	
9,600.0	9,518.4	9,025.0	8,790.4	36.1	33.5	0.00	24.6	-898.6	772.8	734.5	38.27	20.195	
9,700.0	9,595.7	9,050.0	8,797.5	36.2	33.5	0.00	48.5	-898.8	828.6	791.8	36.75	22.547	
9,800.0	9,658.2	9,083.9	8,805.2	36.3	33.5	0.00	81.5	-899.0	872.0	836.3	35.72	24.413	
9,900.0	9,703.1	9,125.0	8,811.3	36.4	33.4	0.00	122.2	-899.2	902.5	867.3	35.12	25.699	
10,000.0	9,728.5	9,150.0	8,813.3	36.3	33.4	0.00	147.1	-899.4	919.2	884.5	34.78	26.434	
10,100.0	9,734.0	9,203.0	8,814.0	36.3	33.4	0.00	200.1	-899.8	922.9	887.8	35.06	26.326	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 304H - OH - Plan 0.1											Offset Site Error:	0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM							Rule Assigned:				Offset Well Error:	0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre	Distance	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
				(usft)	(usft)		+N/-S (usft)	+E/-W (usft)					
10,200.0	9,734.0	9,303.0	8,814.0	36.4	33.3	0.00	300.1	-900.4	922.9	887.4	35.48	26.009	
10,300.0	9,734.0	9,403.0	8,814.0	36.5	33.3	0.00	400.0	-901.1	922.9	886.9	35.97	25.654	
10,400.0	9,734.0	9,503.0	8,814.0	36.7	33.3	0.00	500.0	-901.7	922.9	886.4	36.53	25.267	
10,500.0	9,734.0	9,603.0	8,814.0	37.0	33.5	0.00	600.0	-902.4	922.9	885.8	37.14	24.852	
10,600.0	9,734.0	9,703.0	8,814.0	37.4	33.8	0.00	700.0	-903.1	922.9	885.1	37.80	24.415	
10,700.0	9,734.0	9,803.0	8,814.0	37.8	34.3	0.00	800.0	-903.7	922.9	884.4	38.52	23.960	
10,800.0	9,734.0	9,903.0	8,814.0	38.3	34.8	0.00	900.0	-904.4	922.9	883.6	39.29	23.492	
10,900.0	9,734.0	10,003.0	8,814.0	38.9	35.4	0.00	1,000.0	-905.0	922.9	882.8	40.10	23.015	
11,000.0	9,734.0	10,103.0	8,814.0	39.5	36.0	0.00	1,100.0	-905.7	922.9	881.9	40.96	22.533	
11,100.0	9,734.0	10,203.0	8,814.0	40.2	36.7	0.00	1,200.0	-906.4	922.9	881.0	41.86	22.049	
11,200.0	9,734.0	10,303.0	8,814.0	40.9	37.4	0.00	1,300.0	-907.0	922.9	880.1	42.79	21.566	
11,300.0	9,734.0	10,403.0	8,814.0	41.6	38.1	0.00	1,400.0	-907.7	922.9	879.1	43.77	21.086	
11,400.0	9,734.0	10,503.0	8,814.0	42.4	38.9	0.00	1,500.0	-908.4	922.9	878.1	44.78	20.612	
11,500.0	9,734.0	10,603.0	8,814.0	43.2	39.8	0.00	1,600.0	-909.0	922.9	877.1	45.81	20.144	
11,600.0	9,734.0	10,703.0	8,814.0	44.0	40.6	0.00	1,700.0	-909.7	922.9	876.0	46.88	19.685	
11,700.0	9,734.0	10,803.0	8,814.0	44.9	41.5	0.00	1,800.0	-910.3	922.9	874.9	47.98	19.235	
11,800.0	9,734.0	10,903.0	8,814.0	45.8	42.4	0.00	1,900.0	-911.0	922.9	873.8	49.10	18.796	
11,900.0	9,734.0	11,003.0	8,814.0	46.7	43.4	0.00	2,000.0	-911.7	922.9	872.7	50.25	18.368	
12,000.0	9,734.0	11,103.0	8,814.0	47.7	44.4	0.00	2,100.0	-912.3	922.9	871.5	51.41	17.950	
12,100.0	9,734.0	11,203.0	8,814.0	48.6	45.4	0.00	2,200.0	-913.0	922.9	870.3	52.60	17.545	
12,200.0	9,734.0	11,303.0	8,814.0	49.6	46.4	0.00	2,300.0	-913.6	922.9	869.1	53.81	17.151	
12,300.0	9,734.0	11,403.0	8,814.0	50.7	47.4	0.00	2,400.0	-914.3	922.9	867.9	55.04	16.769	
12,400.0	9,734.0	11,503.0	8,814.0	51.7	48.5	0.00	2,500.0	-915.0	922.9	866.6	56.28	16.398	
12,500.0	9,734.0	11,603.0	8,814.0	52.8	49.6	0.00	2,600.0	-915.6	922.9	865.4	57.54	16.039	
12,600.0	9,734.0	11,703.0	8,814.0	53.8	50.7	0.00	2,700.0	-916.3	922.9	864.1	58.81	15.692	
12,700.0	9,734.0	11,803.0	8,814.0	54.9	51.8	0.00	2,800.0	-917.0	922.9	862.8	60.10	15.356	
12,800.0	9,734.0	11,903.0	8,814.0	56.0	53.0	0.00	2,900.0	-917.6	922.9	861.5	61.40	15.030	
12,900.0	9,734.0	12,003.0	8,814.0	57.2	54.1	0.00	3,000.0	-918.3	922.9	860.2	62.72	14.716	
13,000.0	9,734.0	12,103.0	8,814.0	58.3	55.3	0.00	3,100.0	-918.9	922.9	858.9	64.04	14.411	
13,100.0	9,734.0	12,203.0	8,814.0	59.5	56.5	0.00	3,200.0	-919.6	922.9	857.5	65.38	14.117	
13,200.0	9,734.0	12,303.0	8,814.0	60.6	57.6	0.00	3,300.0	-920.3	922.9	856.2	66.72	13.832	
13,300.0	9,734.0	12,403.0	8,814.0	61.8	58.8	0.00	3,400.0	-920.9	922.9	854.8	68.08	13.557	
13,400.0	9,734.0	12,503.0	8,814.0	63.0	60.1	0.00	3,500.0	-921.6	922.9	853.5	69.44	13.290	
13,500.0	9,734.0	12,603.0	8,814.0	64.2	61.3	0.00	3,600.0	-922.2	922.9	852.1	70.81	13.033	
13,600.0	9,734.0	12,703.0	8,814.0	65.4	62.5	0.00	3,700.0	-922.9	922.9	850.7	72.20	12.783	
13,700.0	9,734.0	12,803.0	8,814.0	66.6	63.7	0.00	3,800.0	-923.6	922.9	849.3	73.58	12.542	
13,800.0	9,734.0	12,903.0	8,814.0	67.8	65.0	0.00	3,900.0	-924.2	922.9	847.9	74.98	12.309	
13,900.0	9,734.0	13,003.0	8,814.0	69.1	66.3	0.00	4,000.0	-924.9	922.9	846.5	76.38	12.083	
14,000.0	9,734.0	13,103.0	8,814.0	70.3	67.5	0.00	4,100.0	-925.6	922.9	845.1	77.79	11.864	
14,100.0	9,734.0	13,203.0	8,814.0	71.6	68.8	0.00	4,200.0	-926.2	922.9	843.7	79.20	11.652	
14,200.0	9,734.0	13,303.0	8,814.0	72.8	70.1	0.00	4,300.0	-926.9	922.9	842.3	80.62	11.447	
14,300.0	9,734.0	13,403.0	8,814.0	74.1	71.4	0.00	4,400.0	-927.5	922.9	840.8	82.05	11.248	
14,400.0	9,734.0	13,503.0	8,814.0	75.4	72.6	0.00	4,500.0	-928.2	922.9	839.4	83.48	11.055	
14,500.0	9,734.0	13,603.0	8,814.0	76.6	73.9	0.00	4,600.0	-928.9	922.9	838.0	84.92	10.868	
14,600.0	9,734.0	13,703.0	8,814.0	77.9	75.2	0.00	4,700.0	-929.5	922.9	836.5	86.36	10.687	
14,700.0	9,734.0	13,803.0	8,814.0	79.2	76.5	0.00	4,800.0	-930.2	922.9	835.1	87.80	10.511	
14,800.0	9,734.0	13,903.0	8,814.0	80.5	77.9	0.00	4,900.0	-930.8	922.9	833.6	89.25	10.340	
14,900.0	9,734.0	14,003.0	8,814.0	81.8	79.2	0.00	4,999.9	-931.5	922.9	832.2	90.71	10.175	
15,000.0	9,734.0	14,103.0	8,814.0	83.1	80.5	0.00	5,099.9	-932.2	922.9	830.7	92.16	10.014	
15,100.0	9,734.0	14,203.0	8,814.0	84.4	81.8	0.00	5,199.9	-932.8	922.9	829.3	93.62	9.858	
15,200.0	9,734.0	14,303.0	8,814.0	85.7	83.1	0.00	5,299.9	-933.5	922.9	827.8	95.09	9.706	
15,300.0	9,734.0	14,403.0	8,814.0	87.0	84.5	0.00	5,399.9	-934.1	922.9	826.3	96.55	9.558	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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)			
15,400.0	9,734.0	14,503.0	8,814.0	88.4	85.8	0.00	5,499.9	-934.8	922.9	824.9	98.02	9.415	
15,500.0	9,734.0	14,603.0	8,814.0	89.7	87.2	0.00	5,599.9	-935.5	922.9	823.4	99.50	9.276	
15,600.0	9,734.0	14,703.0	8,814.0	91.0	88.5	0.00	5,699.9	-936.1	922.9	821.9	100.97	9.140	
15,700.0	9,734.0	14,803.0	8,814.0	92.4	89.8	0.00	5,799.9	-936.8	922.9	820.4	102.45	9.008	
15,800.0	9,734.0	14,903.0	8,814.0	93.7	91.2	0.00	5,899.9	-937.5	922.9	819.0	103.94	8.880	
15,900.0	9,734.0	15,003.0	8,814.0	95.0	92.6	0.00	5,999.9	-938.1	922.9	817.5	105.42	8.755	
16,000.0	9,734.0	15,103.0	8,814.0	96.4	93.9	0.00	6,099.9	-938.8	922.9	816.0	106.91	8.633	
16,100.0	9,734.0	15,203.0	8,814.0	97.7	95.3	0.00	6,199.9	-939.4	922.9	814.5	108.40	8.514	
16,200.0	9,734.0	15,303.0	8,814.0	99.1	96.6	0.00	6,299.9	-940.1	922.9	813.0	109.89	8.399	
16,300.0	9,734.0	15,403.0	8,814.0	100.4	98.0	0.00	6,399.9	-940.8	922.9	811.5	111.38	8.286	
16,400.0	9,734.0	15,503.0	8,814.0	101.8	99.4	0.00	6,499.9	-941.4	922.9	810.0	112.88	8.176	
16,500.0	9,734.0	15,603.0	8,814.0	103.1	100.7	0.00	6,599.9	-942.1	922.9	808.5	114.37	8.069	
16,600.0	9,734.0	15,703.0	8,814.0	104.5	102.1	0.00	6,699.9	-942.7	922.9	807.0	115.87	7.965	
16,700.0	9,734.0	15,803.0	8,814.0	105.8	103.5	0.00	6,799.9	-943.4	922.9	805.5	117.37	7.863	
16,800.0	9,734.0	15,903.0	8,814.0	107.2	104.8	0.00	6,899.9	-944.1	922.9	804.0	118.88	7.763	
16,900.0	9,734.0	16,003.0	8,814.0	108.6	106.2	0.00	6,999.9	-944.7	922.9	802.5	120.38	7.666	
17,000.0	9,734.0	16,103.0	8,814.0	109.9	107.6	0.00	7,099.9	-945.4	922.9	801.0	121.89	7.572	
17,100.0	9,734.0	16,203.0	8,814.0	111.3	109.0	0.00	7,199.9	-946.1	922.9	799.5	123.40	7.479	
17,200.0	9,734.0	16,303.0	8,814.0	112.7	110.4	0.00	7,299.9	-946.7	922.9	798.0	124.91	7.389	
17,300.0	9,734.0	16,403.0	8,814.0	114.1	111.7	0.00	7,399.9	-947.4	922.9	796.5	126.42	7.300	
17,400.0	9,734.0	16,503.0	8,814.0	115.4	113.1	0.00	7,499.9	-948.0	922.9	795.0	127.93	7.214	
17,500.0	9,734.0	16,603.0	8,814.0	116.8	114.5	0.00	7,599.9	-948.7	922.9	793.5	129.44	7.130	
17,600.0	9,734.0	16,703.0	8,814.0	118.2	115.9	0.00	7,699.9	-949.4	922.9	791.9	130.96	7.047	
17,700.0	9,734.0	16,803.0	8,814.0	119.6	117.3	0.00	7,799.9	-950.0	922.9	790.4	132.47	6.967	
17,800.0	9,734.0	16,903.0	8,814.0	121.0	118.7	0.00	7,899.9	-950.7	922.9	788.9	133.99	6.888	
17,900.0	9,734.0	17,003.0	8,814.0	122.3	120.1	0.00	7,999.9	-951.3	922.9	787.4	135.51	6.811	
18,000.0	9,734.0	17,103.0	8,814.0	123.7	121.5	0.00	8,099.9	-952.0	922.9	785.9	137.03	6.735	
18,100.0	9,734.0	17,203.0	8,814.0	125.1	122.9	0.00	8,199.9	-952.7	922.9	784.3	138.55	6.661	
18,200.0	9,734.0	17,303.0	8,814.0	126.5	124.3	0.00	8,299.9	-953.3	922.9	782.8	140.07	6.589	
18,300.0	9,734.0	17,403.0	8,814.0	127.9	125.6	0.00	8,399.9	-954.0	922.9	781.3	141.60	6.518	
18,400.0	9,734.0	17,503.0	8,814.0	129.3	127.0	0.00	8,499.9	-954.6	922.9	779.8	143.12	6.448	
18,500.0	9,734.0	17,603.0	8,814.0	130.7	128.4	0.00	8,599.9	-955.3	922.9	778.3	144.65	6.380	
18,600.0	9,734.0	17,703.0	8,814.0	132.1	129.8	0.00	8,699.9	-956.0	922.9	776.7	146.17	6.314	
18,700.0	9,734.0	17,803.0	8,814.0	133.4	131.2	0.00	8,799.9	-956.6	922.9	775.2	147.70	6.249	
18,800.0	9,734.0	17,903.0	8,814.0	134.8	132.6	0.00	8,899.9	-957.3	922.9	773.7	149.23	6.185	
18,900.0	9,734.0	18,003.0	8,814.0	136.2	134.1	0.00	8,999.9	-958.0	922.9	772.1	150.75	6.122	
19,000.0	9,734.0	18,103.0	8,814.0	137.6	135.5	0.00	9,099.9	-958.6	922.9	770.6	152.28	6.060	
19,100.0	9,734.0	18,203.0	8,814.0	139.0	136.9	0.00	9,199.9	-959.3	922.9	769.1	153.81	6.000	
19,200.0	9,734.0	18,303.0	8,814.0	140.4	138.3	0.00	9,299.9	-959.9	922.9	767.6	155.35	5.941	
19,300.0	9,734.0	18,403.0	8,814.0	141.8	139.7	0.00	9,399.9	-960.6	922.9	766.0	156.88	5.883	
19,400.0	9,734.0	18,503.0	8,814.0	143.2	141.1	0.00	9,499.8	-961.3	922.9	764.5	158.41	5.826	
19,500.0	9,734.0	18,603.0	8,814.0	144.6	142.5	0.00	9,599.8	-961.9	922.9	763.0	159.94	5.770	
19,600.0	9,734.0	18,703.0	8,814.0	146.0	143.9	0.00	9,699.8	-962.6	922.9	761.4	161.48	5.715	
19,700.0	9,734.0	18,803.0	8,814.0	147.4	145.3	0.00	9,799.8	-963.2	922.9	759.9	163.01	5.662	
19,800.0	9,734.0	18,903.0	8,814.0	148.8	146.7	0.00	9,899.8	-963.9	922.9	758.4	164.55	5.609	
19,900.0	9,734.0	19,003.0	8,814.0	150.3	148.1	0.00	9,999.8	-964.6	922.9	756.8	166.08	5.557	
20,000.0	9,734.0	19,103.0	8,814.0	151.7	149.5	0.00	10,099.8	-965.2	922.9	755.3	167.62	5.506	
20,019.5	9,734.0	19,122.4	8,814.0	151.9	149.8	0.00	10,119.3	-965.4	922.9	755.0	167.92	5.496	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 305H - 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)			
0.0	0.0	2.6	2.6	0.0	0.0	6.79	160.0	19.1	161.1				
100.0	100.0	102.6	102.6	0.1	0.1	6.79	160.0	19.1	161.1	160.9	0.27	590.663	
200.0	200.0	202.6	202.6	0.5	0.5	6.79	160.0	19.1	161.1	160.1	0.99	162.802	
300.0	300.0	302.6	302.6	0.8	0.9	6.79	160.0	19.1	161.1	159.4	1.71	94.412	
400.0	400.0	402.6	402.6	1.2	1.2	6.79	160.0	19.1	161.1	158.7	2.42	66.484	
500.0	500.0	502.6	502.6	1.6	1.6	6.79	160.0	19.1	161.1	158.0	3.14	51.306	
600.0	600.0	602.6	602.6	1.9	1.9	6.79	160.0	19.1	161.1	157.3	3.86	41.771	
700.0	700.0	702.6	702.6	2.3	2.3	6.79	160.0	19.1	161.1	156.6	4.57	35.224	
800.0	800.0	802.6	802.6	2.6	2.7	6.79	160.0	19.1	161.1	155.8	5.29	30.452	
900.0	900.0	902.6	902.6	3.0	3.0	6.79	160.0	19.1	161.1	155.1	6.01	26.818	
1,000.0	1,000.0	1,002.6	1,002.6	3.4	3.4	6.79	160.0	19.1	161.1	154.4	6.73	23.959	
1,100.0	1,100.0	1,102.6	1,102.6	3.7	3.7	6.79	160.0	19.1	161.1	153.7	7.44	21.651	
1,200.0	1,200.0	1,202.6	1,202.6	4.1	4.1	6.79	160.0	19.1	161.1	153.0	8.16	19.748	
1,300.0	1,300.0	1,302.6	1,302.6	4.4	4.4	6.79	160.0	19.1	161.1	152.3	8.88	18.153	
1,400.0	1,400.0	1,402.6	1,402.6	4.8	4.8	6.79	160.0	19.1	161.1	151.5	9.59	16.797	
1,500.0	1,500.0	1,502.6	1,502.6	5.2	5.2	6.79	160.0	19.1	161.1	150.8	10.31	15.629	
1,600.0	1,600.0	1,602.6	1,602.6	5.5	5.5	6.79	160.0	19.1	161.1	150.1	11.03	14.613	
1,700.0	1,700.0	1,702.6	1,702.6	5.9	5.9	6.79	160.0	19.1	161.1	149.4	11.74	13.720	
1,800.0	1,800.0	1,802.6	1,802.6	6.2	6.2	6.79	160.0	19.1	161.1	148.7	12.46	12.931	
1,900.0	1,900.0	1,902.6	1,902.6	6.6	6.6	6.79	160.0	19.1	161.1	148.0	13.18	12.228	
2,000.0	2,000.0	2,002.8	2,002.8	6.9	7.0	6.79	160.0	19.1	161.1	147.2	13.89	11.596	
2,100.0	2,100.0	2,108.6	2,108.6	7.3	7.3	116.28	157.9	19.1	160.0	145.4	14.59	10.963	
2,200.0	2,199.8	2,214.2	2,214.0	7.6	7.7	118.47	152.0	19.2	156.8	141.6	15.25	10.285	
2,300.0	2,299.5	2,313.9	2,313.4	8.0	8.0	121.90	144.4	19.3	153.7	137.8	15.91	9.661	
2,367.0	2,365.9	2,380.4	2,379.7	8.2	8.2	124.82	139.3	19.4	153.1	136.7	16.36	9.355 CC	
2,400.0	2,398.7	2,413.2	2,412.4	8.3	8.3	126.44	136.8	19.5	153.3	136.7	16.59	9.239 ES	
2,500.0	2,497.7	2,512.2	2,511.1	8.7	8.6	131.51	129.3	19.6	155.1	137.8	17.27	8.982	
2,600.0	2,596.7	2,611.2	2,609.9	9.0	9.0	136.44	121.7	19.8	158.2	140.2	17.95	8.810	
2,700.0	2,695.7	2,710.2	2,708.6	9.4	9.3	141.15	114.2	19.9	162.4	143.7	18.64	8.711	
2,800.0	2,794.6	2,809.3	2,807.3	9.8	9.7	145.60	106.7	20.0	167.6	148.3	19.33	8.672	
2,900.0	2,893.6	2,908.3	2,906.1	10.1	10.0	149.76	99.1	20.2	173.8	153.8	20.02	8.683	
3,000.0	2,992.6	3,007.3	3,004.8	10.5	10.3	153.62	91.6	20.3	180.9	160.2	20.71	8.734	
3,100.0	3,091.6	3,106.3	3,103.5	10.9	10.7	157.18	84.0	20.5	188.7	167.3	21.41	8.816	
3,200.0	3,190.6	3,205.4	3,202.3	11.2	11.0	160.44	76.5	20.6	197.2	175.1	22.11	8.923	
3,300.0	3,289.6	3,304.4	3,301.0	11.6	11.4	163.43	68.9	20.7	206.3	183.5	22.81	9.048	
3,400.0	3,388.5	3,403.4	3,399.8	12.0	11.7	166.16	61.4	20.9	216.0	192.5	23.51	9.187	
3,500.0	3,487.5	3,502.4	3,498.5	12.4	12.1	168.66	53.8	21.0	226.0	201.8	24.21	9.335	
3,600.0	3,586.5	3,601.5	3,597.2	12.8	12.4	170.94	46.3	21.2	236.5	211.6	24.92	9.490	
3,700.0	3,685.5	3,700.5	3,696.0	13.2	12.8	173.03	38.7	21.3	247.3	221.7	25.63	9.649	
3,800.0	3,784.5	3,799.5	3,794.7	13.5	13.1	174.94	31.2	21.4	258.4	232.0	26.34	9.810	
3,900.0	3,883.5	3,898.5	3,893.4	13.9	13.5	176.70	23.6	21.6	269.7	242.7	27.05	9.972	
4,000.0	3,982.4	3,997.6	3,992.2	14.3	13.9	178.31	16.1	21.7	281.3	253.6	27.77	10.132	
4,100.0	4,081.4	4,096.6	4,090.9	14.7	14.2	179.79	8.6	21.9	293.1	264.6	28.48	10.291	
4,200.0	4,180.4	4,195.6	4,189.7	15.1	14.6	-178.84	1.0	22.0	305.1	275.9	29.20	10.448	
4,300.0	4,279.4	4,294.6	4,288.4	15.5	14.9	-177.58	-6.5	22.1	317.2	287.3	29.92	10.602	
4,400.0	4,378.4	4,393.7	4,387.1	15.9	15.3	-176.40	-14.1	22.3	329.5	298.9	30.64	10.753	
4,500.0	4,477.4	4,492.7	4,485.9	16.3	15.7	-175.32	-21.6	22.4	341.9	310.6	31.37	10.900	
4,600.0	4,576.3	4,591.7	4,584.6	16.7	16.0	-174.31	-29.2	22.6	354.4	322.3	32.09	11.044	
4,700.0	4,675.3	4,690.7	4,683.3	17.1	16.4	-173.36	-36.7	22.7	367.0	334.2	32.82	11.184	
4,800.0	4,774.3	4,789.8	4,782.1	17.5	16.7	-172.48	-44.3	22.8	379.8	346.2	33.55	11.321	
4,900.0	4,873.3	4,888.8	4,880.8	17.9	17.1	-171.66	-51.8	23.0	392.5	358.3	34.27	11.453	
5,000.0	4,972.3	4,987.8	4,979.6	18.3	17.5	-170.89	-59.4	23.1	405.4	370.4	35.00	11.582	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 305H - 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	5,071.3	5,086.9	5,078.3	18.7	17.8	-170.17	-66.9	23.3	418.3	382.6	35.73	11.707	
5,200.0	5,170.3	5,185.9	5,177.0	19.1	18.2	-169.49	-74.5	23.4	431.3	394.9	36.47	11.829	
5,300.0	5,269.2	5,284.9	5,275.8	19.5	18.6	-168.85	-82.0	23.5	444.4	407.2	37.20	11.947	
5,400.0	5,368.2	5,383.9	5,374.5	19.9	18.9	-168.24	-89.5	23.7	457.5	419.6	37.93	12.061	
5,500.0	5,467.2	5,483.0	5,473.2	20.3	19.3	-167.67	-97.1	23.8	470.7	432.0	38.67	12.172	
5,600.0	5,566.2	5,582.0	5,572.0	20.7	19.6	-167.13	-104.6	24.0	483.8	444.4	39.40	12.280	
5,700.0	5,665.2	5,681.0	5,670.7	21.1	20.0	-166.62	-112.2	24.1	497.1	456.9	40.14	12.385	
5,800.0	5,764.2	5,780.0	5,769.5	21.5	20.4	-166.14	-119.7	24.2	510.4	469.5	40.87	12.486	
5,900.0	5,863.1	5,879.1	5,868.2	21.9	20.7	-165.68	-127.3	24.4	523.7	482.0	41.61	12.585	
6,000.0	5,962.1	5,978.1	5,966.9	22.3	21.1	-165.24	-134.8	24.5	537.0	494.6	42.35	12.681	
6,100.0	6,061.1	6,077.1	6,065.7	22.7	21.5	-164.83	-142.4	24.7	550.4	507.3	43.09	12.774	
6,200.0	6,160.1	6,176.1	6,164.4	23.1	21.8	-164.43	-149.9	24.8	563.8	519.9	43.82	12.864	
6,300.0	6,259.1	6,275.2	6,263.1	23.5	22.2	-164.06	-157.5	24.9	577.2	532.6	44.56	12.952	
6,400.0	6,358.1	6,374.2	6,361.9	23.9	22.6	-163.70	-165.0	25.1	590.6	545.3	45.30	13.037	
6,500.0	6,457.0	6,473.2	6,460.6	24.3	22.9	-163.35	-172.6	25.2	604.1	558.0	46.04	13.120	
6,600.0	6,556.0	6,572.2	6,559.4	24.7	23.3	-163.02	-180.1	25.4	617.6	570.8	46.78	13.200	
6,700.0	6,655.0	6,671.3	6,658.1	25.1	23.7	-162.71	-187.7	25.5	631.1	583.5	47.53	13.278	
6,800.0	6,754.0	6,770.3	6,756.8	25.5	24.0	-162.40	-195.2	25.6	644.6	596.3	48.27	13.355	
6,900.0	6,853.0	6,869.3	6,855.6	25.9	24.4	-162.11	-202.7	25.8	658.1	609.1	49.01	13.429	
7,000.0	6,952.0	6,968.3	6,954.3	26.3	24.8	-161.84	-210.3	25.9	671.7	621.9	49.75	13.501	
7,100.0	7,050.9	7,067.4	7,053.0	26.7	25.1	-161.57	-217.8	26.1	685.2	634.7	50.49	13.571	
7,200.0	7,149.9	7,166.4	7,151.8	27.1	25.5	-161.31	-225.4	26.2	698.8	647.6	51.24	13.639	
7,300.0	7,248.9	7,265.4	7,250.5	27.5	25.9	-161.07	-232.9	26.3	712.4	660.4	51.98	13.706	
7,400.0	7,347.9	7,364.4	7,349.3	27.9	26.2	-160.83	-240.5	26.5	726.0	673.3	52.72	13.770	
7,500.0	7,446.9	7,463.5	7,448.0	28.3	26.6	-160.60	-248.0	26.6	739.7	686.2	53.47	13.833	
7,600.0	7,545.9	7,562.5	7,546.7	28.8	27.0	-160.38	-255.6	26.7	753.3	699.1	54.21	13.895	
7,700.0	7,644.8	7,661.5	7,645.5	29.2	27.4	-160.17	-263.1	26.9	766.9	712.0	54.96	13.955	
7,800.0	7,743.8	7,760.5	7,744.2	29.6	27.7	-159.96	-270.7	27.0	780.6	724.9	55.70	14.013	
7,900.0	7,842.8	7,859.6	7,842.9	30.0	28.1	-159.76	-278.2	27.2	794.2	737.8	56.45	14.070	
8,000.0	7,941.8	7,958.6	7,941.7	30.4	28.5	-159.57	-285.8	27.3	807.9	750.7	57.19	14.126	
8,100.0	8,040.8	8,057.9	8,040.7	30.8	28.8	-159.39	-293.2	27.4	821.6	763.6	57.94	14.180	
8,200.0	8,139.8	8,156.4	8,141.1	31.2	29.2	-159.39	-298.3	27.5	835.1	776.5	58.68	14.232	
8,300.0	8,238.8	8,255.7	8,241.4	31.6	29.5	-159.62	-299.9	27.6	848.6	789.2	59.40	14.285	
8,400.0	8,337.7	8,354.9	8,340.5	32.0	29.9	-159.95	-299.9	27.6	861.9	801.8	60.09	14.343	
8,500.0	8,436.7	8,453.9	8,440.7	32.4	30.2	-161.03	-288.4	27.5	875.1	814.4	60.75	14.405	
8,600.0	8,535.7	8,550.0	8,527.2	32.8	30.4	-163.13	-260.2	27.3	889.1	827.8	61.28	14.510	
8,700.0	8,634.7	8,650.0	8,633.3	33.2	30.6	-165.61	-225.0	27.1	903.3	843.7	61.62	14.693	
8,800.0	8,734.1	8,689.6	8,645.2	33.6	30.7	-168.20	-186.7	26.8	923.2	861.4	61.75	14.951	
8,900.0	8,833.8	8,741.3	8,682.8	34.0	30.8	-170.52	-151.2	26.6	943.5	881.9	61.58	15.321	
9,000.0	8,933.7	8,783.7	8,710.6	34.3	30.9	-172.55	-119.2	26.4	967.2	906.1	61.10	15.830	
9,100.0	9,033.7	8,818.7	8,731.3	34.7	30.9	76.96	-91.0	26.2	994.9	934.6	60.29	16.501	
9,200.0	9,133.7	8,850.0	8,748.1	35.0	31.0	75.41	-64.5	26.0	1,029.2	970.0	59.25	17.371	
9,300.0	9,233.7	8,875.0	8,760.2	35.3	31.0	74.14	-42.6	25.9	1,070.5	1,012.5	58.00	18.458	
9,400.0	9,333.4	8,900.0	8,771.1	35.6	31.1	68.74	-20.2	25.7	1,116.6	1,060.0	56.66	19.709	
9,500.0	9,429.7	8,925.0	8,780.9	35.9	31.1	62.22	2.8	25.6	1,162.1	1,106.8	55.28	21.021	
9,600.0	9,518.4	8,950.0	8,789.4	36.1	31.1	56.68	26.3	25.4	1,204.1	1,150.1	53.95	22.317	
9,700.0	9,595.7	8,975.0	8,796.7	36.2	31.2	52.25	50.2	25.3	1,240.7	1,187.9	52.77	23.511	
9,800.0	9,658.2	9,012.4	8,805.3	36.3	31.2	48.78	86.7	25.0	1,270.1	1,218.2	51.90	24.471	
9,900.0	9,703.1	9,050.0	8,811.0	36.4	31.3	46.49	123.8	24.8	1,291.2	1,239.9	51.29	25.173	
10,000.0	9,728.5	9,075.0	8,813.1	36.3	31.3	45.32	148.7	24.6	1,303.1	1,252.2	50.98	25.562	
10,100.0	9,734.0	9,132.5	8,814.0	36.3	31.4	45.04	206.2	24.2	1,305.7	1,254.7	51.08	25.561	
10,200.0	9,734.0	9,232.5	8,814.0	36.4	31.6	45.04	306.2	23.6	1,305.7	1,254.4	51.37	25.416	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 305H - 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	
10,300.0	9,734.0	9,332.5	8,814.0	36.5	31.9	45.04	406.2	22.9	1,305.7	1,254.0	51.77	25.223	
10,400.0	9,734.0	9,432.5	8,814.0	36.7	32.3	45.04	506.2	22.2	1,305.7	1,253.5	52.26	24.985	
10,500.0	9,734.0	9,532.5	8,814.0	37.0	32.6	45.04	606.2	21.6	1,305.7	1,252.9	52.85	24.705	
10,600.0	9,734.0	9,632.5	8,814.0	37.4	33.1	45.04	706.2	20.9	1,305.7	1,252.2	53.54	24.389	
10,700.0	9,734.0	9,732.5	8,814.0	37.8	33.6	45.04	806.2	20.3	1,305.7	1,251.4	54.32	24.039	
10,800.0	9,734.0	9,832.5	8,814.0	38.3	34.2	45.04	906.1	19.6	1,305.7	1,250.6	55.18	23.662	
10,900.0	9,734.0	9,932.5	8,814.0	38.9	34.8	45.04	1,006.1	18.9	1,305.7	1,249.6	56.13	23.263	
11,000.0	9,734.0	10,032.5	8,814.0	39.5	35.5	45.04	1,106.1	18.3	1,305.7	1,248.6	57.16	22.844	
11,100.0	9,734.0	10,132.5	8,814.0	40.2	36.2	45.04	1,206.1	17.6	1,305.7	1,247.5	58.26	22.412	
11,200.0	9,734.0	10,232.5	8,814.0	40.9	36.9	45.04	1,306.1	16.9	1,305.7	1,246.3	59.43	21.969	
11,300.0	9,734.0	10,332.5	8,814.0	41.6	37.7	45.04	1,406.1	16.3	1,305.7	1,245.1	60.68	21.520	
11,400.0	9,734.0	10,432.5	8,814.0	42.4	38.5	45.04	1,506.1	15.6	1,305.7	1,243.8	61.98	21.068	
11,500.0	9,734.0	10,532.5	8,814.0	43.2	39.4	45.04	1,606.1	15.0	1,305.7	1,242.4	63.34	20.615	
11,600.0	9,734.0	10,632.5	8,814.0	44.0	40.3	45.04	1,706.1	14.3	1,305.7	1,241.0	64.76	20.164	
11,700.0	9,734.0	10,732.5	8,814.0	44.9	41.2	45.04	1,806.1	13.6	1,305.7	1,239.5	66.23	19.716	
11,800.0	9,734.0	10,832.5	8,814.0	45.8	42.2	45.04	1,906.1	13.0	1,305.7	1,238.0	67.74	19.275	
11,900.0	9,734.0	10,932.5	8,814.0	46.7	43.2	45.04	2,006.1	12.3	1,305.7	1,236.4	69.31	18.840	
12,000.0	9,734.0	11,032.5	8,814.0	47.7	44.2	45.04	2,106.1	11.7	1,305.7	1,234.8	70.91	18.414	
12,100.0	9,734.0	11,132.5	8,814.0	48.6	45.2	45.04	2,206.1	11.0	1,305.7	1,233.2	72.55	17.997	
12,200.0	9,734.0	11,232.5	8,814.0	49.6	46.3	45.04	2,306.1	10.3	1,305.7	1,231.5	74.23	17.589	
12,300.0	9,734.0	11,332.5	8,814.0	50.7	47.4	45.04	2,406.1	9.7	1,305.7	1,229.8	75.95	17.192	
12,400.0	9,734.0	11,432.5	8,814.0	51.7	48.5	45.04	2,506.1	9.0	1,305.7	1,228.0	77.70	16.806	
12,500.0	9,734.0	11,532.5	8,814.0	52.8	49.6	45.04	2,606.1	8.3	1,305.7	1,226.3	79.47	16.430	
12,600.0	9,734.0	11,632.5	8,814.0	53.8	50.7	45.04	2,706.1	7.7	1,305.7	1,224.5	81.28	16.065	
12,700.0	9,734.0	11,732.5	8,814.0	54.9	51.9	45.04	2,806.1	7.0	1,305.7	1,222.6	83.11	15.711	
12,800.0	9,734.0	11,832.5	8,814.0	56.0	53.0	45.04	2,906.1	6.4	1,305.7	1,220.8	84.97	15.368	
12,900.0	9,734.0	11,932.5	8,814.0	57.2	54.2	45.04	3,006.1	5.7	1,305.7	1,218.9	86.84	15.036	
13,000.0	9,734.0	12,032.5	8,814.0	58.3	55.4	45.04	3,106.1	5.0	1,305.7	1,217.0	88.74	14.714	
13,100.0	9,734.0	12,132.5	8,814.0	59.5	56.6	45.04	3,206.1	4.4	1,305.7	1,215.1	90.66	14.402	
13,200.0	9,734.0	12,232.5	8,814.0	60.6	57.8	45.04	3,306.1	3.7	1,305.7	1,213.1	92.60	14.100	
13,300.0	9,734.0	12,332.5	8,814.0	61.8	59.1	45.04	3,406.1	3.1	1,305.7	1,211.2	94.56	13.809	
13,400.0	9,734.0	12,432.5	8,814.0	63.0	60.3	45.04	3,506.1	2.4	1,305.7	1,209.2	96.53	13.526	
13,500.0	9,734.0	12,532.5	8,814.0	64.2	61.5	45.04	3,606.1	1.7	1,305.7	1,207.2	98.52	13.253	
13,600.0	9,734.0	12,632.5	8,814.0	65.4	62.8	45.04	3,706.1	1.1	1,305.7	1,205.2	100.53	12.989	
13,700.0	9,734.0	12,732.5	8,814.0	66.6	64.0	45.04	3,806.1	0.4	1,305.7	1,203.2	102.54	12.734	
13,800.0	9,734.0	12,832.5	8,814.0	67.8	65.3	45.04	3,906.1	-0.2	1,305.7	1,201.2	104.57	12.486	
13,900.0	9,734.0	12,932.5	8,814.0	69.1	66.6	45.04	4,006.1	-0.9	1,305.7	1,199.1	106.62	12.247	
14,000.0	9,734.0	13,032.5	8,814.0	70.3	67.9	45.04	4,106.1	-1.6	1,305.7	1,197.1	108.67	12.016	
14,100.0	9,734.0	13,132.5	8,814.0	71.6	69.2	45.04	4,206.1	-2.2	1,305.7	1,195.0	110.74	11.791	
14,200.0	9,734.0	13,232.5	8,814.0	72.8	70.4	45.04	4,306.1	-2.9	1,305.7	1,192.9	112.81	11.575	
14,300.0	9,734.0	13,332.5	8,814.0	74.1	71.7	45.04	4,406.1	-3.6	1,305.7	1,190.8	114.90	11.364	
14,400.0	9,734.0	13,432.5	8,814.0	75.4	73.1	45.04	4,506.1	-4.2	1,305.7	1,188.8	116.99	11.161	
14,500.0	9,734.0	13,532.5	8,814.0	76.6	74.4	45.04	4,606.1	-4.9	1,305.7	1,186.6	119.10	10.964	
14,600.0	9,734.0	13,632.5	8,814.0	77.9	75.7	45.04	4,706.1	-5.5	1,305.7	1,184.5	121.21	10.773	
14,700.0	9,734.0	13,732.5	8,814.0	79.2	77.0	45.04	4,806.1	-6.2	1,305.7	1,182.4	123.33	10.588	
14,800.0	9,734.0	13,832.5	8,814.0	80.5	78.3	45.04	4,906.1	-6.9	1,305.7	1,180.3	125.45	10.408	
14,900.0	9,734.0	13,932.5	8,814.0	81.8	79.7	45.04	5,006.1	-7.5	1,305.7	1,178.2	127.59	10.234	
15,000.0	9,734.0	14,032.5	8,814.0	83.1	81.0	45.04	5,106.1	-8.2	1,305.7	1,176.0	129.73	10.065	
15,100.0	9,734.0	14,132.5	8,814.0	84.4	82.3	45.04	5,206.1	-8.8	1,305.7	1,173.9	131.88	9.901	
15,200.0	9,734.0	14,232.5	8,814.0	85.7	83.7	45.04	5,306.1	-9.5	1,305.7	1,171.7	134.03	9.742	
15,300.0	9,734.0	14,332.5	8,814.0	87.0	85.0	45.04	5,406.1	-10.2	1,305.7	1,169.6	136.19	9.588	
15,400.0	9,734.0	14,432.5	8,814.0	88.4	86.4	45.04	5,506.0	-10.8	1,305.7	1,167.4	138.36	9.438	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 305H - 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)	
15,500.0	9,734.0	14,532.5	8,814.0	89.7	87.7	45.04	5,606.0	-11.5	1,305.7	1,165.2	140.53	9.292		
15,600.0	9,734.0	14,632.5	8,814.0	91.0	89.1	45.04	5,706.0	-12.2	1,305.7	1,163.0	142.70	9.150		
15,700.0	9,734.0	14,732.5	8,814.0	92.4	90.4	45.04	5,806.0	-12.8	1,305.7	1,160.9	144.88	9.012		
15,800.0	9,734.0	14,832.5	8,814.0	93.7	91.8	45.04	5,906.0	-13.5	1,305.7	1,158.7	147.07	8.879		
15,900.0	9,734.0	14,932.5	8,814.0	95.0	93.1	45.04	6,006.0	-14.1	1,305.7	1,156.5	149.26	8.748		
16,000.0	9,734.0	15,032.5	8,814.0	96.4	94.5	45.04	6,106.0	-14.8	1,305.7	1,154.3	151.45	8.622		
16,100.0	9,734.0	15,132.5	8,814.0	97.7	95.9	45.04	6,206.0	-15.5	1,305.7	1,152.1	153.65	8.498		
16,200.0	9,734.0	15,232.5	8,814.0	99.1	97.2	45.04	6,306.0	-16.1	1,305.7	1,149.9	155.85	8.378		
16,300.0	9,734.0	15,332.5	8,814.0	100.4	98.6	45.04	6,406.0	-16.8	1,305.7	1,147.7	158.05	8.261		
16,400.0	9,734.0	15,432.5	8,814.0	101.8	100.0	45.04	6,506.0	-17.4	1,305.7	1,145.5	160.26	8.147		
16,500.0	9,734.0	15,532.5	8,814.0	103.1	101.4	45.04	6,606.0	-18.1	1,305.7	1,143.3	162.48	8.037		
16,600.0	9,734.0	15,632.5	8,814.0	104.5	102.8	45.04	6,706.0	-18.8	1,305.7	1,141.1	164.69	7.928		
16,700.0	9,734.0	15,732.5	8,814.0	105.8	104.1	45.04	6,806.0	-19.4	1,305.7	1,138.8	166.91	7.823		
16,800.0	9,734.0	15,832.5	8,814.0	107.2	105.5	45.04	6,906.0	-20.1	1,305.7	1,136.6	169.13	7.720		
16,900.0	9,734.0	15,932.5	8,814.0	108.6	106.9	45.04	7,006.0	-20.8	1,305.7	1,134.4	171.36	7.620		
17,000.0	9,734.0	16,032.5	8,814.0	109.9	108.3	45.04	7,106.0	-21.4	1,305.7	1,132.2	173.58	7.522		
17,100.0	9,734.0	16,132.5	8,814.0	111.3	109.7	45.04	7,206.0	-22.1	1,305.7	1,129.9	175.81	7.427		
17,200.0	9,734.0	16,232.5	8,814.0	112.7	111.1	45.04	7,306.0	-22.7	1,305.7	1,127.7	178.05	7.334		
17,300.0	9,734.0	16,332.5	8,814.0	114.1	112.4	45.04	7,406.0	-23.4	1,305.7	1,125.5	180.28	7.243		
17,400.0	9,734.0	16,432.5	8,814.0	115.4	113.8	45.04	7,506.0	-24.1	1,305.7	1,123.2	182.52	7.154		
17,500.0	9,734.0	16,532.5	8,814.0	116.8	115.2	45.04	7,606.0	-24.7	1,305.7	1,121.0	184.76	7.067		
17,600.0	9,734.0	16,632.5	8,814.0	118.2	116.6	45.04	7,706.0	-25.4	1,305.7	1,118.7	187.00	6.983		
17,700.0	9,734.0	16,732.5	8,814.0	119.6	118.0	45.04	7,806.0	-26.0	1,305.7	1,116.5	189.24	6.900		
17,800.0	9,734.0	16,832.5	8,814.0	121.0	119.4	45.04	7,906.0	-26.7	1,305.7	1,114.3	191.49	6.819		
17,900.0	9,734.0	16,932.5	8,814.0	122.3	120.8	45.04	8,006.0	-27.4	1,305.7	1,112.0	193.74	6.740		
18,000.0	9,734.0	17,032.5	8,814.0	123.7	122.2	45.04	8,106.0	-28.0	1,305.7	1,109.8	195.99	6.662		
18,100.0	9,734.0	17,132.5	8,814.0	125.1	123.6	45.04	8,206.0	-28.7	1,305.7	1,107.5	198.24	6.587		
18,200.0	9,734.0	17,232.5	8,814.0	126.5	125.0	45.04	8,306.0	-29.4	1,305.7	1,105.2	200.49	6.513		
18,300.0	9,734.0	17,332.5	8,814.0	127.9	126.4	45.04	8,406.0	-30.0	1,305.7	1,103.0	202.75	6.440		
18,400.0	9,734.0	17,432.5	8,814.0	129.3	127.8	45.04	8,506.0	-30.7	1,305.7	1,100.7	205.01	6.369		
18,500.0	9,734.0	17,532.5	8,814.0	130.7	129.2	45.04	8,606.0	-31.3	1,305.7	1,098.5	207.27	6.300		
18,600.0	9,734.0	17,632.5	8,814.0	132.1	130.6	45.04	8,706.0	-32.0	1,305.7	1,096.2	209.53	6.232		
18,700.0	9,734.0	17,732.5	8,814.0	133.4	132.0	45.04	8,806.0	-32.7	1,305.7	1,094.0	211.79	6.165		
18,800.0	9,734.0	17,832.5	8,814.0	134.8	133.4	45.04	8,906.0	-33.3	1,305.7	1,091.7	214.05	6.100		
18,900.0	9,734.0	17,932.5	8,814.0	136.2	134.8	45.04	9,006.0	-34.0	1,305.7	1,089.4	216.32	6.036		
19,000.0	9,734.0	18,032.5	8,814.0	137.6	136.3	45.04	9,106.0	-34.6	1,305.7	1,087.2	218.58	5.974		
19,100.0	9,734.0	18,132.5	8,814.0	139.0	137.7	45.04	9,206.0	-35.3	1,305.7	1,084.9	220.85	5.912		
19,200.0	9,734.0	18,232.5	8,814.0	140.4	139.1	45.04	9,306.0	-36.0	1,305.7	1,082.6	223.12	5.852		
19,300.0	9,734.0	18,332.5	8,814.0	141.8	140.5	45.04	9,406.0	-36.6	1,305.7	1,080.4	225.39	5.793		
19,400.0	9,734.0	18,432.5	8,814.0	143.2	141.9	45.04	9,506.0	-37.3	1,305.7	1,078.1	227.66	5.735		
19,500.0	9,734.0	18,532.5	8,814.0	144.6	143.3	45.04	9,606.0	-37.9	1,305.7	1,075.8	229.93	5.679		
19,600.0	9,734.0	18,632.5	8,814.0	146.0	144.7	45.04	9,706.0	-38.6	1,305.7	1,073.5	232.21	5.623		
19,700.0	9,734.0	18,732.5	8,814.0	147.4	146.1	45.04	9,806.0	-39.3	1,305.7	1,071.3	234.48	5.569		
19,800.0	9,734.0	18,832.5	8,814.0	148.8	147.5	45.04	9,906.0	-39.9	1,305.7	1,069.0	236.76	5.515		
19,900.0	9,734.0	18,932.5	8,814.0	150.3	149.0	45.04	10,005.9	-40.6	1,305.7	1,066.7	239.04	5.463		
20,000.0	9,734.0	19,032.5	8,814.0	151.7	150.4	45.04	10,105.9	-41.3	1,305.7	1,064.4	241.31	5.411		
20,019.5	9,734.0	19,051.9	8,814.0	151.9	150.7	45.04	10,125.4	-41.4	1,305.7	1,064.0	241.76	5.401 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 306H - 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)			
0.0	0.0	2.8	2.8	0.0	0.0	13.70	160.2	39.1	164.9				
100.0	100.0	102.8	102.8	0.1	0.1	13.70	160.2	39.1	164.9	164.7	0.27	602.984	
200.0	200.0	202.8	202.8	0.5	0.5	13.70	160.2	39.1	164.9	163.9	0.99	166.514	
300.0	300.0	302.8	302.8	0.8	0.9	13.70	160.2	39.1	164.9	163.2	1.71	96.594	
400.0	400.0	402.8	402.8	1.2	1.2	13.70	160.2	39.1	164.9	162.5	2.42	68.029	
500.0	500.0	502.8	502.8	1.6	1.6	13.70	160.2	39.1	164.9	161.8	3.14	52.502	
600.0	600.0	602.8	602.8	1.9	1.9	13.70	160.2	39.1	164.9	161.1	3.86	42.746	
700.0	700.0	702.8	702.8	2.3	2.3	13.70	160.2	39.1	164.9	160.3	4.58	36.048	
800.0	800.0	802.8	802.8	2.6	2.7	13.70	160.2	39.1	164.9	159.6	5.29	31.164	
900.0	900.0	902.8	902.8	3.0	3.0	13.70	160.2	39.1	164.9	158.9	6.01	27.446	
1,000.0	1,000.0	1,002.8	1,002.8	3.4	3.4	13.70	160.2	39.1	164.9	158.2	6.73	24.520	
1,100.0	1,100.0	1,102.8	1,102.8	3.7	3.7	13.70	160.2	39.1	164.9	157.5	7.44	22.159	
1,200.0	1,200.0	1,202.8	1,202.8	4.1	4.1	13.70	160.2	39.1	164.9	156.8	8.16	20.212	
1,300.0	1,300.0	1,302.8	1,302.8	4.4	4.4	13.70	160.2	39.1	164.9	156.0	8.88	18.579	
1,400.0	1,400.0	1,402.8	1,402.8	4.8	4.8	13.70	160.2	39.1	164.9	155.3	9.59	17.191	
1,500.0	1,500.0	1,502.8	1,502.8	5.2	5.2	13.70	160.2	39.1	164.9	154.6	10.31	15.995	
1,600.0	1,600.0	1,602.8	1,602.8	5.5	5.5	13.70	160.2	39.1	164.9	153.9	11.03	14.956	
1,700.0	1,700.0	1,702.8	1,702.8	5.9	5.9	13.70	160.2	39.1	164.9	153.2	11.74	14.043	
1,800.0	1,800.0	1,802.8	1,802.8	6.2	6.2	13.70	160.2	39.1	164.9	152.5	12.46	13.235	
1,900.0	1,900.0	1,902.8	1,902.8	6.6	6.6	13.70	160.2	39.1	164.9	151.7	13.18	12.515	
2,000.0	2,000.0	2,002.8	2,002.8	6.9	7.0	13.70	160.2	39.1	164.9	151.0	13.90	11.869	
2,002.0	2,002.0	2,004.9	2,004.9	6.9	7.0	122.47	160.2	39.1	164.9	151.0	13.91	11.857	CC
2,100.0	2,100.0	2,104.0	2,104.0	7.3	7.3	123.61	159.4	40.8	165.5	150.9	14.59	11.341	ES
2,200.0	2,199.8	2,204.6	2,204.4	7.6	7.6	126.89	157.0	45.6	167.6	152.3	15.27	10.977	
2,300.0	2,299.5	2,303.8	2,303.3	8.0	8.0	132.01	153.0	53.5	172.2	156.3	15.94	10.802	
2,400.0	2,398.7	2,401.3	2,399.9	8.3	8.3	138.48	147.7	64.2	181.0	164.4	16.62	10.888	
2,500.0	2,497.7	2,496.7	2,494.2	8.7	8.6	145.55	141.1	77.5	194.2	176.9	17.29	11.231	
2,600.0	2,596.7	2,591.7	2,587.7	9.0	9.0	152.31	133.3	92.9	210.9	192.9	17.95	11.746	
2,700.0	2,695.7	2,687.2	2,681.5	9.4	9.3	158.14	125.5	108.6	230.2	211.6	18.62	12.368	
2,800.0	2,794.6	2,782.7	2,775.4	9.8	9.7	163.06	117.7	124.2	251.6	232.4	19.28	13.051	
2,900.0	2,893.6	2,878.2	2,869.3	10.1	10.1	167.21	109.9	139.9	274.6	254.6	19.95	13.765	
3,000.0	2,992.6	2,973.6	2,963.1	10.5	10.4	170.73	102.1	155.6	298.7	278.1	20.62	14.489	
3,100.0	3,091.6	3,069.1	3,057.0	10.9	10.8	173.73	94.3	171.2	323.8	302.5	21.29	15.208	
3,200.0	3,190.6	3,164.6	3,150.8	11.2	11.2	176.31	86.5	186.9	349.7	327.7	21.97	15.913	
3,300.0	3,289.6	3,260.1	3,244.7	11.6	11.5	178.53	78.7	202.5	376.1	353.4	22.66	16.598	
3,400.0	3,388.5	3,355.5	3,338.5	12.0	11.9	-179.54	70.8	218.2	402.9	379.6	23.34	17.261	
3,500.0	3,487.5	3,451.0	3,432.4	12.4	12.3	-177.84	63.0	233.8	430.2	406.1	24.03	17.899	
3,600.0	3,586.5	3,546.5	3,526.3	12.8	12.7	-176.35	55.2	249.5	457.7	433.0	24.73	18.512	
3,700.0	3,685.5	3,642.0	3,620.1	13.2	13.1	-175.03	47.4	265.1	485.5	460.1	25.42	19.099	
3,800.0	3,784.5	3,737.4	3,714.0	13.5	13.5	-173.84	39.6	280.8	513.6	487.4	26.12	19.661	
3,900.0	3,883.5	3,832.9	3,807.8	13.9	13.9	-172.78	31.8	296.5	541.8	515.0	26.82	20.199	
4,000.0	3,982.4	3,928.4	3,901.7	14.3	14.3	-171.82	24.0	312.1	570.1	542.6	27.52	20.714	
4,100.0	4,081.4	4,023.9	3,995.5	14.7	14.6	-170.96	16.1	327.8	598.6	570.4	28.23	21.206	
4,200.0	4,180.4	4,119.3	4,089.4	15.1	15.0	-170.17	8.3	343.4	627.3	598.3	28.94	21.676	
4,300.0	4,279.4	4,214.8	4,183.3	15.5	15.4	-169.45	0.5	359.1	656.0	626.3	29.65	22.126	
4,400.0	4,378.4	4,310.3	4,277.1	15.9	15.8	-168.79	-7.3	374.7	684.8	654.4	30.36	22.557	
4,500.0	4,477.4	4,405.8	4,371.0	16.3	16.2	-168.18	-15.1	390.4	713.7	682.6	31.07	22.970	
4,600.0	4,576.3	4,501.2	4,464.8	16.7	16.6	-167.62	-22.9	406.0	742.6	710.8	31.78	23.365	
4,700.0	4,675.3	4,596.7	4,558.7	17.1	17.0	-167.11	-30.7	421.7	771.6	739.1	32.50	23.743	
4,800.0	4,774.3	4,692.2	4,652.5	17.5	17.4	-166.62	-38.5	437.4	800.7	767.5	33.22	24.106	
4,900.0	4,873.3	4,787.7	4,746.4	17.9	17.8	-166.18	-46.4	453.0	829.8	795.9	33.93	24.454	
5,000.0	4,972.3	4,883.1	4,840.3	18.3	18.3	-165.76	-54.2	468.7	859.0	824.3	34.65	24.789	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 306H - 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	5,071.3	4,978.6	4,934.1	18.7	18.7	-165.37	-62.0	484.3	888.2	852.8	35.37	25.110
5,200.0	5,170.3	5,074.1	5,028.0	19.1	19.1	-165.01	-69.8	500.0	917.4	881.3	36.09	25.418
5,300.0	5,269.2	5,169.6	5,121.8	19.5	19.5	-164.66	-77.6	515.6	946.6	909.8	36.81	25.715
5,400.0	5,368.2	5,265.0	5,215.7	19.9	19.9	-164.34	-85.4	531.3	975.9	938.4	37.54	26.000
5,500.0	5,467.2	5,360.5	5,309.5	20.3	20.3	-164.04	-93.2	546.9	1,005.3	967.0	38.26	26.275
5,600.0	5,566.2	5,456.0	5,403.4	20.7	20.7	-163.75	-101.1	562.6	1,034.6	995.6	38.98	26.539
5,700.0	5,665.2	5,551.4	5,497.3	21.1	21.1	-163.48	-108.9	578.3	1,064.0	1,024.3	39.71	26.794
5,800.0	5,764.2	5,646.9	5,591.1	21.5	21.5	-163.23	-116.7	593.9	1,093.3	1,052.9	40.43	27.040
5,900.0	5,863.1	5,742.4	5,685.0	21.9	21.9	-162.99	-124.5	609.6	1,122.7	1,081.6	41.16	27.278
6,000.0	5,962.1	5,837.9	5,778.8	22.3	22.3	-162.76	-132.3	625.2	1,152.2	1,110.3	41.89	27.506
6,100.0	6,061.1	5,933.3	5,872.7	22.7	22.7	-162.54	-140.1	640.9	1,181.6	1,139.0	42.61	27.728
6,200.0	6,160.1	6,028.8	5,966.5	23.1	23.2	-162.33	-147.9	656.5	1,211.1	1,167.7	43.34	27.941
6,300.0	6,259.1	6,124.3	6,060.4	23.5	23.6	-162.13	-155.8	672.2	1,240.5	1,196.5	44.07	28.148
6,400.0	6,358.1	6,219.8	6,154.3	23.9	24.0	-161.94	-163.6	687.8	1,270.0	1,225.2	44.80	28.348
6,500.0	6,457.0	6,315.2	6,248.1	24.3	24.4	-161.76	-171.4	703.5	1,299.5	1,254.0	45.53	28.541
6,600.0	6,556.0	6,410.7	6,342.0	24.7	24.8	-161.59	-179.2	719.2	1,329.0	1,282.7	46.26	28.728
6,700.0	6,655.0	6,506.2	6,435.8	25.1	25.2	-161.42	-187.0	734.8	1,358.5	1,311.5	46.99	28.909
6,800.0	6,754.0	6,601.7	6,529.7	25.5	25.6	-161.27	-194.8	750.5	1,388.0	1,340.3	47.72	29.085
6,900.0	6,853.0	6,697.1	6,623.5	25.9	26.0	-161.12	-202.6	766.1	1,417.6	1,369.1	48.46	29.255
7,000.0	6,952.0	6,792.6	6,717.4	26.3	26.5	-160.97	-210.4	781.8	1,447.1	1,397.9	49.19	29.420
7,100.0	7,050.9	6,888.1	6,811.3	26.7	26.9	-160.83	-218.3	797.4	1,476.7	1,426.7	49.92	29.580
7,200.0	7,149.9	6,983.6	6,905.1	27.1	27.3	-160.70	-226.1	813.1	1,506.2	1,455.6	50.65	29.736
7,300.0	7,248.9	7,079.0	6,999.0	27.5	27.7	-160.57	-233.9	828.7	1,535.8	1,484.4	51.39	29.886
7,400.0	7,347.9	7,174.5	7,092.8	27.9	28.1	-160.44	-241.7	844.4	1,565.3	1,513.2	52.12	30.033
7,500.0	7,446.9	7,270.0	7,186.7	28.3	28.5	-160.33	-249.5	860.1	1,594.9	1,542.1	52.86	30.175
7,600.0	7,545.9	7,365.5	7,280.5	28.8	28.9	-160.21	-257.3	875.7	1,624.5	1,570.9	53.59	30.314
7,700.0	7,644.8	7,460.9	7,374.4	29.2	29.4	-160.10	-265.1	891.4	1,654.1	1,599.8	54.33	30.448
7,800.0	7,743.8	7,556.4	7,468.3	29.6	29.8	-159.99	-273.0	907.0	1,683.7	1,628.6	55.06	30.579
7,900.0	7,842.8	7,655.6	7,565.2	30.0	30.6	-159.88	-286.4	934.0	1,710.6	1,654.1	56.52	30.266
8,000.0	7,941.8	7,769.4	7,678.2	30.4	31.4	-159.98	-294.0	949.2	1,731.1	1,673.2	57.85	29.925
8,100.0	8,040.8	7,868.4	7,777.0	30.8	31.9	-160.21	-295.2	951.6	1,745.5	1,686.8	58.79	29.691
8,200.0	8,139.8	7,967.4	7,875.0	31.2	32.2	-160.37	-295.2	951.6	1,758.9	1,699.5	59.49	29.569
8,300.0	8,238.8	8,066.4	7,972.0	31.6	32.5	-160.52	-295.2	951.6	1,772.4	1,712.2	60.18	29.449
8,400.0	8,337.7	8,165.0	8,069.0	32.0	32.8	-160.68	-295.2	951.6	1,785.8	1,724.9	60.88	29.332
8,500.0	8,436.7	8,263.3	8,166.2	32.4	33.1	-161.20	-283.6	951.5	1,799.1	1,737.6	61.57	29.223
8,600.0	8,535.7	8,362.2	8,265.5	32.8	33.3	-162.23	-255.3	951.3	1,812.8	1,750.6	62.19	29.152
8,700.0	8,634.7	8,460.0	8,362.2	33.2	33.5	-163.48	-219.7	951.1	1,827.5	1,764.8	62.73	29.134
8,800.0	8,734.1	8,556.4	8,457.0	33.6	33.6	-164.82	-181.4	950.8	1,841.6	1,778.5	63.19	29.146
8,900.0	8,833.8	8,653.0	8,553.0	34.0	33.6	-166.02	-145.9	950.6	1,855.5	1,791.9	63.54	29.200
9,000.0	8,933.7	8,758.3	8,657.1	34.3	33.6	-167.08	-113.9	950.4	1,869.5	1,805.7	63.79	29.308
9,100.0	9,033.7	8,883.3	8,781.7	34.7	33.6	83.24	-85.7	950.2	1,884.3	1,820.4	63.90	29.487
9,200.0	9,133.7	8,985.0	8,882.0	35.0	33.6	82.42	-58.9	950.0	1,902.7	1,838.7	63.91	29.769
9,300.0	9,233.7	9,085.0	8,982.0	35.3	33.6	81.75	-37.0	949.9	1,925.3	1,861.5	63.81	30.174
9,400.0	9,333.4	9,185.0	9,082.0	35.6	33.6	79.01	-14.5	949.7	1,951.3	1,887.7	63.60	30.680
9,500.0	9,429.7	9,285.0	9,182.0	35.9	33.6	75.26	8.6	949.6	1,977.7	1,914.4	63.31	31.240
9,600.0	9,518.4	9,380.0	9,277.0	36.1	33.6	71.81	32.1	949.4	2,002.7	1,939.7	62.95	31.815
9,700.0	9,595.7	9,450.0	9,347.0	36.2	33.6	68.85	56.0	949.2	2,024.9	1,962.4	62.58	32.356
9,800.0	9,658.2	9,508.0	9,405.0	36.3	33.6	66.36	91.9	949.0	2,043.1	1,980.8	62.31	32.791
9,900.0	9,703.1	9,550.0	9,447.0	36.4	33.5	64.61	129.6	948.8	2,056.4	1,994.2	62.12	33.101
10,000.0	9,728.5	9,575.0	9,472.0	36.3	33.5	63.69	154.5	948.6	2,063.9	2,001.9	62.04	33.268
10,100.0	9,734.0	9,580.0	9,477.0	36.3	33.5	63.46	212.3	948.2	2,065.6	2,003.4	62.19	33.216
10,200.0	9,734.0	9,580.0	9,477.0	36.4	33.4	63.46	312.3	947.5	2,065.6	2,003.0	62.55	33.025

