

DRILTECH MWD SURVEY REPORT



Company: EOG Resources, Inc.
Well: Endurance 36 State Com #701H
Location: Lea Co., NM
Rig: H&P 659

Job Number: DM-2016-049-EODT-NM
Vertical Section Plane: 354.36
Well API Number: 30-025-42984
Tie Into: Surface

HOBBS OCD

FEB 13 2017

RECEIVED

Calculation Method: Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
Tie In	Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	MWD	198.00	0.88	133.68	198	197.99	-1.15	1.05 S	1.10 E	1.52	133.68	0.44	0.44	67.52
2	MWD	288.00	0.70	122.78	90	287.98	-2.02	1.83 S	2.06 E	2.75	131.52	0.26	-0.20	-12.11
3	MWD	414.00	0.70	134.91	126	413.97	-3.09	2.79 S	3.25 E	4.28	130.56	0.12	0.00	9.63
4	MWD	507.00	0.18	300.50	93	506.97	-3.44	3.11 S	3.53 E	4.71	131.40	0.94	-0.56	178.05
5	MWD	693.00	1.23	321.41	186	692.96	-1.60	1.40 S	2.03 E	2.47	124.61	0.57	0.56	11.24
6	MWD	785.00	1.23	304.71	92	784.93	-0.13	0.07 S	0.61 E	0.61	96.53	0.39	0.00	-18.15
7	MWD	878.00	1.23	302.96	93	877.91	1.14	1.04 N	1.05 W	1.48	314.72	0.04	0.00	-1.88
8	MWD	971.00	1.06	310.16	93	970.89	2.38	2.14 N	2.55 W	3.33	310.03	0.24	-0.18	7.74
9	MWD	994.00	0.70	317.90	23	993.89	2.65	2.38 N	2.80 W	3.68	310.34	1.64	-1.57	33.65
10	MWD	1155.00	0.18	17.14	161	1154.89	3.67	3.35 N	3.39 W	4.77	314.69	0.39	-0.32	-186.81
11	MWD	1248.00	2.11	252.68	93	1247.87	3.46	2.98 N	4.98 W	5.81	300.92	2.38	2.08	253.27
12	MWD	1342.00	2.29	247.59	94	1341.80	2.57	1.75 N	8.37 W	8.55	281.82	0.28	0.19	-5.41
13	MWD	1436.00	3.87	249.34	94	1435.66	1.20	0.08 S	13.07 W	13.07	269.63	1.68	1.68	1.86
14	MWD	1529.00	4.57	242.49	93	1528.41	-0.99	2.90 S	19.30 W	19.51	261.45	0.93	0.75	-7.37
15	MWD	1622.00	5.10	243.19	93	1621.08	-3.86	6.48 S	26.27 W	27.06	256.15	0.57	0.57	0.75
16	MWD	1716.00	5.45	241.96	94	1714.68	-7.07	10.46 S	33.94 W	35.52	252.87	0.39	0.37	-1.31
17	MWD	1809.00	5.81	243.02	93	1807.23	-10.47	14.67 S	42.03 W	44.52	250.76	0.40	0.39	1.14
18	MWD	1902.00	5.63	244.60	93	1899.77	-13.73	18.77 S	50.35 W	53.73	249.56	0.26	-0.19	1.70
19	MWD	1995.00	6.69	249.17	93	1992.23	-16.69	22.65 S	59.53 W	63.70	249.17	1.25	1.14	4.91
20	MWD	2088.00	7.21	249.52	93	2084.54	-19.60	26.62 S	70.06 W	74.95	249.20	0.56	0.56	0.38
21	MWD	2183.00	7.39	251.45	95	2178.77	-22.49	30.65 S	81.44 W	87.02	249.38	0.32	0.19	2.03
22	MWD	2276.00	7.39	251.80	93	2271.00	-25.13	34.42 S	92.79 W	98.97	249.65	0.05	0.00	0.38
23	MWD	2370.00	7.39	250.40	94	2364.22	-27.90	38.33 S	104.23 W	111.06	249.81	0.19	0.00	-1.49
24	MWD	2463.00	7.39	250.93	93	2456.45	-30.74	42.29 S	115.52 W	123.02	249.89	0.07	0.00	0.57
25	MWD	2557.00	7.57	248.64	94	2549.65	-33.82	46.52 S	127.00 W	135.25	249.88	0.37	0.19	-2.44
26	MWD	2651.00	7.57	248.29	94	2642.83	-37.21	51.07 S	138.52 W	147.63	249.76	0.05	0.00	-0.37
27	MWD	2744.00	7.74	248.99	93	2735.00	-40.56	55.58 S	150.05 W	160.02	249.68	0.21	0.18	0.75
28	MWD	2931.00	7.57	251.63	187	2920.33	-46.62	63.98 S	173.50 W	184.92	249.76	0.21	-0.09	1.41
29	MWD	3025.00	7.39	251.28	94	3013.53	-49.35	67.87 S	185.10 W	197.15	249.86	0.20	-0.19	-0.37
