

Results of Directional Survey

API number:	30-025-41302		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	THISTLE UNIT # 50H

surface	ULSTR:	P	34		T 23S		R 33E
					200 FSL		660 FEL

BH Loc	ULSTR:	A	34		T 23S		R 33E
	15903 MD		11288.1	TVD	326 FNL		669 FEL
					4954 FSL		

Top Perf/OH	ULSTR:	P	34		T 23S		R 33E
	11361 MD		11205.1	TVD	420 FSL		565 FEL

Bot Perf/OH	ULSTR:	A	34		T 23S		R 33E
	15763 MD		11286.7	TVD	466 FNL		664 FEL
					4814 FSL		

	MD	N/S	E/W	VD
	11354	213.12	94.88	11203.19
TOP PERFS/OH	11361	219.84	94.63	11205.14
	11382	239.99	93.87	11210.97
	15704	4555.40	-1.84	11285.58
BOT PERFS/OH	15763	4614.36	-3.88	11286.67
	15798	4649.33	-5.09	11287.31

NEXT TO LAST	15832	4683.31	-6.29	11287.66
LAST READING	15903	4754.26	-8.92	11288.09
TD	15903	4754.26	-8.92	11288.09

Surface Location	200	FS	660	FE
Projected BHL	4954	FS	669	FE
Location of				
Top Perfs/OH	420	FS	565	FE
Bottom Perfs/OH	4814	FS	664	FE

SUMMARY of Subsurface Locations

Surface Location	P-34-23S-33E	200	FS	660	FE	Vert. Depth
Top Perfs/OH	P-34-23S-33E	420	FS	565	FE	11205.14
Bottom Perfs/OH	A-34-23S-33E	4814	FS	664	FE	11286.67
Projected TD	A-34-23S-33E	4954	FS	669	FE	11288.09

JUL 08 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 OCD

JUN 25 2014

RECEIVED

February 13, 2014

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

Attn: David Cook

Re: **Thistle Unit No 050H**

Please find enclosed a copy of the survey from 0' to 10,541' 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.

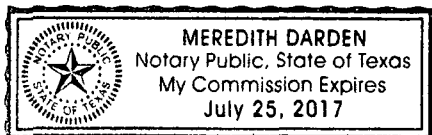
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 13th day of February A.D., 2014, by Keith Havelka.

Meredith Darden
Notary Public, State of Texas



JUL 08 2014



Company: DEVON ENERGY
 Lease/Well: THISTLE UNIT/No 050H

HOBBS OCD

Rig Name: H&P 416
 State/County: NEW MEXICO/LEA
 Latitude: 32.25, Longitude: -103.55
 GRID North is 0.42 Degrees East of True North
 VS-Azi: 0.00 Degrees

JUN 25 2014

RECEIVED



Depth Reference : 25 Ft

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01.ut
 Minimum Curvature Method
 Report Date/Time: 2/13/2014 / 10:09

VAUGHN ENERGY SERVICES
 MIDLAND, TX
 432-563-5444

SURVEYOR : JAVIER ESTRADA
 THISTLE UNIT NO 050H / API 30-025-41302

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	****
158.00	0.50	18.44	158.00	0.66	0.22	0.66	0.69	18.44	0.32
251.30	0.42	28.82	251.29	1.35	0.51	1.35	1.44	20.88	0.13
344.60	0.17	77.26	344.59	1.68	0.82	1.68	1.87	25.96	0.35
437.90	0.18	59.62	437.89	1.78	1.08	1.78	2.09	31.25	0.06
531.20	0.06	322.95	531.19	1.90	1.18	1.90	2.23	31.93	0.21
624.50	0.18	231.24	624.49	1.84	1.04	1.84	2.11	29.43	0.20
717.80	0.24	236.60	717.79	1.64	0.76	1.64	1.81	24.85	0.07
811.10	0.17	353.55	811.09	1.67	0.58	1.67	1.77	19.14	0.38
904.40	0.05	215.90	904.39	1.78	0.54	1.78	1.86	16.96	0.22
997.70	0.37	288.48	997.69	1.84	0.23	1.84	1.86	7.24	0.39
1091.00	0.46	256.53	1090.99	1.85	-0.41	1.85	1.90	347.43	0.26
1185.50	0.21	224.60	1185.49	1.64	-0.90	1.64	1.87	331.23	0.32
1280.00	0.45	222.49	1279.99	1.24	-1.27	1.24	1.78	314.33	0.25
1374.50	0.42	238.00	1374.48	0.79	-1.82	0.79	1.98	293.40	0.13
1469.00	0.55	261.95	1468.98	0.54	-2.56	0.54	2.62	281.86	0.25
1563.50	0.71	328.22	1563.47	0.97	-3.32	0.97	3.46	286.33	0.74
1658.00	0.57	302.40	1657.97	1.72	-4.03	1.72	4.38	293.16	0.34
1752.50	0.77	285.80	1752.46	2.15	-5.03	2.15	5.47	293.10	0.29

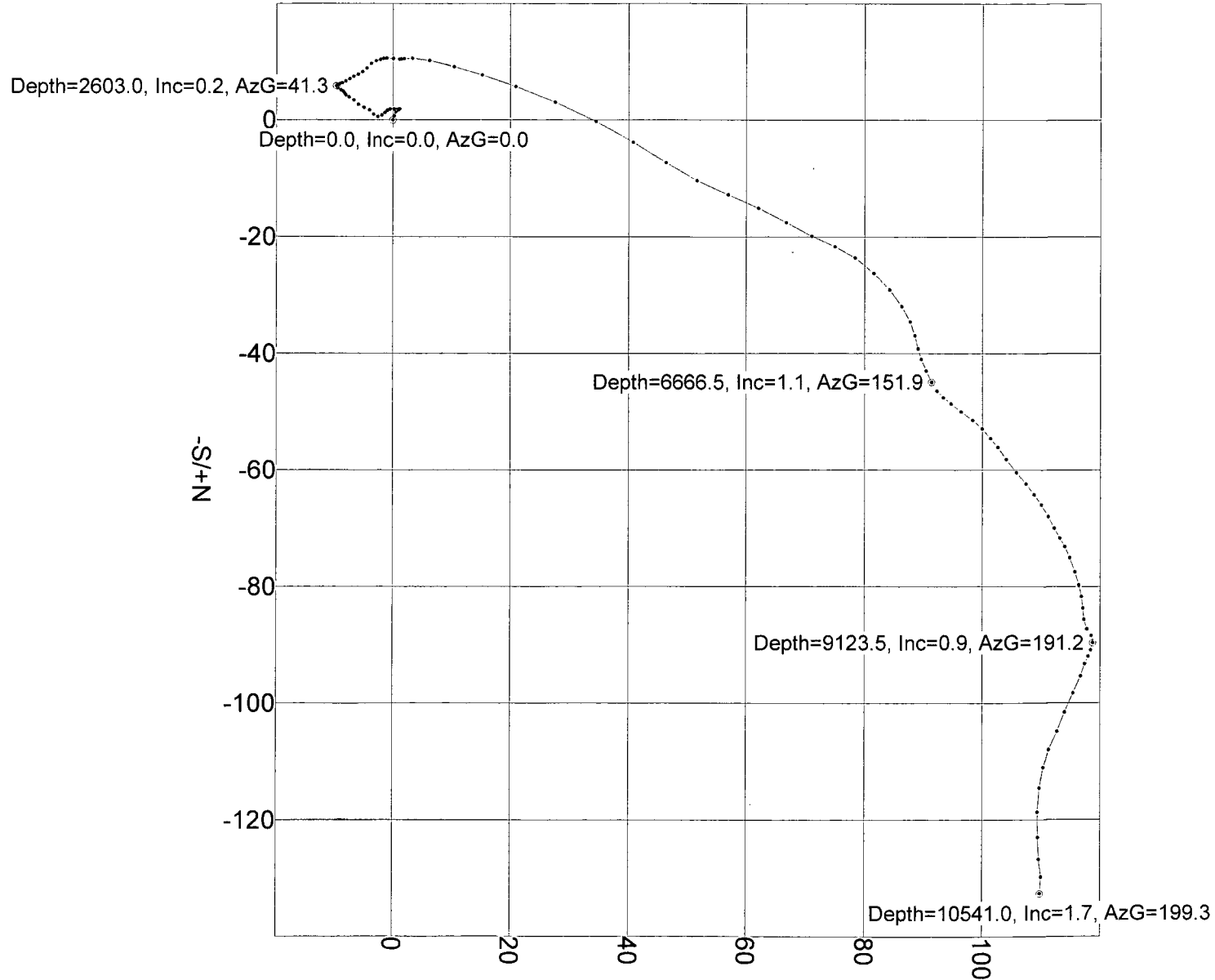
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1847.00	0.59	316.97	1846.96	2.68	-5.98	2.68	6.55	294.13	0.43
1941.50	0.70	309.58	1941.45	3.41	-6.76	3.41	7.57	296.74	0.15
2036.00	0.51	292.93	2035.95	3.94	-7.59	3.94	8.56	297.41	0.27
2130.50	0.30	315.24	2130.44	4.28	-8.16	4.28	9.21	297.68	0.27
2225.00	0.17	347.70	2224.94	4.59	-8.36	4.59	9.54	298.77	0.20
2319.50	0.35	307.23	2319.44	4.90	-8.62	4.90	9.92	299.61	0.26
2414.00	0.20	294.35	2413.94	5.15	-9.01	5.15	10.37	299.74	0.17
2508.50	0.53	306.82	2508.44	5.48	-9.51	5.48	10.97	299.94	0.35
2603.00	0.20	41.32	2602.94	5.86	-9.75	5.86	11.37	301.00	0.61
2697.50	0.19	61.04	2697.44	6.06	-9.50	6.06	11.27	302.52	0.07
2792.00	0.25	69.77	2791.94	6.21	-9.17	6.21	11.07	304.10	0.07
2886.50	0.31	68.02	2886.43	6.37	-8.74	6.37	10.81	306.11	0.06
2981.00	0.51	59.15	2980.93	6.68	-8.14	6.68	10.53	309.40	0.22
3075.50	0.48	57.42	3075.43	7.11	-7.44	7.11	10.30	313.70	0.03
3170.00	0.43	66.03	3169.93	7.47	-6.79	7.47	10.09	317.74	0.09
3264.50	0.61	63.25	3264.42	7.84	-6.01	7.84	9.88	322.53	0.20
3359.00	0.50	56.07	3358.92	8.30	-5.22	8.30	9.80	327.85	0.14
3453.50	0.66	47.44	3453.41	8.90	-4.48	8.90	9.96	333.30	0.19
3548.00	0.70	37.71	3547.91	9.72	-3.72	9.72	10.41	339.04	0.13
3642.50	0.66	90.87	3642.40	10.17	-2.82	10.17	10.55	344.48	0.65
3737.00	0.35	45.90	3736.90	10.36	-2.07	10.36	10.56	348.70	0.51
3831.50	0.41	85.85	3831.39	10.58	-1.52	10.58	10.69	351.80	0.28
3926.00	0.18	88.75	3925.89	10.61	-1.03	10.61	10.66	354.43	0.25
4020.50	1.16	94.53	4020.39	10.54	0.07	10.54	10.54	0.38	1.04
4115.00	0.15	91.91	4114.88	10.46	1.15	10.46	10.52	6.27	1.07
4209.50	0.17	84.64	4209.38	10.47	1.41	10.47	10.56	7.68	0.03
4304.00	0.46	82.49	4303.88	10.53	1.93	10.53	10.70	10.37	0.31
4398.50	1.27	90.18	4398.36	10.58	3.35	10.58	11.09	17.56	0.86
4493.00	2.32	101.32	4492.82	10.20	6.27	10.20	11.97	31.58	1.17
4587.50	2.90	106.33	4587.22	9.15	10.44	9.15	13.88	48.76	0.65
4682.00	3.19	107.27	4681.58	7.70	15.24	7.70	17.08	63.21	0.32
4776.50	4.09	110.66	4775.89	5.73	20.91	5.73	21.68	74.68	0.97
4871.00	4.64	113.16	4870.12	3.04	27.57	3.04	27.74	83.71	0.62
4965.50	4.65	118.15	4964.31	-0.27	34.46	-0.27	34.46	90.45	0.43
5060.00	4.14	121.08	5058.53	-3.84	40.76	-3.84	40.94	95.38	0.59
5154.50	3.84	123.39	5152.80	-7.34	46.32	-7.34	46.90	99.01	0.36
5249.00	3.61	116.41	5247.10	-10.41	51.63	-10.41	52.67	101.40	0.53
5343.50	3.48	112.40	5341.42	-12.83	56.95	-12.83	58.38	102.69	0.30
5438.00	3.33	115.67	5435.76	-15.11	62.08	-15.11	63.89	103.68	0.26

