

Results of Directional Survey

API number:	30-025-41884		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	BOUNDARY RAIDER 6 FEDERAL # 2H

surface	ULSTR:	A	07	T	23S	R	32E
				200	FNL	200	FEL

5257

BH Loc	ULSTR:	A	06	T	23S	R	32E
15445	MD	10415.5	TVD	340	FNL	670	FEL
				4927	FSL		

Top Perf/OH	ULSTR:	A	07	T	23S	R	32E
10850	MD	10437.0	TVD	348	FSL	352	FEL

Bot Perf/OH	ULSTR:	A	06	T	23S	R	32E
15332	MD	10416.2	TVD	4814	FSL	662	FEL
				4814	FSL		

	MD	N/S	E/W	VD
	10830.00	528.16	-149.01	10437.25
TOP PERFS/OH	10850.00	547.89	-152.30	10437.04
	10924.00	620.87	-164.45	10436.27
	15284.00	4966.24	-502.07	10416.08
BOT PERFS/OH	15332.00	5014.13	-505.29	10416.21
	15379.00	5061.02	-508.45	10416.33

NEXT TO LAST	15379.00	5061.02	-508.45	10416.33
LAST READING	15445.00	5126.88	-512.59	10415.52
TD	15445.00	5126.88	-512.59	10415.52

Surface Location	200	FN	200	FE
Projected BHL	4927	FS	713	FE
Location of				
Top Perfs/OH	348	FS	352	FE
Bottom Perfs/OH	4814	FS	705	FE

SUMMARY of Subsurface Locations

Surface Location	A-07-23S-32E	200	FN	200	FE	Vert. Depth
Top Perfs/OH	A-07-23S-32E	348	FS	352	FE	10437.04
Bottom Perfs/OH	A-06-23S-32E	4814	FS	705	FE	10416.21
Projected TD	A-06-23S-32E	4927	FS	713	FE	10415.52

FEB 03 2015

HOBSOCD
JAN 05 2015
RECEIVED



September 19, 2014

Devon Energy
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: David Cook

Re: **Boundary Raider 6 Federal No. 002H**

Please find enclosed a copy of the survey from 0.00' to 9487.00' 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.

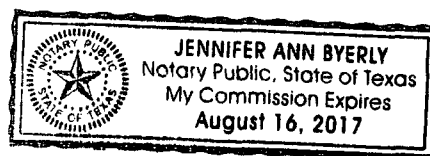
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 19 day of September A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Devon Energy
Lease/Well: Boundary Raider 6 Federal/No. 002H

Rig Name: Cactus # 126
State/County: New Mexico /Eddy
Latitude: 32.33, Longitude: -103.71
GRID North is 0.34 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : R.K.B = 25 FT

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: bounddary raider 6 fed 2h.ut

Minimum Curvature Method

Report Date/Time: 9/19/2014 / 11:43

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada

Boundary Raider 6 Federal No. 002H / API 30-025-41884

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	****
131.50	0.20	45.90	131.50	0.16	0.16	0.16	0.23	45.90	0.15
226.00	0.35	123.53	226.00	0.11	0.52	0.11	0.54	77.73	0.39
320.50	0.32	103.61	320.50	-0.11	1.02	-0.11	1.03	96.03	0.13
415.00	0.44	132.93	415.00	-0.42	1.54	-0.42	1.60	105.09	0.24
509.50	0.33	126.86	509.49	-0.83	2.02	-0.83	2.19	112.18	0.12
604.00	0.44	142.79	603.99	-1.28	2.46	-1.28	2.77	117.44	0.16
698.50	0.30	221.44	698.49	-1.75	2.52	-1.75	3.07	124.77	0.51
793.00	0.55	285.31	792.99	-1.81	1.92	-1.81	2.64	133.33	0.53
887.50	0.47	262.15	887.48	-1.75	1.10	-1.75	2.06	147.85	0.23
982.00	0.62	269.66	981.98	-1.80	0.20	-1.80	1.81	173.73	0.18
1076.50	0.32	284.52	1076.48	-1.74	-0.57	-1.74	1.83	198.24	0.34
1171.00	0.41	292.37	1170.97	-1.54	-1.14	-1.54	1.92	216.40	0.10
1265.50	0.55	271.92	1265.47	-1.40	-1.90	-1.40	2.36	233.57	0.23
1360.00	0.70	265.38	1359.97	-1.43	-2.93	-1.43	3.26	243.90	0.18
1454.50	0.59	247.31	1454.46	-1.67	-3.95	-1.67	4.29	247.12	0.24
1549.00	0.85	263.73	1548.95	-1.93	-5.10	-1.93	5.45	249.24	0.35
1643.50	0.93	292.42	1643.44	-1.72	-6.50	-1.72	6.73	255.21	0.47
1738.00	0.86	259.48	1737.93	-1.55	-7.90	-1.55	8.05	258.87	0.54

