

HOBBS OCD

JAN 18 2017

Submit 1 Copy To Appropriate District Office

District I - (575) 393-6161

1625 N. French Dr., Hobbs, NM 88240

District II - (575) 748-1283

811 S. First St., Artesia, NM 88210

District III - (505) 334-6178

1000 Rio Brazos Rd., Aztec, NM 87410

District IV - (505) 476-3460

1220 S. St. Francis Dr., Santa Fe, NM

87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103

Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-43442
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY, LP		6. State Oil & Gas Lease No.
3. Address of Operator 333 W. Sheridan Avenue Oklahoma City, OK 73102		7. Lease Name or Unit Agreement Name Thistle Unit
4. Well Location Unit Letter <u>P</u> : 185 feet from the <u>South</u> line and 400 feet from the <u>East</u> line Section <u>34</u> Township <u>23S</u> Range <u>33E</u> NMPM <u>Lea</u> , County		8. Well Number <u>138H</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3640		9. OGRID Number <u>6137</u>
		10. Pool name or Wildcat Triple X; Bone Spring

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
 TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
 PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
 DOWNHOLE COMMINGLE ☐
 CLOSED-LOOP SYSTEM ☐
 OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
 COMMENCE DRILLING OPNS. ☐ P AND A ☐
 CASING/CEMENT JOB ☐
 OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Devon Energy respectfully requests to change the target formation from Leonard B to Leonard C, with a TVD of 10,093' @ LP. Please see the attached revised C-102, Drilling Plan, & Directional Survey.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

Rebecca Deal

TITLE Regulatory Analyst

DATE 1/12/2017

Type or print name Rebecca Deal

E-mail address: rebecca.deal@dvn.com

PHONE: 405-228-88429

For State Use Only

APPROVED BY:

[Signature]

TITLE

Petroleum Engineer

DATE

01/24/17

Conditions of Approval (if any):

JAN 18 2017

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Devon Energy, Thistle Unit 138H

1. Geologic Formations

TVD of target	9,724'	Pilot hole depth	N/A
MD at TD:	17,766'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1,324		
Top of Salt	1,824		
Base of Salt	4,969		
Delaware	5,236		
Lower Brushy Canyon	8,936		
1 st Bone Spring Lime	9,129		
Leonard A	9,260		
Leonard B	9,622		
Leonard B Base	9,732		
Leonard C	9,973		

*H₂S, water flows, loss of circulation, abnormal pressures, etc.

Devon Energy, Thistle Unit 138H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1,350'	13.375"	48	H-40	STC	1.18	2.64	8.05
12.25"	0	4,300'	9.625"	40	J-55	BTC	1.15	1.77	4.15
12.25"	4,300'	5,100'	9.625"	40	HCK-55	BTC	1.58	1.47	4.50
8.75"	0	17,766'	5.5"	17	P-110	BTC	1.56	1.93	2.09
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Devon Energy, Thistle Unit 138H

3. Cementing Program

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	680	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	550	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
13-3/8" Surface Two Stage	460	12.9	9.81	1.85	14	1 st Stage Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	550	14.8	6.32	1.33	6	1 st Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	DV Tool = 300ft					
	320	14.8	6.32	1.33	6	2 nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1060	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod	430	10.9	20.6	3.31	24	Lead: (50:40:10) Class C: Silicalite: Enhancer 923 + 10% BWOC Bentonite + 0.05% BWOC SA-1015 + 0.3% BWOC HR-800 + 0.2% BWOC FE-2 + 0.125 lb/sk Pol-E-Flake + 0.5 lb/sk D-Air 5000
	1800	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	100%
13-3/8" Surface – Two Stage Option	1 st Stage = 300' / 2 nd Stage = 0'	100%
9-5/8" Intermediate	0'	75%
5-1/2" Production Casing	4900'	25%

Devon Energy, Thistle Unit 138H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Devon Energy, Thistle Unit 138H

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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. • Wellhead will be installed by wellhead representatives. • If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Wellhead representative will install the test plug for the initial BOP test. • Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon Energy, Thistle Unit 138H

	Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1,350'	FW Gel	8.6-8.8	28-34	N/C
1,350'	5,100'	Saturated Brine	10.0-10.2	28-34	N/C
5,100'	17,766'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

Devon Energy, Thistle Unit 138H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4703 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N H₂S is present

Y H₂S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Thistle Unit
Well: 138H
Wellbore: OH
Design: Plan #1

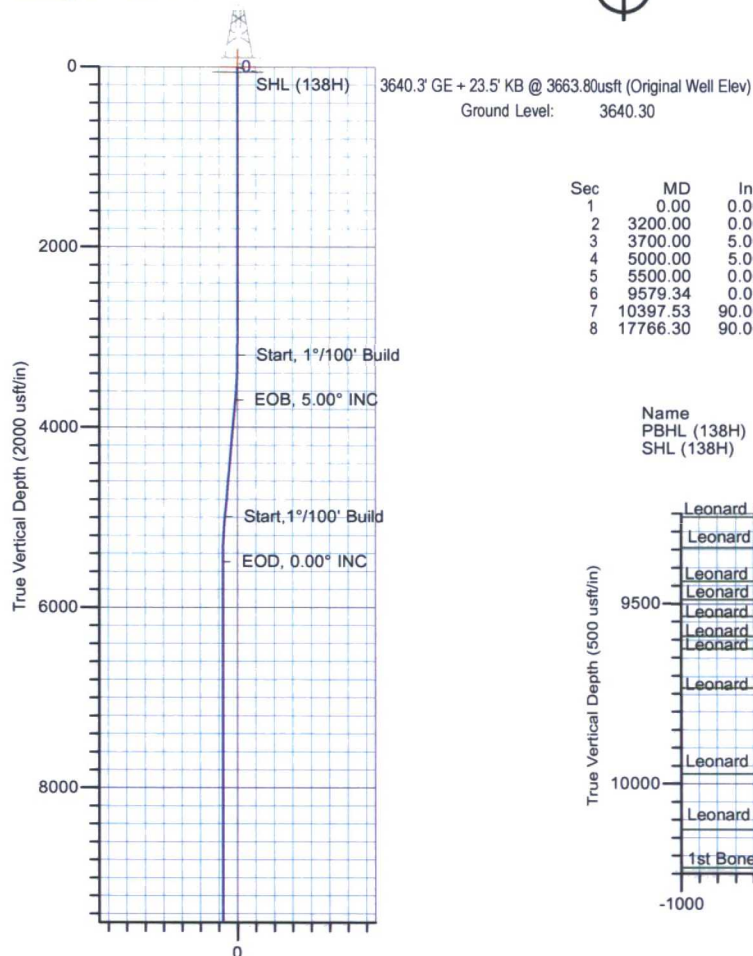


Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.48°

Magnetic Field
Strength: 48205.2snT
Dip Angle: 60.05°
Date: 1/5/2017
Model: HDGM

PROJECT DETAILS: Lea County, NM (NAD-83)

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

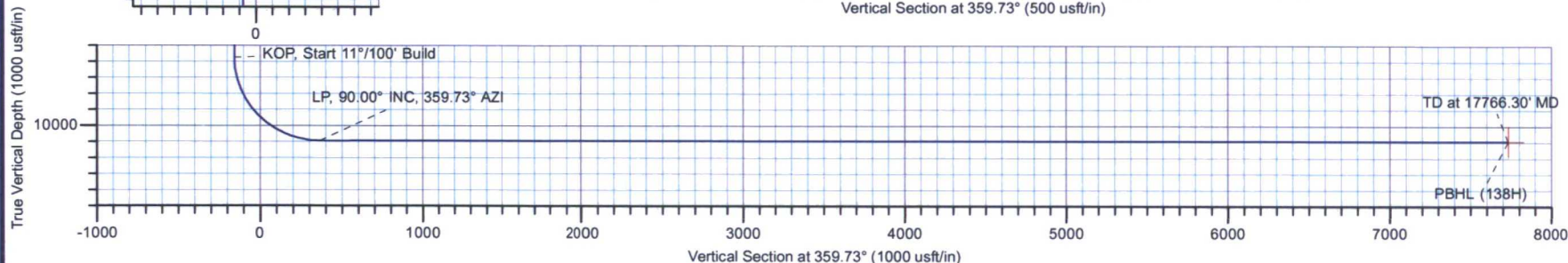
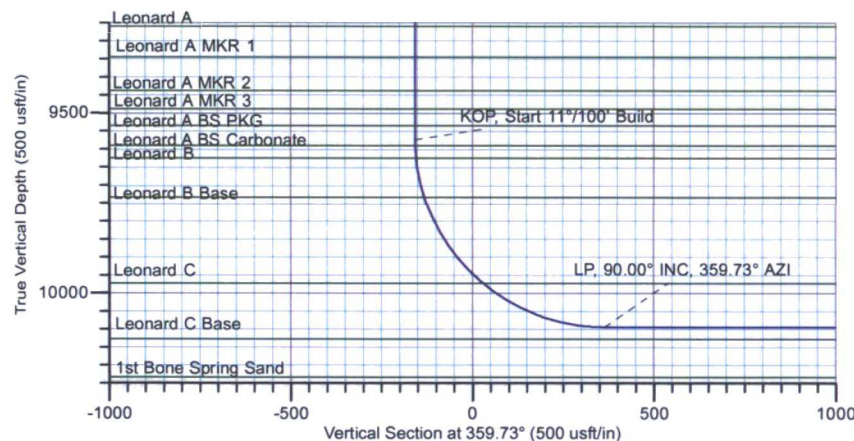


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	Start, 1°/100' Build
3	3700.00	5.00	180.00	3699.37	-21.80	0.00	1.00	180.00	-21.80	EOB, 5.00° INC
4	5000.00	5.00	180.00	4994.42	-135.11	0.00	0.00	0.00	-135.10	Start, 1°/100' Build
5	5500.00	0.00	0.00	5493.78	-156.91	0.00	1.00	180.00	-156.91	EOD, 0.00° INC
6	9579.34	0.00	0.00	9573.13	-156.91	0.00	0.00	0.00	-156.91	KOP, Start 11°/100' Build
7	10397.53	90.00	359.73	10094.00	363.96	-2.48	11.00	359.73	363.96	LP, 90.00° INC, 359.73° AZI
8	17766.30	90.00	359.73	10094.00	7732.65	-37.51	0.00	0.00	7732.74	TD at 17766.30' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PBHL (138H)	10094.00	7732.65	-37.51	32° 16' 32.321 N	103° 33' 10.435 W
SHL (138H)	0.00	0.00	0.00	32° 15' 15.804 N	103° 33' 10.653 W



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LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (138H/OH)
Thistle Unit
Created By: Brady Deaver
Date: 14:00, January 12 2017
Approved: _____
Date: _____

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Thistle Unit
Well: 138H
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.48°

Magnetic Field
Strength: 48205.2snT
Dip Angle: 60.05°
Date: 1/5/2017
Model: HDGM



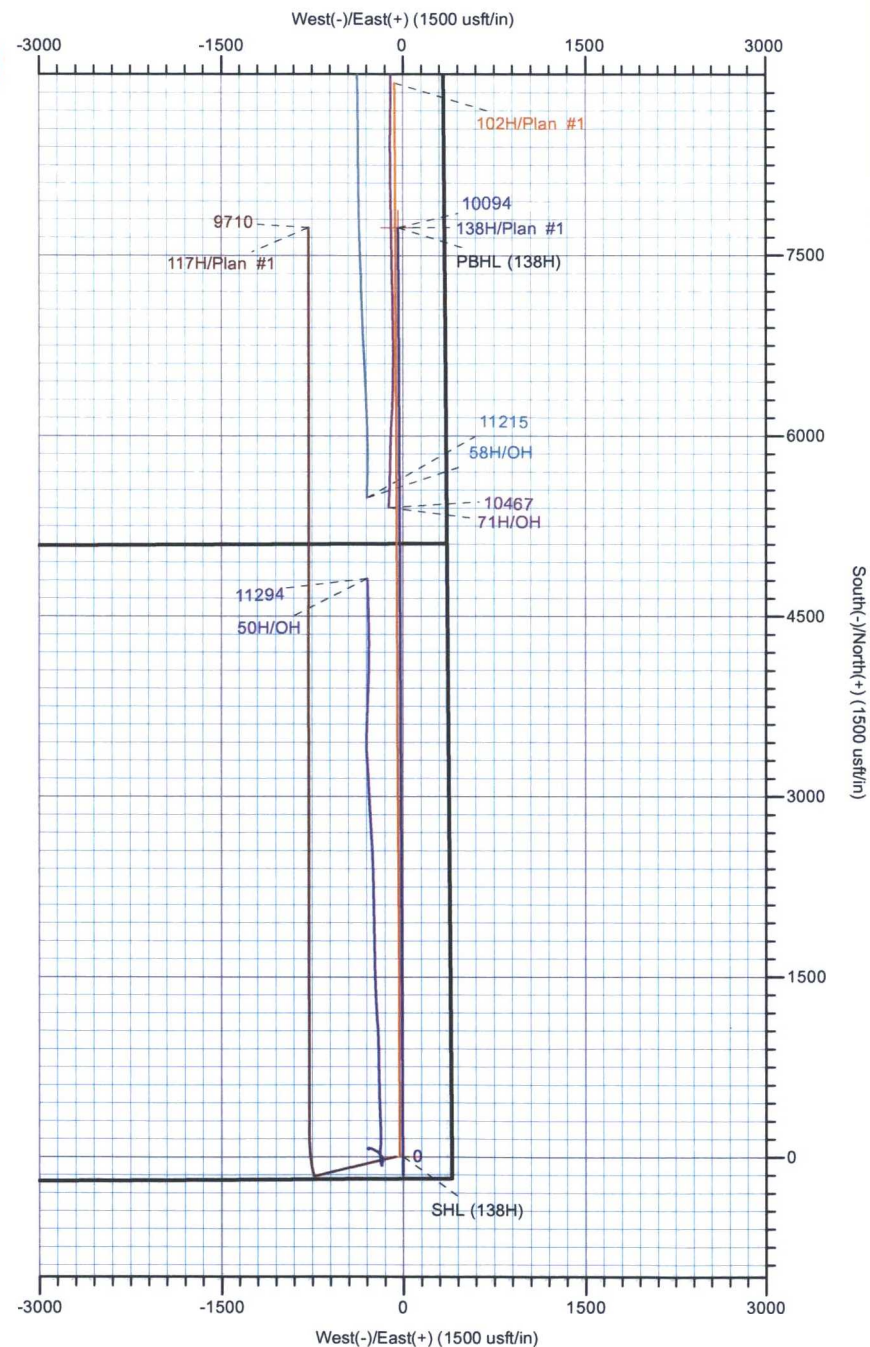
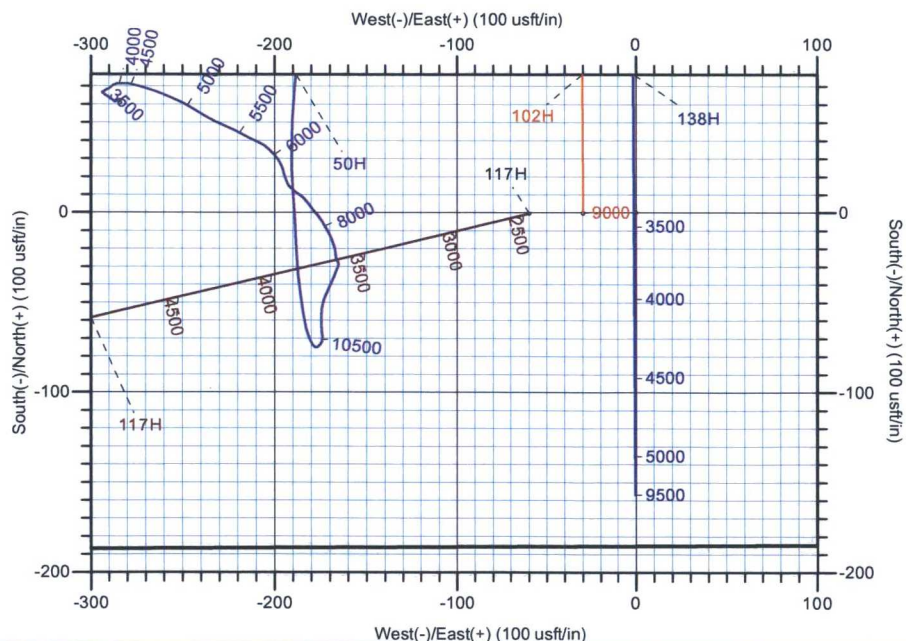
PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	
3700.00	5.00	180.00	3699.37	-21.80	0.00	1.00	180.00	-21.80	
5000.00	5.00	180.00	4994.42	-135.11	0.00	0.00	0.00	-135.10	
5500.00	0.00	0.00	5493.78	-156.91	0.00	1.00	180.00	-156.91	
9579.34	0.00	0.00	9573.13	-156.91	0.00	0.00	0.00	-156.91	
10397.53	90.00	359.73	10094.00	363.96	-2.48	11.00	359.73	363.96	
17766.30	90.00	359.73	10094.00	7732.65	-37.51	0.00	0.00	7732.74	PBHL (138H)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (138H)	10094.00	7732.65	-37.51	464889.75	782539.61	32° 16' 32.321 N	103° 33' 10.435 W
SHL (138H)	0.00	0.00	0.00	457157.10	782577.12	32° 15' 15.804 N	103° 33' 10.653 W



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (138H/OH)
Thistle Unit

Created By: Brady Deaver
Date: 14:05, January 12 2017
Approved: _____
Date: _____

Devon Energy

Lea County, NM (NAD-83)

Thistle Unit

138H

OH

Plan: Plan #1

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Standard Planning Report

12 January, 2017

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 138H
Company:	Devon Energy	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	138H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Lea County, 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	Thistle Unit				
Site Position:		Northing:	468,026.90 usft	Latitude:	32° 17' 3.494 N
From:	Map	Easting:	780,722.56 usft	Longitude:	103° 33' 31.335 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	138H					
Well Position	+N-S	-10,869.80 usft	Northing:	457,157.10 usft	Latitude:	32° 15' 15.804 N
	+E-W	1,854.56 usft	Easting:	782,577.12 usft	Longitude:	103° 33' 10.653 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	3,663.80 usft	Ground Level:	3,640.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/5/2017	6.90	60.05	48,205

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.73

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,700.00	5.00	180.00	3,699.37	-21.80	0.00	1.00	1.00	0.00	180.00	
5,000.00	5.00	180.00	4,994.42	-135.11	0.00	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,493.78	-156.91	0.00	1.00	-1.00	0.00	180.00	
9,579.35	0.00	0.00	9,573.13	-156.91	0.00	0.00	0.00	0.00	0.00	
10,397.53	90.00	359.73	10,094.00	363.96	-2.48	11.00	11.00	0.00	359.73	
17,766.30	90.00	359.73	10,094.00	7,732.65	-37.51	0.00	0.00	0.00	0.00	PBHL (138H)