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
5532.50	3.09	119.84	5530.11	-17.57	66.76	-17.57	69.04	104.74	0.36
5627.00	2.87	116.97	5624.48	-19.91	71.08	-19.91	73.82	105.64	0.28
5721.50	2.33	111.44	5718.88	-21.68	74.98	-21.68	78.05	106.13	0.63
5816.00	2.44	127.68	5813.30	-23.61	78.36	-23.61	81.84	106.77	0.72
5910.50	2.54	131.22	5907.71	-26.23	81.53	-26.23	85.65	107.83	0.20
6005.00	2.20	142.04	6002.13	-29.04	84.23	-29.04	89.09	109.02	0.60
6099.50	2.10	148.26	6096.56	-31.94	86.25	-31.94	91.98	110.32	0.27
6194.00	1.50	155.55	6191.02	-34.53	87.67	-34.53	94.23	111.50	0.68
6288.50	1.57	167.44	6285.48	-36.92	88.47	-36.92	95.86	112.65	0.34
6383.00	1.26	166.20	6379.96	-39.19	89.00	-39.19	97.24	113.77	0.33
6477.50	1.06	159.13	6474.44	-41.02	89.56	-41.02	98.51	114.61	0.26
6572.00	1.50	156.56	6568.91	-42.98	90.36	-42.98	100.06	115.44	0.47
6666.50	1.13	151.91	6663.39	-44.94	91.29	-44.94	101.76	116.21	0.41
6761.00	1.01	144.89	6757.87	-46.44	92.21	-46.44	103.25	116.73	0.19
6855.50	0.94	129.09	6852.36	-47.61	93.29	-47.61	104.74	117.04	0.29
6950.00	1.13	128.02	6946.84	-48.67	94.63	-48.67	106.41	117.22	0.20
7044.50	1.53	129.61	7041.32	-50.05	96.33	-50.05	108.56	117.45	0.42
7139.00	1.41	122.73	7135.78	-51.48	98.28	-51.48	110.95	117.65	0.22
7233.50	1.25	140.62	7230.26	-52.91	99.92	-52.91	113.06	117.90	0.47
7328.00	1.46	139.00	7324.73	-54.61	101.36	-54.61	115.14	118.32	0.22
7422.50	0.87	143.11	7419.21	-56.10	102.58	-56.10	116.92	118.67	0.62
7517.00	2.18	146.35	7513.68	-58.17	104.01	-58.17	119.17	119.22	1.38
7611.50	1.35	136.07	7608.13	-60.46	105.77	-60.46	121.84	119.75	0.93
7706.00	1.67	142.41	7702.60	-62.36	107.39	-62.36	124.18	120.14	0.38
7800.50	1.12	145.87	7797.07	-64.21	108.74	-64.21	126.28	120.56	0.59
7895.00	1.47	144.26	7891.55	-65.96	109.97	-65.96	128.23	120.95	0.38
7989.50	1.39	153.85	7986.02	-67.97	111.18	-67.97	130.32	121.44	0.27
8084.00	1.34	151.79	8080.49	-69.98	112.21	-69.98	132.25	121.95	0.08
8178.50	1.04	149.66	8174.97	-71.69	113.17	-71.69	133.97	122.35	0.33
8273.00	0.97	151.24	8269.46	-73.13	113.99	-73.13	135.43	122.68	0.07
8367.50	1.57	158.73	8363.93	-75.04	114.84	-75.04	137.18	123.16	0.65
8462.00	1.56	161.62	8458.40	-77.46	115.71	-77.46	139.25	123.80	0.08
8556.50	1.27	165.21	8552.87	-79.69	116.38	-79.69	141.05	124.40	0.32
8651.00	1.23	169.05	8647.35	-81.70	116.84	-81.70	142.57	124.96	0.09
8745.50	1.17	176.21	8741.82	-83.66	117.10	-83.66	143.92	125.54	0.17
8840.00	1.16	173.17	8836.31	-85.58	117.28	-85.58	145.18	126.12	0.07
8934.50	0.97	151.52	8930.79	-87.23	117.77	-87.23	146.56	126.53	0.47
9029.00	0.71	141.12	9025.28	-88.38	118.52	-88.38	147.84	126.71	0.32
9123.50	0.95	191.21	9119.77	-89.60	118.73	-89.60	148.75	127.04	0.78

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
9218.00	0.66	199.57	9214.26	-90.88	118.40	-90.88	149.26	127.51	0.33
9312.50	0.73	203.89	9308.75	-91.94	117.97	-91.94	149.57	127.93	0.09
9407.00	1.04	202.77	9403.24	-93.28	117.40	-93.28	149.94	128.47	0.33
9501.50	1.62	195.38	9497.72	-95.36	116.71	-95.36	150.71	129.25	0.65
9596.00	2.27	209.87	9592.16	-98.27	115.43	-98.27	151.59	130.41	0.85
9690.50	2.15	196.88	9686.59	-101.58	113.98	-101.58	152.68	131.71	0.54
9785.00	2.13	204.89	9781.03	-104.87	112.73	-104.87	153.97	132.93	0.32
9879.50	2.08	202.48	9875.46	-108.05	111.33	-108.05	155.15	134.14	0.10
9974.00	1.78	192.18	9969.91	-111.07	110.37	-111.07	156.58	135.18	0.49
10068.50	2.51	189.63	10064.34	-114.54	109.71	-114.54	158.61	136.23	0.78
10163.00	2.55	179.20	10158.75	-118.69	109.39	-118.69	161.41	137.33	0.49
10257.50	2.67	179.19	10253.15	-122.99	109.46	-122.99	164.64	138.33	0.12
10352.00	1.92	175.61	10347.58	-126.77	109.61	-126.77	167.58	139.15	0.81
10446.50	1.80	170.12	10442.03	-129.81	109.98	-129.81	170.14	139.73	0.22
10541.00	1.71	199.26	10536.48	-132.60	109.77	-132.60	172.15	140.38	0.94



VAUGHN ENERGY SERVICES
MIDLAND, TX
432-563-5444
SURVEYOR : JAVIER ESTRADA
THISTLE UNIT NO 050H / API 30-025-41302



-W/+E
VES Survey Date: 01/22/2014



JUN 25 2014

Directional Survey

District DELAWARE BASIN	County LEA	RECEIVED	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM		
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20	Tubing Head Elevation (ft)

Wellbores			
Wellbore Name OH	Parent Wellbore	Kick Off Depth (ftKB)	Vertical Section Direction (°) 359.57
Actual Deviation Survey WEATHERFORD & GYRO, Proposed? No	Definitive? No	Proposed? No	Proposed Deviation Survey

Deviation Survey					
Date 1/12/2014	Description FLOW DRIFT				
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00	Inclination Tie In (°) 0.00	Azimuth Tie In (°) 0.00	NSTie In (ft) 0.00	EWtie In (ft) 0.00