30	MWD	3118.00	7.57	250.75	93	3105.74	-52.14	71.81 S	196.55 W	209.25	249.93	0.21	0.19	-0.57
31	MWD	3212.00	7.21	251.10	94	3198.96	-54.95	75.76 S	207.97 W	221.34	249.98	0.39	-0.38	0.37
32	MWD	3307.00	6.69	251.80	95	3293.26	-57.52	79.42 S	218.87 W	232.83	250.06	0.55	-0.55	0.74
33	MWD	3496.00	8.80	250.05	189	3480.53	-63.49	87.79 S	242.92 W	258.30	250.13	1.12	1.12	-0.93
34	MWD	3592.00	8.80	250.05	96	3575.40	-67.12	92.80 S	256.73 W	272.99	250.13	0.00	0.00	0.00
35	MWD	3686.00	8.62	250.22	94	3668.32	-70.62	97.64 S	270.11 W	287.22	250.13	0.19	-0.19	0.18
36	MWD	3781.00	7.74	250.75	95	3762.35	-73.87	102.16 S	282.85 W	300.74	250.14	0.93	-0.93	0.56
37	MWD	3876.00	6.86	251.45	95	3856.58	-76.64	106.07 S	294.27 W	312.81	250.18	0.93	-0.93	0.74
38	MWD	3971.00	6.86	249.17	95	3950.90	-79.39	109.89 S	304.95 W	324.15	250.18	0.29	0.00	-2.40
39	MWD	4066.00	7.04	248.99	95	4045.20	-82.42	114.00 S	315.69 W	335.64	250.14	0.19	0.19	-0.19
40	MWD	4159.00	5.98	251.28	93	4137.60	-85.03	117.60 S	325.60 W	346.19	250.14	1.17	-1.14	2.46
41	MWD	4347.00	8.09	234.23	188	4324.19	-93.89	128.48 S	345.61 W	368.72	249.61	1.57	1.12	-9.07
42	MWD	4441.00	7.74	233.70	94	4417.30	-100.44	136.09 S	356.08 W	381.20	249.08	0.38	-0.37	-0.56
43	MWD	4533.00	7.21	234.93	92	4508.51	-106.43	143.07 S	365.80 W	392.78	248.64	0.60	-0.58	1.34
44	MWD	4626.00	6.33	227.20	93	4600.87	-112.40	149.91 S	374.34 W	403.24	248.18	1.36	-0.95	-8.31
45	MWD	4720.00	5.81	228.43	94	4694.34	-118.32	156.59 S	381.70 W	412.57	247.69	0.57	-0.55	1.31
46	MWD	4814.00	6.51	230.71	94	4787.80	-124.06	163.12 S	389.38 W	422.17	247.27	0.79	0.74	2.43
47	MWD	4907.00	6.33	225.09	93	4880.21	-130.23	170.08 S	397.09 W	431.98	246.81	0.70	-0.19	-6.04
48	MWD	5001.00	7.39	223.50	94	4973.54	-137.46	178.12 S	404.93 W	442.37	246.26	1.15	1.13	-1.69
49	MWD	5095.00	7.04	226.32	94	5066.80	-144.97	186.49 S	413.25 W	453.38	245.71	0.53	-0.37	3.00
50	MWD	5189.00	7.04	229.30	94	5160.09	-151.83	194.22 S	421.79 W	464.35	245.28	0.39	0.00	3.17
51	MWD	5282.00	6.69	230.36	93	5252.42	-158.13	201.39 S	430.28 W	475.08	244.92	0.40	-0.38	1.14
52	MWD	5376.00	6.51	233.17	94	5345.80	-163.95	208.08 S	438.76 W	485.60	244.63	0.39	-0.19	2.99
53	MWD	5471.00	6.33	233.00	95	5440.20	-169.47	214.46 S	447.25 W	496.01	244.38	0.19	-0.19	-0.18
54	MWD	5558.00	6.51	233.70	87	5526.66	-174.48	220.27 S	455.06 W	505.56	244.17	0.23	0.21	0.80
55	MWD	5652.00	5.98	233.52	94	5620.10	-179.71	226.33 S	463.29 W	515.62	243.96	0.56	-0.56	-0.19
56	MWD	5839.00	7.39	254.44	187	5805.85	-186.77	235.35 S	482.71 W	537.03	244.01	1.49	0.75	11.19
57	MWD	5932.00	7.04	254.27	93	5898.11	-188.80	238.50 S	493.96 W	548.52	244.23	0.38	-0.38	-0.18
58	MWD	6026.00	7.04	254.09	94	5991.40	-190.84	241.64 S	505.04 W	559.87	244.43	0.02	0.00	-0.19
59	MWD	6119.00	6.69	249.17	93	6083.74	-193.27	245.13 S	515.59 W	570.89	244.57	0.74	-0.38	-5.29
60	MWD	6213.00	6.51	253.21	94	6177.12	-195.74	248.62 S	525.81 W	581.62	244.69	0.53	-0.19	4.30
61	MWD	6307.00	7.57	251.28	94	6270.41	-198.17	252.14 S	536.77 W	593.04	244.84	1.16	1.13	-2.05

