



Minimum Curvature Calculation

Client: EOG Resources
Well: Lomas Rojas 26 State Com #704H
County, ST: Lea county, TX
Rig: H&P #260
Lat / Long: 32° 6' 24.001" N / 103° 32' 26.284" W
API#: 30-025-42971
RKB / GL: 3369' / 3344'
Vertical Section Angle: 186.88

Job #: PB-161001
M.W.D. Operators: J. Demory / S. Asher
Directional Drillers: T. Turner / D. Etheridge
Tool Azimuth to Grid North: 6.67
Geomagnetic Model: IGRF2015
Single or Multi-well Pad (# /total): 2 / 2
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	191.00	0.62	22.02	191.00	-1.00	0.96	0.39	0.32
2	312.00	0.44	19.91	311.99	-2.08	2.00	0.79	0.15
3	432.00	0.53	25.09	431.99	-3.06	2.94	1.18	0.08
4	527.00	0.62	24.22	526.98	-3.97	3.80	1.58	0.10
5	679.00	0.44	42.67	678.98	-5.22	4.98	2.31	0.16
6	862.00	0.53	19.21	861.97	-6.62	6.30	3.07	0.12
7	956.00	0.26	44.17	955.97	-7.22	6.86	3.36	0.33
8	1089.00	0.18	47.68	1088.97	-7.61	7.22	3.72	0.06
9	1240.00	0.79	329.49	1239.96	-8.62	8.28	3.37	0.51
10	1429.00	3.17	322.29	1428.83	-13.38	13.53	-0.49	1.26
11	1619.00	4.66	320.09	1618.39	-22.40	23.61	-8.65	0.79
12	1808.00	6.24	321.23	1806.53	-34.84	37.51	-20.01	0.84
13	1997.00	6.33	318.24	1994.39	-48.91	53.29	-33.38	0.18
14	2187.00	8.53	316.66	2182.78	-64.85	71.35	-50.03	1.16
15	2376.00	8.97	317.36	2369.58	-83.38	92.39	-69.63	0.24
16	2566.00	8.35	314.55	2557.42	-101.43	112.96	-89.50	0.39
17	2755.00	7.74	315.08	2744.56	-117.68	131.60	-108.26	0.33
18	2945.00	9.06	315.87	2932.51	-135.01	151.40	-127.72	0.70
19	3134.00	9.76	317.89	3118.97	-154.88	173.96	-148.82	0.41
20	3324.00	8.97	323.08	3306.44	-176.14	197.75	-168.52	0.61
21	3513.00	9.76	325.36	3492.92	-198.77	222.71	-186.47	0.46
22	3703.00	9.41	324.04	3680.27	-222.22	248.54	-204.75	0.22
23	3892.00	9.06	320.35	3866.82	-243.79	272.50	-223.32	0.36
24	4082.00	8.71	318.33	4054.54	-263.60	294.77	-242.43	0.25
25	4271.00	8.18	317.10	4241.49	-281.76	315.30	-261.09	0.30
26	4461.00	8.00	325.80	4429.61	-300.45	336.14	-277.73	0.65
27	4650.00	7.39	327.91	4616.90	-319.82	357.32	-291.58	0.36
28	4840.00	7.12	322.64	4805.38	-337.75	377.03	-305.22	0.38
29	5029.00	9.76	313.14	4992.33	-355.62	397.30	-324.02	1.58
30	5219.00	8.71	311.30	5179.86	-373.28	417.81	-346.58	0.57
31	5409.00	10.38	316.05	5367.23	-392.23	439.63	-369.27	0.97
32	5598.00	10.11	316.05	5553.22	-413.46	463.83	-392.60	0.14
33	5788.00	9.23	315.78	5740.52	-433.56	486.75	-414.80	0.46
34	5977.00	8.88	317.36	5927.16	-452.55	508.35	-435.25	0.23
35	6167.00	7.83	315.52	6115.14	-470.15	528.37	-454.25	0.57
36	6356.00	7.21	314.73	6302.51	-485.47	545.90	-471.70	0.33
37	6545.00	6.68	315.52	6490.13	-499.61	562.09	-487.83	0.28
38	6735.00	6.33	315.87	6678.90	-513.10	577.50	-502.86	0.19
39	6924.00	5.98	316.92	6866.81	-525.99	592.17	-516.84	0.19
40	7114.00	5.28	316.57	7055.90	-537.94	605.74	-529.61	0.37
41	7303.00	4.13	321.49	7244.26	-548.27	617.38	-539.83	0.64
42	7493.00	1.58	330.99	7434.01	-555.20	625.03	-545.36	1.36
43	7682.00	1.67	309.28	7622.93	-558.79	629.05	-548.75	0.33
44	7872.00	0.35	260.94	7812.90	-560.11	630.71	-551.47	0.77
45	8061.00	0.70	306.64	8001.89	-560.53	631.31	-552.97	0.28
46	8251.00	1.67	280.45	8191.85	-561.27	632.51	-556.62	0.57
47	8440.00	0.70	327.65	8380.81	-562.34	633.98	-559.95	0.69
48	8630.00	1.76	282.73	8570.77	-563.54	635.61	-563.42	0.71
49	8819.00	1.23	322.99	8759.71	-565.29	637.86	-567.47	0.60
50	9009.00	1.58	7.55	8949.66	-569.38	642.09	-568.35	0.59
51	9198.00	1.85	34.18	9138.57	-574.70	647.20	-566.29	0.44

