

Results of Directional Survey

API number:	30-025-41341		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	THISTLE UNIT # 57H

surface	ULSTR:	O	22	T	23S	R	33E
				150	FSL	2150	FEL

BH Loc	ULSTR:	N	27	T	23S	R	33E
16135	MD	11301.0	TVD	328	FSL	2005	FWL
				4952	FNL	3275	FEL

Top Perf/OH	ULSTR:	O	22	T	23S	R	33E
11550	MD	11253.6	TVD	380	FNL	2293	FWL
						2987	FEL

Bot Perf/OH	ULSTR:	N	27	T	23S	R	33E
16002	MD	11311.6	TVD	4820	FNL	2019	FWL
				4820	FNL	3261	FEL

	MD	N/S	E/W	VD
	11543	-523.18	-836.55	11252.35
TOP PERFS/OH	11550	-530.06	-836.91	11253.59
	11578	-557.57	-838.33	11258.56
	15916	-4884.86	-1102.08	11315.71
BOT PERFS/OH	16002	-4970.27	-1111.27	11311.63
	16010	-4978.21	-1112.13	11311.25

NEXT TO LAST	16070	-5037.69	-1118.53	11306.64
LAST READING	16135	-5102.07	-1125.40	11300.93
TD	16135	-5102.07	-1125.40	11300.93

Surface Location	150	FS	2150	FE
Projected BHL	4952	FN	3275	FE
Location of				
Top Perfs/OH	380	FN	2987	FE
Bottom Perfs/OH	4820	FN	3261	FE

SUMMARY of Subsurface Locations

Surface Location	O-22-23S-33E	150	FS	2150	FE	Vert. Depth
Top Perfs/OH	O-22-23S-33E	380	FN	2987	FE	11253.59
Bottom Perfs/OH	N-27-23S-33E	4820	FN	3261	FE	11311.63
Projected TD	N-27-23S-33E	4952	FN	3275	FE	11300.93

MAY 05 2014



A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

HOBBS OCB

APR 17 2014

RECEIVED

December 6, 2013

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: Patti Riechers

Re: Thistle Unit No. 057H

Please find enclosed a copy of the survey from 0.00' to 1432.00' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

Sincerely,

Keith Havelka
Operations

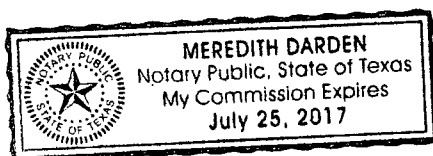
STATE OF TEXAS §

§

COUNTY OF NUECES §

This instrument was acknowledged before me on the 6th day of December A.D., 2013, by Keith Havelka.

Meredith Darden
Notary Public, State of Texas





Company: Devon Energy Production Co.

