

Results of Directional Survey

API number:	30-025-41303			
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP	
		Property:	THISTLE UNIT	# 65H

surface	ULSTR:	P	33	T 23S	R 33E
				124 FSL	1058 FEL

BH Loc	ULSTR:	A	33	T 23S	R 33E
15772	MD	11215.6	TVD	318 FNL	710 FEL
				4962 FSL	

Top Perf/OH	ULSTR:	P	33	T 23S	R 33E
11529	MD	11228.4	TVD	729 FSL	914 FEL

Bot Perf/OH	ULSTR:	A	33	T 23S	R 33E
15604	MD	11213.8	TVD	486 FNL	715 FEL
				4794 FSL	

	MD	N/S	E/W	VD
	11509	586.55	142.81	11221.44
TOP PERFS/OH	11529	605.27	143.70	11228.43
	11540	615.56	144.19	11232.27
	15539	4605.38	340.00	11213.64
BOT PERFS/OH	15604	4670.33	342.57	11213.80
	15633	4699.31	343.71	11213.87

NEXT TO LAST	15706	4772.26	346.27	11214.58
LAST READING	15772	4838.22	348.37	11215.63
TD	15772	4838.22	348.37	11215.63

Surface Location	124	FS	1058	FE
Projected BHL	4962	FS	710	FE
Location of				
Top Perfs/OH	729	FS	914	FE
Bottom Perfs/OH	4794	FS	715	FE

SUMMARY of Subsurface Locations

Surface Location	P-33-23S-33E	124	FS	1058	FE	Vert. Depth
Top Perfs/OH	P-33-23S-33E	729	FS	914	FE	11228.43
Bottom Perfs/OH	A-33-23S-33E	4794	FS	715	FE	11213.80
Projected TD	A-33-23S-33E	4962	FS	710	FE	11215.63

OCT 22 2013



A GYRO TECHNOLOGIES INC. COMPANY

August 30, 2013

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

HOBBS OGD

OCT 04 2013

RECEIVED

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

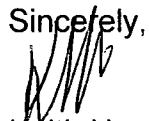
Attn: Patti Riechers

Re: Thistle Unit No. 065

Please find enclosed a copy of the survey from 0.00' to 10470.00' ran on the above referenced well.

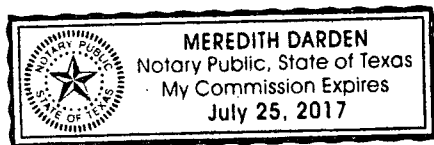
If I can be of any further service please do not hesitate to call me at 800-606-4976.

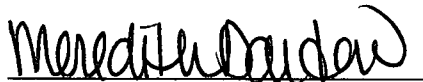
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 30th day of August, A.D., 2013, by Keith Havelka.




Meredith Darden
Notary Public, State of Texas



Company: Devon Energy Production Co

Well: Thistle Unit No. 065

Rig Name: H&P #416

State/County: New Mexico/Lea

Latitude: 32.25, Longitude: -103.07

GRID North is 0.67 Degrees East of True North

VS-Azi: 4.27 Degrees



Depth Reference : R.K.B. Height of 25 ft.

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: finalreport.ut

Minimum Curvature Method

Report Date/Time: 8/30/2013 / 11:21

Vaughn Energy Services

Midland, TX

(432) 563-5444

Surveyor: Joshua Kirby

Thistle Unit No. 065 / API 30-025-41303

RECEIVED
OCT 04 2013
HOESS OCD

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	****
100.00	0.31	208.05	100.00	-0.24	-0.13	-0.25	0.27	208.05	0.31
200.00	0.45	150.62	200.00	-0.82	-0.06	-0.82	0.82	184.45	0.38
300.00	0.44	177.59	299.99	-1.54	0.14	-1.53	1.55	174.66	0.21
400.00	0.51	174.76	399.99	-2.37	0.20	-2.35	2.38	175.15	0.08
500.00	0.43	148.86	499.99	-3.14	0.44	-3.10	3.17	172.09	0.23
600.00	0.56	181.89	599.98	-3.95	0.61	-3.89	4.00	171.17	0.31
700.00	0.25	178.98	699.98	-4.67	0.60	-4.61	4.70	172.65	0.31
800.00	0.39	203.00	799.98	-5.20	0.47	-5.15	5.23	174.82	0.19
900.00	0.42	187.86	899.98	-5.89	0.29	-5.85	5.89	177.21	0.11
1000.00	0.39	167.72	999.98	-6.58	0.31	-6.54	6.59	177.32	0.15
1100.00	0.43	182.77	1099.97	-7.29	0.36	-7.24	7.30	177.15	0.12
1200.00	0.29	167.08	1199.97	-7.91	0.40	-7.86	7.92	177.10	0.17
1300.00	0.08	201.27	1299.97	-8.22	0.43	-8.17	8.23	176.98	0.23
1400.00	0.10	169.09	1399.97	-8.37	0.43	-8.32	8.38	177.09	0.05
1500.00	0.32	9.63	1499.97	-8.18	0.49	-8.12	8.19	176.58	0.42
1600.00	0.56	0.90	1599.97	-7.41	0.54	-7.34	7.43	175.80	0.25
1700.00	0.82	5.98	1699.96	-6.20	0.63	-6.13	6.23	174.22	0.27
1800.00	0.88	10.80	1799.95	-4.73	0.85	-4.66	4.81	169.87	0.09