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Survey #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	DLS
52	9388.00	1.49	30.58	9328.49	-579.69	651.86	-563.31	0.20
53	9577.00	1.14	356.30	9517.45	-583.79	655.85	-562.19	0.45
54	9766.00	0.18	29.08	9706.43	-585.91	657.99	-562.16	0.53
55	9956.00	0.35	278.34	9896.43	-586.20	658.33	-562.59	0.24
56	10145.00	1.41	288.27	10085.41	-586.67	659.15	-565.37	0.56
57	10335.00	1.93	273.07	10275.33	-586.92	660.05	-570.79	0.36
58	10524.00	1.76	249.86	10464.23	-585.39	659.22	-576.69	0.40
59	10714.00	1.32	261.46	10654.16	-583.49	657.89	-581.59	0.28
60	10864.00	2.11	258.92	10804.09	-582.17	657.10	-586.01	0.53
61	11052.00	1.76	261.73	10991.99	-580.35	656.02	-592.26	0.19
62	11240.00	3.25	268.23	11179.80	-578.80	655.44	-600.45	0.81
63	11429.00	3.17	270.69	11368.50	-577.43	655.34	-611.03	0.08
64	11524.00	1.32	168.56	11463.45	-576.10	654.30	-613.44	3.87
65	11712.00	0.79	4.65	11651.44	-575.34	653.47	-612.90	1.11
66	11900.00	1.32	72.50	11839.41	-577.53	655.41	-610.73	0.67
67	11995.00	1.23	79.53	11934.39	-578.29	655.93	-608.69	0.19
68	12089.00	1.67	111.70	12028.36	-578.24	655.60	-606.42	0.97
69	12136.00	6.51	147.73	12075.23	-576.00	653.10	-604.36	11.17
70	12183.00	11.78	163.38	12121.62	-569.53	646.24	-601.57	12.30
71	12276.00	25.50	169.79	12209.54	-541.55	617.30	-595.27	14.89
72	12323.00	32.71	170.06	12250.58	-519.69	594.81	-591.28	15.34
73	12370.00	36.93	181.48	12289.20	-493.44	568.14	-589.45	16.49
74	12417.00	39.31	189.66	12326.20	-464.49	539.33	-592.32	11.87
75	12464.00	41.77	188.25	12361.91	-433.96	509.15	-597.06	5.59
76	12511.00	48.54	185.09	12395.04	-400.67	476.08	-600.87	15.17
77	12558.00	55.22	180.17	12424.05	-363.84	439.18	-602.50	16.42
78	12606.00	62.43	178.76	12448.88	-323.15	398.14	-602.09	15.23
79	12653.00	66.13	175.95	12469.28	-281.40	355.86	-600.13	9.54
80	12700.00	70.00	174.10	12486.83	-238.75	312.43	-596.34	9.01
81	12747.00	73.95	175.68	12501.37	-195.04	267.93	-592.36	8.99
82	12794.00	77.12	178.14	12513.11	-150.22	222.49	-589.92	8.44
83	12842.00	80.37	179.29	12522.48	-103.63	175.43	-588.86	7.17
84	12873.00	83.89	179.38	12526.73	-73.19	144.73	-588.51	11.36
85	12934.00	89.08	176.47	12530.47	-13.08	83.92	-586.30	9.75
86	13060.00	91.54	176.30	12529.78	110.80	-41.82	-578.36	1.96
87	13154.00	92.24	176.56	12526.68	203.19	-135.59	-572.51	0.79
88	13248.00	91.45	177.79	12523.66	295.80	-229.42	-567.88	1.55
89	13342.00	91.01	179.02	12521.64	388.75	-323.36	-565.26	1.39