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Thistle Unit
Well: 138H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (138H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,323.80	0.00	0.00	1,323.80	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,823.80	0.00	0.00	1,823.80	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start, 1°/100' Build									
3,300.00	1.00	180.00	3,299.99	-0.87	0.00	-0.87	1.00	1.00	0.00
3,400.00	2.00	180.00	3,399.96	-3.49	0.00	-3.49	1.00	1.00	0.00
3,500.00	3.00	180.00	3,499.86	-7.85	0.00	-7.85	1.00	1.00	0.00
3,600.00	4.00	180.00	3,599.68	-13.96	0.00	-13.96	1.00	1.00	0.00
3,700.00	5.00	180.00	3,699.37	-21.80	0.00	-21.80	1.00	1.00	0.00
EOB, 5.00° INC									
3,800.00	5.00	180.00	3,798.99	-30.52	0.00	-30.52	0.00	0.00	0.00
3,900.00	5.00	180.00	3,898.60	-39.23	0.00	-39.23	0.00	0.00	0.00
4,000.00	5.00	180.00	3,998.22	-47.95	0.00	-47.95	0.00	0.00	0.00
4,100.00	5.00	180.00	4,097.84	-56.67	0.00	-56.66	0.00	0.00	0.00
4,200.00	5.00	180.00	4,197.46	-65.38	0.00	-65.38	0.00	0.00	0.00
4,300.00	5.00	180.00	4,297.08	-74.10	0.00	-74.10	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Thistle Unit
Well: 138H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.00	5.00	180.00	4,396.70	-82.81	0.00	-82.81	0.00	0.00	0.00
4,500.00	5.00	180.00	4,496.32	-91.53	0.00	-91.53	0.00	0.00	0.00
4,600.00	5.00	180.00	4,595.94	-100.24	0.00	-100.24	0.00	0.00	0.00
4,700.00	5.00	180.00	4,695.56	-108.96	0.00	-108.96	0.00	0.00	0.00
4,800.00	5.00	180.00	4,795.18	-117.67	0.00	-117.67	0.00	0.00	0.00
4,900.00	5.00	180.00	4,894.80	-126.39	0.00	-126.39	0.00	0.00	0.00
4,974.28	5.00	180.00	4,968.80	-132.86	0.00	-132.86	0.00	0.00	0.00
Base of Salt									
5,000.00	5.00	180.00	4,994.42	-135.11	0.00	-135.10	0.00	0.00	0.00
Start, 1°/100' Build									
5,100.00	4.00	180.00	5,094.11	-142.95	0.00	-142.95	1.00	-1.00	0.00
5,200.00	3.00	180.00	5,193.92	-149.06	0.00	-149.05	1.00	-1.00	0.00
5,241.93	2.58	180.00	5,235.80	-151.10	0.00	-151.10	1.00	-1.00	0.00
Delaware									
5,300.00	2.00	180.00	5,293.83	-153.42	0.00	-153.42	1.00	-1.00	0.00
5,400.00	1.00	180.00	5,393.79	-156.04	0.00	-156.03	1.00	-1.00	0.00
5,500.00	0.00	0.00	5,493.78	-156.91	0.00	-156.91	1.00	-1.00	0.00
EOD, 0.00° INC									
5,600.00	0.00	0.00	5,593.78	-156.91	0.00	-156.91	0.00	0.00	0.00
5,700.00	0.00	0.00	5,693.78	-156.91	0.00	-156.91	0.00	0.00	0.00
5,800.00	0.00	0.00	5,793.78	-156.91	0.00	-156.91	0.00	0.00	0.00
5,900.00	0.00	0.00	5,893.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,000.00	0.00	0.00	5,993.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,100.00	0.00	0.00	6,093.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,200.00	0.00	0.00	6,193.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,300.00	0.00	0.00	6,293.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,400.00	0.00	0.00	6,393.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,500.00	0.00	0.00	6,493.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,600.00	0.00	0.00	6,593.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,700.00	0.00	0.00	6,693.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,800.00	0.00	0.00	6,793.78	-156.91	0.00	-156.91	0.00	0.00	0.00
6,900.00	0.00	0.00	6,893.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,000.00	0.00	0.00	6,993.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,100.00	0.00	0.00	7,093.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,200.00	0.00	0.00	7,193.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,300.00	0.00	0.00	7,293.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,400.00	0.00	0.00	7,393.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,500.00	0.00	0.00	7,493.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,600.00	0.00	0.00	7,593.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,700.00	0.00	0.00	7,693.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,800.00	0.00	0.00	7,793.78	-156.91	0.00	-156.91	0.00	0.00	0.00
7,900.00	0.00	0.00	7,893.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,000.00	0.00	0.00	7,993.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,100.00	0.00	0.00	8,093.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,200.00	0.00	0.00	8,193.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,300.00	0.00	0.00	8,293.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,400.00	0.00	0.00	8,393.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,500.00	0.00	0.00	8,493.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,600.00	0.00	0.00	8,593.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,700.00	0.00	0.00	8,693.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,800.00	0.00	0.00	8,793.78	-156.91	0.00	-156.91	0.00	0.00	0.00
8,900.00	0.00	0.00	8,893.78	-156.91	0.00	-156.91	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 138H
Company:	Devon Energy	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	138H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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)
8,942.02	0.00	0.00	8,935.80	-156.91	0.00	-156.91	0.00	0.00	0.00
Lower Brushy									
9,000.00	0.00	0.00	8,993.78	-156.91	0.00	-156.91	0.00	0.00	0.00
9,100.00	0.00	0.00	9,093.78	-156.91	0.00	-156.91	0.00	0.00	0.00
9,135.02	0.00	0.00	9,128.80	-156.91	0.00	-156.91	0.00	0.00	0.00
1st BSPG Lime									
9,200.00	0.00	0.00	9,193.78	-156.91	0.00	-156.91	0.00	0.00	0.00
9,266.02	0.00	0.00	9,259.80	-156.91	0.00	-156.91	0.00	0.00	0.00
Leonard A									
9,300.00	0.00	0.00	9,293.78	-156.91	0.00	-156.91	0.00	0.00	0.00
9,351.02	0.00	0.00	9,344.80	-156.91	0.00	-156.91	0.00	0.00	0.00
Leonard A MKR 1									
9,400.00	0.00	0.00	9,393.78	-156.91	0.00	-156.91	0.00	0.00	0.00
9,444.02	0.00	0.00	9,437.80	-156.91	0.00	-156.91	0.00	0.00	0.00
Leonard A MKR 2									
9,494.02	0.00	0.00	9,487.80	-156.91	0.00	-156.91	0.00	0.00	0.00
Leonard A MKR 3									
9,500.00	0.00	0.00	9,493.78	-156.91	0.00	-156.91	0.00	0.00	0.00
9,540.02	0.00	0.00	9,533.80	-156.91	0.00	-156.91	0.00	0.00	0.00
Leonard A BS PKG									
9,579.35	0.00	0.00	9,573.13	-156.91	0.00	-156.91	0.00	0.00	0.00
KOP, Start 11°/100' Build									
9,595.02	1.72	359.73	9,588.80	-156.67	0.00	-156.67	11.00	11.00	0.00
Leonard A BS Carbonate									
9,600.00	2.27	359.73	9,593.78	-156.50	0.00	-156.50	11.00	11.00	0.00
9,630.10	5.58	359.73	9,623.80	-154.44	-0.01	-154.44	11.00	11.00	0.00
Leonard B									
9,650.00	7.77	359.73	9,643.57	-152.12	-0.02	-152.12	11.00	11.00	0.00
9,700.00	13.27	359.73	9,692.71	-143.00	-0.07	-142.99	11.00	11.00	0.00
9,740.58	17.74	359.73	9,731.80	-132.15	-0.12	-132.15	11.00	11.00	0.00
Leonard B Base									
9,750.00	18.77	359.73	9,740.75	-129.20	-0.13	-129.20	11.00	11.00	0.00
9,800.00	24.27	359.73	9,787.24	-110.87	-0.22	-110.86	11.00	11.00	0.00
9,850.00	29.77	359.73	9,831.77	-88.16	-0.33	-88.16	11.00	11.00	0.00
9,900.00	35.27	359.73	9,873.91	-61.29	-0.45	-61.28	11.00	11.00	0.00
9,950.00	40.77	359.73	9,913.28	-30.50	-0.60	-30.50	11.00	11.00	0.00
10,000.00	46.27	359.73	9,949.53	3.92	-0.76	3.92	11.00	11.00	0.00
10,034.92	50.11	359.73	9,972.80	29.94	-0.89	29.94	11.00	11.00	0.00
Leonard C									
10,050.00	51.77	359.73	9,982.30	41.65	-0.94	41.65	11.00	11.00	0.00
10,100.00	57.27	359.73	10,011.31	82.35	-1.14	82.36	11.00	11.00	0.00
10,150.00	62.77	359.73	10,036.28	125.64	-1.34	125.65	11.00	11.00	0.00
10,200.00	68.27	359.73	10,056.99	171.13	-1.56	171.14	11.00	11.00	0.00
10,250.00	73.77	359.73	10,073.25	218.40	-1.78	218.40	11.00	11.00	0.00
10,300.00	79.27	359.73	10,084.90	267.00	-2.02	267.01	11.00	11.00	0.00
10,350.00	84.77	359.73	10,091.83	316.50	-2.25	316.50	11.00	11.00	0.00
10,397.53	90.00	359.73	10,094.00	363.96	-2.48	363.96	11.00	11.00	0.00
LP, 90.00° INC, 359.73° AZI									
10,400.00	90.00	359.73	10,094.00	366.43	-2.49	366.44	0.00	0.00	0.00
10,500.00	90.00	359.73	10,094.00	466.43	-2.96	466.44	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 Multi User Db
Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Thistle Unit
Well: 138H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
10,600.00	90.00	359.73	10,094.00	566.43	-3.44	566.44	0.00	0.00	0.00
10,700.00	90.00	359.73	10,094.00	666.43	-3.91	666.44	0.00	0.00	0.00
10,800.00	90.00	359.73	10,094.00	766.43	-4.39	766.44	0.00	0.00	0.00
10,900.00	90.00	359.73	10,094.00	866.42	-4.87	866.44	0.00	0.00	0.00
11,000.00	90.00	359.73	10,094.00	966.42	-5.34	966.44	0.00	0.00	0.00
11,100.00	90.00	359.73	10,094.00	1,066.42	-5.82	1,066.44	0.00	0.00	0.00
11,200.00	90.00	359.73	10,094.00	1,166.42	-6.29	1,166.44	0.00	0.00	0.00
11,300.00	90.00	359.73	10,094.00	1,266.42	-6.77	1,266.44	0.00	0.00	0.00
11,400.00	90.00	359.73	10,094.00	1,366.42	-7.24	1,366.44	0.00	0.00	0.00
11,500.00	90.00	359.73	10,094.00	1,466.42	-7.72	1,466.44	0.00	0.00	0.00
11,600.00	90.00	359.73	10,094.00	1,566.42	-8.19	1,566.44	0.00	0.00	0.00
11,700.00	90.00	359.73	10,094.00	1,666.42	-8.67	1,666.44	0.00	0.00	0.00
11,800.00	90.00	359.73	10,094.00	1,766.41	-9.14	1,766.44	0.00	0.00	0.00
11,900.00	90.00	359.73	10,094.00	1,866.41	-9.62	1,866.44	0.00	0.00	0.00
12,000.00	90.00	359.73	10,094.00	1,966.41	-10.10	1,966.44	0.00	0.00	0.00
12,100.00	90.00	359.73	10,094.00	2,066.41	-10.57	2,066.44	0.00	0.00	0.00
12,200.00	90.00	359.73	10,094.00	2,166.41	-11.05	2,166.44	0.00	0.00	0.00
12,300.00	90.00	359.73	10,094.00	2,266.41	-11.52	2,266.44	0.00	0.00	0.00
12,400.00	90.00	359.73	10,094.00	2,366.41	-12.00	2,366.44	0.00	0.00	0.00
12,500.00	90.00	359.73	10,094.00	2,466.41	-12.47	2,466.44	0.00	0.00	0.00
12,600.00	90.00	359.73	10,094.00	2,566.41	-12.95	2,566.44	0.00	0.00	0.00
12,700.00	90.00	359.73	10,094.00	2,666.40	-13.42	2,666.44	0.00	0.00	0.00
12,800.00	90.00	359.73	10,094.00	2,766.40	-13.90	2,766.44	0.00	0.00	0.00
12,900.00	90.00	359.73	10,094.00	2,866.40	-14.37	2,866.44	0.00	0.00	0.00
13,000.00	90.00	359.73	10,094.00	2,966.40	-14.85	2,966.44	0.00	0.00	0.00
13,100.00	90.00	359.73	10,094.00	3,066.40	-15.32	3,066.44	0.00	0.00	0.00
13,200.00	90.00	359.73	10,094.00	3,166.40	-15.80	3,166.44	0.00	0.00	0.00
13,300.00	90.00	359.73	10,094.00	3,266.40	-16.28	3,266.44	0.00	0.00	0.00
13,400.00	90.00	359.73	10,094.00	3,366.40	-16.75	3,366.44	0.00	0.00	0.00
13,500.00	90.00	359.73	10,094.00	3,466.40	-17.23	3,466.44	0.00	0.00	0.00
13,600.00	90.00	359.73	10,094.00	3,566.39	-17.70	3,566.44	0.00	0.00	0.00
13,700.00	90.00	359.73	10,094.00	3,666.39	-18.18	3,666.44	0.00	0.00	0.00
13,800.00	90.00	359.73	10,094.00	3,766.39	-18.65	3,766.44	0.00	0.00	0.00
13,900.00	90.00	359.73	10,094.00	3,866.39	-19.13	3,866.44	0.00	0.00	0.00
14,000.00	90.00	359.73	10,094.00	3,966.39	-19.60	3,966.44	0.00	0.00	0.00
14,100.00	90.00	359.73	10,094.00	4,066.39	-20.08	4,066.44	0.00	0.00	0.00
14,200.00	90.00	359.73	10,094.00	4,166.39	-20.55	4,166.44	0.00	0.00	0.00
14,300.00	90.00	359.73	10,094.00	4,266.39	-21.03	4,266.44	0.00	0.00	0.00
14,400.00	90.00	359.73	10,094.00	4,366.38	-21.51	4,366.44	0.00	0.00	0.00
14,500.00	90.00	359.73	10,094.00	4,466.38	-21.98	4,466.44	0.00	0.00	0.00
14,600.00	90.00	359.73	10,094.00	4,566.38	-22.46	4,566.44	0.00	0.00	0.00
14,700.00	90.00	359.73	10,094.00	4,666.38	-22.93	4,666.44	0.00	0.00	0.00
14,800.00	90.00	359.73	10,094.00	4,766.38	-23.41	4,766.44	0.00	0.00	0.00
14,900.00	90.00	359.73	10,094.00	4,866.38	-23.88	4,866.44	0.00	0.00	0.00
15,000.00	90.00	359.73	10,094.00	4,966.38	-24.36	4,966.44	0.00	0.00	0.00
15,100.00	90.00	359.73	10,094.00	5,066.38	-24.83	5,066.44	0.00	0.00	0.00
15,200.00	90.00	359.73	10,094.00	5,166.38	-25.31	5,166.44	0.00	0.00	0.00
15,300.00	90.00	359.73	10,094.00	5,266.37	-25.78	5,266.44	0.00	0.00	0.00
15,400.00	90.00	359.73	10,094.00	5,366.37	-26.26	5,366.44	0.00	0.00	0.00
15,500.00	90.00	359.73	10,094.00	5,466.37	-26.74	5,466.44	0.00	0.00	0.00
15,600.00	90.00	359.73	10,094.00	5,566.37	-27.21	5,566.44	0.00	0.00	0.00
15,700.00	90.00	359.73	10,094.00	5,666.37	-27.69	5,666.44	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 138H
Company:	Devon Energy	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	138H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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)
15,800.00	90.00	359.73	10,094.00	5,766.37	-28.16	5,766.44	0.00	0.00	0.00
15,900.00	90.00	359.73	10,094.00	5,866.37	-28.64	5,866.44	0.00	0.00	0.00
16,000.00	90.00	359.73	10,094.00	5,966.37	-29.11	5,966.44	0.00	0.00	0.00
16,100.00	90.00	359.73	10,094.00	6,066.37	-29.59	6,066.44	0.00	0.00	0.00
16,200.00	90.00	359.73	10,094.00	6,166.36	-30.06	6,166.44	0.00	0.00	0.00
16,300.00	90.00	359.73	10,094.00	6,266.36	-30.54	6,266.44	0.00	0.00	0.00
16,400.00	90.00	359.73	10,094.00	6,366.36	-31.01	6,366.44	0.00	0.00	0.00
16,500.00	90.00	359.73	10,094.00	6,466.36	-31.49	6,466.44	0.00	0.00	0.00
16,600.00	90.00	359.73	10,094.00	6,566.36	-31.97	6,566.44	0.00	0.00	0.00
16,700.00	90.00	359.73	10,094.00	6,666.36	-32.44	6,666.44	0.00	0.00	0.00
16,800.00	90.00	359.73	10,094.00	6,766.36	-32.92	6,766.44	0.00	0.00	0.00
16,900.00	90.00	359.73	10,094.00	6,866.36	-33.39	6,866.44	0.00	0.00	0.00
17,000.00	90.00	359.73	10,094.00	6,966.36	-33.87	6,966.44	0.00	0.00	0.00
17,100.00	90.00	359.73	10,094.00	7,066.35	-34.34	7,066.44	0.00	0.00	0.00
17,200.00	90.00	359.73	10,094.00	7,166.35	-34.82	7,166.44	0.00	0.00	0.00
17,300.00	90.00	359.73	10,094.00	7,266.35	-35.29	7,266.44	0.00	0.00	0.00
17,400.00	90.00	359.73	10,094.00	7,366.35	-35.77	7,366.44	0.00	0.00	0.00
17,500.00	90.00	359.73	10,094.00	7,466.35	-36.24	7,466.44	0.00	0.00	0.00
17,600.00	90.00	359.73	10,094.00	7,566.35	-36.72	7,566.44	0.00	0.00	0.00
17,700.00	90.00	359.73	10,094.00	7,666.35	-37.19	7,666.44	0.00	0.00	0.00
17,766.30	90.00	359.73	10,094.00	7,732.65	-37.51	7,732.74	0.00	0.00	0.00
TD at 17766.30' MD - PBHL (138H)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL (138H) - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	457,157.10	782,577.12	32° 15' 15.804 N	103° 33' 10.653 W
PBHL (138H) - plan hits target center - Point	0.00	0.00	10,094.00	7,732.65	-37.51	464,889.75	782,539.61	32° 16' 32.321 N	103° 33' 10.435 W

LEAM Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Multi User Db	Local Co-ordinate Reference:	Well 138H
Company:	Devon Energy	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Project:	Lea County, NM (NAD-83)	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site:	Thistle Unit	North Reference:	Grid
Well:	138H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,323.80	1,321.30	Rustler		0.00	
1,823.80	1,821.30	Top of Salt		0.00	
4,974.28	4,966.30	Base of Salt		0.00	
5,241.93	5,233.30	Delaware		0.00	
8,942.02	8,933.30	Lower Brushy		0.00	
9,135.02	9,126.30	1st BSPG Lime		0.00	
9,266.02	9,257.30	Leonard A		0.00	
9,351.02	9,342.30	Leonard A MKR 1		0.00	
9,444.02	9,435.30	Leonard A MKR 2		0.00	
9,494.02	9,485.30	Leonard A MKR 3		0.00	
9,540.02	9,531.30	Leonard A BS PKG		0.00	
9,595.02	9,586.30	Leonard A BS Carbonate		0.00	
9,630.10	9,621.30	Leonard B		0.00	
9,740.58	9,729.30	Leonard B Base		0.00	
10,034.92	9,970.30	Leonard C		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,200.00	3,200.00	0.00	0.00	Start, 1°/100' Build
3,700.00	3,699.37	-21.80	0.00	EOB, 5.00° INC
5,000.00	4,994.42	-135.11	0.00	Start, 1°/100' Build
5,500.00	5,493.78	-156.91	0.00	EOD, 0.00° INC
9,579.35	9,573.13	-156.91	0.00	KOP, Start 11°/100' Build
10,397.53	10,094.00	363.96	-2.48	LP, 90.00° INC, 359.73° AZI
17,766.30	10,094.00	7,732.65	-37.51	TD at 17766.30' MD

Devon Energy

Lea County, NM (NAD-83)

Thistle Unit

138H

OH

Plan #1

HOBBS OCD

JAN 18 2017

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Anticollision Report

12 January, 2017

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 138H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Reference Site:	Thistle Unit	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	138H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 9,999.98 usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program		Date	1/12/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,766.30	Plan #1 (OH)	LEAM MWD+HDGM	MWD+HDGM	

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
Thistle Unit						
102H - OH - Plan #1	3,245.42	3,245.92	29.93	15.63	2.093	CC
102H - OH - Plan #1	3,400.00	3,400.46	30.11	15.19	2.018	ES
102H - OH - Plan #1	3,500.00	3,500.36	30.90	15.58	2.017	SF
117H - OH - Plan #1	2,300.00	2,297.50	59.93	49.87	5.960	CC, ES
117H - OH - Plan #1	17,766.30	17,401.09	835.58	599.77	3.543	SF
Thistle Unit (Offsets)						
50H - OH - OH	9,919.95	9,886.18	172.22	148.99	7.414	CC, ES, SF
58H - OH - OH	15,521.92	16,290.00	1,152.52	1,060.99	12.592	CC, ES
58H - OH - OH	17,500.00	14,337.76	1,164.60	1,069.63	12.263	SF
71H - OH - OH	15,436.71	14,979.00	383.22	298.67	4.533	SF
71H - OH - OH	17,396.14	13,018.04	372.65	293.47	4.706	CC, ES

Offset Design												Thistle Unit - 102H - OH - Plan #1		Offset Site Error:	0.00 usft
Survey Program:												0-LEAM MWD+HDGM		Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis				Distance				Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor		
0.00	0.00	0.50	0.50	0.00	0.00	-90.34	-0.18	-29.93	29.93						
100.00	100.00	100.50	100.50	0.09	0.09	-90.34	-0.18	-29.93	29.93	29.76	0.17	172.939			
200.00	200.00	200.50	200.50	0.31	0.31	-90.34	-0.18	-29.93	29.93	29.31	0.62	48.073			
300.00	300.00	300.50	300.50	0.54	0.54	-90.34	-0.18	-29.93	29.93	28.86	1.07	27.917			
400.00	400.00	400.50	400.50	0.76	0.76	-90.34	-0.18	-29.93	29.93	28.41	1.52	19.670			
500.00	500.00	500.50	500.50	0.99	0.99	-90.34	-0.18	-29.93	29.93	27.96	1.97	15.184			
600.00	600.00	600.50	600.50	1.21	1.21	-90.34	-0.18	-29.93	29.93	27.51	2.42	12.364			
700.00	700.00	700.50	700.50	1.43	1.44	-90.34	-0.18	-29.93	29.93	27.06	2.87	10.428			
800.00	800.00	800.50	800.50	1.66	1.66	-90.34	-0.18	-29.93	29.93	26.61	3.32	9.016			
900.00	900.00	900.50	900.50	1.88	1.89	-90.34	-0.18	-29.93	29.93	26.16	3.77	7.941			
1,000.00	1,000.00	1,000.50	1,000.50	2.11	2.11	-90.34	-0.18	-29.93	29.93	25.71	4.22	7.094			
1,100.00	1,100.00	1,100.50	1,100.50	2.33	2.33	-90.34	-0.18	-29.93	29.93	25.26	4.67	6.411			
1,200.00	1,200.00	1,200.50	1,200.50	2.56	2.56	-90.34	-0.18	-29.93	29.93	24.81	5.12	5.848			
1,300.00	1,300.00	1,300.50	1,300.50	2.78	2.78	-90.34	-0.18	-29.93	29.93	24.36	5.57	5.376			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit - 102H - OH - Plan #1													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							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		
1,400.00	1,400.00	1,400.50	1,400.50	3.01	3.01	-90.34	-0.18	-29.93	29.93	23.91	6.02	4.974		
1,500.00	1,500.00	1,500.50	1,500.50	3.23	3.23	-90.34	-0.18	-29.93	29.93	23.46	6.47	4.629		
1,600.00	1,600.00	1,600.50	1,600.50	3.46	3.46	-90.34	-0.18	-29.93	29.93	23.01	6.92	4.328		
1,700.00	1,700.00	1,700.50	1,700.50	3.68	3.68	-90.34	-0.18	-29.93	29.93	22.56	7.37	4.064		
1,800.00	1,800.00	1,800.50	1,800.50	3.91	3.91	-90.34	-0.18	-29.93	29.93	22.12	7.82	3.830		
1,900.00	1,900.00	1,900.50	1,900.50	4.13	4.13	-90.34	-0.18	-29.93	29.93	21.67	8.26	3.622		
2,000.00	2,000.00	2,000.50	2,000.50	4.36	4.36	-90.34	-0.18	-29.93	29.93	21.22	8.71	3.435		
2,100.00	2,100.00	2,100.50	2,100.50	4.58	4.58	-90.34	-0.18	-29.93	29.93	20.77	9.16	3.266		
2,200.00	2,200.00	2,200.50	2,200.50	4.81	4.81	-90.34	-0.18	-29.93	29.93	20.32	9.61	3.113		
2,300.00	2,300.00	2,300.50	2,300.50	5.03	5.03	-90.34	-0.18	-29.93	29.93	19.87	10.06	2.974		
2,400.00	2,400.00	2,400.50	2,400.50	5.26	5.26	-90.34	-0.18	-29.93	29.93	19.42	10.51	2.847		
2,500.00	2,500.00	2,500.50	2,500.50	5.48	5.48	-90.34	-0.18	-29.93	29.93	18.97	10.96	2.730		
2,600.00	2,600.00	2,600.50	2,600.50	5.71	5.71	-90.34	-0.18	-29.93	29.93	18.52	11.41	2.623		
2,700.00	2,700.00	2,700.50	2,700.50	5.93	5.93	-90.34	-0.18	-29.93	29.93	18.07	11.86	2.523		
2,800.00	2,800.00	2,800.50	2,800.50	6.15	6.16	-90.34	-0.18	-29.93	29.93	17.62	12.31	2.431		
2,900.00	2,900.00	2,900.50	2,900.50	6.38	6.38	-90.34	-0.18	-29.93	29.93	17.17	12.76	2.346		
3,000.00	3,000.00	3,000.50	3,000.50	6.60	6.61	-90.34	-0.18	-29.93	29.93	16.72	13.21	2.266		
3,100.00	3,100.00	3,100.50	3,100.50	6.83	6.83	-90.34	-0.18	-29.93	29.93	16.27	13.66	2.191		
3,200.00	3,200.00	3,200.50	3,200.50	7.05	7.05	-90.34	-0.18	-29.93	29.93	15.82	14.11	2.121		
3,245.42	3,245.42	3,245.92	3,245.92	7.14	7.16	90.00	-0.18	-29.93	29.93	15.63	14.30	2.093 CC		
3,300.00	3,299.99	3,300.49	3,300.49	7.25	7.28	91.33	-0.18	-29.93	29.94	15.41	14.53	2.061		
3,400.00	3,399.96	3,400.46	3,400.46	7.42	7.50	96.31	-0.18	-29.93	30.11	15.19	14.92	2.018 ES		
3,500.00	3,499.86	3,500.36	3,500.36	7.59	7.73	104.36	-0.18	-29.93	30.90	15.58	15.32	2.017 SF		
3,600.00	3,599.68	3,600.18	3,600.18	7.76	7.95	114.66	-0.18	-29.93	32.95	17.23	15.71	2.097		
3,700.00	3,699.37	3,699.87	3,699.87	7.94	8.18	125.74	-0.18	-29.93	36.92	20.81	16.12	2.291		
3,800.00	3,798.99	3,799.49	3,799.49	8.12	8.40	135.28	-0.18	-29.93	42.62	26.09	16.52	2.579		
3,900.00	3,898.60	3,899.10	3,899.10	8.31	8.63	142.43	-0.18	-29.93	49.20	32.27	16.93	2.906		
4,000.00	3,998.22	3,998.72	3,998.72	8.50	8.85	147.83	-0.18	-29.93	56.37	39.03	17.34	3.251		
4,100.00	4,097.84	4,098.34	4,098.34	8.70	9.07	151.99	-0.18	-29.93	63.92	46.17	17.75	3.601		
4,200.00	4,197.46	4,197.96	4,197.96	8.90	9.30	155.26	-0.18	-29.93	71.74	53.58	18.17	3.949		
4,300.00	4,297.08	4,297.58	4,297.58	9.10	9.52	157.88	-0.18	-29.93	79.75	61.16	18.58	4.292		
4,400.00	4,396.70	4,397.20	4,397.20	9.31	9.74	160.02	-0.18	-29.93	87.89	68.89	19.00	4.626		
4,500.00	4,496.32	4,496.82	4,496.82	9.52	9.97	161.79	-0.18	-29.93	96.13	76.71	19.42	4.950		
4,600.00	4,595.94	4,596.44	4,596.44	9.73	10.19	163.29	-0.18	-29.93	104.44	84.61	19.84	5.265		
4,700.00	4,695.56	4,696.06	4,696.06	9.94	10.42	164.56	-0.18	-29.93	112.82	92.56	20.26	5.569		
4,800.00	4,795.18	4,795.68	4,795.68	10.16	10.64	165.66	-0.18	-29.93	121.25	100.56	20.68	5.862		
4,900.00	4,894.80	4,895.30	4,895.30	10.38	10.86	166.61	-0.18	-29.93	129.71	108.60	21.11	6.145		
5,000.00	4,994.42	4,994.92	4,994.92	10.60	11.09	167.45	-0.18	-29.93	138.21	116.67	21.53	6.418		
5,100.00	5,094.11	5,094.61	5,094.61	10.83	11.31	168.13	-0.18	-29.93	145.87	123.90	21.97	6.640		
5,200.00	5,193.92	5,194.42	5,194.42	11.06	11.54	168.62	-0.18	-29.93	151.85	129.44	22.41	6.775		
5,300.00	5,293.83	5,294.33	5,294.33	11.28	11.76	168.94	-0.18	-29.93	156.13	133.28	22.86	6.831		
5,400.00	5,393.79	5,394.29	5,394.29	11.50	11.99	169.13	-0.18	-29.93	158.70	135.40	23.30	6.811		
5,500.00	5,493.78	5,494.28	5,494.28	11.71	12.21	-10.81	-0.18	-29.93	159.56	135.83	23.73	6.723		
5,600.00	5,593.78	5,594.28	5,594.28	11.91	12.44	-10.81	-0.18	-29.93	159.56	135.40	24.16	6.603		
5,700.00	5,693.78	5,694.28	5,694.28	12.12	12.66	-10.81	-0.18	-29.93	159.56	134.96	24.60	6.485		
5,800.00	5,793.78	5,794.28	5,794.28	12.34	12.88	-10.81	-0.18	-29.93	159.56	134.51	25.05	6.371		
5,900.00	5,893.78	5,894.28	5,894.28	12.55	13.11	-10.81	-0.18	-29.93	159.56	134.07	25.49	6.260		
6,000.00	5,993.78	5,994.28	5,994.28	12.76	13.33	-10.81	-0.18	-29.93	159.56	133.63	25.93	6.153		
6,100.00	6,093.78	6,094.28	6,094.28	12.98	13.56	-10.81	-0.18	-29.93	159.56	133.19	26.37	6.050		
6,200.00	6,193.78	6,194.28	6,194.28	13.19	13.78	-10.81	-0.18	-29.93	159.56	132.74	26.82	5.950		
6,300.00	6,293.78	6,294.28	6,294.28	13.41	14.01	-10.81	-0.18	-29.93	159.56	132.30	27.26	5.853		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)