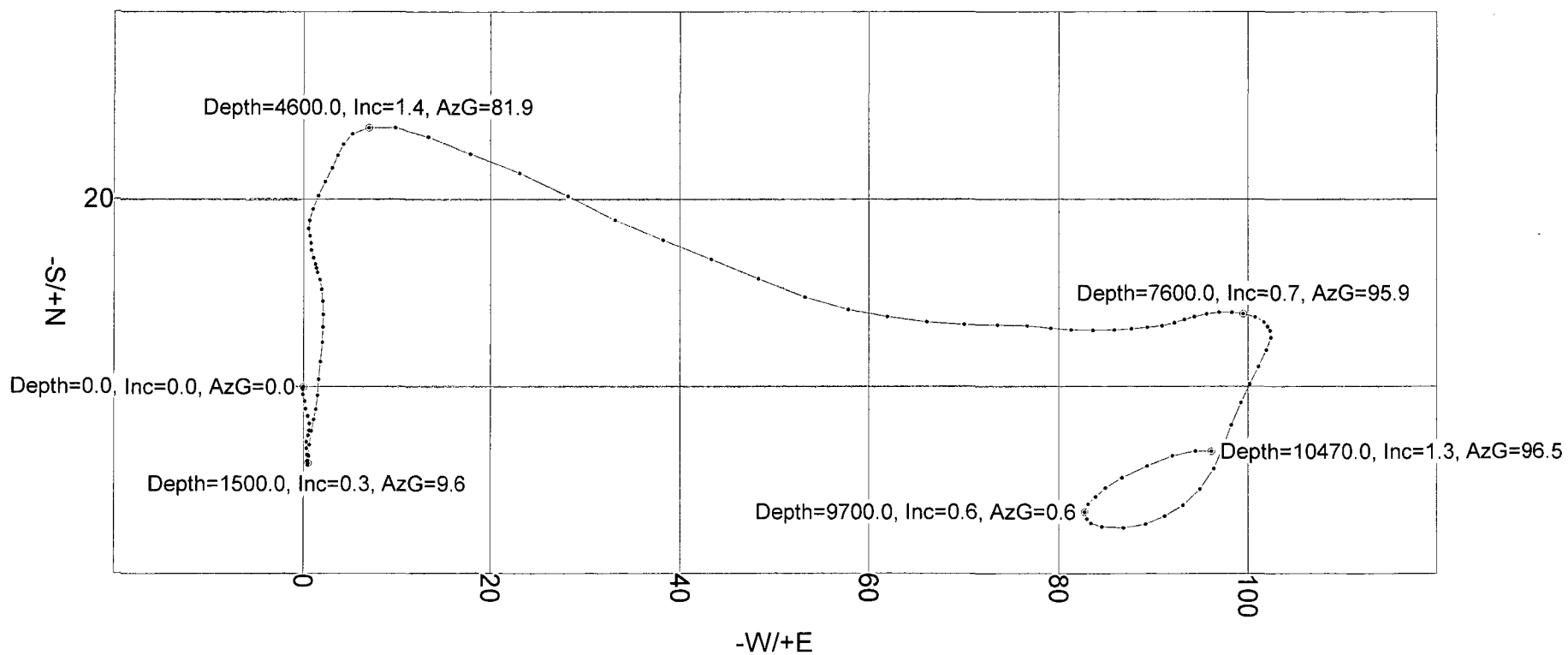
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.53	12.42	1899.94	-3.53	1.09	-3.44	3.69	162.86	0.35
2000.00	0.76	9.66	1999.93	-2.42	1.30	-2.32	2.75	151.76	0.23
2100.00	0.96	4.69	2099.92	-0.92	1.48	-0.81	1.75	122.01	0.21
2200.00	1.01	3.08	2199.91	0.79	1.60	0.91	1.78	63.64	0.05
2300.00	1.18	8.74	2299.89	2.69	1.80	2.81	3.23	33.81	0.20
2400.00	1.21	2.03	2399.87	4.76	1.99	4.89	5.16	22.74	0.14
2500.00	0.64	3.22	2499.85	6.36	2.06	6.50	6.69	17.95	0.57
2600.00	0.89	359.03	2599.85	7.70	2.08	7.83	7.98	15.12	0.26
2700.00	0.75	356.88	2699.84	9.14	2.03	9.26	9.36	12.53	0.14
2800.00	0.68	353.95	2799.83	10.39	1.93	10.50	10.57	10.54	0.08
2900.00	0.54	343.19	2899.82	11.43	1.73	11.53	11.56	8.63	0.19
3000.00	0.38	337.71	2999.82	12.18	1.47	12.26	12.27	6.90	0.16
3100.00	0.17	5.68	3099.82	12.64	1.36	12.70	12.71	6.15	0.24
3200.00	0.35	334.98	3199.82	13.06	1.25	13.12	13.12	5.46	0.22
3300.00	0.47	346.49	3299.81	13.73	1.02	13.77	13.77	4.26	0.14
3400.00	0.53	345.09	3399.81	14.57	0.81	14.59	14.60	3.18	0.06
3500.00	0.36	9.90	3499.81	15.33	0.74	15.34	15.34	2.78	0.25
3600.00	0.54	344.39	3599.80	16.09	0.67	16.10	16.10	2.39	0.27
3700.00	0.36	351.16	3699.80	16.86	0.50	16.85	16.87	1.68	0.19
3800.00	0.67	15.93	3799.80	17.74	0.61	17.73	17.75	1.96	0.38
3900.00	0.79	18.39	3899.79	18.95	0.99	18.97	18.98	2.98	0.12
4000.00	0.97	24.74	3999.78	20.37	1.56	20.43	20.43	4.37	0.21
4100.00	0.97	27.43	4099.76	21.88	2.30	22.00	22.01	5.99	0.05
4200.00	0.94	25.52	4199.75	23.37	3.04	23.53	23.57	7.41	0.04
4300.00	0.71	22.00	4299.74	24.69	3.62	24.89	24.95	8.35	0.24
4400.00	0.85	30.54	4399.73	25.90	4.23	26.14	26.24	9.28	0.18
4500.00	0.86	51.57	4499.72	27.00	5.19	27.31	27.49	10.89	0.31
4600.00	1.35	81.89	4599.70	27.63	6.95	28.07	28.49	14.12	0.75
4700.00	1.90	94.79	4699.66	27.66	9.77	28.31	29.33	19.45	0.65
4800.00	2.38	114.36	4799.59	26.67	13.31	27.58	29.80	26.53	0.87
4900.00	3.26	109.78	4899.47	24.85	17.88	26.11	30.61	35.74	0.91
5000.00	3.18	112.78	4999.31	22.81	23.12	24.47	32.48	45.39	0.19
5100.00	3.31	119.26	5099.15	20.32	28.20	22.36	34.76	54.22	0.39
5200.00	3.11	115.19	5198.99	17.75	33.18	20.17	37.63	61.85	0.31
5300.00	3.18	110.55	5298.84	15.63	38.23	18.43	41.30	67.77	0.26
5400.00	3.06	113.40	5398.70	13.59	43.27	16.78	45.36	72.56	0.19
5500.00	3.12	112.37	5498.55	11.50	48.24	15.06	49.59	76.59	0.08
5600.00	3.08	110.69	5598.40	9.51	53.26	13.45	54.10	79.87	0.10
5700.00	2.38	100.11	5698.29	8.20	57.82	12.48	58.40	81.93	0.85

