



Minimum Curvature Calculation

Client: EOG Resources ✓
Well: Lomas Rojas 26 State Com 703H ✓
County, ST: Lea County, NM
Rig: HP 260
Lat / Long: 32° 6' 23.999 / -103° 32' 25.935
API#: 30-025-42970 ✓
RKB / GL: 3369 / 3344
Vertical Section Angle: 176.87

Job #: PB-151564
M.W.D. Operators: J. Demory / S. Asher
Directional Drillers: T. Turner / D. Etheridge
Tool Azimuth to Grid North: 6.55
Geomagnetic Model: HDGM
Single or Multi-well Pad (# /total): Single
DSI Corrected Runs:

HOBBS OCD
APR 14 2016
RECEIVED

Survey #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	DLS
Tie In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	189.00	0.88	29.93	188.99	-1.22	1.26	0.72	0.47
2	371.00	0.79	53.66	370.97	-3.07	3.21	2.43	0.19
3	525.00	0.53	57.70	524.96	-4.00	4.22	3.89	0.17
4	677.00	0.18	61.39	676.96	-4.45	4.71	4.69	0.23
5	859.00	0.09	116.94	858.96	-4.50	4.78	5.07	0.08
6	1049.00	0.44	290.70	1048.96	-4.72	4.97	4.52	0.28
7	1081.00	0.44	289.56	1080.96	-4.82	5.06	4.29	0.03
8	1227.00	0.62	315.75	1226.95	-5.63	5.81	3.21	0.20
9	1417.00	2.20	25.97	1416.90	-9.59	9.83	4.09	1.09
10	1606.00	3.17	19.38	1605.69	-17.59	18.02	7.41	0.54
11	1796.00	3.87	18.50	1795.33	-28.40	29.06	11.19	0.37
12	1985.00	5.19	11.65	1983.73	-42.60	43.48	14.94	0.75
13	2175.00	6.68	12.97	2172.71	-61.52	62.66	19.16	0.79
14	2364.00	7.12	18.68	2360.34	-82.96	84.47	25.38	0.43
15	2554.00	7.12	21.23	2548.88	-104.62	106.60	33.41	0.17
16	2743.00	6.95	19.29	2736.46	-125.86	128.31	41.43	0.15
17	2933.00	6.51	20.44	2925.15	-146.36	149.26	48.99	0.24
18	3127.00	8.18	24.04	3117.55	-168.72	172.17	58.45	0.89
19	3317.00	8.53	24.83	3305.53	-193.19	197.30	69.88	0.19
20	3506.00	8.71	23.25	3492.40	-218.39	223.17	81.41	0.16
21	3696.00	8.44	24.66	3680.27	-243.62	249.06	92.91	0.18
22	3885.00	8.09	24.92	3867.31	-267.62	273.73	104.30	0.19
23	3980.00	7.56	17.71	3961.43	-279.36	285.74	109.02	1.17
24	4170.00	7.12	9.71	4149.88	-302.53	309.26	114.81	0.59
25	4359.00	6.33	11.21	4337.57	-324.04	331.02	118.81	0.43
26	4549.00	6.07	11.21	4526.46	-343.92	351.15	122.80	0.14
27	4738.00	7.74	17.62	4714.09	-365.51	373.08	128.59	0.97
28	4928.00	7.74	12.97	4902.36	-389.76	397.75	135.34	0.33
29	5118.00	7.12	10.86	5090.76	-413.48	421.78	140.43	0.36
30	5307.00	6.60	10.68	5278.41	-435.40	443.96	144.65	0.28
31	5497.00	6.24	10.24	5467.22	-456.04	464.85	148.51	0.19
32	5686.00	6.24	18.59	5655.10	-475.58	484.69	153.61	0.48
33	5876.00	5.80	13.05	5844.05	-494.39	503.83	159.07	0.38
34	6065.00	7.12	13.76	6031.85	-514.77	524.51	164.01	0.70
35	6255.00	6.68	13.32	6220.47	-536.64	546.70	169.36	0.23
36	6444.00	6.33	11.38	6408.26	-557.27	567.61	173.94	0.22
37	6633.00	7.83	17.71	6595.81	-579.39	590.09	179.92	0.89
38	6823.00	7.39	17.36	6784.14	-602.93	614.08	187.50	0.23
39	7012.00	7.39	19.56	6971.57	-625.53	637.14	195.20	0.15
40	7202.00	5.10	4.18	7160.44	-645.18	657.08	199.90	1.48
41	7391.00	2.55	335.35	7349.02	-657.43	669.28	198.76	1.65
42	7581.00	0.88	330.43	7538.93	-662.67	674.39	196.28	0.88
43	7770.00	0.88	321.81	7727.91	-665.16	676.80	194.66	0.07
44	7960.00	0.70	6.55	7917.89	-667.50	679.10	193.89	0.33
45	8149.00	0.62	0.66	8106.88	-669.65	681.27	194.04	0.06
46	8339.00	0.62	15.34	8296.87	-671.66	683.28	194.32	0.08
47	8529.00	0.88	33.53	8486.85	-673.80	685.49	195.40	0.18
48	8718.00	0.97	37.49	8675.83	-676.18	687.97	197.18	0.06
49	8908.00	1.32	46.45	8865.79	-678.82	690.76	199.74	0.21
50	9097.00	1.67	197.18	9054.76	-677.65	689.62	200.50	1.53
51	9287.00	1.49	192.26	9244.69	-672.67	684.57	199.16	0.12