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
1/12/2014	494.00	0.80	348.00						MWD	NOV
1/12/2014	515.00	0.20	7.00						MWD	NOV
1/12/2014	697.00	0.10	347.00						MWD	NOV
1/12/2014	788.00	0.40	312.00						MWD	NOV
1/12/2014	880.00	0.50	329.00						MWD	NOV
1/12/2014	972.00	0.60	325.00						MWD	NOV
1/12/2014	1,252.00	0.60	303.00						MWD	NOV
1/12/2014	1,504.00	0.50	292.00						MWD	NOV
1/12/2014	1,693.00	0.90	327.00						MWD	NOV
1/12/2014	1,787.00	1.00	320.00						MWD	NOV
1/12/2014	1,879.00	1.00	307.00						MWD	NOV
1/12/2014	1,975.00	1.00	302.00						MWD	NOV
1/12/2014	2,165.00	0.70	303.00						MWD	NOV
1/12/2014	2,255.00	0.60	317.00						MWD	NOV
1/12/2014	2,350.00	0.70	329.00						MWD	NOV
1/12/2014	2,444.00	0.60	328.00						MWD	NOV
1/12/2014	2,539.00	0.40	319.00						MWD	NOV
1/12/2014	2,825.00	0.60	343.00						MWD	NOV
1/12/2014	3,012.00	0.50	357.00						MWD	NOV
1/12/2014	3,391.00	0.70	9.00						MWD	NOV
1/12/2014	3,775.00	0.30	9.00						MWD	NOV
1/12/2014	3,965.00	0.20	32.00						MWD	NOV
1/12/2014	4,155.00	0.10	302.00						MWD	NOV
1/12/2014	4,434.00	1.30	89.00						MWD	NOV
1/12/2014	4,579.00	2.20	94.00						MWD	NOV
1/12/2014	4,624.00	2.60	102.00						MWD	NOV
1/12/2014	4,718.00	3.10	106.00						MWD	NOV
1/12/2014	4,812.00	3.80	109.00						MWD	NOV
1/12/2014	4,909.00	4.50	114.00						MWD	NOV
1/12/2014	5,097.00	3.80	114.00						MWD	NOV
1/12/2014	5,545.00	2.40	116.00						MWD	NOV
1/12/2014	5,640.00	2.30	113.00						MWD	NOV
1/12/2014	5,923.00	1.90	121.00						MWD	NOV
1/12/2014	6,108.00	1.40	123.00						MWD	NOV
1/12/2014	6,393.00	0.80	130.00						MWD	NOV
1/12/2014	6,581.00	0.60	109.00						MWD	NOV
1/12/2014	6,805.00	0.40	84.00						MWD	NOV
1/12/2014	7,147.00	0.80	133.00						MWD	NOV
1/12/2014	7,623.00	0.90	143.00						MWD	NOV
1/12/2014	8,193.00	0.90	139.00						MWD	NOV
1/12/2014	8,382.00	1.00	172.00						MWD	NOV
1/12/2014	8,569.00	0.90	185.00						MWD	NOV
1/12/2014	8,855.00	1.10	192.00						MWD	NOV
1/12/2014	9,234.00	0.50	184.00						MWD	NOV
1/12/2014	9,613.00	2.30	197.00						MWD	NOV
1/12/2014	9,801.00	2.10	214.00						MWD	NOV
1/12/2014	10,084.00	2.50	191.00						MWD	NOV



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20
				Tubing Head Elevation (ft)

Wellbores				
Wellbore Name OH	Parent Wellbore	Kick Off Depth (ftKB)	Vertical Section Direction (°) 359.57	
Actual Deviation Survey WEATHERFORD & GYRO, Proposed? No	Definitive? No	Proposed? No	Proposed Deviation Survey	

Deviation Survey					
Date 1/22/2014	Description VES				
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00	Inclination Tie In (°) 0.00	Azimuth Tie In (°) 0.00	NSTie In (ft) 0.00	EW Tie In (ft) 0.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
1/22/2014	158.00	0.50	18.44						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	251.30	0.42	28.82						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	344.60	0.17	77.26						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	437.90	0.18	59.62						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	531.20	0.06	322.95						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	624.50	0.18	231.24						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	717.80	0.24	236.60						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	811.10	0.17	353.55						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	904.40	0.05	215.90						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	997.70	0.37	288.48						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,091.00	0.46	256.53						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,185.50	0.21	224.60						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,280.00	0.45	222.49						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,374.50	0.42	238.00						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,469.00	0.55	261.95						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,563.50	0.71	328.22						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,658.00	0.57	302.40						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,752.50	0.77	285.80						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,847.00	0.59	316.97						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,941.50	0.70	309.58						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,036.00	0.51	292.93						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,130.50	0.30	315.24						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,225.00	0.17	347.70						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,319.50	0.35	307.23						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,414.00	0.20	294.35						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,508.50	0.53	306.82						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,603.00	0.20	41.32						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,697.50	0.19	61.04						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,792.00	0.25	69.77						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,886.50	0.31	68.02						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,981.00	0.51	59.15						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,075.50	0.48	57.42						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,170.00	0.43	66.03						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,264.50	0.61	63.25						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,359.00	0.50	56.07						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,453.50	0.66	47.44						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,548.00	0.70	37.71						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,642.50	0.66	90.87						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,737.00	0.35	45.90						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,831.50	0.41	85.85						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,926.00	0.18	88.75						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,020.50	1.16	94.53						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,115.00	0.15	91.91						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,209.50	0.17	84.64						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,304.00	0.46	82.49						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,398.50	1.27	90.18						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,493.00	2.32	101.32						GYRO	VAUHGN ENERGY SERVICES



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20	Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (*100ft)	Survey Tool	Survey Company
1/22/2014	4,587.50	2.90	106.33						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,682.00	3.19	107.27						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,776.50	4.09	110.66						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,871.00	4.64	113.16						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,965.50	4.65	118.15						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,060.00	4.14	121.08						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,154.50	3.84	123.39						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,249.00	3.61	116.41						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,343.50	3.48	112.40						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,438.00	3.33	115.67						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,532.50	3.09	119.84						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,627.00	2.87	116.97						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,721.50	2.33	111.44						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,816.00	2.44	127.68						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,910.50	2.54	131.22						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,005.00	2.20	142.04						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,099.50	2.10	148.26						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,194.00	1.50	155.55						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,288.50	1.57	167.44						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,383.00	1.26	166.20						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,477.50	1.06	159.13						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,572.00	1.50	156.56						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,666.50	1.13	151.91						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,761.00	1.01	144.89						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,855.50	0.94	129.09						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,950.00	1.13	128.02						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,044.50	1.53	129.61						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,139.00	1.41	122.73						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,233.50	1.25	140.62						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,328.00	1.46	139.00						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,422.50	0.87	143.11						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,517.00	2.18	146.35						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,611.50	1.35	136.07						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,706.00	1.67	142.41						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,800.50	1.12	145.87						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,895.00	1.47	144.26						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,989.50	1.39	153.85						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,084.00	1.34	151.79						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,178.50	1.04	149.66						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,273.00	0.97	151.24						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,367.50	1.57	158.73						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,462.00	1.56	161.62						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,556.50	1.27	165.21						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,651.00	1.23	169.05						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,745.50	1.17	176.21						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,840.00	1.16	173.17						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,934.50	0.97	151.52						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,029.00	0.71	141.12						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,123.50	0.95	191.21						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,218.00	0.66	199.57						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,312.50	0.73	203.89						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,407.00	1.04	202.77						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,501.50	1.62	195.38						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,596.00	2.27	209.87						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,690.50	2.15	196.88						GYRO	VAUHGN ENERGY SERVICES



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20	Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
1/22/2014	9,785.00	2.13	204.89						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,879.50	2.08	202.48						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,974.00	1.78	192.18						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,068.50	2.51	189.63						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,163.00	2.55	179.20						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,257.50	2.67	179.19						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,352.00	1.92	175.61						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,446.50	1.80	170.12						GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,541.00	1.71	199.26						GYRO	VAUHGN ENERGY SERVICES



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20
				Tubing Head Elevation (ft)

Wellbores				
Wellbore Name OH	Parent Wellbore	Kick Off Depth (ftKB)	Vertical Section Direction (°) 359.57	
Actual Deviation Survey WEATHERFORD & GYRO, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey					
Date 1/24/2014	Description WEATHERFORD & GYRO				
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EWtie In (ft)

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
1/22/2014	158.00	0.50	18.44	158.00	0.65	0.65	0.22	0.32	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	251.30	0.42	28.82	251.29	1.34	1.34	0.51	0.12	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	344.60	0.17	77.26	344.59	1.66	1.67	0.81	0.36	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	437.90	0.18	59.62	437.89	1.77	1.77	1.07	0.06	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	531.20	0.06	322.95	531.19	1.88	1.89	1.17	0.21	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	624.50	0.18	231.24	624.49	1.83	1.83	1.03	0.21	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	717.80	0.24	236.60	717.79	1.63	1.64	0.75	0.07	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	811.10	0.17	353.55	811.09	1.66	1.67	0.57	0.38	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	904.40	0.05	215.90	904.39	1.77	1.77	0.53	0.22	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	997.70	0.37	288.48	997.69	1.83	1.83	0.22	0.38	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,091.00	0.46	256.53	1,090.99	1.84	1.84	-0.43	0.26	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,185.50	0.21	224.60	1,185.49	1.64	1.63	-0.92	0.32	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,280.00	0.45	222.49	1,279.99	1.24	1.23	-1.29	0.25	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,374.50	0.42	238.00	1,374.48	0.79	0.78	-1.84	0.13	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,469.00	0.55	261.95	1,468.98	0.55	0.53	-2.58	0.25	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,563.50	0.71	328.22	1,563.48	0.99	0.96	-3.34	0.74	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,658.00	0.57	302.40	1,657.97	1.74	1.71	-4.04	0.34	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,752.50	0.77	285.80	1,752.46	2.17	2.14	-5.05	0.29	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,847.00	0.59	316.97	1,846.96	2.71	2.67	-5.99	0.43	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	1,941.50	0.70	309.58	1,941.45	3.44	3.39	-6.77	0.15	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,036.00	0.51	292.93	2,035.95	3.98	3.92	-7.60	0.27	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,130.50	0.30	315.24	2,130.44	4.32	4.26	-8.16	0.27	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,225.00	0.17	347.70	2,224.94	4.64	4.57	-8.37	0.19	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,319.50	0.35	307.23	2,319.44	4.95	4.88	-8.63	0.26	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,414.00	0.20	294.35	2,413.94	5.19	5.13	-9.01	0.17	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,508.50	0.53	306.82	2,508.44	5.53	5.46	-9.51	0.36	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,603.00	0.20	41.32	2,602.94	5.92	5.84	-9.75	0.61	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,697.50	0.19	61.04	2,697.44	6.11	6.04	-9.50	0.07	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,792.00	0.25	69.77	2,791.94	6.26	6.19	-9.17	0.07	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,886.50	0.31	68.02	2,886.43	6.42	6.36	-8.74	0.06	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	2,981.00	0.51	59.15	2,980.93	6.73	6.67	-8.14	0.22	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,075.50	0.48	57.42	3,075.43	7.15	7.10	-7.45	0.04	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,170.00	0.43	66.03	3,169.93	7.50	7.45	-6.79	0.09	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,264.50	0.61	63.25	3,264.42	7.87	7.82	-6.02	0.19	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,359.00	0.50	56.07	3,358.92	8.32	8.28	-5.23	0.14	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,453.50	0.66	47.44	3,453.41	8.91	8.88	-4.48	0.19	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,548.00	0.70	37.71	3,547.91	9.73	9.70	-3.73	0.13	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,642.50	0.66	90.87	3,642.40	10.17	10.15	-2.83	0.65	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,737.00	0.35	45.90	3,736.90	10.36	10.34	-2.08	0.51	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,831.50	0.41	85.85	3,831.39	10.58	10.57	-1.54	0.28	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	3,926.00	0.18	88.75	3,925.89	10.61	10.60	-1.05	0.24	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,020.50	1.16	94.53	4,020.39	10.52	10.53	0.05	1.04	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,115.00	0.15	91.91	4,114.88	10.44	10.45	1.13	1.07	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,209.50	0.17	84.64	4,209.38	10.44	10.45	1.39	0.03	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,304.00	0.46	82.49	4,303.88	10.50	10.52	1.91	0.31	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,398.50	1.27	90.18	4,398.36	10.54	10.56	3.33	0.86	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,493.00	2.32	101.32	4,492.82	10.14	10.19	6.25	1.17	GYRO	VAUHGN ENERGY SERVICES