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
5800.00	2.41	100.48	5798.20	7.45	61.93	12.04	62.38	83.14	0.03
5900.00	2.43	95.28	5898.11	6.88	66.11	11.78	66.46	84.06	0.22
6000.00	2.07	92.56	5998.04	6.60	70.02	11.80	70.33	84.61	0.37
6100.00	1.97	88.68	6097.97	6.56	73.54	12.02	73.84	84.90	0.17
6200.00	1.59	95.31	6197.93	6.47	76.64	12.16	76.91	85.17	0.43
6300.00	1.32	96.80	6297.89	6.21	79.16	12.08	79.40	85.52	0.27
6400.00	1.18	92.75	6397.87	6.02	81.33	12.06	81.55	85.77	0.16
6500.00	1.44	89.72	6497.84	5.98	83.62	12.19	83.83	85.91	0.26
6600.00	1.16	87.82	6597.82	6.02	85.89	12.40	86.10	85.99	0.28
6700.00	0.90	83.16	6697.80	6.15	87.68	12.67	87.90	85.98	0.28
6800.00	1.03	86.63	6797.79	6.30	89.36	12.94	89.58	85.97	0.14
6900.00	0.78	80.41	6897.78	6.47	90.93	13.22	91.16	85.93	0.27
7000.00	0.79	71.97	6997.77	6.79	92.26	13.64	92.51	85.79	0.12
7100.00	0.47	70.28	7097.76	7.14	93.30	14.07	93.57	85.62	0.32
7200.00	0.80	76.65	7197.75	7.44	94.36	14.45	94.65	85.49	0.33
7300.00	0.74	78.12	7297.74	7.74	95.66	14.84	95.98	85.38	0.06
7400.00	0.80	86.55	7397.74	7.91	97.00	15.11	97.32	85.34	0.13
7500.00	0.71	96.71	7497.73	7.88	98.31	15.18	98.63	85.42	0.16
7600.00	0.66	95.86	7597.72	7.75	99.50	15.14	99.80	85.55	0.05
7700.00	0.85	112.08	7697.71	7.41	100.76	14.89	101.03	85.79	0.28
7800.00	0.39	137.40	7797.71	6.89	101.68	14.44	101.91	86.13	0.53
7900.00	0.31	148.81	7897.70	6.41	102.04	13.99	102.24	86.41	0.10
8000.00	0.33	150.21	7997.70	5.93	102.32	13.53	102.50	86.68	0.02
8100.00	0.56	189.63	8097.70	5.20	102.38	12.81	102.52	87.09	0.37
8200.00	1.03	204.27	8197.69	3.90	101.93	11.47	102.01	87.81	0.51
8300.00	1.23	205.36	8297.67	2.10	101.10	9.62	101.12	88.81	0.20
8400.00	1.14	207.22	8397.65	0.25	100.18	7.70	100.18	89.86	0.11
8500.00	1.36	203.04	8497.62	-1.73	99.27	5.67	99.28	91.00	0.24
8600.00	1.62	203.03	8597.59	-4.12	98.25	3.21	98.34	92.40	0.26
8700.00	1.35	195.46	8697.56	-6.55	97.38	0.71	97.60	93.85	0.33
8800.00	1.46	210.29	8797.53	-8.80	96.42	-1.59	96.82	95.21	0.38
8900.00	1.56	217.32	8897.49	-10.98	94.96	-3.88	95.59	96.60	0.21
9000.00	1.33	236.41	8997.46	-12.70	93.16	-5.73	94.03	97.76	0.53
9100.00	1.28	242.64	9097.44	-13.86	91.21	-7.03	92.25	98.64	0.15
9200.00	1.27	249.86	9197.41	-14.75	89.18	-8.07	90.39	99.39	0.16
9300.00	1.50	270.11	9297.38	-15.13	86.82	-8.62	88.13	99.89	0.54
9400.00	1.09	277.21	9397.36	-15.01	84.56	-8.67	85.88	100.06	0.44
9500.00	0.36	319.22	9497.35	-14.65	83.41	-8.40	84.69	99.96	0.86
9600.00	0.36	313.47	9597.35	-14.20	82.98	-7.98	84.18	99.71	0.04