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Job Number: DM-2016-049-EODT-NM
Vertical Section Plane: 354.36
Well API Number: 30-025-42984
Tie Into: Surface

Calculation Method: Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
62	MWD	6401.00	7.57	252.33	94	6363.59	-200.86	256.01 S	548.54 W	605.34	244.98	0.15	0.00	1.12
63	MWD	6494.00	7.21	250.22	93	6455.81	-203.56	259.84 S	559.86 W	617.23	245.10	0.48	-0.39	-2.27
64	MWD	6587.00	6.86	252.51	93	6548.11	-206.13	263.49 S	570.65 W	628.55	245.22	0.48	-0.38	2.46
65	MWD	6680.00	6.86	250.22	93	6640.45	-208.63	267.04 S	581.18 W	639.59	245.32	0.29	0.00	-2.46
66	MWD	6773.00	6.69	250.93	93	6732.80	-211.24	270.69 S	591.52 W	650.52	245.41	0.20	-0.18	0.76
67	MWD	6867.00	6.86	250.57	94	6826.14	-213.85	274.34 S	601.99 W	661.56	245.50	0.19	0.18	-0.38
68	MWD	6961.00	6.16	240.73	94	6919.54	-217.21	278.68 S	611.69 W	672.18	245.51	1.40	-0.74	-10.47
69	MWD	7054.00	5.81	233.88	93	7012.03	-221.60	283.89 S	619.84 W	681.76	245.39	0.85	-0.38	-7.37
70	MWD	7148.00	3.87	230.54	94	7105.69	-225.78	288.71 S	626.14 W	689.49	245.25	2.08	-2.06	-3.55
71	MWD	7241.00	2.64	223.86	93	7198.54	-228.92	292.25 S	630.04 W	694.52	245.12	1.38	-1.32	-7.18
72	MWD	7334.00	2.82	225.26	93	7291.44	-231.75	295.41 S	633.15 W	698.67	244.99	0.21	0.19	1.51
73	MWD	7427.00	2.64	224.21	93	7384.33	-234.57	298.55 S	636.27 W	702.83	244.86	0.20	-0.19	-1.13
74	MWD	7522.00	1.23	236.69	95	7479.27	-236.46	300.68 S	638.65 W	705.89	244.79	1.54	-1.48	13.14
75	MWD	7615.00	1.06	254.97	93	7572.26	-237.06	301.45 S	640.31 W	707.72	244.79	0.43	-0.18	19.66
76	MWD	7709.00	1.41	252.86	94	7666.23	-237.44	302.02 S	642.26 W	709.72	244.82	0.38	0.37	-2.24
77	MWD	7803.00	2.11	241.61	94	7760.19	-238.34	303.18 S	644.89 W	712.60	244.82	0.83	0.74	-11.97
78	MWD	7897.00	1.23	233.17	94	7854.15	-239.53	304.61 S	647.22 W	715.31	244.80	0.97	-0.94	-8.98
79	MWD	7990.00	0.53	143.88	93	7947.14	-240.41	305.55 S	647.76 W	716.21	244.75	1.43	-0.75	-96.01
80	MWD	8084.00	1.41	205.40	94	8041.13	-241.78	306.95 S	648.00 W	717.02	244.65	1.33	0.94	65.45
81	MWD	8178.00	1.06	233.17	94	8135.11	-243.22	308.52 S	649.19 W	718.77	244.58	0.73	-0.37	29.54
82	MWD	8272.00	1.23	230.36	94	8229.09	-244.24	309.68 S	650.67 W	720.60	244.55	0.19	0.18	-2.99
83	MWD	8366.00	1.23	206.63	94	8323.07	-245.65	311.23 S	651.89 W	722.38	244.48	0.54	0.00	-25.24
84	MWD	8461.00	1.23	195.73	95	8418.04	-247.46	313.12 S	652.63 W	723.86	244.37	0.25	0.00	-11.47
85	MWD	8555.00	0.88	106.79	94	8512.03	-248.68	314.30 S	652.21 W	723.99	244.27	1.59	-0.37	-94.62
86	MWD	8649.00	1.58	92.90	94	8606.01	-249.15	314.57 S	650.23 W	722.32	244.18	0.80	0.74	-14.78
87	MWD	8743.00	1.41	99.05	94	8699.98	-249.63	314.82 S	647.79 W	720.24	244.08	0.25	-0.18	6.54
88	MWD	8838.00	2.29	97.64	95	8794.93	-250.37	315.26 S	644.75 W	717.70	243.94	0.93	0.93	-1.48
89	MWD	8931.00	0.70	143.17	93	8887.90	-251.28	315.96 S	642.57 W	716.05	243.82	2.01	-1.71	48.96
90	MWD	9024.00	0.35	186.06	93	8980.89	-252.04	316.70 S	642.26 W	716.10	243.75	0.54	-0.38	46.12
91	MWD	9118.00	0.35	199.42	94	9074.89	-252.58	317.25 S	642.39 W	716.46	243.72	0.09	0.00	14.21
92	MWD	9213.00	0.35	184.48	95	9169.89	-253.13	317.81 S	642.51 W	716.81	243.68	0.10	0.00	-15.73
93	MWD	9306.00	0.70	194.32	93	9262.89	-253.95	318.65 S	642.67 W	717.33	243.63	0.39	0.38	10.58
