

Results of Directional Survey

API number:	30-025-41806		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	BILBREY 33 FEDERAL COM # 3H

surface	ULSTR:	J	33	T 21S	R 32E
				2600 FSL	1350 FEL ✓

BH Loc	ULSTR:	B	28	T 21S	R 32E
18031	MD	10635.1	TVD	331 FNL	1926 FEL ✓
				4949 FSL	1926 FEL

Top Perf/OH	ULSTR:	J	33	T 21S	R 32E
10900	MD	10611.6	TVD	3107 FSL	1707 FEL

Bot Perf/OH	ULSTR:	B	28	T 21S	R 32E
17949	MD	10635.4	TVD	402 FNL	1920 FEL
				4878 FSL	1920 FEL

	MD	N/S	E/W	VD
	10782.00	395.15	-357.74	10573.33
TOP PERFS/OH	10900.00	506.77	-357.48	10611.57
	10814.00	425.42	-357.67	10583.70
	17898.00	7496.28	-566.36	10635.52
BOT PERFS/OH	17949.00	7557.92	-569.92	10635.43
	17981.00	7596.60	-572.15	10635.37

NEXT TO LAST	17981.00	7596.60	-572.15	10635.37
LAST READING	18031.00	7628.90	-576.24	10635.11
TD	18031.00	7628.90	-576.24	10635.11

Surface Location	2600	FS	1350	FE
Projected BHL	10229	FS	1926	FE
Location of				
Top Perfs/OH	3107	FS	1707	FE
Bottom Perfs/OH	10158	FS	1920	FE

SUMMARY of Subsurface Locations

Surface Location	J-33-21S-32E	2600	FS	1350	FE	Vert. Depth
Top Perfs/OH	J-33-21S-32E	3107	FS	1707	FE	10611.57
Bottom Perfs/OH	B-28-21S-32E	10158	FS	1920	FE	10635.43
Projected TD	B-28-21S-32E	10229	FS	1926	FE	10635.11

FEB 03 2015

HOBBSOCD

JAN 05 2015

RECEIVED



August 12, 2014

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

Attn: David Cook

Re: **Bilbrey 33 Fed Com 3H**

Please find enclosed a copy of the survey from 0.00' to 4644.00' 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,

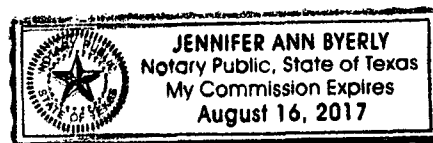
A handwritten signature in black ink, appearing to read "Keith Havelka".

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 12 day of August
A.D., 2014, by Keith Havelka.

A handwritten signature in black ink, appearing to read "Jennifer Ann Byerly".
Jennifer Ann Byerly
Notary Public, State of Texas





Company: DEVON ENERGY
Lease/Well: BILBREY 33 FED COM/3H

Rig Name: H&P 394
State/County: NEW MEXICO/LEA
Latitude: 32.44, Longitude: -103.68
GRID North is 0.35 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : R.K.B=25FT

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: bilbrey 33 fed com 3h .ut

Minimum Curvature Method

Report Date/Time: 8/12/2014 / 14:17

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada

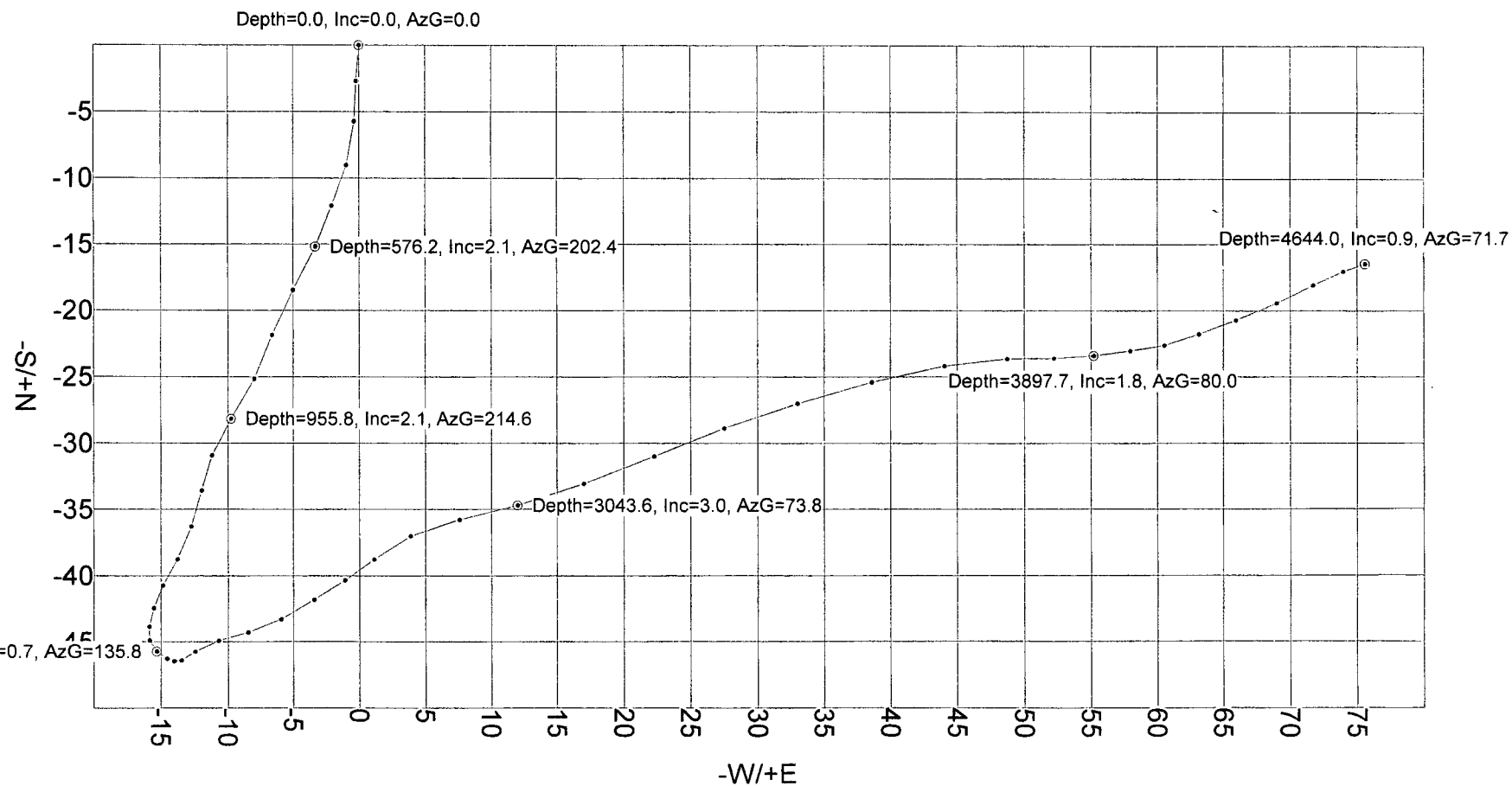
Bilbrey 33 Fed Com 3H / API 30-025-41806