Reference Site: Thistle Unit

Site Error: 0.00 usft

Reference Well: 138H

Well Error: 0.00 usft

Reference Wellbore: OH

Reference Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Output errors are at

Database:

Offset TVD Reference:

Well 138H

3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)

3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)

Grid

Minimum Curvature

2.00 sigma

EDM 5000.1 Multi User Db

Offset Datum

Offset Design Thistle Unit - 102H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)							
6,400.00	6,393.78	6,394.28	6,394.28	13.62	14.23	-10.81	-0.18	-29.93	159.56	131.86	27.70	5.760			
6,500.00	6,493.78	6,494.28	6,494.28	13.84	14.46	-10.81	-0.18	-29.93	159.56	131.41	28.15	5.669			
6,600.00	6,593.78	6,594.28	6,594.28	14.05	14.68	-10.81	-0.18	-29.93	159.56	130.97	28.59	5.581			
6,700.00	6,693.78	6,694.28	6,694.28	14.27	14.91	-10.81	-0.18	-29.93	159.56	130.53	29.03	5.496			
6,800.00	6,793.78	6,794.28	6,794.28	14.49	15.13	-10.81	-0.18	-29.93	159.56	130.08	29.48	5.413			
6,900.00	6,893.78	6,894.28	6,894.28	14.70	15.36	-10.81	-0.18	-29.93	159.56	129.64	29.92	5.333			
7,000.00	6,993.78	6,994.28	6,994.28	14.92	15.58	-10.81	-0.18	-29.93	159.56	129.19	30.37	5.255			
7,100.00	7,093.78	7,094.28	7,094.28	15.14	15.81	-10.81	-0.18	-29.93	159.56	128.75	30.81	5.179			
7,200.00	7,193.78	7,194.28	7,194.28	15.35	16.03	-10.81	-0.18	-29.93	159.56	128.31	31.25	5.105			
7,300.00	7,293.78	7,294.28	7,294.28	15.57	16.26	-10.81	-0.18	-29.93	159.56	127.86	31.70	5.034			
7,400.00	7,393.78	7,394.28	7,394.28	15.79	16.48	-10.81	-0.18	-29.93	159.56	127.42	32.14	4.964			
7,500.00	7,493.78	7,494.28	7,494.28	16.01	16.71	-10.81	-0.18	-29.93	159.56	126.97	32.59	4.896			
7,600.00	7,593.78	7,594.28	7,594.28	16.22	16.93	-10.81	-0.18	-29.93	159.56	126.53	33.03	4.830			
7,700.00	7,693.78	7,694.28	7,694.28	16.44	17.16	-10.81	-0.18	-29.93	159.56	126.08	33.48	4.766			
7,800.00	7,793.78	7,794.28	7,794.28	16.66	17.38	-10.81	-0.18	-29.93	159.56	125.64	33.93	4.703			
7,900.00	7,893.78	7,894.28	7,894.28	16.88	17.60	-10.81	-0.18	-29.93	159.56	125.19	34.37	4.642			
8,000.00	7,993.78	7,994.28	7,994.28	17.10	17.83	-10.81	-0.18	-29.93	159.56	124.74	34.82	4.583			
8,100.00	8,093.78	8,094.28	8,094.28	17.32	18.05	-10.81	-0.18	-29.93	159.56	124.30	35.26	4.525			
8,200.00	8,193.78	8,194.28	8,194.28	17.54	18.28	-10.81	-0.18	-29.93	159.56	123.85	35.71	4.469			
8,300.00	8,293.78	8,294.28	8,294.28	17.76	18.50	-10.81	-0.18	-29.93	159.56	123.41	36.15	4.413			
8,400.00	8,393.78	8,394.28	8,394.28	17.97	18.73	-10.81	-0.18	-29.93	159.56	122.96	36.60	4.360			
8,500.00	8,493.78	8,494.28	8,494.28	18.19	18.95	-10.81	-0.18	-29.93	159.56	122.51	37.05	4.307			
8,600.00	8,593.78	8,594.28	8,594.28	18.41	19.18	-10.81	-0.18	-29.93	159.56	122.07	37.49	4.256			
8,700.00	8,693.78	8,694.28	8,694.28	18.63	19.40	-10.81	-0.18	-29.93	159.56	121.62	37.94	4.206			
8,800.00	8,793.78	8,794.28	8,794.28	18.85	19.63	-10.81	-0.18	-29.93	159.56	121.18	38.38	4.157			
8,900.00	8,893.78	8,894.28	8,894.28	19.07	19.85	-10.81	-0.18	-29.93	159.56	120.73	38.83	4.109			
9,000.00	8,993.78	8,994.28	8,994.28	19.29	20.08	-10.81	-0.18	-29.93	159.56	120.28	39.28	4.062			
9,100.00	9,093.78	9,094.28	9,094.28	19.51	20.30	-10.81	-0.18	-29.93	159.56	119.84	39.72	4.017			
9,108.84	9,102.62	9,103.12	9,103.12	19.53	20.32	-10.81	-0.18	-29.93	159.56	119.80	39.76	4.013			
9,200.00	9,193.78	9,199.88	9,199.88	19.73	20.52	-10.80	0.02	-29.93	159.82	119.68	40.14	3.981			
9,300.00	9,293.78	9,265.82	9,265.36	19.95	20.69	-10.32	7.67	-29.96	169.77	129.69	40.08	4.236			
9,400.00	9,393.78	9,338.08	9,335.44	20.17	20.85	-9.37	25.06	-30.04	193.59	154.13	39.46	4.906			
9,500.00	9,493.78	9,400.00	9,393.09	20.39	20.98	-8.38	47.55	-30.13	230.11	191.94	38.17	6.028			
9,579.35	9,573.13	9,450.00	9,437.44	20.57	21.08	-7.57	70.61	-30.23	266.88	229.55	37.33	7.149			
9,600.00	9,593.78	9,463.84	9,449.30	20.61	21.11	-6.93	77.73	-30.26	277.12	239.95	37.18	7.454			
9,650.00	9,643.57	9,500.00	9,479.37	20.72	21.18	-6.16	97.81	-30.34	300.85	263.95	36.90	8.153			
9,700.00	9,692.71	9,520.39	9,495.68	20.81	21.22	-5.70	110.03	-30.39	322.43	286.71	35.72	9.028			
9,750.00	9,740.75	9,550.00	9,518.50	20.89	21.29	-5.26	128.90	-30.47	342.28	307.28	35.00	9.780			
9,800.00	9,787.24	9,576.32	9,537.85	20.97	21.36	-4.93	146.74	-30.55	360.17	326.11	34.06	10.575			
9,850.00	9,831.77	9,600.00	9,554.47	21.05	21.42	-4.66	163.60	-30.62	376.13	343.16	32.97	11.408			
9,900.00	9,873.91	9,631.81	9,575.56	21.13	21.51	-4.43	187.41	-30.72	389.97	357.69	32.29	12.079			
9,950.00	9,913.28	9,650.00	9,586.95	21.21	21.56	-4.27	201.59	-30.78	401.99	371.10	30.90	13.011			
10,000.00	9,949.53	9,686.99	9,608.56	21.28	21.67	-4.11	231.61	-30.91	411.53	381.07	30.46	13.513			
10,050.00	9,982.30	9,714.51	9,623.22	21.36	21.76	-4.01	254.89	-31.01	419.14	389.59	29.55	14.185			
10,100.00	10,011.31	9,750.00	9,640.27	21.46	21.88	-3.93	286.01	-31.14	424.75	395.72	29.03	14.630			
10,150.00	10,036.28	9,769.45	9,648.71	21.58	21.96	-3.89	303.53	-31.21	427.94	400.12	27.83	15.380			
10,200.00	10,056.99	9,800.00	9,660.63	21.72	22.07	-3.88	331.65	-31.33	429.13	401.97	27.16	15.797			
10,250.00	10,073.25	9,824.34	9,668.93	21.87	22.18	-3.89	354.53	-31.43	428.12	401.80	26.33	16.262			
10,300.00	10,084.90	9,850.00	9,676.51	22.05	22.29	-3.92	379.04	-31.53	424.99	399.34	25.65	16.569			
10,350.00	10,091.83	9,879.27	9,683.67	22.24	22.42	-3.99	407.42	-31.65	419.68	394.49	25.20	16.657			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit - 102H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		+N-S (usft)	+E-W (usft)					
10,397.53	10,094.00	9,900.00	9,687.78	22.45	22.52	-4.07	427.74	-31.74	412.73	388.03	24.71	16.706	
10,400.00	10,094.00	9,900.00	9,687.78	22.46	22.52	-4.07	427.74	-31.74	412.35	387.69	24.66	16.718	
10,500.00	10,094.00	9,962.67	9,695.23	22.97	22.84	-4.14	489.93	-32.00	401.01	376.54	24.47	16.387	
10,600.00	10,094.00	10,039.77	9,696.22	23.57	23.29	-4.15	567.00	-32.32	399.33	374.55	24.78	16.116	
10,700.00	10,094.00	10,139.77	9,696.40	24.28	23.94	-4.14	667.00	-32.74	399.15	373.86	25.29	15.782	
10,800.00	10,094.00	10,239.77	9,696.57	25.07	24.68	-4.14	767.00	-33.17	398.97	373.09	25.88	15.415	
10,900.00	10,094.00	10,339.77	9,696.74	25.94	25.51	-4.13	867.00	-33.59	398.79	372.25	26.54	15.026	
11,000.00	10,094.00	10,439.77	9,696.92	26.88	26.41	-4.12	967.00	-34.01	398.61	371.35	27.26	14.620	
11,100.00	10,094.00	10,539.77	9,697.09	27.89	27.38	-4.12	1,067.00	-34.43	398.44	370.39	28.05	14.206	
11,200.00	10,094.00	10,639.77	9,697.27	28.95	28.41	-4.11	1,166.99	-34.85	398.26	369.37	28.89	13.787	
11,300.00	10,094.00	10,739.77	9,697.44	30.06	29.49	-4.11	1,266.99	-35.28	398.08	368.30	29.78	13.369	
11,400.00	10,094.00	10,839.76	9,697.62	31.23	30.63	-4.10	1,366.99	-35.70	397.90	367.19	30.71	12.957	
11,500.00	10,094.00	10,939.76	9,697.79	32.43	31.81	-4.09	1,466.99	-36.12	397.72	366.04	31.69	12.552	
11,600.00	10,094.00	11,039.76	9,697.97	33.67	33.02	-4.09	1,566.99	-36.54	397.55	364.85	32.70	12.157	
11,700.00	10,094.00	11,139.76	9,698.14	34.94	34.28	-4.08	1,666.99	-36.96	397.37	363.62	33.75	11.774	
11,800.00	10,094.00	11,239.76	9,698.32	36.24	35.56	-4.08	1,766.99	-37.39	397.19	362.36	34.83	11.404	
11,900.00	10,094.00	11,339.76	9,698.49	37.57	36.87	-4.07	1,866.99	-37.81	397.01	361.07	35.94	11.047	
12,000.00	10,094.00	11,439.76	9,698.66	38.92	38.21	-4.07	1,966.98	-38.23	396.83	359.76	37.07	10.704	
12,100.00	10,094.00	11,539.76	9,698.84	40.29	39.57	-4.06	2,066.98	-38.65	396.66	358.42	38.23	10.375	
12,200.00	10,094.00	11,639.76	9,699.01	41.68	40.95	-4.05	2,166.98	-39.07	396.48	357.07	39.41	10.060	
12,300.00	10,094.00	11,739.76	9,699.19	43.09	42.35	-4.05	2,266.98	-39.50	396.30	355.69	40.61	9.758	
12,400.00	10,094.00	11,839.76	9,699.36	44.52	43.76	-4.04	2,366.98	-39.92	396.12	354.29	41.83	9.470	
12,500.00	10,094.00	11,939.76	9,699.54	45.96	45.19	-4.04	2,466.98	-40.34	395.95	352.88	43.06	9.194	
12,600.00	10,094.00	12,039.76	9,699.71	47.41	46.64	-4.03	2,566.98	-40.76	395.77	351.45	44.31	8.931	
12,700.00	10,094.00	12,139.76	9,699.89	48.87	48.09	-4.02	2,666.98	-41.18	395.59	350.01	45.58	8.680	
12,800.00	10,094.00	12,239.76	9,700.06	50.34	49.56	-4.02	2,766.97	-41.60	395.41	348.56	46.85	8.440	
12,900.00	10,094.00	12,339.76	9,700.24	51.83	51.04	-4.01	2,866.97	-42.03	395.23	347.10	48.14	8.210	
13,000.00	10,094.00	12,439.76	9,700.41	53.32	52.52	-4.01	2,966.97	-42.45	395.06	345.62	49.44	7.991	
13,100.00	10,094.00	12,539.76	9,700.58	54.82	54.02	-4.00	3,066.97	-42.87	394.88	344.13	50.74	7.782	
13,200.00	10,094.00	12,639.76	9,700.76	56.33	55.52	-3.99	3,166.97	-43.29	394.70	342.64	52.06	7.582	
13,300.00	10,094.00	12,739.76	9,700.93	57.85	57.04	-3.99	3,266.97	-43.71	394.52	341.14	53.39	7.390	
13,400.00	10,094.00	12,839.76	9,701.11	59.37	58.55	-3.98	3,366.97	-44.14	394.34	339.63	54.72	7.207	
13,500.00	10,094.00	12,939.76	9,701.28	60.90	60.08	-3.98	3,466.97	-44.56	394.17	338.11	56.06	7.031	
13,600.00	10,094.00	13,039.76	9,701.46	62.43	61.61	-3.97	3,566.96	-44.98	393.99	336.58	57.41	6.863	
13,700.00	10,094.00	13,139.76	9,701.63	63.97	63.14	-3.96	3,666.96	-45.40	393.81	335.05	58.76	6.702	
13,800.00	10,094.00	13,239.76	9,701.81	65.51	64.68	-3.96	3,766.96	-45.82	393.63	333.52	60.12	6.548	
13,900.00	10,094.00	13,339.76	9,701.98	67.06	66.23	-3.95	3,866.96	-46.25	393.46	331.97	61.48	6.399	
14,000.00	10,094.00	13,439.76	9,702.16	68.61	67.78	-3.95	3,966.96	-46.67	393.28	330.43	62.85	6.257	
14,100.00	10,094.00	13,539.76	9,702.33	70.17	69.33	-3.94	4,066.96	-47.09	393.10	328.87	64.23	6.120	
14,200.00	10,094.00	13,639.76	9,702.50	71.73	70.89	-3.93	4,166.96	-47.51	392.92	327.32	65.61	5.989	
14,300.00	10,094.00	13,739.76	9,702.68	73.29	72.45	-3.93	4,266.96	-47.93	392.74	325.76	66.99	5.863	
14,400.00	10,094.00	13,839.76	9,702.85	74.86	74.01	-3.92	4,366.96	-48.36	392.57	324.19	68.38	5.741	
14,500.00	10,094.00	13,939.76	9,703.03	76.43	75.58	-3.92	4,466.95	-48.78	392.39	322.62	69.77	5.624	
14,600.00	10,094.00	14,039.76	9,703.20	78.00	77.15	-3.91	4,566.95	-49.20	392.21	321.05	71.16	5.512	
14,700.00	10,094.00	14,139.76	9,703.38	79.57	78.72	-3.90	4,666.95	-49.62	392.03	319.47	72.56	5.403	
14,800.00	10,094.00	14,239.76	9,703.55	81.15	80.30	-3.90	4,766.95	-50.04	391.86	317.90	73.96	5.298	
14,900.00	10,094.00	14,339.76	9,703.73	82.73	81.88	-3.89	4,866.95	-50.47	391.68	316.32	75.36	5.197	
15,000.00	10,094.00	14,439.76	9,703.90	84.31	83.46	-3.89	4,966.95	-50.89	391.50	314.73	76.77	5.100	
15,100.00	10,094.00	14,539.76	9,704.08	85.90	85.04	-3.88	5,066.95	-51.31	391.32	313.15	78.18	5.006	
15,200.00	10,094.00	14,639.76	9,704.25	87.48	86.62	-3.87	5,166.95	-51.73	391.14	311.56	79.59	4.915	
15,300.00	10,094.00	14,739.76	9,704.42	89.07	88.21	-3.87	5,266.94	-52.15	390.97	309.97	81.00	4.827	

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit - 102H - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							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		
15,400.00	10,094.00	14,839.76	9,704.60	90.66	89.80	-3.86	5,366.94	-52.57	390.79	308.37	82.42	4.742		
15,500.00	10,094.00	14,939.76	9,704.77	92.25	91.39	-3.85	5,466.94	-53.00	390.61	306.78	83.83	4.659		
15,600.00	10,094.00	15,039.76	9,704.95	93.84	92.98	-3.85	5,566.94	-53.42	390.43	305.18	85.25	4.580		
15,700.00	10,094.00	15,139.76	9,705.12	95.44	94.57	-3.84	5,666.94	-53.84	390.26	303.58	86.68	4.503		
15,800.00	10,094.00	15,239.76	9,705.30	97.03	96.16	-3.84	5,766.94	-54.26	390.08	301.98	88.10	4.428		
15,900.00	10,094.00	15,339.76	9,705.47	98.63	97.76	-3.83	5,866.94	-54.68	389.90	300.38	89.52	4.355		
16,000.00	10,094.00	15,439.76	9,705.65	100.23	99.36	-3.82	5,966.94	-55.11	389.72	298.77	90.95	4.285		
16,100.00	10,094.00	15,539.76	9,705.82	101.83	100.96	-3.82	6,066.93	-55.53	389.54	297.17	92.38	4.217		
16,200.00	10,094.00	15,639.76	9,706.00	103.43	102.56	-3.81	6,166.93	-55.95	389.37	295.56	93.81	4.151		
16,300.00	10,094.00	15,739.76	9,706.17	105.03	104.16	-3.81	6,266.93	-56.37	389.19	293.95	95.24	4.086		
16,400.00	10,094.00	15,839.76	9,706.34	106.63	105.76	-3.80	6,366.93	-56.79	389.01	292.34	96.67	4.024		
16,500.00	10,094.00	15,939.76	9,706.52	108.24	107.36	-3.79	6,466.93	-57.22	388.83	290.73	98.10	3.964		
16,600.00	10,094.00	16,039.76	9,706.69	109.84	108.96	-3.79	6,566.93	-57.64	388.66	289.12	99.54	3.905		
16,700.00	10,094.00	16,139.76	9,706.87	111.45	110.57	-3.78	6,666.93	-58.06	388.48	287.51	100.97	3.847		
16,800.00	10,094.00	16,239.76	9,707.04	113.05	112.18	-3.77	6,766.93	-58.48	388.30	285.89	102.41	3.792		
16,900.00	10,094.00	16,339.76	9,707.22	114.66	113.78	-3.77	6,866.93	-58.90	388.12	284.28	103.85	3.737		
17,000.00	10,094.00	16,439.76	9,707.39	116.27	115.39	-3.76	6,966.92	-59.33	387.95	282.66	105.29	3.685		
17,100.00	10,094.00	16,539.76	9,707.57	117.88	117.00	-3.76	7,066.92	-59.75	387.77	281.04	106.73	3.633		
17,200.00	10,094.00	16,639.76	9,707.74	119.49	118.61	-3.75	7,166.92	-60.17	387.59	279.42	108.17	3.583		
17,300.00	10,094.00	16,739.76	9,707.91	121.10	120.22	-3.74	7,266.92	-60.59	387.41	277.80	109.61	3.535		
17,400.00	10,094.00	16,839.75	9,708.09	122.71	121.83	-3.74	7,366.92	-61.01	387.23	276.18	111.05	3.487		
17,500.00	10,094.00	16,939.75	9,708.26	124.32	123.44	-3.73	7,466.92	-61.43	387.06	274.56	112.49	3.441		
17,600.00	10,094.00	17,039.75	9,708.44	125.94	125.05	-3.72	7,566.92	-61.86	386.88	272.94	113.94	3.396		
17,700.00	10,094.00	17,139.75	9,708.61	127.55	126.66	-3.72	7,666.92	-62.28	386.70	271.32	115.38	3.351		
17,766.30	10,094.00	17,206.06	9,708.73	128.62	127.73	-3.71	7,733.22	-62.56	386.58	270.24	116.34	3.323		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit - 117H - OH - Plan #1														Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error: 0.00 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)					
0.00	0.00	0.00	0.00	0.00	0.00	-90.33	-0.34	-59.93	59.98						
100.00	100.00	97.50	97.50	0.09	0.08	-90.33	-0.34	-59.93	59.93	59.76	0.17	352.957			
200.00	200.00	197.50	197.50	0.31	0.31	-90.33	-0.34	-59.93	59.93	59.32	0.62	97.313			
300.00	300.00	297.50	297.50	0.54	0.53	-90.33	-0.34	-59.93	59.93	58.87	1.07	56.253			
400.00	400.00	397.50	397.50	0.76	0.75	-90.33	-0.34	-59.93	59.93	58.42	1.51	39.560			
500.00	500.00	497.50	497.50	0.99	0.98	-90.33	-0.34	-59.93	59.93	57.97	1.96	30.508			
600.00	600.00	597.50	597.50	1.21	1.20	-90.33	-0.34	-59.93	59.93	57.52	2.41	24.827			
700.00	700.00	697.50	697.50	1.43	1.43	-90.33	-0.34	-59.93	59.93	57.07	2.86	20.929			
800.00	800.00	797.50	797.50	1.66	1.65	-90.33	-0.34	-59.93	59.93	56.62	3.31	18.089			
900.00	900.00	897.50	897.50	1.88	1.88	-90.33	-0.34	-59.93	59.93	56.17	3.76	15.928			
1,000.00	1,000.00	997.50	997.50	2.11	2.10	-90.33	-0.34	-59.93	59.93	55.72	4.21	14.228			
1,100.00	1,100.00	1,097.50	1,097.50	2.33	2.33	-90.33	-0.34	-59.93	59.93	55.27	4.66	12.856			
1,200.00	1,200.00	1,197.50	1,197.50	2.56	2.55	-90.33	-0.34	-59.93	59.93	54.82	5.11	11.725			
1,300.00	1,300.00	1,297.50	1,297.50	2.78	2.78	-90.33	-0.34	-59.93	59.93	54.37	5.56	10.778			
1,400.00	1,400.00	1,397.50	1,397.50	3.01	3.00	-90.33	-0.34	-59.93	59.93	53.92	6.01	9.971			
1,500.00	1,500.00	1,497.50	1,497.50	3.23	3.23	-90.33	-0.34	-59.93	59.93	53.47	6.46	9.278			
1,600.00	1,600.00	1,597.50	1,597.50	3.46	3.45	-90.33	-0.34	-59.93	59.93	53.02	6.91	8.674			
1,700.00	1,700.00	1,697.50	1,697.50	3.68	3.68	-90.33	-0.34	-59.93	59.93	52.57	7.36	8.144			
1,800.00	1,800.00	1,797.50	1,797.50	3.91	3.90	-90.33	-0.34	-59.93	59.93	52.12	7.81	7.675			
1,900.00	1,900.00	1,897.50	1,897.50	4.13	4.13	-90.33	-0.34	-59.93	59.93	51.67	8.26	7.257			
2,000.00	2,000.00	1,997.50	1,997.50	4.36	4.35	-90.33	-0.34	-59.93	59.93	51.22	8.71	6.883			
2,100.00	2,100.00	2,097.50	2,097.50	4.58	4.58	-90.33	-0.34	-59.93	59.93	50.77	9.16	6.545			
2,200.00	2,200.00	2,197.50	2,197.50	4.81	4.80	-90.33	-0.34	-59.93	59.93	50.32	9.61	6.239			
2,300.00	2,300.00	2,297.50	2,297.50	5.03	5.03	-90.33	-0.34	-59.93	59.93	49.87	10.06	5.960 CC, ES			
2,400.00	2,400.00	2,396.51	2,396.50	5.26	5.23	-90.50	-0.53	-60.72	60.73	50.25	10.48	5.792			
2,500.00	2,500.00	2,495.43	2,495.40	5.48	5.42	-91.02	-1.12	-63.17	63.21	52.32	10.90	5.802			
2,600.00	2,600.00	2,594.24	2,594.11	5.71	5.62	-91.80	-2.12	-67.27	67.39	56.09	11.30	5.961			
2,700.00	2,700.00	2,692.88	2,692.57	5.93	5.81	-92.75	-3.50	-73.02	73.27	61.56	11.71	6.256			
2,800.00	2,800.00	2,791.28	2,790.68	6.15	6.02	-93.76	-5.29	-80.39	80.85	68.73	12.12	6.672			
2,900.00	2,900.00	2,889.39	2,888.35	6.38	6.22	-94.77	-7.46	-89.37	90.15	77.62	12.52	7.199			
3,000.00	3,000.00	2,988.76	2,987.18	6.60	6.44	-95.68	-9.88	-99.38	100.41	87.46	12.95	7.756			
3,100.00	3,100.00	3,088.22	3,086.11	6.83	6.66	-96.42	-12.31	-109.41	110.69	97.32	13.37	8.277			
3,200.00	3,200.00	3,187.68	3,185.03	7.05	6.89	-97.03	-14.73	-119.44	120.99	107.18	13.80	8.766			
3,300.00	3,299.99	3,287.16	3,283.97	7.25	7.12	82.73	-17.15	-129.47	131.18	116.98	14.20	9.235			
3,400.00	3,399.96	3,386.65	3,382.93	7.42	7.35	83.22	-19.58	-139.49	141.17	126.59	14.58	9.681			
3,500.00	3,499.86	3,486.12	3,481.86	7.59	7.59	84.29	-22.00	-149.52	150.99	136.02	14.96	10.090			
3,600.00	3,599.68	3,585.54	3,580.75	7.76	7.83	85.84	-24.43	-159.55	160.73	145.38	15.35	10.470			
3,700.00	3,699.37	3,684.88	3,679.56	7.94	8.07	87.79	-26.85	-169.56	170.52	154.77	15.75	10.828			
3,800.00	3,798.99	3,784.18	3,778.32	8.12	8.32	89.89	-29.27	-179.57	180.49	164.34	16.15	11.175			
3,900.00	3,898.60	3,883.47	3,877.07	8.31	8.56	91.77	-31.69	-189.58	190.68	174.12	16.56	11.514			
4,000.00	3,998.22	3,982.77	3,975.83	8.50	8.81	93.46	-34.11	-199.59	201.05	184.08	16.98	11.842			
4,100.00	4,097.84	4,082.06	4,074.59	8.70	9.06	94.98	-36.53	-209.60	211.58	194.18	17.40	12.159			
4,200.00	4,197.46	4,181.36	4,173.35	8.90	9.31	96.35	-38.95	-219.61	222.25	204.42	17.83	12.465			
4,300.00	4,297.08	4,280.65	4,272.11	9.10	9.57	97.60	-41.37	-229.62	233.03	214.76	18.26	12.760			
4,400.00	4,396.70	4,379.95	4,370.87	9.31	9.82	98.74	-43.79	-239.63	243.90	225.20	18.70	13.043			
4,500.00	4,496.32	4,479.24	4,469.63	9.52	10.08	99.78	-46.21	-249.64	254.87	235.73	19.14	13.314			
4,600.00	4,595.94	4,578.54	4,568.39	9.73	10.34	100.74	-48.63	-259.65	265.91	246.32	19.59	13.574			
4,700.00	4,695.56	4,677.83	4,667.15	9.94	10.60	101.61	-51.06	-269.66	277.02	256.98	20.04	13.824			
4,800.00	4,795.18	4,777.13	4,765.91	10.16	10.86	102.43	-53.48	-279.67	288.19	267.70	20.49	14.062			
4,900.00	4,894.80	4,876.42	4,864.67	10.38	11.12	103.18	-55.90	-289.68	299.41	278.46	20.95	14.291			
5,000.00	4,994.42	4,975.72	4,963.43	10.60	11.38	103.87	-58.32	-299.69	310.68	289.27	21.41	14.511			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)