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
9700.00	0.62	0.64	9697.34	-13.44	82.75	-7.24	83.83	99.22	0.46
9800.00	0.55	48.15	9797.34	-12.57	83.12	-6.35	84.06	98.60	0.48
9900.00	0.70	43.63	9897.33	-11.81	83.89	-5.53	84.72	98.01	0.15
10000.00	0.92	49.63	9997.32	-10.85	84.92	-4.50	85.61	97.28	0.24
10100.00	1.48	63.32	10097.30	-9.75	86.69	-3.27	87.23	96.42	0.62
10200.00	1.88	66.06	10197.26	-8.51	89.34	-1.83	89.74	95.44	0.41
10300.00	1.43	70.70	10297.21	-7.43	92.02	-0.56	92.32	94.62	0.47
10400.00	1.47	85.58	10397.18	-6.92	94.48	0.14	94.74	94.19	0.38
10470.00	1.29	96.54	10467.16	-6.94	96.16	0.24	96.41	94.13	0.46



Vaughn Energy Services
Midland, TX
(432) 563-5444
Surveyor: Joshua Kirby
Thistle Unit No. 065 / API 30-025-41303





Thistle Unit 65H
Lea County, New Mexico

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	10470.00	1.29	96.54	10467.16	-6.94	96.16	0.00	0.00	0.24	
2	10677.29	1.29	96.54	10674.40	-7.47	100.80	0.00	0.00	0.05	
3	11583.20	90.51	2.92	11248.00	569.16	143.25	10.00	-93.61	578.25	
4	15857.81	90.51	2.92	11210.00	4838.05	361.09	0.00	0.00	4851.51	PBHL

WELL DETAILS					
Name	+N/-S	+E/-W	Northing	Easting	Latitude
Thistle Unit 65H	0.00	0.00	457109.49	776617.14	32°15'15.747N

Longitude	Slot
103°34'20.077W	N/A

TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL	11210.00	4838.05	361.09	461947.54	776978.23

Shape
Rectangle (4275x50)