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 306H - OH - Plan 0.1													Offset Site Error: 0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM							Rule Assigned:						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
10,300.0	9,734.0	9,407.8	8,814.0	36.5	33.3	63.46	412.3	946.9	2,065.6	2,002.6	63.02	32.779	
10,400.0	9,734.0	9,507.8	8,814.0	36.7	33.3	63.46	512.3	946.2	2,065.6	2,002.0	63.60	32.479	
10,500.0	9,734.0	9,607.8	8,814.0	37.0	33.5	63.46	612.3	945.6	2,065.6	2,001.3	64.28	32.132	
10,600.0	9,734.0	9,707.8	8,814.0	37.4	33.9	63.46	712.3	944.9	2,065.6	2,000.5	65.08	31.742	
10,700.0	9,734.0	9,807.8	8,814.0	37.8	34.3	63.46	812.3	944.2	2,065.6	1,999.6	65.97	31.313	
10,800.0	9,734.0	9,907.8	8,814.0	38.3	34.9	63.46	912.3	943.6	2,065.6	1,998.6	66.95	30.852	
10,900.0	9,734.0	10,007.8	8,814.0	38.9	35.4	63.46	1,012.3	942.9	2,065.6	1,997.6	68.03	30.363	
11,000.0	9,734.0	10,107.8	8,814.0	39.5	36.1	63.46	1,112.3	942.3	2,065.6	1,996.4	69.19	29.852	
11,100.0	9,734.0	10,207.8	8,814.0	40.2	36.8	63.46	1,212.3	941.6	2,065.6	1,995.1	70.44	29.323	
11,200.0	9,734.0	10,307.8	8,814.0	40.9	37.5	63.46	1,312.3	940.9	2,065.6	1,993.8	71.77	28.781	
11,300.0	9,734.0	10,407.8	8,814.0	41.6	38.3	63.46	1,412.3	940.3	2,065.6	1,992.4	73.17	28.230	
11,400.0	9,734.0	10,507.8	8,814.0	42.4	39.1	63.46	1,512.2	939.6	2,065.6	1,990.9	74.64	27.673	
11,500.0	9,734.0	10,607.8	8,814.0	43.2	39.9	63.46	1,612.2	938.9	2,065.6	1,989.4	76.18	27.115	
11,600.0	9,734.0	10,707.8	8,814.0	44.0	40.8	63.46	1,712.2	938.3	2,065.6	1,987.8	77.78	26.557	
11,700.0	9,734.0	10,807.8	8,814.0	44.9	41.7	63.46	1,812.2	937.6	2,065.6	1,986.2	79.44	26.003	
11,800.0	9,734.0	10,907.8	8,814.0	45.8	42.6	63.46	1,912.2	937.0	2,065.6	1,984.4	81.15	25.454	
11,900.0	9,734.0	11,007.8	8,814.0	46.7	43.5	63.46	2,012.2	936.3	2,065.6	1,982.7	82.92	24.912	
12,000.0	9,734.0	11,107.8	8,814.0	47.7	44.5	63.46	2,112.2	935.6	2,065.6	1,980.9	84.73	24.379	
12,100.0	9,734.0	11,207.8	8,814.0	48.6	45.5	63.46	2,212.2	935.0	2,065.6	1,979.0	86.59	23.856	
12,200.0	9,734.0	11,307.8	8,814.0	49.6	46.6	63.46	2,312.2	934.3	2,065.6	1,977.1	88.49	23.343	
12,300.0	9,734.0	11,407.8	8,814.0	50.7	47.6	63.46	2,412.2	933.7	2,065.6	1,975.2	90.43	22.842	
12,400.0	9,734.0	11,507.8	8,814.0	51.7	48.7	63.46	2,512.2	933.0	2,065.6	1,973.2	92.41	22.354	
12,500.0	9,734.0	11,607.8	8,814.0	52.8	49.8	63.46	2,612.2	932.3	2,065.6	1,971.2	94.42	21.877	
12,600.0	9,734.0	11,707.8	8,814.0	53.8	50.9	63.46	2,712.2	931.7	2,065.6	1,969.1	96.46	21.413	
12,700.0	9,734.0	11,807.8	8,814.0	54.9	52.0	63.46	2,812.2	931.0	2,065.6	1,967.1	98.54	20.962	
12,800.0	9,734.0	11,907.8	8,814.0	56.0	53.1	63.46	2,912.2	930.3	2,065.6	1,964.9	100.64	20.524	
12,900.0	9,734.0	12,007.8	8,814.0	57.2	54.3	63.46	3,012.2	929.7	2,065.6	1,962.8	102.78	20.098	
13,000.0	9,734.0	12,107.8	8,814.0	58.3	55.5	63.46	3,112.2	929.0	2,065.6	1,960.7	104.93	19.685	
13,100.0	9,734.0	12,207.8	8,814.0	59.5	56.6	63.46	3,212.2	928.4	2,065.6	1,958.5	107.11	19.284	
13,200.0	9,734.0	12,307.8	8,814.0	60.6	57.8	63.46	3,312.2	927.7	2,065.6	1,956.3	109.32	18.895	
13,300.0	9,734.0	12,407.8	8,814.0	61.8	59.0	63.46	3,412.2	927.0	2,065.6	1,954.0	111.54	18.519	
13,400.0	9,734.0	12,507.8	8,814.0	63.0	60.2	63.46	3,512.2	926.4	2,065.6	1,951.8	113.79	18.153	
13,500.0	9,734.0	12,607.8	8,814.0	64.2	61.5	63.46	3,612.2	925.7	2,065.6	1,949.5	116.05	17.799	
13,600.0	9,734.0	12,707.8	8,814.0	65.4	62.7	63.46	3,712.2	925.1	2,065.6	1,947.3	118.33	17.456	
13,700.0	9,734.0	12,807.8	8,814.0	66.6	63.9	63.46	3,812.2	924.4	2,065.6	1,945.0	120.63	17.124	
13,800.0	9,734.0	12,907.8	8,814.0	67.8	65.2	63.46	3,912.2	923.7	2,065.6	1,942.6	122.94	16.802	
13,900.0	9,734.0	13,007.8	8,814.0	69.1	66.4	63.46	4,012.2	923.1	2,065.6	1,940.3	125.27	16.489	
14,000.0	9,734.0	13,107.8	8,814.0	70.3	67.7	63.46	4,112.2	922.4	2,065.6	1,938.0	127.61	16.187	
14,100.0	9,734.0	13,207.8	8,814.0	71.6	69.0	63.46	4,212.2	921.7	2,065.6	1,935.6	129.96	15.894	
14,200.0	9,734.0	13,307.8	8,814.0	72.8	70.3	63.46	4,312.2	921.1	2,065.6	1,933.3	132.33	15.609	
14,300.0	9,734.0	13,407.8	8,814.0	74.1	71.6	63.46	4,412.2	920.4	2,065.6	1,930.9	134.71	15.334	
14,400.0	9,734.0	13,507.8	8,814.0	75.4	72.8	63.46	4,512.2	919.8	2,065.6	1,928.5	137.10	15.066	
14,500.0	9,734.0	13,607.8	8,814.0	76.6	74.1	63.46	4,612.2	919.1	2,065.6	1,926.1	139.50	14.807	
14,600.0	9,734.0	13,707.8	8,814.0	77.9	75.4	63.46	4,712.2	918.4	2,065.6	1,923.7	141.91	14.555	
14,700.0	9,734.0	13,807.8	8,814.0	79.2	76.7	63.46	4,812.2	917.8	2,065.6	1,921.3	144.34	14.311	
14,800.0	9,734.0	13,907.8	8,814.0	80.5	78.1	63.46	4,912.2	917.1	2,065.6	1,918.8	146.77	14.074	
14,900.0	9,734.0	14,007.8	8,814.0	81.8	79.4	63.46	5,012.2	916.5	2,065.6	1,916.4	149.20	13.844	
15,000.0	9,734.0	14,107.8	8,814.0	83.1	80.7	63.46	5,112.2	915.8	2,065.6	1,913.9	151.65	13.621	
15,100.0	9,734.0	14,207.8	8,814.0	84.4	82.0	63.46	5,212.2	915.1	2,065.6	1,911.5	154.11	13.404	
15,200.0	9,734.0	14,307.8	8,814.0	85.7	83.4	63.46	5,312.2	914.5	2,065.6	1,909.0	156.57	13.193	
15,300.0	9,734.0	14,407.8	8,814.0	87.0	84.7	63.46	5,412.2	913.8	2,065.6	1,906.5	159.04	12.988	
15,400.0	9,734.0	14,507.8	8,814.0	88.4	86.0	63.46	5,512.2	913.1	2,065.6	1,904.1	161.52	12.789	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 306H - OH - Plan 0.1													Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM							Rule Assigned:						Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance					Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,500.0	9,734.0	14,607.8	8,814.0	89.7	87.4	63.46	5,612.2	912.5	2,065.6	1,901.6	164.00	12.595		
15,600.0	9,734.0	14,707.8	8,814.0	91.0	88.7	63.46	5,712.2	911.8	2,065.6	1,899.1	166.49	12.407		
15,700.0	9,734.0	14,807.8	8,814.0	92.4	90.1	63.46	5,812.2	911.2	2,065.6	1,896.6	168.98	12.224		
15,800.0	9,734.0	14,907.8	8,814.0	93.7	91.4	63.46	5,912.2	910.5	2,065.6	1,894.1	171.48	12.045		
15,900.0	9,734.0	15,007.8	8,814.0	95.0	92.8	63.46	6,012.1	909.8	2,065.6	1,891.6	173.99	11.872		
16,000.0	9,734.0	15,107.8	8,814.0	96.4	94.1	63.46	6,112.1	909.2	2,065.6	1,889.1	176.50	11.703		
16,100.0	9,734.0	15,207.8	8,814.0	97.7	95.5	63.46	6,212.1	908.5	2,065.6	1,886.6	179.02	11.538		
16,200.0	9,734.0	15,307.8	8,814.0	99.1	96.8	63.46	6,312.1	907.9	2,065.6	1,884.0	181.54	11.378		
16,300.0	9,734.0	15,407.8	8,814.0	100.4	98.2	63.46	6,412.1	907.2	2,065.6	1,881.5	184.07	11.222		
16,400.0	9,734.0	15,507.8	8,814.0	101.8	99.6	63.46	6,512.1	906.5	2,065.6	1,879.0	186.60	11.070		
16,500.0	9,734.0	15,607.8	8,814.0	103.1	100.9	63.46	6,612.1	905.9	2,065.6	1,876.5	189.13	10.921		
16,600.0	9,734.0	15,707.8	8,814.0	104.5	102.3	63.46	6,712.1	905.2	2,065.6	1,873.9	191.67	10.777		
16,700.0	9,734.0	15,807.8	8,814.0	105.8	103.7	63.46	6,812.1	904.5	2,065.6	1,871.4	194.21	10.636		
16,800.0	9,734.0	15,907.8	8,814.0	107.2	105.1	63.46	6,912.1	903.9	2,065.6	1,868.8	196.76	10.498		
16,900.0	9,734.0	16,007.8	8,814.0	108.6	106.4	63.46	7,012.1	903.2	2,065.6	1,866.3	199.31	10.364		
17,000.0	9,734.0	16,107.8	8,814.0	109.9	107.8	63.46	7,112.1	902.6	2,065.6	1,863.7	201.86	10.233		
17,100.0	9,734.0	16,207.8	8,814.0	111.3	109.2	63.46	7,212.1	901.9	2,065.6	1,861.2	204.42	10.105		
17,200.0	9,734.0	16,307.8	8,814.0	112.7	110.6	63.46	7,312.1	901.2	2,065.6	1,858.6	206.98	9.980		
17,300.0	9,734.0	16,407.8	8,814.0	114.1	111.9	63.46	7,412.1	900.6	2,065.6	1,856.0	209.55	9.857		
17,400.0	9,734.0	16,507.8	8,814.0	115.4	113.3	63.46	7,512.1	899.9	2,065.6	1,853.5	212.11	9.738		
17,500.0	9,734.0	16,607.8	8,814.0	116.8	114.7	63.46	7,612.1	899.3	2,065.6	1,850.9	214.68	9.622		
17,600.0	9,734.0	16,707.8	8,814.0	118.2	116.1	63.46	7,712.1	898.6	2,065.6	1,848.3	217.25	9.508		
17,700.0	9,734.0	16,807.8	8,814.0	119.6	117.5	63.46	7,812.1	897.9	2,065.6	1,845.8	219.83	9.396		
17,800.0	9,734.0	16,907.8	8,814.0	121.0	118.9	63.46	7,912.1	897.3	2,065.6	1,843.2	222.40	9.288		
17,900.0	9,734.0	17,007.8	8,814.0	122.3	120.3	63.46	8,012.1	896.6	2,065.6	1,840.6	224.98	9.181		
18,000.0	9,734.0	17,107.8	8,814.0	123.7	121.7	63.46	8,112.1	895.9	2,065.6	1,838.0	227.57	9.077		
18,100.0	9,734.0	17,207.8	8,814.0	125.1	123.1	63.46	8,212.1	895.3	2,065.6	1,835.4	230.15	8.975		
18,200.0	9,734.0	17,307.8	8,814.0	126.5	124.5	63.46	8,312.1	894.6	2,065.6	1,832.8	232.74	8.875		
18,300.0	9,734.0	17,407.8	8,814.0	127.9	125.9	63.46	8,412.1	894.0	2,065.6	1,830.3	235.33	8.778		
18,400.0	9,734.0	17,507.8	8,814.0	129.3	127.3	63.46	8,512.1	893.3	2,065.6	1,827.7	237.92	8.682		
18,500.0	9,734.0	17,607.8	8,814.0	130.7	128.7	63.46	8,612.1	892.6	2,065.6	1,825.1	240.51	8.588		
18,600.0	9,734.0	17,707.8	8,814.0	132.1	130.1	63.46	8,712.1	892.0	2,065.6	1,822.5	243.11	8.497		
18,700.0	9,734.0	17,807.8	8,814.0	133.4	131.5	63.46	8,812.1	891.3	2,065.6	1,819.9	245.70	8.407		
18,800.0	9,734.0	17,907.8	8,814.0	134.8	132.9	63.46	8,912.1	890.7	2,065.6	1,817.3	248.30	8.319		
18,900.0	9,734.0	18,007.8	8,814.0	136.2	134.3	63.46	9,012.1	890.0	2,065.6	1,814.7	250.90	8.233		
19,000.0	9,734.0	18,107.8	8,814.0	137.6	135.7	63.46	9,112.1	889.3	2,065.6	1,812.1	253.50	8.148		
19,100.0	9,734.0	18,207.8	8,814.0	139.0	137.1	63.46	9,212.1	888.7	2,065.6	1,809.5	256.11	8.065		
19,200.0	9,734.0	18,307.8	8,814.0	140.4	138.5	63.46	9,312.1	888.0	2,065.6	1,806.9	258.71	7.984		
19,300.0	9,734.0	18,407.8	8,814.0	141.8	139.9	63.46	9,412.1	887.3	2,065.6	1,804.3	261.32	7.904		
19,400.0	9,734.0	18,507.8	8,814.0	143.2	141.3	63.46	9,512.1	886.7	2,065.6	1,801.7	263.93	7.826		
19,500.0	9,734.0	18,607.8	8,814.0	144.6	142.7	63.46	9,612.1	886.0	2,065.6	1,799.0	266.54	7.750		
19,600.0	9,734.0	18,707.8	8,814.0	146.0	144.1	63.46	9,712.1	885.4	2,065.6	1,796.4	269.15	7.674		
19,700.0	9,734.0	18,807.8	8,814.0	147.4	145.5	63.46	9,812.1	884.7	2,065.6	1,793.8	271.76	7.601		
19,800.0	9,734.0	18,907.8	8,814.0	148.8	146.9	63.46	9,912.1	884.0	2,065.6	1,791.2	274.38	7.528		
19,900.0	9,734.0	19,007.8	8,814.0	150.3	148.3	63.46	10,012.1	883.4	2,065.6	1,788.6	276.99	7.457		
20,000.0	9,734.0	19,107.8	8,814.0	151.7	149.8	63.46	10,112.1	882.7	2,065.6	1,786.0	279.61	7.387		
20,019.5	9,734.0	19,127.2	8,814.0	151.9	150.0	63.46	10,131.5	882.6	2,065.6	1,785.5	280.12	7.374 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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)			
0.0	0.0	0.0	0.0	0.0	0.0	-90.09	-0.1	-40.1	40.1				
100.0	100.0	99.5	99.5	0.1	0.1	-90.09	-0.1	-40.1	40.1	39.8	0.26	152.577	
200.0	200.0	199.5	199.5	0.5	0.5	-90.09	-0.1	-40.1	40.1	39.1	0.98	40.976	
300.0	300.0	299.5	299.5	0.8	0.8	-90.09	-0.1	-40.1	40.1	38.4	1.70	23.650	
400.0	400.0	399.5	399.5	1.2	1.2	-90.09	-0.1	-40.1	40.1	37.7	2.41	16.622	
500.0	500.0	499.5	499.5	1.6	1.6	-90.09	-0.1	-40.1	40.1	37.0	3.13	12.814	
600.0	600.0	599.5	599.5	1.9	1.9	-90.09	-0.1	-40.1	40.1	36.3	3.85	10.425	
700.0	700.0	699.5	699.5	2.3	2.3	-90.09	-0.1	-40.1	40.1	35.5	4.56	8.787	
800.0	800.0	799.5	799.5	2.6	2.6	-90.09	-0.1	-40.1	40.1	34.8	5.28	7.594	
900.0	900.0	899.5	899.5	3.0	3.0	-90.09	-0.1	-40.1	40.1	34.1	6.00	6.686	
1,000.0	1,000.0	999.5	999.5	3.4	3.4	-90.09	-0.1	-40.1	40.1	33.4	6.71	5.972	
1,100.0	1,100.0	1,099.5	1,099.5	3.7	3.7	-90.09	-0.1	-40.1	40.1	32.7	7.43	5.396	
1,200.0	1,200.0	1,199.5	1,199.5	4.1	4.1	-90.09	-0.1	-40.1	40.1	32.0	8.15	4.921	
1,300.0	1,300.0	1,299.5	1,299.5	4.4	4.4	-90.09	-0.1	-40.1	40.1	31.2	8.87	4.523	
1,400.0	1,400.0	1,399.5	1,399.5	4.8	4.8	-90.09	-0.1	-40.1	40.1	30.5	9.58	4.185	
1,500.0	1,500.0	1,499.5	1,499.5	5.2	5.1	-90.09	-0.1	-40.1	40.1	29.8	10.30	3.894	
1,600.0	1,600.0	1,599.5	1,599.5	5.5	5.5	-90.09	-0.1	-40.1	40.1	29.1	11.02	3.640	
1,700.0	1,700.0	1,699.5	1,699.5	5.9	5.9	-90.09	-0.1	-40.1	40.1	28.4	11.73	3.418	
1,800.0	1,800.0	1,799.5	1,799.5	6.2	6.2	-90.09	-0.1	-40.1	40.1	27.7	12.45	3.221	
1,900.0	1,900.0	1,899.5	1,899.5	6.6	6.6	-90.09	-0.1	-40.1	40.1	26.9	13.17	3.046	
2,000.0	2,000.0	1,999.5	1,999.5	6.9	6.9	-90.09	-0.1	-40.1	40.1	26.2	13.88	2.888 CC	
2,100.0	2,100.0	2,098.1	2,098.1	7.3	7.3	19.07	-0.3	-41.8	40.1	25.6	14.57	2.755	
2,200.0	2,199.8	2,196.8	2,196.6	7.6	7.6	20.22	-1.2	-46.8	40.3	25.0	15.21	2.646	
2,300.0	2,299.5	2,295.4	2,294.9	8.0	8.0	22.12	-2.6	-55.1	40.5	24.7	15.85	2.556	
2,400.0	2,398.7	2,394.0	2,392.8	8.3	8.3	24.73	-4.6	-66.8	41.0	24.5	16.48	2.486 ES, SF	
2,500.0	2,497.7	2,492.6	2,490.2	8.7	8.7	27.09	-7.1	-81.8	43.0	25.9	17.10	2.513	
2,600.0	2,596.7	2,591.0	2,586.8	9.0	9.0	27.85	-10.2	-100.0	48.3	30.5	17.71	2.725	
2,700.0	2,695.7	2,688.9	2,682.3	9.4	9.4	27.32	-13.9	-121.4	56.8	38.5	18.30	3.102	
2,800.0	2,794.6	2,786.2	2,776.4	9.8	9.8	26.07	-18.0	-145.8	68.5	49.7	18.88	3.632	
2,900.0	2,893.6	2,884.4	2,870.7	10.1	10.2	24.68	-22.6	-172.9	82.8	63.3	19.53	4.243	
3,000.0	2,992.6	2,983.3	2,965.6	10.5	10.6	23.66	-27.3	-200.4	97.3	77.1	20.23	4.812	
3,100.0	3,091.6	3,082.3	3,060.5	10.9	11.0	22.90	-31.9	-227.8	111.9	90.9	20.94	5.342	
3,200.0	3,190.6	3,181.2	3,155.4	11.2	11.4	22.32	-36.6	-255.3	126.4	104.7	21.65	5.837	
3,300.0	3,289.6	3,280.1	3,250.4	11.6	11.9	21.86	-41.3	-282.8	140.9	118.6	22.37	6.299	
3,400.0	3,388.5	3,379.1	3,345.3	12.0	12.3	21.48	-45.9	-310.2	155.5	132.4	23.10	6.732	
3,500.0	3,487.5	3,478.0	3,440.2	12.4	12.8	21.17	-50.6	-337.7	170.0	146.2	23.83	7.137	
3,600.0	3,586.5	3,576.9	3,535.1	12.8	13.3	20.91	-55.3	-365.2	184.6	160.0	24.56	7.517	
3,700.0	3,685.5	3,675.9	3,630.1	13.2	13.7	20.68	-59.9	-392.7	199.2	173.9	25.29	7.874	
3,800.0	3,784.5	3,774.8	3,725.0	13.5	14.2	20.49	-64.6	-420.1	213.7	187.7	26.03	8.210	
3,900.0	3,883.5	3,873.7	3,819.9	13.9	14.7	20.32	-69.2	-447.6	228.3	201.5	26.78	8.526	
4,000.0	3,982.4	3,972.7	3,914.8	14.3	15.2	20.17	-73.9	-475.1	242.9	215.3	27.52	8.825	
4,100.0	4,081.4	4,071.6	4,009.8	14.7	15.7	20.04	-78.6	-502.5	257.4	229.2	28.27	9.108	
4,200.0	4,180.4	4,170.5	4,104.7	15.1	16.2	19.92	-83.2	-530.0	272.0	243.0	29.01	9.375	
4,300.0	4,279.4	4,269.5	4,199.6	15.5	16.6	19.82	-87.9	-557.5	286.6	256.8	29.77	9.628	
4,400.0	4,378.4	4,368.4	4,294.6	15.9	17.1	19.72	-92.6	-584.9	301.2	270.6	30.52	9.868	
4,500.0	4,477.4	4,467.3	4,389.5	16.3	17.6	19.64	-97.2	-612.4	315.7	284.5	31.27	10.097	
4,600.0	4,576.3	4,566.2	4,484.4	16.7	18.1	19.56	-101.9	-639.9	330.3	298.3	32.03	10.313	
4,700.0	4,675.3	4,665.2	4,579.3	17.1	18.6	19.49	-106.6	-667.4	344.9	312.1	32.78	10.520	
4,800.0	4,774.3	4,764.1	4,674.3	17.5	19.2	19.42	-111.2	-694.8	359.5	325.9	33.54	10.717	
4,900.0	4,873.3	4,863.0	4,769.2	17.9	19.7	19.36	-115.9	-722.3	374.0	339.7	34.30	10.904	
5,000.0	4,972.3	4,962.0	4,864.1	18.3	20.2	19.30	-120.5	-749.8	388.6	353.6	35.06	11.083	
5,100.0	5,071.3	5,060.9	4,959.0	18.7	20.7	19.25	-125.2	-777.2	403.2	367.4	35.83	11.255	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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		Offset Wellbore Centre		Distance		Minimum	Separation	Warning	
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)	Separation (usft)		
5,200.0	5,170.3	5,159.8	5,054.0	19.1	21.2	19.20	-129.9	-804.7	417.8	381.2	36.59	11.418	
5,300.0	5,269.2	5,258.8	5,148.9	19.5	21.7	19.15	-134.5	-832.2	432.4	395.0	37.35	11.575	
5,400.0	5,368.2	5,357.7	5,243.8	19.9	22.2	19.11	-139.2	-859.6	446.9	408.8	38.12	11.725	
5,500.0	5,467.2	5,456.6	5,338.7	20.3	22.7	19.07	-143.9	-887.1	461.5	422.6	38.88	11.869	
5,600.0	5,566.2	5,555.6	5,433.7	20.7	23.3	19.03	-148.5	-914.6	476.1	436.4	39.65	12.008	
5,700.0	5,665.2	5,654.5	5,528.6	21.1	23.8	19.00	-153.2	-942.1	490.7	450.3	40.42	12.140	
5,800.0	5,764.2	5,753.4	5,623.5	21.5	24.3	18.97	-157.9	-969.5	505.3	464.1	41.18	12.268	
5,900.0	5,863.1	5,852.3	5,718.4	21.9	24.8	18.93	-162.5	-997.0	519.8	477.9	41.95	12.391	
6,000.0	5,962.1	5,951.3	5,813.4	22.3	25.3	18.91	-167.2	-1,024.5	534.4	491.7	42.72	12.509	
6,100.0	6,061.1	6,050.2	5,908.3	22.7	25.9	18.88	-171.9	-1,051.9	549.0	505.5	43.49	12.623	
6,200.0	6,160.1	6,149.1	6,003.2	23.1	26.4	18.85	-176.5	-1,079.4	563.6	519.3	44.26	12.732	
6,300.0	6,259.1	6,248.1	6,098.2	23.5	26.9	18.83	-181.2	-1,106.9	578.2	533.1	45.03	12.838	
6,400.0	6,358.1	6,347.0	6,193.1	23.9	27.4	18.80	-185.8	-1,134.3	592.7	546.9	45.81	12.940	
6,500.0	6,457.0	6,445.9	6,288.0	24.3	28.0	18.78	-190.5	-1,161.8	607.3	560.7	46.58	13.039	
6,600.0	6,556.0	6,544.9	6,382.9	24.7	28.5	18.76	-195.2	-1,189.3	621.9	574.5	47.35	13.134	
6,700.0	6,655.0	6,643.8	6,477.9	25.1	29.0	18.74	-199.8	-1,216.8	636.5	588.4	48.12	13.226	
6,800.0	6,754.0	6,742.7	6,572.8	25.5	29.5	18.72	-204.5	-1,244.2	651.1	602.2	48.90	13.315	
6,900.0	6,853.0	6,841.7	6,667.7	25.9	30.1	18.70	-209.2	-1,271.7	665.6	616.0	49.67	13.401	
7,000.0	6,952.0	6,940.6	6,762.6	26.3	30.6	18.68	-213.8	-1,299.2	680.2	629.8	50.45	13.484	
7,100.0	7,050.9	7,039.5	6,857.6	26.7	31.1	18.66	-218.5	-1,326.6	694.8	643.6	51.22	13.565	
7,200.0	7,149.9	7,138.5	6,952.5	27.1	31.6	18.64	-223.2	-1,354.1	709.4	657.4	51.99	13.643	
7,300.0	7,248.9	7,237.4	7,047.4	27.5	32.2	18.63	-227.8	-1,381.6	724.0	671.2	52.77	13.719	
7,400.0	7,347.9	7,336.3	7,142.3	27.9	32.7	18.61	-232.5	-1,409.0	738.5	685.0	53.55	13.793	
7,500.0	7,446.9	7,435.2	7,237.3	28.3	33.2	18.60	-237.1	-1,436.5	753.1	698.8	54.32	13.864	
7,600.0	7,545.9	7,534.2	7,332.2	28.8	33.8	18.58	-241.8	-1,464.0	767.7	712.6	55.10	13.933	
7,700.0	7,644.8	7,633.1	7,427.1	29.2	34.3	18.57	-246.5	-1,491.4	782.3	726.4	55.88	14.001	
7,800.0	7,743.8	7,732.0	7,522.0	29.6	34.8	18.56	-251.1	-1,518.9	796.9	740.2	56.65	14.066	
7,900.0	7,842.8	7,831.0	7,617.0	30.0	35.3	18.54	-255.8	-1,546.4	811.5	754.0	57.43	14.130	
8,000.0	7,941.8	7,929.9	7,711.9	30.4	35.9	18.53	-260.5	-1,573.9	826.0	767.8	58.21	14.191	
8,100.0	8,040.8	8,028.8	7,806.8	30.8	36.4	18.52	-265.1	-1,601.3	840.6	781.6	58.98	14.251	
8,200.0	8,139.8	8,127.8	7,901.8	31.2	36.9	18.51	-269.8	-1,628.8	855.2	795.4	59.76	14.310	
8,300.0	8,238.8	8,226.7	7,996.7	31.6	37.5	18.50	-274.5	-1,656.3	869.8	809.2	60.54	14.367	
8,400.0	8,337.7	8,325.6	8,091.6	32.0	38.0	18.49	-279.1	-1,683.7	884.4	823.0	61.32	14.422	
8,500.0	8,436.7	8,424.6	8,186.5	32.4	38.5	18.48	-283.8	-1,711.2	898.9	836.8	62.10	14.476	
8,600.0	8,535.7	8,523.5	8,281.5	32.8	39.1	18.47	-288.5	-1,738.7	913.5	850.6	62.88	14.529	
8,700.0	8,634.7	8,635.7	8,389.2	33.2	39.7	18.49	-293.7	-1,769.5	928.2	864.4	63.79	14.551	
8,800.0	8,734.1	8,781.8	8,530.9	33.6	40.4	18.53	-299.6	-1,804.5	941.9	877.0	64.95	14.503	
8,900.0	8,833.8	8,929.2	8,675.5	34.0	41.0	18.54	-304.4	-1,832.6	953.9	887.9	65.95	14.463	
9,000.0	8,933.7	9,077.7	8,822.5	34.3	41.6	18.51	-307.9	-1,853.4	964.1	897.3	66.80	14.432	
9,100.0	9,033.7	9,227.2	8,971.4	34.7	42.2	-90.33	-310.2	-1,866.7	972.3	904.8	67.48	14.408	
9,200.0	9,133.7	9,377.6	9,121.7	35.0	42.6	-90.38	-311.2	-1,872.4	976.1	908.1	68.00	14.355	
9,300.0	9,233.7	9,489.2	9,233.2	35.3	42.9	-90.39	-311.2	-1,872.6	976.2	907.6	68.59	14.233	
9,400.0	9,333.4	9,581.5	9,325.4	35.6	43.2	-90.01	-306.2	-1,872.9	976.5	907.3	69.25	14.102	
9,500.0	9,429.7	9,671.8	9,412.9	35.9	43.4	-90.00	-284.9	-1,874.2	977.8	908.0	69.83	14.003	
9,600.0	9,518.4	9,762.6	9,495.4	36.1	43.6	-89.98	-247.2	-1,876.5	980.1	909.7	70.31	13.938	
9,700.0	9,595.7	9,854.3	9,569.9	36.2	43.7	-89.96	-194.2	-1,879.8	983.2	912.5	70.71	13.904	
9,800.0	9,658.2	9,947.2	9,633.6	36.3	43.8	-89.93	-126.9	-1,883.9	987.2	916.1	71.05	13.894	
9,900.0	9,703.1	10,041.5	9,683.8	36.4	43.9	-89.90	-47.4	-1,888.7	991.8	920.4	71.35	13.901	
10,000.0	9,728.5	10,137.6	9,717.7	36.3	43.9	-89.87	42.2	-1,894.2	996.9	925.3	71.61	13.920	
10,100.0	9,734.0	10,235.9	9,733.2	36.3	43.9	-89.98	138.9	-1,900.1	1,002.2	930.4	71.87	13.946	
10,200.0	9,734.0	10,375.4	9,734.0	36.4	44.0	-90.03	278.3	-1,906.4	1,006.2	934.0	72.28	13.921	
10,300.0	9,734.0	10,490.2	9,734.0	36.5	44.1	-90.03	393.1	-1,907.5	1,006.5	933.7	72.78	13.830	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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)			
10,400.0	9,734.0	10,590.2	9,734.0	36.7	44.2	-90.03	493.1	-1,908.2	1,006.5	933.1	73.38	13.717	
10,500.0	9,734.0	10,690.2	9,734.0	37.0	44.3	-90.03	593.1	-1,908.9	1,006.5	932.5	74.08	13.587	
10,600.0	9,734.0	10,790.2	9,734.0	37.4	44.5	-90.03	693.1	-1,909.6	1,006.6	931.7	74.89	13.440	
10,700.0	9,734.0	10,890.2	9,734.0	37.8	44.8	-90.03	793.1	-1,910.3	1,006.6	930.8	75.81	13.278	
10,800.0	9,734.0	10,990.2	9,734.0	38.3	45.0	-90.03	893.1	-1,911.0	1,006.6	929.8	76.82	13.104	
10,900.0	9,734.0	11,090.2	9,734.0	38.9	45.4	-90.03	993.1	-1,911.7	1,006.7	928.7	77.93	12.918	
11,000.0	9,734.0	11,190.2	9,734.0	39.5	45.8	-90.03	1,093.1	-1,912.4	1,006.7	927.6	79.12	12.723	
11,100.0	9,734.0	11,290.2	9,734.0	40.2	46.2	-90.03	1,193.0	-1,913.1	1,006.7	926.3	80.41	12.521	
11,200.0	9,734.0	11,390.2	9,734.0	40.9	46.7	-90.03	1,293.0	-1,913.8	1,006.8	925.0	81.77	12.312	
11,300.0	9,734.0	11,490.2	9,734.0	41.6	47.2	-90.03	1,393.0	-1,914.5	1,006.8	923.6	83.22	12.099	
11,400.0	9,734.0	11,590.2	9,734.0	42.4	47.8	-90.03	1,493.0	-1,915.2	1,006.8	922.1	84.73	11.882	
11,500.0	9,734.0	11,690.2	9,734.0	43.2	48.5	-90.03	1,593.0	-1,915.8	1,006.9	920.5	86.32	11.664	
11,600.0	9,734.0	11,790.2	9,734.0	44.0	49.1	-90.03	1,693.0	-1,916.5	1,006.9	918.9	87.98	11.445	
11,700.0	9,734.0	11,890.2	9,734.0	44.9	49.9	-90.03	1,793.0	-1,917.2	1,006.9	917.2	89.70	11.226	
11,800.0	9,734.0	11,990.2	9,734.0	45.8	50.6	-90.03	1,893.0	-1,917.9	1,007.0	915.5	91.47	11.008	
11,900.0	9,734.0	12,090.2	9,734.0	46.7	51.4	-90.03	1,993.0	-1,918.6	1,007.0	913.7	93.31	10.792	
12,000.0	9,734.0	12,190.2	9,734.0	47.7	52.2	-90.03	2,093.0	-1,919.3	1,007.0	911.8	95.19	10.579	
12,100.0	9,734.0	12,290.2	9,734.0	48.6	53.1	-90.03	2,193.0	-1,920.0	1,007.1	909.9	97.13	10.368	
12,200.0	9,734.0	12,390.2	9,734.0	49.6	54.0	-90.03	2,293.0	-1,920.7	1,007.1	908.0	99.11	10.161	
12,300.0	9,734.0	12,490.2	9,734.0	50.7	54.9	-90.03	2,393.0	-1,921.4	1,007.1	906.0	101.14	9.958	
12,400.0	9,734.0	12,590.2	9,734.0	51.7	55.8	-90.03	2,493.0	-1,922.1	1,007.1	903.9	103.21	9.759	
12,500.0	9,734.0	12,690.2	9,734.0	52.8	56.8	-90.03	2,593.0	-1,922.8	1,007.2	901.9	105.31	9.564	
12,600.0	9,734.0	12,790.2	9,734.0	53.8	57.7	-90.03	2,693.0	-1,923.5	1,007.2	899.8	107.46	9.373	
12,700.0	9,734.0	12,890.2	9,734.0	54.9	58.7	-90.03	2,793.0	-1,924.2	1,007.2	897.6	109.64	9.187	
12,800.0	9,734.0	12,990.2	9,734.0	56.0	59.8	-90.03	2,893.0	-1,924.9	1,007.3	895.4	111.85	9.006	
12,900.0	9,734.0	13,090.2	9,734.0	57.2	60.8	-90.03	2,993.0	-1,925.6	1,007.3	893.2	114.09	8.829	
13,000.0	9,734.0	13,190.2	9,734.0	58.3	61.9	-90.03	3,093.0	-1,926.3	1,007.3	891.0	116.36	8.657	
13,100.0	9,734.0	13,290.2	9,734.0	59.5	62.9	-90.03	3,193.0	-1,926.9	1,007.4	888.7	118.65	8.490	
13,200.0	9,734.0	13,390.2	9,734.0	60.6	64.0	-90.03	3,293.0	-1,927.6	1,007.4	886.4	120.98	8.327	
13,300.0	9,734.0	13,490.2	9,734.0	61.8	65.1	-90.03	3,393.0	-1,928.3	1,007.4	884.1	123.32	8.169	
13,400.0	9,734.0	13,590.2	9,734.0	63.0	66.2	-90.03	3,493.0	-1,929.0	1,007.5	881.8	125.69	8.015	
13,500.0	9,734.0	13,690.2	9,734.0	64.2	67.4	-90.03	3,593.0	-1,929.7	1,007.5	879.4	128.09	7.866	
13,600.0	9,734.0	13,790.2	9,734.0	65.4	68.5	-90.03	3,693.0	-1,930.4	1,007.5	877.0	130.50	7.721	
13,700.0	9,734.0	13,890.2	9,734.0	66.6	69.7	-90.03	3,793.0	-1,931.1	1,007.6	874.6	132.93	7.580	
13,800.0	9,734.0	13,990.2	9,734.0	67.8	70.8	-90.03	3,893.0	-1,931.8	1,007.6	872.2	135.38	7.443	
13,900.0	9,734.0	14,090.2	9,734.0	69.1	72.0	-90.03	3,993.0	-1,932.5	1,007.6	869.8	137.84	7.310	
14,000.0	9,734.0	14,190.2	9,734.0	70.3	73.2	-90.03	4,093.0	-1,933.2	1,007.7	867.3	140.33	7.181	
14,100.0	9,734.0	14,290.2	9,734.0	71.6	74.4	-90.03	4,193.0	-1,933.9	1,007.7	864.9	142.83	7.055	
14,200.0	9,734.0	14,390.2	9,734.0	72.8	75.6	-90.03	4,293.0	-1,934.6	1,007.7	862.4	145.34	6.934	
14,300.0	9,734.0	14,490.2	9,734.0	74.1	76.8	-90.03	4,393.0	-1,935.3	1,007.8	859.9	147.87	6.815	
14,400.0	9,734.0	14,590.2	9,734.0	75.4	78.0	-90.03	4,493.0	-1,936.0	1,007.8	857.4	150.41	6.700	
14,500.0	9,734.0	14,690.2	9,734.0	76.6	79.3	-90.03	4,593.0	-1,936.7	1,007.8	854.9	152.96	6.589	
14,600.0	9,734.0	14,790.2	9,734.0	77.9	80.5	-90.03	4,693.0	-1,937.3	1,007.9	852.3	155.52	6.480	
14,700.0	9,734.0	14,890.2	9,734.0	79.2	81.7	-90.03	4,793.0	-1,938.0	1,007.9	849.8	158.10	6.375	
14,800.0	9,734.0	14,990.2	9,734.0	80.5	83.0	-90.03	4,893.0	-1,938.7	1,007.9	847.2	160.69	6.273	
14,900.0	9,734.0	15,090.2	9,734.0	81.8	84.2	-90.03	4,993.0	-1,939.4	1,008.0	844.7	163.29	6.173	
15,000.0	9,734.0	15,190.2	9,734.0	83.1	85.5	-90.03	5,093.0	-1,940.1	1,008.0	842.1	165.89	6.076	
15,100.0	9,734.0	15,290.2	9,734.0	84.4	86.8	-90.03	5,193.0	-1,940.8	1,008.0	839.5	168.51	5.982	
15,200.0	9,734.0	15,390.2	9,734.0	85.7	88.0	-90.03	5,293.0	-1,941.5	1,008.0	836.9	171.13	5.890	
15,300.0	9,734.0	15,490.2	9,734.0	87.0	89.3	-90.03	5,392.9	-1,942.2	1,008.1	834.3	173.77	5.801	
15,400.0	9,734.0	15,590.2	9,734.0	88.4	90.6	-90.03	5,492.9	-1,942.9	1,008.1	831.7	176.41	5.715	
15,500.0	9,734.0	15,690.2	9,734.0	89.7	91.9	-90.03	5,592.9	-1,943.6	1,008.1	829.1	179.06	5.630	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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)			
15,600.0	9,734.0	15,790.2	9,734.0	91.0	93.2	-90.03	5,692.9	-1,944.3	1,008.2	826.5	181.72	5.548	
15,700.0	9,734.0	15,890.2	9,734.0	92.4	94.5	-90.03	5,792.9	-1,945.0	1,008.2	823.8	184.38	5.468	
15,800.0	9,734.0	15,990.2	9,734.0	93.7	95.8	-90.03	5,892.9	-1,945.7	1,008.2	821.2	187.06	5.390	
15,900.0	9,734.0	16,090.2	9,734.0	95.0	97.1	-90.03	5,992.9	-1,946.4	1,008.3	818.5	189.73	5.314	
16,000.0	9,734.0	16,190.2	9,734.0	96.4	98.4	-90.03	6,092.9	-1,947.1	1,008.3	815.9	192.42	5.240	
16,100.0	9,734.0	16,290.2	9,734.0	97.7	99.7	-90.03	6,192.9	-1,947.8	1,008.3	813.2	195.11	5.168	
16,200.0	9,734.0	16,390.2	9,734.0	99.1	101.0	-90.03	6,292.9	-1,948.4	1,008.4	810.6	197.80	5.098	
16,300.0	9,734.0	16,490.2	9,734.0	100.4	102.4	-90.03	6,392.9	-1,949.1	1,008.4	807.9	200.51	5.029	
16,400.0	9,734.0	16,590.2	9,734.0	101.8	103.7	-90.03	6,492.9	-1,949.8	1,008.4	805.2	203.21	4.962	
16,500.0	9,734.0	16,690.2	9,734.0	103.1	105.0	-90.03	6,592.9	-1,950.5	1,008.5	802.5	205.93	4.897	
16,600.0	9,734.0	16,790.2	9,734.0	104.5	106.3	-90.03	6,692.9	-1,951.2	1,008.5	799.9	208.64	4.834	
16,700.0	9,734.0	16,890.2	9,734.0	105.8	107.7	-90.03	6,792.9	-1,951.9	1,008.5	797.2	211.36	4.772	
16,800.0	9,734.0	16,990.2	9,734.0	107.2	109.0	-90.03	6,892.9	-1,952.6	1,008.6	794.5	214.09	4.711	
16,900.0	9,734.0	17,090.2	9,734.0	108.6	110.4	-90.03	6,992.9	-1,953.3	1,008.6	791.8	216.82	4.652	
17,000.0	9,734.0	17,190.2	9,734.0	109.9	111.7	-90.03	7,092.9	-1,954.0	1,008.6	789.1	219.56	4.594	
17,100.0	9,734.0	17,290.2	9,734.0	111.3	113.0	-90.03	7,192.9	-1,954.7	1,008.7	786.4	222.30	4.537	
17,200.0	9,734.0	17,390.2	9,734.0	112.7	114.4	-90.03	7,292.9	-1,955.4	1,008.7	783.7	225.04	4.482	
17,300.0	9,734.0	17,490.2	9,734.0	114.1	115.7	-90.03	7,392.9	-1,956.1	1,008.7	780.9	227.79	4.428	
17,400.0	9,734.0	17,590.2	9,734.0	115.4	117.1	-90.03	7,492.9	-1,956.8	1,008.8	778.2	230.54	4.376	
17,500.0	9,734.0	17,690.2	9,734.0	116.8	118.4	-90.03	7,592.9	-1,957.5	1,008.8	775.5	233.29	4.324	
17,600.0	9,734.0	17,790.2	9,734.0	118.2	119.8	-90.03	7,692.9	-1,958.2	1,008.8	772.8	236.05	4.274	
17,700.0	9,734.0	17,890.2	9,734.0	119.6	121.2	-90.03	7,792.9	-1,958.8	1,008.9	770.0	238.81	4.225	
17,800.0	9,734.0	17,990.2	9,734.0	121.0	122.5	-90.03	7,892.9	-1,959.5	1,008.9	767.3	241.57	4.176	
17,900.0	9,734.0	18,090.2	9,734.0	122.3	123.9	-90.03	7,992.9	-1,960.2	1,008.9	764.6	244.34	4.129	
18,000.0	9,734.0	18,190.2	9,734.0	123.7	125.3	-90.03	8,092.9	-1,960.9	1,008.9	761.8	247.11	4.083	
18,100.0	9,734.0	18,290.2	9,734.0	125.1	126.6	-90.03	8,192.9	-1,961.6	1,009.0	759.1	249.88	4.038	
18,200.0	9,734.0	18,390.2	9,734.0	126.5	128.0	-90.03	8,292.9	-1,962.3	1,009.0	756.4	252.65	3.994	
18,300.0	9,734.0	18,490.2	9,734.0	127.9	129.4	-90.03	8,392.9	-1,963.0	1,009.0	753.6	255.43	3.950	
18,400.0	9,734.0	18,590.2	9,734.0	129.3	130.7	-90.03	8,492.9	-1,963.7	1,009.1	750.9	258.21	3.908	
18,500.0	9,734.0	18,690.2	9,734.0	130.7	132.1	-90.03	8,592.9	-1,964.4	1,009.1	748.1	260.99	3.866	
18,600.0	9,734.0	18,790.2	9,734.0	132.1	133.5	-90.03	8,692.9	-1,965.1	1,009.1	745.4	263.78	3.826	
18,700.0	9,734.0	18,890.2	9,734.0	133.4	134.9	-90.03	8,792.9	-1,965.8	1,009.2	742.6	266.57	3.786	
18,800.0	9,734.0	18,990.2	9,734.0	134.8	136.2	-90.03	8,892.9	-1,966.5	1,009.2	739.8	269.36	3.747	
18,900.0	9,734.0	19,090.2	9,734.0	136.2	137.6	-90.03	8,992.9	-1,967.2	1,009.2	737.1	272.15	3.708	
19,000.0	9,734.0	19,190.2	9,734.0	137.6	139.0	-90.03	9,092.9	-1,967.9	1,009.3	734.3	274.94	3.671	
19,100.0	9,734.0	19,290.2	9,734.0	139.0	140.4	-90.03	9,192.9	-1,968.6	1,009.3	731.6	277.74	3.634	
19,200.0	9,734.0	19,390.2	9,734.0	140.4	141.8	-90.03	9,292.9	-1,969.3	1,009.3	728.8	280.54	3.598	
19,300.0	9,734.0	19,490.2	9,734.0	141.8	143.1	-90.03	9,392.9	-1,969.9	1,009.4	726.0	283.34	3.562	
19,400.0	9,734.0	19,590.2	9,734.0	143.2	144.5	-90.03	9,492.8	-1,970.6	1,009.4	723.3	286.14	3.528	
19,500.0	9,734.0	19,690.2	9,734.0	144.6	145.9	-90.03	9,592.8	-1,971.3	1,009.4	720.5	288.94	3.494	
19,600.0	9,734.0	19,790.2	9,734.0	146.0	147.3	-90.03	9,692.8	-1,972.0	1,009.5	717.7	291.75	3.460	
19,700.0	9,734.0	19,890.2	9,734.0	147.4	148.7	-90.03	9,792.8	-1,972.7	1,009.5	714.9	294.56	3.427	
19,800.0	9,734.0	19,990.2	9,734.0	148.8	150.1	-90.03	9,892.8	-1,973.4	1,009.5	712.2	297.37	3.395	
19,900.0	9,734.0	20,090.2	9,734.0	150.3	151.5	-90.03	9,992.8	-1,974.1	1,009.6	709.4	300.18	3.363	
20,000.0	9,734.0	20,190.2	9,734.0	151.7	152.7	-90.03	10,092.8	-1,974.8	1,009.6	706.8	302.79	3.334	
20,000.0	9,734.0	20,190.2	9,734.0	151.7	152.7	-90.03	10,092.8	-1,974.8	1,009.6	706.8	302.79	3.334	
20,019.5	9,734.0	20,207.7	9,734.0	151.9	153.0	-90.03	10,110.3	-1,974.9	1,009.6	706.3	303.33	3.328	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 515H - 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	
0.0	0.0	0.6	0.6	0.0	0.0	89.88	0.0	19.9	19.9				
100.0	100.0	100.6	100.6	0.1	0.1	89.88	0.0	19.9	19.9	19.6	0.27	74.955	
200.0	200.0	200.6	200.6	0.5	0.5	89.88	0.0	19.9	19.9	18.9	0.98	20.263	
300.0	300.0	300.6	300.6	0.8	0.9	89.88	0.0	19.9	19.9	18.2	1.70	11.715	
400.0	400.0	400.6	400.6	1.2	1.2	89.88	0.0	19.9	19.9	17.5	2.42	8.239	
500.0	500.0	500.6	500.6	1.6	1.6	89.88	0.0	19.9	19.9	16.8	3.13	6.354	
600.0	600.0	600.6	600.6	1.9	1.9	89.88	0.0	19.9	19.9	16.1	3.85	5.171	
700.0	700.0	700.6	700.6	2.3	2.3	89.88	0.0	19.9	19.9	15.3	4.57	4.359	
800.0	800.0	800.6	800.6	2.6	2.6	89.88	0.0	19.9	19.9	14.6	5.28	3.768	
900.0	900.0	900.6	900.6	3.0	3.0	89.88	0.0	19.9	19.9	13.9	6.00	3.318	
1,000.0	1,000.0	1,000.6	1,000.6	3.4	3.4	89.88	0.0	19.9	19.9	13.2	6.72	2.964	
1,100.0	1,100.0	1,100.6	1,100.6	3.7	3.7	89.88	0.0	19.9	19.9	12.5	7.44	2.678	
1,200.0	1,200.0	1,200.6	1,200.6	4.1	4.1	89.88	0.0	19.9	19.9	11.8	8.15	2.442	
1,300.0	1,300.0	1,300.6	1,300.6	4.4	4.4	89.88	0.0	19.9	19.9	11.0	8.87	2.245	
1,400.0	1,400.0	1,400.6	1,400.6	4.8	4.8	89.88	0.0	19.9	19.9	10.3	9.59	2.077	
1,500.0	1,500.0	1,500.6	1,500.6	5.2	5.2	89.88	0.0	19.9	19.9	9.6	10.30	1.932	
1,600.0	1,600.0	1,600.6	1,600.6	5.5	5.5	89.88	0.0	19.9	19.9	8.9	11.02	1.807	
1,700.0	1,700.0	1,700.6	1,700.6	5.9	5.9	89.88	0.0	19.9	19.9	8.2	11.74	1.696	
1,800.0	1,800.0	1,800.6	1,800.6	6.2	6.2	89.88	0.0	19.9	19.9	7.5	12.45	1.599	
1,900.0	1,900.0	1,900.6	1,900.6	6.6	6.6	89.88	0.0	19.9	19.9	6.7	13.17	1.512	
1,916.5	1,916.5	1,917.1	1,917.1	6.6	6.6	89.88	0.0	19.9	19.9	6.6	13.29	1.498	Level 3, CC
2,000.0	2,000.0	2,000.6	2,000.6	6.9	6.9	89.89	0.0	19.9	19.9	6.0	13.89	1.434	Level 3, ES, SF
2,100.0	2,100.0	2,100.5	2,100.4	7.3	7.3	-158.20	-1.7	20.1	21.8	7.2	14.57	1.497	Level 3
2,200.0	2,199.8	2,200.0	2,199.8	7.6	7.6	-151.52	-6.9	20.8	27.8	12.6	15.23	1.824	
2,300.0	2,299.5	2,299.0	2,298.5	8.0	7.9	-145.15	-15.4	21.9	38.2	22.3	15.88	2.404	
2,400.0	2,398.7	2,397.8	2,396.7	8.3	8.3	-141.42	-26.3	23.2	52.6	36.1	16.54	3.182	
2,500.0	2,497.7	2,496.5	2,494.7	8.7	8.6	-140.42	-37.3	24.6	68.8	51.6	17.22	3.996	
2,600.0	2,596.7	2,595.2	2,592.8	9.0	8.9	-139.82	-48.3	26.0	85.0	67.1	17.90	4.748	
2,700.0	2,695.7	2,693.9	2,690.8	9.4	9.3	-139.41	-59.3	27.4	101.2	82.6	18.58	5.443	
2,800.0	2,794.6	2,792.5	2,788.9	9.8	9.6	-139.12	-70.3	28.7	117.3	98.1	19.27	6.088	
2,900.0	2,893.6	2,891.2	2,886.9	10.1	10.0	-138.89	-81.3	30.1	133.5	113.6	19.97	6.685	
3,000.0	2,992.6	2,989.9	2,985.0	10.5	10.3	-138.72	-92.2	31.5	149.7	129.0	20.68	7.241	
3,100.0	3,091.6	3,088.6	3,083.1	10.9	10.7	-138.58	-103.2	32.9	165.9	144.5	21.38	7.758	
3,200.0	3,190.6	3,187.3	3,181.1	11.2	11.0	-138.46	-114.2	34.3	182.1	160.0	22.10	8.241	
3,300.0	3,289.6	3,285.9	3,279.2	11.6	11.4	-138.36	-125.2	35.7	198.3	175.5	22.81	8.692	
3,400.0	3,388.5	3,384.6	3,377.2	12.0	11.7	-138.28	-136.2	37.0	214.5	190.9	23.53	9.115	
3,500.0	3,487.5	3,483.3	3,475.3	12.4	12.1	-138.21	-147.2	38.4	230.7	206.4	24.25	9.511	
3,600.0	3,586.5	3,582.0	3,573.3	12.8	12.5	-138.15	-158.1	39.8	246.9	221.9	24.98	9.883	
3,700.0	3,685.5	3,680.7	3,671.4	13.2	12.8	-138.09	-169.1	41.2	263.1	237.4	25.71	10.233	
3,800.0	3,784.5	3,779.3	3,769.5	13.5	13.2	-138.05	-180.1	42.6	279.3	252.8	26.44	10.563	
3,900.0	3,883.5	3,878.0	3,867.5	13.9	13.6	-138.00	-191.1	43.9	295.4	268.3	27.17	10.875	
4,000.0	3,982.4	3,976.7	3,965.6	14.3	13.9	-137.97	-202.1	45.3	311.6	283.7	27.90	11.169	
4,100.0	4,081.4	4,075.4	4,063.6	14.7	14.3	-137.93	-213.1	46.7	327.8	299.2	28.64	11.447	
4,200.0	4,180.4	4,174.1	4,161.7	15.1	14.7	-137.90	-224.0	48.1	344.0	314.7	29.38	11.711	
4,300.0	4,279.4	4,272.7	4,259.7	15.5	15.0	-137.87	-235.0	49.5	360.2	330.1	30.12	11.961	
4,400.0	4,378.4	4,371.4	4,357.8	15.9	15.4	-137.85	-246.0	50.8	376.4	345.6	30.86	12.198	
4,500.0	4,477.4	4,470.1	4,455.9	16.3	15.8	-137.82	-257.0	52.2	392.6	361.0	31.60	12.424	
4,600.0	4,576.3	4,568.8	4,553.9	16.7	16.1	-137.80	-268.0	53.6	408.8	376.5	32.34	12.639	
4,700.0	4,675.3	4,667.5	4,652.0	17.1	16.5	-137.78	-279.0	55.0	425.0	391.9	33.09	12.844	
4,800.0	4,774.3	4,772.1	4,756.1	17.5	16.9	-137.88	-289.6	56.3	440.7	406.8	33.88	13.008	
4,900.0	4,873.3	4,879.5	4,863.2	17.9	17.3	-138.40	-296.6	57.2	454.6	420.0	34.67	13.114	
5,000.0	4,972.3	4,986.9	4,970.6	18.3	17.7	-139.32	-299.7	57.6	466.8	431.4	35.44	13.173	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 515H - 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	5,071.3	5,088.2	5,071.9	18.7	18.0	-140.44	-299.9	57.6	477.8	441.6	36.15	13.216	
5,200.0	5,170.3	5,187.2	5,170.9	19.1	18.4	-141.49	-299.9	57.6	488.9	452.0	36.85	13.265	
5,300.0	5,269.2	5,286.2	5,269.8	19.5	18.7	-142.50	-299.9	57.6	500.1	462.6	37.56	13.317	
5,400.0	5,368.2	5,385.2	5,368.8	19.9	19.0	-143.47	-299.9	57.6	511.5	473.3	38.26	13.370	
5,500.0	5,467.2	5,484.1	5,467.8	20.3	19.4	-144.39	-299.9	57.6	523.1	484.1	38.96	13.425	
5,600.0	5,566.2	5,583.1	5,566.8	20.7	19.7	-145.28	-299.9	57.6	534.7	495.1	39.66	13.482	
5,700.0	5,665.2	5,682.1	5,665.8	21.1	20.0	-146.12	-299.9	57.6	546.5	506.1	40.37	13.539	
5,800.0	5,764.2	5,781.1	5,764.8	21.5	20.4	-146.93	-299.9	57.6	558.4	517.3	41.07	13.597	
5,900.0	5,863.1	5,880.1	5,863.7	21.9	20.7	-147.71	-299.9	57.6	570.4	528.6	41.77	13.656	
6,000.0	5,962.1	5,979.1	5,962.7	22.3	21.0	-148.46	-299.9	57.6	582.5	540.0	42.47	13.714	
6,100.0	6,061.1	6,078.0	6,061.7	22.7	21.4	-149.17	-299.9	57.6	594.7	551.5	43.18	13.773	
6,200.0	6,160.1	6,177.0	6,160.7	23.1	21.7	-149.86	-299.9	57.6	607.0	563.1	43.88	13.832	
6,300.0	6,259.1	6,276.0	6,259.7	23.5	22.0	-150.52	-299.9	57.6	619.4	574.8	44.59	13.891	
6,400.0	6,358.1	6,375.0	6,358.7	23.9	22.4	-151.15	-299.9	57.6	631.8	586.5	45.29	13.950	
6,500.0	6,457.0	6,474.0	6,457.6	24.3	22.7	-151.76	-299.9	57.6	644.3	598.3	46.00	14.008	
6,600.0	6,556.0	6,573.0	6,556.6	24.7	23.1	-152.34	-299.9	57.6	656.9	610.2	46.70	14.066	
6,700.0	6,655.0	6,671.9	6,655.6	25.1	23.4	-152.91	-299.9	57.6	669.6	622.2	47.41	14.124	
6,800.0	6,754.0	6,770.9	6,754.6	25.5	23.7	-153.45	-299.9	57.6	682.3	634.2	48.11	14.181	
6,900.0	6,853.0	6,869.9	6,853.6	25.9	24.1	-153.97	-299.9	57.6	695.1	646.2	48.82	14.237	
7,000.0	6,952.0	6,968.9	6,952.6	26.3	24.4	-154.48	-299.9	57.6	707.9	658.4	49.53	14.293	
7,100.0	7,050.9	7,067.9	7,051.5	26.7	24.8	-154.96	-299.9	57.6	720.8	670.5	50.24	14.348	
7,200.0	7,149.9	7,166.9	7,150.5	27.1	25.1	-155.43	-299.9	57.6	733.7	682.8	50.94	14.403	
7,300.0	7,248.9	7,265.8	7,249.5	27.5	25.5	-155.89	-299.9	57.6	746.7	695.0	51.65	14.456	
7,400.0	7,347.9	7,364.8	7,348.5	27.9	25.8	-156.32	-299.9	57.6	759.7	707.4	52.36	14.510	
7,500.0	7,446.9	7,463.8	7,447.5	28.3	26.1	-156.75	-299.9	57.6	772.8	719.7	53.07	14.562	
7,600.0	7,545.9	7,562.8	7,546.5	28.8	26.5	-157.15	-299.9	57.6	785.9	732.1	53.78	14.614	
7,700.0	7,644.8	7,661.8	7,645.4	29.2	26.8	-157.55	-299.9	57.6	799.0	744.5	54.49	14.665	
7,800.0	7,743.8	7,760.8	7,744.4	29.6	27.2	-157.93	-299.9	57.6	812.2	757.0	55.20	14.715	
7,900.0	7,842.8	7,859.7	7,843.4	30.0	27.5	-158.30	-299.9	57.6	825.4	769.5	55.91	14.764	
8,000.0	7,941.8	7,958.7	7,942.4	30.4	27.9	-158.66	-299.9	57.6	838.7	782.0	56.62	14.813	
8,100.0	8,040.8	8,057.7	8,041.4	30.8	28.2	-159.01	-299.9	57.6	851.9	794.6	57.33	14.861	
8,200.0	8,139.8	8,156.7	8,140.4	31.2	28.5	-159.35	-299.9	57.6	865.2	807.2	58.04	14.908	
8,300.0	8,238.8	8,255.7	8,239.4	31.6	28.9	-159.67	-299.9	57.6	878.6	819.8	58.75	14.954	
8,400.0	8,337.7	8,354.7	8,338.3	32.0	29.2	-159.99	-299.9	57.6	891.9	832.5	59.46	15.000	
8,500.0	8,436.7	8,453.7	8,437.3	32.4	29.6	-160.30	-299.9	57.6	905.3	845.2	60.17	15.045	
8,600.0	8,535.7	8,552.6	8,536.3	32.8	29.9	-160.60	-299.9	57.6	918.8	857.9	60.89	15.090	
8,700.0	8,634.7	8,651.7	8,635.3	33.2	30.3	-160.91	-299.9	57.6	931.9	870.3	61.60	15.128	
8,800.0	8,734.1	8,751.0	8,734.7	33.6	30.6	-161.20	-299.9	57.6	942.3	880.0	62.31	15.123	
8,900.0	8,833.8	8,850.8	8,834.4	34.0	31.0	-161.39	-299.9	57.6	949.5	886.5	63.02	15.067	
9,000.0	8,933.7	8,950.7	8,934.3	34.3	31.3	-161.50	-299.9	57.6	953.3	889.6	63.72	14.961	
9,100.0	9,033.7	9,050.7	9,034.3	34.7	31.7	89.72	-299.9	57.6	954.0	889.6	64.41	14.813	
9,200.0	9,133.7	9,150.7	9,134.3	35.0	32.0	89.72	-299.9	57.6	954.0	889.0	65.09	14.658	
9,300.0	9,233.7	9,250.7	9,234.3	35.3	32.4	89.72	-299.9	57.6	954.0	888.3	65.77	14.506	
9,400.0	9,333.4	9,360.4	9,343.6	35.6	32.7	90.08	-291.9	57.1	953.7	887.2	66.48	14.344	
9,500.0	9,429.7	9,472.3	9,450.2	35.9	33.1	90.05	-258.9	55.1	952.0	884.9	67.12	14.184	
9,600.0	9,518.4	9,582.9	9,545.2	36.1	33.4	90.00	-202.9	51.7	949.3	881.6	67.65	14.031	
9,700.0	9,595.7	9,691.5	9,623.5	36.2	33.6	89.94	-128.1	47.1	945.5	877.4	68.11	13.882	
9,800.0	9,658.2	9,797.8	9,681.9	36.3	33.8	89.89	-39.7	41.7	941.0	872.5	68.51	13.736	
9,900.0	9,703.1	9,901.7	9,718.7	36.4	34.0	89.84	57.0	35.8	935.9	867.0	68.87	13.590	
10,000.0	9,728.5	10,003.1	9,733.6	36.3	34.2	89.80	157.0	29.7	930.5	861.3	69.20	13.447	
10,100.0	9,734.0	10,083.3	9,734.0	36.3	34.4	89.96	237.1	25.4	925.9	856.4	69.51	13.321	
10,200.0	9,734.0	10,158.9	9,734.0	36.4	34.6	89.96	312.6	23.4	923.9	854.0	69.88	13.221	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 515H - 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)					
10,229.6	9,734.0	10,182.0	9,734.0	36.4	34.6	89.96	335.7	23.2	923.8	853.8	70.01	13.195			
10,300.0	9,734.0	10,252.4	9,734.0	36.5	34.8	89.96	406.1	22.7	923.8	853.4	70.40	13.122			
10,400.0	9,734.0	10,352.4	9,734.0	36.7	35.2	89.96	506.1	22.0	923.8	852.7	71.05	13.002			
10,500.0	9,734.0	10,452.4	9,734.0	37.0	35.6	89.96	606.1	21.4	923.8	852.0	71.81	12.864			
10,600.0	9,734.0	10,552.4	9,734.0	37.4	36.0	89.96	706.1	20.7	923.8	851.1	72.68	12.710			
10,700.0	9,734.0	10,652.4	9,734.0	37.8	36.5	89.96	806.1	20.1	923.8	850.2	73.65	12.543			
10,800.0	9,734.0	10,752.4	9,734.0	38.3	37.1	89.96	906.1	19.4	923.8	849.1	74.73	12.363			
10,900.0	9,734.0	10,852.4	9,734.0	38.9	37.7	89.96	1,006.1	18.7	923.8	847.9	75.89	12.173			
11,000.0	9,734.0	10,952.4	9,734.0	39.5	38.3	89.96	1,106.1	18.1	923.8	846.7	77.15	11.974			
11,100.0	9,734.0	11,052.4	9,734.0	40.2	39.0	89.96	1,206.1	17.4	923.8	845.3	78.50	11.769			
11,200.0	9,734.0	11,152.4	9,734.0	40.9	39.7	89.96	1,306.1	16.8	923.8	843.9	79.92	11.559			
11,300.0	9,734.0	11,252.4	9,734.0	41.6	40.5	89.96	1,406.1	16.1	923.8	842.4	81.43	11.345			
11,400.0	9,734.0	11,352.4	9,734.0	42.4	41.3	89.96	1,506.1	15.4	923.8	840.8	83.01	11.129			
11,500.0	9,734.0	11,452.4	9,734.0	43.2	42.1	89.96	1,606.1	14.8	923.8	839.2	84.66	10.913			
11,600.0	9,734.0	11,552.4	9,734.0	44.0	43.0	89.96	1,706.1	14.1	923.8	837.5	86.37	10.696			
11,700.0	9,734.0	11,652.4	9,734.0	44.9	43.9	89.96	1,806.1	13.5	923.8	835.7	88.14	10.481			
11,800.0	9,734.0	11,752.4	9,734.0	45.8	44.8	89.96	1,906.1	12.8	923.8	833.8	89.98	10.267			
11,900.0	9,734.0	11,852.4	9,734.0	46.7	45.8	89.96	2,006.1	12.1	923.8	832.0	91.87	10.056			
12,000.0	9,734.0	11,952.4	9,734.0	47.7	46.8	89.96	2,106.1	11.5	923.8	830.0	93.81	9.848			
12,100.0	9,734.0	12,052.4	9,734.0	48.6	47.8	89.96	2,206.1	10.8	923.8	828.0	95.79	9.644			
12,200.0	9,734.0	12,152.4	9,734.0	49.6	48.8	89.96	2,306.1	10.2	923.8	826.0	97.83	9.444			
12,300.0	9,734.0	12,252.4	9,734.0	50.7	49.8	89.96	2,406.1	9.5	923.8	823.9	99.90	9.247			
12,400.0	9,734.0	12,352.4	9,734.0	51.7	50.9	89.96	2,506.1	8.9	923.8	821.8	102.02	9.056			
12,500.0	9,734.0	12,452.4	9,734.0	52.8	52.0	89.96	2,606.1	8.2	923.8	819.7	104.17	8.869			
12,600.0	9,734.0	12,552.4	9,734.0	53.8	53.1	89.96	2,706.1	7.5	923.8	817.5	106.36	8.686			
12,700.0	9,734.0	12,652.4	9,734.0	54.9	54.2	89.96	2,806.1	6.9	923.8	815.3	108.58	8.508			
12,800.0	9,734.0	12,752.4	9,734.0	56.0	55.3	89.96	2,906.1	6.2	923.8	813.0	110.83	8.336			
12,900.0	9,734.0	12,852.4	9,734.0	57.2	56.5	89.96	3,006.1	5.6	923.8	810.7	113.11	8.167			
13,000.0	9,734.0	12,952.4	9,734.0	58.3	57.7	89.96	3,106.1	4.9	923.9	808.4	115.42	8.004			
13,100.0	9,734.0	13,052.4	9,734.0	59.5	58.8	89.96	3,206.1	4.2	923.9	806.1	117.76	7.845			
13,200.0	9,734.0	13,152.4	9,734.0	60.6	60.0	89.96	3,306.1	3.6	923.9	803.7	120.12	7.691			
13,300.0	9,734.0	13,252.4	9,734.0	61.8	61.2	89.96	3,406.1	2.9	923.9	801.4	122.50	7.542			
13,400.0	9,734.0	13,352.4	9,734.0	63.0	62.4	89.96	3,506.1	2.3	923.9	799.0	124.90	7.397			
13,500.0	9,734.0	13,452.4	9,734.0	64.2	63.6	89.96	3,606.1	1.6	923.9	796.5	127.33	7.256			
13,600.0	9,734.0	13,552.4	9,734.0	65.4	64.9	89.96	3,706.1	0.9	923.9	794.1	129.77	7.119			
13,700.0	9,734.0	13,652.4	9,734.0	66.6	66.1	89.96	3,806.1	0.3	923.9	791.6	132.23	6.987			
13,800.0	9,734.0	13,752.4	9,734.0	67.8	67.4	89.96	3,906.1	-0.4	923.9	789.2	134.71	6.858			
13,900.0	9,734.0	13,852.4	9,734.0	69.1	68.6	89.96	4,006.1	-1.0	923.9	786.7	137.21	6.733			
14,000.0	9,734.0	13,952.4	9,734.0	70.3	69.9	89.96	4,106.1	-1.7	923.9	784.2	139.72	6.612			
14,100.0	9,734.0	14,052.4	9,734.0	71.6	71.1	89.96	4,206.1	-2.4	923.9	781.6	142.24	6.495			
14,200.0	9,734.0	14,152.4	9,734.0	72.8	72.4	89.96	4,306.1	-3.0	923.9	779.1	144.78	6.381			
14,300.0	9,734.0	14,252.4	9,734.0	74.1	73.7	89.96	4,406.1	-3.7	923.9	776.5	147.34	6.271			
14,400.0	9,734.0	14,352.4	9,734.0	75.4	75.0	89.96	4,506.1	-4.3	923.9	774.0	149.90	6.163			
14,500.0	9,734.0	14,452.4	9,734.0	76.6	76.3	89.96	4,606.0	-5.0	923.9	771.4	152.48	6.059			
14,600.0	9,734.0	14,552.4	9,734.0	77.9	77.6	89.96	4,706.0	-5.7	923.9	768.8	155.06	5.958			
14,700.0	9,734.0	14,652.4	9,734.0	79.2	78.9	89.96	4,806.0	-6.3	923.9	766.2	157.66	5.860			
14,800.0	9,734.0	14,752.4	9,734.0	80.5	80.2	89.96	4,906.0	-7.0	923.9	763.6	160.27	5.765			
14,900.0	9,734.0	14,852.4	9,734.0	81.8	81.5	89.96	5,006.0	-7.6	923.9	761.0	162.89	5.672			
15,000.0	9,734.0	14,952.4	9,734.0	83.1	82.8	89.96	5,106.0	-8.3	923.9	758.4	165.52	5.582			
15,100.0	9,734.0	15,052.4	9,734.0	84.4	84.1	89.96	5,206.0	-9.0	923.9	755.7	168.15	5.494			
15,200.0	9,734.0	15,152.4	9,734.0	85.7	85.5	89.96	5,306.0	-9.6	923.9	753.1	170.80	5.409			
15,300.0	9,734.0	15,252.4	9,734.0	87.0	86.8	89.96	5,406.0	-10.3	923.9	750.4	173.45	5.327			