94	MWD	9401.00	0.88	176.22	95	9357.88	-255.22	319.94 S	642.76 W	717.99	243.54	0.32	0.19	-19.05
95	MWD	9495.00	0.70	205.40	94	9451.87	-256.43	321.18 S	642.96 W	718.72	243.46	0.46	-0.19	31.04
96	MWD	9588.00	1.06	222.45	93	9544.86	-257.50	322.33 S	643.79 W	719.97	243.40	0.47	0.39	18.33
97	MWD	9681.00	1.06	216.47	93	9637.84	-258.71	323.65 S	644.88 W	721.54	243.35	0.12	0.00	-6.43
98	MWD	9775.00	1.06	238.09	94	9731.82	-259.74	324.81 S	646.13 W	723.18	243.31	0.42	0.00	23.00
99	MWD	9869.00	1.41	247.59	94	9825.80	-260.46	325.71 S	647.94 W	725.20	243.31	0.43	0.37	10.11
100	MWD	9963.00	1.76	244.77	94	9919.77	-261.27	326.77 S	650.32 W	727.80	243.32	0.38	0.37	-3.00
101	MWD	10057.00	1.94	250.57	94	10013.72	-262.14	327.91 S	653.12 W	730.82	243.34	0.28	0.19	6.17
102	MWD	10150.00	1.76	238.80	93	10106.67	-263.13	329.18 S	655.83 W	733.80	243.35	0.45	-0.19	-12.66
103	MWD	10244.00	1.41	249.17	94	10200.63	-264.05	330.33 S	658.14 W	736.39	243.35	0.48	-0.37	11.03
104	MWD	10337.00	1.94	255.50	93	10293.59	-264.60	331.14 S	660.74 W	739.07	243.38	0.60	0.57	6.81
105	MWD	10430.00	1.94	254.27	93	10386.54	-265.12	331.96 S	663.78 W	742.15	243.43	0.04	0.00	-1.32
106	MWD	10523.00	1.76	251.98	93	10479.49	-265.70	332.83 S	666.65 W	745.11	243.47	0.21	-0.19	-2.46
107	MWD	10616.00	2.29	263.23	93	10572.43	-266.04	333.49 S	669.85 W	748.28	243.53	0.71	0.57	12.10
108	MWD	10710.00	2.82	266.39	94	10666.34	-266.00	333.85 S	674.03 W	752.18	243.65	0.58	0.56	3.36
109	MWD	10803.00	2.64	278.00	93	10759.24	-265.41	333.70 S	678.43 W	756.06	243.81	0.62	-0.19	12.48
110	MWD	10896.00	2.64	276.41	93	10852.14	-264.46	333.16 S	682.68 W	759.64	243.99	0.08	0.00	-1.71
111	MWD	10989.00	2.99	283.27	93	10945.02	-263.22	332.37 S	687.17 W	763.33	244.19	0.52	0.38	7.38
112	MWD	11082.00	2.99	283.45	93	11037.90	-261.64	331.24 S	691.89 W	767.09	244.42	0.01	0.00	0.19
113	MWD	11146.00	2.64	284.85	64	11101.82	-260.58	330.48 S	694.94 W	769.51	244.57	0.56	-0.55	2.19
114	MWD	11282.00	1.76	278.35	136	11237.72	-258.98	329.37 S	700.03 W	773.65	244.80	0.67	-0.65	-4.78
115	MWD	11366.00	2.29	316.84	84	11321.67	-257.34	327.96 S	702.45 W	775.24	244.97	1.70	0.63	45.82
116	MWD	11459.00	2.29	330.55	93	11414.60	-254.16	324.99 S	704.64 W	775.97	245.24	0.59	0.00	14.74
117	MWD	11552.00	1.58	13.62	93	11507.55	-251.25	322.12 S	705.25 W	775.33	245.45	1.68	-0.76	-340.78
118	MWD	11646.00	1.58	357.98	94	11601.51	-248.74	319.57 S	704.99 W	774.04	245.62	0.46	0.00	366.34
119	MWD	11739.00	1.06	76.90	93	11694.49	-247.35	318.09 S	704.20 W	772.71	245.69	1.85	-0.56	-302.24
120	MWD	11833.00	0.88	71.45	94	11788.48	-247.07	317.67 S	702.67 W	771.14	245.67	0.21	-0.19	-5.80
121	MWD	11926.00	0.70	73.39	93	11881.47	-246.80	317.28 S	701.45 W	769.86	245.66	0.20	-0.19	2.09
122	MWD	12020.00	0.88	86.39	94	11975.46	-246.72	317.07 S	700.18 W	768.62	245.64	0.27	0.19	13.83
123	MWD	12113.00	0.88	68.11	93	12068.45	-246.55	316.76 S	698.80 W	767.24	245.62	0.30	0.00	-19.66
124	MWD	12207.00	3.17	7.12	94	12162.39	-243.81	313.91 S	697.81 W	765.16	245.78	3.03	2.44	-64.88
125	MWD	12255.00	8.45	359.73	48	12210.13	-239.00	309.06 S	697.66 W	763.05	246.11	11.09	11.00	734.60
126	MWD	12300.00	14.25	357.63	45	12254.23	-230.17	300.21 S	697.90 W	759.74	246.72	12.92	12.89	-4.67