KB ELEV: 3673.3
GL ELEV: 3648.3

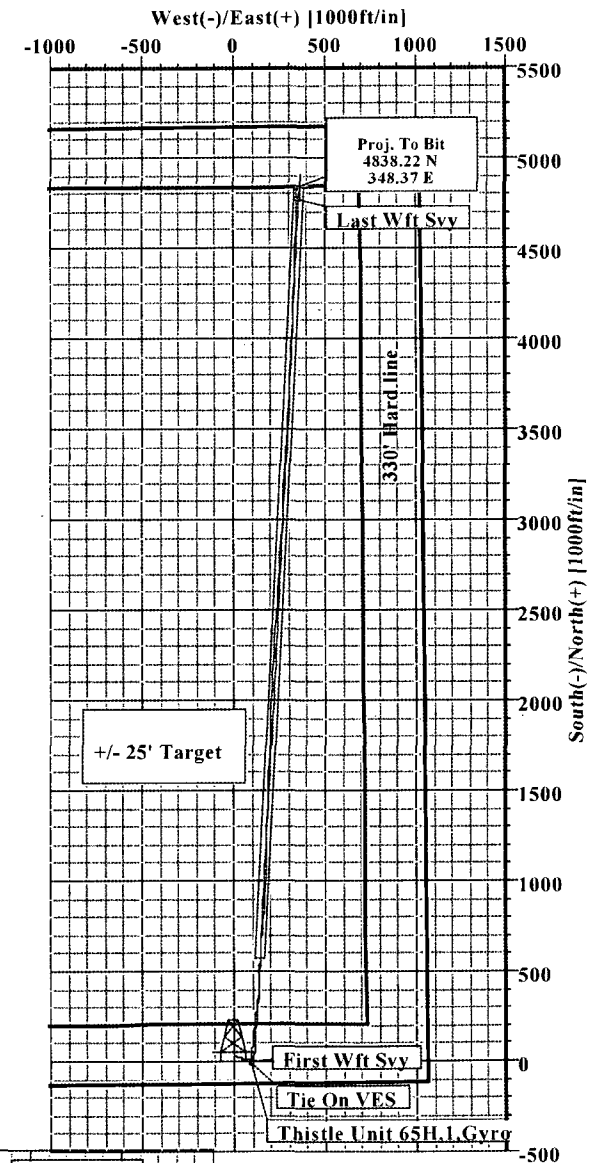
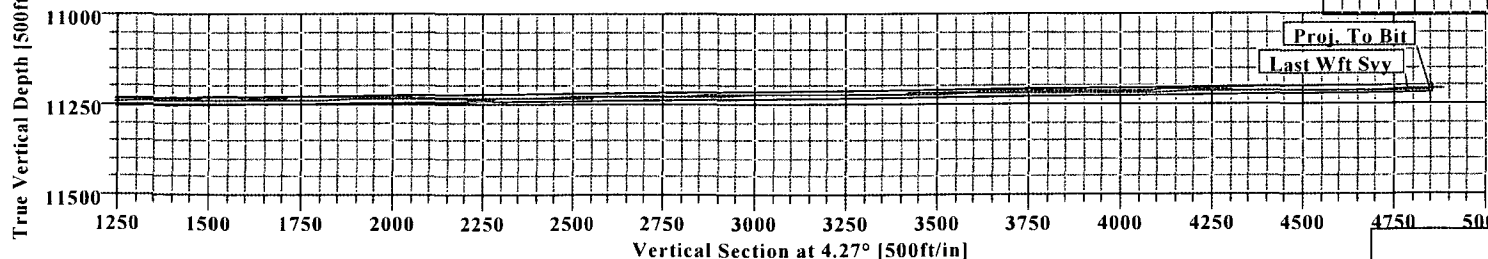
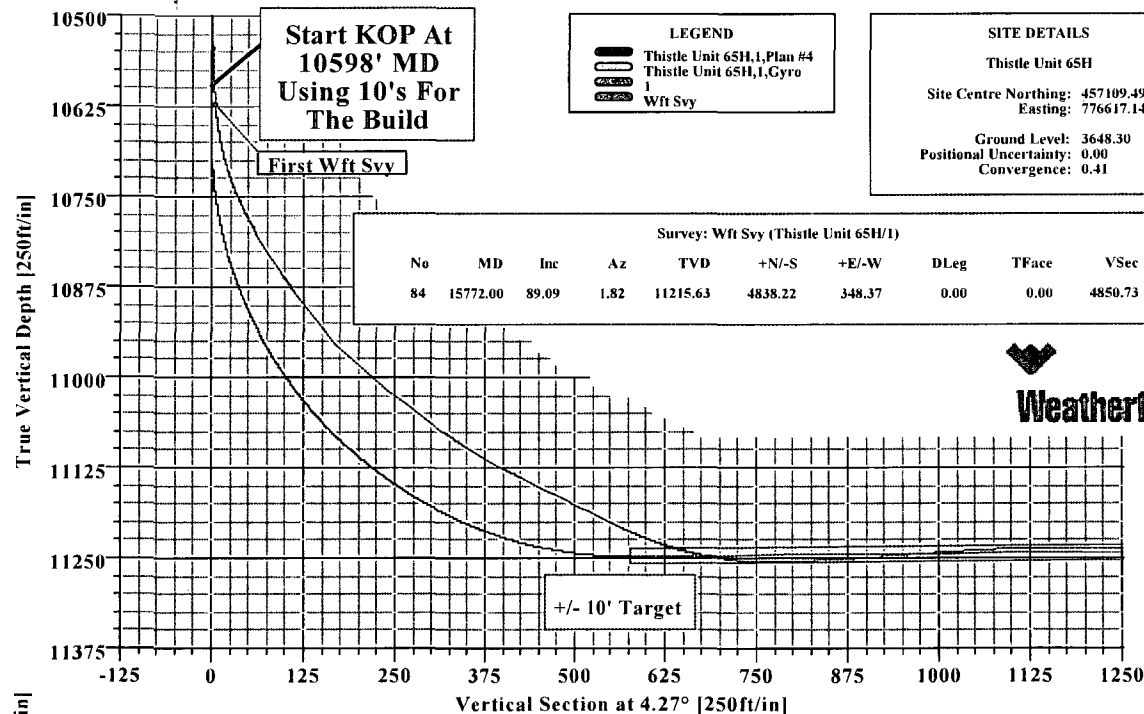
Start KOP At
10598' MD
Using 10's For
The Build

First Wft Svy

LEGEND	
	Thistle Unit 65H, 1, Plan #4
	Thistle Unit 65H, 1, Gyro
	Wft Svy

SITE DETAILS
Thistle Unit 65H
Site Centre Northing: 457109.49
Easting: 776617.14
Ground Level: 3648.30
Positional Uncertainty: 0.00
Convergence: 0.41

Survey: Wft Svy (Thistle Unit 65H/1)									
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
84	15772.00	89.09	1.82	11215.63	4838.22	348.37	0.00	0.00	4850.73



Proj. To Bit
Last Wft Svy



Weatherford

Wft Survey Report X Y's.