Reference Site: Thistle Unit

Site Error: 0.00 usft

Reference Well: 138H

Well Error: 0.00 usft

Reference Wellbore: OH

Reference Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Output errors are at

Database:

Offset TVD Reference:

Well 138H

3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)

3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)

Grid

Minimum Curvature

2.00 sigma

EDM 5000.1 Multi User Db

Offset Datum

Offset Design Thistle Unit - 117H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		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			
5,100.00	5,094.11	5,075.06	5,062.23	10.83	11.64	104.48	-60.74	-309.70	321.77	299.90	21.87	14.710			
5,200.00	5,193.92	5,174.48	5,161.12	11.06	11.91	104.75	-63.16	-319.73	332.45	310.11	22.34	14.883			
5,300.00	5,293.83	5,273.95	5,260.06	11.28	12.17	104.73	-65.59	-329.75	342.68	319.88	22.79	15.033			
5,400.00	5,393.79	5,373.44	5,359.01	11.50	12.44	104.43	-68.01	-339.78	352.48	329.24	23.25	15.163			
5,500.00	5,493.78	5,472.92	5,457.95	11.71	12.71	-76.12	-70.44	-349.81	361.88	338.20	23.68	15.282			
5,600.00	5,593.78	5,572.38	5,556.87	11.91	12.97	-76.85	-72.86	-359.84	371.12	347.01	24.11	15.393			
5,700.00	5,693.78	5,671.84	5,655.80	12.12	13.24	-77.56	-75.29	-369.86	380.42	355.87	24.55	15.496			
5,800.00	5,793.78	5,771.30	5,754.72	12.34	13.51	-78.22	-77.71	-379.89	389.78	364.79	24.99	15.597			
5,900.00	5,893.78	5,870.76	5,853.65	12.55	13.78	-78.86	-80.14	-389.92	399.18	373.75	25.43	15.697			
6,000.00	5,993.78	5,970.22	5,952.57	12.76	14.05	-79.47	-82.56	-399.94	408.63	382.76	25.87	15.794			
6,100.00	6,093.78	6,069.68	6,051.49	12.98	14.32	-80.05	-84.98	-409.97	418.13	391.82	26.31	15.890			
6,200.00	6,193.78	6,169.14	6,150.42	13.19	14.59	-80.60	-87.41	-420.00	427.67	400.91	26.76	15.984			
6,300.00	6,293.78	6,268.61	6,249.34	13.41	14.86	-81.13	-89.83	-430.02	437.24	410.04	27.20	16.076			
6,400.00	6,393.78	6,368.07	6,348.27	13.62	15.13	-81.64	-92.26	-440.05	446.85	419.21	27.64	16.166			
6,500.00	6,493.78	6,467.53	6,447.19	13.84	15.40	-82.13	-94.68	-450.08	456.49	428.41	28.08	16.254			
6,600.00	6,593.78	6,566.99	6,546.12	14.05	15.67	-82.59	-97.11	-460.10	466.17	437.64	28.53	16.341			
6,700.00	6,693.78	6,666.45	6,645.04	14.27	15.94	-83.04	-99.53	-470.13	475.87	446.90	28.97	16.425			
6,800.00	6,793.78	6,765.91	6,743.96	14.49	16.21	-83.47	-101.96	-480.16	485.60	456.19	29.42	16.508			
6,900.00	6,893.78	6,865.37	6,842.89	14.70	16.49	-83.88	-104.38	-490.18	495.36	465.50	29.86	16.588			
7,000.00	6,993.78	6,964.83	6,941.81	14.92	16.76	-84.28	-106.81	-500.21	505.14	474.83	30.31	16.667			
7,100.00	7,093.78	7,064.29	7,040.74	15.14	17.03	-84.66	-109.23	-510.24	514.95	484.19	30.75	16.745			
7,200.00	7,193.78	7,163.75	7,139.66	15.35	17.30	-85.03	-111.65	-520.26	524.77	493.57	31.20	16.820			
7,300.00	7,293.78	7,263.21	7,238.59	15.57	17.58	-85.38	-114.08	-530.29	534.62	502.97	31.65	16.894			
7,400.00	7,393.78	7,362.67	7,337.51	15.79	17.85	-85.72	-116.50	-540.32	544.49	512.39	32.09	16.966			
7,500.00	7,493.78	7,462.13	7,436.43	16.01	18.13	-86.05	-118.93	-550.34	554.37	521.83	32.54	17.037			
7,600.00	7,593.78	7,561.59	7,535.36	16.22	18.40	-86.37	-121.35	-560.37	564.27	531.29	32.99	17.106			
7,700.00	7,693.78	7,661.06	7,634.28	16.44	18.67	-86.68	-123.78	-570.40	574.19	540.76	33.43	17.174			
7,800.00	7,793.78	7,760.52	7,733.21	16.66	18.95	-86.97	-126.20	-580.42	584.13	550.25	33.88	17.240			
7,900.00	7,893.78	7,859.98	7,832.13	16.88	19.22	-87.26	-128.63	-590.45	594.08	559.75	34.33	17.305			
8,000.00	7,993.78	7,959.44	7,931.06	17.10	19.50	-87.53	-131.05	-600.48	604.04	569.26	34.78	17.368			
8,100.00	8,093.78	8,058.90	8,029.98	17.32	19.77	-87.80	-133.48	-610.50	614.02	578.79	35.23	17.430			
8,200.00	8,193.78	8,158.36	8,128.91	17.54	20.05	-88.06	-135.90	-620.53	624.01	588.33	35.68	17.491			
8,300.00	8,293.78	8,257.82	8,227.83	17.76	20.32	-88.31	-138.32	-630.56	634.01	597.89	36.13	17.550			
8,400.00	8,393.78	8,357.28	8,326.75	17.97	20.60	-88.56	-140.75	-640.58	644.03	607.45	36.58	17.608			
8,500.00	8,493.78	8,456.74	8,425.68	18.19	20.88	-88.79	-143.17	-650.61	654.05	617.03	37.03	17.665			
8,600.00	8,593.78	8,556.20	8,524.60	18.41	21.15	-89.02	-145.60	-660.64	664.09	626.61	37.48	17.720			
8,700.00	8,693.78	8,655.66	8,623.53	18.63	21.43	-89.24	-148.02	-670.66	674.13	636.21	37.93	17.775			
8,800.00	8,793.78	8,755.12	8,722.45	18.85	21.70	-89.46	-150.45	-680.69	684.19	645.81	38.38	17.828			
8,900.00	8,893.78	8,854.58	8,821.38	19.07	21.98	-89.67	-152.87	-690.71	694.26	655.43	38.83	17.880			
9,000.00	8,993.78	8,954.04	8,920.30	19.29	22.26	-89.87	-155.30	-700.74	704.33	665.05	39.28	17.932			
9,100.00	9,093.78	9,053.51	9,019.22	19.51	22.53	-90.07	-157.72	-710.77	714.41	674.68	39.73	17.982			
9,200.00	9,193.78	9,152.97	9,118.15	19.73	22.81	-90.26	-160.15	-720.79	724.50	684.32	40.18	18.031			
9,300.00	9,293.78	9,252.83	9,217.45	19.95	23.07	-90.24	-160.00	-730.86	734.59	693.96	40.63	18.080			
9,400.00	9,393.78	9,350.00	9,312.62	20.17	23.28	-89.98	-143.72	-740.50	744.79	703.74	41.04	18.146			
9,500.00	9,493.78	9,438.57	9,395.39	20.39	23.44	-86.69	-113.85	-748.89	756.24	714.85	41.39	18.269			
9,579.35	9,573.13	9,500.00	9,449.26	20.57	23.54	-84.53	-84.71	-754.34	767.45	725.85	41.59	18.451			
9,600.00	9,593.78	9,515.35	9,462.16	20.61	23.56	-83.31	-76.50	-755.65	770.76	729.13	41.63	18.513			
9,650.00	9,643.57	9,550.00	9,490.36	20.72	23.61	-81.11	-56.58	-758.51	779.19	737.50	41.68	18.693			
9,700.00	9,692.71	9,585.88	9,518.11	20.81	23.65	-78.91	-34.02	-761.31	788.03	746.32	41.71	18.894			
9,750.00	9,740.75	9,620.11	9,543.08	20.89	23.69	-76.84	-10.75	-763.84	797.10	755.42	41.68	19.122			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit - 117H - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error: 0.00 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	
9,800.00	9,787.24	9,850.00	9,563.60	20.97	23.72	-74.99	10.88	-765.92	806.24	764.64	41.60	19.381	
9,850.00	9,831.77	9,887.01	9,587.25	21.05	23.76	-73.05	39.24	-768.31	815.23	773.68	41.56	19.618	
9,900.00	9,873.91	9,719.83	9,606.50	21.13	23.80	-71.35	65.75	-770.26	823.96	782.50	41.46	19.873	
9,950.00	9,913.28	9,750.00	9,622.69	21.21	23.83	-69.83	91.14	-771.90	832.28	790.92	41.36	20.121	
10,000.00	9,949.53	9,784.51	9,639.39	21.28	23.87	-68.39	121.29	-773.58	840.04	798.73	41.31	20.333	
10,050.00	9,982.30	9,816.47	9,653.05	21.36	23.91	-67.14	150.14	-774.96	847.14	805.88	41.26	20.531	
10,100.00	10,011.31	9,850.00	9,665.46	21.46	23.96	-66.03	181.26	-776.22	853.48	812.22	41.26	20.687	
10,150.00	10,036.28	9,879.81	9,674.80	21.58	24.00	-65.14	209.55	-777.16	858.95	817.68	41.28	20.809	
10,200.00	10,056.99	9,911.26	9,682.89	21.72	24.06	-64.39	239.92	-777.98	863.51	822.14	41.36	20.876	
10,250.00	10,073.25	9,950.00	9,690.33	21.87	24.14	-63.75	277.93	-778.72	867.12	825.57	41.55	20.870	
10,300.00	10,084.90	9,973.87	9,693.51	22.05	24.19	-63.39	301.58	-779.04	869.60	827.87	41.73	20.839	
10,350.00	10,091.83	10,000.00	9,695.74	22.24	24.26	-63.15	327.61	-779.27	871.09	829.09	42.00	20.742	
10,397.53	10,094.00	10,036.92	9,696.72	22.45	24.37	-63.06	364.51	-779.36	871.44	829.08	42.36	20.571	
10,400.00	10,094.00	10,039.39	9,696.72	22.46	24.38	-63.06	366.98	-779.36	871.42	829.04	42.38	20.560	
10,500.00	10,094.00	10,139.39	9,696.86	22.97	24.77	-63.06	466.98	-779.36	870.94	827.56	43.38	20.077	
10,600.00	10,094.00	10,239.39	9,697.00	23.57	25.29	-63.05	566.98	-779.36	870.45	825.91	44.54	19.541	
10,700.00	10,094.00	10,339.39	9,697.14	24.28	25.93	-63.04	666.98	-779.36	869.96	824.09	45.87	18.964	
10,800.00	10,094.00	10,439.39	9,697.28	25.07	26.67	-63.04	766.98	-779.36	869.48	822.12	47.36	18.360	
10,900.00	10,094.00	10,539.39	9,697.42	25.94	27.50	-63.03	866.97	-779.36	868.99	820.01	48.98	17.743	
11,000.00	10,094.00	10,639.38	9,697.56	26.88	28.40	-63.03	966.97	-779.36	868.50	817.78	50.72	17.124	
11,100.00	10,094.00	10,739.38	9,697.70	27.89	29.37	-63.02	1,066.97	-779.36	868.01	815.44	52.58	16.510	
11,200.00	10,094.00	10,839.38	9,697.84	28.95	30.40	-63.01	1,166.97	-779.36	867.53	812.99	54.53	15.908	
11,300.00	10,094.00	10,939.38	9,697.98	30.06	31.48	-63.01	1,266.97	-779.36	867.04	810.46	56.58	15.324	
11,400.00	10,094.00	11,039.38	9,698.12	31.23	32.61	-63.00	1,366.97	-779.36	866.55	807.84	58.71	14.760	
11,500.00	10,094.00	11,139.38	9,698.26	32.43	33.78	-63.00	1,466.97	-779.36	866.07	805.16	60.91	14.219	
11,600.00	10,094.00	11,239.38	9,698.40	33.67	34.98	-62.99	1,566.97	-779.36	865.58	802.40	63.18	13.701	
11,700.00	10,094.00	11,339.38	9,698.54	34.94	36.22	-62.98	1,666.96	-779.36	865.09	799.59	65.50	13.208	
11,800.00	10,094.00	11,439.37	9,698.68	36.24	37.49	-62.98	1,766.96	-779.36	864.61	796.73	67.87	12.738	
11,900.00	10,094.00	11,539.37	9,698.82	37.57	38.79	-62.97	1,866.96	-779.36	864.12	793.82	70.30	12.292	
12,000.00	10,094.00	11,639.37	9,698.96	38.92	40.11	-62.97	1,966.96	-779.36	863.63	790.87	72.76	11.870	
12,100.00	10,094.00	11,739.37	9,699.09	40.29	41.46	-62.96	2,066.96	-779.36	863.15	787.88	75.26	11.469	
12,200.00	10,094.00	11,839.37	9,699.23	41.68	42.82	-62.95	2,166.96	-779.36	862.66	784.86	77.80	11.088	
12,300.00	10,094.00	11,939.37	9,699.37	43.09	44.21	-62.95	2,266.96	-779.36	862.17	781.81	80.36	10.728	
12,400.00	10,094.00	12,039.37	9,699.51	44.52	45.61	-62.94	2,366.95	-779.36	861.68	778.73	82.96	10.387	
12,500.00	10,094.00	12,139.37	9,699.65	45.96	47.02	-62.93	2,466.95	-779.36	861.20	775.62	85.58	10.063	
12,600.00	10,094.00	12,239.36	9,699.79	47.41	48.45	-62.93	2,566.95	-779.36	860.71	772.49	88.22	9.756	
12,700.00	10,094.00	12,339.36	9,699.93	48.87	49.89	-62.92	2,666.95	-779.36	860.22	769.34	90.89	9.465	
12,800.00	10,094.00	12,439.36	9,700.07	50.34	51.34	-62.92	2,766.95	-779.36	859.74	766.17	93.57	9.188	
12,900.00	10,094.00	12,539.36	9,700.21	51.83	52.80	-62.91	2,866.95	-779.36	859.25	762.98	96.27	8.925	
13,000.00	10,094.00	12,639.36	9,700.35	53.32	54.28	-62.90	2,966.95	-779.36	858.76	759.78	98.99	8.675	
13,100.00	10,094.00	12,739.36	9,700.49	54.82	55.76	-62.90	3,066.95	-779.36	858.28	756.56	101.72	8.438	
13,200.00	10,094.00	12,839.36	9,700.63	56.33	57.25	-62.89	3,166.94	-779.36	857.79	753.32	104.46	8.211	
13,300.00	10,094.00	12,939.36	9,700.77	57.85	58.75	-62.89	3,266.94	-779.36	857.30	750.08	107.22	7.996	
13,400.00	10,094.00	13,039.35	9,700.91	59.37	60.25	-62.88	3,366.94	-779.36	856.82	746.82	109.99	7.790	
13,500.00	10,094.00	13,139.35	9,701.05	60.90	61.76	-62.87	3,466.94	-779.36	856.33	743.56	112.77	7.593	
13,600.00	10,094.00	13,239.35	9,701.19	62.43	63.28	-62.87	3,566.94	-779.36	855.84	740.28	115.56	7.406	
13,700.00	10,094.00	13,339.35	9,701.33	63.97	64.81	-62.86	3,666.94	-779.36	855.36	736.99	118.36	7.227	
13,800.00	10,094.00	13,439.35	9,701.47	65.51	66.33	-62.85	3,766.94	-779.36	854.87	733.70	121.17	7.055	
13,900.00	10,094.00	13,539.35	9,701.61	67.06	67.87	-62.85	3,866.93	-779.36	854.38	730.40	123.99	6.891	
14,000.00	10,094.00	13,639.35	9,701.75	68.61	69.41	-62.84	3,966.93	-779.36	853.90	727.09	126.81	6.734	
14,100.00	10,094.00	13,739.35	9,701.89	70.17	70.95	-62.84	4,066.93	-779.36	853.41	723.77	129.64	6.583	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 138H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Reference Site:	Thistle Unit	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	138H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 117H - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						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			
14,200.00	10,094.00	13,839.35	9,702.03	71.73	72.50	-62.83	4,166.93	-779.36	852.92	720.44	132.48	6.438			
14,300.00	10,094.00	13,939.34	9,702.17	73.29	74.05	-62.82	4,266.93	-779.36	852.43	717.12	135.32	6.299			
14,400.00	10,094.00	14,039.34	9,702.31	74.86	75.60	-62.82	4,366.93	-779.36	851.95	713.78	138.17	6.166			
14,500.00	10,094.00	14,139.34	9,702.45	76.43	77.16	-62.81	4,466.93	-779.36	851.46	710.44	141.02	6.038			
14,600.00	10,094.00	14,239.34	9,702.59	78.00	78.72	-62.80	4,566.93	-779.36	850.97	707.09	143.88	5.914			
14,700.00	10,094.00	14,339.34	9,702.73	79.57	80.28	-62.80	4,666.92	-779.36	850.49	703.74	146.74	5.796			
14,800.00	10,094.00	14,439.34	9,702.86	81.15	81.85	-62.79	4,766.92	-779.36	850.00	700.39	149.61	5.681			
14,900.00	10,094.00	14,539.34	9,703.00	82.73	83.42	-62.79	4,866.92	-779.36	849.51	697.03	152.48	5.571			
15,000.00	10,094.00	14,639.34	9,703.14	84.31	84.99	-62.78	4,966.92	-779.36	849.03	693.67	155.36	5.465			
15,100.00	10,094.00	14,739.33	9,703.28	85.90	86.56	-62.77	5,066.92	-779.36	848.54	690.30	158.24	5.362			
15,200.00	10,094.00	14,839.33	9,703.42	87.48	88.14	-62.77	5,166.92	-779.36	848.05	686.94	161.12	5.264			
15,300.00	10,094.00	14,939.33	9,703.56	89.07	89.72	-62.76	5,266.92	-779.36	847.57	683.56	164.01	5.168			
15,400.00	10,094.00	15,039.33	9,703.70	90.66	91.30	-62.75	5,366.92	-779.36	847.08	680.19	166.89	5.076			
15,500.00	10,094.00	15,139.33	9,703.84	92.25	92.88	-62.75	5,466.91	-779.36	846.59	676.81	169.79	4.986			
15,600.00	10,094.00	15,239.33	9,703.98	93.84	94.46	-62.74	5,566.91	-779.36	846.11	673.43	172.68	4.900			
15,700.00	10,094.00	15,339.33	9,704.12	95.44	96.05	-62.74	5,666.91	-779.36	845.62	670.05	175.58	4.816			
15,800.00	10,094.00	15,439.33	9,704.26	97.03	97.64	-62.73	5,766.91	-779.36	845.14	666.66	178.48	4.735			
15,900.00	10,094.00	15,539.32	9,704.40	98.63	99.23	-62.72	5,866.91	-779.36	844.65	663.27	181.38	4.657			
16,000.00	10,094.00	15,639.32	9,704.54	100.23	100.82	-62.72	5,966.91	-779.36	844.16	659.88	184.28	4.581			
16,100.00	10,094.00	15,739.32	9,704.68	101.83	102.41	-62.71	6,066.91	-779.36	843.68	656.49	187.19	4.507			
16,200.00	10,094.00	15,839.32	9,704.82	103.43	104.00	-62.70	6,166.90	-779.36	843.19	653.09	190.09	4.436			
16,300.00	10,094.00	15,939.32	9,704.96	105.03	105.60	-62.70	6,266.90	-779.36	842.70	649.70	193.00	4.366			
16,400.00	10,094.00	16,039.32	9,705.10	106.63	107.19	-62.69	6,366.90	-779.36	842.22	646.30	195.92	4.299			
16,500.00	10,094.00	16,139.32	9,705.24	108.24	108.79	-62.68	6,466.90	-779.36	841.73	642.90	198.83	4.233			
16,600.00	10,094.00	16,239.32	9,705.38	109.84	110.39	-62.68	6,566.90	-779.36	841.24	639.50	201.74	4.170			
16,700.00	10,094.00	16,339.31	9,705.52	111.45	111.99	-62.67	6,666.90	-779.36	840.76	636.10	204.66	4.108			
16,800.00	10,094.00	16,439.31	9,705.66	113.05	113.59	-62.66	6,766.90	-779.36	840.27	632.69	207.58	4.048			
16,900.00	10,094.00	16,539.31	9,705.80	114.66	115.19	-62.66	6,866.90	-779.36	839.78	629.29	210.50	3.990			
17,000.00	10,094.00	16,639.31	9,705.94	116.27	116.79	-62.65	6,966.89	-779.36	839.30	625.88	213.42	3.933			
17,100.00	10,094.00	16,739.31	9,706.08	117.88	118.39	-62.65	7,066.89	-779.36	838.81	622.47	216.34	3.877			
17,200.00	10,094.00	16,839.31	9,706.22	119.49	120.00	-62.64	7,166.89	-779.36	838.32	619.06	219.26	3.823			
17,300.00	10,094.00	16,939.31	9,706.36	121.10	121.60	-62.63	7,266.89	-779.36	837.84	615.65	222.18	3.771			
17,400.00	10,094.00	17,039.31	9,706.50	122.71	123.21	-62.63	7,366.89	-779.36	837.35	612.24	225.11	3.720			
17,500.00	10,094.00	17,139.30	9,706.63	124.32	124.81	-62.62	7,466.89	-779.36	836.87	608.83	228.03	3.670			
17,600.00	10,094.00	17,239.30	9,706.77	125.94	126.42	-62.61	7,566.89	-779.36	836.38	605.42	230.96	3.621			
17,700.00	10,094.00	17,339.30	9,706.91	127.55	128.03	-62.61	7,666.88	-779.36	835.89	602.00	233.89	3.574			
17,765.85	10,094.00	17,401.09	9,707.00	128.81	129.02	-62.60	7,728.67	-779.36	835.58	599.78	235.80	3.544			
17,766.30	10,094.00	17,401.09	9,707.00	128.62	129.02	-62.60	7,728.67	-779.36	835.58	599.77	235.81	3.543 SF			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 50H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 158- VES GyroFlex V2, 10541-MWD-ISCWSA													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	-77.89	60.94	-283.92	290.44					
100.00	100.00	94.57	94.57	0.09	0.08	-77.84	61.17	-283.84	290.36	290.19	0.17	1,721.081		
200.00	200.00	194.81	194.80	0.31	0.17	-77.69	61.88	-283.59	290.27	289.79	0.48	606.305		
300.00	300.00	295.09	295.08	0.54	0.25	-77.56	62.50	-283.26	290.07	289.30	0.78	373.848		
400.00	400.00	395.12	395.12	0.76	0.31	-77.51	62.65	-282.96	289.82	288.76	1.06	274.199		
500.00	500.00	494.53	494.52	0.99	0.36	-77.48	62.79	-282.75	289.64	288.31	1.33	218.156		
512.79	512.79	507.20	507.19	1.01	0.37	-77.48	62.80	-282.74	289.63	288.27	1.36	212.698		
600.00	600.00	593.95	593.94	1.21	0.40	-77.48	62.82	-282.83	289.72	288.13	1.59	182.216		
700.00	700.00	693.63	693.63	1.43	0.43	-77.53	62.83	-283.09	289.93	288.08	1.85	156.811		
800.00	800.00	794.03	794.02	1.66	0.46	-77.55	62.56	-283.34	290.16	288.06	2.11	137.754		
900.00	900.00	894.29	894.28	1.88	0.49	-77.52	62.71	-283.38	290.24	287.88	2.36	122.866		
1,000.00	1,000.00	992.64	992.63	2.11	0.52	-77.52	62.76	-283.67	290.53	287.91	2.62	111.016		
1,100.00	1,100.00	1,092.33	1,092.32	2.33	0.54	-77.55	62.78	-284.36	291.21	288.34	2.87	101.379		
1,200.00	1,200.00	1,193.79	1,193.78	2.56	0.57	-77.62	62.55	-284.86	291.65	288.52	3.13	93.269		
1,300.00	1,300.00	1,293.21	1,293.19	2.78	0.60	-77.72	62.10	-285.28	291.96	288.58	3.38	86.387		
1,400.00	1,400.00	1,392.67	1,392.65	3.01	0.62	-77.83	61.65	-285.87	292.45	288.82	3.63	80.504		
1,500.00	1,500.00	1,491.81	1,491.79	3.23	0.65	-77.90	61.47	-286.70	293.23	289.34	3.89	75.443		
1,600.00	1,600.00	1,591.83	1,591.80	3.46	0.68	-77.79	62.18	-287.45	294.11	289.97	4.14	71.028		
1,700.00	1,700.00	1,691.25	1,691.22	3.68	0.71	-77.71	62.82	-288.26	295.05	290.65	4.40	67.129		
1,800.00	1,800.00	1,791.06	1,791.02	3.91	0.74	-77.67	63.25	-289.42	296.27	291.62	4.65	63.705		
1,900.00	1,900.00	1,891.59	1,891.54	4.13	0.77	-77.58	63.94	-290.25	297.22	292.32	4.91	60.589		
2,000.00	2,000.00	1,991.54	1,991.49	4.36	0.81	-77.48	64.66	-291.14	298.25	293.09	5.16	57.792		
2,100.00	2,100.00	2,092.62	2,092.56	4.58	0.84	-77.44	65.06	-291.91	299.07	293.66	5.42	55.215		
2,200.00	2,200.00	2,193.77	2,193.71	4.81	0.87	-77.38	65.42	-292.25	299.48	293.81	5.67	52.823		
2,300.00	2,300.00	2,293.15	2,293.09	5.03	0.90	-77.33	65.73	-292.43	299.73	293.81	5.92	50.623		
2,400.00	2,400.00	2,393.29	2,393.23	5.26	0.93	-77.29	66.03	-292.85	300.21	294.03	6.18	48.612		
2,500.00	2,500.00	2,492.18	2,492.12	5.48	0.96	-77.26	66.31	-293.31	300.72	294.29	6.43	46.759		
2,600.00	2,600.00	2,594.70	2,594.63	5.71	0.98	-77.19	66.76	-293.68	301.17	294.50	6.68	45.104		
2,700.00	2,700.00	2,695.20	2,695.14	5.93	0.99	-77.14	66.98	-293.43	300.97	294.07	6.91	43.570		