Lease/Well: Thistle Unit /No. 057H

Rig Name: H&P 394

State/County: New Mexico/Lea

Latitude: 32.28, Longitude: -103.56

GRID North is 0.41 Degrees East of True North

VS-Azi: 192.30 Degrees



DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01.ut

Minimum Curvature Method

Report Date/Time: 12/5/2013 / 14:17

VAUGHN ENERGY SERVICES

CORPUS CHRISTI, TX

800-606-4976

SURVEYOR: CHRIS ALBERT

Thistle Unit No. 057H / API 30-025-41341

HOBBS OCD

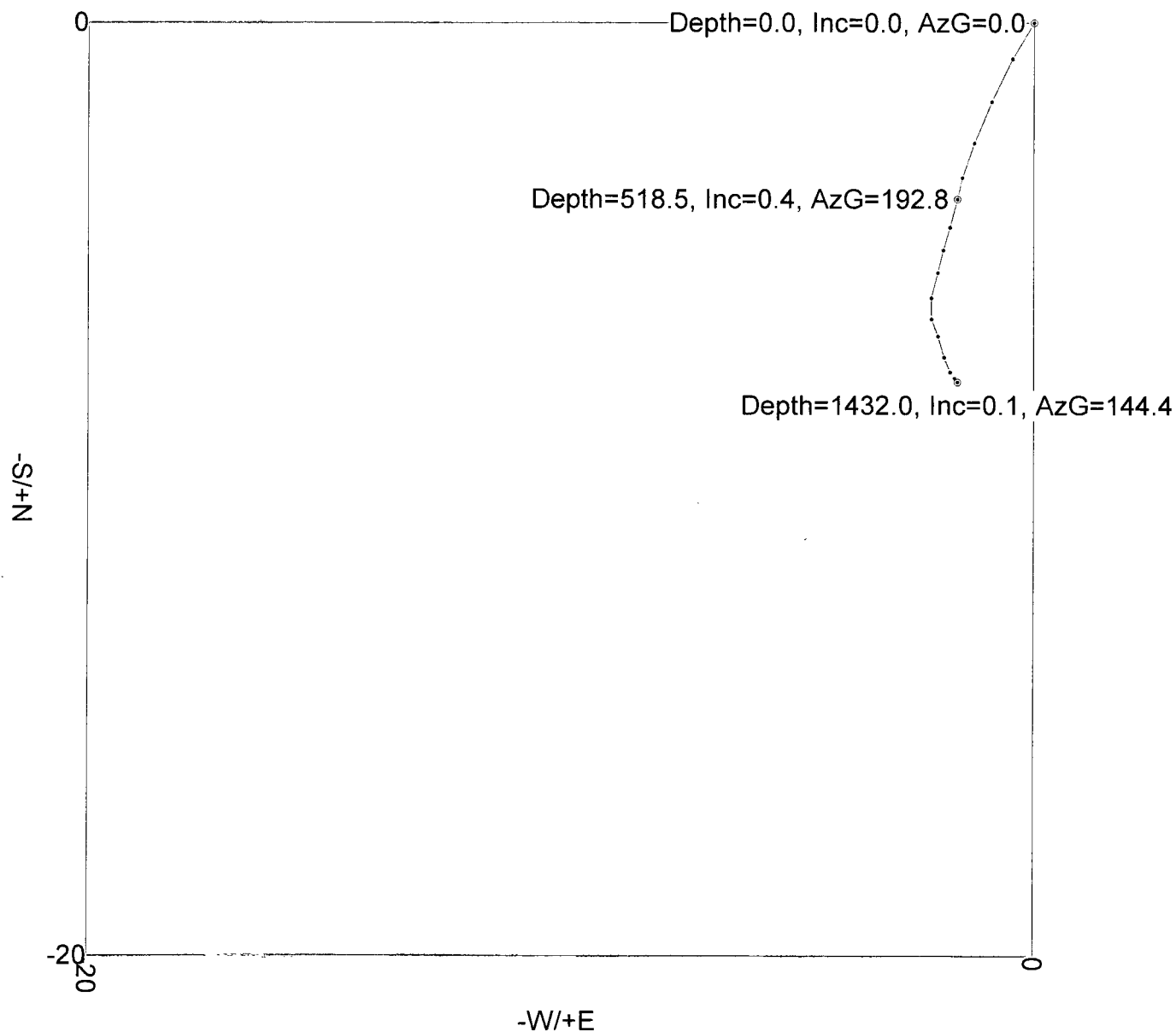
APR 17 2014

RECEIVED

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
171.50	0.60	210.03	171.50	-0.77	-0.45	0.85	0.90	210.03	0.35
266.00	0.64	201.40	265.99	-1.69	-0.89	1.84	1.91	207.66	0.11
360.50	0.52	203.22	360.49	-2.58	-1.25	2.79	2.87	205.84	0.12
455.00	0.43	193.12	454.98	-3.32	-1.50	3.57	3.65	204.31	0.13
518.50	0.42	192.81	518.48	-3.78	-1.61	4.04	4.11	203.02	0.02
613.00	0.34	198.08	612.98	-4.38	-1.77	4.66	4.72	201.99	0.10
707.50	0.28	192.42	707.48	-4.87	-1.90	5.16	5.23	201.37	0.07
802.00	0.32	194.39	801.98	-5.35	-2.02	5.66	5.72	200.68	0.05
896.50	0.35	193.01	896.48	-5.89	-2.15	6.22	6.27	200.06	0.03
991.00	0.22	158.31	990.97	-6.35	-2.15	6.66	6.70	198.71	0.23
1085.50	0.25	161.77	1085.47	-6.72	-2.02	6.99	7.01	196.72	0.04
1180.00	0.32	165.05	1179.97	-7.17	-1.88	7.40	7.41	194.73	0.07
1274.50	0.11	143.34	1274.47	-7.49	-1.76	7.69	7.69	193.26	0.23
1369.00	0.09	142.21	1368.97	-7.62	-1.67	7.80	7.80	192.35	0.02
1432.00	0.10	144.37	1431.97	-7.70	-1.61	7.86	7.87	191.78	0.02



VAUGHN ENERGY SERVICES
CORPUS CHRISTI, TX
800-606-4976
SURVEYOR: CHRIS ALBERT
Thistle Unit No. 057H / API 30-025-41341



VES Survey Date: 11/19/2013



Devon Energy

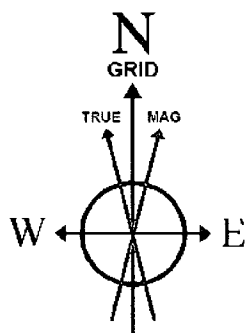
Location: Lea County, NM
Field: (Thistle) Sec 22, T23S, R33E
Facility: Thistle Unit No.56H & No.57H & No.58H

Slot: No.57H SHL
Well: No.57H
Wellbore: No.57H PWB

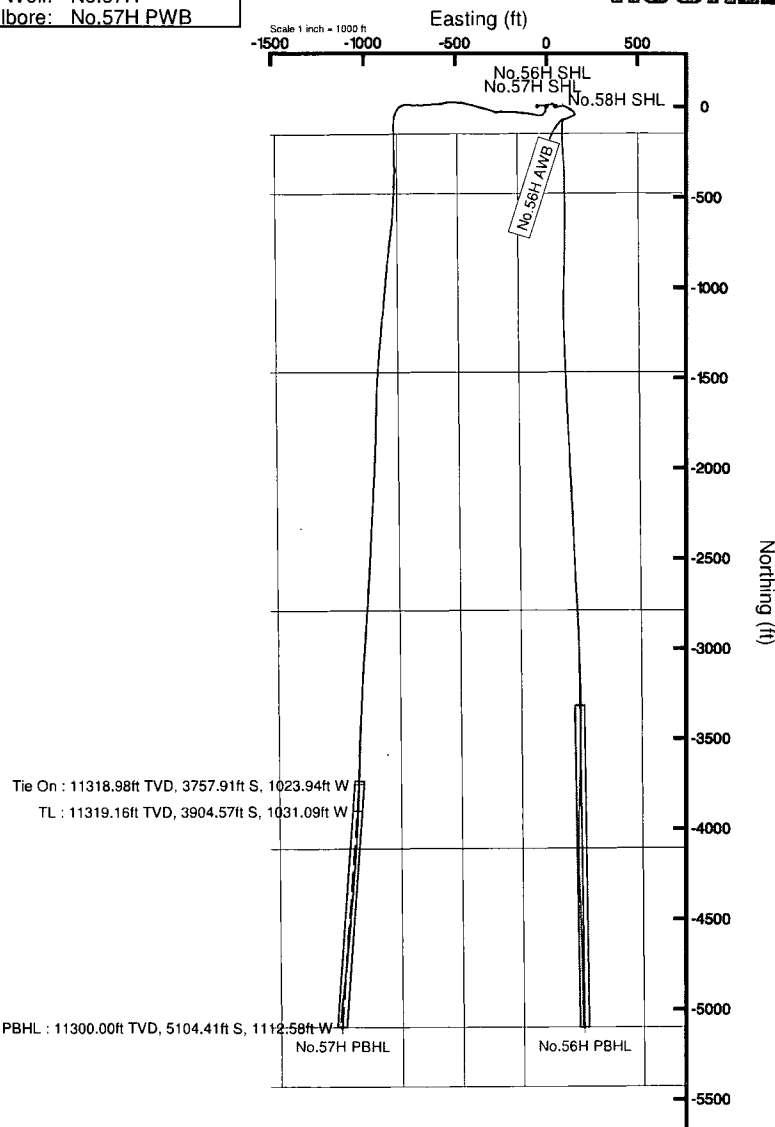
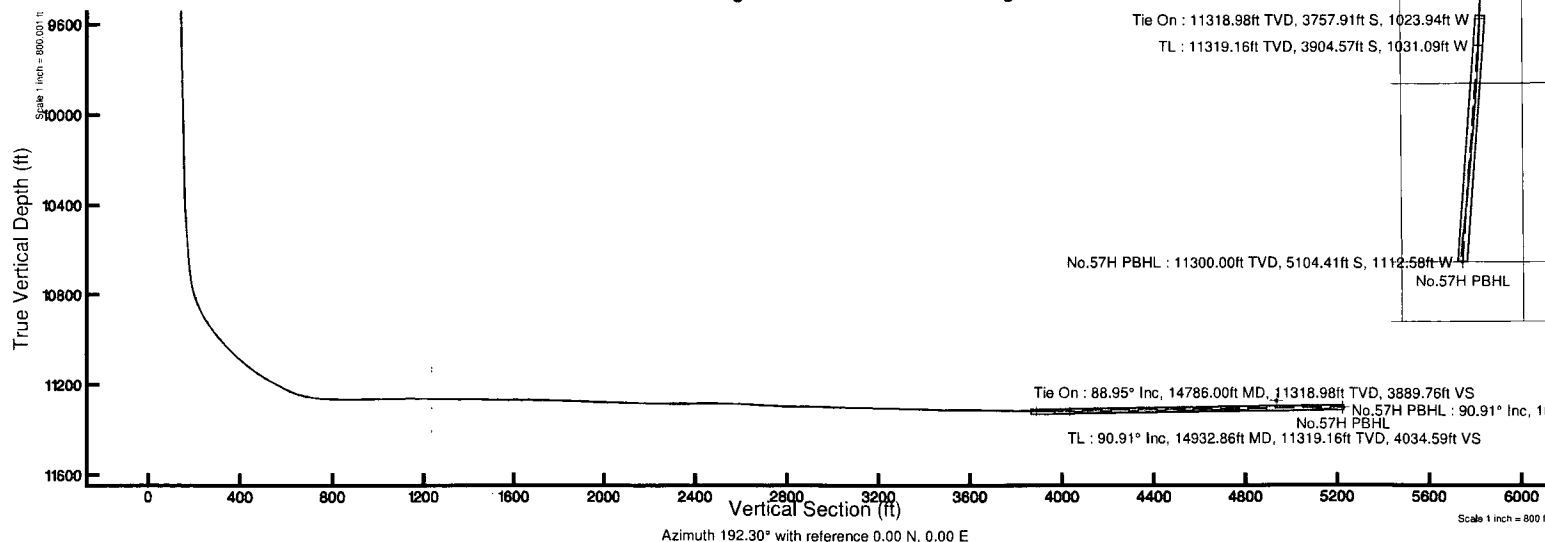


Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	14786.00	88.950	181.700	11318.98	-3757.91	-1023.94	3889.76
TL	14932.86	90.913	183.885	11319.16	-3904.57	-1031.09	4034.59
No.57H PBHL	16135.61	90.913	183.885	11300.00	-5104.41	-1112.58	5224.25

*No reference wellbore is No.57H
 True vertical depths are referenced to Top of No.57H SHL (KB)
 Measured depths are referenced to Top of No.57H SHL (KB)
 Tie on No.57H SHL (KB) to Main Gas Level 3711.2 feet
 Main Gas Level is Main Line (A) No.57H SHL 0 feet
 Coordinates are in feet referenced to East
 Grid System: NAD83 / T1 New Mexico S.P. Eastern Zone (2011) US feet
 North Reference: Grid north
 Scale: True distance
 Depths are in feet
 Created by: gblsbl on 14 Dec 2013



BGGM (1945.0 to 2015.0) Dip: 60.18° Field: 48426.1 nT
Magnetic North is 7.42 degrees East of True North (at 12/Aug/2013)
Grid North is 0.41 degrees East of True North
To correct azimuth from True to Grid subtract 0.41 degrees
To correct azimuth from Magnetic to Grid add 7.01 degrees





Actual Wellpath Report

No.57H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.57H SHL
Area	Lea County, NM	Well	No.57H
Field	(Thistle) Sec 22, T23S, R33E	Wellbore	No.57H AWB
Facility	Thistle Unit No.56H & No.57H & No.58H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Gentbry
Scale	0.999975	Report Generated	12/18/2013 at 8:26:57 AM
Convergence at slot	0.41° East	Database/Source file	MidlandDB/No.57H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.25	49.96	780725.04	467726.93	32°17'00.526"N	103°33'31.331"W
Facility Reference Pt			780675.08	467726.68	32°17'00.527"N	103°33'31.913"W
Field Reference Pt			780675.08	467726.68	32°17'00.527"N	103°33'31.913"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.57H SHL (KB) to Facility Vertical Datum	3714.20ft
Horizontal Reference Pt	Slot	Rig on No.57H SHL (KB) to Mean Sea Level	3714.20ft
Vertical Reference Pt	Rig on No.57H SHL (KB)	Rig on No.57H SHL (KB) to Mud Line at Slot (No.57H SHL)	3714.20ft
MD Reference Pt	Rig on No.57H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	192.30°



Actual Wellpath Report

No.57H AWP

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Facility	Thistle Unit No.56H & No.57H & No.58H		