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	****
196.60	1.58	185.02	196.58	-2.69	-0.24	-2.69	2.70	185.02	0.80
291.50	2.10	181.04	291.43	-5.73	-0.38	-5.73	5.75	183.82	0.57
386.40	2.00	199.42	386.27	-9.04	-0.97	-9.04	9.09	186.10	0.70
481.30	1.91	200.85	481.11	-12.08	-2.08	-12.08	12.25	189.77	0.11
576.20	2.10	202.41	575.95	-15.16	-3.30	-15.16	15.52	192.29	0.21
671.10	2.40	212.10	670.78	-18.45	-5.02	-18.45	19.12	195.23	0.51
766.00	2.19	197.40	765.60	-21.86	-6.62	-21.86	22.84	196.84	0.65
860.90	2.12	207.04	860.44	-25.16	-7.96	-25.16	26.38	197.56	0.39
955.80	2.11	214.58	955.27	-28.16	-9.75	-28.16	29.80	199.10	0.29
1050.70	1.69	198.89	1050.12	-30.92	-11.19	-30.92	32.88	199.90	0.70
1145.60	1.64	194.12	1144.98	-33.56	-11.97	-33.56	35.63	199.64	0.16
1240.50	1.77	196.48	1239.84	-36.28	-12.72	-36.28	38.44	199.32	0.16
1335.40	1.51	211.19	1334.70	-38.75	-13.79	-38.75	41.13	199.58	0.52
1430.30	1.21	204.98	1429.57	-40.73	-14.86	-40.73	43.36	200.04	0.35
1525.20	1.00	197.59	1524.46	-42.43	-15.53	-42.43	45.19	200.10	0.26
1620.10	0.74	189.00	1619.35	-43.83	-15.88	-43.83	46.62	199.91	0.30
1715.00	0.52	164.42	1714.24	-44.86	-15.86	-44.86	47.58	199.47	0.36
1809.90	0.73	135.79	1809.13	-45.72	-15.32	-45.72	48.21	198.53	0.39

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
1904.80	0.44	111.65	1904.03	-46.28	-14.56	-46.28	48.52	197.46	0.40
1999.70	0.23	104.38	1998.93	-46.47	-14.03	-46.47	48.54	196.81	0.22
2094.60	0.45	73.35	2093.83	-46.41	-13.49	-46.41	48.33	196.21	0.29
2189.50	1.08	50.86	2188.72	-45.74	-12.44	-45.74	47.40	195.22	0.72
2284.40	1.30	75.18	2283.60	-44.90	-10.71	-44.90	46.16	193.42	0.57
2379.30	1.52	74.54	2378.47	-44.29	-8.46	-44.29	45.09	190.81	0.24
2474.20	1.76	63.44	2473.33	-43.30	-5.94	-43.30	43.71	187.82	0.42
2569.10	1.78	55.15	2568.19	-41.81	-3.43	-41.81	41.95	184.69	0.27
2664.00	1.55	60.88	2663.05	-40.34	-1.10	-40.34	40.36	181.57	0.30
2758.90	1.75	49.01	2757.91	-38.77	1.11	-38.77	38.79	178.37	0.42
2853.80	2.26	64.00	2852.75	-37.00	3.88	-37.00	37.20	174.01	0.77
2948.70	2.52	78.75	2947.57	-35.77	7.62	-35.77	36.57	167.98	0.70
3043.60	2.96	73.85	3042.36	-34.68	12.02	-34.68	36.71	160.89	0.52
3138.50	3.38	69.98	3137.11	-33.05	17.00	-33.05	37.16	152.78	0.50
3233.40	3.45	67.31	3231.84	-30.98	22.26	-30.98	38.15	144.30	0.18
3328.30	3.40	68.84	3326.57	-28.87	27.52	-28.87	39.88	136.37	0.11
3423.20	3.60	73.67	3421.30	-27.02	33.00	-27.02	42.65	129.31	0.38
3518.10	3.44	74.03	3516.02	-25.40	38.59	-25.40	46.20	123.35	0.16
3613.00	3.32	80.86	3610.75	-24.18	44.05	-24.18	50.25	118.76	0.44
3707.90	2.37	87.10	3705.54	-23.64	48.72	-23.64	54.15	115.88	1.06
3802.80	1.84	92.24	3800.37	-23.60	52.20	-23.60	57.29	114.33	0.59
3897.70	1.80	79.97	3895.22	-23.40	55.20	-23.40	59.95	112.97	0.41
3992.60	1.56	85.72	3990.08	-23.04	57.95	-23.04	62.37	111.68	0.31
4087.50	1.59	75.40	4084.95	-22.62	60.52	-22.62	64.61	110.49	0.30
4182.40	1.73	68.64	4179.81	-21.76	63.13	-21.76	66.78	109.02	0.25
4277.30	1.89	70.00	4274.66	-20.70	65.94	-20.70	69.11	107.43	0.18
4372.20	2.15	64.78	4369.50	-19.41	69.02	-19.41	71.70	105.71	0.33
4467.10	1.49	61.46	4464.35	-18.06	71.71	-18.06	73.95	104.14	0.70
4562.00	1.50	69.35	4559.22	-17.04	73.96	-17.04	75.90	102.97	0.22
4644.00	0.92	71.69	4641.20	-16.45	75.59	-16.45	77.36	102.28	0.72



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Bilbrey 33 Fed Com 3H / API 30-025-41806





September 18, 2014

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

Attn: David Cook

Re: **Bilbrey 33 Federal Com 3H**

Please find enclosed a copy of the survey from 4644' to 6606' 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,

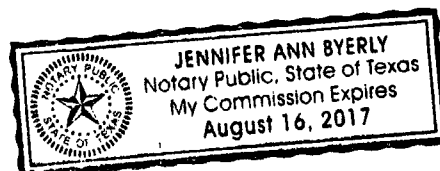
A handwritten signature in black ink, appearing to read "Keith Havelka", written over the word "Sincerely,".

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 18 day of September A.D., 2014, by Keith Havelka.

A handwritten signature in black ink, appearing to read "Jennifer Ann Byerly", written over the printed name and title.
Jennifer Ann Byerly
Notary Public, State of Texas





Company: DEVON ENERGY
Lease/Well: BILBREY 33 FED COM/3H

Rig Name: H&P 394
State/County: NEW MEXICO/LEA
Latitude: 32.44, Longitude: -103.68
GRID North is 0.35 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : R.K.B=25FT

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: bilbrey 33 fed com 3h_mrg.ut