2,800.00	2,800.00	2,795.57	2,795.51	6.15	1.00	-77.10	67.13	-293.07	300.67	293.53	7.13	42.141		
2,900.00	2,900.00	2,895.86	2,895.79	6.38	1.01	-77.04	67.32	-292.61	300.26	292.89	7.36	40.784		
3,000.00	3,000.00	2,996.36	2,996.30	6.60	1.02	-76.95	67.68	-291.94	299.69	292.10	7.59	39.479		
3,100.00	3,100.00	3,096.23	3,096.16	6.83	1.03	-76.83	68.13	-291.22	299.09	291.27	7.82	38.239		
3,200.00	3,200.00	3,196.44	3,196.37	7.05	1.04	-76.74	68.48	-290.52	298.49	290.43	8.05	37.070		
3,300.00	3,299.99	3,296.67	3,296.59	7.25	1.05	103.55	68.92	-289.64	297.94	289.69	8.25	36.098		
3,348.74	3,348.72	3,345.05	3,344.97	7.33	1.06	103.81	69.15	-289.25	297.86	289.52	8.34	35.718		
3,400.00	3,399.96	3,396.24	3,396.15	7.42	1.07	104.17	69.42	-288.86	297.93	289.50	8.43	35.343		
3,500.00	3,499.86	3,495.99	3,495.90	7.59	1.08	105.15	70.17	-288.05	298.43	289.82	8.61	34.658		
3,600.00	3,599.68	3,596.52	3,596.43	7.76	1.10	106.47	70.99	-287.23	299.54	290.74	8.80	34.055		
3,700.00	3,699.37	3,695.80	3,695.70	7.94	1.11	107.96	71.15	-286.24	300.96	291.98	8.98	33.499		
3,800.00	3,798.99	3,795.03	3,794.92	8.12	1.13	109.60	71.46	-285.69	303.35	294.18	9.18	33.054		
3,900.00	3,898.60	3,894.36	3,894.26	8.31	1.14	111.18	71.53	-285.09	305.85	296.48	9.37	32.627		
4,000.00	3,998.22	3,997.43	3,997.32	8.50	1.16	112.78	71.50	-284.28	308.39	298.82	9.57	32.214		
4,100.00	4,097.84	4,094.25	4,094.13	8.70	1.17	114.30	71.39	-282.88	310.52	300.74	9.78	31.753		
4,200.00	4,197.46	4,192.77	4,192.65	8.90	1.18	115.75	71.39	-282.57	313.93	303.95	9.99	31.438		
4,300.00	4,297.08	4,293.56	4,293.43	9.10	1.20	117.23	71.45	-282.09	317.43	307.23	10.20	31.131		
4,400.00	4,396.70	4,397.42	4,397.29	9.31	1.21	118.80	71.50	-280.61	320.30	309.89	10.41	30.771		
4,500.00	4,496.32	4,503.61	4,503.42	9.52	1.23	120.46	71.04	-277.24	321.63	311.01	10.62	30.280		
4,600.00	4,595.94	4,606.65	4,606.35	9.73	1.24	122.07	69.80	-272.55	321.65	310.81	10.84	29.681		
4,700.00	4,695.56	4,709.06	4,708.60	9.94	1.26	123.68	68.14	-267.20	321.10	310.05	11.05	29.049		
4,800.00	4,795.18	4,813.61	4,812.90	10.16	1.27	125.34	65.67	-260.49	319.40	308.13	11.27	28.342		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 50H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 158- VES GyroFlex V2, 10541-MWD-ISCWSA														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance		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	Warning		
4,900.00	4,894.80	4,915.37	4,914.34	10.38	1.29	126.95	62.48	-253.09	316.79	305.30	11.49	27.572			
5,000.00	4,994.42	5,013.93	5,012.58	10.60	1.30	128.42	58.81	-246.12	314.24	302.52	11.72	26.822			
5,100.00	5,094.11	5,111.57	5,109.97	10.83	1.32	129.68	55.17	-240.06	311.99	300.05	11.95	26.110			
5,200.00	5,193.92	5,209.72	5,207.90	11.06	1.34	130.67	51.69	-234.51	309.31	297.13	12.19	25.381			
5,300.00	5,293.83	5,308.19	5,306.18	11.28	1.35	131.54	48.95	-228.96	306.10	293.68	12.42	24.643			
5,400.00	5,393.79	5,407.35	5,405.16	11.50	1.37	132.23	46.58	-223.48	302.13	289.48	12.65	23.876			
5,500.00	5,493.78	5,506.41	5,504.06	11.71	1.39	-47.38	44.05	-218.41	297.22	284.35	12.88	23.085			
5,600.00	5,593.78	5,605.04	5,602.55	11.91	1.41	-47.14	41.53	-213.84	292.08	278.98	13.10	22.302			
5,700.00	5,693.78	5,702.25	5,699.65	12.12	1.43	-46.87	39.55	-209.70	287.58	274.25	13.33	21.575			
5,800.00	5,793.78	5,802.70	5,800.01	12.34	1.45	-46.64	37.65	-206.03	283.62	270.06	13.56	20.917			
5,900.00	5,893.78	5,903.29	5,900.51	12.55	1.47	-46.57	34.91	-202.85	279.31	265.52	13.79	20.252			
6,000.00	5,993.78	6,001.56	5,998.69	12.76	1.49	-46.61	32.00	-199.80	275.17	261.14	14.03	19.616			
6,100.00	6,093.78	6,099.50	6,096.57	12.98	1.50	-46.76	28.99	-197.69	271.50	257.23	14.27	19.032			
6,200.00	6,193.78	6,197.65	6,194.66	13.19	1.51	-46.96	26.31	-196.23	268.54	254.04	14.50	18.514			
6,300.00	6,293.78	6,297.10	6,294.08	13.41	1.53	-47.24	23.78	-195.43	266.22	251.48	14.74	18.058			
6,400.00	6,393.78	6,396.00	6,392.95	13.62	1.54	-47.53	21.46	-194.88	264.22	249.24	14.98	17.637			
6,500.00	6,493.78	6,495.96	6,492.89	13.84	1.55	-47.75	19.57	-194.26	262.50	247.28	15.22	17.248			
6,600.00	6,593.78	6,597.12	6,594.02	14.05	1.57	-47.97	17.37	-193.33	260.35	244.89	15.46	16.844			
6,700.00	6,693.78	6,695.98	6,692.86	14.27	1.58	-48.13	15.50	-192.38	258.37	242.67	15.70	16.461			
6,800.00	6,793.78	6,795.65	6,792.52	14.49	1.60	-48.23	14.02	-191.37	256.63	240.69	15.94	16.101			
6,900.00	6,893.78	6,895.87	6,892.72	14.70	1.62	-48.23	12.89	-190.12	254.94	238.77	16.18	15.758			
7,000.00	6,993.78	6,997.22	6,994.05	14.92	1.65	-48.20	11.63	-188.53	252.95	236.53	16.42	15.407			
7,100.00	7,093.78	7,097.73	7,094.53	15.14	1.67	-48.17	10.03	-186.52	250.40	233.74	16.66	15.031			
7,200.00	7,193.78	7,197.02	7,193.79	15.35	1.70	-48.12	8.61	-184.58	247.99	231.09	16.90	14.672			
7,300.00	7,293.78	7,297.36	7,294.10	15.57	1.72	-48.18	6.90	-183.09	245.74	228.59	17.14	14.333			
7,400.00	7,393.78	7,395.81	7,392.52	15.79	1.75	-48.25	5.19	-181.64	243.49	226.10	17.39	13.999			
7,500.00	7,493.78	7,499.39	7,496.08	16.01	1.77	-48.38	3.29	-180.29	241.31	223.68	17.63	13.687			
7,600.00	7,593.78	7,597.60	7,594.24	16.22	1.79	-48.54	0.72	-178.40	238.14	220.26	17.88	13.320			
7,700.00	7,693.78	7,698.22	7,694.82	16.44	1.82	-48.62	-1.25	-176.70	235.58	217.45	18.12	12.998			
7,800.00	7,793.78	7,796.13	7,792.70	16.66	1.84	-48.75	-3.21	-175.25	233.15	214.77	18.38	12.688			
7,900.00	7,893.78	7,897.39	7,893.94	16.88	1.87	-48.88	-5.08	-173.94	230.96	212.34	18.62	12.405			
8,000.00	7,993.78	7,996.77	7,993.28	17.10	1.89	-49.08	-7.20	-172.68	228.60	209.74	18.87	12.117			
8,100.00	8,093.78	8,096.50	8,092.99	17.32	1.92	-49.30	-9.30	-171.60	226.40	207.29	19.11	11.845			
8,200.00	8,193.78	8,195.51	8,191.98	17.54	1.94	-49.47	-11.02	-170.62	224.52	205.16	19.37	11.594			
8,300.00	8,293.78	8,295.70	8,292.15	17.76	1.96	-49.63	-12.56	-169.77	222.87	203.26	19.61	11.364			
8,400.00	8,393.78	8,397.01	8,393.43	17.97	1.99	-49.92	-14.86	-168.82	220.69	200.84	19.85	11.116			
8,500.00	8,493.78	8,496.44	8,492.83	18.19	2.01	-50.28	-17.40	-167.95	218.39	198.29	20.10	10.863			
8,600.00	8,593.78	8,595.59	8,591.95	18.41	2.03	-50.63	-19.60	-167.35	216.50	196.15	20.35	10.637			
8,700.00	8,693.78	8,695.12	8,691.46	18.63	2.06	-51.00	-21.70	-166.95	214.86	194.26	20.60	10.429			
8,800.00	8,793.78	8,794.88	8,791.20	18.85	2.08	-51.39	-23.74	-166.76	213.43	192.58	20.85	10.237			
8,900.00	8,893.78	8,895.08	8,891.37	19.07	2.10	-51.74	-25.67	-166.44	211.98	190.89	21.09	10.050			
9,000.00	8,993.78	8,994.71	8,990.99	19.29	2.12	-51.92	-27.09	-165.69	210.50	189.16	21.34	9.863			
9,100.00	9,093.78	9,093.77	9,090.05	19.51	2.15	-52.08	-28.23	-165.16	209.38	187.78	21.60	9.695			
9,200.00	9,193.78	9,192.87	9,189.14	19.73	2.16	-52.44	-29.67	-165.44	208.71	186.87	21.85	9.554			
9,300.00	9,293.78	9,292.57	9,288.82	19.95	2.18	-52.75	-30.80	-165.87	208.37	186.28	22.08	9.435			
9,400.00	9,393.78	9,392.81	9,389.05	20.17	2.19	-53.14	-32.14	-166.44	208.02	185.70	22.32	9.322			
9,500.00	9,493.78	9,493.96	9,490.18	20.39	2.20	-53.73	-34.24	-167.17	207.36	184.82	22.54	9.201			
9,579.35	9,573.13	9,572.47	9,568.65	20.57	2.21	-54.40	-36.57	-168.09	206.73	183.99	22.73	9.094			
9,600.00	9,593.78	9,592.83	9,588.99	20.61	2.22	-54.46	-37.25	-168.45	206.39	183.60	22.78	9.058			
9,650.00	9,643.57	9,643.22	9,639.35	20.72	2.22	-56.27	-39.00	-169.34	203.64	180.75	22.89	8.897			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
 (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
 (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 50H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 158- VES GyroFlex V2, 10541-MWD-ISCWSA													Offset Well Error:	0.00 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		
9,700.00	9,692.71	9,692.81	9,688.90	20.81	2.23	-59.48	-40.76	-169.99	198.31	175.33	22.98	8.629		
9,750.00	9,740.75	9,739.83	9,735.89	20.89	2.24	-64.06	-42.42	-170.56	191.25	168.17	23.08	8.287		
9,800.00	9,787.24	9,785.20	9,781.22	20.97	2.24	-70.07	-43.97	-171.22	183.62	160.46	23.16	7.928		
9,850.00	9,831.77	9,829.06	9,825.06	21.05	2.25	-77.39	-45.45	-171.89	176.80	153.59	23.21	7.618		
9,900.00	9,873.91	9,870.41	9,866.38	21.13	2.26	-85.48	-46.84	-172.48	172.64	149.42	23.23	7.433		
9,919.95	9,889.97	9,886.18	9,882.14	21.16	2.26	-88.78	-47.37	-172.70	172.22	148.99	23.23	7.414 CC, ES, SF		
9,950.00	9,913.28	9,909.17	9,905.11	21.21	2.26	-93.66	-48.12	-172.99	173.30	150.09	23.22	7.464		
10,000.00	9,949.53	9,944.81	9,940.74	21.28	2.27	-101.09	-49.26	-173.35	180.62	157.42	23.20	7.785		
10,050.00	9,982.30	9,976.83	9,972.74	21.36	2.28	-107.10	-50.25	-173.59	195.62	172.42	23.20	8.431		
10,100.00	10,011.31	10,004.04	9,999.94	21.46	2.28	-111.10	-51.14	-173.78	218.30	195.05	23.25	9.389		
10,150.00	10,036.28	10,026.93	10,022.81	21.58	2.29	-113.07	-51.96	-173.93	247.78	224.46	23.32	10.625		
10,200.00	10,056.99	10,045.33	10,041.19	21.72	2.29	-112.83	-52.67	-174.06	282.76	259.36	23.39	12.087		
10,250.00	10,073.25	10,059.15	10,055.00	21.87	2.29	-110.10	-53.24	-174.16	321.96	298.50	23.46	13.725		
10,300.00	10,084.90	10,068.50	10,064.34	22.05	2.30	-104.47	-53.64	-174.23	364.27	340.76	23.51	15.495		
10,350.00	10,091.83	10,073.17	10,069.01	22.24	2.30	-95.43	-53.84	-174.26	408.70	385.15	23.55	17.356		
10,397.53	10,094.00	10,073.29	10,069.13	22.45	2.30	-83.67	-53.84	-174.26	452.15	428.58	23.57	19.180		
10,400.00	10,094.00	10,073.18	10,069.02	22.46	2.30	-83.64	-53.84	-174.26	454.43	430.86	23.57	19.276		
10,500.00	10,094.00	10,068.83	10,064.67	22.97	2.30	-82.22	-53.65	-174.23	548.07	524.45	23.62	23.205		
10,600.00	10,094.00	10,068.50	10,064.34	23.57	2.30	-82.12	-53.64	-174.23	643.61	619.98	23.63	27.242		
10,700.00	10,094.00	10,060.95	10,056.80	24.28	2.29	-79.69	-53.31	-174.18	740.28	716.60	23.68	31.258		
10,800.00	10,094.00	10,057.16	10,053.01	25.07	2.29	-78.48	-53.16	-174.15	837.73	814.01	23.71	35.330		
10,900.00	10,094.00	10,053.47	10,049.32	25.94	2.29	-77.32	-53.00	-174.12	935.69	911.95	23.74	39.416		
11,000.00	10,094.00	10,049.86	10,045.72	26.88	2.29	-76.19	-52.86	-174.10	1,034.04	1,010.27	23.77	43.509		
11,100.00	10,094.00	10,046.34	10,042.20	27.89	2.29	-75.10	-52.71	-174.07	1,132.66	1,108.86	23.79	47.604		
11,200.00	10,094.00	12,170.43	11,227.17	28.95	20.34	-169.85	1,086.90	-209.70	1,159.53	1,134.62	24.91	46.549		
11,300.00	10,094.00	12,276.65	11,234.16	30.06	22.14	-169.66	1,192.73	-215.40	1,166.93	1,140.74	26.19	44.552		
11,400.00	10,094.00	12,454.55	11,236.77	31.23	25.24	-169.32	1,370.36	-223.93	1,168.64	1,140.59	28.06	41.653		
11,459.52	10,094.00	12,509.14	11,236.26	31.94	26.17	-169.21	1,424.89	-226.28	1,168.52	1,139.71	28.81	40.560		
11,500.00	10,094.00	12,548.38	11,236.02	32.43	26.81	-169.14	1,464.11	-227.88	1,168.55	1,139.21	29.34	39.832		
11,600.00	10,094.00	12,648.03	11,235.51	33.67	28.46	-168.97	1,563.68	-231.76	1,168.70	1,138.01	30.68	38.088		
11,700.00	10,094.00	12,737.36	11,235.32	34.94	29.96	-168.86	1,652.97	-234.40	1,169.00	1,137.03	31.97	36.569		
11,800.00	10,094.00	12,814.44	11,236.88	36.24	31.27	-168.82	1,730.01	-235.96	1,171.23	1,138.07	33.16	35.323		
11,900.00	10,094.00	12,974.76	11,238.31	37.57	34.06	-168.79	1,890.30	-237.57	1,172.53	1,137.56	34.97	33.528		
12,000.00	10,094.00	13,068.34	11,236.12	38.92	35.67	-168.78	1,983.86	-237.86	1,170.23	1,133.92	36.31	32.226		
12,057.50	10,094.00	13,107.32	11,235.69	39.71	36.34	-168.77	2,022.83	-238.23	1,169.70	1,132.71	36.99	31.626		
12,100.00	10,094.00	13,132.11	11,235.83	40.29	36.76	-168.76	2,047.62	-238.60	1,170.02	1,132.57	37.45	31.242		
12,200.00	10,094.00	13,201.05	11,237.96	41.68	37.93	-168.72	2,116.50	-240.19	1,173.24	1,134.61	38.63	30.370		
12,300.00	10,094.00	13,371.66	11,240.43	43.09	40.90	-168.57	2,287.01	-244.57	1,175.55	1,134.89	40.66	28.914		
12,400.00	10,094.00	13,465.00	11,237.68	44.52	42.55	-168.45	2,380.28	-246.86	1,173.12	1,131.01	42.10	27.864		
12,500.00	10,094.00	13,559.00	11,236.19	45.96	44.17	-168.35	2,474.23	-249.24	1,171.98	1,128.42	43.56	26.906		
12,508.95	10,094.00	13,559.00	11,236.19	46.09	44.17	-168.35	2,474.23	-249.24	1,171.95	1,128.33	43.62	26.866		
12,600.00	10,094.00	13,606.99	11,237.01	47.41	44.99	-168.29	2,522.19	-250.87	1,173.82	1,129.19	44.64	26.297		
12,700.00	10,094.00	13,675.13	11,240.24	48.87	46.14	-168.19	2,590.17	-253.91	1,179.14	1,133.26	45.88	25.701		
12,800.00	10,094.00	13,803.78	11,246.47	50.34	48.36	-167.93	2,718.45	-261.30	1,185.17	1,137.42	47.75	24.820		
12,900.00	10,094.00	13,910.79	11,248.26	51.83	50.20	-167.64	2,825.21	-268.43	1,188.07	1,138.59	49.48	24.012		
13,000.00	10,094.00	14,001.46	11,250.75	53.32	51.74	-167.43	2,915.69	-273.70	1,191.90	1,140.88	51.02	23.360		
13,100.00	10,094.00	14,140.12	11,253.50	54.82	54.13	-167.20	3,054.17	-280.01	1,194.85	1,141.84	53.01	22.541		
13,200.00	10,094.00	14,246.23	11,252.84	56.33	55.97	-166.92	3,160.09	-286.27	1,195.45	1,140.68	54.77	21.826		
13,300.00	10,094.00	14,381.00	11,250.35	57.85	58.32	-166.52	3,294.55	-295.00	1,195.25	1,138.39	56.85	21.023		
13,400.00	10,094.00	14,455.71	11,248.34	59.37	59.60	-166.35	3,369.14	-298.44	1,193.66	1,135.31	58.35	20.457		
13,408.96	10,094.00	14,462.04	11,248.29	59.51	59.71	-166.34	3,375.47	-298.60	1,193.64	1,135.16	58.47	20.413		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 50H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 158- VES GyroFlex V2, 10541-MWD-ISCWSA													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							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		
13,500.00	10,094.00	14,539.99	11,248.66	60.90	61.04	-166.33	3,453.41	-299.36	1,194.14	1,134.34	59.79	19.971		
13,600.00	10,094.00	14,624.27	11,250.31	62.43	62.47	-166.41	3,537.67	-298.46	1,195.69	1,134.54	61.15	19.552		
13,700.00	10,094.00	14,718.97	11,253.91	63.97	64.08	-166.62	3,632.25	-295.30	1,198.49	1,136.00	62.49	19.180		
13,800.00	10,094.00	14,827.72	11,257.65	65.51	65.95	-166.87	3,740.86	-291.22	1,200.87	1,136.97	63.90	18.793		
13,900.00	10,094.00	14,935.01	11,260.53	67.06	67.80	-167.10	3,848.04	-287.40	1,202.57	1,137.26	65.31	18.412		
14,000.00	10,094.00	15,044.00	11,262.48	68.61	69.69	-167.33	3,956.94	-283.52	1,203.41	1,136.67	66.74	18.031		
14,100.00	10,094.00	15,117.79	11,264.25	70.17	70.94	-167.47	4,030.67	-281.17	1,205.01	1,137.07	67.94	17.735		
14,200.00	10,094.00	15,211.97	11,268.17	71.73	72.53	-167.65	4,124.73	-278.72	1,208.41	1,139.13	69.28	17.442		
14,300.00	10,094.00	15,302.07	11,271.83	73.29	74.07	-167.75	4,214.75	-277.70	1,212.05	1,141.41	70.64	17.158		
14,400.00	10,094.00	15,401.65	11,276.05	74.86	75.78	-167.75	4,314.24	-279.05	1,216.37	1,144.19	72.18	16.851		
14,500.00	10,094.00	15,508.11	11,280.08	76.43	77.62	-167.74	4,420.60	-280.73	1,220.31	1,146.50	73.81	16.534		
14,600.00	10,094.00	15,614.48	11,283.41	78.00	79.47	-167.70	4,526.89	-282.87	1,223.69	1,148.23	75.46	16.217		
14,700.00	10,094.00	15,719.93	11,285.92	79.57	81.30	-167.59	4,632.26	-286.32	1,226.62	1,149.45	77.17	15.894		
14,800.00	10,094.00	15,836.92	11,287.69	81.15	83.36	-167.45	4,749.17	-290.39	1,228.77	1,149.74	79.03	15.548		
14,900.00	10,094.00	15,903.00	11,288.09	82.73	84.53	-167.35	4,815.20	-292.84	1,230.54	1,150.14	80.39	15.307		
15,000.00	10,094.00	15,903.00	11,288.09	84.31	84.53	-167.35	4,815.20	-292.84	1,238.63	1,157.86	80.77	15.335		
15,100.00	10,094.00	15,903.00	11,288.09	85.90	84.53	-167.35	4,815.20	-292.84	1,254.66	1,173.95	80.72	15.544		
15,200.00	10,094.00	15,903.00	11,288.09	87.48	84.53	-167.35	4,815.20	-292.84	1,278.34	1,198.08	80.26	15.927		
15,300.00	10,094.00	15,903.00	11,288.09	89.07	84.53	-167.35	4,815.20	-292.84	1,309.25	1,229.79	79.47	16.476		
15,400.00	10,094.00	15,903.00	11,288.09	90.66	84.53	-167.35	4,815.20	-292.84	1,346.89	1,268.51	78.38	17.184		
15,500.00	10,094.00	15,903.00	11,288.09	92.25	84.53	-167.35	4,815.20	-292.84	1,390.72	1,313.64	77.08	18.042		
15,600.00	10,094.00	15,903.00	11,288.09	93.84	84.53	-167.35	4,815.20	-292.84	1,440.17	1,364.54	75.63	19.043		
15,700.00	10,094.00	15,903.00	11,288.09	95.44	84.53	-167.35	4,815.20	-292.84	1,494.68	1,420.60	74.07	20.178		
15,800.00	10,094.00	15,903.00	11,288.09	97.03	84.53	-167.35	4,815.20	-292.84	1,553.72	1,481.25	72.47	21.439		
15,900.00	10,094.00	15,903.00	11,288.09	98.63	84.53	-167.35	4,815.20	-292.84	1,616.79	1,545.94	70.86	22.818		
16,000.00	10,094.00	15,903.00	11,288.09	100.23	84.53	-167.35	4,815.20	-292.84	1,683.45	1,614.19	69.26	24.306		
16,100.00	10,094.00	15,903.00	11,288.09	101.83	84.53	-167.35	4,815.20	-292.84	1,753.28	1,685.57	67.70	25.896		
16,200.00	10,094.00	15,903.00	11,288.09	103.43	84.53	-167.35	4,815.20	-292.84	1,825.91	1,759.71	66.20	27.581		
16,300.00	10,094.00	15,903.00	11,288.09	105.03	84.53	-167.35	4,815.20	-292.84	1,901.04	1,836.27	64.77	29.352		
16,400.00	10,094.00	15,903.00	11,288.09	106.63	84.53	-167.35	4,815.20	-292.84	1,978.36	1,914.96	63.40	31.205		
16,500.00	10,094.00	15,903.00	11,288.09	108.24	84.53	-167.35	4,815.20	-292.84	2,057.65	1,995.54	62.11	33.131		
16,600.00	10,094.00	15,903.00	11,288.09	109.84	84.53	-167.35	4,815.20	-292.84	2,138.66	2,077.78	60.89	35.126		
16,700.00	10,094.00	15,903.00	11,288.09	111.45	84.53	-167.35	4,815.20	-292.84	2,221.23	2,161.49	59.74	37.182		
16,800.00	10,094.00	15,903.00	11,288.09	113.05	84.53	-167.35	4,815.20	-292.84	2,305.18	2,246.52	58.66	39.296		
16,900.00	10,094.00	15,903.00	11,288.09	114.66	84.53	-167.35	4,815.20	-292.84	2,390.36	2,332.58	57.78	41.367		
17,000.00	10,094.00	15,903.00	11,288.09	116.27	84.53	-167.35	4,815.20	-292.84	2,476.65	2,419.52	57.13	43.351		
17,100.00	10,094.00	15,903.00	11,288.09	117.88	84.53	-167.35	4,815.20	-292.84	2,563.94	2,507.42	56.52	45.365		
17,200.00	10,094.00	15,903.00	11,288.09	119.49	84.53	-167.35	4,815.20	-292.84	2,652.12	2,596.18	55.95	47.406		
17,300.00	10,094.00	15,903.00	11,288.09	121.10	84.53	-167.35	4,815.20	-292.84	2,741.12	2,685.71	55.41	49.470		
17,400.00	10,094.00	15,903.00	11,288.09	122.71	84.53	-167.35	4,815.20	-292.84	2,830.85	2,775.94	54.91	51.555		
17,500.00	10,094.00	15,903.00	11,288.09	124.32	84.53	-167.35	4,815.20	-292.84	2,921.25	2,866.81	54.44	53.658		
17,600.00	10,094.00	15,903.00	11,288.09	125.94	84.53	-167.35	4,815.20	-292.84	3,012.26	2,958.25	54.01	55.776		
17,700.00	10,094.00	15,903.00	11,288.09	127.55	84.53	-167.35	4,815.20	-292.84	3,103.82	3,050.21	53.60	57.907		
17,766.30	10,094.00	15,903.00	11,288.09	128.62	84.53	-167.35	4,815.20	-292.84	3,164.80	3,111.46	53.35	59.325		