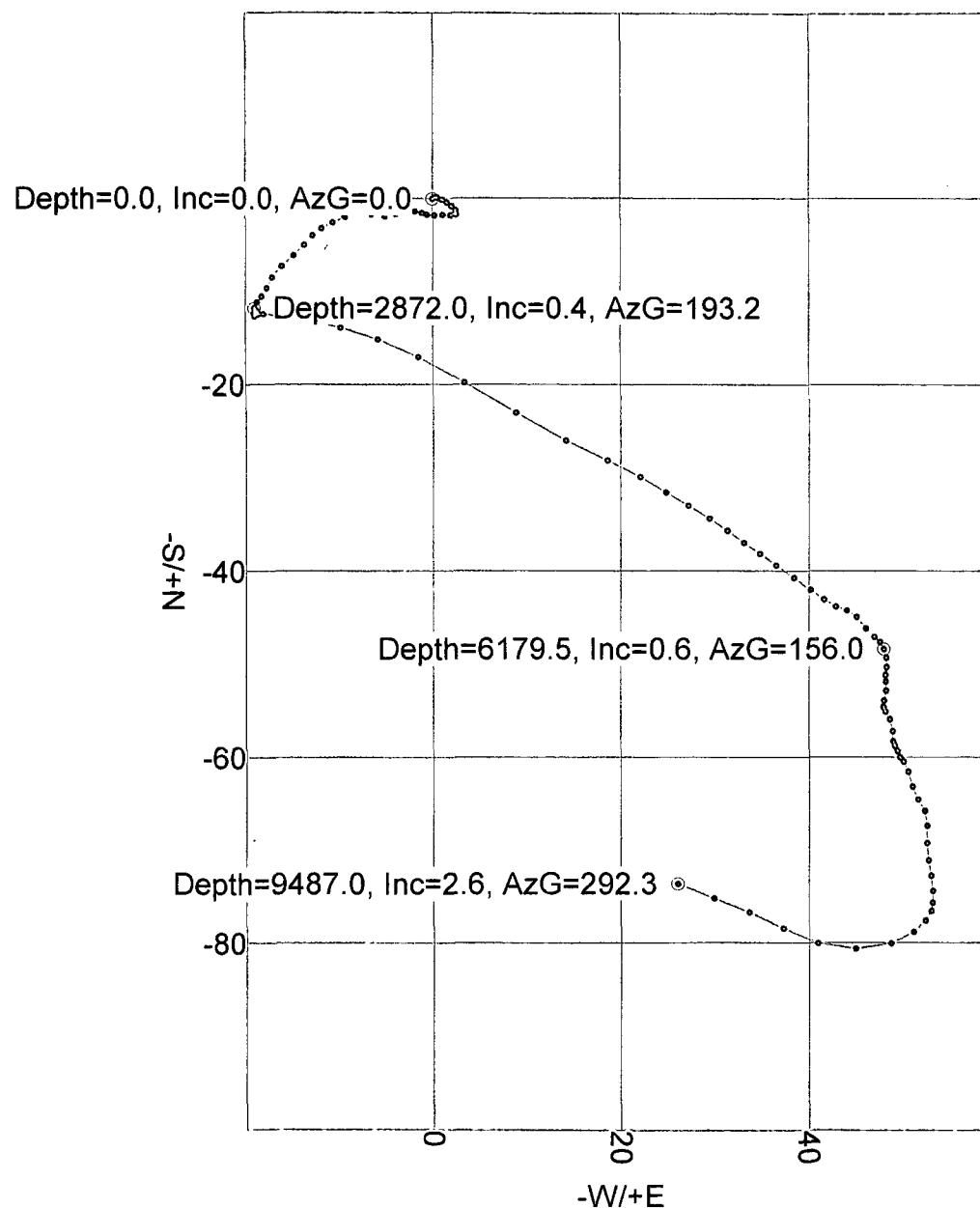
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1832.50	0.94	247.56	1832.42	-1.98	-9.32	-1.98	9.52	258.00	0.22
1927.00	0.84	242.12	1926.91	-2.60	-10.65	-2.60	10.96	256.27	0.14
2021.50	0.78	243.38	2021.40	-3.21	-11.83	-3.21	12.26	254.81	0.06
2116.00	0.74	218.58	2115.89	-3.98	-12.79	-3.98	13.40	252.72	0.35
2210.50	0.91	223.76	2210.38	-5.00	-13.69	-5.00	14.58	249.94	0.19
2305.00	1.00	226.20	2304.87	-6.11	-14.81	-6.11	16.02	247.57	0.11
2399.50	1.05	227.40	2399.35	-7.27	-16.04	-7.27	17.61	245.62	0.05
2494.00	0.88	213.04	2493.84	-8.46	-17.07	-8.46	19.05	243.63	0.31
2588.50	0.74	203.93	2588.33	-9.63	-17.71	-9.63	20.16	241.48	0.20
2683.00	0.56	226.11	2682.82	-10.50	-18.29	-10.50	21.09	240.14	0.33
2777.50	0.43	211.26	2777.32	-11.12	-18.80	-11.12	21.85	239.40	0.19
2872.00	0.41	193.21	2871.82	-11.75	-19.06	-11.75	22.39	238.35	0.14
2966.50	0.27	170.58	2966.32	-12.30	-19.10	-12.30	22.72	237.23	0.20
3061.00	0.19	167.95	3060.81	-12.67	-19.03	-12.67	22.87	236.35	0.09
3155.50	0.22	348.83	3155.31	-12.65	-19.04	-12.65	22.86	236.40	0.43
3250.00	0.33	24.41	3249.81	-12.22	-18.96	-12.22	22.56	237.19	0.21
3344.50	0.20	146.92	3344.31	-12.11	-18.75	-12.11	22.33	237.14	0.50
3439.00	0.06	222.20	3438.81	-12.29	-18.69	-12.29	22.37	236.68	0.21
3533.50	0.13	133.05	3533.31	-12.40	-18.65	-12.40	22.39	236.38	0.15