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 515H - 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	9,734.0	15,352.4	9,734.0	88.4	88.1	89.96	5,506.0	-10.9	923.9	747.8	176.11	5.246	
15,500.0	9,734.0	15,452.4	9,734.0	89.7	89.5	89.96	5,606.0	-11.6	923.9	745.1	178.78	5.168	
15,600.0	9,734.0	15,552.4	9,734.0	91.0	90.8	89.96	5,706.0	-12.2	923.9	742.5	181.45	5.092	
15,700.0	9,734.0	15,652.4	9,734.0	92.4	92.1	89.96	5,806.0	-12.9	923.9	739.8	184.13	5.018	
15,800.0	9,734.0	15,752.4	9,734.0	93.7	93.5	89.96	5,906.0	-13.6	923.9	737.1	186.82	4.945	
15,900.0	9,734.0	15,852.4	9,734.0	95.0	94.8	89.96	6,006.0	-14.2	923.9	734.4	189.51	4.875	
16,000.0	9,734.0	15,952.4	9,734.0	96.4	96.2	89.96	6,106.0	-14.9	923.9	731.7	192.21	4.807	
16,100.0	9,734.0	16,052.4	9,734.0	97.7	97.6	89.96	6,206.0	-15.5	923.9	729.0	194.92	4.740	
16,200.0	9,734.0	16,152.4	9,734.0	99.1	98.9	89.96	6,306.0	-16.2	923.9	726.3	197.63	4.675	
16,300.0	9,734.0	16,252.4	9,734.0	100.4	100.3	89.96	6,406.0	-16.9	923.9	723.6	200.35	4.612	
16,400.0	9,734.0	16,352.4	9,734.0	101.8	101.6	89.96	6,506.0	-17.5	923.9	720.9	203.07	4.550	
16,500.0	9,734.0	16,452.4	9,734.0	103.1	103.0	89.96	6,606.0	-18.2	923.9	718.1	205.79	4.490	
16,600.0	9,734.0	16,552.4	9,734.0	104.5	104.4	89.96	6,706.0	-18.8	923.9	715.4	208.52	4.431	
16,700.0	9,734.0	16,652.4	9,734.0	105.8	105.7	89.96	6,806.0	-19.5	923.9	712.7	211.26	4.374	
16,800.0	9,734.0	16,752.4	9,734.0	107.2	107.1	89.96	6,906.0	-20.2	923.9	709.9	213.99	4.318	
16,900.0	9,734.0	16,852.4	9,734.0	108.6	108.5	89.96	7,006.0	-20.8	923.9	707.2	216.74	4.263	
17,000.0	9,734.0	16,952.4	9,734.0	109.9	109.9	89.96	7,106.0	-21.5	923.9	704.5	219.48	4.210	
17,100.0	9,734.0	17,052.4	9,734.0	111.3	111.2	89.96	7,206.0	-22.1	923.9	701.7	222.23	4.158	
17,200.0	9,734.0	17,152.4	9,734.0	112.7	112.6	89.96	7,306.0	-22.8	923.9	699.0	224.99	4.107	
17,300.0	9,734.0	17,252.4	9,734.0	114.1	114.0	89.96	7,406.0	-23.5	923.9	696.2	227.74	4.057	
17,400.0	9,734.0	17,352.4	9,734.0	115.4	115.4	89.96	7,506.0	-24.1	923.9	693.4	230.50	4.008	
17,500.0	9,734.0	17,452.4	9,734.0	116.8	116.8	89.96	7,606.0	-24.8	923.9	690.7	233.27	3.961	
17,600.0	9,734.0	17,552.4	9,734.0	118.2	118.1	89.96	7,706.0	-25.4	923.9	687.9	236.04	3.914	
17,700.0	9,734.0	17,652.4	9,734.0	119.6	119.5	89.96	7,806.0	-26.1	923.9	685.1	238.81	3.869	
17,800.0	9,734.0	17,752.4	9,734.0	121.0	120.9	89.96	7,906.0	-26.8	924.0	682.4	241.58	3.825	
17,900.0	9,734.0	17,852.4	9,734.0	122.3	122.3	89.96	8,006.0	-27.4	924.0	679.6	244.35	3.781	
18,000.0	9,734.0	17,952.4	9,734.0	123.7	123.7	89.96	8,106.0	-28.1	924.0	676.8	247.13	3.739	
18,100.0	9,734.0	18,052.4	9,734.0	125.1	125.1	89.96	8,206.0	-28.7	924.0	674.0	249.91	3.697	
18,200.0	9,734.0	18,152.4	9,734.0	126.5	126.5	89.96	8,306.0	-29.4	924.0	671.3	252.70	3.656	
18,300.0	9,734.0	18,252.4	9,734.0	127.9	127.9	89.96	8,406.0	-30.0	924.0	668.5	255.48	3.617	
18,400.0	9,734.0	18,352.4	9,734.0	129.3	129.3	89.96	8,506.0	-30.7	924.0	665.7	258.27	3.577	
18,500.0	9,734.0	18,452.4	9,734.0	130.7	130.7	89.96	8,606.0	-31.4	924.0	662.9	261.06	3.539	
18,600.0	9,734.0	18,552.4	9,734.0	132.1	132.1	89.96	8,706.0	-32.0	924.0	660.1	263.86	3.502	
18,700.0	9,734.0	18,652.4	9,734.0	133.4	133.5	89.96	8,806.0	-32.7	924.0	657.3	266.65	3.465	
18,800.0	9,734.0	18,752.4	9,734.0	134.8	134.9	89.96	8,906.0	-33.3	924.0	654.5	269.45	3.429	
18,900.0	9,734.0	18,852.4	9,734.0	136.2	136.3	89.96	9,006.0	-34.0	924.0	651.7	272.25	3.394	
19,000.0	9,734.0	18,952.4	9,734.0	137.6	137.7	89.96	9,105.9	-34.7	924.0	648.9	275.05	3.359	
19,100.0	9,734.0	19,052.4	9,734.0	139.0	139.1	89.96	9,205.9	-35.3	924.0	646.1	277.85	3.325	
19,200.0	9,734.0	19,152.4	9,734.0	140.4	140.5	89.96	9,305.9	-36.0	924.0	643.3	280.66	3.292	
19,300.0	9,734.0	19,252.4	9,734.0	141.8	141.9	89.96	9,405.9	-36.6	924.0	640.5	283.47	3.260	
19,400.0	9,734.0	19,352.4	9,734.0	143.2	143.3	89.96	9,505.9	-37.3	924.0	637.7	286.27	3.228	
19,500.0	9,734.0	19,452.4	9,734.0	144.6	144.7	89.96	9,605.9	-38.0	924.0	634.9	289.08	3.196	
19,600.0	9,734.0	19,552.4	9,734.0	146.0	146.1	89.96	9,705.9	-38.6	924.0	632.1	291.90	3.165	
19,700.0	9,734.0	19,652.4	9,734.0	147.4	147.5	89.96	9,805.9	-39.3	924.0	629.3	294.71	3.135	
19,800.0	9,734.0	19,752.4	9,734.0	148.8	148.9	89.96	9,905.9	-39.9	924.0	626.5	297.53	3.106	
19,900.0	9,734.0	19,852.4	9,734.0	150.3	150.3	89.96	10,005.9	-40.6	924.0	623.7	300.34	3.076	
20,000.0	9,734.0	19,952.4	9,734.0	151.7	151.6	89.96	10,105.9	-41.3	924.0	621.0	303.04	3.049	
20,019.5	9,734.0	19,971.8	9,734.0	151.9	151.9	89.96	10,125.4	-41.4	924.0	620.4	303.55	3.044	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 516H - 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)			
0.0	0.0	0.7	0.7	0.0	0.0	89.87	0.1	39.9	39.9				
100.0	100.0	100.7	100.7	0.1	0.1	89.87	0.1	39.9	39.9	39.6	0.27	149.971	
200.0	200.0	200.7	200.7	0.5	0.5	89.87	0.1	39.9	39.9	38.9	0.98	40.583	
300.0	300.0	300.7	300.7	0.8	0.9	89.87	0.1	39.9	39.9	38.2	1.70	23.467	
400.0	400.0	400.7	400.7	1.2	1.2	89.87	0.1	39.9	39.9	37.5	2.42	16.505	
500.0	500.0	500.7	500.7	1.6	1.6	89.87	0.1	39.9	39.9	36.8	3.13	12.729	
600.0	600.0	600.7	600.7	1.9	1.9	89.87	0.1	39.9	39.9	36.0	3.85	10.359	
700.0	700.0	700.7	700.7	2.3	2.3	89.87	0.1	39.9	39.9	35.3	4.57	8.733	
800.0	800.0	800.7	800.7	2.6	2.6	89.87	0.1	39.9	39.9	34.6	5.28	7.548	
900.0	900.0	900.7	900.7	3.0	3.0	89.87	0.1	39.9	39.9	33.9	6.00	6.647	
1,000.0	1,000.0	1,000.7	1,000.7	3.4	3.4	89.87	0.1	39.9	39.9	33.2	6.72	5.937	
1,100.0	1,100.0	1,100.7	1,100.7	3.7	3.7	89.87	0.1	39.9	39.9	32.5	7.44	5.365	
1,200.0	1,200.0	1,200.7	1,200.7	4.1	4.1	89.87	0.1	39.9	39.9	31.7	8.15	4.893	
1,300.0	1,300.0	1,300.7	1,300.7	4.4	4.4	89.87	0.1	39.9	39.9	31.0	8.87	4.498	
1,400.0	1,400.0	1,400.7	1,400.7	4.8	4.8	89.87	0.1	39.9	39.9	30.3	9.59	4.161	
1,500.0	1,500.0	1,500.7	1,500.7	5.2	5.2	89.87	0.1	39.9	39.9	29.6	10.30	3.872	
1,600.0	1,600.0	1,600.7	1,600.7	5.5	5.5	89.87	0.1	39.9	39.9	28.9	11.02	3.620	
1,700.0	1,700.0	1,700.7	1,700.7	5.9	5.9	89.87	0.1	39.9	39.9	28.2	11.74	3.399	
1,800.0	1,800.0	1,800.7	1,800.7	6.2	6.2	89.87	0.1	39.9	39.9	27.4	12.45	3.203	
1,900.0	1,900.0	1,900.7	1,900.7	6.6	6.6	89.87	0.1	39.9	39.9	26.7	13.17	3.029	
1,916.4	1,916.4	1,917.1	1,917.1	6.6	6.6	89.87	0.1	39.9	39.9	26.6	13.29	3.002 CC	
2,000.0	2,000.0	2,000.7	2,000.7	6.9	6.9	89.87	0.1	39.9	39.9	26.0	13.89	2.872 ES, SF	
2,100.0	2,100.0	2,099.3	2,099.3	7.3	7.3	-161.36	-0.4	41.5	43.2	28.6	14.57	2.965	
2,200.0	2,199.8	2,197.2	2,197.1	7.6	7.6	-161.37	-2.0	46.3	53.1	37.9	15.22	3.488	
2,300.0	2,299.5	2,293.9	2,293.4	8.0	7.9	-161.36	-4.6	54.2	69.4	53.6	15.85	4.380	
2,400.0	2,398.7	2,388.8	2,387.6	8.3	8.3	-161.32	-8.0	64.9	92.1	75.7	16.46	5.597	
2,500.0	2,497.7	2,484.3	2,482.1	8.7	8.6	-161.33	-12.2	77.9	118.9	101.8	17.10	6.952	
2,600.0	2,596.7	2,580.6	2,577.4	9.0	9.0	-161.33	-16.5	91.1	145.8	128.0	17.77	8.207	
2,700.0	2,695.7	2,676.9	2,672.8	9.4	9.3	-161.34	-20.8	104.3	172.7	154.3	18.44	9.369	
2,800.0	2,794.6	2,773.2	2,768.1	9.8	9.7	-161.34	-25.1	117.5	199.6	180.5	19.11	10.447	
2,900.0	2,893.6	2,869.6	2,863.4	10.1	10.0	-161.34	-29.3	130.7	226.5	206.8	19.79	11.449	
3,000.0	2,992.6	2,965.9	2,958.7	10.5	10.4	-161.34	-33.6	143.9	253.5	233.0	20.47	12.382	
3,100.0	3,091.6	3,062.2	3,054.0	10.9	10.7	-161.34	-37.9	157.1	280.4	259.2	21.15	13.254	
3,200.0	3,190.6	3,158.5	3,149.3	11.2	11.1	-161.34	-42.1	170.3	307.3	285.4	21.84	14.069	
3,300.0	3,289.6	3,254.8	3,244.6	11.6	11.5	-161.34	-46.4	183.5	334.2	311.7	22.53	14.832	
3,400.0	3,388.5	3,351.1	3,339.9	12.0	11.8	-161.34	-50.7	196.7	361.1	337.9	23.22	15.548	
3,500.0	3,487.5	3,447.4	3,435.2	12.4	12.2	-161.34	-55.0	209.9	388.0	364.1	23.92	16.222	
3,600.0	3,586.5	3,543.7	3,530.5	12.8	12.6	-161.34	-59.2	223.1	414.9	390.3	24.62	16.855	
3,700.0	3,685.5	3,640.0	3,625.8	13.2	12.9	-161.34	-63.5	236.3	441.8	416.5	25.32	17.453	
3,800.0	3,784.5	3,736.4	3,721.1	13.5	13.3	-161.34	-67.8	249.5	468.8	442.7	26.02	18.017	
3,900.0	3,883.5	3,832.7	3,816.4	13.9	13.7	-161.34	-72.1	262.7	495.7	468.9	26.72	18.551	
4,000.0	3,982.4	3,929.0	3,911.7	14.3	14.1	-161.34	-76.3	275.8	522.6	495.2	27.42	19.056	
4,100.0	4,081.4	4,025.3	4,007.1	14.7	14.4	-161.34	-80.6	289.0	549.5	521.4	28.13	19.535	
4,200.0	4,180.4	4,121.6	4,102.4	15.1	14.8	-161.34	-84.9	302.2	576.4	547.6	28.84	19.990	
4,300.0	4,279.4	4,217.9	4,197.7	15.5	15.2	-161.34	-89.2	315.4	603.3	573.8	29.54	20.422	
4,400.0	4,378.4	4,314.2	4,293.0	15.9	15.6	-161.34	-93.4	328.6	630.2	600.0	30.25	20.833	
4,500.0	4,477.4	4,410.5	4,388.3	16.3	16.0	-161.34	-97.7	341.8	657.1	626.2	30.96	21.224	
4,600.0	4,576.3	4,506.8	4,483.6	16.7	16.3	-161.34	-102.0	355.0	684.0	652.4	31.67	21.597	
4,700.0	4,675.3	4,603.1	4,578.9	17.1	16.7	-161.34	-106.2	368.2	711.0	678.6	32.38	21.953	
4,800.0	4,774.3	4,699.5	4,674.2	17.5	17.1	-161.34	-110.5	381.4	737.9	704.8	33.10	22.294	
4,900.0	4,873.3	4,795.8	4,769.5	17.9	17.5	-161.34	-114.8	394.6	764.8	731.0	33.81	22.619	
5,000.0	4,972.3	4,892.1	4,864.8	18.3	17.9	-161.34	-119.1	407.8	791.7	757.2	34.53	22.931	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 516H - 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	5,071.3	4,988.4	4,960.1	18.7	18.2	-161.34	-123.3	421.0	818.6	783.4	35.24	23.229	
5,200.0	5,170.3	5,084.7	5,055.4	19.1	18.6	-161.34	-127.6	434.2	845.5	809.6	35.96	23.515	
5,300.0	5,269.2	5,181.0	5,150.7	19.5	19.0	-161.34	-131.9	447.4	872.4	835.8	36.67	23.789	
5,400.0	5,368.2	5,277.3	5,246.0	19.9	19.4	-161.34	-136.2	460.6	899.3	862.0	37.39	24.053	
5,500.0	5,467.2	5,373.6	5,341.3	20.3	19.8	-161.34	-140.4	473.8	926.3	888.1	38.11	24.306	
5,600.0	5,566.2	5,469.9	5,436.7	20.7	20.2	-161.34	-144.7	487.0	953.2	914.3	38.83	24.549	
5,700.0	5,665.2	5,566.3	5,532.0	21.1	20.6	-161.34	-149.0	500.1	980.1	940.5	39.55	24.783	
5,800.0	5,764.2	5,662.6	5,627.3	21.5	20.9	-161.34	-153.3	513.3	1,007.0	966.7	40.27	25.009	
5,900.0	5,863.1	5,758.9	5,722.6	21.9	21.3	-161.34	-157.5	526.5	1,033.9	992.9	40.99	25.226	
6,000.0	5,962.1	5,855.2	5,817.9	22.3	21.7	-161.34	-161.8	539.7	1,060.8	1,019.1	41.71	25.436	
6,100.0	6,061.1	5,951.5	5,913.2	22.7	22.1	-161.34	-166.1	552.9	1,087.7	1,045.3	42.43	25.638	
6,200.0	6,160.1	6,047.8	6,008.5	23.1	22.5	-161.34	-170.3	566.1	1,114.6	1,071.5	43.15	25.833	
6,300.0	6,259.1	6,144.1	6,103.8	23.5	22.9	-161.34	-174.6	579.3	1,141.5	1,097.7	43.87	26.021	
6,400.0	6,358.1	6,240.4	6,199.1	23.9	23.3	-161.34	-178.9	592.5	1,168.5	1,123.9	44.59	26.203	
6,500.0	6,457.0	6,336.7	6,294.4	24.3	23.7	-161.34	-183.2	605.7	1,195.4	1,150.1	45.31	26.379	
6,600.0	6,556.0	6,433.1	6,389.7	24.7	24.1	-161.34	-187.4	618.9	1,222.3	1,176.2	46.04	26.550	
6,700.0	6,655.0	6,529.4	6,485.0	25.1	24.4	-161.34	-191.7	632.1	1,249.2	1,202.4	46.76	26.714	
6,800.0	6,754.0	6,625.7	6,580.3	25.5	24.8	-161.34	-196.0	645.3	1,276.1	1,228.6	47.48	26.874	
6,900.0	6,853.0	6,722.0	6,675.6	25.9	25.2	-161.34	-200.3	658.5	1,303.0	1,254.8	48.21	27.029	
7,000.0	6,952.0	6,818.3	6,771.0	26.3	25.6	-161.34	-204.5	671.7	1,329.9	1,281.0	48.93	27.178	
7,100.0	7,050.9	6,914.6	6,866.3	26.7	26.0	-161.34	-208.8	684.9	1,356.8	1,307.2	49.66	27.324	
7,200.0	7,149.9	7,010.9	6,961.6	27.1	26.4	-161.34	-213.1	698.1	1,383.8	1,333.4	50.38	27.465	
7,300.0	7,248.9	7,107.2	7,056.9	27.5	26.8	-161.34	-217.4	711.3	1,410.7	1,359.6	51.11	27.601	
7,400.0	7,347.9	7,203.5	7,152.2	27.9	27.2	-161.34	-221.6	724.5	1,437.6	1,385.7	51.83	27.734	
7,500.0	7,446.9	7,299.8	7,247.5	28.3	27.6	-161.34	-225.9	737.6	1,464.5	1,411.9	52.56	27.863	
7,600.0	7,545.9	7,396.2	7,342.8	28.8	28.0	-161.34	-230.2	750.8	1,491.4	1,438.1	53.29	27.988	
7,700.0	7,644.8	7,492.5	7,438.1	29.2	28.3	-161.34	-234.4	764.0	1,518.3	1,464.3	54.01	28.110	
7,800.0	7,743.8	7,588.8	7,533.4	29.6	28.7	-161.34	-238.7	777.2	1,545.2	1,490.5	54.74	28.228	
7,900.0	7,842.8	7,685.1	7,628.7	30.0	29.1	-161.34	-243.0	790.4	1,572.1	1,516.7	55.47	28.343	
8,000.0	7,941.8	7,781.4	7,724.0	30.4	29.5	-161.34	-247.3	803.6	1,599.0	1,542.9	56.19	28.455	
8,100.0	8,040.8	7,877.7	7,819.3	30.8	29.9	-161.34	-251.5	816.8	1,626.0	1,569.0	56.92	28.564	
8,200.0	8,139.8	7,974.0	7,914.6	31.2	30.3	-161.34	-255.8	830.0	1,652.9	1,595.2	57.65	28.671	
8,300.0	8,238.8	8,070.3	8,009.9	31.6	30.7	-161.34	-260.1	843.2	1,679.8	1,621.4	58.38	28.774	
8,400.0	8,337.7	8,166.6	8,105.2	32.0	31.1	-161.34	-264.4	856.4	1,706.7	1,647.6	59.11	28.875	
8,500.0	8,436.7	8,263.0	8,200.6	32.4	31.5	-161.34	-268.6	869.6	1,733.6	1,673.8	59.84	28.973	
8,600.0	8,535.7	8,359.3	8,295.9	32.8	31.9	-161.34	-272.9	882.8	1,760.5	1,700.0	60.56	29.068	
8,700.0	8,634.7	8,455.7	8,391.2	33.2	32.3	-161.41	-277.2	896.0	1,787.1	1,725.8	61.29	29.157	
8,800.0	8,734.1	8,552.7	8,487.3	33.6	32.7	-161.54	-281.5	909.3	1,811.1	1,749.1	62.02	29.201	
8,900.0	8,833.8	8,650.5	8,584.1	34.0	33.1	-161.60	-285.8	922.7	1,831.8	1,769.1	62.75	29.194	
9,000.0	8,933.7	8,898.9	8,831.1	34.3	34.0	-161.54	-293.6	946.8	1,845.4	1,781.1	64.39	28.661	
9,100.0	9,033.7	9,102.4	9,034.4	34.7	34.7	89.71	-295.2	951.6	1,848.0	1,782.5	65.50	28.213	
9,200.0	9,133.7	9,202.4	9,134.4	35.0	35.0	89.71	-295.2	951.6	1,848.0	1,781.8	66.17	27.930	
9,300.0	9,233.7	9,302.4	9,234.4	35.3	35.3	89.71	-295.2	951.6	1,848.0	1,781.2	66.83	27.653	
9,400.0	9,333.4	9,402.8	9,334.5	35.6	35.6	90.08	-288.8	951.5	1,848.0	1,780.5	67.48	27.388	
9,500.0	9,429.7	9,503.3	9,431.3	35.9	35.9	90.07	-262.1	951.3	1,848.0	1,779.9	68.06	27.154	
9,600.0	9,518.4	9,603.8	9,520.2	36.1	36.1	90.06	-215.8	951.0	1,848.0	1,779.4	68.56	26.954	
9,700.0	9,595.7	9,704.1	9,597.5	36.2	36.3	90.05	-152.0	950.6	1,848.0	1,779.0	68.99	26.785	
9,800.0	9,658.2	9,804.4	9,659.6	36.3	36.4	90.03	-73.6	950.1	1,848.0	1,778.6	69.37	26.639	
9,900.0	9,703.1	9,904.5	9,704.1	36.4	36.4	90.01	15.9	949.5	1,848.0	1,778.3	69.71	26.508	
10,000.0	9,728.5	10,004.5	9,728.9	36.3	36.4	89.99	112.6	948.9	1,848.0	1,778.0	70.03	26.387	
10,001.6	9,728.7	10,006.1	9,729.1	36.3	36.4	89.99	114.2	948.9	1,848.0	1,778.0	70.04	26.385	
10,100.0	9,734.0	10,104.5	9,734.0	36.3	36.3	89.98	212.3	948.2	1,848.0	1,777.7	70.34	26.271	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 516H - OH - Plan 0.1												Offset Site Error:	0.0 usft
Survey Program: 0-B001Mb_MWD+HRGM							Rule Assigned:					Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	9,734.0	10,204.5	9,734.0	36.4	36.4	89.98	312.3	947.5	1,848.0	1,777.3	70.74	26.124	
10,300.0	9,734.0	10,304.5	9,734.0	36.5	36.5	89.98	412.3	946.9	1,848.0	1,776.7	71.25	25.936	
10,400.0	9,734.0	10,404.5	9,734.0	36.7	36.7	89.98	512.3	946.2	1,848.0	1,776.1	71.88	25.710	
10,500.0	9,734.0	10,504.5	9,734.0	37.0	37.0	89.98	612.3	945.6	1,848.0	1,775.4	72.61	25.450	
10,600.0	9,734.0	10,604.5	9,734.0	37.4	37.4	89.98	712.3	944.9	1,848.0	1,774.5	73.46	25.158	
10,700.0	9,734.0	10,704.5	9,734.0	37.8	37.9	89.98	812.3	944.2	1,848.0	1,773.6	74.40	24.838	
10,800.0	9,734.0	10,804.5	9,734.0	38.3	38.4	89.98	912.3	943.6	1,848.0	1,772.6	75.45	24.494	
10,900.0	9,734.0	10,904.5	9,734.0	38.9	39.0	89.98	1,012.3	942.9	1,848.0	1,771.4	76.59	24.130	
11,000.0	9,734.0	11,004.5	9,734.0	39.5	39.6	89.98	1,112.3	942.3	1,848.0	1,770.2	77.82	23.748	
11,100.0	9,734.0	11,104.5	9,734.0	40.2	40.2	89.98	1,212.3	941.6	1,848.0	1,768.9	79.13	23.353	
11,200.0	9,734.0	11,204.5	9,734.0	40.9	40.9	89.98	1,312.3	940.9	1,848.0	1,767.5	80.53	22.947	
11,300.0	9,734.0	11,304.5	9,734.0	41.6	41.7	89.98	1,412.3	940.3	1,848.0	1,766.0	82.01	22.533	
11,400.0	9,734.0	11,404.5	9,734.0	42.4	42.5	89.98	1,512.2	939.6	1,848.0	1,764.4	83.57	22.114	
11,500.0	9,734.0	11,504.5	9,734.0	43.2	43.3	89.98	1,612.2	938.9	1,848.0	1,762.8	85.19	21.693	
11,600.0	9,734.0	11,604.5	9,734.0	44.0	44.1	89.98	1,712.2	938.3	1,848.0	1,761.1	86.88	21.271	
11,700.0	9,734.0	11,704.5	9,734.0	44.9	45.0	89.98	1,812.2	937.6	1,848.0	1,759.4	88.63	20.851	
11,800.0	9,734.0	11,804.5	9,734.0	45.8	45.9	89.98	1,912.2	937.0	1,848.0	1,757.6	90.44	20.434	
11,900.0	9,734.0	11,904.5	9,734.0	46.7	46.8	89.98	2,012.2	936.3	1,848.0	1,755.7	92.30	20.021	
12,000.0	9,734.0	12,004.5	9,734.0	47.7	47.8	89.98	2,112.2	935.6	1,848.0	1,753.8	94.22	19.613	
12,100.0	9,734.0	12,104.5	9,734.0	48.6	48.7	89.98	2,212.2	935.0	1,848.0	1,751.8	96.19	19.212	
12,200.0	9,734.0	12,204.5	9,734.0	49.6	49.7	89.98	2,312.2	934.3	1,848.0	1,749.8	98.20	18.819	
12,300.0	9,734.0	12,304.5	9,734.0	50.7	50.8	89.98	2,412.2	933.7	1,848.0	1,747.7	100.26	18.433	
12,400.0	9,734.0	12,404.5	9,734.0	51.7	51.8	89.98	2,512.2	933.0	1,848.0	1,745.6	102.35	18.055	
12,500.0	9,734.0	12,504.5	9,734.0	52.8	52.9	89.98	2,612.2	932.3	1,848.0	1,743.5	104.49	17.687	
12,600.0	9,734.0	12,604.5	9,734.0	53.8	53.9	89.98	2,712.2	931.7	1,848.0	1,741.3	106.66	17.327	
12,700.0	9,734.0	12,704.5	9,734.0	54.9	55.0	89.98	2,812.2	931.0	1,848.0	1,739.1	108.86	16.976	
12,800.0	9,734.0	12,804.5	9,734.0	56.0	56.1	89.98	2,912.2	930.3	1,848.0	1,736.9	111.10	16.634	
12,900.0	9,734.0	12,904.5	9,734.0	57.2	57.3	89.98	3,012.2	929.7	1,848.0	1,734.6	113.36	16.302	
13,000.0	9,734.0	13,004.5	9,734.0	58.3	58.4	89.98	3,112.2	929.0	1,848.0	1,732.3	115.65	15.979	
13,100.0	9,734.0	13,104.5	9,734.0	59.5	59.6	89.98	3,212.2	928.4	1,848.0	1,730.0	117.97	15.665	
13,200.0	9,734.0	13,204.5	9,734.0	60.6	60.7	89.98	3,312.2	927.7	1,848.0	1,727.7	120.32	15.359	
13,300.0	9,734.0	13,304.5	9,734.0	61.8	61.9	89.98	3,412.2	927.0	1,848.0	1,725.3	122.69	15.063	
13,400.0	9,734.0	13,404.5	9,734.0	63.0	63.1	89.98	3,512.2	926.4	1,848.0	1,722.9	125.08	14.775	
13,500.0	9,734.0	13,504.5	9,734.0	64.2	64.3	89.98	3,612.2	925.7	1,848.0	1,720.5	127.49	14.495	
13,600.0	9,734.0	13,604.5	9,734.0	65.4	65.5	89.98	3,712.2	925.1	1,848.0	1,718.1	129.92	14.224	
13,700.0	9,734.0	13,704.5	9,734.0	66.6	66.7	89.98	3,812.2	924.4	1,848.0	1,715.6	132.37	13.961	
13,800.0	9,734.0	13,804.5	9,734.0	67.8	67.9	89.98	3,912.2	923.7	1,848.0	1,713.2	134.84	13.705	
13,900.0	9,734.0	13,904.5	9,734.0	69.1	69.2	89.98	4,012.2	923.1	1,848.0	1,710.7	137.32	13.458	
14,000.0	9,734.0	14,004.5	9,734.0	70.3	70.4	89.98	4,112.2	922.4	1,848.0	1,708.2	139.82	13.217	
14,100.0	9,734.0	14,104.5	9,734.0	71.6	71.7	89.98	4,212.2	921.7	1,848.0	1,705.7	142.34	12.983	
14,200.0	9,734.0	14,204.5	9,734.0	72.8	72.9	89.98	4,312.2	921.1	1,848.0	1,703.1	144.86	12.757	
14,300.0	9,734.0	14,304.5	9,734.0	74.1	74.2	89.98	4,412.2	920.4	1,848.0	1,700.6	147.41	12.537	
14,400.0	9,734.0	14,404.5	9,734.0	75.4	75.5	89.98	4,512.2	919.8	1,848.0	1,698.0	149.96	12.323	
14,500.0	9,734.0	14,504.5	9,734.0	76.6	76.7	89.98	4,612.2	919.1	1,848.0	1,695.5	152.53	12.116	
14,600.0	9,734.0	14,604.5	9,734.0	77.9	78.0	89.98	4,712.2	918.4	1,848.0	1,692.9	155.11	11.914	
14,700.0	9,734.0	14,704.5	9,734.0	79.2	79.3	89.98	4,812.2	917.8	1,848.0	1,690.3	157.70	11.719	
14,800.0	9,734.0	14,804.5	9,734.0	80.5	80.6	89.98	4,912.2	917.1	1,848.0	1,687.7	160.30	11.529	
14,900.0	9,734.0	14,904.5	9,734.0	81.8	81.9	89.98	5,012.2	916.5	1,848.0	1,685.1	162.91	11.344	
15,000.0	9,734.0	15,004.5	9,734.0	83.1	83.2	89.98	5,112.2	915.8	1,848.0	1,682.5	165.53	11.164	
15,100.0	9,734.0	15,104.5	9,734.0	84.4	84.5	89.98	5,212.2	915.1	1,848.0	1,679.8	168.16	10.990	
15,200.0	9,734.0	15,204.5	9,734.0	85.7	85.8	89.98	5,312.2	914.5	1,848.0	1,677.2	170.79	10.820	
15,300.0	9,734.0	15,304.5	9,734.0	87.0	87.2	89.98	5,412.2	913.8	1,848.0	1,674.6	173.44	10.655	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 516H - 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	9,734.0	15,404.5	9,734.0	88.4	88.5	89.98	5,512.2	913.1	1,848.0	1,671.9	176.09	10.494	
15,500.0	9,734.0	15,504.5	9,734.0	89.7	89.8	89.98	5,612.2	912.5	1,848.0	1,669.2	178.75	10.338	
15,600.0	9,734.0	15,604.5	9,734.0	91.0	91.1	89.98	5,712.2	911.8	1,848.0	1,666.6	181.42	10.186	
15,700.0	9,734.0	15,704.5	9,734.0	92.4	92.5	89.98	5,812.2	911.2	1,848.0	1,663.9	184.10	10.038	
15,800.0	9,734.0	15,804.5	9,734.0	93.7	93.8	89.98	5,912.2	910.5	1,848.0	1,661.2	186.78	9.894	
15,900.0	9,734.0	15,904.5	9,734.0	95.0	95.1	89.98	6,012.1	909.8	1,848.0	1,658.5	189.46	9.754	
16,000.0	9,734.0	16,004.5	9,734.0	96.4	96.5	89.98	6,112.1	909.2	1,848.0	1,655.8	192.16	9.617	
16,100.0	9,734.0	16,104.5	9,734.0	97.7	97.8	89.98	6,212.1	908.5	1,848.0	1,653.1	194.86	9.484	
16,200.0	9,734.0	16,204.5	9,734.0	99.1	99.2	89.98	6,312.1	907.9	1,848.0	1,650.4	197.56	9.354	
16,300.0	9,734.0	16,304.5	9,734.0	100.4	100.5	89.98	6,412.1	907.2	1,848.0	1,647.7	200.27	9.227	
16,400.0	9,734.0	16,404.5	9,734.0	101.8	101.9	89.98	6,512.1	906.5	1,848.0	1,645.0	202.99	9.104	
16,500.0	9,734.0	16,504.5	9,734.0	103.1	103.2	89.98	6,612.1	905.9	1,848.0	1,642.3	205.71	8.984	
16,600.0	9,734.0	16,604.5	9,734.0	104.5	104.6	89.98	6,712.1	905.2	1,848.0	1,639.6	208.43	8.866	
16,700.0	9,734.0	16,704.5	9,734.0	105.8	106.0	89.98	6,812.1	904.5	1,848.0	1,636.8	211.16	8.751	
16,800.0	9,734.0	16,804.5	9,734.0	107.2	107.3	89.98	6,912.1	903.9	1,848.0	1,634.1	213.90	8.640	
16,900.0	9,734.0	16,904.5	9,734.0	108.6	108.7	89.98	7,012.1	903.2	1,848.0	1,631.4	216.63	8.530	
17,000.0	9,734.0	17,004.5	9,734.0	109.9	110.0	89.98	7,112.1	902.6	1,848.0	1,628.6	219.38	8.424	
17,100.0	9,734.0	17,104.5	9,734.0	111.3	111.4	89.98	7,212.1	901.9	1,848.0	1,625.9	222.12	8.320	
17,200.0	9,734.0	17,204.5	9,734.0	112.7	112.8	89.98	7,312.1	901.2	1,848.0	1,623.1	224.87	8.218	
17,300.0	9,734.0	17,304.5	9,734.0	114.1	114.2	89.98	7,412.1	900.6	1,848.0	1,620.4	227.63	8.119	
17,400.0	9,734.0	17,404.5	9,734.0	115.4	115.5	89.98	7,512.1	899.9	1,848.0	1,617.6	230.38	8.021	
17,500.0	9,734.0	17,504.5	9,734.0	116.8	116.9	89.98	7,612.1	899.3	1,848.0	1,614.9	233.14	7.926	
17,600.0	9,734.0	17,604.5	9,734.0	118.2	118.3	89.98	7,712.1	898.6	1,848.0	1,612.1	235.91	7.834	
17,700.0	9,734.0	17,704.5	9,734.0	119.6	119.7	89.98	7,812.1	897.9	1,848.0	1,609.3	238.67	7.743	
17,800.0	9,734.0	17,804.5	9,734.0	121.0	121.1	89.98	7,912.1	897.3	1,848.0	1,606.6	241.44	7.654	
17,900.0	9,734.0	17,904.5	9,734.0	122.3	122.4	89.98	8,012.1	896.6	1,848.0	1,603.8	244.21	7.567	
18,000.0	9,734.0	18,004.5	9,734.0	123.7	123.8	89.98	8,112.1	895.9	1,848.0	1,601.0	246.99	7.482	
18,100.0	9,734.0	18,104.5	9,734.0	125.1	125.2	89.98	8,212.1	895.3	1,848.0	1,598.2	249.77	7.399	
18,200.0	9,734.0	18,204.5	9,734.0	126.5	126.6	89.98	8,312.1	894.6	1,848.0	1,595.4	252.55	7.317	
18,300.0	9,734.0	18,304.5	9,734.0	127.9	128.0	89.98	8,412.1	894.0	1,848.0	1,592.7	255.33	7.238	
18,400.0	9,734.0	18,404.5	9,734.0	129.3	129.4	89.98	8,512.1	893.3	1,848.0	1,589.9	258.12	7.160	
18,500.0	9,734.0	18,504.5	9,734.0	130.7	130.8	89.98	8,612.1	892.6	1,848.0	1,587.1	260.90	7.083	
18,600.0	9,734.0	18,604.5	9,734.0	132.1	132.2	89.98	8,712.1	892.0	1,848.0	1,584.3	263.69	7.008	
18,700.0	9,734.0	18,704.5	9,734.0	133.4	133.6	89.98	8,812.1	891.3	1,848.0	1,581.5	266.49	6.935	
18,800.0	9,734.0	18,804.5	9,734.0	134.8	134.9	89.98	8,912.1	890.7	1,848.0	1,578.7	269.28	6.863	
18,900.0	9,734.0	18,904.5	9,734.0	136.2	136.3	89.98	9,012.1	890.0	1,848.0	1,575.9	272.08	6.792	
19,000.0	9,734.0	19,004.5	9,734.0	137.6	137.7	89.98	9,112.1	889.3	1,848.0	1,573.1	274.87	6.723	
19,100.0	9,734.0	19,104.5	9,734.0	139.0	139.1	89.98	9,212.1	888.7	1,848.0	1,570.3	277.68	6.655	
19,200.0	9,734.0	19,204.5	9,734.0	140.4	140.5	89.98	9,312.1	888.0	1,848.0	1,567.5	280.48	6.589	
19,300.0	9,734.0	19,304.5	9,734.0	141.8	141.9	89.98	9,412.1	887.3	1,848.0	1,564.7	283.28	6.523	
19,400.0	9,734.0	19,404.5	9,734.0	143.2	143.3	89.98	9,512.1	886.7	1,848.0	1,561.9	286.09	6.460	
19,500.0	9,734.0	19,504.5	9,734.0	144.6	144.7	89.98	9,612.1	886.0	1,848.0	1,559.1	288.90	6.397	
19,600.0	9,734.0	19,604.5	9,734.0	146.0	146.1	89.98	9,712.1	885.4	1,848.0	1,556.3	291.71	6.335	
19,700.0	9,734.0	19,704.5	9,734.0	147.4	147.5	89.98	9,812.1	884.7	1,848.0	1,553.5	294.52	6.275	
19,800.0	9,734.0	19,804.5	9,734.0	148.8	148.9	89.98	9,912.1	884.0	1,848.0	1,550.7	297.33	6.215	
19,900.0	9,734.0	19,904.5	9,734.0	150.3	150.4	89.98	10,012.1	883.4	1,848.0	1,547.8	300.14	6.157	
20,000.0	9,734.0	20,004.5	9,734.0	151.7	151.8	89.98	10,112.1	882.7	1,848.0	1,545.0	302.96	6.100	
20,019.5	9,734.0	20,023.9	9,734.0	151.9	152.0	89.98	10,131.5	882.6	1,848.0	1,544.5	303.51	6.089	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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		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)			
0.0	0.0	0.0	0.0	0.0	0.0	179.69	-160.1	0.9	160.1				
100.0	100.0	99.5	99.5	0.1	0.1	179.69	-160.1	0.9	160.1	159.8	0.26	609.137	
200.0	200.0	199.5	199.5	0.5	0.5	179.69	-160.1	0.9	160.1	159.1	0.98	163.589	
300.0	300.0	299.5	299.5	0.8	0.8	179.69	-160.1	0.9	160.1	158.4	1.70	94.418	
400.0	400.0	399.5	399.5	1.2	1.2	179.69	-160.1	0.9	160.1	157.7	2.41	66.359	
500.0	500.0	499.5	499.5	1.6	1.6	179.69	-160.1	0.9	160.1	157.0	3.13	51.157	
600.0	600.0	599.5	599.5	1.9	1.9	179.69	-160.1	0.9	160.1	156.2	3.85	41.621	
700.0	700.0	699.5	699.5	2.3	2.3	179.69	-160.1	0.9	160.1	155.5	4.56	35.082	
800.0	800.0	799.5	799.5	2.6	2.6	179.69	-160.1	0.9	160.1	154.8	5.28	30.319	
900.0	900.0	899.5	899.5	3.0	3.0	179.69	-160.1	0.9	160.1	154.1	6.00	26.694	
1,000.0	1,000.0	999.5	999.5	3.4	3.4	179.69	-160.1	0.9	160.1	153.4	6.71	23.844	
1,100.0	1,100.0	1,099.5	1,099.5	3.7	3.7	179.69	-160.1	0.9	160.1	152.7	7.43	21.544	
1,200.0	1,200.0	1,199.5	1,199.5	4.1	4.1	179.69	-160.1	0.9	160.1	151.9	8.15	19.648	
1,300.0	1,300.0	1,299.5	1,299.5	4.4	4.4	179.69	-160.1	0.9	160.1	151.2	8.87	18.059	
1,400.0	1,400.0	1,399.5	1,399.5	4.8	4.8	179.69	-160.1	0.9	160.1	150.5	9.58	16.708	
1,500.0	1,500.0	1,499.5	1,499.5	5.2	5.1	179.69	-160.1	0.9	160.1	149.8	10.30	15.545	
1,600.0	1,600.0	1,599.5	1,599.5	5.5	5.5	179.69	-160.1	0.9	160.1	149.1	11.02	14.533	
1,700.0	1,700.0	1,699.5	1,699.5	5.9	5.9	179.69	-160.1	0.9	160.1	148.4	11.73	13.645	
1,800.0	1,800.0	1,799.5	1,799.5	6.2	6.2	179.69	-160.1	0.9	160.1	147.6	12.45	12.859	
1,900.0	1,900.0	1,899.5	1,899.5	6.6	6.6	179.69	-160.1	0.9	160.1	146.9	13.17	12.159	
2,000.0	2,000.0	1,999.5	1,999.5	6.9	6.9	179.69	-160.1	0.9	160.1	146.2	13.88	11.531	
2,100.0	2,100.0	2,098.7	2,098.6	7.3	7.3	-71.54	-160.4	-0.8	159.8	145.2	14.58	10.964	
2,200.0	2,199.8	2,197.8	2,197.6	7.6	7.6	-71.50	-161.2	-5.9	158.9	143.7	15.25	10.422	
2,300.0	2,299.5	2,296.9	2,296.4	8.0	8.0	-71.44	-162.5	-14.3	157.5	141.6	15.93	9.886	
2,400.0	2,398.7	2,396.4	2,395.2	8.3	8.3	-71.46	-164.4	-25.8	155.5	138.8	16.62	9.351	
2,500.0	2,497.7	2,496.4	2,494.4	8.7	8.7	-71.98	-166.3	-37.9	152.8	135.5	17.33	8.820	
2,600.0	2,596.7	2,596.3	2,593.6	9.0	9.0	-72.51	-168.3	-50.1	150.2	132.2	18.04	8.327	
2,700.0	2,695.7	2,696.3	2,692.8	9.4	9.4	-73.06	-170.2	-62.2	147.6	128.9	18.76	7.869	
2,800.0	2,794.6	2,796.3	2,792.0	9.8	9.7	-73.63	-172.2	-74.3	145.1	125.6	19.49	7.443	
2,900.0	2,893.6	2,896.2	2,891.2	10.1	10.1	-74.21	-174.1	-86.4	142.5	122.3	20.22	7.047	
3,000.0	2,992.6	2,996.2	2,990.4	10.5	10.5	-74.83	-176.1	-98.5	140.0	119.0	20.96	6.677	
3,100.0	3,091.6	3,096.1	3,089.6	10.9	10.8	-75.46	-178.0	-110.6	137.4	115.7	21.70	6.332	
3,200.0	3,190.6	3,196.1	3,188.8	11.2	11.2	-76.12	-180.0	-122.8	134.9	112.5	22.45	6.009	
3,300.0	3,289.6	3,296.0	3,288.0	11.6	11.6	-76.80	-182.0	-134.9	132.4	109.2	23.20	5.707	
3,400.0	3,388.5	3,396.0	3,387.2	12.0	12.0	-77.51	-183.9	-147.0	130.0	106.0	23.96	5.424	
3,500.0	3,487.5	3,496.0	3,486.4	12.4	12.3	-78.24	-185.9	-159.1	127.5	102.8	24.72	5.158	
3,600.0	3,586.5	3,595.9	3,585.6	12.8	12.7	-79.00	-187.8	-171.2	125.1	99.6	25.48	4.908	
3,700.0	3,685.5	3,695.9	3,684.8	13.2	13.1	-79.80	-189.8	-183.3	122.7	96.4	26.25	4.673	
3,800.0	3,784.5	3,795.8	3,784.0	13.5	13.5	-80.62	-191.7	-195.4	120.3	93.3	27.02	4.452	
3,900.0	3,883.5	3,895.8	3,883.2	13.9	13.9	-81.48	-193.7	-207.6	117.9	90.1	27.79	4.244	
4,000.0	3,982.4	3,995.7	3,982.4	14.3	14.2	-82.38	-195.6	-219.7	115.6	87.0	28.56	4.047	
4,100.0	4,081.4	4,095.7	4,081.6	14.7	14.6	-83.31	-197.6	-231.8	113.3	84.0	29.33	3.862	
4,200.0	4,180.4	4,195.6	4,180.8	15.1	15.0	-84.28	-199.5	-243.9	111.0	80.9	30.11	3.687	
4,300.0	4,279.4	4,295.6	4,280.0	15.5	15.4	-85.28	-201.5	-256.0	108.8	77.9	30.89	3.522	
4,400.0	4,378.4	4,395.6	4,379.2	15.9	15.8	-86.33	-203.4	-268.1	106.6	74.9	31.67	3.365	
4,500.0	4,477.4	4,495.5	4,478.4	16.3	16.2	-87.43	-205.4	-280.3	104.4	72.0	32.45	3.218	
4,600.0	4,576.3	4,595.5	4,577.6	16.7	16.5	-88.57	-207.3	-292.4	102.3	69.1	33.23	3.078	
4,700.0	4,675.3	4,695.4	4,676.8	17.1	16.9	-89.76	-209.3	-304.5	100.2	66.2	34.01	2.946	
4,800.0	4,774.3	4,795.4	4,776.0	17.5	17.3	-91.00	-211.2	-316.6	98.2	63.4	34.79	2.822	
4,900.0	4,873.3	4,895.3	4,875.2	17.9	17.7	-92.29	-213.2	-328.7	96.2	60.6	35.57	2.704	
5,000.0	4,972.3	4,995.3	4,974.4	18.3	18.1	-93.63	-215.1	-340.8	94.2	57.9	36.35	2.592	
5,100.0	5,071.3	5,095.3	5,073.6	18.7	18.5	-95.03	-217.1	-352.9	92.3	55.2	37.13	2.487	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald 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		Offset Wellbore Centre		Distance				Warning
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	
5,200.0	5,170.3	5,195.2	5,172.8	19.1	18.9	-96.49	-219.0	-365.1	90.5	52.6	37.90	2.388	
5,300.0	5,269.2	5,295.2	5,272.0	19.5	19.3	-98.00	-221.0	-377.2	88.8	50.1	38.68	2.295	
5,400.0	5,368.2	5,395.1	5,371.2	19.9	19.6	-99.58	-222.9	-389.3	87.1	47.6	39.45	2.207	
5,500.0	5,467.2	5,495.1	5,470.4	20.3	20.0	-101.22	-224.9	-401.4	85.4	45.2	40.22	2.124	
5,600.0	5,566.2	5,595.0	5,569.6	20.7	20.4	-102.92	-226.8	-413.5	83.9	42.9	40.98	2.046	
5,700.0	5,665.2	5,695.0	5,668.8	21.1	20.8	-104.68	-228.8	-425.6	82.4	40.6	41.74	1.973	
5,800.0	5,764.2	5,794.9	5,768.0	21.5	21.2	-106.50	-230.7	-437.8	81.0	38.5	42.50	1.905	
5,900.0	5,863.1	5,894.9	5,867.2	21.9	21.6	-108.39	-232.7	-449.9	79.6	36.4	43.25	1.842	
6,000.0	5,962.1	5,994.9	5,966.4	22.3	22.0	-110.34	-234.6	-462.0	78.4	34.4	43.99	1.783	
6,100.0	6,061.1	6,094.8	6,065.6	22.7	22.4	-112.35	-236.6	-474.1	77.3	32.6	44.73	1.728	
6,200.0	6,160.1	6,194.8	6,164.8	23.1	22.8	-114.42	-238.5	-486.2	76.2	30.8	45.46	1.677	
6,300.0	6,259.1	6,294.7	6,264.0	23.5	23.2	-116.54	-240.5	-498.3	75.3	29.1	46.18	1.631	
6,400.0	6,358.1	6,394.7	6,363.2	23.9	23.6	-118.71	-242.4	-510.5	74.5	27.6	46.89	1.588	
6,500.0	6,457.0	6,494.6	6,462.4	24.3	23.9	-120.93	-244.4	-522.6	73.8	26.2	47.60	1.550	
6,600.0	6,556.0	6,594.6	6,561.6	24.7	24.3	-123.18	-246.3	-534.7	73.2	24.9	48.29	1.515	
6,700.0	6,655.0	6,694.6	6,660.8	25.1	24.7	-125.47	-248.3	-546.8	72.7	23.7	48.98	1.483 Level 3	
6,800.0	6,754.0	6,794.5	6,760.0	25.5	25.1	-127.79	-250.2	-558.9	72.3	22.6	49.67	1.455 Level 3	
6,900.0	6,853.0	6,894.5	6,859.2	25.9	25.5	-130.13	-252.2	-571.0	72.0	21.7	50.34	1.431 Level 3	
7,000.0	6,952.0	6,994.4	6,958.4	26.3	25.9	-132.48	-254.1	-583.1	71.9	20.9	51.01	1.409 Level 3	
7,060.9	7,012.2	7,055.3	7,018.8	26.6	26.1	-133.92	-255.3	-590.5	71.9	20.5	51.41	1.398 Level 3	
7,100.0	7,050.9	7,094.4	7,057.6	26.7	26.3	-134.84	-256.1	-595.3	71.9	20.2	51.67	1.391 Level 3	
7,200.0	7,149.9	7,194.3	7,156.8	27.1	26.7	-137.19	-258.0	-607.4	72.0	19.7	52.33	1.376 Level 3	
7,300.0	7,248.9	7,294.3	7,256.0	27.5	27.1	-139.53	-260.0	-619.5	72.2	19.2	52.98	1.363 Level 3	
7,400.0	7,347.9	7,394.2	7,355.2	27.9	27.5	-141.86	-262.0	-631.6	72.6	18.9	53.64	1.353 Level 3	
7,500.0	7,446.9	7,494.2	7,454.4	28.3	27.9	-144.16	-263.9	-643.7	73.0	18.7	54.29	1.345 Level 3	
7,600.0	7,545.9	7,594.2	7,553.6	28.8	28.3	-146.42	-265.9	-655.8	73.6	18.7	54.94	1.340 Level 3	
7,700.0	7,644.8	7,694.1	7,652.8	29.2	28.7	-148.65	-267.8	-668.0	74.3	18.7	55.59	1.337 Level 3	
7,800.0	7,743.8	7,794.1	7,752.0	29.6	29.1	-150.83	-269.8	-680.1	75.1	18.9	56.25	1.335 Level 3	
7,900.0	7,842.8	7,894.0	7,851.2	30.0	29.4	-152.96	-271.7	-692.2	76.0	19.1	56.91	1.336 Level 3	
8,000.0	7,941.8	7,994.0	7,950.4	30.4	29.8	-155.04	-273.7	-704.3	77.0	19.5	57.57	1.338 Level 3	
8,100.0	8,040.8	8,093.9	8,049.6	30.8	30.2	-157.06	-275.6	-716.4	78.2	19.9	58.24	1.342 Level 3	
8,200.0	8,139.8	8,193.9	8,148.8	31.2	30.6	-159.02	-277.6	-728.5	79.4	20.5	58.91	1.347 Level 3	
8,300.0	8,238.8	8,293.9	8,248.0	31.6	31.0	-160.92	-279.5	-740.6	80.7	21.1	59.58	1.354 Level 3	
8,400.0	8,337.7	8,393.8	8,347.2	32.0	31.4	-162.76	-281.5	-752.8	82.1	21.8	60.27	1.362 Level 3	
8,500.0	8,436.7	8,493.8	8,446.4	32.4	31.8	-164.54	-283.4	-764.9	83.5	22.6	60.96	1.370 Level 3	
8,600.0	8,535.7	8,593.7	8,545.6	32.8	32.2	-166.25	-285.4	-777.0	85.1	23.4	61.65	1.380 Level 3	
8,700.0	8,634.7	8,693.7	8,644.8	33.2	32.6	-167.86	-287.3	-789.1	86.4	24.0	62.35	1.385 Level 3	
8,800.0	8,734.1	8,793.7	8,744.0	33.6	33.0	-169.06	-289.3	-801.2	84.9	21.8	63.06	1.346 Level 3	
8,900.0	8,833.8	8,893.5	8,843.2	34.0	33.4	-169.86	-291.2	-813.3	80.0	16.2	63.77	1.255 Level 3	
9,000.0	8,933.7	8,993.2	8,942.0	34.3	33.8	-170.30	-293.2	-825.4	71.7	7.2	64.48	1.112 Level 2	
9,100.0	9,033.7	9,092.5	9,040.6	34.7	34.2	80.85	-295.1	-837.4	60.2	-5.0	65.18	0.923 Level 1	
9,200.0	9,133.7	9,191.7	9,139.1	35.0	34.6	80.85	-297.0	-849.5	47.9	-18.0	65.87	0.727 Level 1	
9,300.0	9,233.7	9,291.0	9,237.6	35.3	35.0	80.85	-299.0	-861.5	35.6	-30.9	66.57	0.535 Level 1	
9,400.0	9,333.4	9,389.8	9,335.7	35.6	35.3	97.67	-300.9	-873.5	23.3	-44.5	67.77	0.344 Level 1	
9,430.6	9,363.4	9,419.4	9,365.0	35.7	35.5	115.73	-301.5	-877.0	21.6	-47.5	69.05	0.312 Level 1, CC, ES, SF	
9,500.0	9,429.7	9,484.6	9,429.9	35.9	35.7	156.32	-302.6	-883.8	33.1	-38.5	71.53	0.462 Level 1	
9,600.0	9,518.4	9,572.5	9,517.5	36.1	36.0	174.90	-303.7	-890.7	77.6	5.6	71.99	1.077 Level 2	
9,700.0	9,595.7	9,649.6	9,594.5	36.2	36.3	178.89	-304.3	-894.5	141.1	68.8	72.35	1.950	
9,800.0	9,658.2	9,712.3	9,657.2	36.3	36.5	179.85	-304.5	-896.1	219.2	146.5	72.68	3.016	
9,900.0	9,703.1	9,757.7	9,702.6	36.4	36.7	180.00	-304.6	-896.4	308.4	235.5	72.90	4.231	
10,000.0	9,728.5	9,783.1	9,728.0	36.3	36.8	180.00	-304.6	-896.4	404.9	331.9	73.01	5.546	
10,100.0	9,734.0	9,788.6	9,733.5	36.3	36.8	0.00	-304.6	-896.4	504.7	431.6	73.04	6.910	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1												Offset Site Error: 0.0 usft			
Survey Program: 0-B001Mb_MWD+HRGM				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,200.0	9,734.0	9,788.6	9,733.5	36.4	36.8	0.00	-304.6	-896.4	604.7	531.6	73.04	8.279			
10,300.0	9,734.0	9,788.6	9,733.5	36.5	36.8	0.00	-304.6	-896.4	704.7	631.6	73.04	9.647			
10,400.0	9,734.0	11,183.8	10,529.0	36.7	39.8	180.00	500.0	-901.7	795.5	754.4	41.09	19.359			
10,500.0	9,734.0	11,283.8	10,529.0	37.0	40.1	180.00	600.0	-902.4	795.5	753.9	41.61	19.116			
10,600.0	9,734.0	11,383.8	10,529.0	37.4	40.6	180.00	700.0	-903.1	795.5	753.3	42.19	18.856			
10,700.0	9,734.0	11,483.8	10,529.0	37.8	41.0	180.00	800.0	-903.7	795.5	752.7	42.81	18.581			
10,800.0	9,734.0	11,583.8	10,529.0	38.3	41.6	180.00	900.0	-904.4	795.5	752.0	43.48	18.294			
10,900.0	9,734.0	11,683.8	10,529.0	38.9	42.1	180.00	1,000.0	-905.0	795.5	751.3	44.20	17.997			
11,000.0	9,734.0	11,783.8	10,529.0	39.5	42.7	180.00	1,100.0	-905.7	795.5	750.5	44.96	17.693			
11,100.0	9,734.0	11,883.8	10,529.0	40.2	43.4	180.00	1,200.0	-906.4	795.5	749.7	45.76	17.383			
11,200.0	9,734.0	11,983.8	10,529.0	40.9	44.1	180.00	1,300.0	-907.0	795.5	748.9	46.61	17.069			
11,300.0	9,734.0	12,083.8	10,529.0	41.6	44.8	180.00	1,400.0	-907.7	795.5	748.0	47.48	16.753			
11,400.0	9,734.0	12,183.8	10,529.0	42.4	45.6	180.00	1,500.0	-908.4	795.5	747.1	48.40	16.437			
11,500.0	9,734.0	12,283.8	10,529.0	43.2	46.4	180.00	1,600.0	-909.0	795.5	746.2	49.34	16.122			
11,600.0	9,734.0	12,383.8	10,529.0	44.0	47.2	180.00	1,700.0	-909.7	795.5	745.2	50.32	15.809			
11,700.0	9,734.0	12,483.8	10,529.0	44.9	48.1	180.00	1,800.0	-910.3	795.5	744.2	51.33	15.499			
11,800.0	9,734.0	12,583.8	10,529.0	45.8	48.9	180.00	1,900.0	-911.0	795.5	743.1	52.36	15.193			
11,900.0	9,734.0	12,683.8	10,529.0	46.7	49.8	180.00	2,000.0	-911.7	795.5	742.1	53.42	14.892			
12,000.0	9,734.0	12,783.8	10,529.0	47.7	50.8	180.00	2,100.0	-912.3	795.5	741.0	54.50	14.595			
12,100.0	9,734.0	12,883.8	10,529.0	48.6	51.7	180.00	2,200.0	-913.0	795.5	739.9	55.61	14.305			
12,200.0	9,734.0	12,983.8	10,529.0	49.6	52.7	180.00	2,300.0	-913.6	795.5	738.8	56.74	14.020			
12,300.0	9,734.0	13,083.8	10,529.0	50.7	53.7	180.00	2,400.0	-914.3	795.5	737.6	57.89	13.741			
12,400.0	9,734.0	13,183.8	10,529.0	51.7	54.7	180.00	2,500.0	-915.0	795.5	736.4	59.06	13.469			
12,500.0	9,734.0	13,283.8	10,529.0	52.8	55.8	180.00	2,600.0	-915.6	795.5	735.3	60.25	13.204			
12,600.0	9,734.0	13,383.8	10,529.0	53.8	56.8	180.00	2,700.0	-916.3	795.5	734.0	61.45	12.945			
12,700.0	9,734.0	13,483.8	10,529.0	54.9	57.9	180.00	2,800.0	-917.0	795.5	732.8	62.67	12.693			
12,800.0	9,734.0	13,583.8	10,529.0	56.0	59.0	180.00	2,900.0	-917.6	795.5	731.6	63.91	12.447			
12,900.0	9,734.0	13,683.8	10,529.0	57.2	60.1	180.00	3,000.0	-918.3	795.5	730.3	65.16	12.209			
13,000.0	9,734.0	13,783.8	10,529.0	58.3	61.2	180.00	3,100.0	-918.9	795.5	729.1	66.42	11.976			
13,100.0	9,734.0	13,883.8	10,529.0	59.5	62.3	180.00	3,200.0	-919.6	795.5	727.8	67.70	11.751			
13,200.0	9,734.0	13,983.8	10,529.0	60.6	63.5	180.00	3,300.0	-920.3	795.5	726.5	68.99	11.531			
13,300.0	9,734.0	14,083.8	10,529.0	61.8	64.6	180.00	3,400.0	-920.9	795.5	725.2	70.29	11.318			
13,400.0	9,734.0	14,183.8	10,529.0	63.0	65.8	180.00	3,500.0	-921.6	795.5	723.9	71.60	11.111			
13,500.0	9,734.0	14,283.8	10,529.0	64.2	67.0	180.00	3,600.0	-922.2	795.5	722.6	72.92	10.909			
13,600.0	9,734.0	14,383.8	10,529.0	65.4	68.2	180.00	3,700.0	-922.9	795.5	721.3	74.25	10.714			
13,700.0	9,734.0	14,483.8	10,529.0	66.6	69.4	180.00	3,800.0	-923.6	795.5	719.9	75.59	10.524			
13,800.0	9,734.0	14,583.8	10,529.0	67.8	70.6	180.00	3,900.0	-924.2	795.5	718.6	76.94	10.340			
13,900.0	9,734.0	14,683.8	10,529.0	69.1	71.8	180.00	4,000.0	-924.9	795.5	717.2	78.29	10.160			
14,000.0	9,734.0	14,783.8	10,529.0	70.3	73.0	180.00	4,100.0	-925.6	795.5	715.8	79.66	9.986			
14,100.0	9,734.0	14,883.8	10,529.0	71.6	74.3	180.00	4,200.0	-926.2	795.5	714.5	81.03	9.817			
14,200.0	9,734.0	14,983.8	10,529.0	72.8	75.5	180.00	4,300.0	-926.9	795.5	713.1	82.41	9.653			
14,300.0	9,734.0	15,083.8	10,529.0	74.1	76.8	180.00	4,400.0	-927.5	795.5	711.7	83.79	9.493			
14,400.0	9,734.0	15,183.8	10,529.0	75.4	78.0	180.00	4,500.0	-928.2	795.5	710.3	85.19	9.338			
14,500.0	9,734.0	15,283.8	10,529.0	76.6	79.3	180.00	4,600.0	-928.9	795.5	708.9	86.58	9.188			
14,600.0	9,734.0	15,383.8	10,529.0	77.9	80.5	180.00	4,700.0	-929.5	795.5	707.5	87.99	9.041			
14,700.0	9,734.0	15,483.8	10,529.0	79.2	81.8	180.00	4,800.0	-930.2	795.5	706.1	89.40	8.898			
14,800.0	9,734.0	15,583.8	10,529.0	80.5	83.1	180.00	4,900.0	-930.8	795.5	704.7	90.81	8.760			
14,900.0	9,734.0	15,683.8	10,529.0	81.8	84.4	180.00	4,999.9	-931.5	795.5	703.3	92.23	8.625			
15,000.0	9,734.0	15,783.8	10,529.0	83.1	85.7	180.00	5,099.9	-932.2	795.5	701.8	93.66	8.494			
15,100.0	9,734.0	15,883.8	10,529.0	84.4	87.0	180.00	5,199.9	-932.8	795.5	700.4	95.09	8.366			
15,200.0	9,734.0	15,983.8	10,529.0	85.7	88.3	180.00	5,299.9	-933.5	795.5	699.0	96.52	8.242			
15,300.0	9,734.0	16,083.8	10,529.0	87.0	89.6	180.00	5,399.9	-934.1	795.5	697.5	97.96	8.121			

