



DIRECTIONAL, INC.

MARKSMEN DIRECTIONAL, INC.

OPERATOR: **ENDURING RESORUCES, LLC**
 WELL: **University 09 1806H**
 LOCATION: **Reagan Co., Texas**
 Rig: **Ensign 765**

START: **1/6/14**
 FINISH: **1/17/14**
 DIR. DRILLER **M Johnston/M Watson**
 CO. REP. **James Erickson**

TIE-IN SURVEY PROVIDED BY:

Comments: **Directional by Marksmen Directional**

DECLINATION (+E / -W): **1.16**
Grid Conv.

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

PROPOSED DIR.: **1.16**

*****Survey Input*****

Survey	No.	Measured Depth	INC	TRUE AZM	TVD	North + - South	East + - West	Vertical Section	DLS/ 100
Tie in		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GYRO		130.00	0.30	218.10	130.00	-0.27	-0.21	-0.27	0.23
GYRO		230.00	0.38	127.41	230.00	-0.68	-0.11	-0.68	0.49
GYRO		330.00	0.39	102.00	330.00	-0.95	0.49	-0.94	0.17
GYRO		430.00	0.25	55.94	429.99	-0.90	1.00	-0.88	0.28
GYRO		530.00	0.28	318.09	529.99	-0.59	1.02	-0.57	0.40
GYRO		612.00	0.58	277.01	611.99	-0.39	0.47	-0.38	0.50
1		785.0	0.60	166.70	784.99	-1.17	-0.19	-1.17	0.56
2		880.0	0.70	194.80	879.98	-2.21	-0.22	-2.22	0.35
3		974.0	0.70	154.20	973.97	-3.28	-0.12	-3.29	0.52
4		1078.0	0.40	141.50	1077.97	-4.14	0.38	-4.13	0.31
5		1162.0	0.40	119.00	1161.97	-4.51	0.82	-4.49	0.19
6		1256.0	1.20	72.80	1255.96	-4.38	2.05	-4.34	1.03
7		1350.0	2.20	56.30	1349.92	-3.09	4.49	-3.00	1.17
8		1444.0	2.60	57.20	1443.83	-0.93	7.79	-0.77	0.43
9		1538.0	2.80	48.60	1537.73	1.74	11.30	1.97	0.48
10		1632.0	2.70	50.50	1631.62	4.67	14.73	4.97	0.14
11		1726.0	2.60	48.60	1725.52	7.49	18.04	7.85	0.14
12		1820.0	2.90	42.70	1819.41	10.64	21.25	11.07	0.44
13		1914.0	2.90	42.90	1913.29	14.13	24.48	14.63	0.01
14		2008.0	2.60	47.50	2007.18	17.32	27.67	17.87	0.40
15		2102.0	3.20	47.50	2101.06	20.53	31.18	21.16	0.64
16		2197.0	3.00	44.20	2195.92	24.10	34.87	24.80	0.28
17		2291.0	2.70	46.10	2289.81	27.40	38.18	28.17	0.33
18		2385.0	2.70	51.20	2383.70	30.32	41.50	31.16	0.26
19		2479.0	2.60	46.40	2477.60	33.18	44.77	34.08	0.26
20		2573.0	2.70	46.40	2571.50	36.18	47.91	37.14	0.11
21		2667.0	2.70	46.80	2665.40	39.22	51.13	40.25	0.02
22		2761.0	2.60	50.50	2759.30	42.09	54.39	43.18	0.21
23		2855.0	2.70	47.50	2853.20	44.94	57.67	46.10	0.18
24		2949.0	2.90	52.40	2947.09	47.89	61.18	49.12	0.33
25		3043.0	2.60	32.90	3040.98	51.13	64.23	52.42	1.04
26		3137.0	2.50	17.30	3134.89	54.88	65.99	56.20	0.74
27		3232.0	2.60	19.90	3229.79	58.88	67.34	60.23	0.16
28		3326.0	1.10	10.10	3323.74	61.78	68.23	63.15	1.63
29		3420.0	1.00	8.50	3417.73	63.48	68.51	64.85	0.11
30		3514.0	0.70	354.10	3511.72	64.86	68.57	66.23	0.39
31		3608.0	1.00	32.40	3605.71	66.12	68.95	67.50	0.67
32		3702.0	0.90	5.10	3699.69	67.55	69.45	68.94	0.49
33		3797.0	0.30	277.40	3794.69	68.33	69.27	69.71	0.99
34		3891.0	0.90	256.50	3888.68	68.18	68.31	69.55	0.67
35		3985.0	0.50	239.80	3982.68	67.81	67.24	69.15	0.47
36		4079.0	0.80	233.80	4076.67	67.21	66.36	68.54	0.33
37		4173.0	1.00	230.50	4170.66	66.30	65.19	67.61	0.22
38		4267.0	1.00	230.00	4264.64	65.25	63.93	66.53	0.01
39		4361.0	1.00	228.90	4358.63	64.19	62.69	65.44	0.02
40		4455.0	0.70	209.90	4452.62	63.15	61.78	64.39	0.43
41		4549.0	0.80	226.10	4546.61	62.20	61.02	63.42	0.25
42		4643.0	0.90	198.10	4640.60	61.04	60.32	62.25	0.45
43		4737.0	0.70	189.00	4734.59	59.77	60.00	60.97	0.25
44		4831.0	0.60	189.40	4828.59	58.72	59.83	59.92	0.11
45		4925.0	0.50	222.40	4922.58	57.93	59.47	59.12	0.35
46		5020.0	0.90	215.90	5017.57	57.02	58.76	58.20	0.43
47		5114.0	0.50	187.20	5111.57	56.02	58.27	57.18	0.55
48		5208.0	1.00	148.60	5205.56	54.91	58.65	56.08	0.73
49		5302.0	1.00	142.40	5299.55	53.56	59.58	54.75	0.12
50		5396.0	1.10	87.60	5393.53	52.95	60.98	54.17	1.03
51		5490.0	1.30	64.90	5487.51	53.44	62.85	54.70	0.54
52		5584.0	0.70	49.40	5581.50	54.26	64.25	55.55	0.69