3628.00	0.63	81.88	3627.81	-12.40	-18.05	-12.40	21.90	235.51	0.59
3722.50	1.39	101.91	3722.30	-12.57	-16.41	-12.57	20.67	232.56	0.88
3817.00	2.13	99.24	3816.75	-13.09	-13.55	-13.09	18.84	226.00	0.79
3911.50	2.50	104.00	3911.17	-13.87	-9.82	-13.87	16.99	215.30	0.44
4006.00	2.52	111.18	4005.58	-15.11	-5.88	-15.11	16.22	201.27	0.33
4100.50	3.19	115.76	4099.96	-17.01	-1.58	-17.01	17.08	185.32	0.75
4195.00	3.66	121.25	4194.30	-19.71	3.36	-19.71	20.00	170.32	0.61
4289.50	4.06	120.45	4288.58	-22.97	8.83	-22.97	24.61	158.98	0.43
4384.00	3.36	117.57	4382.88	-25.95	14.17	-25.95	29.57	151.37	0.77
4478.50	2.58	112.88	4477.26	-28.06	18.58	-28.06	33.65	146.49	0.87
4573.00	2.22	121.40	4571.67	-29.84	22.10	-29.84	37.13	143.48	0.53
4667.50	1.65	121.66	4666.12	-31.50	24.82	-31.50	40.11	141.77	0.61
4762.00	1.68	120.97	4760.58	-32.93	27.16	-32.93	42.68	140.48	0.04
4856.50	1.50	121.16	4855.04	-34.28	29.40	-34.28	45.16	139.38	0.19
4951.00	1.34	129.66	4949.51	-35.62	31.31	-35.62	47.42	138.69	0.28
5045.50	1.30	123.10	5043.99	-36.91	33.05	-36.91	49.55	138.16	0.16
5140.00	1.22	126.82	5138.47	-38.10	34.76	-38.10	51.57	137.63	0.12
5234.50	1.36	122.94	5232.94	-39.31	36.50	-39.31	53.64	137.12	0.17
5329.00	1.45	127.61	5327.41	-40.65	38.38	-40.65	55.91	136.64	0.16
5423.50	1.23	124.21	5421.89	-41.95	40.17	-41.95	58.08	136.24	0.25