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 604H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM									Rule Assigned:				Offset Well Error: 0.0 usft	
Reference		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)	
15,400.0	9,734.0	16,183.8	10,529.0	88.4	90.9	180.00	5,499.9	-934.8	795.5	696.1	99.40	8.003		
15,500.0	9,734.0	16,283.8	10,529.0	89.7	92.2	180.00	5,599.9	-935.5	795.5	694.7	100.84	7.889		
15,600.0	9,734.0	16,383.8	10,529.0	91.0	93.5	180.00	5,699.9	-936.1	795.5	693.2	102.29	7.777		
15,700.0	9,734.0	16,483.8	10,529.0	92.4	94.8	180.00	5,799.9	-936.8	795.5	691.8	103.74	7.668		
15,800.0	9,734.0	16,583.8	10,529.0	93.7	96.2	180.00	5,899.9	-937.5	795.5	690.3	105.20	7.562		
15,900.0	9,734.0	16,683.8	10,529.0	95.0	97.5	180.00	5,999.9	-938.1	795.5	688.8	106.66	7.458		
16,000.0	9,734.0	16,783.8	10,529.0	96.4	98.8	180.00	6,099.9	-938.8	795.5	687.4	108.12	7.357		
16,100.0	9,734.0	16,883.8	10,529.0	97.7	100.1	180.00	6,199.9	-939.4	795.5	685.9	109.59	7.259		
16,200.0	9,734.0	16,983.8	10,529.0	99.1	101.5	180.00	6,299.9	-940.1	795.5	684.4	111.05	7.163		
16,300.0	9,734.0	17,083.8	10,529.0	100.4	102.8	180.00	6,399.9	-940.8	795.5	683.0	112.52	7.070		
16,400.0	9,734.0	17,183.8	10,529.0	101.8	104.2	180.00	6,499.9	-941.4	795.5	681.5	114.00	6.978		
16,500.0	9,734.0	17,283.8	10,529.0	103.1	105.5	180.00	6,599.9	-942.1	795.5	680.0	115.47	6.889		
16,600.0	9,734.0	17,383.8	10,529.0	104.5	106.9	180.00	6,699.9	-942.7	795.5	678.5	116.95	6.802		
16,700.0	9,734.0	17,483.8	10,529.0	105.8	108.2	180.00	6,799.9	-943.4	795.5	677.1	118.43	6.717		
16,800.0	9,734.0	17,583.8	10,529.0	107.2	109.6	180.00	6,899.9	-944.1	795.5	675.6	119.92	6.634		
16,900.0	9,734.0	17,683.8	10,529.0	108.6	110.9	180.00	6,999.9	-944.7	795.5	674.1	121.40	6.553		
17,000.0	9,734.0	17,783.8	10,529.0	109.9	112.3	180.00	7,099.9	-945.4	795.5	672.6	122.89	6.473		
17,100.0	9,734.0	17,883.8	10,529.0	111.3	113.6	180.00	7,199.9	-946.1	795.5	671.1	124.38	6.396		
17,200.0	9,734.0	17,983.8	10,529.0	112.7	115.0	180.00	7,299.9	-946.7	795.5	669.6	125.87	6.320		
17,300.0	9,734.0	18,083.8	10,529.0	114.1	116.4	180.00	7,399.9	-947.4	795.5	668.1	127.36	6.246		
17,400.0	9,734.0	18,183.8	10,529.0	115.4	117.7	180.00	7,499.9	-948.0	795.5	666.6	128.86	6.174		
17,500.0	9,734.0	18,283.8	10,529.0	116.8	119.1	180.00	7,599.9	-948.7	795.5	665.1	130.35	6.103		
17,600.0	9,734.0	18,383.8	10,529.0	118.2	120.5	180.00	7,699.9	-949.4	795.5	663.6	131.85	6.033		
17,700.0	9,734.0	18,483.8	10,529.0	119.6	121.8	180.00	7,799.9	-950.0	795.5	662.1	133.35	5.965		
17,800.0	9,734.0	18,583.8	10,529.0	121.0	123.2	180.00	7,899.9	-950.7	795.5	660.6	134.85	5.899		
17,900.0	9,734.0	18,683.8	10,529.0	122.3	124.6	180.00	7,999.9	-951.3	795.5	659.1	136.36	5.834		
18,000.0	9,734.0	18,783.8	10,529.0	123.7	126.0	180.00	8,099.9	-952.0	795.5	657.6	137.86	5.770		
18,100.0	9,734.0	18,883.8	10,529.0	125.1	127.4	180.00	8,199.9	-952.7	795.5	656.1	139.37	5.708		
18,200.0	9,734.0	18,983.8	10,529.0	126.5	128.7	180.00	8,299.9	-953.3	795.5	654.6	140.87	5.647		
18,300.0	9,734.0	19,083.8	10,529.0	127.9	130.1	180.00	8,399.9	-954.0	795.5	653.1	142.38	5.587		
18,400.0	9,734.0	19,183.8	10,529.0	129.3	131.5	180.00	8,499.9	-954.6	795.5	651.6	143.89	5.528		
18,500.0	9,734.0	19,283.8	10,529.0	130.7	132.9	180.00	8,599.9	-955.3	795.5	650.1	145.40	5.471		
18,600.0	9,734.0	19,383.8	10,529.0	132.1	134.3	180.00	8,699.9	-956.0	795.5	648.6	146.92	5.415		
18,700.0	9,734.0	19,483.8	10,529.0	133.4	135.7	180.00	8,799.9	-956.6	795.5	647.1	148.43	5.359		
18,800.0	9,734.0	19,583.8	10,529.0	134.8	137.0	180.00	8,899.9	-957.3	795.5	645.6	149.94	5.305		
18,900.0	9,734.0	19,683.8	10,529.0	136.2	138.4	180.00	8,999.9	-958.0	795.5	644.0	151.46	5.252		
19,000.0	9,734.0	19,783.8	10,529.0	137.6	139.8	180.00	9,099.9	-958.6	795.5	642.5	152.98	5.200		
19,100.0	9,734.0	19,883.8	10,529.0	139.0	141.2	180.00	9,199.9	-959.3	795.5	641.0	154.50	5.149		
19,200.0	9,734.0	19,983.8	10,529.0	140.4	142.6	180.00	9,299.9	-959.9	795.5	639.5	156.01	5.099		
19,300.0	9,734.0	20,083.8	10,529.0	141.8	144.0	180.00	9,399.9	-960.6	795.5	638.0	157.53	5.050		
19,400.0	9,734.0	20,183.8	10,529.0	143.2	145.4	180.00	9,499.9	-961.3	795.5	636.4	159.06	5.001		
19,500.0	9,734.0	20,283.8	10,529.0	144.6	146.8	180.00	9,599.9	-961.9	795.5	634.9	160.58	4.954		
19,600.0	9,734.0	20,383.8	10,529.0	146.0	148.2	180.00	9,699.9	-962.6	795.5	633.4	162.10	4.907		
19,700.0	9,734.0	20,483.8	10,529.0	147.4	149.6	180.00	9,799.9	-963.2	795.5	631.9	163.62	4.862		
19,800.0	9,734.0	20,583.8	10,529.0	148.8	151.0	180.00	9,899.9	-963.9	795.5	630.4	165.15	4.817		
19,900.0	9,734.0	20,683.8	10,529.0	150.3	152.4	180.00	9,999.9	-964.6	795.5	628.8	166.67	4.773		
20,000.0	9,734.0	20,783.8	10,529.0	151.7	153.8	180.00	10,099.9	-965.2	795.5	627.3	168.20	4.729		
20,019.5	9,734.0	20,803.3	10,529.0	151.9	154.1	180.00	10,119.3	-965.4	795.5	627.0	168.50	4.721		