**Weatherford®**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Thistle Unit 65H
Well: Thistle Unit 65H
Wellpath: 1

Date: 9/2/2013 Time: 08:33:42 Page: 1
Co-ordinate(NE) Reference: Well: Thistle Unit 65H, Grid North
Vertical (TVD) Reference: SITE 3673.3
Section (VS) Reference: Well (0.00N,0.00E,4.27Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: Wft Svy Start Date: 8/26/2013

Company: Weatherford Engineer: Russell W. Joyner
Tool: MWD;MWD - Standard Tied-to: User Defined

Site: Thistle Unit 65H

HOBBS OGD

Site Position: Northing: 457109.49 ft Latitude: 32 15 15.747 N
From: Map Easting: 776617.14 ft Longitude: 103 34 20.077 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 3648.30 ft Grid Convergence: 0.41 deg

OCT 04 2013

Well: Thistle Unit 65H Slot Name:

Well Position: +N/-S 0.00 ft Northing: 457109.49 ft Latitude: 32 15 15.747 N
+E/-W 0.00 ft Easting: 776617.14 ft Longitude: 103 34 20.077 W
Position Uncertainty: 0.00 ft

RECEIVED

Wellpath: 1

Current Datum: SITE Height 3673.30 ft
Magnetic Data: 9/1/2013
Field Strength: 48438 nT
Vertical Section: Depth From (TVD) +N/-S
ft ft

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 7.32 deg
Mag Dip Angle: 60.16 deg
+E/-W Direction
ft deg

0.00 0.00 0.00 4.27

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
10470.00	1.29	96.54	10467.16	-6.94	96.16	0.00	0.24	457102.55	776713.30	Tie On VES
10626.00	3.54	1.00	10623.05	-2.32	97.99	2.49	4.98	457107.17	776715.13	First Wft Svy
10657.00	8.71	354.34	10653.87	0.97	97.77	16.81	8.25	457110.46	776714.91	
10689.00	12.70	355.70	10685.30	6.89	97.27	12.49	14.12	457116.38	776714.41	
10720.00	17.55	359.66	10715.22	14.97	96.99	15.99	22.15	457124.46	776714.13	
10752.00	22.52	0.46	10745.28	25.93	97.01	15.55	33.08	457135.42	776714.15	
10783.00	26.63	2.29	10773.46	38.81	97.33	13.48	45.95	457148.30	776714.47	
10815.00	29.10	2.62	10801.75	53.75	97.98	7.73	60.90	457163.24	776715.12	
10846.00	31.72	3.30	10828.48	69.42	98.79	8.52	76.59	457178.91	776715.93	
10878.00	33.62	4.74	10855.42	86.65	100.01	6.41	93.86	457196.14	776717.15	
10910.00	34.91	7.09	10881.87	104.57	101.87	5.77	111.86	457214.06	776719.01	
10941.00	36.83	7.17	10906.99	122.59	104.12	6.20	130.01	457232.08	776721.26	
10973.00	39.95	5.95	10932.06	142.33	106.39	10.03	149.86	457251.82	776723.53	
11004.00	43.64	5.15	10955.17	162.89	108.38	12.03	170.51	457272.38	776725.52	
11036.00	46.42	5.63	10977.79	185.43	110.51	8.75	193.14	457294.92	776727.65	
11067.00	49.19	6.16	10998.61	208.27	112.87	9.02	216.10	457317.76	776730.01	
11099.00	51.98	6.91	11018.92	232.83	115.69	8.90	240.80	457342.32	776732.83	
11130.00	53.94	7.30	11037.59	257.38	118.75	6.40	265.51	457366.87	776735.89	
11162.00	53.56	7.50	11056.52	282.97	122.07	1.29	291.28	457392.46	776739.21	
11193.00	54.30	7.38	11074.77	307.82	125.31	2.41	316.30	457417.31	776742.45	
11225.00	57.11	6.72	11092.80	334.06	128.56	8.94	342.70	457443.55	776745.70	
11256.00	59.62	5.47	11109.06	360.30	131.35	8.79	369.08	457469.79	776748.49	
11288.00	62.39	4.13	11124.57	388.18	133.69	9.40	397.06	457497.67	776750.83	
11319.00	63.38	2.95	11138.70	415.72	135.39	4.66	424.65	457525.21	776752.53	
11351.00	63.40	2.74	11153.03	444.30	136.81	0.59	453.25	457553.79	776753.95	
11383.00	63.18	2.65	11167.41	472.85	138.16	0.73	481.83	457582.34	776755.30	
11414.00	63.60	2.23	11181.30	500.54	139.34	1.82	509.53	457610.03	776756.48	
11446.00	63.83	2.38	11195.47	529.21	140.49	0.83	538.20	457638.70	776757.63	
11477.00	65.35	2.38	11208.77	557.19	141.66	4.90	566.19	457666.68	776758.80	
11509.00	68.00	2.11	11221.44	586.55	142.81	8.32	595.55	457696.04	776759.95	



Weatherford

Wft Survey Report X Y's.