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
5518.00	0.92	127.78	5516.37	-42.98	41.61	-42.98	59.82	135.93	0.33
5612.50	0.86	113.50	5610.86	-43.73	42.86	-43.73	61.23	135.58	0.25
5707.00	0.72	105.07	5705.35	-44.17	44.08	-44.17	62.40	135.06	0.19
5801.50	0.89	138.34	5799.84	-44.87	45.14	-44.87	63.65	134.83	0.52
5896.00	1.04	142.68	5894.33	-46.10	46.15	-46.10	65.23	134.97	0.18
5990.50	0.55	121.44	5988.82	-47.02	47.06	-47.02	66.52	134.98	0.60
6085.00	0.46	144.77	6083.32	-47.57	47.66	-47.57	67.34	134.94	0.23
6179.50	0.60	155.96	6177.81	-48.33	48.08	-48.33	68.18	135.15	0.18
6274.00	0.57	172.89	6272.31	-49.26	48.35	-49.26	69.02	135.54	0.19
6368.50	0.64	185.89	6366.80	-50.25	48.35	-50.25	69.73	136.10	0.16
6463.00	0.39	184.58	6461.30	-51.09	48.27	-51.09	70.29	136.63	0.26
6557.50	0.46	172.57	6555.79	-51.79	48.29	-51.79	70.81	137.00	0.12
6652.00	0.73	184.10	6650.29	-52.77	48.30	-52.77	71.53	137.53	0.31
6746.50	0.56	199.25	6744.78	-53.80	48.10	-53.80	72.17	138.20	0.25
6841.00	0.32	166.05	6839.28	-54.49	48.02	-54.49	72.63	138.61	0.36
6935.50	0.38	143.57	6933.78	-55.00	48.27	-55.00	73.18	138.73	0.15
7030.00	0.76	154.03	7028.27	-55.81	48.73	-55.81	74.09	138.88	0.41
7124.50	0.88	177.06	7122.77	-57.09	49.04	-57.09	75.26	139.34	0.37
7219.00	0.44	178.53	7217.26	-58.18	49.08	-58.18	76.12	139.85	0.46
7313.50	0.25	120.44	7311.76	-58.65	49.27	-58.65	76.60	139.97	0.40
7408.00	0.59	173.00	7406.25	-59.24	49.51	-59.24	77.21	140.12	0.51
7502.50	0.32	133.19	7500.75	-59.91	49.76	-59.91	77.88	140.29	0.43
7597.00	0.46	144.52	7595.25	-60.39	50.17	-60.39	78.51	140.28	0.17
7691.50	1.01	161.00	7689.74	-61.49	50.66	-61.49	79.67	140.52	0.63
7786.00	1.00	165.72	7784.23	-63.08	51.13	-63.08	81.20	140.97	0.09
7880.50	0.85	145.31	7878.72	-64.45	51.74	-64.45	82.65	141.25	0.38
7975.00	0.89	154.71	7973.20	-65.70	52.45	-65.70	84.07	141.40	0.16
8069.50	1.13	181.84	8067.69	-67.29	52.73	-67.29	85.49	141.91	0.56
8164.00	1.14	179.14	8162.17	-69.16	52.72	-69.16	86.96	142.68	0.06
8258.50	1.11	170.07	8256.65	-71.00	52.89	-71.00	88.53	143.32	0.19
8353.00	0.96	170.62	8351.14	-72.68	53.18	-72.68	90.06	143.81	0.16
8447.50	1.02	177.15	8445.62	-74.30	53.35	-74.30	91.47	144.32	0.14
8542.00	0.52	188.21	8540.12	-75.56	53.33	-75.56	92.49	144.79	0.55
8636.50	0.61	189.65	8634.61	-76.48	53.18	-76.48	93.16	145.19	0.10
8731.00	0.92	223.01	8729.10	-77.53	52.58	-77.53	93.68	145.85	0.56
8825.50	1.29	230.76	8823.58	-78.76	51.24	-78.76	93.96	146.95	0.42
8920.00	2.02	250.84	8918.05	-79.98	48.84	-79.98	93.71	148.59	0.97
9014.50	2.71	269.12	9012.47	-80.56	45.03	-80.56	92.29	150.80	1.07
9109.00	2.42	289.00	9106.87	-79.95	40.91	-79.95	89.81	152.90	0.98