**MARKSMEN DIRECTIONAL, INC.**

OPERATOR: **ENDURING RESORUCES, LLC**
 WELL: **University 09 1806H**
 LOCATION: **Reagan Co., Texas**
 Rig: **Ensign 765**

START: **1/6/14**
 FINISH: **1/17/14**
 DIR. DRILLER **M Johnston/M Watson**
 CO. REP. **James Erickson**

TIE-IN SURVEY PROVIDED BY:

Comments: **Directional by Marksmen Directional**

DECLINATION (+E / -W): **1.16**
Grid Conv.

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

PROPOSED DIR.: **1.16**

*****Survey Input*****

Survey	No.	Measured Depth	INC	TRUE AZM	TVD	North + - South	East + - West	Vertical Section	DLS/ 100
53		5679.0	0.50	28.20	5676.49	55.01	64.88	56.31	0.31
54		5773.0	0.40	27.50	5770.49	55.66	65.23	56.97	0.11
55		5866.0	0.40	74.40	5863.49	56.03	65.69	57.35	0.34
56		5961.0	0.10	55.80	5958.49	56.17	66.08	57.50	0.32
57		6055.0	0.10	41.20	6052.49	56.28	66.20	57.61	0.03
56		6252.0	0.10	72.60	6249.49	56.46	66.48	57.79	0.03
57		6283.0	0.10	5.80	6280.49	56.49	66.51	57.83	0.36
58		6346.0	0.40	356.50	6343.49	56.77	66.50	58.10	0.48
59		6440.0	0.30	2.70	6437.48	57.34	66.49	58.67	0.11
60		6534.0	0.30	67.50	6531.48	57.68	66.73	59.02	0.34
61		6628.0	0.30	84.60	6625.48	57.80	67.20	59.15	0.09
62		6722.0	0.20	121.10	6719.48	57.74	67.59	59.09	0.19
63		6816.0	0.20	57.30	6813.48	57.74	67.87	59.10	0.22
64		6910.0	0.20	73.20	6907.48	57.88	68.16	59.24	0.06
65		7004.0	0.10	155.40	7001.48	57.85	68.35	59.22	0.22
66		7098.0	0.10	101.10	7095.48	57.76	68.47	59.13	0.10
67		7129.0	0.30	54.20	7126.48	57.80	68.56	59.18	0.78
68		7161.0	1.80	349.00	7158.47	58.34	68.53	59.72	5.30
69		7192.0	4.70	343.70	7189.42	60.04	68.08	61.41	9.39
70		7224.0	7.80	344.70	7221.23	63.39	67.14	64.74	9.69
71		7255.0	10.40	350.70	7251.83	68.19	66.13	69.51	8.92
72		7286.0	12.60	354.10	7282.21	74.31	65.33	75.62	7.42
73		7318.0	14.80	353.20	7313.30	81.84	64.49	83.13	6.91
74		7349.0	17.10	351.40	7343.10	90.28	63.34	91.54	7.59
75		7380.0	19.70	350.90	7372.51	99.95	61.83	101.18	8.40
76		7412.0	22.30	351.40	7402.39	111.28	60.07	112.47	8.14
77		7443.0	25.10	353.20	7430.77	123.63	58.41	124.78	9.33
78		7474.0	27.80	354.80	7458.52	137.36	56.98	138.48	9.01