Minimum Curvature Method

Report Date/Time: 9/18/2014 / 10:45

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada/Tim Dillon

Bilbrey 33 Fed Com 3H / API 30-025-41806

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	****
196.60	1.58	185.02	196.58	-2.69	-0.24	-2.69	2.70	185.02	0.80
291.50	2.10	181.04	291.43	-5.73	-0.38	-5.73	5.75	183.82	0.57
386.40	2.00	199.42	386.27	-9.04	-0.97	-9.04	9.09	186.10	0.70
481.30	1.91	200.85	481.11	-12.08	-2.08	-12.08	12.25	189.77	0.11
576.20	2.10	202.41	575.95	-15.16	-3.30	-15.16	15.52	192.29	0.21
671.10	2.40	212.10	670.78	-18.45	-5.02	-18.45	19.12	195.23	0.51
766.00	2.19	197.40	765.60	-21.86	-6.62	-21.86	22.84	196.84	0.65
860.90	2.12	207.04	860.44	-25.16	-7.96	-25.16	26.38	197.56	0.39
955.80	2.11	214.58	955.27	-28.16	-9.75	-28.16	29.80	199.10	0.29
1050.70	1.69	198.89	1050.12	-30.92	-11.19	-30.92	32.88	199.90	0.70
1145.60	1.64	194.12	1144.98	-33.56	-11.97	-33.56	35.63	199.64	0.16
1240.50	1.77	196.48	1239.84	-36.28	-12.72	-36.28	38.44	199.32	0.16
1335.40	1.51	211.19	1334.70	-38.75	-13.79	-38.75	41.13	199.58	0.52
1430.30	1.21	204.98	1429.57	-40.73	-14.86	-40.73	43.36	200.04	0.35
1525.20	1.00	197.59	1524.46	-42.43	-15.53	-42.43	45.19	200.10	0.26
1620.10	0.74	189.00	1619.35	-43.83	-15.88	-43.83	46.62	199.91	0.30
1715.00	0.52	164.42	1714.24	-44.86	-15.86	-44.86	47.58	199.47	0.36
1809.90	0.73	135.79	1809.13	-45.72	-15.32	-45.72	48.21	198.53	0.39

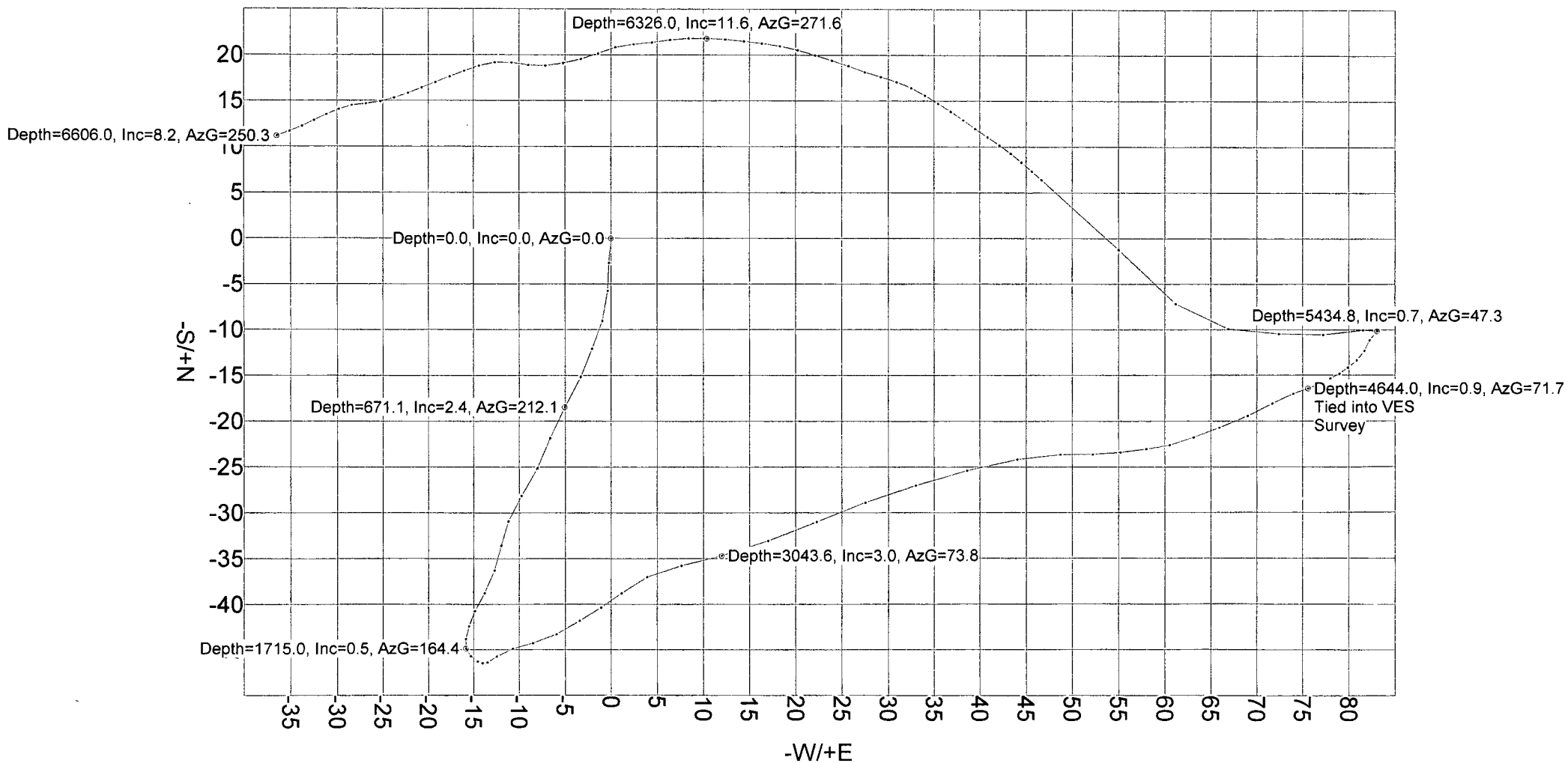
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1904.80	0.44	111.65	1904.03	-46.28	-14.56	-46.28	48.52	197.46	0.40
1999.70	0.23	104.38	1998.93	-46.47	-14.03	-46.47	48.54	196.81	0.22
2094.60	0.45	73.35	2093.83	-46.41	-13.49	-46.41	48.33	196.21	0.29
2189.50	1.08	50.86	2188.72	-45.74	-12.44	-45.74	47.40	195.22	0.72
2284.40	1.30	75.18	2283.60	-44.90	-10.71	-44.90	46.16	193.42	0.57
2379.30	1.52	74.54	2378.47	-44.29	-8.46	-44.29	45.09	190.81	0.24
2474.20	1.76	63.44	2473.33	-43.30	-5.94	-43.30	43.71	187.82	0.42
2569.10	1.78	55.15	2568.19	-41.81	-3.43	-41.81	41.95	184.69	0.27
2664.00	1.55	60.88	2663.05	-40.34	-1.10	-40.34	40.36	181.57	0.30
2758.90	1.75	49.01	2757.91	-38.77	1.11	-38.77	38.79	178.37	0.42
2853.80	2.26	64.00	2852.75	-37.00	3.88	-37.00	37.20	174.01	0.77
2948.70	2.52	78.75	2947.57	-35.77	7.62	-35.77	36.57	167.98	0.70
3043.60	2.96	73.85	3042.36	-34.68	12.02	-34.68	36.71	160.89	0.52
3138.50	3.38	69.98	3137.11	-33.05	17.00	-33.05	37.16	152.78	0.50
3233.40	3.45	67.31	3231.84	-30.98	22.26	-30.98	38.15	144.30	0.18
3328.30	3.40	68.84	3326.57	-28.87	27.52	-28.87	39.88	136.37	0.11
3423.20	3.60	73.67	3421.30	-27.02	33.00	-27.02	42.65	129.31	0.38
3518.10	3.44	74.03	3516.02	-25.40	38.59	-25.40	46.20	123.35	0.16
3613.00	3.32	80.86	3610.75	-24.18	44.05	-24.18	50.25	118.76	0.44
3707.90	2.37	87.10	3705.54	-23.64	48.72	-23.64	54.15	115.88	1.06
3802.80	1.84	92.24	3800.37	-23.60	52.20	-23.60	57.29	114.33	0.59
3897.70	1.80	79.97	3895.22	-23.40	55.20	-23.40	59.95	112.97	0.41
3992.60	1.56	85.72	3990.08	-23.04	57.95	-23.04	62.37	111.68	0.31
4087.50	1.59	75.40	4084.95	-22.62	60.52	-22.62	64.61	110.49	0.30
4182.40	1.73	68.64	4179.81	-21.76	63.13	-21.76	66.78	109.02	0.25
4277.30	1.89	70.00	4274.66	-20.70	65.94	-20.70	69.11	107.43	0.18
4372.20	2.15	64.78	4369.50	-19.41	69.02	-19.41	71.70	105.71	0.33
4467.10	1.49	61.46	4464.35	-18.06	71.71	-18.06	73.95	104.14	0.70
4562.00	1.50	69.35	4559.22	-17.04	73.96	-17.04	75.90	102.97	0.22
Tied into VES Survey									
4644.00	0.92	71.69	4641.20	-16.45	75.59	-16.45	77.36	102.28	0.72
4773.56	0.56	63.80	4770.75	-15.84	77.14	-15.84	78.75	101.61	0.29
4868.02	0.66	57.45	4865.21	-15.35	78.01	-15.35	79.51	101.13	0.13
4962.48	0.70	62.94	4959.66	-14.79	78.98	-14.79	80.36	100.61	0.08
5056.94	0.63	42.99	5054.11	-14.15	79.85	-14.15	81.09	100.05	0.25
5151.40	0.90	55.01	5148.56	-13.35	80.81	-13.35	81.91	99.38	0.33
5245.86	0.80	22.02	5243.01	-12.31	81.67	-12.31	82.59	98.57	0.52