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 605H - 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)			
0.0	0.0	0.0	0.0	0.0	0.0	172.62	-160.0	20.7	161.3				
100.0	100.0	99.4	99.4	0.1	0.1	172.62	-160.0	20.7	161.3	161.1	0.26	614.107	
200.0	200.0	199.4	199.4	0.5	0.5	172.62	-160.0	20.7	161.3	160.3	0.98	164.901	
300.0	300.0	299.4	299.4	0.8	0.8	172.62	-160.0	20.7	161.3	159.6	1.70	95.161	
400.0	400.0	399.4	399.4	1.2	1.2	172.62	-160.0	20.7	161.3	158.9	2.41	66.877	
500.0	500.0	499.4	499.4	1.6	1.6	172.62	-160.0	20.7	161.3	158.2	3.13	51.554	
600.0	600.0	599.4	599.4	1.9	1.9	172.62	-160.0	20.7	161.3	157.5	3.85	41.944	
700.0	700.0	699.4	699.4	2.3	2.3	172.62	-160.0	20.7	161.3	156.8	4.56	35.354	
800.0	800.0	799.4	799.4	2.6	2.6	172.62	-160.0	20.7	161.3	156.0	5.28	30.553	
900.0	900.0	899.4	899.4	3.0	3.0	172.62	-160.0	20.7	161.3	155.3	6.00	26.900	
1,000.0	1,000.0	999.4	999.4	3.4	3.4	172.62	-160.0	20.7	161.3	154.6	6.71	24.028	
1,100.0	1,100.0	1,099.4	1,099.4	3.7	3.7	172.62	-160.0	20.7	161.3	153.9	7.43	21.709	
1,200.0	1,200.0	1,199.4	1,199.4	4.1	4.1	172.62	-160.0	20.7	161.3	153.2	8.15	19.799	
1,300.0	1,300.0	1,299.4	1,299.4	4.4	4.4	172.62	-160.0	20.7	161.3	152.5	8.86	18.198	
1,400.0	1,400.0	1,399.4	1,399.4	4.8	4.8	172.62	-160.0	20.7	161.3	151.7	9.58	16.836	
1,500.0	1,500.0	1,499.4	1,499.4	5.2	5.1	172.62	-160.0	20.7	161.3	151.0	10.30	15.664	
1,600.0	1,600.0	1,599.4	1,599.4	5.5	5.5	172.62	-160.0	20.7	161.3	150.3	11.02	14.645	
1,700.0	1,700.0	1,699.4	1,699.4	5.9	5.9	172.62	-160.0	20.7	161.3	149.6	11.73	13.750	
1,800.0	1,800.0	1,799.4	1,799.4	6.2	6.2	172.62	-160.0	20.7	161.3	148.9	12.45	12.958	
1,900.0	1,900.0	1,899.4	1,899.4	6.6	6.6	172.62	-160.0	20.7	161.3	148.2	13.17	12.252	
2,000.0	2,000.0	1,999.4	1,999.4	6.9	6.9	172.62	-160.0	20.7	161.3	147.4	13.88	11.620 CC, ES	
2,100.0	2,100.0	2,094.3	2,094.3	7.3	7.3	-79.01	-161.5	20.5	162.5	148.0	14.55	11.173	
2,200.0	2,199.8	2,191.6	2,191.4	7.6	7.6	-80.22	-165.9	19.8	165.9	150.7	15.19	10.920	
2,300.0	2,299.5	2,291.3	2,291.0	8.0	7.9	-82.53	-170.7	18.9	169.3	153.4	15.86	10.673	
2,400.0	2,398.7	2,390.7	2,390.3	8.3	8.2	-85.87	-175.6	18.1	172.7	156.1	16.54	10.441	
2,500.0	2,497.7	2,489.9	2,489.4	8.7	8.6	-89.79	-180.5	17.3	176.6	159.4	17.22	10.257	
2,600.0	2,596.7	2,589.1	2,588.5	9.0	8.9	-93.52	-185.3	16.5	181.4	163.4	17.91	10.127	
2,700.0	2,695.7	2,688.3	2,687.5	9.4	9.2	-97.06	-190.2	15.7	186.8	168.2	18.60	10.043	
2,800.0	2,794.6	2,787.5	2,786.6	9.8	9.6	-100.38	-195.0	14.9	193.0	173.7	19.30	9.998	
2,900.0	2,893.6	2,886.6	2,885.7	10.1	9.9	-103.49	-199.9	14.1	199.8	179.8	20.01	9.985	
3,000.0	2,992.6	2,985.8	2,984.7	10.5	10.3	-106.39	-204.7	13.3	207.1	186.4	20.71	9.998	
3,100.0	3,091.6	3,085.0	3,083.8	10.9	10.6	-109.09	-209.6	12.5	214.9	193.5	21.42	10.032	
3,200.0	3,190.6	3,184.2	3,182.9	11.2	10.9	-111.60	-214.4	11.7	223.2	201.1	22.14	10.083	
3,300.0	3,289.6	3,283.4	3,282.0	11.6	11.3	-113.92	-219.3	10.9	231.9	209.0	22.85	10.147	
3,400.0	3,388.5	3,382.6	3,381.0	12.0	11.6	-116.08	-224.1	10.1	240.9	217.3	23.56	10.222	
3,500.0	3,487.5	3,481.8	3,480.1	12.4	12.0	-118.08	-229.0	9.3	250.2	225.9	24.28	10.305	
3,600.0	3,586.5	3,581.0	3,579.2	12.8	12.3	-119.93	-233.8	8.5	259.8	234.8	25.00	10.393	
3,700.0	3,685.5	3,680.2	3,678.3	13.2	12.7	-121.65	-238.7	7.7	269.7	244.0	25.72	10.486	
3,800.0	3,784.5	3,779.4	3,777.3	13.5	13.0	-123.25	-243.5	6.9	279.8	253.4	26.44	10.582	
3,900.0	3,883.5	3,878.6	3,876.4	13.9	13.4	-124.73	-248.4	6.1	290.1	262.9	27.16	10.680	
4,000.0	3,982.4	3,977.8	3,975.5	14.3	13.7	-126.12	-253.2	5.3	300.6	272.7	27.88	10.780	
4,100.0	4,081.4	4,077.0	4,074.6	14.7	14.1	-127.41	-258.1	4.5	311.2	282.6	28.61	10.879	
4,200.0	4,180.4	4,176.2	4,173.6	15.1	14.4	-128.61	-262.9	3.7	322.0	292.7	29.33	10.978	
4,300.0	4,279.4	4,275.4	4,272.7	15.5	14.8	-129.74	-267.8	2.9	332.9	302.9	30.05	11.077	
4,400.0	4,378.4	4,374.6	4,371.8	15.9	15.1	-130.80	-272.6	2.1	343.9	313.2	30.78	11.175	
4,500.0	4,477.4	4,473.8	4,470.8	16.3	15.5	-131.78	-277.5	1.2	355.1	323.6	31.50	11.271	
4,600.0	4,576.3	4,573.0	4,569.9	16.7	15.8	-132.71	-282.3	0.4	366.3	334.1	32.23	11.366	
4,700.0	4,675.3	4,672.2	4,669.0	17.1	16.2	-133.59	-287.2	-0.4	377.7	344.7	32.96	11.460	
4,800.0	4,774.3	4,771.4	4,768.1	17.5	16.6	-134.41	-292.0	-1.2	389.1	355.4	33.68	11.551	
4,900.0	4,873.3	4,870.9	4,867.5	17.9	16.9	-135.19	-296.9	-2.0	400.6	366.2	34.41	11.640	
5,000.0	4,972.3	4,974.0	4,970.6	18.3	17.3	-136.25	-299.7	-2.4	411.6	376.4	35.15	11.708	
5,100.0	5,071.3	5,074.1	5,070.7	18.7	17.6	-137.57	-299.9	-2.5	422.0	386.2	35.86	11.768	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 605H - 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)			
5,200.0	5,170.3	5,173.1	5,169.7	19.1	18.0	-138.84	-299.9	-2.5	432.7	396.1	36.57	11.833	
5,300.0	5,269.2	5,272.1	5,268.6	19.5	18.3	-140.04	-299.9	-2.5	443.5	406.3	37.27	11.901	
5,400.0	5,368.2	5,371.1	5,367.6	19.9	18.6	-141.19	-299.9	-2.5	454.6	416.6	37.97	11.971	
5,500.0	5,467.2	5,470.1	5,466.6	20.3	19.0	-142.28	-299.9	-2.5	465.8	427.1	38.68	12.043	
5,600.0	5,566.2	5,569.0	5,565.6	20.7	19.3	-143.32	-299.9	-2.5	477.2	437.8	39.38	12.117	
5,700.0	5,665.2	5,668.0	5,664.6	21.1	19.7	-144.31	-299.9	-2.5	488.7	448.6	40.08	12.191	
5,800.0	5,764.2	5,767.0	5,763.6	21.5	20.0	-145.26	-299.9	-2.5	500.3	459.5	40.79	12.266	
5,900.0	5,863.1	5,866.0	5,862.5	21.9	20.3	-146.16	-299.9	-2.5	512.1	470.6	41.49	12.342	
6,000.0	5,962.1	5,965.0	5,961.5	22.3	20.7	-147.03	-299.9	-2.5	524.0	481.8	42.20	12.418	
6,100.0	6,061.1	6,064.0	6,060.5	22.7	21.0	-147.85	-299.9	-2.5	536.0	493.1	42.90	12.494	
6,200.0	6,160.1	6,162.9	6,159.5	23.1	21.4	-148.64	-299.9	-2.5	548.2	504.6	43.61	12.570	
6,300.0	6,259.1	6,261.9	6,258.5	23.5	21.7	-149.40	-299.9	-2.5	560.4	516.1	44.32	12.645	
6,400.0	6,358.1	6,360.9	6,357.5	23.9	22.1	-150.12	-299.9	-2.5	572.7	527.7	45.02	12.720	
6,500.0	6,457.0	6,459.9	6,456.4	24.3	22.4	-150.81	-299.9	-2.5	585.1	539.4	45.73	12.795	
6,600.0	6,556.0	6,558.9	6,555.4	24.7	22.8	-151.47	-299.9	-2.5	597.6	551.2	46.44	12.868	
6,700.0	6,655.0	6,657.9	6,654.4	25.1	23.1	-152.11	-299.9	-2.5	610.2	563.0	47.15	12.942	
6,800.0	6,754.0	6,756.9	6,753.4	25.5	23.4	-152.72	-299.9	-2.5	622.8	574.9	47.86	13.014	
6,900.0	6,853.0	6,855.8	6,852.4	25.9	23.8	-153.31	-299.9	-2.5	635.5	586.9	48.56	13.085	
7,000.0	6,952.0	6,954.8	6,951.4	26.3	24.1	-153.87	-299.9	-2.5	648.2	599.0	49.27	13.156	
7,100.0	7,050.9	7,053.8	7,050.3	26.7	24.5	-154.41	-299.9	-2.5	661.1	611.1	49.98	13.226	
7,200.0	7,149.9	7,152.8	7,149.3	27.1	24.8	-154.93	-299.9	-2.5	673.9	623.2	50.69	13.294	
7,300.0	7,248.9	7,251.8	7,248.3	27.5	25.2	-155.43	-299.9	-2.5	686.9	635.5	51.40	13.362	
7,400.0	7,347.9	7,350.8	7,347.3	27.9	25.5	-155.92	-299.9	-2.5	699.9	647.7	52.12	13.429	
7,500.0	7,446.9	7,449.7	7,446.3	28.3	25.9	-156.38	-299.9	-2.5	712.9	660.1	52.83	13.495	
7,600.0	7,545.9	7,548.7	7,545.3	28.8	26.2	-156.83	-299.9	-2.5	725.9	672.4	53.54	13.560	
7,700.0	7,644.8	7,647.7	7,644.2	29.2	26.6	-157.27	-299.9	-2.5	739.1	684.8	54.25	13.623	
7,800.0	7,743.8	7,746.7	7,743.2	29.6	26.9	-157.68	-299.9	-2.5	752.2	697.3	54.96	13.686	
7,900.0	7,842.8	7,845.7	7,842.2	30.0	27.3	-158.09	-299.9	-2.5	765.4	709.7	55.67	13.748	
8,000.0	7,941.8	7,944.7	7,941.2	30.4	27.6	-158.48	-299.9	-2.5	778.6	722.3	56.39	13.809	
8,100.0	8,040.8	8,043.6	8,040.2	30.8	28.0	-158.85	-299.9	-2.5	791.9	734.8	57.10	13.869	
8,200.0	8,139.8	8,142.6	8,139.2	31.2	28.3	-159.22	-299.9	-2.5	805.2	747.4	57.81	13.927	
8,300.0	8,238.8	8,241.6	8,238.2	31.6	28.7	-159.57	-299.9	-2.5	818.5	760.0	58.53	13.985	
8,400.0	8,337.7	8,340.6	8,337.1	32.0	29.0	-159.91	-299.9	-2.5	831.9	772.6	59.24	14.042	
8,500.0	8,436.7	8,439.6	8,436.1	32.4	29.4	-160.24	-299.9	-2.5	845.3	785.3	59.96	14.098	
8,600.0	8,535.7	8,538.6	8,535.1	32.8	29.7	-160.56	-299.9	-2.5	858.7	798.0	60.67	14.153	
8,700.0	8,634.7	8,637.6	8,634.1	33.2	30.1	-160.90	-299.9	-2.5	871.8	810.4	61.39	14.202	
8,800.0	8,734.1	8,737.0	8,733.5	33.6	30.4	-161.20	-299.9	-2.5	882.2	820.1	62.10	14.207	
8,900.0	8,833.8	8,836.7	8,833.2	34.0	30.8	-161.41	-299.9	-2.5	889.4	826.6	62.81	14.161	
9,000.0	8,933.7	8,936.6	8,933.1	34.3	31.1	-161.51	-299.9	-2.5	893.2	829.7	63.51	14.064	
9,100.0	9,033.7	9,036.6	9,033.1	34.7	31.5	89.70	-299.9	-2.5	894.0	829.8	64.20	13.924	
9,200.0	9,133.7	9,136.6	9,133.1	35.0	31.8	89.70	-299.9	-2.5	894.0	829.1	64.89	13.777	
9,300.0	9,233.7	9,236.6	9,233.1	35.3	32.2	89.70	-299.9	-2.5	894.0	828.4	65.57	13.633	
9,303.9	9,237.6	9,240.5	9,237.0	35.3	32.2	90.08	-299.9	-2.5	894.0	828.4	65.60	13.628	
9,400.0	9,333.4	9,336.3	9,332.8	35.6	32.5	90.47	-299.9	-2.5	894.0	827.7	66.26	13.492	
9,500.0	9,429.7	9,432.6	9,429.1	35.9	32.9	92.01	-299.9	-2.5	894.6	827.7	66.93	13.366	
9,600.0	9,518.4	9,521.3	9,517.8	36.1	33.2	94.25	-299.9	-2.5	897.5	829.9	67.56	13.283	
9,700.0	9,595.7	9,598.6	9,595.1	36.2	33.5	96.41	-299.9	-2.5	905.3	837.1	68.14	13.285	
9,800.0	9,658.2	9,661.0	9,657.6	36.3	33.7	97.60	-299.9	-2.5	920.7	852.1	68.63	13.415	
9,900.0	9,703.1	9,705.9	9,702.5	36.4	33.8	96.99	-299.9	-2.5	946.1	877.0	69.02	13.708	
10,000.0	9,728.5	9,731.3	9,727.9	36.3	33.9	93.95	-299.9	-2.5	981.9	912.6	69.26	14.176	
10,100.0	9,734.0	9,736.9	9,733.4	36.3	33.9	90.00	-299.9	-2.5	1,027.2	957.8	69.37	14.808	
10,200.0	9,734.0	9,736.9	9,733.4	36.4	33.9	90.00	-299.9	-2.5	1,079.9	1,010.5	69.42	15.555	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 605H - 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			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	9,734.0	9,736.9	9,733.4	36.5	33.9	90.00	-299.9	-2.5	1,139.0	1,069.6	69.47	16.395		
10,400.0	9,734.0	9,736.9	9,733.4	36.7	33.9	90.00	-299.9	-2.5	1,203.6	1,134.1	69.52	17.314		
10,500.0	9,734.0	11,234.2	10,529.0	37.0	38.5	130.72	606.2	21.9	1,219.5	1,154.8	64.74	18.838		
10,600.0	9,734.0	11,334.2	10,529.0	37.4	38.9	130.72	706.2	21.2	1,219.5	1,154.0	65.55	18.605		
10,700.0	9,734.0	11,434.2	10,529.0	37.8	39.4	130.72	806.2	20.5	1,219.5	1,153.1	66.44	18.355		
10,800.0	9,734.0	11,534.2	10,529.0	38.3	40.0	130.72	906.2	19.9	1,219.5	1,152.1	67.40	18.093		
10,900.0	9,734.0	11,634.2	10,529.0	38.9	40.6	130.72	1,006.2	19.2	1,219.5	1,151.1	68.44	17.819		
11,000.0	9,734.0	11,734.2	10,529.0	39.5	41.2	130.72	1,106.2	18.5	1,219.5	1,150.0	69.55	17.535		
11,100.0	9,734.0	11,834.2	10,529.0	40.2	41.9	130.72	1,206.2	17.9	1,219.5	1,148.8	70.72	17.245		
11,200.0	9,734.0	11,934.2	10,529.0	40.9	42.6	130.72	1,306.2	17.2	1,219.5	1,147.6	71.95	16.949		
11,300.0	9,734.0	12,034.2	10,529.0	41.6	43.3	130.72	1,406.2	16.5	1,219.5	1,146.3	73.24	16.650		
11,400.0	9,734.0	12,134.2	10,529.0	42.4	44.1	130.72	1,506.2	15.9	1,219.5	1,144.9	74.59	16.349		
11,500.0	9,734.0	12,234.2	10,529.0	43.2	44.9	130.72	1,606.2	15.2	1,219.5	1,143.5	75.99	16.047		
11,600.0	9,734.0	12,334.2	10,529.0	44.0	45.8	130.72	1,706.2	14.6	1,219.5	1,142.1	77.45	15.747		
11,700.0	9,734.0	12,434.2	10,529.0	44.9	46.7	130.72	1,806.2	13.9	1,219.5	1,140.6	78.94	15.447		
11,800.0	9,734.0	12,534.2	10,529.0	45.8	47.6	130.72	1,906.2	13.2	1,219.5	1,139.0	80.49	15.151		
11,900.0	9,734.0	12,634.2	10,529.0	46.7	48.5	130.72	2,006.2	12.6	1,219.5	1,137.4	82.08	14.858		
12,000.0	9,734.0	12,734.2	10,529.0	47.7	49.5	130.72	2,106.1	11.9	1,219.5	1,135.8	83.70	14.569		
12,100.0	9,734.0	12,834.2	10,529.0	48.6	50.4	130.72	2,206.1	11.2	1,219.5	1,134.1	85.37	14.285		
12,200.0	9,734.0	12,934.2	10,529.0	49.6	51.4	130.72	2,306.1	10.6	1,219.5	1,132.4	87.07	14.007		
12,300.0	9,734.0	13,034.2	10,529.0	50.7	52.5	130.72	2,406.1	9.9	1,219.5	1,130.7	88.80	13.733		
12,400.0	9,734.0	13,134.2	10,529.0	51.7	53.5	130.72	2,506.1	9.2	1,219.5	1,128.9	90.56	13.466		
12,500.0	9,734.0	13,234.2	10,529.0	52.8	54.6	130.72	2,606.1	8.6	1,219.5	1,127.1	92.36	13.204		
12,600.0	9,734.0	13,334.2	10,529.0	53.8	55.6	130.72	2,706.1	7.9	1,219.5	1,125.3	94.18	12.949		
12,700.0	9,734.0	13,434.2	10,529.0	54.9	56.7	130.72	2,806.1	7.2	1,219.5	1,123.4	96.03	12.699		
12,800.0	9,734.0	13,534.2	10,529.0	56.0	57.9	130.72	2,906.1	6.6	1,219.5	1,121.6	97.90	12.456		
12,900.0	9,734.0	13,634.2	10,529.0	57.2	59.0	130.72	3,006.1	5.9	1,219.5	1,119.7	99.80	12.219		
13,000.0	9,734.0	13,734.2	10,529.0	58.3	60.1	130.72	3,106.1	5.3	1,219.5	1,117.8	101.72	11.989		
13,100.0	9,734.0	13,834.2	10,529.0	59.5	61.3	130.72	3,206.1	4.6	1,219.5	1,115.8	103.66	11.765		
13,200.0	9,734.0	13,934.2	10,529.0	60.6	62.4	130.72	3,306.1	3.9	1,219.5	1,113.8	105.62	11.546		
13,300.0	9,734.0	14,034.2	10,529.0	61.8	63.6	130.72	3,406.1	3.3	1,219.5	1,111.9	107.59	11.334		
13,400.0	9,734.0	14,134.2	10,529.0	63.0	64.8	130.72	3,506.1	2.6	1,219.5	1,109.9	109.59	11.127		
13,500.0	9,734.0	14,234.2	10,529.0	64.2	66.0	130.72	3,606.1	1.9	1,219.5	1,107.9	111.60	10.927		
13,600.0	9,734.0	14,334.2	10,529.0	65.4	67.2	130.72	3,706.1	1.3	1,219.5	1,105.8	113.63	10.732		
13,700.0	9,734.0	14,434.2	10,529.0	66.6	68.4	130.72	3,806.1	0.6	1,219.5	1,103.8	115.68	10.542		
13,800.0	9,734.0	14,534.2	10,529.0	67.8	69.6	130.72	3,906.1	-0.1	1,219.5	1,101.7	117.73	10.358		
13,900.0	9,734.0	14,634.2	10,529.0	69.1	70.9	130.72	4,006.1	-0.7	1,219.4	1,099.6	119.81	10.179		
14,000.0	9,734.0	14,734.2	10,529.0	70.3	72.1	130.72	4,106.1	-1.4	1,219.4	1,097.6	121.89	10.004		
14,100.0	9,734.0	14,834.2	10,529.0	71.6	73.4	130.72	4,206.1	-2.1	1,219.4	1,095.5	123.99	9.835		
14,200.0	9,734.0	14,934.2	10,529.0	72.8	74.6	130.72	4,306.1	-2.7	1,219.4	1,093.3	126.09	9.671		
14,300.0	9,734.0	15,034.2	10,529.0	74.1	75.9	130.72	4,406.1	-3.4	1,219.4	1,091.2	128.21	9.511		
14,400.0	9,734.0	15,134.2	10,529.0	75.4	77.2	130.72	4,506.1	-4.0	1,219.4	1,089.1	130.34	9.356		
14,500.0	9,734.0	15,234.2	10,529.0	76.6	78.4	130.72	4,606.1	-4.7	1,219.4	1,087.0	132.48	9.205		
14,600.0	9,734.0	15,334.2	10,529.0	77.9	79.7	130.72	4,706.1	-5.4	1,219.4	1,084.8	134.63	9.058		
14,700.0	9,734.0	15,434.2	10,529.0	79.2	81.0	130.72	4,806.1	-6.0	1,219.4	1,082.6	136.79	8.915		
14,800.0	9,734.0	15,534.2	10,529.0	80.5	82.3	130.72	4,906.1	-6.7	1,219.4	1,080.5	138.96	8.776		
14,900.0	9,734.0	15,634.2	10,529.0	81.8	83.6	130.72	5,006.1	-7.4	1,219.4	1,078.3	141.13	8.640		
15,000.0	9,734.0	15,734.2	10,529.0	83.1	84.9	130.72	5,106.1	-8.0	1,219.4	1,076.1	143.31	8.509		
15,100.0	9,734.0	15,834.2	10,529.0	84.4	86.2	130.72	5,206.1	-8.7	1,219.4	1,073.9	145.50	8.381		
15,200.0	9,734.0	15,934.2	10,529.0	85.7	87.5	130.72	5,306.1	-9.4	1,219.4	1,071.7	147.70	8.256		
15,300.0	9,734.0	16,034.2	10,529.0	87.0	88.8	130.72	5,406.1	-10.0	1,219.4	1,069.5	149.91	8.135		
15,400.0	9,734.0	16,134.2	10,529.0	88.4	90.2	130.72	5,506.1	-10.7	1,219.4	1,067.3	152.12	8.016		