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 1629-MWD-ISCWSA, 16290-Project													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							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		
2,900.00	2,900.00	16,290.00	11,265.27	6.38	93.92	-3.07	5,487.02	-294.24	9,966.66	9,925.31	41.35	241.059		
3,000.00	3,000.00	16,290.00	11,265.27	6.60	93.92	-3.07	5,487.02	-294.24	9,883.38	9,841.96	41.42	238.591		
3,100.00	3,100.00	16,290.00	11,265.27	6.83	93.92	-3.07	5,487.02	-294.24	9,800.42	9,758.91	41.51	236.106		
3,200.00	3,200.00	16,290.00	11,265.27	7.05	93.92	-3.07	5,487.02	-294.24	9,717.78	9,676.18	41.60	233.606		
3,300.00	3,299.99	16,290.00	11,265.27	7.25	93.92	177.01	5,487.02	-294.24	9,635.97	9,594.29	41.68	231.211		
3,400.00	3,399.96	16,290.00	11,265.27	7.42	93.92	177.08	5,487.02	-294.24	9,555.53	9,513.79	41.74	228.923		
3,500.00	3,499.86	16,290.00	11,265.27	7.59	93.92	177.14	5,487.02	-294.24	9,476.53	9,434.71	41.81	226.631		
3,600.00	3,599.88	16,290.00	11,265.27	7.76	93.92	177.20	5,487.02	-294.24	9,399.02	9,357.12	41.90	224.339		
3,700.00	3,699.37	16,290.00	11,265.27	7.94	93.92	177.26	5,487.02	-294.24	9,323.06	9,281.08	41.99	222.050		
3,800.00	3,798.99	16,290.00	11,265.27	8.12	93.92	177.26	5,487.02	-294.24	9,248.14	9,206.05	42.09	219.736		
3,900.00	3,898.60	16,290.00	11,265.27	8.31	93.92	177.26	5,487.02	-294.24	9,173.70	9,131.50	42.20	217.396		
4,000.00	3,998.22	16,290.00	11,265.27	8.50	93.92	177.26	5,487.02	-294.24	9,099.74	9,057.43	42.31	215.055		
4,100.00	4,097.84	16,290.00	11,265.27	8.70	93.92	177.26	5,487.02	-294.24	9,026.29	8,983.86	42.43	212.715		
4,200.00	4,197.46	16,290.00	11,265.27	8.90	93.92	177.26	5,487.02	-294.24	8,953.35	8,910.79	42.56	210.379		
4,300.00	4,297.08	16,290.00	11,265.27	9.10	93.92	177.26	5,487.02	-294.24	8,880.94	8,838.25	42.69	208.050		
4,400.00	4,396.70	16,290.00	11,265.27	9.31	93.92	177.26	5,487.02	-294.24	8,809.07	8,766.25	42.82	205.728		
4,500.00	4,496.32	16,290.00	11,265.27	9.52	93.92	177.26	5,487.02	-294.24	8,737.75	8,694.80	42.96	203.416		
4,600.00	4,595.94	16,290.00	11,265.27	9.73	93.92	177.26	5,487.02	-294.24	8,667.00	8,623.91	43.09	201.115		
4,700.00	4,695.56	16,290.00	11,265.27	9.94	93.92	177.26	5,487.02	-294.24	8,596.83	8,553.59	43.24	198.827		
4,800.00	4,795.18	16,290.00	11,265.27	10.16	93.92	177.26	5,487.02	-294.24	8,527.26	8,483.87	43.38	196.555		
4,900.00	4,894.80	16,290.00	11,265.27	10.38	93.92	177.26	5,487.02	-294.24	8,458.29	8,414.76	43.53	194.298		
5,000.00	4,994.42	16,290.00	11,265.27	10.60	93.92	177.26	5,487.02	-294.24	8,389.95	8,346.27	43.68	192.058		
5,100.00	5,094.11	16,290.00	11,265.27	10.83	93.92	177.21	5,487.02	-294.24	8,321.61	8,277.77	43.85	189.794		
5,200.00	5,193.92	16,290.00	11,265.27	11.06	93.92	177.17	5,487.02	-294.24	8,252.64	8,208.63	44.01	187.500		
5,300.00	5,293.83	16,290.00	11,265.27	11.28	93.92	177.12	5,487.02	-294.24	8,183.04	8,138.86	44.18	185.216		
5,400.00	5,393.79	16,290.00	11,265.27	11.50	93.92	177.07	5,487.02	-294.24	8,112.82	8,068.48	44.35	182.941		
5,500.00	5,493.78	16,290.00	11,265.27	11.71	93.92	-2.98	5,487.02	-294.24	8,041.99	7,997.48	44.50	180.701		
5,600.00	5,593.78	16,290.00	11,265.27	11.91	93.92	-2.98	5,487.02	-294.24	7,971.16	7,926.50	44.66	178.489		
5,700.00	5,693.78	16,290.00	11,265.27	12.12	93.92	-2.98	5,487.02	-294.24	7,900.95	7,856.13	44.82	176.285		
5,800.00	5,793.78	16,290.00	11,265.27	12.34	93.92	-2.98	5,487.02	-294.24	7,831.40	7,786.42	44.98	174.105		
5,900.00	5,893.78	16,290.00	11,265.27	12.55	93.92	-2.98	5,487.02	-294.24	7,762.51	7,717.36	45.14	171.949		
6,000.00	5,993.78	16,290.00	11,265.27	12.76	93.92	-2.98	5,487.02	-294.24	7,694.30	7,648.99	45.31	169.817		
6,100.00	6,093.78	16,290.00	11,265.27	12.98	93.92	-2.98	5,487.02	-294.24	7,626.80	7,581.32	45.48	167.711		
6,200.00	6,193.78	16,290.00	11,265.27	13.19	93.92	-2.98	5,487.02	-294.24	7,560.01	7,514.37	45.64	165.631		
6,300.00	6,293.78	16,290.00	11,265.27	13.41	93.92	-2.98	5,487.02	-294.24	7,493.97	7,448.15	45.81	163.578		
6,400.00	6,393.78	16,290.00	11,265.27	13.62	93.92	-2.98	5,487.02	-294.24	7,428.68	7,382.70	45.98	161.553		
6,500.00	6,493.78	16,290.00	11,265.27	13.84	93.92	-2.98	5,487.02	-294.24	7,364.17	7,318.02	46.15	159.555		
6,600.00	6,593.78	16,290.00	11,265.27	14.05	93.92	-2.98	5,487.02	-294.24	7,300.46	7,254.01	46.45	157.155		
6,700.00	6,693.78	16,290.00	11,265.27	14.27	93.92	-2.98	5,487.02	-294.24	7,237.57	7,190.79	46.78	154.704		
6,800.00	6,793.78	16,290.00	11,265.27	14.49	93.92	-2.98	5,487.02	-294.24	7,175.53	7,128.41	47.12	152.294		
6,900.00	6,893.78	16,290.00	11,265.27	14.70	93.92	-2.98	5,487.02	-294.24	7,114.35	7,066.90	47.45	149.926		
7,000.00	6,993.78	16,290.00	11,265.27	14.92	93.92	-2.98	5,487.02	-294.24	7,054.06	7,006.26	47.79	147.599		
7,100.00	7,093.78	16,290.00	11,265.27	15.14	93.92	-2.98	5,487.02	-294.24	6,994.67	6,946.54	48.13	145.315		
7,200.00	7,193.78	16,290.00	11,265.27	15.35	93.92	-2.98	5,487.02	-294.24	6,936.22	6,887.74	48.48	143.073		
7,300.00	7,293.78	16,290.00	11,265.27	15.57	93.92	-2.98	5,487.02	-294.24	6,878.73	6,829.90	48.83	140.874		
7,400.00	7,393.78	16,290.00	11,265.27	15.79	93.92	-2.98	5,487.02	-294.24	6,822.22	6,773.04	49.18	138.719		
7,500.00	7,493.78	16,290.00	11,265.27	16.01	93.92	-2.98	5,487.02	-294.24	6,766.72	6,717.18	49.53	136.607		
7,600.00	7,593.78	16,290.00	11,265.27	16.22	93.92	-2.98	5,487.02	-294.24	6,712.24	6,662.35	49.89	134.539		
7,700.00	7,693.78	16,290.00	11,265.27	16.44	93.92	-2.98	5,487.02	-294.24	6,658.82	6,608.57	50.25	132.515		
7,800.00	7,793.78	16,290.00	11,265.27	16.66	93.92	-2.98	5,487.02	-294.24	6,606.49	6,555.88	50.61	130.535		
7,900.00	7,893.78	16,290.00	11,265.27	16.88	93.92	-2.98	5,487.02	-294.24	6,555.26	6,504.28	50.97	128.599		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 1629-MWD-ISCWSA, 16290-Project													Offset Well Error:	0.00 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		
8,000.00	7,993.78	16,290.00	11,265.27	17.10	93.92	-2.98	5,487.02	-294.24	6,505.16	6,453.82	51.34	126.708		
8,100.00	8,093.78	16,290.00	11,265.27	17.32	93.92	-2.98	5,487.02	-294.24	6,456.23	6,404.52	51.71	124.862		
8,200.00	8,193.78	16,290.00	11,265.27	17.54	93.92	-2.98	5,487.02	-294.24	6,408.48	6,356.41	52.08	123.060		
8,300.00	8,293.78	16,290.00	11,265.27	17.76	93.92	-2.98	5,487.02	-294.24	6,361.95	6,309.50	52.45	121.304		
8,400.00	8,393.78	16,290.00	11,265.27	17.97	93.92	-2.98	5,487.02	-294.24	6,316.65	6,263.84	52.82	119.592		
8,500.00	8,493.78	16,290.00	11,265.27	18.19	93.92	-2.98	5,487.02	-294.24	6,272.63	6,219.44	53.19	117.925		
8,600.00	8,593.78	16,290.00	11,265.27	18.41	93.92	-2.98	5,487.02	-294.24	6,229.90	6,176.33	53.57	116.303		
8,700.00	8,693.78	16,290.00	11,265.27	18.63	93.92	-2.98	5,487.02	-294.24	6,188.49	6,134.54	53.94	114.727		
8,800.00	8,793.78	16,290.00	11,265.27	18.85	93.92	-2.98	5,487.02	-294.24	6,148.42	6,094.11	54.32	113.195		
8,900.00	8,893.78	16,290.00	11,265.27	19.07	93.92	-2.98	5,487.02	-294.24	6,109.73	6,055.04	54.69	111.708		
9,000.00	8,993.78	16,290.00	11,265.27	19.29	93.92	-2.98	5,487.02	-294.24	6,072.44	6,017.37	55.07	110.266		
9,100.00	9,093.78	16,290.00	11,265.27	19.51	93.92	-2.98	5,487.02	-294.24	6,036.58	5,981.13	55.45	108.868		
9,200.00	9,193.78	16,290.00	11,265.27	19.73	93.92	-2.98	5,487.02	-294.24	6,002.17	5,946.35	55.83	107.515		
9,300.00	9,293.78	16,290.00	11,265.27	19.95	93.92	-2.98	5,487.02	-294.24	5,969.24	5,913.04	56.20	106.207		
9,400.00	9,393.78	16,290.00	11,265.27	20.17	93.92	-2.98	5,487.02	-294.24	5,937.81	5,881.23	56.58	104.942		
9,500.00	9,493.78	16,290.00	11,265.27	20.39	93.92	-2.98	5,487.02	-294.24	5,907.90	5,850.94	56.96	103.722		
9,579.35	9,573.13	16,290.00	11,265.27	20.57	93.92	-2.98	5,487.02	-294.24	5,885.27	5,828.02	57.26	102.785		
9,600.00	9,593.78	16,290.00	11,265.27	20.61	93.92	-2.75	5,487.02	-294.24	5,879.15	5,821.82	57.34	102.537		
9,650.00	9,643.57	16,290.00	11,265.27	20.72	93.92	-2.85	5,487.02	-294.24	5,861.41	5,803.88	57.52	101.897		
9,700.00	9,692.71	16,290.00	11,265.27	20.81	93.92	-2.98	5,487.02	-294.24	5,839.62	5,781.92	57.70	101.203		
9,750.00	9,740.75	16,290.00	11,265.27	20.89	93.92	-3.16	5,487.02	-294.24	5,813.95	5,756.08	57.87	100.465		
9,800.00	9,787.24	16,290.00	11,265.27	20.97	93.92	-3.39	5,487.02	-294.24	5,784.59	5,726.56	58.03	99.690		
9,850.00	9,831.77	16,290.00	11,265.27	21.05	93.92	-3.68	5,487.02	-294.24	5,751.74	5,693.57	58.17	98.884		
9,900.00	9,873.91	16,290.00	11,265.27	21.13	93.92	-4.07	5,487.02	-294.24	5,715.65	5,657.36	58.29	98.051		
9,950.00	9,913.28	16,290.00	11,265.27	21.21	93.92	-4.59	5,487.02	-294.24	5,676.61	5,618.21	58.40	97.198		
10,000.00	9,949.53	16,290.00	11,265.27	21.28	93.92	-5.31	5,487.02	-294.24	5,634.90	5,576.41	58.50	96.331		
10,050.00	9,982.30	16,290.00	11,265.27	21.36	93.92	-6.35	5,487.02	-294.24	5,590.87	5,532.29	58.57	95.454		
10,100.00	10,011.31	16,290.00	11,265.27	21.46	93.92	-7.97	5,487.02	-294.24	5,544.85	5,486.22	58.63	94.574		
10,150.00	10,036.28	16,290.00	11,265.27	21.58	93.92	-10.77	5,487.02	-294.24	5,497.24	5,438.57	58.67	93.697		
10,200.00	10,056.99	16,290.00	11,265.27	21.72	93.92	-16.68	5,487.02	-294.24	5,448.43	5,389.74	58.69	92.827		
10,250.00	10,073.25	16,290.00	11,265.27	21.87	93.92	-35.39	5,487.02	-294.24	5,398.86	5,340.16	58.70	91.970		
10,300.00	10,084.90	16,290.00	11,265.27	22.05	93.92	-117.38	5,487.02	-294.24	5,348.95	5,290.26	58.70	91.130		
10,350.00	10,091.83	16,290.00	11,265.27	22.24	93.92	-157.55	5,487.02	-294.24	5,299.17	5,240.50	58.68	90.313		
10,397.53	10,094.00	16,290.00	11,265.27	22.45	93.92	-166.58	5,487.02	-294.24	5,252.40	5,193.75	58.65	89.561		
10,400.00	10,094.00	16,290.00	11,265.27	22.46	93.92	-166.58	5,487.02	-294.24	5,249.98	5,191.34	58.64	89.525		
10,500.00	10,094.00	16,290.00	11,265.27	22.97	93.92	-166.58	5,487.02	-294.24	5,152.47	5,093.89	58.58	87.957		
10,600.00	10,094.00	16,290.00	11,265.27	23.57	93.92	-166.58	5,487.02	-294.24	5,055.05	4,996.54	58.52	86.386		
10,700.00	10,094.00	16,290.00	11,265.27	24.28	93.92	-166.58	5,487.02	-294.24	4,957.74	4,899.28	58.46	84.812		
10,800.00	10,094.00	16,290.00	11,265.27	25.07	93.92	-166.58	5,487.02	-294.24	4,860.54	4,802.14	58.40	83.234		
10,900.00	10,094.00	16,290.00	11,265.27	25.94	93.92	-166.58	5,487.02	-294.24	4,763.45	4,705.11	58.34	81.654		
11,000.00	10,094.00	16,290.00	11,265.27	26.88	93.92	-166.58	5,487.02	-294.24	4,666.48	4,608.20	58.28	80.070		
11,100.00	10,094.00	16,290.00	11,265.27	27.89	93.92	-166.58	5,487.02	-294.24	4,569.64	4,511.42	58.22	78.484		
11,200.00	10,094.00	16,290.00	11,265.27	28.95	93.92	-166.58	5,487.02	-294.24	4,472.95	4,414.78	58.17	76.895		
11,300.00	10,094.00	16,290.00	11,265.27	30.06	93.92	-166.58	5,487.02	-294.24	4,376.40	4,318.28	58.12	75.302		
11,400.00	10,094.00	16,290.00	11,265.27	31.23	93.92	-166.58	5,487.02	-294.24	4,280.01	4,221.94	58.07	73.707		
11,500.00	10,094.00	16,290.00	11,265.27	32.43	93.92	-166.58	5,487.02	-294.24	4,183.79	4,125.77	58.02	72.109		
11,600.00	10,094.00	16,290.00	11,265.27	33.67	93.92	-166.58	5,487.02	-294.24	4,087.75	4,029.78	57.98	70.508		
11,700.00	10,094.00	16,290.00	11,265.27	34.94	93.92	-166.58	5,487.02	-294.24	3,991.91	3,933.98	57.93	68.904		
11,800.00	10,094.00	16,290.00	11,265.27	36.24	93.92	-166.58	5,487.02	-294.24	3,896.28	3,838.38	57.90	67.297		
11,900.00	10,094.00	16,290.00	11,265.27	37.57	93.92	-166.58	5,487.02	-294.24	3,800.87	3,743.00	57.86	65.687		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 138H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Reference Site:	Thistle Unit	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	138H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 1629-MWD-ISCWSA, 16290-Project													Offset Well Error:	0.00 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		
12,000.00	10,094.00	16,290.00	11,265.27	38.92	93.92	-166.58	5,487.02	-294.24	3,705.70	3,647.86	57.84	64.073		
12,100.00	10,094.00	16,290.00	11,265.27	40.29	93.92	-166.58	5,487.02	-294.24	3,610.79	3,552.98	57.81	62.457		
12,200.00	10,094.00	16,290.00	11,265.27	41.68	93.92	-166.58	5,487.02	-294.24	3,516.17	3,458.37	57.80	60.837		
12,300.00	10,094.00	16,290.00	11,265.27	43.09	93.92	-166.58	5,487.02	-294.24	3,421.85	3,364.06	57.79	59.215		
12,400.00	10,094.00	16,290.00	11,265.27	44.52	93.92	-166.58	5,487.02	-294.24	3,327.86	3,270.08	57.79	57.588		
12,500.00	10,094.00	16,290.00	11,265.27	45.96	93.92	-166.58	5,487.02	-294.24	3,234.24	3,176.44	57.80	55.959		
12,600.00	10,094.00	16,290.00	11,265.27	47.41	93.92	-166.58	5,487.02	-294.24	3,141.00	3,083.18	57.82	54.325		
12,700.00	10,094.00	16,290.00	11,265.27	48.87	93.92	-166.58	5,487.02	-294.24	3,048.20	2,990.35	57.85	52.688		
12,800.00	10,094.00	16,290.00	11,265.27	50.34	93.92	-166.58	5,487.02	-294.24	2,955.86	2,897.96	57.90	51.048		
12,900.00	10,094.00	16,290.00	11,265.27	51.83	93.92	-166.58	5,487.02	-294.24	2,864.04	2,806.07	57.97	49.404		
13,000.00	10,094.00	16,290.00	11,265.27	53.32	93.92	-166.58	5,487.02	-294.24	2,772.79	2,714.73	58.06	47.757		
13,100.00	10,094.00	16,290.00	11,265.27	54.82	93.92	-166.58	5,487.02	-294.24	2,682.16	2,623.99	58.17	46.106		
13,200.00	10,094.00	16,290.00	11,265.27	56.33	93.92	-166.58	5,487.02	-294.24	2,592.22	2,533.90	58.31	44.452		
13,300.00	10,094.00	16,290.00	11,265.27	57.85	93.92	-166.58	5,487.02	-294.24	2,503.04	2,444.55	58.49	42.796		
13,400.00	10,094.00	16,290.00	11,265.27	59.37	93.92	-166.58	5,487.02	-294.24	2,414.71	2,356.01	58.70	41.138		
13,500.00	10,094.00	16,290.00	11,265.27	60.90	93.92	-166.58	5,487.02	-294.24	2,327.33	2,268.38	58.95	39.479		
13,600.00	10,094.00	16,290.00	11,265.27	62.43	93.92	-166.58	5,487.02	-294.24	2,241.00	2,181.74	59.25	37.820		
13,700.00	10,094.00	16,290.00	11,265.27	63.97	93.92	-166.58	5,487.02	-294.24	2,155.85	2,096.23	59.61	36.164		
13,800.00	10,094.00	16,290.00	11,265.27	65.51	93.92	-166.58	5,487.02	-294.24	2,072.03	2,011.99	60.04	34.512		
13,900.00	10,094.00	16,290.00	11,265.27	67.06	93.92	-166.58	5,487.02	-294.24	1,989.70	1,929.16	60.54	32.867		
14,000.00	10,094.00	16,290.00	11,265.27	68.61	93.92	-166.58	5,487.02	-294.24	1,909.07	1,847.94	61.12	31.234		
14,100.00	10,094.00	16,290.00	11,265.27	70.17	93.92	-166.58	5,487.02	-294.24	1,830.34	1,768.54	61.80	29.618		
14,200.00	10,094.00	16,290.00	11,265.27	71.73	93.92	-166.58	5,487.02	-294.24	1,753.79	1,690.72	63.07	27.809		
14,300.00	10,094.00	16,290.00	11,265.27	73.29	93.92	-166.58	5,487.02	-294.24	1,679.70	1,615.14	64.55	26.021		
14,400.00	10,094.00	16,290.00	11,265.27	74.86	93.92	-166.58	5,487.02	-294.24	1,608.41	1,542.20	66.21	24.292		
14,500.00	10,094.00	16,290.00	11,265.27	76.43	93.92	-166.58	5,487.02	-294.24	1,540.33	1,472.27	68.06	22.633		
14,600.00	10,094.00	16,290.00	11,265.27	78.00	93.92	-166.58	5,487.02	-294.24	1,475.88	1,405.79	70.09	21.058		
14,700.00	10,094.00	16,290.00	11,265.27	79.57	93.92	-166.58	5,487.02	-294.24	1,415.57	1,343.27	72.30	19.579		
14,800.00	10,094.00	16,290.00	11,265.27	81.15	93.92	-166.58	5,487.02	-294.24	1,359.95	1,285.27	74.68	18.211		
14,900.00	10,094.00	16,290.00	11,265.27	82.73	93.92	-166.58	5,487.02	-294.24	1,309.61	1,232.42	77.19	16.966		
15,000.00	10,094.00	16,290.00	11,265.27	84.31	93.92	-166.58	5,487.02	-294.24	1,265.19	1,185.40	79.79	15.857		
15,100.00	10,094.00	16,290.00	11,265.27	85.90	93.92	-166.58	5,487.02	-294.24	1,227.32	1,144.92	82.40	14.895		
15,200.00	10,094.00	16,290.00	11,265.27	87.48	93.92	-166.58	5,487.02	-294.24	1,196.63	1,111.69	84.94	14.088		
15,300.00	10,094.00	16,290.00	11,265.27	89.07	93.92	-166.58	5,487.02	-294.24	1,173.69	1,086.37	87.32	13.442		
15,400.00	10,094.00	16,290.00	11,265.27	90.66	93.92	-166.58	5,487.02	-294.24	1,158.95	1,069.52	89.43	12.959		
15,500.00	10,094.00	16,290.00	11,265.27	92.25	93.92	-166.58	5,487.02	-294.24	1,152.73	1,061.53	91.19	12.640		
15,521.92	10,094.00	16,290.00	11,265.27	92.60	93.92	-166.58	5,487.02	-294.24	1,152.52	1,060.99	91.53	12.592 CC, ES		
15,600.00	10,094.00	16,239.48	11,266.73	93.84	93.91	-166.65	5,537.51	-293.54	1,154.05	1,061.83	92.22	12.514		
15,700.00	10,094.00	16,141.22	11,269.66	95.44	92.49	-166.77	5,635.72	-292.14	1,156.51	1,064.38	92.13	12.553		
15,800.00	10,094.00	16,038.52	11,272.87	97.03	90.87	-166.91	5,738.35	-290.51	1,159.10	1,067.21	91.89	12.614		
15,900.00	10,094.00	15,925.46	11,275.35	98.63	89.07	-167.08	5,851.36	-287.96	1,160.59	1,069.14	91.45	12.691		
16,000.00	10,094.00	15,815.34	11,276.44	100.23	87.29	-167.09	5,961.47	-288.59	1,161.60	1,070.33	91.27	12.726		
16,100.00	10,094.00	15,700.57	11,275.16	101.83	85.43	-166.91	6,076.16	-292.58	1,161.18	1,069.92	91.26	12.724		
16,200.00	10,094.00	15,594.82	11,272.90	103.43	83.74	-166.70	6,181.78	-297.05	1,159.95	1,068.52	91.43	12.686		
16,300.00	10,094.00	15,506.09	11,271.36	105.03	82.35	-166.55	6,270.44	-300.16	1,158.97	1,067.19	91.78	12.627		
16,354.27	10,094.00	15,457.16	11,270.91	105.90	81.59	-166.47	6,319.35	-301.84	1,158.85	1,066.89	91.96	12.602		
16,400.00	10,094.00	15,415.63	11,270.65	106.63	80.94	-166.40	6,360.84	-303.43	1,158.93	1,066.83	92.10	12.583		
16,500.00	10,094.00	15,323.81	11,270.46	108.24	79.49	-166.23	6,452.58	-307.46	1,159.66	1,067.21	92.45	12.544		
16,600.00	10,094.00	15,222.25	11,270.55	109.84	77.86	-166.03	6,554.03	-312.19	1,160.75	1,068.07	92.68	12.524		
16,700.00	10,094.00	15,118.36	11,270.33	111.45	76.19	-165.82	6,657.80	-316.92	1,161.53	1,068.65	92.88	12.505		
16,800.00	10,094.00	15,012.24	11,269.53	113.05	74.48	-165.59	6,763.80	-322.08	1,161.89	1,068.80	93.09	12.481		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 1629-MWD-ISCWSA, 16290-Project													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							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		
16,900.00	10,094.00	14,906.32	11,268.13	114.66	72.80	-165.34	6,869.57	-327.43	1,161.76	1,068.44	93.33	12.448		
16,997.78	10,094.00	14,813.06	11,266.54	116.23	71.35	-165.13	6,962.72	-331.79	1,161.21	1,067.54	93.68	12.396		
17,000.00	10,094.00	14,811.55	11,266.53	116.27	71.33	-165.13	6,964.23	-331.85	1,161.21	1,067.52	93.69	12.394		
17,100.00	10,094.00	14,739.00	11,266.95	117.88	70.20	-165.01	7,036.71	-334.92	1,162.67	1,068.40	94.27	12.333		
17,200.00	10,094.00	14,609.26	11,267.47	119.49	68.19	-164.83	7,166.36	-339.46	1,163.85	1,069.78	94.07	12.372		
17,300.00	10,094.00	14,502.00	11,266.32	121.10	66.56	-164.71	7,273.59	-342.00	1,163.31	1,069.19	94.11	12.361		
17,377.86	10,094.00	14,432.80	11,265.42	122.35	65.52	-164.63	7,342.75	-343.92	1,162.82	1,068.45	94.37	12.321		
17,400.00	10,094.00	14,417.09	11,265.34	122.71	65.29	-164.61	7,358.45	-344.42	1,162.88	1,068.38	94.50	12.305		
17,500.00	10,094.00	14,337.76	11,266.13	124.32	64.10	-164.50	7,437.73	-347.29	1,164.60	1,069.63	94.97	12.263 SF		
17,600.00	10,094.00	14,232.52	11,267.47	125.94	62.53	-164.37	7,542.89	-350.91	1,166.62	1,071.54	95.08	12.269		
17,700.00	10,094.00	14,129.57	11,268.68	127.55	61.00	-164.25	7,645.79	-354.13	1,168.47	1,073.26	95.21	12.273		
17,766.30	10,094.00	14,058.78	11,269.27	128.62	59.94	-164.19	7,716.55	-356.03	1,169.40	1,074.16	95.24	12.278		