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
5340.32	0.82	31.68	5337.47	-11.13	82.27	-11.13	83.02	97.70	0.14
5434.78	0.75	47.35	5431.92	-10.14	83.07	-10.14	83.69	96.96	0.24
5529.24	2.46	261.03	5526.35	-10.04	81.52	-10.04	82.14	97.02	3.29
5623.70	2.80	265.13	5620.71	-10.55	77.22	-10.55	77.93	97.78	0.41
5718.16	3.07	276.43	5715.05	-10.46	72.40	-10.46	73.15	98.22	0.67
5812.62	3.60	275.16	5809.35	-9.91	66.93	-9.91	67.66	98.42	0.57
5907.08	4.56	311.34	5903.58	-7.16	61.15	-7.16	61.57	96.68	2.85
6001.54	5.81	316.14	5997.66	-1.24	55.02	-1.24	55.03	91.29	1.40
6096.00	7.97	310.01	6091.43	6.42	46.69	6.42	47.13	82.17	2.41
6106.00	8.40	311.08	6101.33	7.34	45.61	7.34	46.20	80.85	4.57
6116.00	8.59	311.15	6111.22	8.32	44.50	8.32	45.27	79.42	1.98
6126.00	8.64	308.35	6121.11	9.27	43.35	9.27	44.33	77.93	4.22
6136.00	8.98	305.55	6130.99	10.19	42.12	10.19	43.34	76.40	5.50
6146.00	9.25	302.64	6140.86	11.08	40.81	11.08	42.29	74.81	5.33
6156.00	9.22	305.92	6150.73	11.98	39.49	11.98	41.26	73.12	5.26
6166.00	9.34	305.66	6160.60	12.93	38.18	12.93	40.31	71.29	1.27
6176.00	9.42	303.39	6170.47	13.85	36.83	13.85	39.35	69.39	3.79
6186.00	9.64	300.64	6180.33	14.73	35.43	14.73	38.37	67.43	5.07
6196.00	9.80	302.26	6190.19	15.61	33.99	15.61	37.40	65.33	3.17
6206.00	9.94	294.92	6200.04	16.43	32.49	16.43	36.41	63.18	12.65
6216.00	10.09	290.59	6209.89	17.10	30.89	17.10	35.30	61.03	7.67
6226.00	10.32	283.79	6219.73	17.62	29.20	17.62	34.10	58.89	12.27
6236.00	10.75	290.40	6229.56	18.16	27.45	18.16	32.91	56.51	12.80
6246.00	10.77	290.63	6239.38	18.81	25.70	18.81	31.85	53.80	0.47
6256.00	11.06	286.56	6249.20	19.42	23.91	19.42	30.80	50.92	8.23
6266.00	11.20	287.72	6259.01	19.99	22.07	19.99	29.77	47.83	2.67
6276.00	11.36	286.47	6268.82	20.56	20.20	20.56	28.82	44.49	2.91
6286.00	11.35	278.73	6278.63	20.99	18.28	20.99	27.83	41.05	15.22
6296.00	11.23	277.43	6288.43	21.26	16.34	21.26	26.82	37.54	2.79
6306.00	11.29	276.80	6298.24	21.51	14.40	21.51	25.88	33.81	1.33
6316.00	11.71	274.43	6308.04	21.70	12.42	21.70	25.00	29.78	6.34
6326.00	11.60	271.62	6317.83	21.81	10.40	21.81	24.16	25.50	5.77
6336.00	11.58	268.78	6327.63	21.81	8.39	21.81	23.37	21.05	5.73
6346.00	11.53	261.90	6337.43	21.65	6.40	21.65	22.58	16.47	13.77
6356.00	11.50	261.73	6347.23	21.37	4.43	21.37	21.82	11.70	0.47
6366.00	11.68	266.49	6357.02	21.16	2.43	21.16	21.30	6.55	9.73
6376.00	11.45	254.30	6366.82	20.83	0.46	20.83	20.84	1.27	24.50
6386.00	11.40	247.81	6376.62	20.19	-1.41	20.19	20.24	356.01	12.87
6396.00	11.40	255.67	6386.43	19.57	-3.28	19.57	19.84	350.48	15.54
6406.00	11.26	257.55	6396.23	19.12	-5.19	19.12	19.81	344.80	3.94