WELLPATH DATA (194 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	210.030	0.00	0.00	0.00	0.00	780725.04	467726.93	32°17'00.526"N	103°33'31.331"W	0.00	
171.50	0.600	210.030	171.50	0.86	-0.78	-0.45	780724.59	467726.15	32°17'00.518"N	103°33'31.337"W	0.35	
266.00	0.640	201.400	265.99	1.85	-1.70	-0.89	780724.15	467725.23	32°17'00.509"N	103°33'31.342"W	0.11	
360.50	0.520	203.220	360.49	2.79	-2.58	-1.25	780723.79	467724.35	32°17'00.500"N	103°33'31.346"W	0.13	
455.00	0.430	193.120	454.98	3.57	-3.32	-1.50	780723.54	467723.61	32°17'00.493"N	103°33'31.349"W	0.13	
518.50	0.420	192.810	518.48	4.04	-3.78	-1.61	780723.43	467723.15	32°17'00.488"N	103°33'31.350"W	0.02	
613.00	0.340	198.080	612.98	4.66	-4.39	-1.77	780723.27	467722.54	32°17'00.482"N	103°33'31.352"W	0.09	
707.50	0.280	192.420	707.48	5.17	-4.88	-1.91	780723.13	467722.05	32°17'00.478"N	103°33'31.354"W	0.07	
802.00	0.320	194.390	801.98	5.67	-5.36	-2.02	780723.02	467721.57	32°17'00.473"N	103°33'31.355"W	0.04	
896.50	0.350	193.010	896.48	6.22	-5.90	-2.15	780722.89	467721.03	32°17'00.468"N	103°33'31.357"W	0.03	
991.00	0.220	158.310	990.97	6.66	-6.35	-2.15	780722.89	467720.58	32°17'00.463"N	103°33'31.357"W	0.22	
1085.50	0.250	161.770	1085.47	6.99	-6.71	-2.02	780723.02	467720.22	32°17'00.459"N	103°33'31.355"W	0.04	
1180.00	0.320	165.050	1179.97	7.40	-7.16	-1.89	780723.15	467719.77	32°17'00.455"N	103°33'31.354"W	0.08	
1274.50	0.110	143.340	1274.47	7.69	-7.49	-1.76	780723.28	467719.44	32°17'00.452"N	103°33'31.352"W	0.23	
1369.00	0.090	142.210	1368.97	7.80	-7.62	-1.66	780723.38	467719.31	32°17'00.450"N	103°33'31.351"W	0.02	
1432.00	0.100	144.370	1431.97	7.87	-7.70	-1.60	780723.44	467719.23	32°17'00.450"N	103°33'31.351"W	0.02	
1519.00	0.130	204.870	1518.97	8.02	-7.85	-1.60	780723.44	467719.08	32°17'00.448"N	103°33'31.351"W	0.14	
1614.00	0.810	303.650	1613.97	7.88	-7.58	-2.20	780722.84	467719.35	32°17'00.451"N	103°33'31.358"W	0.88	
1709.00	0.860	233.280	1708.96	8.17	-7.63	-3.33	780721.71	467719.30	32°17'00.450"N	103°33'31.371"W	1.01	
1804.00	2.320	175.510	1803.93	10.55	-9.98	-3.76	780721.28	467716.95	32°17'00.427"N	103°33'31.376"W	2.10	
1899.00	4.070	182.900	1898.77	15.72	-15.26	-3.78	780721.26	467711.67	32°17'00.375"N	103°33'31.376"W	1.89	
1994.00	4.940	191.400	1993.48	23.13	-22.64	-4.75	780720.29	467704.29	32°17'00.302"N	103°33'31.389"W	1.15	
2088.00	5.440	202.120	2087.10	31.57	-30.73	-7.23	780717.81	467696.20	32°17'00.222"N	103°33'31.418"W	1.16	
2183.00	6.460	218.050	2181.59	40.82	-39.12	-12.22	780712.82	467687.82	32°17'00.140"N	103°33'31.477"W	2.03	
2277.00	6.310	234.810	2275.02	49.39	-46.26	-19.70	780705.34	467680.67	32°17'00.069"N	103°33'31.565"W	1.98	
2372.00	6.740	253.640	2369.41	55.91	-50.84	-29.32	780695.72	467676.09	32°17'00.025"N	103°33'31.677"W	2.29	
2466.00	6.720	268.650	2462.77	59.86	-52.52	-40.11	780684.93	467674.41	32°17'00.009"N	103°33'31.803"W	1.87	
2561.00	6.460	282.570	2557.15	61.14	-51.49	-50.89	780674.16	467675.44	32°17'00.020"N	103°33'31.928"W	1.70	
2655.00	5.920	286.280	2650.60	60.78	-48.98	-60.70	780664.34	467677.95	32°17'00.045"N	103°33'32.042"W	0.71	
2749.00	5.450	283.420	2744.14	60.36	-46.58	-69.70	780655.35	467680.35	32°17'00.070"N	103°33'32.147"W	0.58	
2843.00	4.850	284.600	2837.76	60.11	-44.55	-77.88	780647.16	467682.39	32°17'00.090"N	103°33'32.242"W	0.65	
2938.00	5.790	279.060	2932.35	60.22	-42.78	-86.50	780638.54	467684.15	32°17'00.109"N	103°33'32.342"W	1.13	
3032.00	5.790	278.230	3025.87	60.82	-41.35	-95.88	780629.17	467685.58	32°17'00.123"N	103°33'32.451"W	0.09	
3127.00	4.810	275.330	3120.46	61.65	-40.30	-104.59	780620.46	467686.63	32°17'00.134"N	103°33'32.553"W	1.07	
3221.00	5.560	275.530	3214.08	62.66	-39.49	-113.04	780612.00	467687.44	32°17'00.143"N	103°33'32.651"W	0.80	
3316.00	5.850	273.350	3308.61	63.96	-38.77	-122.46	780602.59	467688.17	32°17'00.151"N	103°33'32.761"W	0.38	
3410.00	5.100	275.120	3402.18	65.22	-38.11	-131.40	780593.64	467688.82	32°17'00.158"N	103°33'32.865"W	0.82	
3505.00	4.580	274.500	3496.84	66.26	-37.44	-139.39	780585.66	467689.49	32°17'00.165"N	103°33'32.958"W	0.55	
3599.00	5.270	275.390	3590.49	67.29	-36.74	-147.43	780577.62	467690.19	32°17'00.173"N	103°33'33.052"W	0.74	
3693.00	5.150	278.580	3684.10	68.08	-35.70	-155.90	780569.15	467691.23	32°17'00.184"N	103°33'33.150"W	0.33	
3788.00	4.570	279.290	3778.76	68.56	-34.46	-163.85	780561.20	467692.47	32°17'00.196"N	103°33'33.243"W	0.61	
3882.00	4.960	274.070	3872.44	69.34	-33.56	-171.60	780553.45	467693.37	32°17'00.206"N	103°33'33.333"W	0.62	
3976.00	6.140	270.840	3965.99	70.92	-33.20	-180.68	780544.37	467693.73	32°17'00.210"N	103°33'33.439"W	1.30	
4071.00	6.090	267.190	4060.45	73.24	-33.37	-190.79	780534.26	467693.56	32°17'00.209"N	103°33'33.556"W	0.41	
4165.00	5.460	269.640	4153.98	75.52	-33.65	-200.24	780524.80	467693.28	32°17'00.207"N	103°33'33.666"W	0.72	



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No.57H AWP

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Field	(Thistle) Sec 22, T23S, R33E	Wellbore	No.57H AWB
Facility	Thistle Unit No.56H & No.57H & No.58H		