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 605H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program: 0-B001Mb_MWD+HRGM		Reference Offset		Semi Major Axis		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)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
15,500.0	9,734.0	16,234.2	10,529.0	89.7	91.5	130.73	5,606.1	-11.4	1,219.4	1,065.1	154.33	7.901		
15,600.0	9,734.0	16,334.2	10,529.0	91.0	92.8	130.73	5,706.1	-12.0	1,219.4	1,062.9	156.56	7.789		
15,700.0	9,734.0	16,434.2	10,529.0	92.4	94.1	130.73	5,806.1	-12.7	1,219.4	1,060.6	158.78	7.680		
15,800.0	9,734.0	16,534.2	10,529.0	93.7	95.5	130.73	5,906.1	-13.4	1,219.4	1,058.4	161.02	7.573		
15,900.0	9,734.0	16,634.2	10,529.0	95.0	96.8	130.73	6,006.1	-14.0	1,219.4	1,056.1	163.26	7.469		
16,000.0	9,734.0	16,734.2	10,529.0	96.4	98.1	130.73	6,106.1	-14.7	1,219.4	1,053.9	165.50	7.368		
16,100.0	9,734.0	16,834.2	10,529.0	97.7	99.5	130.73	6,206.1	-15.3	1,219.4	1,051.7	167.75	7.269		
16,200.0	9,734.0	16,934.2	10,529.0	99.1	100.8	130.73	6,306.1	-16.0	1,219.4	1,049.4	170.01	7.173		
16,300.0	9,734.0	17,034.2	10,529.0	100.4	102.2	130.73	6,406.1	-16.7	1,219.4	1,047.1	172.26	7.079		
16,400.0	9,734.0	17,134.2	10,529.0	101.8	103.5	130.73	6,506.1	-17.3	1,219.4	1,044.9	174.53	6.987		
16,500.0	9,734.0	17,234.2	10,529.0	103.1	104.9	130.73	6,606.0	-18.0	1,219.4	1,042.6	176.79	6.897		
16,600.0	9,734.0	17,334.2	10,529.0	104.5	106.3	130.73	6,706.0	-18.7	1,219.4	1,040.3	179.07	6.810		
16,700.0	9,734.0	17,434.2	10,529.0	105.8	107.6	130.73	6,806.0	-19.3	1,219.4	1,038.1	181.34	6.724		
16,800.0	9,734.0	17,534.2	10,529.0	107.2	109.0	130.73	6,906.0	-20.0	1,219.4	1,035.8	183.62	6.641		
16,900.0	9,734.0	17,634.2	10,529.0	108.6	110.3	130.73	7,006.0	-20.7	1,219.4	1,033.5	185.90	6.559		
17,000.0	9,734.0	17,734.2	10,529.0	109.9	111.7	130.73	7,106.0	-21.3	1,219.4	1,031.2	188.19	6.480		
17,100.0	9,734.0	17,834.2	10,529.0	111.3	113.1	130.73	7,206.0	-22.0	1,219.4	1,028.9	190.47	6.402		
17,200.0	9,734.0	17,934.2	10,529.0	112.7	114.4	130.73	7,306.0	-22.7	1,219.4	1,026.6	192.77	6.326		
17,300.0	9,734.0	18,034.2	10,529.0	114.1	115.8	130.73	7,406.0	-23.3	1,219.4	1,024.3	195.06	6.251		
17,400.0	9,734.0	18,134.2	10,529.0	115.4	117.2	130.73	7,506.0	-24.0	1,219.4	1,022.0	197.36	6.178		
17,500.0	9,734.0	18,234.2	10,529.0	116.8	118.6	130.73	7,606.0	-24.6	1,219.4	1,019.7	199.66	6.107		
17,600.0	9,734.0	18,334.2	10,529.0	118.2	119.9	130.73	7,706.0	-25.3	1,219.4	1,017.4	201.96	6.038		
17,700.0	9,734.0	18,434.2	10,529.0	119.6	121.3	130.73	7,806.0	-26.0	1,219.4	1,015.1	204.27	5.969		
17,800.0	9,734.0	18,534.2	10,529.0	121.0	122.7	130.73	7,906.0	-26.6	1,219.4	1,012.8	206.58	5.903		
17,900.0	9,734.0	18,634.2	10,529.0	122.3	124.1	130.73	8,006.0	-27.3	1,219.4	1,010.5	208.89	5.837		
18,000.0	9,734.0	18,734.2	10,529.0	123.7	125.5	130.73	8,106.0	-28.0	1,219.4	1,008.2	211.20	5.773		
18,100.0	9,734.0	18,834.2	10,529.0	125.1	126.8	130.73	8,206.0	-28.6	1,219.4	1,005.8	213.52	5.711		
18,200.0	9,734.0	18,934.2	10,529.0	126.5	128.2	130.73	8,306.0	-29.3	1,219.4	1,003.5	215.84	5.649		
18,300.0	9,734.0	19,034.2	10,529.0	127.9	129.6	130.73	8,406.0	-30.0	1,219.4	1,001.2	218.16	5.589		
18,400.0	9,734.0	19,134.2	10,529.0	129.3	131.0	130.73	8,506.0	-30.6	1,219.4	998.9	220.48	5.530		
18,500.0	9,734.0	19,234.2	10,529.0	130.7	132.4	130.73	8,606.0	-31.3	1,219.4	996.5	222.81	5.473		
18,600.0	9,734.0	19,334.2	10,529.0	132.1	133.8	130.73	8,706.0	-32.0	1,219.4	994.2	225.13	5.416		
18,700.0	9,734.0	19,434.2	10,529.0	133.4	135.2	130.73	8,806.0	-32.6	1,219.3	991.9	227.46	5.361		
18,800.0	9,734.0	19,534.2	10,529.0	134.8	136.6	130.73	8,906.0	-33.3	1,219.3	989.6	229.79	5.306		
18,900.0	9,734.0	19,634.2	10,529.0	136.2	138.0	130.73	9,006.0	-33.9	1,219.3	987.2	232.12	5.253		
19,000.0	9,734.0	19,734.2	10,529.0	137.6	139.4	130.73	9,106.0	-34.6	1,219.3	984.9	234.46	5.201		
19,100.0	9,734.0	19,834.2	10,529.0	139.0	140.8	130.73	9,206.0	-35.3	1,219.3	982.5	236.79	5.149		
19,200.0	9,734.0	19,934.2	10,529.0	140.4	142.2	130.73	9,306.0	-35.9	1,219.3	980.2	239.13	5.099		
19,300.0	9,734.0	20,034.2	10,529.0	141.8	143.6	130.73	9,406.0	-36.6	1,219.3	977.9	241.47	5.050		
19,400.0	9,734.0	20,134.2	10,529.0	143.2	145.0	130.73	9,506.0	-37.3	1,219.3	975.5	243.81	5.001		
19,500.0	9,734.0	20,234.2	10,529.0	144.6	146.4	130.73	9,606.0	-37.9	1,219.3	973.2	246.15	4.954		
19,600.0	9,734.0	20,334.2	10,529.0	146.0	147.8	130.73	9,706.0	-38.6	1,219.3	970.8	248.50	4.907		
19,700.0	9,734.0	20,434.2	10,529.0	147.4	149.2	130.73	9,806.0	-39.3	1,219.3	968.5	250.84	4.861		
19,800.0	9,734.0	20,534.2	10,529.0	148.8	150.6	130.73	9,906.0	-39.9	1,219.3	966.1	253.19	4.816		
19,900.0	9,734.0	20,634.2	10,529.0	150.3	152.0	130.73	10,006.0	-40.6	1,219.3	963.8	255.54	4.772		
20,000.0	9,734.0	20,734.2	10,529.0	151.7	153.3	130.73	10,106.0	-41.3	1,219.3	961.5	257.80	4.730		
20,019.5	9,734.0	20,753.6	10,529.0	151.9	153.5	130.73	10,125.4	-41.4	1,219.3	961.1	258.21	4.722 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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 606H - 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)			
0.0	0.0	0.0	0.0	0.0	0.0	165.70	-159.7	40.7	164.9				
100.0	100.0	98.8	98.8	0.1	0.1	165.70	-159.7	40.7	164.9	164.6	0.26	629.479	
200.0	200.0	198.8	198.8	0.5	0.5	165.70	-159.7	40.7	164.9	163.9	0.98	168.891	
300.0	300.0	298.8	298.8	0.8	0.8	165.70	-159.7	40.7	164.9	163.2	1.69	97.373	
400.0	400.0	398.8	398.8	1.2	1.2	165.70	-159.7	40.7	164.9	162.4	2.41	68.406	
500.0	500.0	498.8	498.8	1.6	1.6	165.70	-159.7	40.7	164.9	161.7	3.13	52.722	
600.0	600.0	598.8	598.8	1.9	1.9	165.70	-159.7	40.7	164.9	161.0	3.84	42.888	
700.0	700.0	698.8	698.8	2.3	2.3	165.70	-159.7	40.7	164.9	160.3	4.56	36.146	
800.0	800.0	798.8	798.8	2.6	2.6	165.70	-159.7	40.7	164.9	159.6	5.28	31.236	
900.0	900.0	898.8	898.8	3.0	3.0	165.70	-159.7	40.7	164.9	158.9	5.99	27.501	
1,000.0	1,000.0	998.8	998.8	3.4	3.4	165.70	-159.7	40.7	164.9	158.1	6.71	24.563	
1,100.0	1,100.0	1,098.8	1,098.8	3.7	3.7	165.70	-159.7	40.7	164.9	157.4	7.43	22.192	
1,200.0	1,200.0	1,198.8	1,198.8	4.1	4.1	165.70	-159.7	40.7	164.9	156.7	8.15	20.239	
1,300.0	1,300.0	1,298.8	1,298.8	4.4	4.4	165.70	-159.7	40.7	164.9	156.0	8.86	18.602	
1,400.0	1,400.0	1,398.8	1,398.8	4.8	4.8	165.70	-159.7	40.7	164.9	155.3	9.58	17.210	
1,500.0	1,500.0	1,498.8	1,498.8	5.2	5.1	165.70	-159.7	40.7	164.9	154.6	10.30	16.011	
1,600.0	1,600.0	1,598.8	1,598.8	5.5	5.5	165.70	-159.7	40.7	164.9	153.8	11.01	14.969	
1,700.0	1,700.0	1,698.8	1,698.8	5.9	5.9	165.70	-159.7	40.7	164.9	153.1	11.73	14.054	
1,800.0	1,800.0	1,798.8	1,798.8	6.2	6.2	165.70	-159.7	40.7	164.9	152.4	12.45	13.245	
1,900.0	1,900.0	1,898.8	1,898.8	6.6	6.6	165.70	-159.7	40.7	164.9	151.7	13.16	12.523	
2,000.0	2,000.0	1,998.8	1,998.8	6.9	6.9	165.70	-159.7	40.7	164.9	151.0	13.88	11.876 CC	
2,100.0	2,100.0	2,096.5	2,096.5	7.3	7.3	-86.63	-160.0	42.3	165.4	150.8	14.57	11.354 ES	
2,200.0	2,199.8	2,193.6	2,193.5	7.6	7.6	-89.86	-160.7	47.2	167.4	152.2	15.23	10.993	
2,300.0	2,299.5	2,289.4	2,288.9	8.0	7.9	-94.94	-161.9	55.2	172.0	156.1	15.89	10.828	
2,400.0	2,398.7	2,384.7	2,383.6	8.3	8.3	-101.39	-163.5	66.0	180.6	164.0	16.54	10.918	
2,500.0	2,497.7	2,481.4	2,479.6	8.7	8.6	-108.12	-165.2	77.6	192.6	175.4	17.21	11.189	
2,600.0	2,596.7	2,578.2	2,575.6	9.0	9.0	-114.04	-167.0	89.2	207.0	189.1	17.88	11.575	
2,700.0	2,695.7	2,674.9	2,671.6	9.4	9.3	-119.17	-168.7	100.7	223.4	204.8	18.56	12.036	
2,800.0	2,794.6	2,771.6	2,767.6	9.8	9.7	-123.60	-170.4	112.3	241.3	222.1	19.24	12.545	
2,900.0	2,893.6	2,868.3	2,863.7	10.1	10.0	-127.42	-172.1	123.9	260.5	240.6	19.92	13.080	
3,000.0	2,992.6	2,965.1	2,959.7	10.5	10.4	-130.71	-173.8	135.5	280.7	260.1	20.60	13.626	
3,100.0	3,091.6	3,061.8	3,055.7	10.9	10.7	-133.56	-175.6	147.1	301.6	280.3	21.28	14.172	
3,200.0	3,190.6	3,158.5	3,151.7	11.2	11.1	-136.05	-177.3	158.6	323.2	301.2	21.97	14.712	
3,300.0	3,289.6	3,255.2	3,247.7	11.6	11.4	-138.22	-179.0	170.2	345.3	322.7	22.66	15.240	
3,400.0	3,388.5	3,352.0	3,343.7	12.0	11.8	-140.14	-180.7	181.8	367.8	344.5	23.35	15.754	
3,500.0	3,487.5	3,448.7	3,439.7	12.4	12.2	-141.83	-182.4	193.4	390.7	366.7	24.04	16.251	
3,600.0	3,586.5	3,545.4	3,535.8	12.8	12.5	-143.34	-184.2	205.0	413.9	389.2	24.74	16.732	
3,700.0	3,685.5	3,642.1	3,631.8	13.2	12.9	-144.69	-185.9	216.5	437.3	411.9	25.43	17.194	
3,800.0	3,784.5	3,738.9	3,727.8	13.5	13.3	-145.90	-187.6	228.1	460.9	434.8	26.13	17.639	
3,900.0	3,883.5	3,835.6	3,823.8	13.9	13.6	-147.00	-189.3	239.7	484.7	457.9	26.83	18.067	
4,000.0	3,982.4	3,932.3	3,919.8	14.3	14.0	-147.99	-191.1	251.3	508.7	481.2	27.53	18.477	
4,100.0	4,081.4	4,029.1	4,015.8	14.7	14.4	-148.89	-192.8	262.9	532.8	504.5	28.23	18.871	
4,200.0	4,180.4	4,125.8	4,111.9	15.1	14.7	-149.72	-194.5	274.4	557.0	528.0	28.93	19.249	
4,300.0	4,279.4	4,222.5	4,207.9	15.5	15.1	-150.48	-196.2	286.0	581.3	551.6	29.64	19.612	
4,400.0	4,378.4	4,319.2	4,303.9	15.9	15.5	-151.17	-197.9	297.6	605.7	575.3	30.34	19.960	
4,500.0	4,477.4	4,416.0	4,399.9	16.3	15.8	-151.82	-199.7	309.2	630.1	599.1	31.05	20.294	
4,600.0	4,576.3	4,512.7	4,495.9	16.7	16.2	-152.41	-201.4	320.8	654.7	622.9	31.76	20.615	
4,700.0	4,675.3	4,609.4	4,591.9	17.1	16.6	-152.97	-203.1	332.3	679.3	646.8	32.46	20.924	
4,800.0	4,774.3	4,706.1	4,687.9	17.5	17.0	-153.48	-204.8	343.9	703.9	670.8	33.17	21.220	
4,900.0	4,873.3	4,802.9	4,784.0	17.9	17.3	-153.96	-206.6	355.5	728.6	694.7	33.88	21.505	
5,000.0	4,972.3	4,899.6	4,880.0	18.3	17.7	-154.41	-208.3	367.1	753.4	718.8	34.59	21.779	
5,100.0	5,071.3	4,996.3	4,976.0	18.7	18.1	-154.83	-210.0	378.7	778.2	742.9	35.30	22.043	

