

Devon Energy

Lea County, NM (NAD-83)

Thistle Unit

138H

OH

Design: OH

Survey Report - Geographic

31 January, 2017

LEAM Drilling Systems LLC

Survey Report - Geographic

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

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

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

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

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	-10,869.80	1,854.56
			359.73

Survey Program	Date 1/31/2017		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
137.00	1,203.00	Survey #1 (OH)	LEAM MWD+HDGM
1,348.00	1,348.00	Survey #2 (OH)	Project
			Description
			MWD+HDGM
			Projection

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map			
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude	
(usft)			(usft)			(usft)	(usft)			
0.00	0.00	0.00	0.00	-10,869.80	1,854.56	457,157.10	782,577.12	32° 15' 15.804 N	103° 33' 10.653 W	
SHL (138H)										
137.00	0.20	158.50	137.00	-10,870.02	1,854.65	457,156.88	782,577.21	32° 15' 15.801 N	103° 33' 10.652 W	
265.00	0.30	103.20	265.00	-10,870.31	1,855.06	457,156.59	782,577.61	32° 15' 15.799 N	103° 33' 10.647 W	
445.00	0.40	99.80	445.00	-10,870.52	1,856.13	457,156.38	782,578.69	32° 15' 15.796 N	103° 33' 10.635 W	
544.00	0.30	114.60	543.99	-10,870.69	1,856.71	457,156.21	782,579.27	32° 15' 15.795 N	103° 33' 10.628 W	
636.00	0.10	205.30	635.99	-10,870.86	1,856.89	457,156.04	782,579.45	32° 15' 15.793 N	103° 33' 10.626 W	
728.00	0.20	184.70	727.99	-10,871.09	1,856.90	457,155.81	782,579.46	32° 15' 15.791 N	103° 33' 10.626 W	
823.00	0.30	184.20	822.99	-10,871.50	1,856.93	457,155.40	782,579.49	32° 15' 15.787 N	103° 33' 10.626 W	

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
918.00	0.30	183.30	917.99	-10,871.99	1,856.90	457,154.91	782,579.45	32° 15' 15.782 N	103° 33' 10.626 W
1,013.00	0.30	190.30	1,012.99	-10,872.49	1,856.84	457,154.41	782,579.39	32° 15' 15.777 N	103° 33' 10.627 W
1,108.00	0.20	192.60	1,107.99	-10,872.89	1,856.76	457,154.01	782,579.31	32° 15' 15.773 N	103° 33' 10.628 W
1,203.00	0.10	235.50	1,202.99	-10,873.10	1,856.65	457,153.80	782,579.21	32° 15' 15.771 N	103° 33' 10.629 W
1,348.00	0.10	235.50	1,347.99	-10,873.24	1,856.44	457,153.66	782,579.00	32° 15' 15.769 N	103° 33' 10.631 W
PBHL (138H) - MP (138H) - BHL (138H)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL (138H)	0.00	0.00	1,347.99	-10,873.24	1,856.44	457,153.66	782,579.00	32° 15' 15.769 N	103° 33' 10.631 W
- actual wellpath hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____