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
9203.50	2.44	298.40	9201.29	-78.34	37.25	-78.34	86.75	154.57	0.42
9298.00	2.40	292.67	9295.70	-76.62	33.66	-76.62	83.69	156.29	0.26
9392.50	2.50	291.49	9390.12	-75.10	29.91	-75.10	80.84	158.28	0.12
9487.00	2.57	292.32	9484.53	-73.54	26.04	-73.54	78.02	160.50	0.08



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Boundary Raider 6 Federal No. 002H / API 30-025-41884





Directional Survey

District DELAWARE BASIN		County LEA		Field Name JOHNSON RANCH		Project Group DELAWARE BASIN REG		State/Province NM							
Surface Legal Location Sec. 7 T23S R32E		API/UWI 3002541884		Latitude (°) 32° 19' 32.659" N		Longitude (°) 103° 42' 21.166" W		Ground Elev... 3,550.40		KB - GL (ft) 25.00		Orig KB Elev (ft) 3,575.40		Tubing Head Elevation (ft)	
Wellbores															
Wellbore Name OH		Parent Wellbore OH		SAP Well ID		Kick Off Depth (ftKB)		Vertical Section Direction (°)							
Actual Deviation Survey GYRO, Proposed? No				Definitive? Yes		Proposed? No		Proposed Deviation Survey GYRO, Proposed? No							
Deviation Survey															
Date 8/24/2014		Description GYRO													
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					
9/7/2014				0.00	0.00	0.00	0.00	0.00	MWD	LEAM DRILLING SYSTEMS					
9/7/2014	131.50	0.20	45.90	131.50	0.14	0.16	0.16	0.15	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	226.00	0.35	123.53	226.00	0.06	0.12	0.52	0.39	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	320.50	0.32	103.61	320.50	-0.21	-0.11	1.02	0.13	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	415.00	0.44	132.93	415.00	-0.57	-0.42	1.54	0.24	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	509.50	0.33	126.86	509.49	-1.02	-0.83	2.03	0.12	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	604.00	0.44	142.79	603.99	-1.52	-1.28	2.46	0.16	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	698.50	0.30	221.44	698.49	-1.99	-1.75	2.52	0.51	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	793.00	0.55	285.31	792.99	-2.00	-1.82	1.92	0.53	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	887.50	0.47	262.15	887.48	-1.85	-1.75	1.10	0.23	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	982.00	0.62	269.66	981.98	-1.82	-1.81	0.20	0.18	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,076.50	0.32	284.52	1,076.48	-1.68	-1.74	-0.57	0.34	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,171.00	0.41	292.37	1,170.97	-1.43	-1.55	-1.13	0.11	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,265.50	0.55	271.92	1,265.47	-1.21	-1.41	-1.90	0.23	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,360.00	0.70	265.38	1,359.97	-1.14	-1.44	-2.93	0.18	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,454.50	0.59	247.31	1,454.46	-1.27	-1.67	-3.95	0.24	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,549.00	0.85	263.73	1,548.95	-1.42	-1.94	-5.10	0.35	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,643.50	0.93	292.42	1,643.44	-1.06	-1.72	-6.50	0.47	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,738.00	0.86	259.48	1,737.93	-0.76	-1.56	-7.91	0.54	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,832.50	0.94	247.56	1,832.42	-1.04	-1.98	-9.32	0.21	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	1,927.00	0.84	242.12	1,926.91	-1.53	-2.60	-10.65	0.14	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,021.50	0.78	243.38	2,021.40	-2.02	-3.21	-11.84	0.07	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,116.00	0.74	218.58	2,115.89	-2.69	-3.98	-12.80	0.35	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,210.50	0.91	223.76	2,210.38	-3.61	-5.00	-13.69	0.20	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,305.00	1.00	226.20	2,304.87	-4.61	-6.11	-14.81	0.10	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,399.50	1.05	227.40	2,399.35	-5.64	-7.27	-16.04	0.06	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,494.00	0.88	213.04	2,493.84	-6.72	-8.46	-17.07	0.31	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,588.50	0.74	203.93	2,588.33	-7.82	-9.63	-17.72	0.20	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,683.00	0.56	226.11	2,682.82	-8.63	-10.51	-18.30	0.32	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,777.50	0.43	211.26	2,777.32	-9.20	-11.13	-18.81	0.19	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,872.00	0.41	193.21	2,871.82	-9.81	-11.76	-19.08	0.14	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	2,966.50	0.27	170.58	2,966.32	-10.35	-12.31	-19.12	0.20	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,061.00	0.19	167.95	3,060.81	-10.73	-12.68	-19.05	0.09	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,155.50	0.22	348.83	3,155.31	-10.70	-12.66	-19.05	0.43	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,250.00	0.33	24.41	3,249.81	-10.28	-12.23	-18.97	0.21	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,344.50	0.20	146.92	3,344.31	-10.20	-12.12	-18.77	0.50	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,439.00	0.06	220.20	3,438.81	-10.38	-12.30	-18.71	0.20	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,533.50	0.13	133.05	3,533.31	-10.49	-12.41	-18.67	0.15	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,628.00	0.63	81.88	3,627.81	-10.55	-12.41	-18.07	0.59	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,722.50	1.39	101.91	3,722.29	-10.88	-12.57	-16.44	0.87	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,817.00	2.13	99.24	3,816.75	-11.68	-13.09	-13.58	0.79	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	3,911.50	2.50	104.00	3,911.17	-12.82	-13.87	-9.85	0.44	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	4,006.00	2.52	111.18	4,005.58	-14.46	-15.12	-5.91	0.33	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	4,100.50	3.19	115.76	4,099.96	-16.77	-17.01	-1.61	0.75	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	4,195.00	3.66	121.25	4,194.30	-19.96	-19.72	3.34	0.61	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	4,289.50	4.06	120.45	4,288.58	-23.74	-22.98	8.80	0.43	GYRO	VAUHG N ENERGY SERVICES					
9/7/2014	4,384.00	3.36	117.57	4,382.88	-27.24	-25.96	14.14	0.77	GYRO	VAUHG N ENERGY SERVICES					



BOUNDARY RAIDER 6 FED 2H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location Sec. 7 T23S R32E	API/UWI 3002541884	Latitude (°) 32° 19' 32.659" N	Longitude (°) 103° 42' 21.166" W	Ground Elev... 3,550.40	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,575.40	Tubing Head Elevation (ft)