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
6416.00	11.09	265.89	6406.04	18.84	-7.11	18.84	20.13	339.33	16.23
6426.00	10.84	278.68	6415.86	18.91	-8.99	18.91	20.94	334.56	24.42
6436.00	10.59	277.17	6425.69	19.17	-10.84	19.17	22.02	330.52	3.78
6446.00	10.48	264.16	6435.52	19.19	-12.65	19.19	22.99	326.60	23.76
6456.00	10.19	251.56	6445.36	18.82	-14.40	18.82	23.69	322.58	22.74
6466.00	9.92	249.92	6455.21	18.24	-16.04	18.24	24.29	318.67	3.95
6476.00	9.64	248.45	6465.06	17.64	-17.63	17.64	24.94	315.01	3.77
6486.00	9.62	248.45	6474.92	17.02	-19.19	17.02	25.65	311.58	0.19
6496.00	9.37	248.80	6484.78	16.42	-20.72	16.42	26.44	308.40	2.57
6506.00	9.30	249.17	6494.65	15.84	-22.24	15.84	27.30	305.47	0.90
6516.00	9.22	252.34	6504.52	15.31	-23.76	15.31	28.26	302.80	5.16
6526.00	8.91	257.73	6514.40	14.90	-25.28	14.90	29.34	300.53	9.06
6536.00	9.58	265.85	6524.27	14.68	-26.86	14.68	30.61	298.65	14.64
6546.00	8.58	260.22	6534.14	14.49	-28.43	14.49	31.91	297.01	13.37
6556.00	8.54	247.53	6544.03	14.08	-29.85	14.08	33.00	295.26	18.86
6566.00	8.27	245.42	6553.92	13.50	-31.19	13.50	33.98	293.40	4.12
6576.00	8.33	244.10	6563.82	12.88	-32.49	12.88	34.95	291.63	1.99
6586.00	8.27	244.25	6573.71	12.25	-33.79	12.25	35.95	289.93	0.63
6596.00	8.33	249.07	6583.61	11.68	-35.12	11.68	37.01	288.40	6.98
6606.00	8.22	250.27	6593.50	11.18	-36.47	11.18	38.14	287.05	2.03



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada/Tim Dillon
Bilbrey 33 Fed Com 3H / API 30-025-41806





Directional Survey

District DELAWARE BASIN	County LEA	Field Name JOHNSON RANCH	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 33 T21S R32E	API/UWI 3002541806	Latitude (°) 32° 26' 5.969" N	Longitude (°) 103° 40' 30.298" W	Ground Elev... 3,729.60
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,754.60
				Tubing Head Elevation (ft)

Wellbores

Wellbore Name OH	Parent Wellbore OH	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (°) 357.55
Actual Deviation Survey GYRO/MWD, Proposed? No	Definitive? No	Proposed? No	Proposed Deviation Survey	