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well 138H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Reference Site:	Thistle Unit	MD Reference:	3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	138H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 126-MWD-ISCWSA													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							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		
2,100.00	2,100.00	14,979.00	10,508.93	4.58	84.85	-1.22	5,402.66	-115.47	9,960.13	9,924.42	35.72	278.870		
2,200.00	2,200.00	14,979.00	10,508.93	4.81	84.85	-1.22	5,402.66	-115.47	9,876.28	9,840.55	35.73	276.417		
2,300.00	2,300.00	14,979.00	10,508.93	5.03	84.85	-1.22	5,402.66	-115.47	9,792.73	9,756.98	35.75	273.914		
2,400.00	2,400.00	14,979.00	10,508.93	5.26	84.85	-1.22	5,402.66	-115.47	9,709.49	9,673.71	35.78	271.365		
2,500.00	2,500.00	14,979.00	10,508.93	5.48	84.85	-1.22	5,402.66	-115.47	9,626.57	9,590.75	35.82	268.774		
2,600.00	2,600.00	14,979.00	10,508.93	5.71	84.85	-1.22	5,402.66	-115.47	9,543.98	9,508.12	35.86	266.144		
2,700.00	2,700.00	14,979.00	10,508.93	5.93	84.85	-1.22	5,402.66	-115.47	9,461.72	9,425.81	35.91	263.481		
2,800.00	2,800.00	14,979.00	10,508.93	6.15	84.85	-1.22	5,402.66	-115.47	9,379.81	9,343.84	35.97	260.789		
2,900.00	2,900.00	14,979.00	10,508.93	6.38	84.85	-1.22	5,402.66	-115.47	9,298.25	9,262.22	36.03	258.071		
3,000.00	3,000.00	14,979.00	10,508.93	6.60	84.85	-1.22	5,402.66	-115.47	9,217.06	9,180.96	36.10	255.332		
3,100.00	3,100.00	14,979.00	10,508.93	6.83	84.85	-1.22	5,402.66	-115.47	9,136.24	9,100.06	36.17	252.576		
3,200.00	3,200.00	14,979.00	10,508.93	7.05	84.85	-1.22	5,402.66	-115.47	9,055.80	9,019.55	36.25	249.807		
3,300.00	3,299.99	14,979.00	10,508.93	7.25	84.85	178.80	5,402.66	-115.47	8,976.28	8,939.97	36.31	247.178		
3,400.00	3,399.96	14,979.00	10,508.93	7.42	84.85	178.83	5,402.66	-115.47	8,896.26	8,861.90	36.36	244.695		
3,500.00	3,499.86	14,979.00	10,508.93	7.59	84.85	178.85	5,402.66	-115.47	8,821.80	8,785.38	36.42	242.215		
3,600.00	3,599.68	14,979.00	10,508.93	7.76	84.85	178.88	5,402.66	-115.47	8,746.97	8,710.49	36.48	239.742		
3,700.00	3,699.37	14,979.00	10,508.93	7.94	84.85	178.90	5,402.66	-115.47	8,673.83	8,637.28	36.55	237.282		
3,800.00	3,798.99	14,979.00	10,508.93	8.12	84.85	178.90	5,402.66	-115.47	8,601.84	8,565.20	36.64	234.798		
3,900.00	3,898.60	14,979.00	10,508.93	8.31	84.85	178.90	5,402.66	-115.47	8,530.41	8,493.68	36.72	232.286		
4,000.00	3,998.22	14,979.00	10,508.93	8.50	84.85	178.90	5,402.66	-115.47	8,459.55	8,422.74	36.82	229.778		
4,100.00	4,097.84	14,979.00	10,508.93	8.70	84.85	178.90	5,402.66	-115.47	8,389.30	8,352.38	36.91	227.275		
4,200.00	4,197.46	14,979.00	10,508.93	8.90	84.85	178.90	5,402.66	-115.47	8,319.65	8,282.63	37.01	224.781		
4,300.00	4,297.08	14,979.00	10,508.93	9.10	84.85	178.90	5,402.66	-115.47	8,250.62	8,213.51	37.12	222.298		
4,400.00	4,396.70	14,979.00	10,508.93	9.31	84.85	178.90	5,402.66	-115.47	8,182.24	8,145.02	37.22	219.829		
4,500.00	4,496.32	14,979.00	10,508.93	9.52	84.85	178.90	5,402.66	-115.47	8,114.51	8,077.18	37.33	217.376		
4,600.00	4,595.94	14,979.00	10,508.93	9.73	84.85	178.90	5,402.66	-115.47	8,047.45	8,010.01	37.44	214.941		
4,700.00	4,695.56	14,979.00	10,508.93	9.94	84.85	178.90	5,402.66	-115.47	7,981.08	7,943.53	37.55	212.526		
4,800.00	4,795.18	14,979.00	10,508.93	10.16	84.85	178.90	5,402.66	-115.47	7,915.42	7,877.75	37.67	210.133		
4,900.00	4,894.80	14,979.00	10,508.93	10.38	84.85	178.90	5,402.66	-115.47	7,850.49	7,812.70	37.79	207.763		
5,000.00	4,994.42	14,979.00	10,508.93	10.60	84.85	178.90	5,402.66	-115.47	7,786.29	7,748.39	37.90	205.418		
5,100.00	5,094.11	14,979.00	10,508.93	10.83	84.85	178.88	5,402.66	-115.47	7,722.19	7,684.16	38.03	203.043		
5,200.00	5,193.92	14,979.00	10,508.93	11.06	84.85	178.86	5,402.66	-115.47	7,657.51	7,619.34	38.17	200.629		
5,300.00	5,293.83	14,979.00	10,508.93	11.28	84.85	178.85	5,402.66	-115.47	7,592.25	7,553.95	38.30	198.226		
5,400.00	5,393.79	14,979.00	10,508.93	11.50	84.85	178.83	5,402.66	-115.47	7,526.43	7,488.00	38.43	195.833		
5,500.00	5,493.78	14,979.00	10,508.93	11.71	84.85	-1.19	5,402.66	-115.47	7,460.05	7,421.49	38.56	193.485		
5,600.00	5,593.78	14,979.00	10,508.93	11.91	84.85	-1.19	5,402.66	-115.47	7,393.76	7,355.09	38.68	191.172		
5,700.00	5,693.78	14,979.00	10,508.93	12.12	84.85	-1.19	5,402.66	-115.47	7,328.24	7,289.44	38.80	188.869		
5,800.00	5,793.78	14,979.00	10,508.93	12.34	84.85	-1.19	5,402.66	-115.47	7,263.51	7,224.58	38.93	186.599		
5,900.00	5,893.78	14,979.00	10,508.93	12.55	84.85	-1.19	5,402.66	-115.47	7,199.58	7,160.53	39.05	184.362		
6,000.00	5,993.78	14,979.00	10,508.93	12.76	84.85	-1.19	5,402.66	-115.47	7,136.48	7,097.30	39.18	182.158		
6,100.00	6,093.78	14,979.00	10,508.93	12.98	84.85	-1.19	5,402.66	-115.47	7,074.23	7,034.93	39.30	179.990		
6,200.00	6,193.78	14,979.00	10,508.93	13.19	84.85	-1.19	5,402.66	-115.47	7,012.86	6,973.43	39.43	177.857		
6,300.00	6,293.78	14,979.00	10,508.93	13.41	84.85	-1.19	5,402.66	-115.47	6,952.38	6,912.83	39.56	175.760		
6,400.00	6,393.78	14,979.00	10,508.93	13.62	84.85	-1.19	5,402.66	-115.47	6,892.82	6,853.08	39.74	173.428		
6,500.00	6,493.78	14,979.00	10,508.93	13.84	84.85	-1.19	5,402.66	-115.47	6,834.21	6,794.20	40.01	170.814		
6,600.00	6,593.78	14,979.00	10,508.93	14.05	84.85	-1.19	5,402.66	-115.47	6,776.57	6,736.29	40.28	168.250		
6,700.00	6,693.78	14,979.00	10,508.93	14.27	84.85	-1.19	5,402.66	-115.47	6,719.91	6,679.37	40.55	165.736		
6,800.00	6,793.78	14,979.00	10,508.93	14.49	84.85	-1.19	5,402.66	-115.47	6,664.28	6,623.47	40.82	163.274		
6,900.00	6,893.78	14,979.00	10,508.93	14.70	84.85	-1.19	5,402.66	-115.47	6,609.70	6,568.61	41.09	160.862		
7,000.00	6,993.78	14,979.00	10,508.93	14.92	84.85	-1.19	5,402.66	-115.47	6,556.18	6,514.82	41.36	158.503		
7,100.00	7,093.78	14,979.00	10,508.93	15.14	84.85	-1.19	5,402.66	-115.47	6,503.76	6,462.12	41.64	156.195		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Reference Site: Thistle Unit
Site Error: 0.00 usft
Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH														Offset Site Error:	0.00 usft
Survey Program: 126-MWD-ISCWSA														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset										
7,200.00	7,193.78	14,979.00	10,508.93	15.35	84.85	-1.19	5,402.66	-115.47	6,452.46	6,410.55	41.92	153.939			
7,300.00	7,293.78	14,979.00	10,508.93	15.57	84.85	-1.19	5,402.66	-115.47	6,402.32	6,360.13	42.19	151.735			
7,400.00	7,393.78	14,979.00	10,508.93	15.79	84.85	-1.19	5,402.66	-115.47	6,353.36	6,310.88	42.47	149.584			
7,500.00	7,493.78	14,979.00	10,508.93	16.01	84.85	-1.19	5,402.66	-115.47	6,305.60	6,262.84	42.75	147.486			
7,600.00	7,593.78	14,979.00	10,508.93	16.22	84.85	-1.19	5,402.66	-115.47	6,259.07	6,216.03	43.04	145.440			
7,700.00	7,693.78	14,979.00	10,508.93	16.44	84.85	-1.19	5,402.66	-115.47	6,213.80	6,170.49	43.32	143.447			
7,800.00	7,793.78	14,979.00	10,508.93	16.66	84.85	-1.19	5,402.66	-115.47	6,169.83	6,126.23	43.60	141.506			
7,900.00	7,893.78	14,979.00	10,508.93	16.88	84.85	-1.19	5,402.66	-115.47	6,127.17	6,083.28	43.89	139.618			
8,000.00	7,993.78	14,979.00	10,508.93	17.10	84.85	-1.19	5,402.66	-115.47	6,085.85	6,041.68	44.17	137.783			
8,100.00	8,093.78	14,979.00	10,508.93	17.32	84.85	-1.19	5,402.66	-115.47	6,045.91	6,001.45	44.46	136.000			
8,200.00	8,193.78	14,979.00	10,508.93	17.54	84.85	-1.19	5,402.66	-115.47	6,007.36	5,962.62	44.74	134.269			
8,300.00	8,293.78	14,979.00	10,508.93	17.76	84.85	-1.19	5,402.66	-115.47	5,970.24	5,925.22	45.03	132.590			
8,400.00	8,393.78	14,979.00	10,508.93	17.97	84.85	-1.19	5,402.66	-115.47	5,934.58	5,889.26	45.32	130.963			
8,500.00	8,493.78	14,979.00	10,508.93	18.19	84.85	-1.19	5,402.66	-115.47	5,900.39	5,854.79	45.60	129.387			
8,600.00	8,593.78	14,979.00	10,508.93	18.41	84.85	-1.19	5,402.66	-115.47	5,867.71	5,821.82	45.89	127.862			
8,700.00	8,693.78	14,979.00	10,508.93	18.63	84.85	-1.19	5,402.66	-115.47	5,836.56	5,790.38	46.18	126.387			
8,800.00	8,793.78	14,979.00	10,508.93	18.85	84.85	-1.19	5,402.66	-115.47	5,806.97	5,760.50	46.47	124.963			
8,900.00	8,893.78	14,979.00	10,508.93	19.07	84.85	-1.19	5,402.66	-115.47	5,778.95	5,732.19	46.76	123.588			
9,000.00	8,993.78	14,979.00	10,508.93	19.29	84.85	-1.19	5,402.66	-115.47	5,752.54	5,705.49	47.05	122.263			
9,100.00	9,093.78	14,979.00	10,508.93	19.51	84.85	-1.19	5,402.66	-115.47	5,727.75	5,680.41	47.34	120.985			
9,200.00	9,193.78	14,979.00	10,508.93	19.73	84.85	-1.19	5,402.66	-115.47	5,704.60	5,656.97	47.64	119.756			
9,300.00	9,293.78	14,979.00	10,508.93	19.95	84.85	-1.19	5,402.66	-115.47	5,683.13	5,635.20	47.93	118.574			
9,400.00	9,393.78	14,979.00	10,508.93	20.17	84.85	-1.19	5,402.66	-115.47	5,663.33	5,615.11	48.22	117.438			
9,500.00	9,493.78	14,979.00	10,508.93	20.39	84.85	-1.19	5,402.66	-115.47	5,645.24	5,596.72	48.52	116.349			
9,579.35	9,573.13	14,979.00	10,508.93	20.57	84.85	-1.19	5,402.66	-115.47	5,632.11	5,583.35	48.76	115.516			
9,600.00	9,593.78	14,979.00	10,508.93	20.61	84.85	-0.92	5,402.66	-115.47	5,628.46	5,579.65	48.82	115.294			
9,650.00	9,643.57	14,979.00	10,508.93	20.72	84.85	-0.95	5,402.66	-115.47	5,616.63	5,567.66	48.97	114.702			
9,700.00	9,692.71	14,979.00	10,508.93	20.81	84.85	-0.98	5,402.66	-115.47	5,600.60	5,551.49	49.11	114.032			
9,750.00	9,740.75	14,979.00	10,508.93	20.89	84.85	-1.02	5,402.66	-115.47	5,580.49	5,531.23	49.26	113.297			
9,800.00	9,787.24	14,979.00	10,508.93	20.97	84.85	-1.07	5,402.66	-115.47	5,556.43	5,507.04	49.39	112.502			
9,850.00	9,831.77	14,979.00	10,508.93	21.05	84.85	-1.15	5,402.66	-115.47	5,528.61	5,479.09	49.52	111.654			
9,900.00	9,873.91	14,979.00	10,508.93	21.13	84.85	-1.24	5,402.66	-115.47	5,497.21	5,447.58	49.63	110.758			
9,950.00	9,913.28	14,979.00	10,508.93	21.21	84.85	-1.36	5,402.66	-115.47	5,462.48	5,412.74	49.74	109.823			
10,000.00	9,949.53	14,979.00	10,508.93	21.28	84.85	-1.52	5,402.66	-115.47	5,424.67	5,374.84	49.83	108.853			
10,050.00	9,982.30	14,979.00	10,508.93	21.36	84.85	-1.74	5,402.66	-115.47	5,384.07	5,334.15	49.92	107.855			
10,100.00	10,011.31	14,979.00	10,508.93	21.46	84.85	-2.04	5,402.66	-115.47	5,340.99	5,291.00	49.99	106.837			
10,150.00	10,036.28	14,979.00	10,508.93	21.58	84.85	-2.51	5,402.66	-115.47	5,295.77	5,245.72	50.05	105.804			
10,200.00	10,056.99	14,979.00	10,508.93	21.72	84.85	-3.27	5,402.66	-115.47	5,248.78	5,198.68	50.10	104.763			
10,250.00	10,073.25	14,979.00	10,508.93	21.87	84.85	-4.75	5,402.66	-115.47	5,200.42	5,150.28	50.14	103.721			
10,300.00	10,084.90	14,979.00	10,508.93	22.05	84.85	-8.71	5,402.66	-115.47	5,151.08	5,100.92	50.16	102.684			
10,350.00	10,091.83	14,979.00	10,508.93	22.24	84.85	-44.64	5,402.66	-115.47	5,101.22	5,051.04	50.18	101.658			
10,397.53	10,094.00	14,979.00	10,508.93	22.45	84.85	-166.57	5,402.66	-115.47	5,053.73	5,003.55	50.19	100.697			
10,400.00	10,094.00	14,979.00	10,508.93	22.46	84.85	-166.57	5,402.66	-115.47	5,051.27	5,001.08	50.19	100.648			
10,500.00	10,094.00	14,979.00	10,508.93	22.97	84.85	-166.57	5,402.66	-115.47	4,951.56	4,901.36	50.20	98.642			
10,600.00	10,094.00	14,979.00	10,508.93	23.57	84.85	-166.57	5,402.66	-115.47	4,851.87	4,801.66	50.21	96.633			
10,700.00	10,094.00	14,979.00	10,508.93	24.28	84.85	-166.57	5,402.66	-115.47	4,752.19	4,701.96	50.22	94.622			
10,800.00	10,094.00	14,979.00	10,508.93	25.07	84.85	-166.57	5,402.66	-115.47	4,652.52	4,602.28	50.24	92.608			
10,900.00	10,094.00	14,979.00	10,508.93	25.94	84.85	-166.57	5,402.66	-115.47	4,552.87	4,502.61	50.26	90.592			
11,000.00	10,094.00	14,979.00	10,508.93	26.88	84.85	-166.57	5,402.66	-115.47	4,453.23	4,402.95	50.28	88.574			
11,100.00	10,094.00	14,979.00	10,508.93	27.89	84.85	-166.57	5,402.66	-115.47	4,353.61	4,303.31	50.30	86.555			