DRILTECH MWD SURVEY REPORT



Company: EOG Resources, Inc.
 Well: Endurance 36 State Com #701H
 Location: Lea Co., NM
 Rig: H&P 659

Job Number: DM-2016-049-EODT-NM
 Vertical Section Plane: 354.36
 Well API Number: 30-025-42984
 Tie Into: Surface

Calculation Method: Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
127	MWD	12347.00	21.99	0.96	47	12298.87	-215.63	285.61 S	698.00 W	754.17	247.75	16.61	16.47	-758.87
128	MWD	12394.00	29.03	3.95	47	12341.26	-195.62	265.41 S	697.06 W	745.88	249.16	15.22	14.98	6.36
129	MWD	12441.00	36.25	5.01	47	12380.81	-170.69	240.16 S	695.06 W	735.38	250.94	15.41	15.36	2.26
130	MWD	12487.00	42.40	3.43	46	12416.38	-141.98	211.10 S	692.94 W	724.38	253.06	13.54	13.37	-3.43
131	MWD	12534.00	49.27	1.49	47	12449.11	-108.62	177.44 S	691.53 W	713.93	255.61	14.91	14.62	-4.13
132	MWD	12581.00	57.54	2.02	47	12477.10	-71.23	139.75 S	690.37 W	704.37	258.56	17.62	17.60	1.13
133	MWD	12628.00	62.29	2.02	47	12500.66	-30.94	99.12 S	688.93 W	696.03	261.81	10.11	10.11	0.00
134	MWD	12675.00	65.81	1.84	47	12521.22	10.95	56.89 S	687.51 W	689.86	265.27	7.50	7.49	-0.38
135	MWD	12722.00	68.27	1.32	47	12539.55	53.88	13.64 S	686.32 W	686.45	268.86	5.33	5.23	-1.11
136	MWD	12769.00	73.55	0.79	47	12554.92	97.98	30.76 N	685.50 W	686.19	272.57	11.28	11.23	-1.13
137	MWD	12816.00	79.00	2.02	47	12566.07	143.27	76.38 N	684.38 W	688.63	276.37	11.87	11.60	2.62
138	MWD	12862.00	81.64	2.02	46	12573.80	188.21	121.70 N	682.78 W	693.54	280.11	5.74	5.74	0.00
139	MWD	12909.00	83.75	0.79	47	12579.78	234.47	168.30 N	681.64 W	702.11	283.87	5.19	4.49	-2.62
140	MWD	12957.00	89.74	359.03	48	12582.50	282.15	216.20 N	681.72 W	715.18	287.60	13.00	12.48	746.33
141	MWD	13081.00	93.61	358.33	124	12578.88	405.72	340.08 N	684.57 W	764.39	296.42	3.17	3.12	-0.56
142	MWD	13175.00	92.73	0.61	94	12573.68	499.19	433.93 N	685.44 W	811.25	302.34	2.60	-0.94	-380.55
143	MWD	13270.00	90.62	2.02	95	12570.90	593.45	528.86 N	683.26 W	864.02	307.74	2.67	-2.22	1.48
144	MWD	13365.00	90.09	2.90	95	12570.31	687.49	623.77 N	679.18 W	922.16	312.56	1.08	-0.56	0.93
145	MWD	13459.00	91.14	3.25	94	12569.30	780.40	717.62 N	674.14 W	984.61	316.79	1.18	1.12	0.37
146	MWD	13553.00	90.26	1.84	94	12568.16	873.43	811.52 N	669.97 W	1052.34	320.46	1.77	-0.94	-1.50