Deviation Survey

Date 8/1/2014		Description GYRO/MWD				
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
8/16/2014				0.00	0.00	0.00	0.00	0.00	MWD	LEAM DRILLING SYSTEMS
8/1/2014	196.60	1.58	185.02	196.58	-2.69	-2.70	-0.24	0.80	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	291.50	2.10	181.04	291.43	-5.72	-5.74	-0.38	0.56	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	386.40	2.00	199.42	386.27	-8.99	-9.04	-0.97	0.70	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	481.30	1.91	200.85	481.11	-11.98	-12.08	-2.08	0.11	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	576.20	2.10	202.41	575.95	-15.01	-15.17	-3.30	0.21	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	671.10	2.40	212.10	670.78	-18.23	-18.46	-5.02	0.51	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	766.00	2.19	197.40	765.60	-21.57	-21.87	-6.62	0.66	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	860.90	2.12	207.04	860.44	-24.80	-25.17	-7.96	0.39	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	955.80	2.11	214.58	955.27	-27.72	-28.17	-9.75	0.29	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,050.70	1.69	198.89	1,050.12	-30.42	-30.93	-11.20	0.70	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,145.60	1.64	194.12	1,144.98	-33.03	-33.57	-11.98	0.16	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,240.50	1.77	196.48	1,239.84	-35.72	-36.29	-12.73	0.16	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,335.40	1.51	211.19	1,334.70	-38.14	-38.77	-13.79	0.52	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,430.30	1.21	204.98	1,429.57	-40.07	-40.75	-14.86	0.35	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,525.20	1.00	197.59	1,524.46	-41.74	-42.44	-15.53	0.27	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,620.10	0.74	189.00	1,619.35	-43.12	-43.84	-15.88	0.31	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,715.00	0.52	164.42	1,714.24	-44.14	-44.86	-15.86	0.36	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,809.90	0.73	135.79	1,809.13	-45.01	-45.71	-15.32	0.39	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,904.80	0.44	111.65	1,904.03	-45.61	-46.27	-14.56	0.39	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	1,999.70	0.23	104.38	1,998.93	-45.81	-46.46	-14.04	0.23	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,094.60	0.45	73.35	2,093.83	-45.78	-46.40	-13.50	0.29	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,189.50	1.08	50.86	2,188.72	-45.15	-45.73	-12.45	0.72	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,284.40	1.30	75.18	2,283.60	-44.39	-44.89	-10.71	0.57	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,379.30	1.52	74.54	2,378.47	-43.87	-44.27	-8.46	0.23	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,474.20	1.76	63.44	2,473.33	-42.99	-43.29	-5.94	0.42	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,569.10	1.78	55.15	2,568.18	-41.61	-41.79	-3.43	0.27	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,664.00	1.55	60.88	2,663.04	-40.24	-40.33	-1.10	0.30	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,758.90	1.75	49.01	2,757.91	-38.76	-38.75	1.12	0.42	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,853.80	2.26	64.00	2,852.75	-37.11	-36.98	3.89	0.77	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	2,948.70	2.52	78.75	2,947.57	-36.05	-35.75	7.62	0.70	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,043.60	2.96	73.85	3,042.36	-35.15	-34.66	12.02	0.52	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,138.50	3.38	69.98	3,137.11	-33.72	-33.03	17.00	0.50	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,233.40	3.45	67.31	3,231.84	-31.89	-30.97	22.26	0.18	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,328.30	3.40	68.84	3,326.57	-30.00	-28.85	27.52	0.11	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,423.20	3.60	73.67	3,421.30	-28.38	-27.00	33.01	0.38	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,518.10	3.44	74.03	3,516.02	-27.00	-25.37	38.60	0.17	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,613.00	3.32	80.86	3,610.75	-26.02	-24.15	44.05	0.44	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,707.90	2.37	87.10	3,705.54	-25.68	-23.62	48.73	1.05	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,802.80	1.84	92.24	3,800.37	-25.79	-23.58	52.21	0.59	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,897.70	1.80	79.97	3,895.22	-25.72	-23.38	55.20	0.41	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	3,992.60	1.56	85.72	3,990.08	-25.48	-23.02	57.95	0.31	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	4,087.50	1.59	75.40	4,084.95	-25.16	-22.59	60.52	0.30	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	4,182.40	1.73	68.64	4,179.81	-24.42	-21.74	63.12	0.25	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	4,277.30	1.89	70.00	4,274.66	-23.48	-20.68	65.93	0.17	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	4,372.20	2.15	64.78	4,369.50	-22.32	-19.39	69.01	0.34	GYRO	VAUHGN ENERGY SERVICES
8/1/2014	4,467.10	1.49	61.46	4,464.35	-21.09	-18.04	71.70	0.70	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 Sec. 33 T21S R32E	API/UWI 3002541806	Latitude (") 32° 26' 5.969" N	Longitude (") 103° 40' 30.298" W	Ground Elev... 3,729.60
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,754.60
				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
8/1/2014	4,562.00	1.50	69.35	4,559.22	-20.16	-17.01	73.95	0.22	GYRO	VAUHG ENERGY SERVICES
8/1/2014	4,644.00	0.92	71.69	4,641.20	-19.65	-16.43	75.58	0.71	GYRO	VAUHG ENERGY SERVICES
8/1/2014	4,780.00	0.70	47.70	4,777.19	-18.81	-15.53	77.23	0.29	MWD	LEAM DRILLING SYSTEMS
8/1/2014	4,875.00	0.80	60.50	4,872.18	-18.14	-14.81	78.24	0.20	MWD	LEAM DRILLING SYSTEMS
8/1/2014	4,969.00	0.80	56.50	4,966.17	-17.50	-14.12	79.36	0.06	MWD	LEAM DRILLING SYSTEMS
8/1/2014	5,064.00	0.60	47.00	5,061.16	-16.84	-13.42	80.27	0.24	MWD	LEAM DRILLING SYSTEMS
8/1/2014	5,158.00	1.00	48.60	5,155.16	-16.00	-12.54	81.25	0.43	MWD	LEAM DRILLING SYSTEMS
8/1/2014	5,253.00	0.70	56.30	5,250.14	-15.18	-11.67	82.35	0.34	MWD	LEAM DRILLING SYSTEMS
8/4/2014	5,347.00	0.70	56.70	5,344.14	-14.59	-11.04	83.31	0.01	MWD	LEAM DRILLING SYSTEMS
8/4/2014	5,442.00	0.90	51.40	5,439.13	-13.85	-10.25	84.38	0.22	MWD	LEAM DRILLING SYSTEMS
8/4/2014	5,536.00	1.50	299.80	5,533.12	-12.76	-9.18	83.89	2.14	MWD	LEAM DRILLING SYSTEMS
8/4/2014	5,631.00	2.80	259.30	5,628.05	-12.43	-8.99	80.53	2.03	MWD	LEAM DRILLING SYSTEMS
8/4/2014	5,725.00	2.90	262.30	5,721.94	-12.98	-9.74	75.92	0.19	MWD	LEAM DRILLING SYSTEMS
8/5/2014	5,820.00	3.40	298.90	5,816.80	-11.73	-8.70	71.07	2.14	MWD	LEAM DRILLING SYSTEMS
8/5/2014	5,915.00	4.00	311.90	5,911.60	-7.95	-5.13	66.14	1.08	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,009.00	5.40	317.00	6,005.29	-2.29	0.30	60.68	1.55	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,104.00	6.80	319.80	6,099.75	5.55	7.86	54.00	1.51	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,199.00	8.70	306.60	6,193.88	14.52	16.45	44.60	2.73	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,293.00	10.10	290.40	6,286.63	22.21	23.56	31.16	3.17	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,388.00	11.80	276.00	6,379.92	26.87	27.48	13.69	3.38	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,482.00	10.90	255.80	6,472.12	26.47	26.30	-4.49	4.31	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,577.00	9.10	250.20	6,565.67	22.40	21.55	-20.27	2.15	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,671.00	8.00	253.40	6,658.63	18.59	17.17	-33.53	1.27	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,766.00	7.00	259.30	6,752.81	16.14	14.20	-45.56	1.33	MWD	LEAM DRILLING SYSTEMS
8/5/2014	6,861.00	6.80	260.90	6,847.12	14.66	12.24	-56.80	0.29	MWD	LEAM DRILLING SYSTEMS
8/6/2014	6,955.00	6.60	259.50	6,940.48	13.26	10.38	-67.60	0.27	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,050.00	6.60	260.40	7,034.85	11.81	8.47	-78.36	0.11	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,144.00	6.30	260.40	7,128.26	10.50	6.71	-88.77	0.32	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,238.00	6.20	258.80	7,221.70	9.08	4.86	-98.83	0.21	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,333.00	6.20	259.00	7,316.14	7.54	2.89	-108.90	0.02	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,428.00	5.90	258.50	7,410.61	6.01	0.94	-118.72	0.32	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,523.00	6.00	255.30	7,505.10	4.19	-1.30	-128.31	0.36	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,617.00	5.50	255.10	7,598.63	2.17	-3.70	-137.41	0.53	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,712.00	5.10	259.30	7,693.22	0.59	-5.66	-145.96	0.59	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,807.00	4.70	261.80	7,787.88	-0.41	-7.00	-153.96	0.48	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,901.00	4.90	259.20	7,881.55	-1.38	-8.30	-161.72	0.31	MWD	LEAM DRILLING SYSTEMS