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
1/22/2014	4,587.50	2.90	106.33	4,587.22	9.06	9.14	10.42	0.66	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,682.00	3.19	107.27	4,681.59	7.57	7.68	15.23	0.31	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,776.50	4.09	110.66	4,775.89	5.56	5.72	20.89	0.98	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,871.00	4.64	113.16	4,870.12	2.82	3.02	27.56	0.62	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	4,965.50	4.65	118.15	4,964.31	-0.55	-0.29	34.45	0.43	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,060.00	4.14	121.08	5,058.53	-4.16	-3.86	40.75	0.59	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,154.50	3.84	123.39	5,152.80	-7.71	-7.36	46.31	0.36	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,249.00	3.61	116.41	5,247.10	-10.81	-10.42	51.62	0.54	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,343.50	3.48	112.40	5,341.42	-13.27	-12.84	56.94	0.30	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,438.00	3.33	115.67	5,435.76	-15.59	-15.12	62.06	0.26	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,532.50	3.09	119.84	5,530.11	-18.08	-17.58	66.75	0.35	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,627.00	2.87	116.97	5,624.48	-20.45	-19.92	71.06	0.28	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,721.50	2.33	111.44	5,718.88	-22.25	-21.69	74.96	0.63	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,816.00	2.44	127.68	5,813.30	-24.21	-23.62	78.34	0.72	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	5,910.50	2.54	131.22	5,907.71	-26.84	-26.23	81.51	0.19	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,005.00	2.20	142.04	6,002.13	-29.68	-29.04	84.20	0.59	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,099.50	2.10	148.26	6,096.57	-32.59	-31.95	86.22	0.27	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,194.00	1.50	155.55	6,191.02	-35.20	-34.54	87.65	0.68	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,288.50	1.57	167.44	6,285.48	-37.60	-36.93	88.44	0.34	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,383.00	1.26	166.20	6,379.96	-39.87	-39.21	88.97	0.33	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,477.50	1.06	159.13	6,474.44	-41.70	-41.03	89.53	0.26	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,572.00	1.50	156.56	6,568.91	-43.66	-42.98	90.33	0.47	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,666.50	1.13	151.91	6,663.39	-45.62	-44.94	91.26	0.41	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,761.00	1.01	144.89	6,757.87	-47.14	-46.44	92.18	0.19	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,855.50	0.94	129.09	6,852.36	-48.31	-47.61	93.26	0.29	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	6,950.00	1.13	128.02	6,946.84	-49.39	-48.68	94.60	0.20	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,044.50	1.53	129.61	7,041.32	-50.78	-50.06	96.30	0.43	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,139.00	1.41	122.73	7,135.79	-52.22	-51.49	98.25	0.23	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,233.50	1.25	140.62	7,230.26	-53.66	-52.91	99.89	0.47	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,328.00	1.46	139.00	7,324.73	-55.38	-54.62	101.33	0.23	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,422.50	0.87	143.11	7,419.21	-56.87	-56.10	102.55	0.63	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,517.00	2.18	146.35	7,513.68	-58.95	-58.17	103.98	1.39	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,611.50	1.35	136.07	7,608.13	-61.26	-60.47	105.75	0.94	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,706.00	1.67	142.41	7,702.60	-63.17	-62.36	107.36	0.38	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,800.50	1.12	145.87	7,797.07	-65.03	-64.22	108.72	0.59	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,895.00	1.47	144.26	7,891.55	-66.79	-65.97	109.94	0.37	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	7,989.50	1.39	153.85	7,986.02	-68.81	-67.98	111.16	0.27	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,084.00	1.34	151.79	8,080.49	-70.82	-69.98	112.18	0.07	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,178.50	1.04	149.66	8,174.97	-72.54	-71.70	113.14	0.32	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,273.00	0.97	151.24	8,269.46	-73.99	-73.14	113.96	0.08	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,367.50	1.57	158.73	8,363.93	-75.90	-75.04	114.81	0.66	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,462.00	1.56	161.62	8,458.40	-78.34	-77.47	115.69	0.08	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,556.50	1.27	165.21	8,552.87	-80.58	-79.71	116.36	0.32	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,651.00	1.23	169.05	8,647.35	-82.59	-81.71	116.82	0.10	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,745.50	1.17	176.21	8,741.83	-84.55	-83.67	117.08	0.17	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,840.00	1.16	173.17	8,836.31	-86.46	-85.58	117.25	0.07	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	8,934.50	0.97	151.52	8,930.79	-88.12	-87.24	117.75	0.47	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,029.00	0.71	141.12	9,025.28	-89.28	-88.40	118.50	0.32	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,123.50	0.95	191.21	9,119.77	-90.51	-89.62	118.71	0.78	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,218.00	0.66	199.57	9,214.26	-91.79	-90.90	118.38	0.33	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,312.50	0.73	203.89	9,308.75	-92.85	-91.96	117.95	0.09	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,407.00	1.04	202.77	9,403.24	-94.18	-93.31	117.38	0.33	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,501.50	1.62	195.38	9,497.72	-96.26	-95.38	116.69	0.64	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,596.00	2.27	209.87	9,592.16	-99.16	-98.30	115.40	0.86	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,690.50	2.15	196.88	9,686.59	-102.47	-101.61	113.96	0.54	GYRO	VAUHGN ENERGY SERVICES



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
1/22/2014	9,785.00	2.13	204.89	9,781.03	-105.75	-104.90	112.70	0.32	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,879.50	2.08	202.48	9,875.46	-108.91	-108.08	111.31	0.11	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	9,974.00	1.78	192.18	9,969.91	-111.93	-111.10	110.34	0.48	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,068.50	2.51	189.63	10,064.34	-115.40	-114.58	109.69	0.78	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,163.00	2.55	179.20	10,158.75	-119.54	-118.72	109.37	0.49	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,257.50	2.67	179.19	10,253.15	-123.84	-123.02	109.43	0.13	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,352.00	1.92	175.61	10,347.58	-127.62	-126.80	109.58	0.81	GYRO	VAUHGN ENERGY SERVICES
1/22/2014	10,446.50	1.80	170.12	10,442.03	-130.66	-129.84	109.96	0.23	GYRO	VAUHGN ENERGY SERVICES
1/24/2014	10,541.00	1.71	199.26	10,536.49	-133.45	-132.63	109.75	0.94	MWD	WEATHERFORD
1/24/2014	10,692.00	1.61	241.55	10,687.43	-136.57	-135.77	107.14	0.80	MWD	WEATHERFORD
1/24/2014	10,723.00	2.38	278.18	10,718.41	-136.68	-135.89	106.12	4.68	MWD	WEATHERFORD
1/24/2014	10,755.00	5.23	324.17	10,750.34	-135.39	-134.61	104.61	12.39	MWD	WEATHERFORD
1/24/2014	10,787.00	9.26	340.07	10,782.08	-131.77	-131.01	102.88	13.95	MWD	WEATHERFORD
1/24/2014	10,818.00	13.16	346.64	10,812.49	-125.98	-125.22	101.21	13.22	MWD	WEATHERFORD
1/24/2014	10,850.00	18.02	349.65	10,843.30	-117.55	-116.81	99.48	15.39	MWD	WEATHERFORD
1/24/2014	10,881.00	21.10	354.02	10,872.51	-107.27	-106.54	98.03	10.99	MWD	WEATHERFORD
1/24/2014	10,912.00	24.61	354.08	10,901.07	-95.29	-94.56	96.79	11.32	MWD	WEATHERFORD
1/24/2014	10,944.00	27.45	357.65	10,929.82	-81.28	-80.56	95.80	10.13	MWD	WEATHERFORD
1/24/2014	10,975.00	30.57	356.89	10,956.93	-66.26	-65.55	95.08	10.13	MWD	WEATHERFORD
1/24/2014	11,006.00	34.75	356.02	10,983.02	-49.56	-48.86	94.03	13.57	MWD	WEATHERFORD
1/24/2014	11,038.00	36.98	358.97	11,008.96	-30.83	-30.13	93.23	8.82	MWD	WEATHERFORD
1/24/2014	11,070.00	40.34	3.31	11,033.95	-10.86	-10.16	93.65	13.49	MWD	WEATHERFORD
1/24/2014	11,101.00	42.79	5.01	11,057.14	9.64	10.35	95.15	8.70	MWD	WEATHERFORD
1/24/2014	11,133.00	45.08	4.53	11,080.18	31.75	32.48	97.00	7.23	MWD	WEATHERFORD
1/24/2014	11,164.00	46.29	3.78	11,101.84	53.86	54.60	98.60	4.27	MWD	WEATHERFORD
1/24/2014	11,196.00	48.34	1.18	11,123.53	77.34	78.09	99.61	8.76	MWD	WEATHERFORD
1/24/2014	11,228.00	52.47	358.89	11,143.93	101.99	102.74	99.61	14.03	MWD	WEATHERFORD
1/24/2014	11,259.00	56.44	357.54	11,161.95	127.20	127.95	98.82	13.29	MWD	WEATHERFORD
1/24/2014	11,291.00	61.73	357.06	11,178.38	154.63	155.36	97.52	16.58	MWD	WEATHERFORD
1/24/2014	11,323.00	66.87	357.44	11,192.25	183.43	184.15	96.14	16.10	MWD	WEATHERFORD
1/24/2014	11,354.00	71.79	357.59	11,203.19	212.40	213.12	94.88	15.88	MWD	WEATHERFORD
1/24/2014	11,382.00	75.94	358.09	11,210.97	239.28	239.99	93.87	14.92	MWD	WEATHERFORD
1/24/2014	11,413.00	78.37	358.75	11,217.86	269.50	270.20	93.04	8.11	MWD	WEATHERFORD
1/24/2014	11,445.00	80.23	358.99	11,223.80	300.94	301.64	92.42	5.86	MWD	WEATHERFORD
1/24/2014	11,477.00	82.35	359.07	11,228.65	332.57	333.27	91.88	6.63	MWD	WEATHERFORD
1/24/2014	11,508.00	85.80	358.97	11,231.85	363.39	364.09	91.36	11.13	MWD	WEATHERFORD
1/24/2014	11,572.00	89.86	359.16	11,234.27	427.33	428.02	90.31	6.35	MWD	WEATHERFORD
1/24/2014	11,667.00	92.66	359.04	11,232.18	522.30	522.98	88.82	2.95	MWD	WEATHERFORD
1/24/2014	11,761.00	92.10	358.61	11,228.28	616.21	616.88	86.90	0.75	MWD	WEATHERFORD
1/24/2014	11,856.00	90.56	358.22	11,226.07	711.16	711.81	84.27	1.67	MWD	WEATHERFORD
1/24/2014	11,951.00	91.26	358.75	11,224.57	806.13	806.77	81.76	0.92	MWD	WEATHERFORD
1/24/2014	12,046.00	90.42	358.24	11,223.17	901.10	901.72	79.26	1.03	MWD	WEATHERFORD
1/24/2014	12,140.00	86.85	357.37	11,225.41	995.01	995.61	75.67	3.91	MWD	WEATHERFORD
1/24/2014	12,235.00	85.80	356.74	11,231.50	1,089.73	1,090.29	70.79	1.29	MWD	WEATHERFORD
1/24/2014	12,330.00	88.25	357.27	11,236.43	1,184.50	1,185.02	65.84	2.64	MWD	WEATHERFORD
1/24/2014	12,424.00	90.84	357.31	11,237.18	1,278.41	1,278.91	61.40	2.76	MWD	WEATHERFORD
1/24/2014	12,519.00	90.35	357.66	11,236.19	1,373.34	1,373.81	57.23	0.63	MWD	WEATHERFORD
1/24/2014	12,613.00	90.28	357.75	11,235.67	1,467.29	1,467.73	53.46	0.12	MWD	WEATHERFORD
1/24/2014	12,708.00	90.21	358.41	11,235.27	1,562.26	1,562.68	50.28	0.70	MWD	WEATHERFORD
1/24/2014	12,803.00	88.25	359.02	11,236.55	1,657.23	1,657.64	48.15	2.16	MWD	WEATHERFORD
1/24/2014	12,897.00	89.23	359.39	11,238.61	1,751.21	1,751.61	46.85	1.11	MWD	WEATHERFORD
1/24/2014	12,993.00	91.68	359.99	11,237.85	1,847.20	1,847.60	46.33	2.63	MWD	WEATHERFORD
1/24/2014	13,087.00	90.77	359.50	11,235.84	1,941.17	1,941.57	45.91	1.10	MWD	WEATHERFORD
1/24/2014	13,181.00	87.62	358.48	11,237.16	2,035.15	2,035.53	44.25	3.52	MWD	WEATHERFORD
1/24/2014	13,276.00	88.53	358.60	11,240.35	2,130.08	2,130.45	41.83	0.97	MWD	WEATHERFORD