WELLPATH DATA (194 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4260.00	4.510	268.900	4248.62	77.37	-33.75	-208.50	780516.55	467693.18	32°17'00.207"N	103°33'33.763"W	1.00	
4354.00	4.770	273.000	4342.31	78.86	-33.61	-216.09	780508.95	467693.32	32°17'00.209"N	103°33'33.851"W	0.45	
4449.00	5.670	273.970	4436.91	80.18	-33.08	-224.72	780500.33	467693.85	32°17'00.214"N	103°33'33.952"W	0.95	
4543.00	5.190	271.440	4530.49	81.65	-32.65	-233.60	780491.44	467694.28	32°17'00.219"N	103°33'34.055"W	0.57	
4637.00	5.470	272.080	4624.08	83.25	-32.38	-242.33	780482.72	467694.55	32°17'00.223"N	103°33'34.157"W	0.30	
4732.00	4.980	276.140	4718.69	84.49	-31.78	-250.96	780474.09	467695.15	32°17'00.229"N	103°33'34.257"W	0.65	
4827.00	3.620	266.320	4813.42	85.76	-31.53	-258.05	780467.00	467695.40	32°17'00.232"N	103°33'34.340"W	1.62	
4921.00	3.000	259.260	4907.26	87.54	-32.18	-263.43	780461.62	467694.75	32°17'00.226"N	103°33'34.402"W	0.79	
5015.00	1.850	239.250	5001.18	89.54	-33.41	-267.15	780457.90	467693.52	32°17'00.214"N	103°33'34.446"W	1.50	
5110.00	1.040	240.940	5096.15	91.16	-34.62	-269.22	780455.83	467692.32	32°17'00.202"N	103°33'34.470"W	0.85	
5184.00	1.140	257.340	5170.14	91.91	-35.10	-270.52	780454.52	467691.83	32°17'00.198"N	103°33'34.485"W	0.44	
5290.00	0.670	262.050	5276.12	92.57	-35.42	-272.17	780452.88	467691.51	32°17'00.195"N	103°33'34.504"W	0.45	
5353.00	1.940	272.230	5339.11	92.88	-35.43	-273.60	780451.45	467691.50	32°17'00.195"N	103°33'34.521"W	2.04	
5447.00	4.030	294.190	5432.97	92.48	-34.01	-278.20	780446.85	467692.92	32°17'00.209"N	103°33'34.575"W	2.50	
5542.00	5.570	289.830	5527.64	91.19	-31.08	-285.58	780439.46	467695.85	32°17'00.239"N	103°33'34.660"W	1.66	
5637.00	7.030	290.360	5622.06	89.77	-27.49	-295.37	780429.68	467699.44	32°17'00.275"N	103°33'34.774"W	1.54	
5731.00	7.300	287.920	5715.33	88.38	-23.66	-306.45	780418.60	467703.27	32°17'00.314"N	103°33'34.903"W	0.43	
5826.00	7.270	287.200	5809.56	87.27	-20.02	-317.93	780407.12	467706.91	32°17'00.350"N	103°33'35.036"W	0.10	
5921.00	6.820	283.850	5903.85	86.60	-16.89	-329.15	780395.90	467710.04	32°17'00.382"N	103°33'35.167"W	0.64	
6015.00	6.940	284.680	5997.17	86.22	-14.12	-340.06	780384.99	467712.81	32°17'00.410"N	103°33'35.293"W	0.17	
6110.00	6.590	284.780	6091.51	85.74	-11.27	-350.89	780374.16	467715.66	32°17'00.439"N	103°33'35.419"W	0.37	
6204.00	6.690	282.510	6184.88	85.49	-8.71	-361.45	780363.60	467718.22	32°17'00.465"N	103°33'35.542"W	0.30	
6298.00	5.610	281.500	6278.33	85.53	-6.61	-371.29	780353.76	467720.32	32°17'00.487"N	103°33'35.657"W	1.15	
6393.00	9.150	293.680	6372.54	84.10	-2.65	-382.77	780342.28	467724.28	32°17'00.527"N	103°33'35.790"W	4.05	
6487.00	7.870	282.560	6465.51	82.60	1.75	-395.89	780329.16	467728.68	32°17'00.571"N	103°33'35.942"W	2.21	
6581.00	8.020	284.320	6558.60	82.34	4.77	-408.53	780316.52	467731.70	32°17'00.602"N	103°33'36.089"W	0.30	
6676.00	7.980	283.160	6652.68	82.00	7.92	-421.37	780303.68	467734.84	32°17'00.634"N	103°33'36.239"W	0.18	
6771.00	7.650	285.500	6746.80	81.55	11.11	-433.89	780291.17	467738.04	32°17'00.667"N	103°33'36.384"W	0.48	
6865.00	7.030	285.130	6840.03	80.92	14.28	-445.47	780279.58	467741.21	32°17'00.699"N	103°33'36.519"W	0.66	
6960.00	6.930	280.270	6934.32	80.83	16.82	-456.72	780268.33	467743.75	32°17'00.725"N	103°33'36.650"W	0.63	
7054.00	6.930	274.760	7027.64	81.78	18.30	-467.95	780257.10	467745.23	32°17'00.740"N	103°33'36.780"W	0.71	
7148.00	6.520	269.020	7120.99	83.75	18.68	-478.94	780246.11	467745.61	32°17'00.745"N	103°33'36.908"W	0.84	
7243.00	5.950	274.020	7215.43	85.69	18.93	-489.24	780235.81	467745.86	32°17'00.748"N	103°33'37.028"W	0.83	
7337.00	7.040	272.360	7308.83	87.39	19.51	-499.86	780225.19	467746.44	32°17'00.754"N	103°33'37.152"W	1.18	
7432.00	6.080	271.970	7403.20	89.29	19.92	-510.70	780214.35	467746.85	32°17'00.759"N	103°33'37.278"W	1.01	
7526.00	5.650	272.450	7496.71	90.98	20.29	-520.30	780204.75	467747.22	32°17'00.764"N	103°33'37.390"W	0.46	
7621.00	5.640	269.730	7591.25	92.79	20.47	-529.64	780195.41	467747.40	32°17'00.766"N	103°33'37.499"W	0.28	
7716.00	5.580	262.490	7685.80	95.37	19.85	-538.89	780186.16	467746.78	32°17'00.761"N	103°33'37.607"W	0.75	
7810.00	4.350	255.720	7779.44	98.52	18.37	-546.88	780178.18	467745.30	32°17'00.746"N	103°33'37.700"W	1.45	
7904.00	4.350	254.550	7873.17	101.77	16.54	-553.77	780171.29	467743.47	32°17'00.729"N	103°33'37.780"W	0.09	
7998.00	4.910	262.540	7966.87	104.79	15.07	-561.19	780163.86	467742.00	32°17'00.715"N	103°33'37.867"W	0.91	
8093.00	4.640	259.340	8061.54	107.66	13.83	-569.00	780156.06	467740.76	32°17'00.703"N	103°33'37.958"W	0.40	
8187.00	4.190	257.620	8155.26	110.58	12.39	-576.09	780148.97	467739.32	32°17'00.689"N	103°33'38.040"W	0.50	
8281.00	4.440	266.030	8248.99	113.03	11.40	-583.07	780141.98	467738.33	32°17'00.680"N	103°33'38.122"W	0.72	
8375.00	4.120	262.950	8342.73	115.17	10.74	-590.06	780135.00	467737.66	32°17'00.674"N	103°33'38.203"W	0.42	