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 606H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program:		0-B001Mb_MWD+HRGM							Rule Assigned:				Offset Well Error: 0.0 usft	
Measured Depth	Reference	Offset	Semi Major Axis		Offset Wellbore Centre			Distance				Warning		
Depth (usft)	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		
5,200.0	5,170.3	5,093.0	5,072.0	19.1	18.4	-155.22	-211.7	390.2	803.0	767.0	36.01	22.297		
5,300.0	5,269.2	5,189.8	5,168.0	19.5	18.8	-155.59	-213.4	401.8	827.9	791.1	36.73	22.542		
5,400.0	5,368.2	5,286.5	5,264.0	19.9	19.2	-155.94	-215.2	413.4	852.7	815.3	37.44	22.778		
5,500.0	5,467.2	5,383.2	5,360.0	20.3	19.6	-156.27	-216.9	425.0	877.7	839.5	38.15	23.006		
5,600.0	5,566.2	5,479.9	5,456.1	20.7	19.9	-156.58	-218.6	436.6	902.6	863.7	38.86	23.225		
5,700.0	5,665.2	5,576.7	5,552.1	21.1	20.3	-156.87	-220.3	448.1	927.6	888.0	39.58	23.437		
5,800.0	5,764.2	5,673.4	5,648.1	21.5	20.7	-157.15	-222.1	459.7	952.6	912.3	40.29	23.642		
5,900.0	5,863.1	5,770.1	5,744.1	21.9	21.1	-157.41	-223.8	471.3	977.6	936.6	41.01	23.839		
6,000.0	5,962.1	5,866.8	5,840.1	22.3	21.4	-157.67	-225.5	482.9	1,002.6	960.9	41.72	24.031		
6,100.0	6,061.1	5,963.6	5,936.1	22.7	21.8	-157.90	-227.2	494.5	1,027.7	985.2	42.44	24.216		
6,200.0	6,160.1	6,060.3	6,032.1	23.1	22.2	-158.13	-228.9	506.0	1,052.7	1,009.6	43.15	24.395		
6,300.0	6,259.1	6,157.0	6,128.2	23.5	22.6	-158.35	-230.7	517.6	1,077.8	1,033.9	43.87	24.568		
6,400.0	6,358.1	6,253.7	6,224.2	23.9	23.0	-158.56	-232.4	529.2	1,102.9	1,058.3	44.59	24.736		
6,500.0	6,457.0	6,350.5	6,320.2	24.3	23.3	-158.75	-234.1	540.8	1,128.0	1,082.7	45.30	24.898		
6,600.0	6,556.0	6,447.2	6,416.2	24.7	23.7	-158.94	-235.8	552.4	1,153.1	1,107.1	46.02	25.056		
6,700.0	6,655.0	6,543.9	6,512.2	25.1	24.1	-159.13	-237.5	563.9	1,178.2	1,131.5	46.74	25.208		
6,800.0	6,754.0	6,640.6	6,608.2	25.5	24.5	-159.30	-239.3	575.5	1,203.4	1,155.9	47.46	25.357		
6,900.0	6,853.0	6,737.4	6,704.2	25.9	24.8	-159.47	-241.0	587.1	1,228.5	1,180.3	48.18	25.500		
7,000.0	6,952.0	6,834.1	6,800.3	26.3	25.2	-159.63	-242.7	598.7	1,253.7	1,204.8	48.90	25.640		
7,100.0	7,050.9	6,930.8	6,896.3	26.7	25.6	-159.78	-244.4	610.3	1,278.8	1,229.2	49.61	25.776		
7,200.0	7,149.9	7,027.5	6,992.3	27.1	26.0	-159.93	-246.2	621.8	1,304.0	1,253.7	50.33	25.907		
7,300.0	7,248.9	7,124.3	7,088.3	27.5	26.4	-160.07	-247.9	633.4	1,329.2	1,278.1	51.05	26.035		
7,400.0	7,347.9	7,221.0	7,184.3	27.9	26.7	-160.21	-249.6	645.0	1,354.4	1,302.6	51.77	26.160		
7,500.0	7,446.9	7,317.7	7,280.3	28.3	27.1	-160.34	-251.3	656.6	1,379.6	1,327.1	52.49	26.281		
7,600.0	7,545.9	7,414.5	7,376.3	28.8	27.5	-160.47	-253.0	668.2	1,404.8	1,351.6	53.21	26.399		
7,700.0	7,644.8	7,511.2	7,472.4	29.2	27.9	-160.59	-254.8	679.8	1,430.0	1,376.1	53.94	26.513		
7,800.0	7,743.8	7,607.9	7,568.4	29.6	28.2	-160.71	-256.5	691.3	1,455.2	1,400.6	54.66	26.625		
7,900.0	7,842.8	7,704.6	7,664.4	30.0	28.6	-160.82	-258.2	702.9	1,480.4	1,425.1	55.38	26.733		
8,000.0	7,941.8	7,801.4	7,760.4	30.4	29.0	-160.93	-259.9	714.5	1,505.7	1,449.6	56.10	26.839		
8,100.0	8,040.8	7,898.1	7,856.4	30.8	29.4	-161.04	-261.7	726.1	1,530.9	1,474.1	56.82	26.942		
8,200.0	8,139.8	7,994.8	7,952.4	31.2	29.8	-161.14	-263.4	737.7	1,556.1	1,498.6	57.54	27.043		
8,300.0	8,238.8	8,091.5	8,048.4	31.6	30.1	-161.24	-265.1	749.2	1,581.4	1,523.1	58.27	27.141		
8,400.0	8,337.7	8,188.3	8,144.5	32.0	30.5	-161.34	-266.8	760.8	1,606.6	1,547.6	58.99	27.236		
8,500.0	8,436.7	8,285.0	8,240.5	32.4	30.9	-161.43	-268.5	772.4	1,631.9	1,572.1	59.71	27.330		
8,600.0	8,535.7	8,381.7	8,336.5	32.8	31.3	-161.52	-270.3	784.0	1,657.1	1,596.7	60.43	27.420		
8,700.0	8,634.7	8,478.5	8,432.6	33.2	31.7	-161.68	-272.0	795.6	1,682.1	1,620.9	61.16	27.505		
8,800.0	8,734.1	8,576.0	8,529.3	33.6	32.0	-161.87	-273.7	807.2	1,704.4	1,642.5	61.88	27.544		
8,900.0	8,833.8	8,674.1	8,626.8	34.0	32.4	-162.00	-275.5	819.0	1,723.4	1,660.8	62.60	27.532		
9,000.0	8,933.7	8,772.9	8,724.8	34.3	32.8	-162.08	-277.2	830.8	1,739.2	1,675.9	63.31	27.469		
9,100.0	9,033.7	8,872.1	8,823.2	34.7	33.2	89.16	-279.0	842.7	1,751.8	1,687.8	64.01	27.366		
9,200.0	9,133.7	8,971.3	8,921.8	35.0	33.6	89.22	-280.8	854.6	1,763.8	1,699.1	64.71	27.256		
9,300.0	9,233.7	9,070.6	9,020.3	35.3	34.0	89.28	-282.5	866.4	1,775.7	1,710.3	65.41	27.147		
9,400.0	9,333.4	9,169.4	9,118.4	35.6	34.4	88.81	-284.3	878.3	1,787.6	1,721.5	66.10	27.044		
9,500.0	9,429.7	9,264.5	9,212.8	35.9	34.7	88.26	-286.0	889.7	1,799.3	1,732.6	66.75	26.957		
9,600.0	9,518.4	9,351.7	9,299.4	36.1	35.1	88.14	-287.5	900.1	1,811.2	1,743.9	67.33	26.900		
9,700.0	9,595.7	9,427.3	9,374.4	36.2	35.4	88.11	-288.9	909.2	1,824.2	1,756.4	67.83	26.892		
9,800.0	9,658.2	9,487.8	9,434.5	36.3	35.6	87.79	-290.0	916.4	1,839.3	1,771.0	68.25	26.950		
9,900.0	9,703.1	9,530.7	9,477.1	36.4	35.8	86.80	-290.7	921.5	1,857.3	1,788.8	68.56	27.089		
10,000.0	9,728.5	9,554.2	9,500.3	36.3	35.9	84.88	-291.1	924.3	1,878.7	1,810.0	68.78	27.315		
10,100.0	9,734.0	9,557.8	9,503.9	36.3	35.9	82.84	-291.2	924.8	1,903.3	1,834.4	68.89	27.627		
10,200.0	9,734.0	9,555.9	9,502.1	36.4	35.9	82.78	-291.2	924.6	1,932.2	1,863.2	69.01	28.000		
10,300.0	9,734.0	9,554.1	9,500.2	36.5	35.9	82.72	-291.1	924.3	1,965.7	1,896.5	69.15	28.427		