79		7506.0	30.60	355.50	7486.45	152.91	55.66	154.01	8.81
80		7537.0	33.80	358.10	7512.68	169.40	54.76	170.47	11.25
81		7569.0	36.60	0.00	7538.83	187.84	54.46	188.90	9.39
82		7600.0	39.70	1.80	7563.21	206.98	54.77	208.05	10.62
83		7631.0	42.70	3.20	7586.53	227.38	55.67	228.46	10.12
84		7663.0	45.50	4.40	7609.51	249.59	57.15	250.70	9.13
85		7694.0	48.60	5.80	7630.63	272.19	59.18	273.33	10.53
86		7725.0	51.80	5.80	7650.47	295.88	61.58	297.07	10.32
87		7757.0	55.00	6.00	7669.55	321.43	64.22	322.67	10.01
88		7788.0	58.70	5.80	7686.49	347.25	66.89	348.53	11.95
89		7819.0	61.60	5.70	7701.92	374.00	69.58	375.33	9.36
90		7851.0	63.90	5.50	7716.57	402.31	72.36	403.69	7.21
91		7882.0	66.40	5.50	7729.60	430.30	75.06	431.74	8.06
92		7913.0	69.20	5.50	7741.31	458.87	77.81	460.35	9.03
93		7944.0	72.50	5.30	7751.48	488.02	80.56	489.55	10.66
94		7975.0	76.60	4.80	7759.74	517.78	83.19	519.36	13.32
95		8006.0	80.20	4.40	7765.97	548.04	85.62	549.66	11.68
96		8038.0	83.30	4.80	7770.56	579.61	88.16	581.27	9.77
97		8069.0	86.40	5.10	7773.34	610.36	90.83	612.08	10.05
98		8100.0	88.40	5.00	7774.75	641.21	93.55	642.97	6.46
99		8132.0	89.30	4.30	7775.39	673.10	96.15	674.90	3.56
100		8226.0	91.20	5.70	7774.98	766.73	104.34	768.69	2.51
101		8320.0	91.60	5.70	7772.68	860.24	113.67	862.36	0.43
102		8414.0	91.90	4.80	7769.81	953.80	122.27	956.08	1.01
103		8508.0	91.10	4.10	7767.35	1047.48	129.56	1049.89	1.13
104		8602.0	88.70	2.30	7767.52	1141.32	134.81	1143.82	3.19
105		8697.0	89.70	4.40	7768.84	1236.15	140.36	1238.73	2.45
106		8791.0	89.70	2.80	7769.33	1329.96	146.26	1332.64	1.70
107		8885.0	89.80	4.30	7769.75	1423.77	152.08	1426.56	1.60
108		8978.0	88.70	0.60	7770.96	1516.66	156.05	1519.51	4.15
109		9072.0	89.00	0.20	7772.85	1610.64	156.71	1613.48	0.53

**MARKSMEN DIRECTIONAL, INC.**

OPERATOR: **ENDURING RESORUCES, LLC**
 WELL: **University 09 1806H**
 LOCATION: **Reagan Co., Texas**
 Rig: **Ensign 765**

START: **1/6/14**FINISH: **1/17/14**DIR. DRILLER **M Johnston/M Watson**CO. REP. **James Erickson**

TIE-IN SURVEY PROVIDED BY:

Comments: **Directional by Marksmen Directional**DECLINATION (+E / -W): **1.16****Grid Conv.**