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location	API/UWI 3002541302	Latitude (°) 32° 15' 16.427" N	Longitude (°) 103° 33' 13.954" W	Ground Elev... 3,633.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,658.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
1/24/2014	13,370.00	91.33	358.42	11,240.47	2,224.05	2,224.41	39.39	2.98	MWD	WEATHERFORD
1/24/2014	13,465.00	92.03	358.77	11,237.68	2,318.99	2,319.34	37.06	0.82	MWD	WEATHERFORD
1/24/2014	13,559.00	89.79	358.32	11,236.19	2,412.96	2,413.29	34.67	2.43	MWD	WEATHERFORD
1/24/2014	13,653.00	86.78	357.29	11,239.00	2,506.86	2,507.17	31.08	3.38	MWD	WEATHERFORD
1/24/2014	13,747.00	86.92	356.65	11,244.17	2,600.62	2,600.89	26.11	0.70	MWD	WEATHERFORD
1/24/2014	13,842.00	89.44	356.04	11,247.18	2,695.42	2,695.64	20.06	2.73	MWD	WEATHERFORD
1/24/2014	13,936.00	88.53	356.43	11,248.85	2,789.24	2,789.42	13.89	1.05	MWD	WEATHERFORD
1/24/2014	14,031.00	87.97	357.44	11,251.75	2,884.10	2,884.24	8.81	1.22	MWD	WEATHERFORD
1/24/2014	14,126.00	89.93	357.43	11,253.49	2,979.01	2,979.13	4.56	2.06	MWD	WEATHERFORD
1/24/2014	14,221.00	90.56	356.22	11,253.08	3,073.90	3,073.98	-0.70	1.44	MWD	WEATHERFORD
1/24/2014	14,315.00	90.56	356.34	11,252.17	3,167.74	3,167.78	-6.80	0.13	MWD	WEATHERFORD
1/24/2014	14,381.00	92.59	356.21	11,250.35	3,233.60	3,233.61	-11.08	3.08	MWD	WEATHERFORD
1/24/2014	14,476.00	89.93	359.13	11,248.26	3,328.51	3,328.49	-14.94	4.16	MWD	WEATHERFORD
1/24/2014	14,571.00	89.09	0.39	11,249.08	3,423.50	3,423.48	-15.34	1.59	MWD	WEATHERFORD
1/24/2014	14,666.00	87.62	2.05	11,251.80	3,518.41	3,518.41	-13.32	2.33	MWD	WEATHERFORD
1/24/2014	14,761.00	87.97	2.21	11,255.46	3,613.25	3,613.28	-9.79	0.41	MWD	WEATHERFORD
1/24/2014	14,855.00	88.39	2.01	11,258.44	3,707.11	3,707.17	-6.33	0.49	MWD	WEATHERFORD
1/24/2014	14,949.00	88.67	2.09	11,260.85	3,800.99	3,801.08	-2.97	0.31	MWD	WEATHERFORD
1/24/2014	15,044.00	89.37	1.97	11,262.48	3,895.89	3,896.00	0.39	0.75	MWD	WEATHERFORD
1/24/2014	15,138.00	87.48	1.61	11,265.06	3,989.78	3,989.92	3.33	2.05	MWD	WEATHERFORD
1/24/2014	15,233.00	87.76	1.19	11,269.01	4,084.65	4,084.80	5.65	0.53	MWD	WEATHERFORD
1/24/2014	15,327.00	87.48	359.24	11,272.91	4,178.56	4,178.72	6.00	2.09	MWD	WEATHERFORD
1/24/2014	15,422.00	87.76	358.95	11,276.86	4,273.47	4,273.62	4.50	0.42	MWD	WEATHERFORD
1/24/2014	15,516.00	87.97	359.33	11,280.36	4,367.40	4,367.55	3.09	0.46	MWD	WEATHERFORD
1/24/2014	15,610.00	88.46	358.34	11,283.29	4,461.35	4,461.48	1.18	1.17	MWD	WEATHERFORD
1/24/2014	15,704.00	88.74	357.97	11,285.58	4,555.29	4,555.40	-1.84	0.49	MWD	WEATHERFORD
1/24/2014	15,798.00	89.16	358.07	11,287.31	4,649.24	4,649.33	-5.09	0.46	MWD	WEATHERFORD
1/24/2014	15,832.00	89.65	357.88	11,287.66	4,683.22	4,683.31	-6.29	1.55	MWD	WEATHERFORD
1/24/2014	15,903.00	89.65	357.88	11,288.09	4,754.19	4,754.26	-8.92	0.00	BIT	WEATHERFORD



Weatherford®

Evaluation, Drilling & Intervention
10000 West County Rd. 116
P.O. Box 61028

Midland, TX USA 79711

Tel. (432) 561-8892 Fax (432) 561-8895

HOBBS OCD

JUN 25 2014

RECEIVED

Devon Energy
333 W. Sherridan Ave
Oklahoma City, OK, 73102

Date: January 3, 2014

Attention: Kurtis Schmitz

Re: Devon Energy
Well: Thistle Unit 50H
Lea County, New Mexico

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Well Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Dave Latch MWD Supervisor	50H	10692 MD 15832 MD	1/22/2014 2/2/2014	Measurement While Drilling

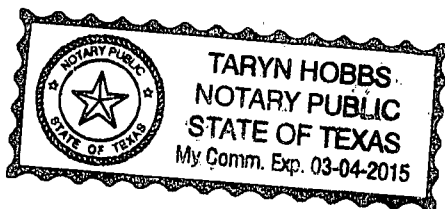
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jesus Aguilar
MWD Coordinator

On this, the 21st day of FEBRUARY, 2014, before me a notary public, the undersigned officer, personally appeared JESUS AGUILAR, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

Notary Public.





Thistle Unit 50H
Lea Co, NM

Plan Data for Thistle Unit 50H

Plan Point Information:
Dogleg Severity Unit: $^{\circ}/100.00\text{ft}$ Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS
(USft)	($^{\circ}$)	($^{\circ}$)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
10541.00	1.71	199.26	10536.49	-132.63	109.75	457038.06	782426.88	-133.45	0.94'
10598.00	0.00	0.00	10593.48	-133.44	109.47	457037.25	782426.60	-134.25	3.00'
10706.00	0.00	0.00	10701.48	-133.44	109.47	457037.25	782426.60	-134.25	0.00'
11536.57	89.53	358.30	11233.01	393.50	93.86	457564.19	782410.99	392.78	10.78'
15900.64	89.53	358.30	11269.00	4755.50	-35.36	461926.19	782281.77	4755.63	0.00'

Plan Data for Thistle Unit 50H

Target Set Information:
Name: Thistle Unit 50H

Position offsets from Slot centre

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape	Comment
	(USft)	(USft)	(USft)	(USft)	(USft)		
1	11269.00	4755.50	-35.36	461926.19	782281.77	Cuboid	