Survey Data

Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	E/W (ft)	DLS (%/100ft)	Survey Tool	Survey Company
9/7/2014	4,478.50	2.58	112.88	4,477.25	-29.78	-28.07	18.56	0.86	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	4,573.00	2.22	121.40	4,571.67	-31.90	-29.85	22.08	0.54	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	4,667.50	1.65	121.66	4,666.12	-33.83	-31.52	24.80	0.60	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	4,762.00	1.68	120.97	4,760.58	-35.48	-32.94	27.14	0.04	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	4,856.50	1.50	121.16	4,855.04	-37.05	-34.30	29.39	0.19	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	4,951.00	1.34	129.66	4,949.51	-38.58	-35.64	31.30	0.28	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,045.50	1.30	123.10	5,043.99	-40.04	-36.93	33.05	0.17	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,140.00	1.22	126.82	5,138.46	-41.39	-38.12	34.75	0.12	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,234.50	1.36	122.94	5,232.94	-42.77	-39.33	36.50	0.17	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,329.00	1.45	127.61	5,327.41	-44.29	-40.67	38.39	0.15	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,423.50	1.23	124.21	5,421.89	-45.76	-41.97	40.17	0.25	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,518.00	0.92	127.78	5,516.37	-46.93	-43.01	41.61	0.34	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,612.50	0.86	113.50	5,610.86	-47.80	-43.76	42.86	0.24	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,707.00	0.72	105.07	5,705.35	-48.36	-44.19	44.08	0.19	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,801.50	0.89	138.34	5,799.84	-49.16	-44.90	45.14	0.52	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,896.00	1.04	142.68	5,894.33	-50.49	-46.13	46.15	0.18	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	5,990.50	0.55	121.44	5,988.82	-51.49	-47.04	47.06	0.60	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,085.00	0.46	144.77	6,083.31	-52.10	-47.59	47.67	0.24	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,179.50	0.60	155.96	6,177.81	-52.90	-48.35	48.09	0.18	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,274.00	0.57	172.89	6,272.31	-53.84	-49.27	48.35	0.18	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,368.50	0.64	185.89	6,366.80	-54.82	-50.26	48.35	0.16	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,463.00	0.39	184.58	6,461.30	-55.66	-51.11	48.27	0.26	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,557.50	0.46	172.57	6,555.79	-56.35	-51.80	48.29	0.12	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,652.00	0.73	184.10	6,650.29	-57.32	-52.78	48.30	0.31	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,746.50	0.56	199.25	6,744.78	-58.34	-53.82	48.10	0.25	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,841.00	0.32	166.05	6,839.28	-59.02	-54.51	48.01	0.36	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	6,935.50	0.38	143.57	6,933.78	-59.55	-55.02	48.26	0.16	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,030.00	0.76	154.03	7,028.27	-60.40	-55.83	48.73	0.42	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,124.50	0.88	177.06	7,122.76	-61.72	-57.12	49.04	0.37	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,219.00	0.44	178.53	7,217.26	-62.80	-58.21	49.08	0.47	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,313.50	0.25	120.44	7,311.76	-63.29	-58.68	49.27	0.40	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,408.00	0.59	173.00	7,406.25	-63.89	-59.26	49.51	0.51	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,502.50	0.32	133.19	7,500.75	-64.58	-59.93	49.76	0.42	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,597.00	0.46	144.52	7,595.25	-65.11	-60.42	50.17	0.17	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,691.50	1.01	161.00	7,689.74	-66.25	-61.51	50.66	0.62	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,786.00	1.00	165.72	7,784.23	-67.87	-63.10	51.14	0.09	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,880.50	0.85	145.31	7,878.71	-69.30	-64.48	51.74	0.38	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	7,975.00	0.89	154.71	7,973.20	-70.61	-65.72	52.45	0.16	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,069.50	1.13	181.84	8,067.69	-72.22	-67.31	52.74	0.56	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,164.00	1.14	179.14	8,162.17	-74.08	-69.18	52.72	0.06	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,258.50	1.11	170.07	8,256.65	-75.93	-71.02	52.89	0.19	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,353.00	0.96	170.62	8,351.14	-77.64	-72.71	53.18	0.16	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,447.50	1.02	177.15	8,445.62	-79.27	-74.33	53.35	0.14	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,542.00	0.52	188.21	8,540.11	-80.52	-75.59	53.33	0.55	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,636.50	0.61	189.65	8,634.61	-81.42	-76.51	53.18	0.10	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,731.00	0.92	223.01	8,729.10	-82.41	-77.56	52.58	0.56	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,825.50	1.29	230.76	8,823.58	-83.50	-78.79	51.24	0.42	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	8,920.00	2.02	250.84	8,918.04	-84.47	-80.01	48.84	0.98	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	9,014.50	2.71	269.12	9,012.46	-84.67	-80.59	45.04	1.07	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	9,109.00	2.42	289.00	9,106.87	-83.65	-79.98	40.92	0.98	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	9,203.50	2.44	298.40	9,201.29	-81.69	-78.37	37.26	0.42	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	9,298.00	2.40	292.67	9,295.70	-79.62	-76.65	33.67	0.26	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	9,392.50	2.50	291.49	9,390.12	-77.74	-75.13	29.92	0.12	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	9,487.00	2.57	292.32	9,484.52	-75.80	-73.57	26.04	0.08	GYRO	VAUHG N ENERGY SERVICES
9/7/2014	9,600.00	2.20	239.10	9,597.44	-75.53	-73.72	21.84	1.91	MWD	LEAM DRILLING SYSTEMS