147	MWD	13648.00	89.21	0.44	95	12568.60	967.77	906.50 N	668.08 W	1126.08	323.61	1.84	-1.11	-1.47
148	MWD	13741.00	89.38	0.96	93	12569.74	1060.19	999.48 N	666.94 W	1201.57	326.29	0.59	0.18	0.56
149	MWD	13836.00	89.91	1.84	95	12570.33	1154.47	1094.45 N	664.62 W	1280.45	328.73	1.08	0.56	0.93
150	MWD	13930.00	90.09	2.02	94	12570.33	1247.65	1188.40 N	661.45 W	1360.08	330.90	0.27	0.19	0.19
151	MWD	14024.00	88.68	1.14	94	12571.34	1340.90	1282.35 N	658.86 W	1441.71	332.81	1.77	-1.50	-0.94
152	MWD	14118.00	89.91	3.07	94	12572.49	1434.03	1376.28 N	655.41 W	1524.37	334.54	2.43	1.31	2.05
153	MWD	14212.00	89.03	1.32	94	12573.36	1527.14	1470.20 N	651.81 W	1608.21	336.09	2.08	-0.94	-1.86
154	MWD	14307.00	90.44	359.56	95	12573.80	1621.60	1565.19 N	651.08 W	1695.21	337.41	2.37	1.48	377.09
155	MWD	14401.00	90.44	359.73	94	12573.08	1715.20	1659.18 N	651.66 W	1782.57	338.56	0.18	0.00	0.18
156	MWD	14496.00	89.38	359.73	95	12573.23	1809.78	1754.18 N	652.11 W	1871.47	339.61	1.12	-1.12	0.00
157	MWD	14589.00	89.56	0.26	93	12574.09	1902.32	1847.18 N	652.12 W	1958.91	340.56	0.60	0.19	-386.53
158	MWD	14683.00	90.26	1.14	94	12574.24	1995.75	1941.17 N	650.97 W	2047.41	341.46	1.20	0.74	0.94
159	MWD	14777.00	88.68	358.33	94	12575.11	2089.32	2035.15 N	651.40 W	2136.86	342.25	3.43	-1.68	379.99
160	MWD	14872.00	90.26	359.03	95	12575.99	2184.04	2130.12 N	653.59 W	2228.14	342.94	1.82	1.66	0.74
161	MWD	14966.00	90.44	358.86	94	12575.41	2277.74	2224.10 N	655.32 W	2318.64	343.58	0.26	0.19	-0.18
162	MWD	15060.00	90.62	359.73	94	12574.54	2371.38	2318.09 N	656.48 W	2409.25	344.19	0.95	0.19	0.93
163	MWD	15154.00	88.15	358.15	94	12575.55	2465.07	2412.06 N	658.22 W	2500.25	344.74	3.12	-2.63	-1.68
164	MWD	15248.00	88.86	358.50	94	12578.00	2558.81	2505.98 N	660.96 W	2591.68	345.22	0.84	0.76	0.37
165	MWD	15342.00	88.15	356.75	94	12580.46	2652.62	2599.87 N	664.86 W	2683.53	345.66	2.01	-0.76	-1.86
166	MWD	15436.00	88.86	356.92	94	12582.91	2746.50	2693.69 N	670.05 W	2775.78	346.03	0.78	0.76	0.18
167	MWD	15529.00	89.21	357.10	93	12584.48	2839.39	2786.55 N	674.90 W	2867.12	346.39	0.42	0.38	0.19
168	MWD	15622.00	89.21	356.57	93	12585.76	2932.29	2879.40 N	680.03 W	2958.61	346.71	0.57	0.00	-0.57
169	MWD	15716.00	90.26	356.92	94	12586.19	3026.21	2973.25 N	685.37 W	3051.22	347.02	1.18	1.12	0.37