Plan Data for Thistle Unit 50H

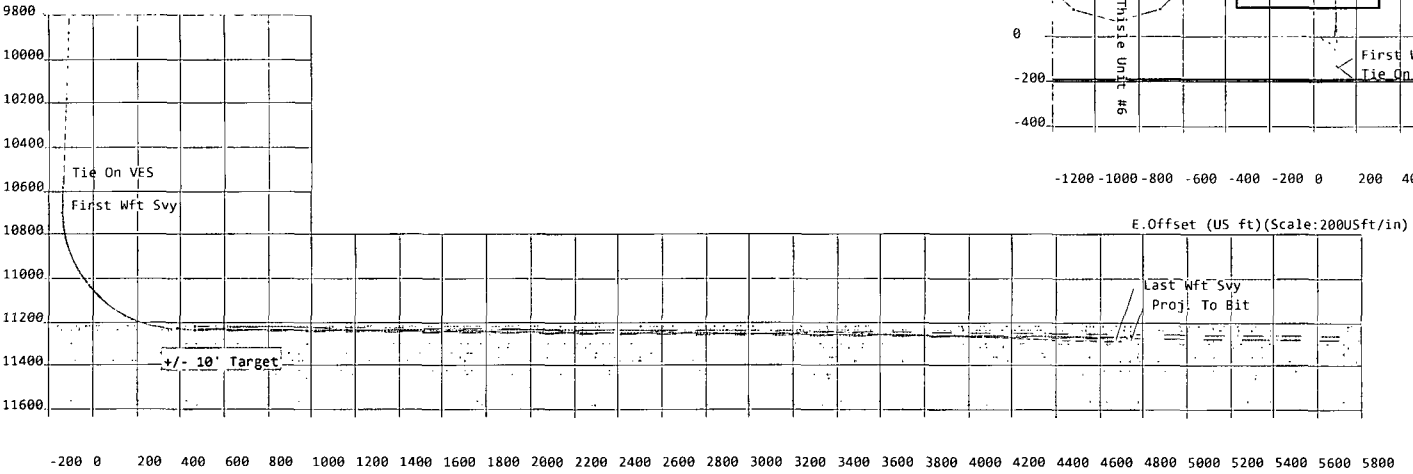
Slot: Thistle Unit 50H

Position:
Offset is from Site centre

+N/-S:	0.00USft	Northing:	457170.69USft	Latitude:	32 $^{\circ}$ 15'16.8"
+E/-W:	0.00USft	Easting:	782317.13USft	Longitude:	-103 $^{\circ}$ 33'13.7"
Elevation Above VRD: 3633.00USft					

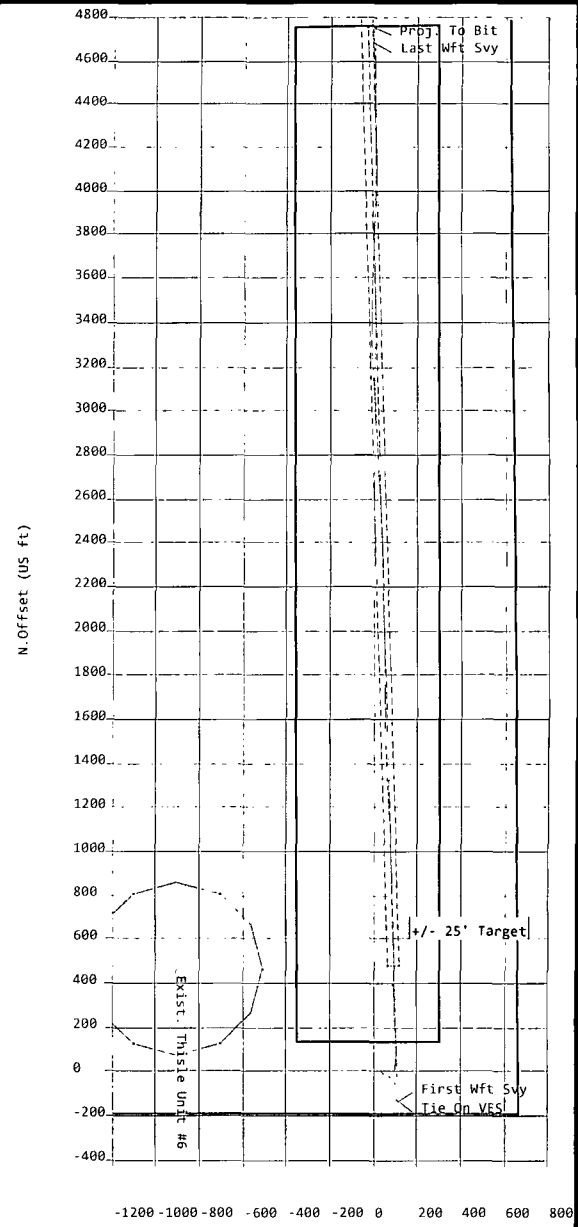
Thistle Unit 50H	_____
Exist. Thistle Unit #6	_____
Thistle Unit 50H	_____
Thistle Unit 50H	_____

KB-3658
GL-3633



VS (US ft)(Bearing:359.57° Scale:200USft/in)

Sign Off: Russell Joyner



Thistle Unit 50H

Field Name	Map Units : US ft	Company Name : Devon Energy
Lea Co, NM Nad 83 NM	Vertical Reference Datum (VRD) : Mean Sea Level	
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)	
	Comment :	

Site Name	Units : US ft	North Reference : Grid	Convergence Angle : 0.42
Thistle Unit 50H	Position	Northing : 457170.69 US ft	Latitude : 32° 15' 15.96"
		Easting : 782317.13 US ft	Longitude : -103° 33' 13.68"
	Elevation above Mean Sea Level: 3633.00 US ft		
	Comment :		

Slot Name	Position (Offsets relative to Site Centre)		
Thistle Unit 50H	+N / -S : 0.00 US ft	Northing : 457170.69 US ft	Latitude : 32° 15' 15.96"
	+E / -W : 0.00 US ft	Easting : 782317.13 US ft	Longitude : -103° 33' 13.68"
	Elevation above Mean Sea Level : 3633.00 US ft		
	Comment :		

Well Name	Type : Main well	UWI :
Thistle Unit 50H	Rig Height Well TVD Reference : 25.00 US ft	Comment :
	Relative to Mean Sea Level: 3658.00 US ft	
	Closure Distance : 4754.3 US ft	Closure Azimuth : 359.892°
	Vertical Section (Position of Origin Relative to Slot)	
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft Az : 359.57°

Target Set

Name : Thistle Unit 50H **Number of Targets :** 1

Comment :

Target Name:	Position (Relative to Slot centre)		
1	+N / -S : 4755.50 US ft	Northing : 461926.19 US ft	Latitude : 32° 16' 3.02"
	+E / -W : -35.36 US ft	Easting : 782281.77 US ft	Longitude : -103° 33' 13.69"
Shape:	TVD (Well TVD Reference) : 11269.00 US ft		
Cuboid	Orientation Azimuth : 358.30°	Inclination : -0.48°	
	Dimensions Length : 8564.00 US ft	Breadth : 50.00 US ft	Height : 20.00 US ft

Survey Name : Wft Svy

Date : 25/Jan/2014 **Survey Tool :** MWD **Comment :** **Company :**

Magnetic Model

Model Name: BGGM **Date:** 30/Jan/2014 **Field Strength:** 48382.2 nT **Declination:** 7.37° **Dip:** 60.14°

Tie Point

MD: 10541 **Inclination:** 1.71 **Azimuth:** 199.26 **TVD:** 10536.5 **North Offset:** -132.6 **East Offset:** 109.77

Well path created using minimum curvature

5D Survey Report

Survey Points (Relative to Slot centre, TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment	
10541.00	1.71	199.26	10536.49	-132.60	109.77	-133.42	0.00	457038.09	782426.90	Tie On VES	
10692.00	1.61	241.55	10687.43	-135.74	107.16	-136.54	0.80	457034.95	782424.29	First Wft Svy	
10723.00	2.38	278.18	10718.41	-135.85	106.14	-136.65	4.68	457034.84	782423.27		
10755.00	5.23	324.17	10750.34	-134.58	104.63	-135.36	12.39	457036.11	782421.76		
10787.00	9.26	340.07	10782.08	-130.97	102.90	-131.74	13.95	457039.72	782420.03		
10818.00	13.16	346.64	10812.49	-125.19	101.23	-125.95	13.22	457045.50	782418.36		
10850.00	18.02	349.65	10843.30	-116.77	99.50	-117.52	15.39	457053.92	782416.63		
10881.00	21.10	354.02	10872.51	-106.50	98.06	-107.24	10.99	457064.19	782415.19		
10912.00	24.61	354.08	10901.07	-94.53	96.81	-95.25	11.32	457076.16	782413.94		
10944.00	27.45	357.65	10929.82	-80.53	95.82	-81.25	10.13	457090.16	782412.95		
10975.00	30.57	356.89	10956.93	-65.51	95.10	-66.23	10.13	457105.18	782412.23		
11006.00	34.75	356.02	10983.02	-48.82	94.06	-49.53	13.57	457121.87	782411.19		
11038.00	36.98	358.97	11008.96	-30.10	93.25	-30.80	8.82	457140.59	782410.38		
11070.00	40.34	3.31	11033.95	-10.12	93.68	-10.83	13.49	457160.57	782410.81		
11101.00	42.79	5.01	11057.14	10.39	95.17	9.67	8.70	457181.08	782412.30		
11133.00	45.08	4.53	11080.18	32.51	97.02	31.78	7.23	457203.20	782414.15		
11164.00	46.29	3.78	11101.84	54.63	98.62	53.89	4.27	457225.32	782415.75		
11196.00	48.34	1.18	11123.53	78.13	99.63	77.38	8.76	457248.82	782416.76		
11228.00	52.47	358.89	11143.93	102.78	99.63	102.03	14.03	457273.47	782416.76		
11259.00	56.44	357.54	11161.95	127.98	98.84	127.24	13.29	457298.67	782415.97		
11291.00	61.73	357.06	11178.38	155.40	97.54	154.66	16.58	457326.09	782414.67		
11323.00	66.87	357.44	11192.25	184.19	96.16	183.46	16.10	457354.88	782413.29		
11354.00	71.79	357.59	11203.19	213.16	94.91	212.44	15.88	457383.85	782412.04		
11382.00	75.94	358.09	11210.97	240.03	93.89	239.32	14.92	457410.72	782411.02		
11413.00	78.37	358.75	11217.86	270.24	93.06	269.53	8.11	457440.93	782410.19		
11445.00	80.23	358.99	11223.80	301.67	92.44	300.97	5.86	457472.36	782409.57		
11477.00	82.35	359.07	11228.65	333.30	91.91	332.60	6.63	457503.99	782409.04		
11508.00	85.80	358.97	11231.85	364.12	91.38	363.43	11.13	457534.81	782408.51		
11572.00	89.86	359.16	11234.27	428.06	90.34	427.37	6.35	457598.75	782407.47		
11667.00	92.66	359.02	11232.18	523.01	88.83	522.33	2.95	457693.70	782405.96		
11761.00	92.10	358.61	11228.28	616.91	86.89	616.24	0.74	457787.60	782404.02		
11856.00	90.56	358.22	11226.07	711.85	84.26	711.19	1.67	457882.54	782401.39		
11951.00	91.26	358.75	11224.57	806.80	81.75	806.16	0.92	457977.49	782398.88		
12046.00	90.42	358.24	11223.17	901.76	79.25	901.14	1.03	458072.45	782396.38		
12140.00	86.85	357.37	11225.41	995.64	75.65	995.05	3.91	458166.33	782392.78		
12235.00	85.80	356.74	11231.50	1090.32	70.78	1089.76	1.29	458261.01	782387.91		
12330.00	88.25	357.27	11236.43	1185.06	65.83	1184.53	2.64	458355.75	782382.96		
12424.00	90.84	357.31	11237.18	1278.94	61.38	1278.44	2.76	458449.63	782378.51		
12519.00	90.35	357.66	11236.19	1373.84	57.22	1373.37	0.63	458544.53	782374.35		
12613.00	90.28	357.75	11235.67	1467.77	53.45	1467.32	0.12	458638.46	782370.58		
12708.00	90.21	358.41	11235.27	1562.71	50.27	1562.29	0.70	458733.40	782367.40		
12803.00	88.25	359.02	11236.55	1657.67	48.14	1657.27	2.16	458828.36	782365.27		
12897.00	89.23	359.39	11238.61	1751.64	46.83	1751.24	1.11	458922.33	782363.96		
12993.00	91.68	359.99	11237.85	1847.63	46.32	1847.23	2.63	459018.32	782363.45		
13087.00	90.77	359.50	11235.84	1941.60	45.90	1941.21	1.10	459112.29	782363.03		
13181.00	87.62	358.48	11237.16	2035.57	44.24	2035.18	3.52	459206.26	782361.37		
13276.00	88.53	358.60	11240.35	2130.48	41.82	2130.11	0.97	459301.17	782358.95		
13370.00	91.33	358.42	11240.47	2224.44	39.38	2224.08	2.98	459395.13	782356.51		
13464.00	92.02	358.77	11237.72	2318.37	37.07	2318.03	0.82	459489.06	782354.20		
13559.00	89.79	358.32	11236.22	2413.32	34.66	2413.00	2.39	459584.01	782351.79		
13653.00	86.78	357.29	11239.03	2507.20	31.06	2506.90	3.38	459677.89	782348.19		
13747.00	86.92	356.65	11244.20	2600.93	26.10	2600.66	0.70	459771.62	782343.23		
13842.00	89.44	356.04	11247.21	2695.68	20.05	2695.45	2.73	459866.37	782337.18		
13936.00	88.53	356.43	11248.88	2789.46	13.88	2789.28	1.05	459960.15	782331.01		
14031.00	87.97	357.44	11251.78	2884.28	8.80	2884.13	1.22	460054.97	782325.93		
14126.00	89.93	357.43	11253.52	2979.16	4.55	2979.04	2.06	460149.85	782321.68		
14221.00	90.56	356.22	11253.11	3074.01	-0.71	3073.93	1.44	460244.70	782316.42		
14315.00	90.56	356.34	11252.20	3167.81	-6.81	3167.77	0.13	460338.50	782310.32		
14381.00	92.59	356.21	11250.38	3233.64	-11.09	3233.63	3.08	460404.33	782306.04		