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Thistle Unit 65H
Well: Thistle Unit 65H
Wellpath: 1

Date: 9/2/2013 Time: 08:33:42 Page: 2
Co-ordinate(NE) Reference: Well: Thistle Unit 65H, Grid North
Vertical (TVD) Reference: SITE 3673.3
Section (VS) Reference: Well (0.00N,0.00E,4.27Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
11540.00	71.08	3.34	11232.27	615.56	144.19	10.61	624.58	457725.05	776761.33	
11572.00	75.50	3.83	11241.47	646.14	146.11	13.89	655.22	457755.63	776763.25	
11603.00	80.24	4.70	11247.98	676.35	148.36	15.53	685.52	457785.84	776765.50	
11635.00	83.34	5.18	11252.55	707.90	151.09	9.80	717.19	457817.39	776768.23	
11659.00	86.50	6.03	11254.68	731.69	153.42	13.63	741.08	457841.18	776770.56	
11691.00	90.91	5.36	11255.40	763.52	156.60	13.94	773.06	457873.01	776773.74	
11722.00	91.61	4.67	11254.72	794.39	159.31	3.17	804.05	457903.88	776776.45	
11754.00	92.31	4.73	11253.63	826.26	161.93	2.20	836.03	457935.75	776779.07	
11786.00	92.94	4.42	11252.16	858.13	164.48	2.19	867.99	457967.62	776781.62	
11817.00	93.78	4.57	11250.34	888.98	166.90	2.75	898.94	457998.47	776784.04	
11849.00	94.48	4.76	11248.04	920.79	169.50	2.27	930.85	458030.28	776786.64	
11943.00	93.71	2.61	11241.33	1014.35	175.52	2.42	1024.60	458123.84	776792.66	
12006.00	92.80	1.99	11237.75	1077.20	178.05	1.75	1087.46	458186.69	776795.19	
12069.00	89.93	1.06	11236.25	1140.15	179.72	4.79	1150.37	458249.64	776796.86	
12132.00	90.14	0.35	11236.21	1203.14	180.50	1.18	1213.24	458312.63	776797.64	
12227.00	90.56	1.60	11235.63	1298.13	182.12	1.39	1308.08	458407.62	776799.26	
12321.00	91.89	1.80	11233.62	1392.06	184.90	1.43	1401.96	458501.55	776802.04	
12416.00	90.56	1.86	11231.59	1486.99	187.94	1.40	1496.85	458596.48	776805.08	
12511.00	89.02	1.34	11231.94	1581.95	190.59	1.71	1591.75	458691.44	776807.73	
12607.00	90.70	1.63	11232.17	1677.91	193.08	1.78	1687.63	458787.40	776810.22	
12701.00	92.38	1.35	11229.64	1771.84	195.52	1.81	1781.48	458881.33	776812.66	
12796.00	90.56	1.40	11227.21	1866.78	197.80	1.92	1876.33	458976.27	776814.94	
12890.00	87.90	2.77	11228.47	1960.70	201.22	3.18	1970.24	459070.19	776818.36	
12985.00	87.34	2.04	11232.42	2055.53	205.20	0.97	2065.10	459165.02	776822.34	
13080.00	88.32	3.73	11236.01	2150.34	209.98	2.06	2160.00	459259.83	776827.12	
13174.00	90.28	3.96	11237.16	2244.12	216.28	2.10	2253.99	459353.61	776833.42	
13269.00	90.98	3.52	11236.12	2338.91	222.48	0.87	2348.98	459448.40	776839.62	
13363.00	91.19	3.70	11234.34	2432.70	228.40	0.29	2442.96	459542.19	776845.54	
13458.00	91.47	3.94	11232.13	2527.47	234.72	0.39	2537.93	459636.96	776851.86	
13552.00	91.96	4.30	11229.32	2621.18	241.47	0.65	2631.88	459730.67	776858.61	
13647.00	90.21	3.61	11227.52	2715.93	248.02	1.98	2726.86	459825.42	776865.16	
13742.00	90.56	3.53	11226.88	2810.75	253.94	0.38	2821.85	459920.24	776871.08	
13836.00	90.42	3.65	11226.08	2904.56	259.82	0.20	2915.84	460014.05	776876.96	
13931.00	90.28	3.45	11225.50	2999.37	265.71	0.26	3010.83	460108.86	776882.85	
14025.00	89.86	2.99	11225.38	3093.23	270.99	0.66	3104.82	460202.72	776888.13	
14120.00	89.72	2.71	11225.73	3188.11	275.71	0.33	3199.79	460297.60	776892.85	
14215.00	91.26	2.92	11224.92	3282.99	280.38	1.64	3294.75	460392.48	776897.52	
14309.00	91.75	2.99	11222.45	3376.83	285.22	0.53	3388.69	460486.32	776902.36	
14404.00	92.38	2.54	11219.03	3471.66	289.80	0.81	3483.60	460581.15	776906.94	
14499.00	90.70	2.99	11216.47	3566.51	294.38	1.83	3578.53	460676.00	776911.52	
14593.00	90.84	3.72	11215.21	3660.34	299.88	0.79	3672.50	460769.83	776917.02	
14688.00	91.12	3.52	11213.59	3755.13	305.88	0.36	3767.48	460864.62	776923.02	
14782.00	90.07	2.62	11212.61	3848.99	310.91	1.47	3861.46	460958.48	776928.05	
14877.00	90.21	1.99	11212.38	3943.91	314.73	0.68	3956.40	461053.40	776931.87	
14971.00	90.84	1.81	11211.52	4037.86	317.85	0.70	4050.32	461147.35	776934.99	
15066.00	91.05	1.94	11209.95	4132.79	320.96	0.26	4145.22	461242.28	776938.10	
15161.00	88.95	2.40	11209.95	4227.72	324.55	2.26	4240.15	461337.21	776941.69	
15255.00	89.23	2.26	11211.44	4321.63	328.38	0.33	4334.08	461431.12	776945.52	
15350.00	89.30	2.37	11212.66	4416.54	332.21	0.14	4429.02	461526.03	776949.35	
15444.00	89.79	2.37	11213.41	4510.46	336.10	0.52	4522.97	461619.95	776953.24	
15539.00	89.93	2.33	11213.64	4605.38	340.00	0.15	4617.91	461714.87	776957.14	
15633.00	89.79	2.20	11213.87	4699.31	343.71	0.20	4711.85	461808.80	776960.85	