8/6/2014	7,996.00	6.10	251.30	7,976.11	-3.38	-10.68	-170.48	1.49	MWD	LEAM DRILLING SYSTEMS
8/6/2014	8,091.00	7.30	255.60	8,070.46	-6.04	-13.80	-181.11	1.37	MWD	LEAM DRILLING SYSTEMS
8/6/2014	8,185.00	7.80	258.10	8,163.64	-8.33	-16.60	-193.14	0.64	MWD	LEAM DRILLING SYSTEMS
8/6/2014	8,280.00	7.40	269.20	8,257.81	-9.21	-18.01	-205.56	1.60	MWD	LEAM DRILLING SYSTEMS
8/8/2014	8,351.00	7.00	270.90	8,328.25	-8.82	-18.01	-214.46	0.64	MWD	LEAM DRILLING SYSTEMS
8/8/2014	8,445.00	6.10	267.60	8,421.64	-8.48	-18.13	-225.18	1.04	MWD	LEAM DRILLING SYSTEMS
8/8/2014	8,540.00	5.70	265.80	8,516.14	-8.62	-18.68	-234.93	0.46	MWD	LEAM DRILLING SYSTEMS
8/8/2014	8,635.00	6.10	271.30	8,610.63	-8.44	-18.91	-244.68	0.73	MWD	LEAM DRILLING SYSTEMS
8/8/2014	8,730.00	5.90	272.70	8,705.11	-7.67	-18.57	-254.60	0.26	MWD	LEAM DRILLING SYSTEMS
8/8/2014	8,825.00	5.50	269.40	8,799.64	-7.08	-18.39	-264.03	0.54	MWD	LEAM DRILLING SYSTEMS
8/8/2014	8,919.00	4.80	273.60	8,893.26	-6.52	-18.19	-272.46	0.85	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,014.00	4.60	273.40	8,987.95	-5.72	-17.71	-280.23	0.21	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,109.00	3.80	273.20	9,082.69	-5.02	-17.31	-287.18	0.84	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,203.00	4.70	283.10	9,176.43	-3.68	-16.26	-294.04	1.23	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,297.00	4.20	283.80	9,270.15	-1.68	-14.57	-301.13	0.54	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,392.00	3.60	281.80	9,364.93	0.02	-13.13	-307.43	0.65	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,487.00	4.00	273.90	9,459.72	1.12	-12.30	-313.66	0.69	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,581.00	3.70	268.10	9,553.51	1.52	-12.17	-319.96	0.52	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,676.00	3.50	255.30	9,648.32	0.93	-13.01	-325.83	0.87	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. 33 T21S R32E	API/UWI 3002541806	Latitude (°) 32° 26' 5.969" N	Longitude (°) 103° 40' 30.298" W	Ground Elev. ... 3,729.60
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,754.60
				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
8/8/2014	9,770.00	3.70	259.90	9,742.14	-0.08	-14.27	-331.59	0.37	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,865.00	3.30	263.60	9,836.96	-0.68	-15.11	-337.32	0.48	MWD	LEAM DRILLING SYSTEMS
8/8/2014	9,960.00	3.30	249.70	9,931.80	-1.71	-16.37	-342.60	0.84	MWD	LEAM DRILLING SYSTEMS
8/11/2014	9,980.00	3.30	246.90	9,951.77	-2.09	-16.79	-343.67	0.81	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,027.00	2.90	264.80	9,998.70	-2.62	-17.43	-346.10	2.22	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,059.00	5.00	296.10	10,030.63	-1.99	-16.89	-348.16	9.18	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,090.00	7.20	312.80	10,061.45	0.03	-14.98	-350.80	9.05	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,122.00	10.60	326.00	10,093.07	3.97	-11.17	-353.92	12.33	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,153.00	13.20	336.50	10,123.40	9.70	-5.56	-356.93	10.88	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,184.00	16.20	343.00	10,153.38	17.19	1.82	-359.60	11.03	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,216.00	18.90	349.20	10,183.89	26.65	11.19	-361.88	10.25	MWD	LEAM DRILLING SYSTEMS
8/11/2014	10,247.00	22.10	352.90	10,212.93	37.43	21.91	-363.54	11.13	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,279.00	25.80	355.50	10,242.17	50.39	34.83	-364.83	12.02	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,310.00	28.50	356.00	10,269.75	64.53	48.93	-365.88	8.74	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,342.00	31.20	358.10	10,297.50	80.45	64.84	-366.68	9.05	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,373.00	31.90	358.70	10,323.92	96.67	81.05	-367.14	2.47	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,405.00	35.00	1.30	10,350.62	114.29	98.68	-367.12	10.67	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,436.00	37.90	2.00	10,375.55	132.66	117.09	-366.59	9.45	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,468.00	40.70	2.90	10,400.31	152.85	137.34	-365.72	8.93	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,499.00	43.50	1.70	10,423.31	173.56	158.10	-364.89	9.40	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,531.00	47.30	1.30	10,445.78	196.28	180.88	-364.29	11.91	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,562.00	51.10	1.70	10,466.03	219.69	204.33	-363.68	12.30	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,594.00	53.60	2.70	10,485.57	244.94	229.64	-362.70	8.19	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,625.00	57.00	2.00	10,503.22	270.33	255.11	-361.66	11.12	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,657.00	59.80	2.40	10,519.99	297.50	282.34	-360.61	8.81	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,688.00	62.10	2.90	10,535.04	324.49	309.41	-359.36	7.55	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,720.00	64.60	1.30	10,549.39	352.99	337.99	-358.31	9.00	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,751.00	67.30	0.30	10,562.02	381.25	366.29	-357.92	9.19	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,782.00	69.90	0.40	10,573.33	410.08	395.15	-357.74	8.39	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,814.00	72.30	359.90	10,583.70	440.32	425.42	-357.67	7.64	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,845.00	75.10	359.90	10,592.40	470.05	455.17	-357.72	9.03	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,877.00	77.50	359.20	10,599.98	501.11	486.26	-357.96	7.80	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,908.00	81.10	359.90	10,605.73	531.55	516.71	-358.20	11.82	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,940.00	84.30	359.00	10,609.80	563.27	548.45	-358.51	10.38	MWD	LEAM DRILLING SYSTEMS
8/12/2014	10,971.00	86.30	358.30	10,612.34	594.16	579.33	-359.24	6.83	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,003.00	89.40	357.60	10,613.54	626.13	611.29	-360.38	9.93	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,088.00	93.30	357.60	10,611.53	711.09	696.17	-363.94	4.59	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,182.00	92.50	356.90	10,606.78	804.97	789.94	-368.44	1.13	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,277.00	91.40	355.90	10,603.55	899.89	884.70	-374.40	1.56	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,371.00	89.30	355.90	10,602.97	993.85	978.45	-381.12	2.23	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,466.00	89.90	356.40	10,603.64	1,088.81	1,073.23	-387.50	0.82	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,560.00	90.40	356.60	10,603.39	1,182.80	1,167.05	-393.24	0.57	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,655.00	89.30	356.20	10,603.64	1,277.78	1,261.87	-399.21	1.23	MWD	LEAM DRILLING SYSTEMS
8/12/2014	11,749.00	90.90	356.90	10,603.47	1,371.76	1,355.69	-404.86	1.86	MWD	LEAM DRILLING SYSTEMS
8/15/2014	11,844.00	88.80	355.30	10,603.72	1,466.72	1,450.46	-411.32	2.78	MWD	LEAM DRILLING SYSTEMS
8/15/2014	11,934.00	89.20	356.00	10,605.29	1,556.66	1,540.19	-418.15	0.90	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,033.00	89.40	356.60	10,606.50	1,655.62	1,638.97	-424.54	0.64	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,127.00	90.10	356.40	10,606.91	1,749.61	1,732.80	-430.27	0.77	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,222.00	90.60	357.30	10,606.33	1,844.60	1,827.65	-435.49	1.08	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,316.00	90.70	357.30	10,605.27	1,938.59	1,921.54	-439.92	0.11	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,411.00	90.90	357.60	10,603.94	2,033.58	2,016.44	-444.15	0.38	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,505.00	90.90	358.30	10,602.46	2,127.57	2,110.36	-447.51	0.74	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,599.00	90.20	358.50	10,601.56	2,221.55	2,204.32	-450.14	0.77	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,694.00	90.90	359.20	10,600.65	2,316.52	2,299.30	-452.04	1.04	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,788.00	90.20	359.40	10,599.75	2,410.47	2,393.29	-453.19	0.77	MWD	LEAM DRILLING SYSTEMS