170	MWD	15809.00	89.38	358.86	93	12586.49	3119.03	3066.18 N	688.79 W	3142.59	347.34	2.29	-0.95	2.09
171	MWD	15903.00	90.79	359.73	94	12586.35	3212.68	3160.17 N	689.95 W	3234.61	347.68	1.76	1.50	0.93
172	MWD	15996.00	89.89	359.91	93	12585.79	3305.25	3253.16 N	690.24 W	3325.58	348.02	0.99	-0.97	0.19
173	MWD	16089.00	90.09	359.91	93	12585.81	3397.81	3346.16 N	690.39 W	3416.64	348.34	0.22	0.22	0.00
174	MWD	16183.00	90.62	0.09	94	12585.23	3491.36	3440.16 N	690.39 W	3508.75	348.65	0.60	0.56	-382.79
175	MWD	16277.00	91.67	0.79	94	12583.35	3584.81	3534.14 N	689.66 W	3600.80	348.96	1.34	1.12	0.74
176	MWD	16370.00	87.98	2.02	93	12583.63	3677.09	3627.09 N	687.39 W	3691.65	349.27	4.18	-3.97	1.32
177	MWD	16463.00	87.62	2.02	93	12587.20	3769.19	3719.97 N	684.11 W	3782.35	349.58	0.39	-0.39	0.00
178	MWD	16557.00	90.09	1.14	94	12589.08	3862.42	3813.90 N	681.52 W	3874.32	349.87	2.79	2.63	-0.94
179	MWD	16651.00	90.26	0.96	94	12588.79	3955.78	3907.89 N	679.80 W	3966.57	350.13	0.26	0.18	-0.19
180	MWD	16745.00	90.26	0.26	94	12588.37	4049.22	4001.88 N	678.80 W	4059.04	350.37	0.74	0.00	-0.74
181	MWD	16839.00	90.26	359.91	94	12587.94	4142.75	4095.88 N	678.66 W	4151.72	350.59	0.37	0.00	382.61
182	MWD	16933.00	90.26	0.26	94	12587.51	4236.28	4189.88 N	678.52 W	4244.46	350.80	0.37	0.00	-382.61
183	MWD	17025.00	91.14	0.09	92	12586.39	4327.80	4281.87 N	678.24 W	4335.25	351.00	0.97	0.96	-0.18
184	MWD	17119.00	89.91	359.56	94	12585.53	4421.36	4375.86 N	678.52 W	4428.16	351.19	1.42	-1.31	382.41
185	MWD	17213.00	90.09	0.44	94	12585.53	4514.91	4469.86 N	678.52 W	4521.07	351.37	0.96	0.19	-382.04
186	MWD	17307.00	89.03	359.73	94	12586.25	4608.43	4563.86 N	678.38 W	4614.00	351.55	1.36	-1.13	382.22
187	MWD	17401.00	90.79	1.14	94	12586.40	4701.90	4657.85 N	677.67 W	4706.89	351.72	2.40	1.87	-381.48
188	MWD	17494.00	90.62	0.79	93	12585.25	4794.27	4750.83 N	676.10 W	4798.69	351.90	0.42	-0.18	-0.38
189	MWD	17589.00	89.38	358.68	95	12585.25	4888.85	4845.82 N	676.54 W	4892.82	352.05	2.58	-1.31	376.73
190	MWD	17682.00	90.62	358.86	93	12585.25	4981.57	4938.80 N	678.54 W	4985.19	352.18	1.35	1.33	0.19
191	MWD	17777.00	87.98	359.21	95	12586.42	5076.24	5033.77 N	680.14 W	5079.51	352.31	2.80	-2.78	0.37