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Survey #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	DLS
52	9476.00	1.23	197.80	9433.64	-668.41	680.23	198.02	0.15
53	9669.00	1.06	193.58	9626.60	-664.76	676.52	196.97	0.10
54	9858.00	0.88	193.93	9815.57	-661.70	673.42	196.21	0.10
55	10048.00	0.62	192.35	10005.56	-659.31	671.00	195.64	0.14
56	10237.00	1.23	290.61	10194.54	-659.14	670.71	193.52	0.77
57	10427.00	1.32	304.15	10384.49	-661.29	672.66	189.80	0.17
58	10616.00	0.79	330.08	10573.46	-663.77	675.01	187.35	0.37
59	10743.00	0.70	343.43	10700.45	-665.31	676.51	186.69	0.15
60	10858.00	0.18	232.87	10815.45	-665.89	677.08	186.35	0.68
61	11045.00	1.14	270.40	11002.43	-665.84	676.91	184.25	0.54
62	11234.00	3.69	57.35	11191.32	-668.96	680.21	187.49	2.48
63	11422.00	1.49	95.06	11379.13	-671.59	683.26	195.02	1.42
64	11610.00	1.23	82.75	11567.08	-671.39	683.30	199.46	0.21
65	11798.00	0.44	31.60	11755.06	-672.12	684.17	201.84	0.54
66	11923.00	0.70	310.56	11880.05	-673.05	685.07	201.51	0.61
67	11986.00	1.06	292.11	11943.05	-673.56	685.54	200.68	0.72
68	12078.00	5.10	186.81	12034.93	-669.89	681.80	199.41	5.95
69	12126.00	9.15	174.07	12082.55	-663.98	675.88	199.55	9.01
70	12173.00	14.95	176.79	12128.49	-654.17	666.10	200.27	12.40
71	12220.00	18.64	181.10	12173.48	-640.61	652.53	200.47	8.28
72	12268.00	23.04	185.93	12218.33	-623.68	635.51	199.35	9.83
73	12315.00	29.81	185.14	12260.40	-603.01	614.70	197.35	14.42
74	12362.00	37.55	184.53	12299.48	-577.22	588.75	195.17	16.48
75	12409.00	43.88	183.74	12335.09	-546.82	558.19	192.97	13.51
76	12456.00	50.30	180.75	12367.07	-512.57	523.81	191.67	14.43
77	12504.00	59.36	179.17	12394.70	-473.43	484.62	191.73	19.06
78	12551.00	66.65	178.73	12416.01	-431.61	442.78	192.50	15.53
79	12598.00	71.05	179.78	12432.97	-387.82	398.96	193.07	9.59
80	12645.00	75.89	180.22	12446.34	-342.84	353.91	193.06	10.34
81	12692.00	78.70	180.40	12456.67	-297.08	308.07	192.82	5.99
82	12740.00	81.95	180.13	12464.74	-249.85	260.76	192.60	6.79
83	12772.00	86.00	181.63	12468.10	-218.12	228.95	192.11	13.49
84	12796.00	89.60	182.86	12469.02	-194.24	204.99	191.17	15.85
85	12866.00	89.69	182.59	12469.45	-124.61	135.07	187.84	0.41
86	12959.00	91.28	182.59	12468.67	-32.08	42.17	183.64	1.71
87	13054.00	88.02	179.34	12469.25	62.65	-52.79	182.04	4.85
88	13148.00	87.93	179.17	12472.57	156.51	-146.72	183.26	0.20
89	13242.00	90.48	180.57	12473.87	250.36	-240.70	183.47	3.09
90	13336.00	88.72	178.29	12474.53	344.26	-334.69	184.41	3.06
91	13431.00	87.49	177.76	12477.67	439.18	-429.58	187.68	1.41
92	13525.00	89.25	178.38	12480.34	533.12	-523.48	190.84	1.99
93	13619.00	91.10	178.64	12480.06	627.08	-617.44	193.29	1.99
94	13713.00	93.21	179.87	12476.52	720.92	-711.36	194.51	2.60
95	13807.00	92.07	179.17	12472.19	814.72	-805.26	195.30	1.42
96	13901.00	90.66	178.82	12469.95	908.63	-899.21	196.94	1.55
97	13995.00	89.87	179.34	12469.52	1002.55	-993.20	198.45	1.01
98	14088.00	88.37	177.94	12470.95	1095.49	-1086.16	200.66	2.21
99	14183.00	90.57	180.05	12471.82	1190.41	-1181.13	202.33	3.21
100	14277.00	89.60	180.40	12471.69	1284.25	-1275.13	201.96	1.10
101	14371.00	90.48	181.98	12471.62	1377.98	-1369.10	200.00	1.92
102	14465.00	90.48	182.68	12470.83	1471.55	-1463.02	196.18	0.74
103	14560.00	90.13	181.54	12470.33	1566.15	-1557.95	192.69	1.26
104	14654.00	91.19	179.96	12469.24	1659.92	-1651.93	191.46	2.02
105	14747.00	92.33	181.63	12466.39	1752.66	-1744.88	190.17	2.17
106	14842.00	89.52	177.06	12464.85	1847.52	-1839.82	191.25	5.65
107	14936.00	87.76	175.04	12467.08	1941.48	-1933.56	197.72	2.85
108	15029.00	90.75	177.06	12468.29	2034.44	-2026.32	204.13	3.88
109	15123.00	91.28	176.09	12466.63	2128.43	-2120.14	209.74	1.18
110	15217.00	92.51	177.32	12463.52	2222.37	-2213.93	215.14	1.85
111	15312.00	88.72	175.12	12462.50	2317.34	-2308.69	221.41	4.61
112	15406.00	89.08	175.83	12464.30	2411.29	-2402.38	228.82	0.85
113	15500.00	87.49	176.44	12467.12	2505.24	-2496.12	235.15	1.81
114	15594.00	89.52	177.59	12469.57	2599.20	-2589.95	240.05	2.48
115	15689.00	91.54	180.49	12468.69	2694.11	-2684.92	241.64	3.72
116	15783.00	90.66	180.75	12466.89	2787.89	-2778.90	240.62	0.98