BILBREY 33 FED COM 3H

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. 33 T21S R32E	API/UWI 3002541806	Latitude (") 32° 26' 5.969" N	Longitude (") 103° 40' 30.298" W	Ground Elev... 3,729.60
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,754.60
				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
8/15/2014	12,882.00	89.70	0.30	10,599.83	2,504.39	2,487.28	-453.44	1.10	MWD	LEAM DRILLING SYSTEMS
8/15/2014	12,977.00	90.00	0.60	10,600.08	2,599.27	2,582.28	-452.69	0.45	MWD	LEAM DRILLING SYSTEMS
8/15/2014	13,071.00	89.80	0.40	10,600.24	2,693.15	2,676.28	-451.87	0.30	MWD	LEAM DRILLING SYSTEMS
8/15/2014	13,165.00	90.20	0.60	10,600.24	2,787.02	2,770.27	-451.05	0.48	MWD	LEAM DRILLING SYSTEMS
8/16/2014	13,260.00	90.20	0.60	10,599.91	2,881.89	2,865.27	-450.05	0.00	MWD	LEAM DRILLING SYSTEMS
8/16/2014	13,357.00	89.90	358.80	10,599.83	2,978.82	2,962.26	-450.56	1.88	MWD	LEAM DRILLING SYSTEMS
8/16/2014	13,451.00	91.80	358.50	10,598.43	3,072.78	3,056.22	-452.78	2.05	MWD	LEAM DRILLING SYSTEMS
8/19/2014	13,545.00	92.20	358.00	10,595.15	3,166.72	3,150.12	-455.65	0.68	MWD	LEAM DRILLING SYSTEMS
8/19/2014	13,640.00	91.40	356.60	10,592.17	3,261.67	3,244.96	-460.12	1.70	MWD	LEAM DRILLING SYSTEMS
8/19/2014	13,734.00	89.90	354.80	10,591.10	3,355.61	3,338.69	-467.17	2.49	MWD	LEAM DRILLING SYSTEMS
8/19/2014	13,828.00	90.80	356.60	10,590.53	3,449.55	3,432.42	-474.21	2.14	MWD	LEAM DRILLING SYSTEMS
8/20/2014	13,923.00	90.00	356.70	10,589.86	3,544.54	3,527.25	-479.76	0.85	MWD	LEAM DRILLING SYSTEMS
8/20/2014	14,017.00	89.10	357.30	10,590.60	3,638.53	3,621.12	-484.68	1.15	MWD	LEAM DRILLING SYSTEMS
8/20/2014	14,112.00	88.60	357.80	10,592.51	3,733.51	3,716.01	-488.74	0.74	MWD	LEAM DRILLING SYSTEMS
8/20/2014	14,206.00	89.30	358.30	10,594.23	3,827.49	3,809.94	-491.94	0.92	MWD	LEAM DRILLING SYSTEMS
8/20/2014	14,301.00	89.50	358.00	10,595.22	3,922.48	3,904.89	-495.01	0.38	MWD	LEAM DRILLING SYSTEMS
8/20/2014	14,395.00	90.70	356.00	10,595.06	4,016.47	3,998.75	-499.93	2.48	MWD	LEAM DRILLING SYSTEMS
8/20/2014	14,490.00	91.50	357.40	10,593.24	4,111.43	4,093.57	-505.40	1.70	MWD	LEAM DRILLING SYSTEMS
8/20/2014	14,584.00	91.50	356.90	10,590.78	4,205.40	4,187.42	-510.07	0.53	MWD	LEAM DRILLING SYSTEMS
8/21/2014	14,679.00	89.40	356.70	10,590.03	4,300.38	4,282.27	-515.37	2.22	MWD	LEAM DRILLING SYSTEMS
8/21/2014	14,773.00	88.00	356.20	10,592.16	4,394.34	4,376.06	-521.19	1.58	MWD	LEAM DRILLING SYSTEMS
8/21/2014	14,868.00	87.40	356.40	10,595.98	4,489.24	4,470.78	-527.31	0.67	MWD	LEAM DRILLING SYSTEMS
8/24/2014	14,974.00	86.80	356.90	10,601.34	4,595.09	4,576.47	-533.50	0.74	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,068.00	87.10	358.00	10,606.34	4,688.95	4,670.24	-537.68	1.21	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,163.00	87.10	358.50	10,611.15	4,783.83	4,765.07	-540.57	0.53	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,257.00	87.30	359.20	10,615.74	4,877.69	4,858.94	-542.46	0.77	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,352.00	87.80	0.30	10,619.80	4,972.53	4,953.85	-542.87	1.27	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,446.00	87.30	0.80	10,623.82	5,066.31	5,047.76	-541.97	0.75	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,541.00	87.10	2.00	10,628.46	5,160.99	5,142.62	-539.65	1.28	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,635.00	88.10	1.50	10,632.39	5,254.65	5,236.49	-536.79	1.19	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,729.00	88.90	2.20	10,634.86	5,348.35	5,330.41	-533.75	1.13	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,824.00	90.30	2.50	10,635.52	5,443.01	5,425.32	-529.86	1.51	MWD	LEAM DRILLING SYSTEMS
8/24/2014	15,918.00	90.40	2.90	10,634.94	5,536.63	5,519.22	-525.43	0.44	MWD	LEAM DRILLING SYSTEMS
8/24/2014	16,013.00	90.00	3.10	10,634.61	5,631.20	5,614.09	-520.46	0.47	MWD	LEAM DRILLING SYSTEMS
8/25/2014	16,107.00	89.00	2.20	10,635.43	5,724.82	5,707.98	-516.11	1.43	MWD	LEAM DRILLING SYSTEMS
8/25/2014	16,296.00	90.30	2.90	10,636.59	5,913.10	5,896.78	-507.70	0.78	MWD	LEAM DRILLING SYSTEMS
8/26/2014	16,390.00	90.90	0.60	10,635.60	6,006.83	5,990.73	-504.83	2.53	MWD	LEAM DRILLING SYSTEMS
8/26/2014	16,485.00	90.20	0.60	10,634.69	6,101.69	6,085.72	-503.84	0.74	MWD	LEAM DRILLING SYSTEMS
8/26/2014	16,579.00	89.40	359.70	10,635.02	6,195.59	6,179.71	-503.59	1.28	MWD	LEAM DRILLING SYSTEMS
8/26/2014	16,673.00	88.40	358.30	10,636.82	6,289.54	6,273.68	-505.23	1.83	MWD	LEAM DRILLING SYSTEMS
8/26/2014	16,767.00	87.80	358.00	10,639.94	6,383.48	6,367.58	-508.26	0.71	MWD	LEAM DRILLING SYSTEMS
8/26/2014	16,862.00	86.60	358.50	10,644.58	6,478.36	6,462.42	-511.16	1.37	MWD	LEAM DRILLING SYSTEMS
8/27/2014	16,956.00	87.50	356.90	10,649.42	6,572.23	6,556.21	-514.93	1.95	MWD	LEAM DRILLING SYSTEMS
8/27/2014	17,050.00	88.40	357.30	10,652.78	6,666.17	6,650.03	-519.68	1.05	MWD	LEAM DRILLING SYSTEMS
8/27/2014	17,145.00	88.90	357.10	10,655.02	6,761.14	6,744.89	-524.32	0.57	MWD	LEAM DRILLING SYSTEMS
8/31/2014	17,237.00	89.70	358.00	10,656.14	6,853.13	6,836.80	-528.25	1.31	MWD	LEAM DRILLING SYSTEMS
8/31/2014	17,331.00	91.00	356.40	10,655.57	6,947.12	6,930.68	-532.85	2.19	MWD	LEAM DRILLING SYSTEMS
8/31/2014	17,425.00	92.50	356.40	10,652.70	7,041.06	7,024.45	-538.74	1.60	MWD	LEAM DRILLING SYSTEMS
9/1/2014	17,519.00	92.00	357.30	10,649.01	7,134.98	7,118.23	-543.91	1.09	MWD	LEAM DRILLING SYSTEMS
9/1/2014	17,614.00	91.70	357.10	10,645.94	7,229.93	7,213.07	-548.54	0.38	MWD	LEAM DRILLING SYSTEMS
9/1/2014	17,709.00	93.30	356.60	10,641.80	7,324.82	7,307.83	-553.76	1.76	MWD	LEAM DRILLING SYSTEMS
9/1/2014	17,804.00	92.20	355.70	10,637.24	7,419.68	7,402.51	-560.13	1.50	MWD	LEAM DRILLING SYSTEMS
9/1/2014	17,898.00	89.90	356.70	10,635.52	7,513.64	7,496.28	-566.36	2.67	MWD	LEAM DRILLING SYSTEMS
9/1/2014	17,981.00	90.30	355.30	10,635.37	7,596.60	7,579.07	-572.15	1.75	MWD	LEAM DRILLING SYSTEMS
9/1/2014	18,031.00	90.30	355.30	10,635.11	7,646.56	7,628.90	-576.24	0.00	BIT	LEAM DRILLING SYSTEMS