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 606H - OH - Plan 0.1													Offset Site Error: 0.0 usft	
Survey Program:		0-B001Mb_MWD+HRGM						Rule Assigned:					Offset Well Error: 0.0 usft	
Measured Depth (usft)	Reference Depth (usft)	Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
10,400.0	9,734.0	9,552.2	9,498.4	36.7	35.9	82.66	-291.1	924.1	2,003.6	1,934.3	69.31	28.907		
10,500.0	9,734.0	11,286.6	10,529.0	37.0	40.2	113.31	612.3	945.6	2,012.2	1,940.8	71.43	28.169		
10,600.0	9,734.0	11,386.6	10,529.0	37.4	40.6	113.31	712.3	944.9	2,012.2	1,940.0	72.26	27.848		
10,700.0	9,734.0	11,486.6	10,529.0	37.8	41.1	113.31	812.3	944.2	2,012.2	1,939.1	73.17	27.500		
10,800.0	9,734.0	11,586.6	10,529.0	38.3	41.6	113.31	912.3	943.6	2,012.2	1,938.0	74.18	27.127		
10,900.0	9,734.0	11,686.6	10,529.0	38.9	42.2	113.31	1,012.3	942.9	2,012.2	1,937.0	75.27	26.734		
11,000.0	9,734.0	11,786.6	10,529.0	39.5	42.8	113.31	1,112.3	942.3	2,012.2	1,935.8	76.44	26.324		
11,100.0	9,734.0	11,886.6	10,529.0	40.2	43.5	113.31	1,212.3	941.6	2,012.2	1,934.5	77.69	25.900		
11,200.0	9,734.0	11,986.6	10,529.0	40.9	44.2	113.31	1,312.3	940.9	2,012.2	1,933.2	79.02	25.466		
11,300.0	9,734.0	12,086.6	10,529.0	41.6	44.9	113.31	1,412.3	940.3	2,012.2	1,931.8	80.41	25.024		
11,400.0	9,734.0	12,186.6	10,529.0	42.4	45.6	113.31	1,512.2	939.6	2,012.2	1,930.3	81.88	24.577		
11,500.0	9,734.0	12,286.6	10,529.0	43.2	46.4	113.31	1,612.2	938.9	2,012.2	1,928.8	83.40	24.127		
11,600.0	9,734.0	12,386.6	10,529.0	44.0	47.3	113.31	1,712.2	938.3	2,012.2	1,927.2	84.99	23.676		
11,700.0	9,734.0	12,486.6	10,529.0	44.9	48.1	113.31	1,812.2	937.6	2,012.2	1,925.6	86.63	23.227		
11,800.0	9,734.0	12,586.6	10,529.0	45.8	49.0	113.31	1,912.2	937.0	2,012.2	1,923.9	88.33	22.781		
11,900.0	9,734.0	12,686.6	10,529.0	46.7	49.9	113.31	2,012.2	936.3	2,012.2	1,922.1	90.08	22.339		
12,000.0	9,734.0	12,786.6	10,529.0	47.7	50.9	113.31	2,112.2	935.6	2,012.2	1,920.3	91.87	21.902		
12,100.0	9,734.0	12,886.6	10,529.0	48.6	51.8	113.31	2,212.2	935.0	2,012.2	1,918.5	93.72	21.472		
12,200.0	9,734.0	12,986.6	10,529.0	49.6	52.8	113.31	2,312.2	934.3	2,012.2	1,916.6	95.60	21.049		
12,300.0	9,734.0	13,086.6	10,529.0	50.7	53.8	113.31	2,412.2	933.7	2,012.2	1,914.7	97.52	20.633		
12,400.0	9,734.0	13,186.6	10,529.0	51.7	54.8	113.31	2,512.2	933.0	2,012.2	1,912.7	99.48	20.227		
12,500.0	9,734.0	13,286.6	10,529.0	52.8	55.9	113.31	2,612.2	932.3	2,012.2	1,910.7	101.48	19.829		
12,600.0	9,734.0	13,386.6	10,529.0	53.8	56.9	113.31	2,712.2	931.7	2,012.2	1,908.7	103.51	19.440		
12,700.0	9,734.0	13,486.6	10,529.0	54.9	58.0	113.31	2,812.2	931.0	2,012.2	1,906.6	105.57	19.060		
12,800.0	9,734.0	13,586.6	10,529.0	56.0	59.1	113.31	2,912.2	930.3	2,012.2	1,904.6	107.66	18.690		
12,900.0	9,734.0	13,686.6	10,529.0	57.2	60.2	113.31	3,012.2	929.7	2,012.2	1,902.4	109.78	18.329		
13,000.0	9,734.0	13,786.6	10,529.0	58.3	61.3	113.31	3,112.2	929.0	2,012.2	1,900.3	111.93	17.978		
13,100.0	9,734.0	13,886.6	10,529.0	59.5	62.4	113.31	3,212.2	928.4	2,012.2	1,898.1	114.10	17.636		
13,200.0	9,734.0	13,986.6	10,529.0	60.6	63.6	113.31	3,312.2	927.7	2,012.2	1,895.9	116.29	17.303		
13,300.0	9,734.0	14,086.6	10,529.0	61.8	64.7	113.31	3,412.2	927.0	2,012.2	1,893.7	118.51	16.979		
13,400.0	9,734.0	14,186.6	10,529.0	63.0	65.9	113.31	3,512.2	926.4	2,012.2	1,891.5	120.75	16.665		
13,500.0	9,734.0	14,286.6	10,529.0	64.2	67.1	113.31	3,612.2	925.7	2,012.2	1,889.2	123.00	16.359		
13,600.0	9,734.0	14,386.6	10,529.0	65.4	68.3	113.31	3,712.2	925.1	2,012.2	1,886.9	125.28	16.062		
13,700.0	9,734.0	14,486.6	10,529.0	66.6	69.5	113.31	3,812.2	924.4	2,012.2	1,884.6	127.57	15.773		
13,800.0	9,734.0	14,586.6	10,529.0	67.8	70.7	113.31	3,912.2	923.7	2,012.2	1,882.3	129.88	15.492		
13,900.0	9,734.0	14,686.6	10,529.0	69.1	71.9	113.31	4,012.2	923.1	2,012.2	1,880.0	132.21	15.220		
14,000.0	9,734.0	14,786.6	10,529.0	70.3	73.1	113.31	4,112.2	922.4	2,012.2	1,877.7	134.55	14.955		
14,100.0	9,734.0	14,886.6	10,529.0	71.6	74.4	113.31	4,212.2	921.7	2,012.2	1,875.3	136.91	14.697		
14,200.0	9,734.0	14,986.6	10,529.0	72.8	75.6	113.31	4,312.2	921.1	2,012.2	1,872.9	139.28	14.447		
14,300.0	9,734.0	15,086.6	10,529.0	74.1	76.9	113.31	4,412.2	920.4	2,012.2	1,870.6	141.66	14.204		
14,400.0	9,734.0	15,186.6	10,529.0	75.4	78.1	113.31	4,512.2	919.8	2,012.2	1,868.2	144.06	13.968		
14,500.0	9,734.0	15,286.6	10,529.0	76.6	79.4	113.31	4,612.2	919.1	2,012.2	1,865.8	146.46	13.739		
14,600.0	9,734.0	15,386.6	10,529.0	77.9	80.6	113.31	4,712.2	918.4	2,012.2	1,863.3	148.88	13.516		
14,700.0	9,734.0	15,486.6	10,529.0	79.2	81.9	113.31	4,812.2	917.8	2,012.2	1,860.9	151.31	13.299		
14,800.0	9,734.0	15,586.6	10,529.0	80.5	83.2	113.31	4,912.2	917.1	2,012.2	1,858.5	153.75	13.088		
14,900.0	9,734.0	15,686.6	10,529.0	81.8	84.5	113.31	5,012.2	916.5	2,012.2	1,856.0	156.20	12.883		
15,000.0	9,734.0	15,786.6	10,529.0	83.1	85.8	113.31	5,112.2	915.8	2,012.2	1,853.6	158.65	12.683		
15,100.0	9,734.0	15,886.6	10,529.0	84.4	87.1	113.31	5,212.2	915.1	2,012.2	1,851.1	161.12	12.489		
15,200.0	9,734.0	15,986.6	10,529.0	85.7	88.4	113.31	5,312.2	914.5	2,012.2	1,848.6	163.59	12.300		
15,300.0	9,734.0	16,086.6	10,529.0	87.0	89.7	113.31	5,412.2	913.8	2,012.2	1,846.1	166.08	12.116		
15,400.0	9,734.0	16,186.6	10,529.0	88.4	91.0	113.31	5,512.2	913.1	2,012.2	1,843.7	168.57	11.937		
15,500.0	9,734.0	16,286.6	10,529.0	89.7	92.3	113.31	5,612.2	912.5	2,012.2	1,841.2	171.06	11.763		

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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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: Emerald Pad 2 - Emerald Fed Com 606H - 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)				
15,600.0	9,734.0	16,386.6	10,529.0	91.0	93.6	113.31	5,712.2	911.8	2,012.2	1,838.7	173.57	11.593			
15,700.0	9,734.0	16,486.6	10,529.0	92.4	94.9	113.31	5,812.2	911.2	2,012.2	1,836.1	176.08	11.428			
15,800.0	9,734.0	16,586.6	10,529.0	93.7	96.2	113.31	5,912.2	910.5	2,012.2	1,833.6	178.60	11.267			
15,900.0	9,734.0	16,686.6	10,529.0	95.0	97.6	113.31	6,012.1	909.8	2,012.2	1,831.1	181.12	11.110			
16,000.0	9,734.0	16,786.6	10,529.0	96.4	98.9	113.31	6,112.1	909.2	2,012.2	1,828.6	183.65	10.957			
16,100.0	9,734.0	16,886.6	10,529.0	97.7	100.2	113.31	6,212.1	908.5	2,012.2	1,826.0	186.18	10.808			
16,200.0	9,734.0	16,986.6	10,529.0	99.1	101.6	113.31	6,312.1	907.9	2,012.2	1,823.5	188.72	10.662			
16,300.0	9,734.0	17,086.6	10,529.0	100.4	102.9	113.31	6,412.1	907.2	2,012.2	1,820.9	191.27	10.520			
16,400.0	9,734.0	17,186.6	10,529.0	101.8	104.3	113.31	6,512.1	906.5	2,012.2	1,818.4	193.82	10.382			
16,500.0	9,734.0	17,286.6	10,529.0	103.1	105.6	113.31	6,612.1	905.9	2,012.2	1,815.8	196.38	10.247			
16,600.0	9,734.0	17,386.6	10,529.0	104.5	107.0	113.31	6,712.1	905.2	2,012.2	1,813.3	198.94	10.115			
16,700.0	9,734.0	17,486.6	10,529.0	105.8	108.3	113.31	6,812.1	904.5	2,012.2	1,810.7	201.50	9.986			
16,800.0	9,734.0	17,586.6	10,529.0	107.2	109.7	113.31	6,912.1	903.9	2,012.2	1,808.1	204.07	9.861			
16,900.0	9,734.0	17,686.6	10,529.0	108.6	111.0	113.31	7,012.1	903.2	2,012.2	1,805.6	206.64	9.738			
17,000.0	9,734.0	17,786.6	10,529.0	109.9	112.4	113.31	7,112.1	902.6	2,012.2	1,803.0	209.22	9.618			
17,100.0	9,734.0	17,886.6	10,529.0	111.3	113.7	113.31	7,212.1	901.9	2,012.2	1,800.4	211.80	9.501			
17,200.0	9,734.0	17,986.6	10,529.0	112.7	115.1	113.31	7,312.1	901.2	2,012.2	1,797.8	214.38	9.386			
17,300.0	9,734.0	18,086.6	10,529.0	114.1	116.5	113.31	7,412.1	900.6	2,012.2	1,795.2	216.97	9.274			
17,400.0	9,734.0	18,186.6	10,529.0	115.4	117.8	113.31	7,512.1	899.9	2,012.2	1,792.7	219.56	9.165			
17,500.0	9,734.0	18,286.6	10,529.0	116.8	119.2	113.31	7,612.1	899.3	2,012.2	1,790.1	222.16	9.058			
17,600.0	9,734.0	18,386.6	10,529.0	118.2	120.6	113.31	7,712.1	898.6	2,012.2	1,787.5	224.75	8.953			
17,700.0	9,734.0	18,486.6	10,529.0	119.6	121.9	113.31	7,812.1	897.9	2,012.2	1,784.9	227.35	8.851			
17,800.0	9,734.0	18,586.6	10,529.0	121.0	123.3	113.31	7,912.1	897.3	2,012.2	1,782.3	229.96	8.750			
17,900.0	9,734.0	18,686.6	10,529.0	122.3	124.7	113.31	8,012.1	896.6	2,012.2	1,779.7	232.56	8.652			
18,000.0	9,734.0	18,786.6	10,529.0	123.7	126.1	113.31	8,112.1	895.9	2,012.2	1,777.0	235.17	8.556			
18,100.0	9,734.0	18,886.6	10,529.0	125.1	127.4	113.31	8,212.1	895.3	2,012.2	1,774.4	237.79	8.462			
18,200.0	9,734.0	18,986.6	10,529.0	126.5	128.8	113.31	8,312.1	894.6	2,012.2	1,771.8	240.40	8.370			
18,300.0	9,734.0	19,086.6	10,529.0	127.9	130.2	113.31	8,412.1	894.0	2,012.2	1,769.2	243.02	8.280			
18,400.0	9,734.0	19,186.6	10,529.0	129.3	131.6	113.31	8,512.1	893.3	2,012.2	1,766.6	245.64	8.192			
18,500.0	9,734.0	19,286.6	10,529.0	130.7	133.0	113.31	8,612.1	892.6	2,012.2	1,764.0	248.26	8.105			
18,600.0	9,734.0	19,386.6	10,529.0	132.1	134.4	113.31	8,712.1	892.0	2,012.2	1,761.3	250.88	8.020			
18,700.0	9,734.0	19,486.6	10,529.0	133.4	135.7	113.31	8,812.1	891.3	2,012.2	1,758.7	253.51	7.937			
18,800.0	9,734.0	19,586.6	10,529.0	134.8	137.1	113.31	8,912.1	890.7	2,012.2	1,756.1	256.14	7.856			
18,900.0	9,734.0	19,686.6	10,529.0	136.2	138.5	113.31	9,012.1	890.0	2,012.2	1,753.4	258.77	7.776			
19,000.0	9,734.0	19,786.6	10,529.0	137.6	139.9	113.31	9,112.1	889.3	2,012.2	1,750.8	261.40	7.698			
19,100.0	9,734.0	19,886.6	10,529.0	139.0	141.3	113.31	9,212.1	888.7	2,012.2	1,748.2	264.04	7.621			
19,200.0	9,734.0	19,986.6	10,529.0	140.4	142.7	113.31	9,312.1	888.0	2,012.2	1,745.5	266.67	7.546			
19,300.0	9,734.0	20,086.6	10,529.0	141.8	144.1	113.31	9,412.1	887.3	2,012.2	1,742.9	269.31	7.472			
19,400.0	9,734.0	20,186.6	10,529.0	143.2	145.5	113.31	9,512.1	886.7	2,012.2	1,740.3	271.95	7.399			
19,500.0	9,734.0	20,286.6	10,529.0	144.6	146.9	113.31	9,612.1	886.0	2,012.2	1,737.6	274.59	7.328			
19,600.0	9,734.0	20,386.6	10,529.0	146.0	148.3	113.31	9,712.1	885.4	2,012.2	1,735.0	277.24	7.258			
19,700.0	9,734.0	20,486.6	10,529.0	147.4	149.7	113.31	9,812.1	884.7	2,012.2	1,732.3	279.88	7.189			
19,800.0	9,734.0	20,586.6	10,529.0	148.8	151.1	113.31	9,912.1	884.0	2,012.2	1,729.7	282.53	7.122			
19,900.0	9,734.0	20,686.6	10,529.0	150.3	152.5	113.31	10,012.1	883.4	2,012.2	1,727.0	285.18	7.056			
20,000.0	9,734.0	20,786.6	10,529.0	151.7	153.9	113.31	10,112.1	882.7	2,012.2	1,724.4	287.83	6.991			
20,019.5	9,734.0	20,806.1	10,529.0	151.9	154.1	113.31	10,131.5	882.6	2,012.2	1,723.9	288.34	6.979 SF			

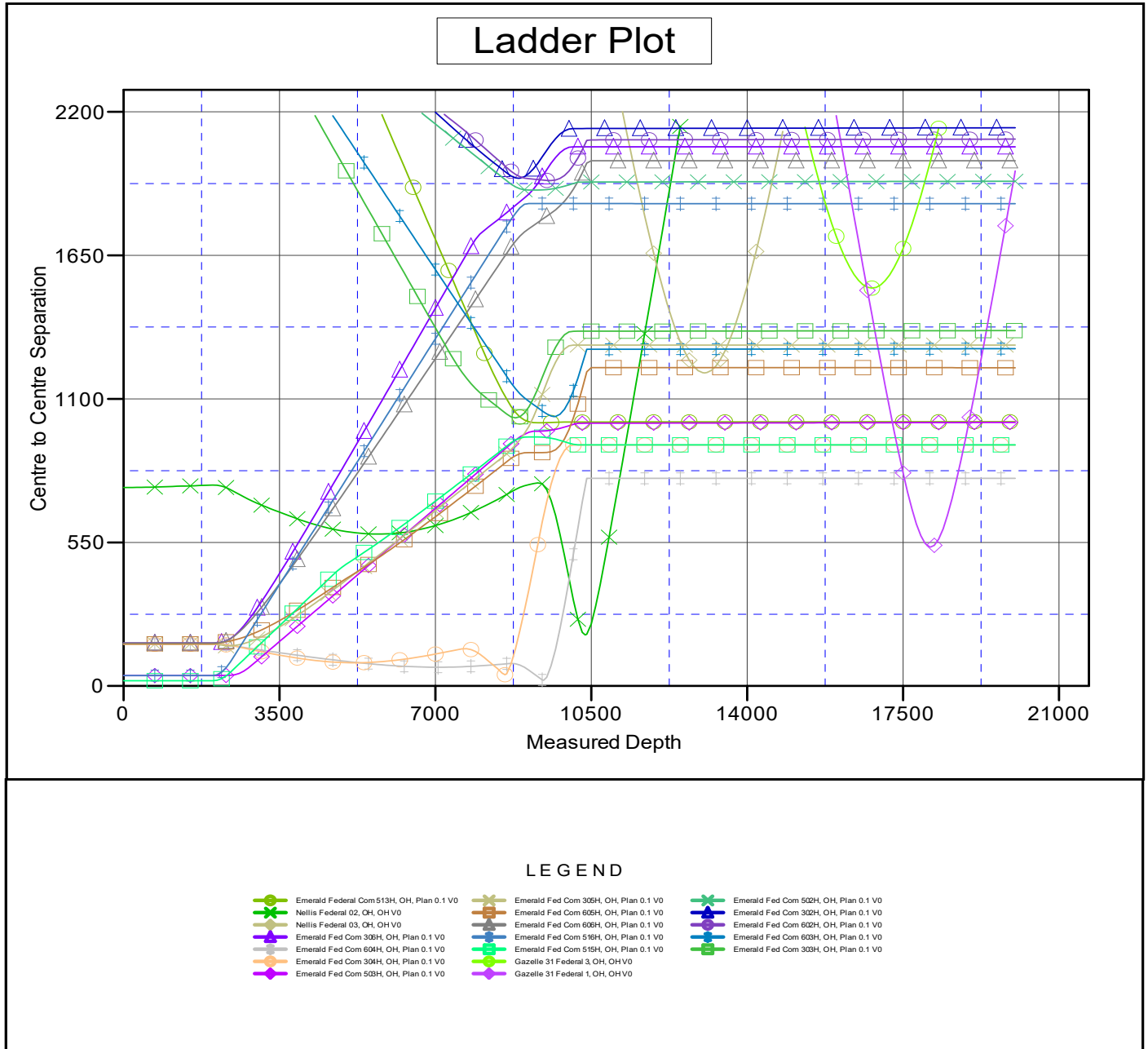
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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 @ 3709.6usft (Original Well Ele)
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Emerald Fed Com 514H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.34°



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 Emerald Fed Com 514H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	WELL @ 3709.6usft (Original Well Elev)
Reference Site:	Emerald Pad 2	MD Reference:	WELL @ 3709.6usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Emerald Fed Com 514H	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 @ 3709.6usft (Original Well Ele

Offset Depths are relative to Offset Datum

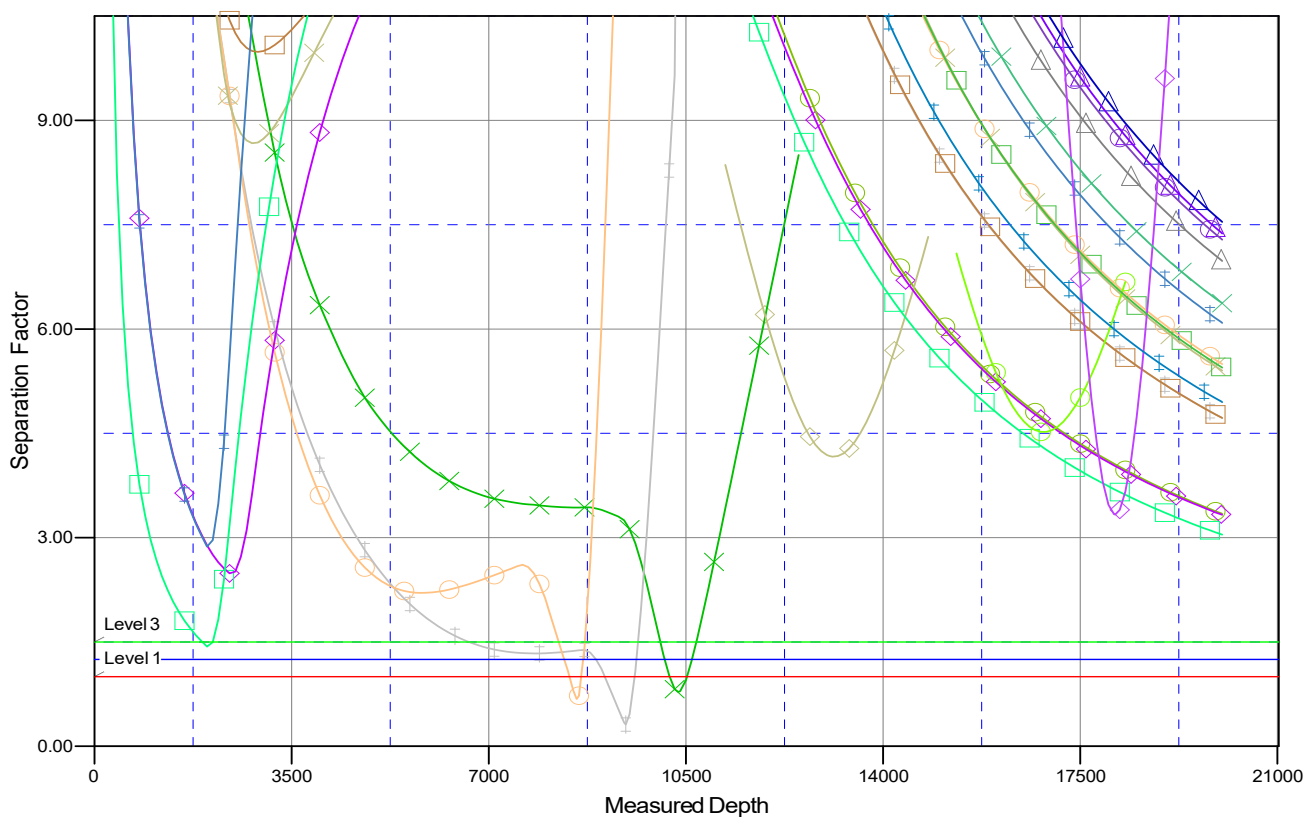
Central Meridian is -104.333334

Coordinates are relative to: Emerald Fed Com 514H

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

Grid Convergence at Surface is: 0.34°

Separation Factor Plot



LEGEND

Emerald Federal Com 513H, OH, Plan 0.1 V0	Emerald Fed Com 305H, OH, Plan 0.1 V0	Emerald Fed Com 502H, OH, Plan 0.1 V0
Nellis Federal 02, OH, OHV0	Emerald Fed Com 605H, OH, Plan 0.1 V0	Emerald Fed Com 302H, OH, Plan 0.1 V0
Nellis Federal 03, OH, OHV0	Emerald Fed Com 606H, OH, Plan 0.1 V0	Emerald Fed Com 602H, OH, Plan 0.1 V0
Emerald Fed Com 306H, OH, Plan 0.1 V0	Emerald Fed Com 516H, OH, Plan 0.1 V0	Emerald Fed Com 603H, OH, Plan 0.1 V0
Emerald Fed Com 604H, OH, Plan 0.1 V0	Emerald Fed Com 515H, OH, Plan 0.1 V0	Emerald Fed Com 303H, OH, Plan 0.1 V0
Emerald Fed Com 304H, OH, Plan 0.1 V0	Gazelle 31 Federal 3, OH, OHV0	
Emerald Fed Com 503H, OH, Plan 0.1 V0	Gazelle 31 Federal 1, OH, OHV0	

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 384424

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 384424
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	9/18/2024