Actual Wellpath Report

No.57H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.57H SHL
Area	Lea County, NM	Well	No.57H
Field	(Thistle) Sec 22, T23S, R33E	Wellbore	No.57H AWB
Facility	Thistle Unit No.56H & No.57H & No.58H		

WELLPATH DATA (194 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8470.00	3.720	264.850	8437.51	117.23	10.04	-596.51	780128.54	467736.97	32°17'00.668"N	103°33'38.279"W	0.44	
8564.00	4.890	265.870	8531.24	119.27	9.48	-603.55	780121.51	467736.41	32°17'00.663"N	103°33'38.360"W	1.25	
8659.00	4.800	265.440	8625.90	121.57	8.87	-611.55	780113.51	467735.80	32°17'00.657"N	103°33'38.454"W	0.10	
8753.00	4.480	264.210	8719.59	123.85	8.19	-619.12	780105.94	467735.12	32°17'00.651"N	103°33'38.542"W	0.36	
8847.00	5.040	266.170	8813.27	126.14	7.54	-626.89	780098.17	467734.47	32°17'00.645"N	103°33'38.633"W	0.62	
8942.00	4.850	269.910	8907.91	128.16	7.26	-635.07	780089.99	467734.19	32°17'00.643"N	103°33'38.728"W	0.39	
9036.00	4.450	264.570	9001.61	130.12	6.90	-642.67	780082.38	467733.83	32°17'00.640"N	103°33'38.816"W	0.63	
9130.00	5.420	268.110	9095.26	132.32	6.41	-650.74	780074.32	467733.34	32°17'00.636"N	103°33'38.911"W	1.08	
9225.00	5.070	264.720	9189.86	134.69	5.88	-659.41	780065.65	467732.81	32°17'00.631"N	103°33'39.011"W	0.49	
9319.00	4.480	264.640	9283.53	137.05	5.15	-667.20	780057.86	467732.08	32°17'00.624"N	103°33'39.102"W	0.63	
9414.00	3.500	257.890	9378.30	139.38	4.20	-673.73	780051.33	467731.13	32°17'00.615"N	103°33'39.178"W	1.14	
9539.00	3.910	265.080	9503.04	142.22	3.03	-681.70	780043.35	467729.96	32°17'00.604"N	103°33'39.271"W	0.50	
9634.00	4.340	275.240	9597.80	143.62	3.08	-688.51	780036.55	467730.01	32°17'00.605"N	103°33'39.351"W	0.89	
9728.00	5.870	274.990	9691.42	144.66	3.83	-696.84	780028.22	467730.76	32°17'00.613"N	103°33'39.448"W	1.63	
9823.00	4.720	270.470	9786.01	146.08	4.28	-705.59	780019.47	467731.21	32°17'00.618"N	103°33'39.550"W	1.29	
9917.00	5.700	267.040	9879.62	148.10	4.07	-714.12	780010.94	467731.00	32°17'00.617"N	103°33'39.649"W	1.09	
10011.00	6.310	266.800	9973.11	150.71	3.54	-723.94	780001.12	467730.47	32°17'00.612"N	103°33'39.763"W	0.65	
10105.00	5.880	275.410	10066.58	152.67	3.71	-733.89	779991.17	467730.64	32°17'00.615"N	103°33'39.879"W	1.07	
10199.00	5.170	271.330	10160.14	154.05	4.26	-742.92	779982.14	467731.19	32°17'00.621"N	103°33'39.984"W	0.86	
10294.00	7.740	273.830	10254.53	155.81	4.79	-753.58	779971.48	467731.72	32°17'00.627"N	103°33'40.109"W	2.72	
10382.00	8.130	274.120	10341.69	157.57	5.63	-765.70	779959.36	467732.56	32°17'00.636"N	103°33'40.250"W	0.45	
10476.00	7.240	257.030	10434.86	161.04	4.78	-778.10	779946.96	467731.71	32°17'00.628"N	103°33'40.394"W	2.60	
10570.00	7.670	245.570	10528.07	167.32	0.85	-789.59	779935.47	467727.78	32°17'00.590"N	103°33'40.528"W	1.64	
10665.00	6.790	240.850	10622.31	174.83	-4.50	-800.27	779924.80	467722.43	32°17'00.538"N	103°33'40.653"W	1.12	
10727.00	7.000	221.970	10683.87	180.54	-9.10	-805.99	779919.07	467717.83	32°17'00.493"N	103°33'40.720"W	3.65	
10756.00	7.680	207.800	10712.63	183.94	-12.13	-808.08	779916.98	467714.80	32°17'00.463"N	103°33'40.745"W	6.65	
10789.00	10.380	211.860	10745.22	188.87	-16.60	-810.68	779914.38	467710.33	32°17'00.419"N	103°33'40.775"W	8.40	
10821.00	13.770	213.910	10776.51	195.13	-22.21	-814.32	779910.74	467704.72	32°17'00.364"N	103°33'40.818"W	10.68	
10850.00	17.330	209.770	10804.44	202.46	-28.83	-818.40	779906.67	467698.10	32°17'00.299"N	103°33'40.866"W	12.85	
10884.00	21.650	204.570	10836.49	213.42	-38.94	-823.52	779901.54	467688.00	32°17'00.199"N	103°33'40.927"W	13.68	
10915.00	25.760	198.260	10864.87	225.72	-50.54	-828.01	779897.05	467676.39	32°17'00.085"N	103°33'40.980"W	15.56	
10944.00	29.410	192.900	10890.58	239.11	-63.47	-831.58	779893.48	467663.46	32°16'59.957"N	103°33'41.023"W	15.21	
10978.00	32.470	185.890	10919.75	256.54	-80.70	-834.38	779890.68	467646.23	32°16'59.787"N	103°33'41.057"W	13.89	
11009.00	35.710	182.470	10945.42	273.73	-98.02	-835.62	779889.44	467628.91	32°16'59.615"N	103°33'41.073"W	12.14	
11038.00	38.050	180.370	10968.61	290.82	-115.42	-836.05	779889.02	467611.52	32°16'59.443"N	103°33'41.079"W	9.16	
11072.00	40.190	178.540	10994.99	311.73	-136.86	-835.84	779889.23	467590.07	32°16'59.231"N	103°33'41.078"W	7.15	
11103.00	42.570	178.670	11018.25	331.64	-157.35	-835.34	779889.73	467569.59	32°16'59.028"N	103°33'41.074"W	7.68	
11133.00	44.740	179.360	11039.95	351.79	-178.05	-834.98	779890.08	467548.88	32°16'58.823"N	103°33'41.072"W	7.41	
11166.00	46.660	179.290	11063.00	374.80	-201.67	-834.70	779890.36	467525.27	32°16'58.590"N	103°33'41.071"W	5.82	
11198.00	48.670	179.490	11084.55	397.86	-225.32	-834.45	779890.61	467501.62	32°16'58.356"N	103°33'41.070"W	6.30	
11229.00	50.520	178.130	11104.64	420.81	-248.92	-833.96	779891.10	467478.02	32°16'58.122"N	103°33'41.066"W	6.84	
11260.00	52.070	177.120	11124.03	444.21	-273.09	-832.95	779892.11	467453.85	32°16'57.883"N	103°33'41.056"W	5.61	
11289.00	54.630	177.610	11141.34	466.69	-296.33	-831.89	779893.18	467430.61	32°16'57.653"N	103°33'41.046"W	8.93	
11323.00	58.090	178.510	11160.17	494.13	-324.61	-830.93	779894.13	467402.32	32°16'57.373"N	103°33'41.037"W	10.41	
11354.00	60.220	179.570	11176.06	520.03	-351.22	-830.49	779894.57	467375.72	32°16'57.110"N	103°33'41.034"W	7.47	