5D Survey Report

Survey Points (Relative to Slot centre, TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
14476.00	89.93	359.13	11248.29	3328.52	-14.95	3328.54	4.16	460499.21	782302.18	
14571.00	89.09	0.39	11249.11	3423.51	-15.35	3423.53	1.59	460594.20	782301.78	
14666.00	87.62	2.05	11251.83	3518.45	-13.33	3518.45	2.33	460689.14	782303.80	
14761.00	87.97	2.21	11255.49	3613.31	-9.80	3613.28	0.41	460784.00	782307.33	
14855.00	88.39	2.01	11258.47	3707.20	-6.34	3707.14	0.49	460877.89	782310.79	
14949.00	88.67	2.09	11260.88	3801.11	-2.98	3801.02	0.31	460971.80	782314.15	
15044.00	89.37	1.97	11262.51	3896.04	0.38	3895.92	0.75	461066.73	782317.51	
15138.00	87.48	1.61	11265.09	3989.95	3.32	3989.81	2.05	461160.64	782320.45	
15233.00	87.76	1.19	11269.04	4084.84	5.64	4084.68	0.53	461255.53	782322.77	
15327.00	87.48	359.24	11272.94	4178.75	5.99	4178.59	2.09	461349.44	782323.12	
15422.00	87.76	358.95	11276.89	4273.66	4.49	4273.50	0.42	461444.35	782321.62	
15516.00	87.97	359.33	11280.39	4367.58	3.08	4367.44	0.46	461538.27	782320.21	
15610.00	88.46	358.34	11283.32	4461.52	1.17	4461.38	1.17	461632.21	782318.30	
15704.00	88.74	357.97	11285.61	4555.44	-1.86	4555.32	0.49	461726.13	782315.27	
15798.00	89.16	358.07	11287.34	4649.37	-5.10	4649.27	0.46	461820.06	782312.03	
15832.00	89.65	357.88	11287.69	4683.34	-6.30	4683.26	1.55	461854.03	782310.83	Last Wft Svy
15903.00	89.65	357.88	11288.12	4754.29	-8.93	4754.23	0.00	461924.98	782308.20	Proj. To Bit



Weatherford[®]

Evaluation, Drilling & Intervention

10000 West County Rd. 116

P.O. Box 61028

Midland, TX USA 79711

Tel. (432) 561-8892 Fax (432) 561-8895

HOBBS OCD

JUN 25 2014

RECEIVED

Devon Energy
333 W. Sherridan Ave
Oklahoma City, OK, 73102

Date: January 3, 2014

Attention: Kurtis Schmitz

Re: Devon Energy
Well: Thistle Unit 50H
Lea County, New Mexico

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Well Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Dave Latch MWD Supervisor	50H	10692 MD 15832 MD	1/22/2014 2/2/2014	Measurement While Drilling

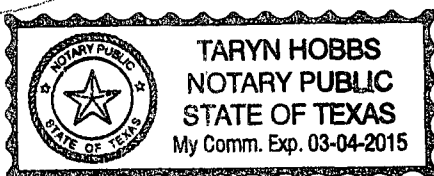
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jesus Aguilar
MWD Coordinator

On this, the 21st day of February 2014, before me a notary public, the undersigned officer, personally appeared JESUS AGUILAR, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

Notary Public





Weatherford

Thistle Unit 50H
Lea Co, NM

Plan Data for Thistle Unit 50H

Plan Point Information:
Dogleg Severity Unit: °/100.00ft Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
10541.00	1.71	199.26	10536.49	-132.63	109.75	457038.06	782426.88	-133.45	0.94
10598.00	0.00	0.00	10593.48	-133.44	109.47	457037.25	782426.60	-134.25	3.00
10706.00	0.00	0.00	10701.48	-133.44	109.47	457037.25	782426.60	-134.25	0.00
11536.57	89.53	358.30	11233.01	393.50	93.86	457564.19	782410.99	392.78	10.78
15900.64	89.53	358.30	11269.00	4755.50	-35.36	461926.19	782281.77	4755.63	0.00

Plan Data for Thistle Unit 50H

Target Set Information:
Name: Thistle Unit 50H

Position offsets from Slot centre

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape	Comment
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)
1	11269.00	4755.50	-35.36	461926.19	782281.77	Cuboid	

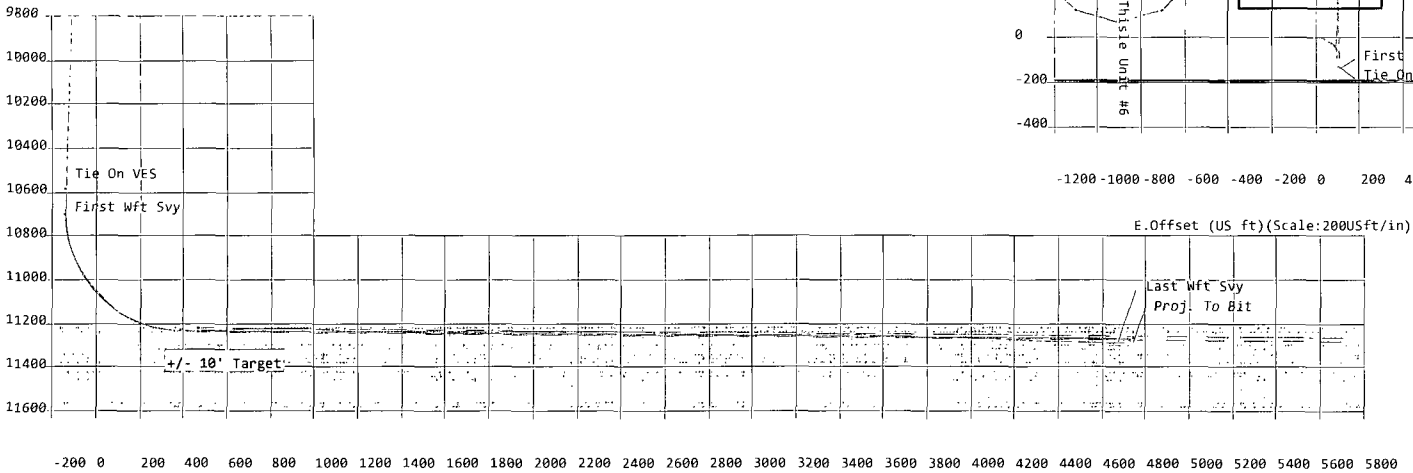
Plan Data for Thistle Unit 50H

Slot: Thistle Unit 50H
Position:
Offset is from Site centre

+N/-S:	0.00USft	Northing:	457170.69USft	Latitude:	32°15'16.0"
+E/-W:	0.00USft	Easting:	782317.13USft	Longitude:	-103°33'13.7"
		Elevation Above VRD:		3633.00USft	

Thistle Unit 50H	_____
Exist. Thistle Unit #6	_____
Thistle Unit 50H	_____
Thistle Unit 50H	_____

KB-3658
GL-3633



VS (US ft)(Bearing:359.57° Scale:200USft/in)

Sign Off: Russell Joyner

Thistle Unit 50H

Field Name	Map Units : US ft	Company Name : Devon Energy
Lea Co, NM Nad 83-NM	Vertical Reference Datum (VRD) : Mean Sea Level	
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)	
	Comment :	

Site Name	Units : US ft	North Reference : Grid	Convergence Angle : 0.42
Thistle Unit 50H	Position	Northing : 457170.69 US ft	Latitude : 32° 15' 15.96"
		Easting : 782317.13 US ft	Longitude : -103° 33' 13.68"
	Elevation above Mean Sea Level: 3633.00 US ft		
	Comment :		

Slot Name	Position (Offsets relative to Site Centre)		
Thistle Unit 50H	+N / -S : 0.00 US ft	Northing : 457170.69 US ft	Latitude : 32°15'15.96"
	+E / -W : 0.00 US ft	Easting : 782317.13 US ft	Longitude : -103°33'13.68"
	Elevation above Mean Sea Level : 3633.00 US ft		
	Comment :		