Weatherford

Wft Survey Report X Y's.



Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Thistle Unit 65H
Well: Thistle Unit 65H
Wellpath: 1

Date: 9/2/2013 **Time:** 08:33:42 **Page:** 3
Co-ordinate(NE) Reference: Well: Thistle Unit 65H, Grid North
Vertical (TVD) Reference: SITE 3673.3
Section (VS) Reference: Well (0.00N,0.00E,4.27Azi)
Survey Calculation Method: Minimum Curvature **Db:** Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
15706.00	89.09	1.82	11214.58	4772.26	346.27	1.09	4784.79	461881.75	776963.41	Last Wft Svy
15772.00	89.09	1.82	11215.63	4838.22	348.37	0.00	4850.73	461947.71	776965.51	Proj. To Bit

Annotation

MD ft	TVD ft	
10470.00	10467.16	Tie On VES
10626.00	10623.05	First Wft Svy
15706.00	11214.58	Last Wft Svy
15772.00	11215.63	Proj. To Bit



Stimulations Summary

District	County	Field Name		Project Group			State/Province	
PERMIAN BASIN	LEA	JOHNSON RANCH		DELAWARE BASIN			NM	
Surface Legal Location		API/UWI	Latitude (°)	Longitude (°)	Ground Elev...	KB - GL (ft)	Orig KB Elev (ft)	Tubing Head Elevation (ft)
SEC33 T23S R33E		3002541303	32° 15' 15.756" N	103° 34' 20.058" W	3,648.30	25.00	3,673.30	
HYBRID , 9/16/2013 07:00 , BONE SPRING 2ND, OH , 15,284.0 ftkB - 15,604.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 56473 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6246.91				3,916.0	5,916.0	79	6,721.0
HYBRID , 9/16/2013 12:01 , BONE SPRING 2ND, OH , 14,867.0 ftkB - 15,186.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 51245 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6182.41				4,039.0	6,585.0	79	7,786.0
HYBRID , 9/16/2013 15:57 , BONE SPRING 2ND, OH , 14,450.0 ftkB - 14,769.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 52919 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6263.26				4,350.0	6,757.0	79	7,424.0
HYBRID , 9/17/2013 06:00 , BONE SPRING 2ND, OH , 14,033.0 ftkB - 14,352.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 54477 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6180.95				4,775.0	6,919.0	80	7,821.0
HYBRID , 9/17/2013 10:02 , BONE SPRING 2ND, OH , 13,615.0 ftkB - 13,935.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 54030 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6181.31				4,454.0	6,561.0	80	7,411.0
HYBRID , 9/17/2013 14:00 , BONE SPRING 2ND, OH , 13,198.0 ftkB - 13,517.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 59489 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6168.88				4,526.0	6,646.0	79	7,472.0
HYBRID , 9/17/2013 17:34 , BONE SPRING 2ND, OH , 12,781.0 ftkB - 13,100.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 60209 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6195.48				4,587.0	6,742.0	79	7,476.0
HYBRID , 9/18/2013 05:51 , BONE SPRING 2ND, OH , 12,364.0 ftkB - 12,683.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 56082 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6119.12				4,575.0	6,619.0	80	7,357.0
HYBRID , 9/18/2013 09:28 , BONE SPRING 2ND, OH , 11,946.0 ftkB - 12,266.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 58626 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6244.38				4,449.0	6,311.0	80	7,177.0
HYBRID , 9/18/2013 13:05 , BONE SPRING 2ND, OH , 11,529.0 ftkB - 11,848.0 ftkB, HALLIBURTON , CRC Resin Coated Sand (Santrol) 85484 LB; P								
Proppant De...	Total Clean Volu...	Pre Trt S/I Prs (psi)	Pst Trt S/I Prs (psi)	P Break (psi)	ISIP (psi)	Avg Treat Pressur...	Q Treat Avg (bbl/...	P Max (psi)
355,000.0	6257.43				4,405.0	6,294.0	80	6,864.0