Actual Wellpath Report

No.57H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.57H SHL
Area	Lea County, NM	Well	No.57H
Field	(Thistle) Sec 22, T23S, R33E	Wellbore	No.57H AWB
Facility	Thistle Unit No.56H & No.57H & No.58H		

WELLPATH DATA (194 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11384.00	61.030	180.870	11190.78	545.59	-377.37	-830.59	779894.47	467349.58	32°16'56.851"N	103°33'41.038"W	4.64	
11417.00	62.170	180.760	11206.48	574.04	-406.39	-831.00	779894.06	467320.55	32°16'56.564"N	103°33'41.045"W	3.47	
11449.00	64.200	182.860	11220.91	602.12	-434.93	-831.91	779893.15	467292.01	32°16'56.281"N	103°33'41.058"W	8.63	
11478.00	67.770	183.020	11232.71	628.25	-461.38	-833.27	779891.79	467265.56	32°16'56.020"N	103°33'41.076"W	12.32	
11512.00	72.460	183.120	11244.27	659.80	-493.30	-834.98	779890.08	467233.64	32°16'55.704"N	103°33'41.098"W	13.80	
11543.00	77.310	182.900	11252.35	689.33	-523.18	-836.55	779888.51	467203.77	32°16'55.409"N	103°33'41.119"W	15.66	
11578.00	82.270	183.030	11258.56	723.31	-557.57	-838.33	779886.73	467169.38	32°16'55.068"N	103°33'41.143"W	14.18	
11610.00	85.380	183.270	11262.00	754.72	-589.33	-840.08	779884.98	467137.62	32°16'54.754"N	103°33'41.166"W	9.75	
11641.00	86.940	184.510	11264.07	785.31	-620.19	-842.18	779882.88	467106.76	32°16'54.449"N	103°33'41.193"W	6.42	
11673.00	88.340	185.550	11265.39	817.03	-652.03	-844.98	779880.08	467074.91	32°16'54.134"N	103°33'41.228"W	5.45	
11704.00	89.170	186.270	11266.07	847.83	-682.86	-848.18	779876.89	467044.09	32°16'53.829"N	103°33'41.268"W	3.54	
11768.00	91.260	186.020	11265.83	911.46	-746.49	-855.03	779870.04	466980.46	32°16'53.200"N	103°33'41.353"W	3.29	
11862.00	91.260	186.270	11263.76	1004.89	-839.93	-865.09	779859.98	466887.03	32°16'52.276"N	103°33'41.478"W	0.27	
11956.00	91.200	185.430	11261.74	1098.27	-933.42	-874.66	779850.40	466793.54	32°16'51.352"N	103°33'41.597"W	0.90	
12051.00	88.310	184.610	11262.15	1192.50	-1028.04	-882.98	779842.09	466698.92	32°16'50.416"N	103°33'41.702"W	3.16	
12145.00	89.880	185.030	11263.63	1285.68	-1121.69	-890.87	779834.19	466605.27	32°16'49.490"N	103°33'41.802"W	1.73	
12239.00	88.950	185.110	11264.59	1378.93	-1215.32	-899.18	779825.88	466511.65	32°16'48.564"N	103°33'41.907"W	0.99	
12334.00	89.820	185.120	11265.61	1473.18	-1309.93	-907.65	779817.42	466417.03	32°16'47.629"N	103°33'42.013"W	0.92	
12428.00	90.090	184.590	11265.68	1566.39	-1403.60	-915.60	779809.46	466323.37	32°16'46.703"N	103°33'42.114"W	0.63	
12522.00	89.110	183.740	11266.34	1659.44	-1497.34	-922.43	779802.63	466229.63	32°16'45.776"N	103°33'42.201"W	1.38	
12617.00	89.010	181.860	11267.90	1753.12	-1592.21	-927.07	779797.99	466134.76	32°16'44.837"N	103°33'42.263"W	1.98	
12711.00	88.180	181.390	11270.20	1845.47	-1686.15	-929.74	779795.33	466040.83	32°16'43.908"N	103°33'42.302"W	1.01	
12805.00	87.470	181.090	11273.77	1937.65	-1780.06	-931.77	779793.30	465946.92	32°16'42.979"N	103°33'42.334"W	0.82	
12899.00	89.070	181.250	11276.61	2029.84	-1873.99	-933.69	779791.38	465852.99	32°16'42.050"N	103°33'42.364"W	1.71	
12994.00	87.910	182.470	11279.11	2123.24	-1968.90	-936.77	779788.30	465758.08	32°16'41.111"N	103°33'42.408"W	1.77	
13088.00	88.610	182.450	11281.97	2215.81	-2062.77	-940.80	779784.26	465664.21	32°16'40.182"N	103°33'42.462"W	0.74	
13182.00	90.460	182.990	11282.73	2308.49	-2156.66	-945.26	779779.80	465570.33	32°16'39.253"N	103°33'42.522"W	2.05	
13277.00	90.800	183.130	11281.69	2402.26	-2251.52	-950.33	779774.73	465475.47	32°16'38.315"N	103°33'42.589"W	0.39	
13371.00	89.600	182.860	11281.36	2495.02	-2345.39	-955.25	779769.82	465381.61	32°16'37.387"N	103°33'42.654"W	1.31	
13465.00	88.030	182.490	11283.30	2587.67	-2439.26	-959.63	779765.44	465287.74	32°16'36.458"N	103°33'42.713"W	1.72	
13560.00	85.810	182.900	11288.41	2681.20	-2534.01	-964.09	779760.98	465192.99	32°16'35.521"N	103°33'42.773"W	2.38	
13654.00	87.440	182.840	11293.94	2773.77	-2627.73	-968.79	779756.28	465099.27	32°16'34.594"N	103°33'42.836"W	1.74	
13749.00	89.110	183.370	11296.80	2867.50	-2722.54	-973.93	779751.13	465004.46	32°16'33.656"N	103°33'42.904"W	1.84	
13843.00	88.210	183.800	11299.00	2960.39	-2816.33	-979.81	779745.26	464910.67	32°16'32.728"N	103°33'42.980"W	1.06	
13938.00	87.750	183.620	11302.35	3054.27	-2911.07	-985.95	779739.12	464815.94	32°16'31.791"N	103°33'43.059"W	0.52	
14032.00	89.040	183.490	11304.98	3147.14	-3004.85	-991.78	779733.29	464722.16	32°16'30.864"N	103°33'43.135"W	1.38	
14126.00	88.670	184.010	11306.86	3240.07	-3098.63	-997.92	779727.14	464628.38	32°16'29.936"N	103°33'43.215"W	0.68	
14220.00	88.830	183.110	11308.91	3332.96	-3192.43	-1003.76	779721.31	464534.59	32°16'29.009"N	103°33'43.290"W	0.97	
14315.00	87.590	182.230	11311.87	3426.57	-3287.28	-1008.18	779716.88	464439.74	32°16'28.071"N	103°33'43.350"W	1.60	
14409.00	89.720	182.970	11314.08	3519.20	-3381.15	-1012.45	779712.62	464345.87	32°16'27.142"N	103°33'43.407"W	2.40	
14503.00	89.690	182.470	11314.57	3611.89	-3475.04	-1016.91	779708.16	464251.98	32°16'26.213"N	103°33'43.467"W	0.53	
14597.00	88.490	181.250	11316.06	3704.32	-3568.98	-1019.96	779705.11	464158.05	32°16'25.284"N	103°33'43.510"W	1.82	
14692.00	89.510	180.940	11317.72	3797.49	-3663.94	-1021.77	779703.30	464063.09	32°16'24.345"N	103°33'43.540"W	1.12	
14786.00	88.950	181.700	11318.98	3889.76	-3757.91	-1023.94	779701.13	463969.12	32°16'23.415"N	103°33'43.573"W	1.00	
14880.00	89.440	181.660	11320.30	3982.15	-3851.86	-1026.69	779698.37	463875.18	32°16'22.485"N	103°33'43.613"W	0.52	