BOUNDARY RAIDER 6 FED 2H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN		County LEA		Field Name JOHNSON RANCH		Project Group DELAWARE BASIN REG		State/Province NM		
Surface Legal Location Sec. 7 T23S R32E		API/UWI 3002541884		Latitude (°) 32° 19' 32.659" N	Longitude (°) 103° 42' 21.166" W	Ground Elev... 3,550.40	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,575.40	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
9/7/2014	9,694.00	2.60	295.40	9,691.37	-75.20	-73.74	18.37	2.44	MWD	LEAM DRILLING SYSTEMS
9/7/2014	9,789.00	2.80	291.90	9,786.26	-73.01	-71.95	14.27	0.27	MWD	LEAM DRILLING SYSTEMS
9/7/2014	9,852.00	3.70	324.40	9,849.17	-70.53	-69.72	11.65	3.20	MWD	LEAM DRILLING SYSTEMS
9/7/2014	9,883.00	4.80	338.70	9,880.08	-68.42	-67.70	10.60	4.90	MWD	LEAM DRILLING SYSTEMS
9/7/2014	9,915.00	7.10	345.30	9,911.91	-65.17	-64.54	9.61	7.49	MWD	LEAM DRILLING SYSTEMS
9/7/2014	9,947.00	9.10	343.60	9,943.59	-60.73	-60.20	8.40	6.29	MWD	LEAM DRILLING SYSTEMS
9/7/2014	9,978.00	11.00	343.90	9,974.11	-55.41	-55.00	6.88	6.13	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,010.00	13.80	343.40	10,005.36	-48.66	-48.41	4.95	8.76	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,047.00	16.40	343.40	10,041.08	-39.20	-39.17	2.19	7.03	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,079.00	18.60	345.70	10,071.60	-29.71	-29.90	-0.36	7.21	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,142.00	22.80	344.50	10,130.52	-7.74	-8.39	-6.10	6.70	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,173.00	25.50	343.60	10,158.80	4.74	3.80	-9.59	8.79	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,205.00	28.60	343.40	10,187.30	19.03	17.75	-13.73	9.69	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,237.00	31.70	343.40	10,214.96	34.81	33.15	-18.32	9.69	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,268.00	35.00	344.50	10,240.86	51.58	49.53	-23.02	10.82	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,300.00	38.40	345.20	10,266.51	70.44	67.99	-28.02	10.70	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,332.00	42.40	345.50	10,290.87	90.92	88.05	-33.26	12.51	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,363.00	46.20	345.20	10,313.06	112.31	108.99	-38.74	12.28	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,395.00	49.90	344.10	10,334.44	135.76	131.94	-45.04	11.84	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,426.00	53.60	342.50	10,353.63	159.65	155.25	-52.04	12.60	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,458.00	57.60	342.20	10,371.71	185.48	180.40	-60.05	12.52	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,489.00	61.40	343.40	10,387.44	211.65	205.91	-67.94	12.70	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,521.00	65.60	343.80	10,401.72	239.79	233.38	-76.02	13.17	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,552.00	69.80	344.30	10,413.48	268.01	260.95	-83.90	13.63	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,584.00	74.40	344.60	10,423.31	298.00	290.28	-92.06	14.40	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,615.00	79.00	344.80	10,430.44	327.74	319.37	-100.02	14.85	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,644.00	83.10	344.80	10,434.95	355.99	347.01	-107.53	14.14	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,672.00	87.50	346.00	10,437.24	383.55	374.01	-114.56	16.28	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,703.00	89.50	346.40	10,438.05	414.23	404.10	-121.95	6.58	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,735.00	90.10	346.60	10,438.17	445.94	435.22	-129.42	1.98	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,830.00	91.00	349.60	10,437.25	540.37	528.16	-149.01	3.30	MWD	LEAM DRILLING SYSTEMS
9/7/2014	10,924.00	90.20	351.49	10,436.27	634.15	620.87	-164.45	2.18	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,019.00	91.80	352.20	10,434.61	729.05	714.90	-177.92	1.84	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,114.00	90.70	353.10	10,432.54	823.99	809.09	-190.07	1.50	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,209.00	91.90	353.90	10,430.38	918.95	903.45	-200.82	1.52	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,304.00	90.30	354.60	10,428.56	1,013.93	997.95	-210.34	1.84	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,398.00	91.00	355.50	10,427.49	1,107.91	1,091.60	-218.45	1.21	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,493.00	91.90	356.40	10,425.09	1,202.84	1,186.33	-225.16	1.34	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,588.00	91.90	357.30	10,421.94	1,297.69	1,281.13	-230.37	0.95	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,683.00	90.90	356.80	10,419.62	1,392.55	1,375.97	-235.26	1.18	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,778.00	89.30	356.90	10,419.45	1,487.45	1,470.83	-240.48	1.69	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,873.00	89.30	355.90	10,420.61	1,582.38	1,565.63	-246.44	1.05	MWD	LEAM DRILLING SYSTEMS
9/7/2014	11,967.00	89.20	353.90	10,421.84	1,676.36	1,659.25	-254.80	2.13	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,062.00	90.00	354.50	10,422.51	1,771.36	1,753.76	-264.40	1.05	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,157.00	91.70	355.40	10,421.10	1,866.34	1,848.37	-272.76	2.02	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,251.00	91.40	354.60	10,418.56	1,960.30	1,941.98	-280.95	0.91	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,346.00	90.20	354.10	10,417.23	2,055.29	2,036.51	-290.30	1.37	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,440.00	91.30	354.60	10,416.00	2,149.28	2,130.04	-299.56	1.29	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,535.00	92.20	355.00	10,413.10	2,244.23	2,224.60	-308.16	1.04	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,630.00	90.70	354.80	10,410.69	2,339.19	2,319.20	-316.60	1.59	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,724.00	91.30	355.70	10,409.05	2,433.16	2,412.86	-324.39	1.15	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,819.00	89.40	355.90	10,408.47	2,528.12	2,507.60	-331.34	2.01	MWD	LEAM DRILLING SYSTEMS
9/7/2014	12,914.00	90.10	356.40	10,408.89	2,623.07	2,602.38	-337.72	0.91	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,009.00	91.00	356.90	10,407.98	2,717.98	2,697.21	-343.27	1.08	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,104.00	89.70	357.10	10,407.39	2,812.87	2,792.08	-348.25	1.38	MWD	LEAM DRILLING SYSTEMS



Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location Sec. 7 T23S R32E	API/UWI 3002541884	Latitude (") 32° 19' 32.659" N	Longitude (") 103° 42' 21.166" W	Ground Elev... 3,550.40	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,575.40	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
9/7/2014	13,199.00	90.80	357.30	10,406.98	2,907.75	2,886.96	-352.89	1.18	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,294.00	90.10	357.30	10,406.23	3,002.61	2,981.85	-357.36	0.74	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,389.00	89.30	356.60	10,406.73	3,097.51	3,076.72	-362.42	1.12	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,484.00	90.40	357.10	10,406.98	3,192.41	3,171.57	-367.64	1.27	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,579.00	89.40	357.10	10,407.15	3,287.29	3,266.45	-372.44	1.05	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,674.00	90.10	356.40	10,407.56	3,382.20	3,361.29	-377.83	1.04	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,769.00	89.80	355.90	10,407.64	3,477.15	3,456.08	-384.21	0.61	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,864.00	89.80	355.50	10,407.98	3,572.13	3,550.81	-391.33	0.42	MWD	LEAM DRILLING SYSTEMS
9/7/2014	13,959.00	89.90	356.60	10,408.22	3,667.08	3,645.58	-397.87	1.16	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,054.00	90.40	357.60	10,407.98	3,761.96	3,740.46	-402.68	1.18	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,148.00	89.20	356.60	10,408.30	3,855.85	3,834.33	-407.43	1.66	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,243.00	89.80	355.40	10,409.13	3,950.80	3,929.10	-414.06	1.41	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,338.00	88.70	354.60	10,410.38	4,045.78	4,023.73	-422.34	1.43	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,433.00	88.50	355.20	10,412.70	4,140.75	4,118.32	-430.78	0.67	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,527.00	89.30	354.10	10,414.50	4,234.72	4,211.89	-439.55	1.45	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,622.00	90.40	354.50	10,414.75	4,329.72	4,306.42	-448.98	1.23	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,716.00	90.80	355.00	10,413.77	4,423.71	4,400.02	-457.58	0.68	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,811.00	89.90	354.80	10,413.19	4,518.71	4,494.64	-466.03	0.97	MWD	LEAM DRILLING SYSTEMS
9/7/2014	14,906.00	90.00	355.40	10,413.27	4,613.70	4,589.29	-474.14	0.64	MWD	LEAM DRILLING SYSTEMS
9/7/2014	15,000.00	90.20	355.40	10,413.10	4,707.68	4,682.99	-481.68	0.21	MWD	LEAM DRILLING SYSTEMS
9/7/2014	15,095.00	89.30	355.90	10,413.52	4,802.65	4,777.71	-488.88	1.08	MWD	LEAM DRILLING SYSTEMS
9/17/2014	15,189.00	89.30	356.10	10,414.67	4,896.60	4,871.48	-495.44	0.21	MWD	LEAM DRILLING SYSTEMS
9/17/2014	15,284.00	89.00	355.90	10,416.08	4,991.55	4,966.24	-502.07	0.38	MWD	LEAM DRILLING SYSTEMS
9/17/2014	15,379.00	90.70	356.40	10,416.33	5,086.49	5,061.02	-508.45	1.87	MWD	LEAM DRILLING SYSTEMS
9/17/2014	15,445.00	90.70	356.40	10,415.52	5,152.44	5,126.88	-512.59	0.00	BIT	LEAM DRILLING SYSTEMS