Well Name	Type : Main well	UWI :
Thistle Unit 50H	Rig Height Well TVD Reference : 25.00 US ft	Comment :
	Relative to Mean Sea Level: 3658.00 US ft	
	Closure Distance : 4754.3 US ft	Closure Azimuth : 359.892°
	Vertical Section (Position of Origin Relative to Slot)	
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft Az : 359.57°

Target Set

Name : Thistle Unit 50H **Number of Targets :** 1

Comment :

Target Name:	Position (Relative to Slot centre)		
1	+N / -S : 4755.50 US ft	Northing : 461926.19 US ft	Latitude : 32°16'3.02"
	+E / -W : -35.36 US ft	Easting : 782281.77 US ft	Longitude : -103°33'13.69"
Shape:	TVD (Well TVD Reference) : 11269.00 US ft		
Cuboid	Orientation Azimuth : 358.30°	Inclination : -0.48°	
	Dimensions Length : 8564.00 US ft	Breadth : 50.00 US ft	Height : 20.00 US ft

Survey Name : Wft Svy

Date : 25/Jan/2014 **Survey Tool :** MWD **Comment :** **Company :**

Magnetic Model

Model Name: BGGM **Date:** 30/Jan/2014 **Field Strength:** 48382.2 nT **Declination:** 7.37° **Dip:** 60.14°

Tie Point
MD: 10541 **Inclination:** 1.71 **Azimuth:** 199.26 **TVD:** 10536.5 **North Offset:** -132.6 **East Offset:** 109.77

Well path created using minimum curvature

5D Survey Report

Survey Points (Relative to Slot centre, TVD relative to Wall TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment	
10541.00	1.71	199.26	10536.49	-132.60	109.77	-133.42	0.00	457038.09	782426.90	Tie On VES	
10692.00	1.61	241.55	10687.43	-135.74	107.16	-136.54	0.80	457034.95	782424.29	First Wft Svy	
10723.00	2.38	278.18	10718.41	-135.85	106.14	-136.65	4.68	457034.84	782423.27		
10755.00	5.23	324.17	10750.34	-134.58	104.63	-135.36	12.39	457036.11	782421.76		
10787.00	9.26	340.07	10782.08	-130.97	102.90	-131.74	13.95	457039.72	782420.03		
10818.00	13.16	346.64	10812.49	-125.19	101.23	-125.95	13.22	457045.50	782418.36		
10850.00	18.02	349.65	10843.30	-116.77	99.50	-117.52	15.39	457053.92	782416.63		
10881.00	21.10	354.02	10872.51	-106.50	98.06	-107.24	10.99	457064.19	782415.19		
10912.00	24.61	354.08	10901.07	-94.53	96.81	-95.25	11.32	457076.16	782413.94		
10944.00	27.45	357.65	10929.82	-80.53	95.82	-81.25	10.13	457090.16	782412.95		
10975.00	30.57	356.89	10956.93	-65.51	95.10	-66.23	10.13	457105.18	782412.23		
11006.00	34.75	356.02	10983.02	-48.82	94.06	-49.53	13.57	457121.87	782411.19		
11038.00	36.98	358.97	11008.96	-30.10	93.25	-30.80	8.82	457140.59	782410.38		
11070.00	40.34	3.31	11033.95	-10.12	93.68	-10.83	13.49	457160.57	782410.81		
11101.00	42.79	5.01	11057.14	10.39	95.17	9.67	8.70	457181.08	782412.30		
11133.00	45.08	4.53	11080.18	32.51	97.02	31.78	7.23	457203.20	782414.15		
11164.00	46.29	3.78	11101.84	54.63	98.62	53.89	4.27	457225.32	782415.75		
11196.00	48.34	1.18	11123.53	78.13	99.63	77.38	8.76	457248.82	782416.76		
11228.00	52.47	358.89	11143.93	102.78	99.63	102.03	14.03	457273.47	782416.76		
11259.00	56.44	357.54	11161.95	127.98	98.84	127.24	13.29	457298.67	782415.97		
11291.00	61.73	357.06	11178.38	155.40	97.54	154.66	16.58	457326.09	782414.67		
11323.00	66.87	357.44	11192.25	184.19	96.16	183.46	16.10	457354.88	782413.29		
11354.00	71.79	357.59	11203.19	213.16	94.91	212.44	15.88	457383.85	782412.04		
11382.00	75.94	358.09	11210.97	240.03	93.89	239.32	14.92	457410.72	782411.02		
11413.00	78.37	358.75	11217.86	270.24	93.06	269.53	8.11	457440.93	782410.19		
11445.00	80.23	358.99	11223.80	301.67	92.44	300.97	5.86	457472.36	782409.57		
11477.00	82.35	359.07	11228.65	333.30	91.91	332.60	6.63	457503.99	782409.04		
11508.00	85.80	358.97	11231.85	364.12	91.38	363.43	11.13	457534.81	782408.51		
11572.00	89.86	359.16	11234.27	428.06	90.34	427.37	6.35	457598.75	782407.47		
11667.00	92.66	359.02	11232.18	523.01	88.83	522.33	2.95	457693.70	782405.96		
11761.00	92.10	358.61	11228.28	616.91	86.89	616.24	0.74	457787.60	782404.02		
11856.00	90.56	358.22	11226.07	711.85	84.26	711.19	1.67	457882.54	782401.39		
11951.00	91.26	358.75	11224.57	806.80	81.75	806.16	0.92	457977.49	782398.88		
12046.00	90.42	358.24	11223.17	901.76	79.25	901.14	1.03	458072.45	782396.38		
12140.00	86.85	357.37	11225.41	995.64	75.65	995.05	3.91	458166.33	782392.78		
12235.00	85.80	356.74	11231.50	1090.32	70.78	1089.76	1.29	458261.01	782387.91		
12330.00	88.25	357.27	11236.43	1185.06	65.83	1184.53	2.64	458355.75	782382.96		
12424.00	90.84	357.31	11237.18	1278.94	61.38	1278.44	2.76	458449.63	782378.51		
12519.00	90.35	357.66	11236.19	1373.84	57.22	1373.37	0.63	458544.53	782374.35		
12613.00	90.28	357.75	11235.67	1467.77	53.45	1467.32	0.12	458638.46	782370.58		
12708.00	90.21	358.41	11235.27	1562.71	50.27	1562.29	0.70	458733.40	782367.40		
12803.00	88.25	359.02	11236.55	1657.67	48.14	1657.27	2.16	458828.36	782365.27		
12897.00	89.23	359.39	11238.61	1751.64	46.83	1751.24	1.11	458922.33	782363.96		
12993.00	91.68	359.99	11237.85	1847.63	46.32	1847.23	2.63	459018.32	782363.45		
13087.00	90.77	359.50	11235.84	1941.60	45.90	1941.21	1.10	459112.29	782363.03		
13181.00	87.62	358.48	11237.16	2035.57	44.24	2035.18	3.52	459206.26	782361.37		
13276.00	88.53	358.60	11240.35	2130.48	41.82	2130.11	0.97	459301.17	782358.95		
13370.00	91.33	358.42	11240.47	2224.44	39.38	2224.08	2.98	459395.13	782356.51		
13464.00	92.02	358.77	11237.72	2318.37	37.07	2318.03	0.82	459489.06	782354.20		
13559.00	89.79	358.32	11236.22	2413.32	34.66	2413.00	2.39	459584.01	782351.79		
13653.00	86.78	357.29	11239.03	2507.20	31.06	2506.90	3.38	459677.89	782348.19		
13747.00	86.92	356.65	11244.20	2600.93	26.10	2600.66	0.70	459771.62	782343.23		
13842.00	89.44	356.04	11247.21	2695.68	20.05	2695.45	2.73	459866.37	782337.18		
13936.00	88.53	356.43	11248.88	2789.46	13.88	2789.28	1.05	459960.15	782331.01		
14031.00	87.97	357.44	11251.78	2884.28	8.80	2884.13	1.22	460054.97	782325.93		
14126.00	89.93	357.43	11253.52	2979.16	4.55	2979.04	2.06	460149.85	782321.68		
14221.00	90.56	356.22	11253.11	3074.01	-0.71	3073.93	1.44	460244.70	782316.42		
14315.00	90.56	356.34	11252.20	3167.81	-6.81	3167.77	0.13	460338.50	782310.32		
14381.00	92.59	356.21	11250.38	3233.64	-11.09	3233.63	3.08	460404.33	782306.04		

5D Survey Report

Survey Points (Relative to Slot centre, TVD relative to Well TVD Reference.)										
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
14476.00	89.93	359.13	11248.29	3328.52	-14.95	3328.54	4.16	460499.21	782302.18	
14571.00	89.09	0.39	11249.11	3423.51	-15.35	3423.53	1.59	460594.20	782301.78	
14666.00	87.62	2.05	11251.83	3518.45	-13.33	3518.45	2.33	460689.14	782303.80	
14761.00	87.97	2.21	11255.49	3613.31	-9.80	3613.28	0.41	460784.00	782307.33	
14855.00	88.39	2.01	11258.47	3707.20	-6.34	3707.14	0.49	460877.89	782310.79	
14949.00	88.67	2.09	11260.88	3801.11	-2.98	3801.02	0.31	460971.80	782314.15	
15044.00	89.37	1.97	11262.51	3896.04	0.38	3895.92	0.75	461066.73	782317.51	
15138.00	87.48	1.61	11265.09	3989.95	3.32	3989.81	2.05	461160.64	782320.45	
15233.00	87.76	1.19	11269.04	4084.84	5.64	4084.68	0.53	461255.53	782322.77	
15327.00	87.48	359.24	11272.94	4178.75	5.99	4178.59	2.09	461349.44	782323.12	
15422.00	87.76	358.95	11276.89	4273.66	4.49	4273.50	0.42	461444.35	782321.62	
15516.00	87.97	359.33	11280.39	4367.58	3.08	4367.44	0.46	461538.27	782320.21	
15610.00	88.46	358.34	11283.32	4461.52	1.17	4461.38	1.17	461632.21	782318.30	
15704.00	88.74	357.97	11285.61	4555.44	-1.86	4555.32	0.49	461726.13	782315.27	
15798.00	89.16	358.07	11287.34	4649.37	-5.10	4649.27	0.46	461820.06	782312.03	
15832.00	89.65	357.88	11287.69	4683.34	-6.30	4683.26	1.55	461854.03	782310.83	Last Wft Svy
15903.00	89.65	357.88	11288.12	4754.29	-8.93	4754.23	0.00	461924.98	782308.20	Proj. To Bit