Actual Wellpath Report

No.57H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.57H SHL
Area	Lea County, NM	Well	No.57H
Field	(Thistle) Sec 22, T23S, R33E	Wellbore	No.57H AWB
Facility	Thistle Unit No.56H & No.57H & No.58H		

WELLPATH DATA (194 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14974.00	90.400	181.870	11320.43	4074.56	-3945.81	-1029.59	779695.48	463781.23	32°16'21.556"N	103°33'43.654"W	1.05	
15068.00	90.220	183.130	11319.92	4167.19	-4039.72	-1033.69	779691.38	463687.32	32°16'20.627"N	103°33'43.710"W	1.35	
15163.00	91.140	184.430	11318.79	4261.13	-4134.50	-1039.95	779685.12	463592.54	32°16'19.690"N	103°33'43.791"W	1.68	
15257.00	90.460	184.050	11317.48	4354.19	-4228.24	-1046.90	779678.17	463498.81	32°16'18.763"N	103°33'43.879"W	0.83	
15351.00	89.380	184.080	11317.61	4447.22	-4322.00	-1053.56	779671.51	463405.05	32°16'17.835"N	103°33'43.965"W	1.15	
15445.00	91.020	184.320	11317.29	4540.28	-4415.74	-1060.45	779664.62	463311.31	32°16'16.908"N	103°33'44.053"W	1.76	
15539.00	90.340	184.850	11316.17	4633.42	-4509.43	-1067.96	779657.11	463217.62	32°16'15.982"N	103°33'44.148"W	0.92	
15634.00	90.120	184.650	11315.79	4727.60	-4604.11	-1075.83	779649.24	463122.95	32°16'15.046"N	103°33'44.248"W	0.31	
15728.00	89.230	185.310	11316.32	4820.83	-4697.75	-1083.99	779641.08	463029.31	32°16'14.120"N	103°33'44.351"W	1.18	
15822.00	89.910	185.340	11317.03	4914.13	-4791.34	-1092.71	779632.36	462935.72	32°16'13.194"N	103°33'44.460"W	0.72	
15916.00	91.690	186.100	11315.71	5007.50	-4884.86	-1102.08	779622.99	462842.20	32°16'12.270"N	103°33'44.577"W	2.06	
16010.00	93.760	186.190	11311.25	5100.85	-4978.21	-1112.13	779612.94	462748.86	32°16'11.347"N	103°33'44.702"W	2.20	
16070.00	95.040	186.090	11306.64	5160.33	-5037.69	-1118.53	779606.54	462689.38	32°16'10.758"N	103°33'44.781"W	2.14	
16135.00	95.040	186.090	11300.93	5224.70	-5102.07	-1125.40	779599.67	462625.00	32°16'10.122"N	103°33'44.867"W	0.00	Proj to Bit

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No.56H PBHL		11271.90	-5098.11	208.31	780933.34	462628.96	32°16'10.066"N	103°33'29.334"W	rectangle
No.57H PBHL		11300.00	-5104.41	-1112.58	779612.49	462622.66	32°16'10.098"N	103°33'44.718"W	rectangle

WELLPATH COMPOSITION - Ref Wellbore: No.57H AWB Ref Wellpath: No.57H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1432.00	Generic gyro - northseeking (Standard)	VES Gyros <171.5-1432>	No.57H AWB
1432.00	16070.00	NaviTrak (Standard)	BHI MWD NaviTrak <1519-16070>	No.57H AWB
16070.00	16135.00	Blind Drilling (std)	Projection to bit	No.57H AWB