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)

Reference Site: Thistle Unit

Site Error: 0.00 usft

Reference Well: 138H

Well Error: 0.00 usft

Reference Wellbore: OH

Reference Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Output errors are at

Database:

Offset TVD Reference:

Well 138H

3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)

3640.3' GE + 23.5' KB @ 3663.80usft
(Original Well Elev)

Grid

Minimum Curvature

2.00 sigma

EDM 5000.1 Multi User Db

Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH													Offset Site Error: 0.00 usft	
Survey Program: 126-MWD-ISCWSA													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							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		
11,200.00	10,094.00	14,979.00	10,508.93	28.95	84.85	-166.57	5,402.66	-115.47	4,254.01	4,203.68	50.32	84.534		
11,300.00	10,094.00	14,979.00	10,508.93	30.06	84.85	-166.57	5,402.66	-115.47	4,154.42	4,104.07	50.35	82.511		
11,400.00	10,094.00	14,979.00	10,508.93	31.23	84.85	-166.57	5,402.66	-115.47	4,054.86	4,004.48	50.38	80.488		
11,500.00	10,094.00	14,979.00	10,508.93	32.43	84.85	-166.57	5,402.66	-115.47	3,955.32	3,904.91	50.41	78.463		
11,600.00	10,094.00	14,979.00	10,508.93	33.67	84.85	-166.57	5,402.66	-115.47	3,855.80	3,805.36	50.44	76.438		
11,700.00	10,094.00	14,979.00	10,508.93	34.94	84.85	-166.57	5,402.66	-115.47	3,756.31	3,705.83	50.48	74.412		
11,800.00	10,094.00	14,979.00	10,508.93	36.24	84.85	-166.57	5,402.66	-115.47	3,656.84	3,606.32	50.52	72.386		
11,900.00	10,094.00	14,979.00	10,508.93	37.57	84.85	-166.57	5,402.66	-115.47	3,557.41	3,506.85	50.56	70.359		
12,000.00	10,094.00	14,979.00	10,508.93	38.92	84.85	-166.57	5,402.66	-115.47	3,458.01	3,407.40	50.61	68.332		
12,100.00	10,094.00	14,979.00	10,508.93	40.29	84.85	-166.57	5,402.66	-115.47	3,358.64	3,307.99	50.65	66.305		
12,200.00	10,094.00	14,979.00	10,508.93	41.68	84.85	-166.57	5,402.66	-115.47	3,259.32	3,208.61	50.71	64.279		
12,300.00	10,094.00	14,979.00	10,508.93	43.09	84.85	-166.57	5,402.66	-115.47	3,160.03	3,109.27	50.76	62.253		
12,400.00	10,094.00	14,979.00	10,508.93	44.52	84.85	-166.57	5,402.66	-115.47	3,060.79	3,009.97	50.82	60.227		
12,500.00	10,094.00	14,979.00	10,508.93	45.96	84.85	-166.57	5,402.66	-115.47	2,961.61	2,910.72	50.88	58.202		
12,600.00	10,094.00	14,979.00	10,508.93	47.41	84.85	-166.57	5,402.66	-115.47	2,862.48	2,811.52	50.95	56.178		
12,700.00	10,094.00	14,979.00	10,508.93	48.87	84.85	-166.57	5,402.66	-115.47	2,763.41	2,712.38	51.03	54.155		
12,800.00	10,094.00	14,979.00	10,508.93	50.34	84.85	-166.57	5,402.66	-115.47	2,664.41	2,613.30	51.11	52.133		
12,900.00	10,094.00	14,979.00	10,508.93	51.83	84.85	-166.57	5,402.66	-115.47	2,565.49	2,514.30	51.19	50.112		
13,000.00	10,094.00	14,979.00	10,508.93	53.32	84.85	-166.57	5,402.66	-115.47	2,466.66	2,415.37	51.29	48.093		
13,100.00	10,094.00	14,979.00	10,508.93	54.82	84.85	-166.57	5,402.66	-115.47	2,367.92	2,316.53	51.39	46.075		
13,200.00	10,094.00	14,979.00	10,508.93	56.33	84.85	-166.57	5,402.66	-115.47	2,269.30	2,217.79	51.51	44.058		
13,300.00	10,094.00	14,979.00	10,508.93	57.85	84.85	-166.57	5,402.66	-115.47	2,170.80	2,119.17	51.63	42.043		
13,400.00	10,094.00	14,979.00	10,508.93	59.37	84.85	-166.57	5,402.66	-115.47	2,072.45	2,020.67	51.77	40.030		
13,500.00	10,094.00	14,979.00	10,508.93	60.90	84.85	-166.57	5,402.66	-115.47	1,974.26	1,922.33	51.93	38.018		
13,600.00	10,094.00	14,979.00	10,508.93	62.43	84.85	-166.57	5,402.66	-115.47	1,876.26	1,824.16	52.11	36.009		
13,700.00	10,094.00	14,979.00	10,508.93	63.97	84.85	-166.57	5,402.66	-115.47	1,778.49	1,726.18	52.31	34.001		
13,800.00	10,094.00	14,979.00	10,508.93	65.51	84.85	-166.57	5,402.66	-115.47	1,680.97	1,628.44	52.54	31.996		
13,900.00	10,094.00	14,979.00	10,508.93	67.06	84.85	-166.57	5,402.66	-115.47	1,583.77	1,530.97	52.80	29.993		
14,000.00	10,094.00	14,979.00	10,508.93	68.61	84.85	-166.57	5,402.66	-115.47	1,486.94	1,433.82	53.12	27.994		
14,100.00	10,094.00	14,979.00	10,508.93	70.17	84.85	-166.57	5,402.66	-115.47	1,390.56	1,337.07	53.49	25.999		
14,200.00	10,094.00	14,979.00	10,508.93	71.73	84.85	-166.57	5,402.66	-115.47	1,294.72	1,240.79	53.93	24.008		
14,300.00	10,094.00	14,979.00	10,508.93	73.29	84.85	-166.57	5,402.66	-115.47	1,199.57	1,145.10	54.46	22.025		
14,400.00	10,094.00	14,979.00	10,508.93	74.86	84.85	-166.57	5,402.66	-115.47	1,105.27	1,050.15	55.12	20.051		
14,500.00	10,094.00	14,979.00	10,508.93	76.43	84.85	-166.57	5,402.66	-115.47	1,012.07	956.12	55.94	18.091		
14,600.00	10,094.00	14,979.00	10,508.93	78.00	84.85	-166.57	5,402.66	-115.47	920.29	863.32	56.97	16.153		
14,700.00	10,094.00	14,979.00	10,508.93	79.57	84.85	-166.57	5,402.66	-115.47	830.42	772.13	58.29	14.247		
14,800.00	10,094.00	14,979.00	10,508.93	81.15	84.85	-166.57	5,402.66	-115.47	743.14	683.17	59.97	12.392		
14,900.00	10,094.00	14,979.00	10,508.93	82.73	84.85	-166.57	5,402.66	-115.47	659.48	597.35	62.12	10.615		
15,000.00	10,094.00	14,979.00	10,508.93	84.31	84.85	-166.57	5,402.66	-115.47	581.01	514.97	66.04	8.798		
15,100.00	10,094.00	14,979.00	10,508.93	85.90	84.85	-166.57	5,402.66	-115.47	510.13	439.26	70.87	7.199		
15,200.00	10,094.00	14,979.00	10,508.93	87.48	84.85	-166.57	5,402.66	-115.47	450.43	374.11	76.32	5.901		
15,300.00	10,094.00	14,979.00	10,508.93	89.07	84.85	-166.57	5,402.66	-115.47	406.87	325.44	81.43	4.996		
15,400.00	10,094.00	14,979.00	10,508.93	90.66	84.85	-166.57	5,402.66	-115.47	384.97	300.60	84.37	4.563		
15,436.71	10,094.00	14,979.00	10,508.93	91.24	84.85	-166.57	5,402.66	-115.47	383.22	298.67	84.54	4.533 SF		
15,500.00	10,094.00	14,931.88	10,511.48	92.25	82.05	-166.97	5,449.67	-113.50	385.54	301.59	83.95	4.592		
15,600.00	10,094.00	14,828.21	10,516.66	93.84	84.28	-167.77	5,553.14	-109.62	389.51	306.47	83.04	4.691		
15,700.00	10,094.00	14,712.52	10,519.46	95.44	80.31	-168.36	5,668.74	-106.62	391.31	308.89	82.43	4.747		
15,800.00	10,094.00	14,603.54	10,517.42	97.03	78.48	-168.64	5,777.69	-104.80	389.01	306.90	82.11	4.738		
15,900.00	10,094.00	14,504.00	10,514.64	98.63	76.87	-168.85	5,877.17	-103.26	385.88	304.01	81.87	4.714		
16,000.00	10,094.00	14,415.00	10,513.48	100.23	75.45	-169.22	5,966.13	-100.93	384.05	302.59	81.46	4.715		
16,044.91	10,094.00	14,370.15	10,513.73	100.95	74.71	-169.53	6,010.95	-99.09	383.92	302.78	81.15	4.731		

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

LEAM Drilling Systems LLC

Anticollision Report

Company: Devon Energy
 Project: Lea County, NM (NAD-83)
 Reference Site: Thistle Unit
 Site Error: 0.00 usft
 Reference Well: 138H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 138H
 TVD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
 (Original Well Elev)
 MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft
 (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Multi User Db
 Offset TVD Reference: Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 126-MWD-ISCWSA													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						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	
16,100.00	10,094.00	14,315.98	10,514.48	101.83	73.82	-170.02	6,065.03	-96.16	384.10	303.44	80.66	4.762	
16,200.00	10,094.00	14,203.63	10,513.60	103.43	71.94	-170.91	6,177.23	-90.48	382.36	302.52	79.84	4.789	
16,300.00	10,094.00	14,109.05	10,511.58	105.03	70.43	-171.49	6,271.70	-86.73	379.60	300.26	79.34	4.785	
16,336.44	10,094.00	14,078.20	10,511.53	105.61	69.95	-171.67	6,302.54	-85.64	379.33	300.16	79.16	4.792	
16,400.00	10,094.00	14,019.21	10,512.38	106.63	69.03	-172.02	6,361.49	-83.72	379.88	301.03	78.86	4.817	
16,500.00	10,094.00	13,923.67	10,514.34	108.24	67.52	-172.50	6,456.97	-81.21	381.51	303.07	78.45	4.863	
16,600.00	10,094.00	13,817.87	10,517.24	109.84	65.81	-172.88	6,562.72	-79.51	384.01	305.82	78.19	4.911	
16,700.00	10,094.00	13,716.78	10,517.54	111.45	64.19	-173.02	6,663.80	-79.13	384.20	306.11	78.09	4.920	
16,800.00	10,094.00	13,612.71	10,517.85	113.05	62.46	-173.04	6,767.88	-79.51	384.49	306.41	78.08	4.924	
16,900.00	10,094.00	13,504.38	10,516.08	114.66	60.66	-172.91	6,876.18	-80.70	382.94	304.76	78.18	4.898	
17,000.00	10,094.00	13,399.23	10,512.20	116.27	58.96	-172.65	6,981.24	-82.44	379.42	301.06	78.35	4.842	
17,100.00	10,094.00	13,306.83	10,508.68	117.88	57.52	-172.38	7,073.55	-84.18	375.87	297.33	78.54	4.786	
17,142.48	10,094.00	13,271.78	10,508.26	118.56	56.97	-172.30	7,108.60	-84.86	375.45	296.87	78.58	4.778	
17,200.00	10,094.00	13,213.47	10,508.42	119.49	56.02	-172.17	7,166.89	-86.00	375.72	297.05	78.67	4.776	
17,300.00	10,094.00	13,105.99	10,506.46	121.10	54.29	-171.83	7,274.32	-88.52	374.15	295.19	78.96	4.738	
17,396.14	10,094.00	13,018.04	10,504.78	122.65	52.94	-171.52	7,362.23	-90.69	372.65	293.47	79.18	4.706 CC, ES	
17,400.00	10,094.00	13,014.71	10,504.78	122.71	52.89	-171.52	7,365.56	-90.74	372.65	293.47	79.18	4.706	
17,500.00	10,094.00	12,927.16	10,506.41	124.32	51.55	-171.52	7,453.09	-91.37	374.52	295.43	79.10	4.735	
17,600.00	10,094.00	12,818.90	10,509.95	125.94	49.82	-171.57	7,561.28	-92.10	377.87	298.75	79.12	4.776	
17,700.00	10,094.00	12,710.82	10,509.76	127.55	48.09	-171.35	7,669.54	-94.06	377.87	298.53	79.34	4.763	
17,766.30	10,094.00	12,640.26	10,508.57	128.62	46.98	-171.17	7,739.87	-95.41	376.91	297.40	79.51	4.741	

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LEAM Drilling Systems LLC

Anticollision Report

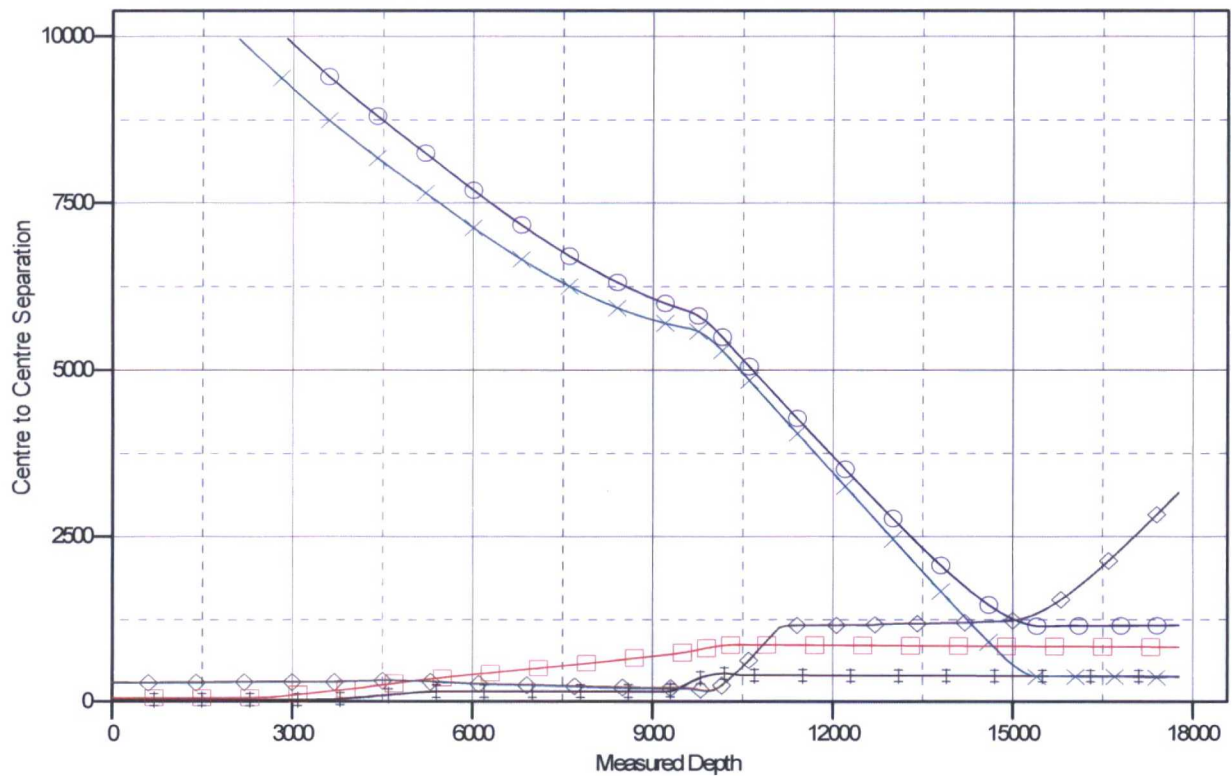
Company: Devon Energy
Project: Lea County, NM (NAD-83)
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Reference Well: 138H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

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MD Reference: 3640.3' GE + 23.5' KB @ 3663.80usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to 3640.3' GE + 23.5' KB @ 3663.80usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 138H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.42°

Ladder Plot



LEGEND

■ 117H, OH, Plan #1 V0 ● 58H, OH, OH V0 ✕ 71H, OH, OH V0
■ 102H, OH, Plan #1 V0 ◆ 50H, OH, OH V0

LEAM Drilling Systems LLC

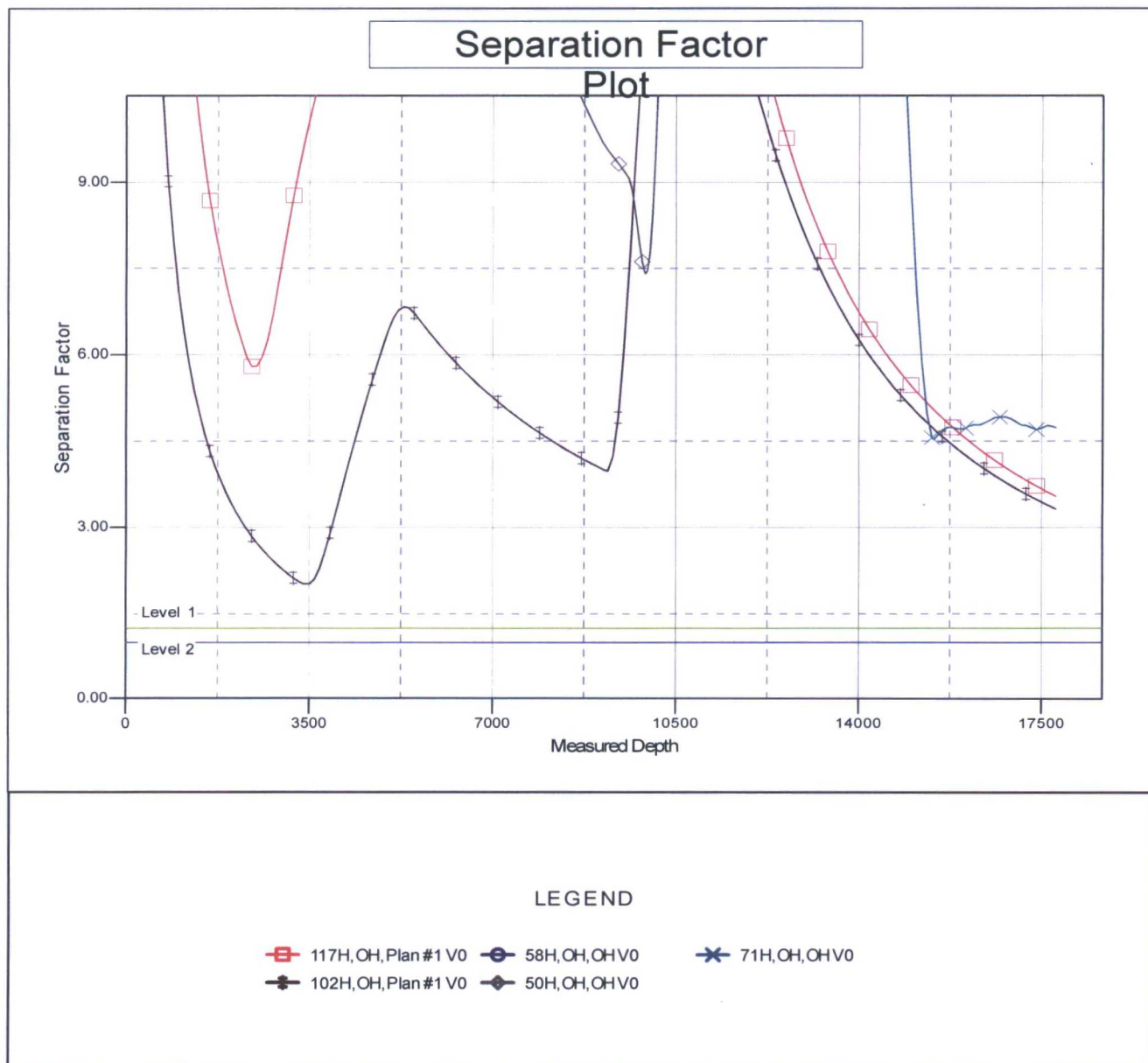
Anticollision Report

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