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117	15876.00	89.87	179.26	12466.46	2880.75	-2871.89	240.61	1.81
118	15970.00	91.36	179.87	12465.45	2974.63	-2965.88	241.33	1.71
119	16064.00	91.10	179.08	12463.43	3068.52	-3059.86	242.19	0.88
120	16159.00	90.22	179.43	12462.34	3163.43	-3154.84	243.42	1.00
121	16253.00	90.75	178.46	12461.54	3257.36	-3248.82	245.15	1.18
122	16348.00	91.71	177.76	12459.50	3352.31	-3343.74	248.29	1.25
123	16442.00	90.31	178.90	12457.84	3446.26	-3437.69	251.02	1.92
124	16537.00	88.99	177.94	12458.42	3541.22	-3532.65	253.64	1.72
125	16631.00	93.30	181.28	12456.55	3635.06	-3626.59	254.28	5.80
126	16725.00	88.72	178.55	12454.89	3728.88	-3720.54	254.43	5.67
127	16819.00	91.98	181.63	12454.31	3822.71	-3814.51	254.28	4.77
128	16913.00	90.75	182.51	12452.08	3916.29	-3908.42	250.88	1.61
129	17008.00	92.07	183.21	12449.74	4010.74	-4003.27	246.15	1.57
130	17101.00	90.92	181.72	12447.31	4103.26	-4096.15	242.15	2.02
131	17196.00	89.52	182.51	12446.95	4197.86	-4191.08	238.64	1.69
132	17276.00	90.04	183.56	12447.25	4277.40	-4270.97	234.41	1.46
PTB	17336.00	90.04	183.56	12447.21	4336.99	-4330.85	230.68	0.00