Job Number:	DM-2016-049-EODT-NM
Vertical Section Plane:	354.36
Well API Number:	30-025-42984
Tie Into:	Surface

Calculation Method: Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates			Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')	
								N/S (ft)	E/W (ft)		Distance (ft)	Angle (deg)				
192	MWD	17870.00	88.86	359.56	93	12588.98	5168.85	5126.72	N	681.14	W	5171.77	352.43	1.02	0.95	0.38
193	MWD	17963.00	89.56	359.38	93	12590.26	5261.47	5219.71	N	682.00	W	5264.08	352.56	0.78	0.75	-0.19
194	MWD	18057.00	90.09	359.03	94	12590.55	5355.13	5313.70	N	683.30	W	5357.45	352.67	0.68	0.56	-0.37
195	MWD	18151.00	91.14	359.38	94	12589.54	5448.79	5407.69	N	684.61	W	5450.85	352.78	1.18	1.12	0.37
196	MWD	18245.00	91.85	359.38	94	12587.09	5542.40	5501.65	N	685.62	W	5544.20	352.90	0.76	0.76	0.00
197	MWD	18339.00	90.26	359.38	94	12585.36	5636.02	5595.62	N	686.64	W	5637.59	353.00	1.69	-1.69	0.00
198	MWD	18432.00	90.62	359.56	93	12584.64	5728.64	5688.62	N	687.50	W	5730.01	353.11	0.43	0.39	0.19
199	MWD	18526.00	91.67	359.56	94	12582.76	5822.24	5782.59	N	688.22	W	5823.40	353.21	1.12	1.12	0.00
200	MWD	18619.00	87.10	0.09	93	12583.76	5914.78	5875.56	N	688.51	W	5915.76	353.32	4.95	-4.91	-386.55
201	MWD	18713.00	87.62	0.79	94	12588.09	6008.15	5969.46	N	687.78	W	6008.95	353.43	0.93	0.55	0.74
202	MWD	18806.00	87.98	359.56	93	12591.66	6100.61	6062.39	N	687.50	W	6101.25	353.53	1.38	0.39	385.77
203	MWD	18899.00	89.74	357.10	93	12593.51	6193.35	6155.32	N	690.21	W	6193.90	353.60	3.25	1.89	-2.65
204	MWD	18992.00	90.62	356.22	93	12593.22	6286.28	6248.16	N	695.63	W	6286.76	353.65	1.34	0.95	-0.95
205	MWD	19086.00	91.85	356.57	94	12591.19	6380.19	6341.95	N	701.54	W	6380.63	353.69	1.36	1.31	0.37
206	MWD	19179.00	91.50	357.10	93	12588.48	6473.07	6434.77	N	706.67	W	6473.45	353.73	0.68	-0.38	0.57
207	MWD	19273.00	90.79	358.15	94	12586.60	6566.89	6528.67	N	710.56	W	6567.22	353.79	1.35	-0.76	1.12
208	MWD	19367.00	90.44	358.33	94	12585.59	6660.67	6622.62	N	713.45	W	6660.93	353.85	0.42	-0.37	0.19
209	MWD	19460.00	89.38	357.98	93	12585.73	6753.47	6715.57	N	716.45	W	6753.67	353.91	1.20	-1.14	-0.38
210	MWD	19554.00	90.79	359.38	94	12585.60	6847.19	6809.54	N	718.61	W	6847.35	353.98	2.11	1.50	1.49
211	MWD	19648.00	91.50	359.56	94	12583.72	6940.80	6903.51	N	719.48	W	6940.90	354.05	0.78	0.76	0.19
212	MWD	19742.00	88.86	358.50	94	12583.42	7034.48	6997.49	N	721.07	W	7034.54	354.12	3.03	-2.81	-1.13
213	MWD	19895.00	90.09	357.98	153	12584.82	7187.12	7150.41	N	725.77	W	7187.15	354.20	0.87	0.80	-0.34
214	PROJ	19957.00	90.09	357.98	62	12584.73	7249.00	7212.37	N	727.96	W	7249.01	354.24	0.00	0.00	0.00
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