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

PROPOSED DIR.: **1.16**

*****Survey Input*****

Survey	No.	Measured Depth	INC	TRUE AZM	TVD	North + - South	East + - West	Vertical Section	DLS/ 100
110		9166.0	88.20	359.30	7775.15	1704.61	156.30	1707.42	1.28
111		9260.0	91.10	2.30	7775.72	1798.58	157.61	1801.40	4.44
112		9354.0	91.30	2.00	7773.75	1892.49	161.14	1895.37	0.38
113		9448.0	89.70	359.50	7772.93	1986.47	162.37	1989.35	3.16
114		9542.0	90.30	358.50	7772.93	2080.45	160.73	2083.28	1.24
115		9637.0	90.30	0.60	7772.43	2175.44	159.98	2178.24	2.21
116		9731.0	90.00	2.30	7772.19	2269.41	162.36	2272.23	1.84
117		9825.0	90.40	2.00	7771.86	2363.34	165.89	2366.22	0.53
118		9919.0	90.70	1.30	7770.96	2457.30	168.59	2460.21	0.81
119		10013.0	89.70	1.10	7770.63	2551.28	170.56	2554.21	1.08
120		10107.0	90.30	2.30	7770.63	2645.23	173.35	2648.20	1.43
121		10201.0	90.50	2.00	7769.97	2739.16	176.88	2742.18	0.38
122		10295.0	90.30	3.70	7769.32	2833.04	181.55	2836.14	1.82
123		10389.0	89.80	4.80	7769.23	2926.78	188.52	2930.00	1.29
124		10483.0	89.60	359.90	7769.73	3020.67	192.37	3023.95	5.22
125		10577.0	89.40	359.30	7770.55	3114.67	191.71	3117.91	0.67
126		10672.0	90.70	359.70	7770.46	3209.66	190.89	3212.87	1.43
127		10766.0	89.80	359.50	7770.05	3303.66	190.23	3306.83	0.98
128		10860.0	90.00	359.30	7770.22	3397.65	189.24	3400.79	0.30
129		10954.0	90.70	0.70	7769.64	3491.65	189.24	3494.76	1.67
130		11048.0	89.80	0.90	7769.23	3585.64	190.56	3588.76	0.98
131		11142.0	89.30	359.90	7769.97	3679.63	191.21	3682.75	1.19
132		11237.0	91.10	1.60	7769.64	3774.61	192.46	3777.73	2.61
133		11331.0	90.50	0.60	7768.33	3868.58	194.26	3871.72	1.24
134		11425.0	89.70	358.80	7768.16	3962.58	193.77	3965.69	2.10
135		11519.0	89.50	359.90	7768.82	4056.57	192.70	4059.64	1.19
136		11613.0	90.80	0.60	7768.57	4150.56	193.11	4153.62	1.57
137		11707.0	90.90	359.50	7767.18	4244.55	193.19	4247.59	1.17
138		11801.0	89.40	2.30	7766.93	4338.53	194.67	4341.58	3.38
139		11895.0	89.10	1.80	7768.16	4432.46	198.03	4435.56	0.62
140		11989.0	90.70	2.80	7768.33	4526.38	201.81	4529.54	2.01
141		12083.0	90.30	1.60	7767.51	4620.31	205.41	4623.52	1.35
142		12178.0	88.70	359.00	7768.34	4715.29	205.91	4718.49	3.21
143		12272.0	89.90	1.60	7769.49	4809.27	206.40	4812.46	3.05
144		12366.0	90.90	1.60	7768.83	4903.23	209.03	4906.46	1.06
145		12460.0	90.10	2.30	7768.01	4997.17	212.23	5000.44	1.13
146		12554.0	90.00	4.10	7767.93	5091.02	217.47	5094.38	1.92
147		12648.0	90.30	5.80	7767.68	5184.67	225.58	5188.17	1.84
148		12742.0	90.00	7.80	7767.43	5278.00	236.71	5281.71	2.15
149		12836.0	90.80	5.30	7766.78	5371.38	247.43	5375.28	2.79
150		12930.0	89.90	5.80	7766.20	5464.93	256.53	5469.01	1.10
151		13024.0	90.00	0.60	7766.29	5558.75	261.77	5562.91	5.53
152		13118.0	89.90	1.10	7766.37	5652.74	263.17	5656.91	0.54
153		13212.0	90.00	4.10	7766.45	5746.64	267.43	5750.87	3.19
154		13306.0	89.60	5.70	7766.78	5840.29	275.46	5844.67	1.75
155		13401.0	90.10	0.20	7767.03	5935.13	280.35	5939.58	5.81
156		13495.0	89.50	1.80	7767.36	6029.11	281.99	6033.58	1.82
157		13589.0	90.00	4.60	7767.77	6122.95	287.23	6127.51	3.03
158		13683.0	89.70	3.20	7768.01	6216.73	293.63	6221.40	1.52
159		13777.0	90.00	2.00	7768.26	6310.63	297.89	6315.37	1.32
160		13871.0	90.00	2.80	7768.26	6404.55	301.83	6409.34	0.85
161		13965.0	90.20	4.80	7768.09	6498.34	308.06	6503.24	2.14
162		14059.0	89.70	2.30	7768.18	6592.15	313.88	6597.15	2.71
163		14153.0	89.70	1.40	7768.67	6686.10	316.91	6691.14	0.96
164		14248.0	89.60	0.60	7769.25	6781.08	318.57	6786.14	0.85
165		14341.0	90.00	1.80	7769.57	6874.06	320.52	6879.14	1.36
166		14373.0	89.90	2.00	7769.60	6906.04	321.58	6911.13	0.70
TD		14561.0	89.90	2.00	7769.93	7093.92	328.14	7099.11	0.00