90	13436.00	90.13	179.38	12520.70	481.90	-417.35	-563.95	1.01
91	13530.00	90.40	182.98	12520.27	575.42	-511.31	-565.88	3.84
92	13624.00	89.52	182.71	12520.34	669.18	-605.19	-570.55	0.98
93	13719.00	87.93	180.43	12522.45	763.74	-700.13	-573.15	2.93
94	13813.00	88.64	179.46	12525.26	857.01	-794.08	-573.06	1.28
95	13907.00	89.87	178.85	12526.48	950.15	-888.06	-571.68	1.46
96	14000.00	89.34	177.44	12527.13	1042.06	-981.01	-568.66	1.62
97	14095.00	90.31	176.30	12527.42	1135.61	-1075.86	-563.48	1.58
98	14189.00	89.87	176.47	12527.27	1228.04	-1169.68	-557.55	0.50
99	14284.00	91.71	178.85	12525.96	1321.79	-1264.58	-553.67	3.17
100	14377.00	91.45	179.46	12523.39	1413.92	-1357.53	-552.30	0.71
101	14471.00	89.87	178.06	12522.31	1506.96	-1451.50	-550.27	2.25
102	14565.00	89.60	178.67	12522.75	1599.92	-1545.46	-547.59	0.71
103	14659.00	90.13	179.64	12522.97	1693.07	-1639.44	-546.20	1.18
104	14753.00	90.84	179.99	12522.17	1786.35	-1733.44	-545.90	0.84
105	14847.00	92.42	182.28	12519.50	1879.83	-1827.37	-547.76	2.96
106	14941.00	91.10	181.13	12516.61	1973.40	-1921.28	-550.55	1.86
107	15034.00	90.84	180.43	12515.04	2065.86	-2014.26	-551.82	0.80
108	15129.00	92.15	181.04	12512.56	2160.28	-2109.22	-553.03	1.52
109	15223.00	90.48	180.34	12510.40	2253.70	-2203.18	-554.17	1.93
110	15316.00	89.25	180.17	12510.62	2346.08	-2296.18	-554.58	1.34
111	15410.00	87.14	179.55	12513.58	2439.32	-2390.13	-554.35	2.34
112	15504.00	88.02	178.32	12517.55	2532.34	-2484.03	-552.61	1.61
113	15598.00	94.70	179.02	12515.32	2625.29	-2577.92	-550.42	7.15
114	15692.00	90.13	178.32	12511.36	2718.22	-2671.79	-548.24	4.92
115	15761.00	90.84	177.09	12510.78	2786.33	-2740.73	-545.48	2.06
116	15792.00	91.63	176.83	12510.11	2816.86	-2771.68	-543.84	2.68

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117	15887.00	90.66	174.63	12508.21	2910.04	-2866.39	-536.77	2.53
118	15980.00	92.33	177.97	12505.78	3001.42	-2959.14	-530.77	4.01
119	16075.00	91.36	179.11	12502.72	3095.36	-3054.06	-528.35	1.58
120	16169.00	88.72	179.55	12502.66	3188.54	-3148.05	-527.25	2.85
121	16264.00	89.87	180.25	12503.83	3282.82	-3243.04	-527.08	1.42
122	16358.00	90.31	180.69	12503.68	3376.24	-3337.03	-527.85	0.66
123	16452.00	89.52	179.29	12503.82	3469.55	-3431.03	-527.84	1.71
124	16546.00	89.78	178.41	12504.39	3562.63	-3525.01	-525.95	0.98
125	16640.00	90.66	179.11	12504.03	3655.68	-3618.98	-523.92	1.20
126	16734.00	91.36	180.43	12502.37	3748.94	-3712.97	-523.54	1.59
127	16828.00	90.40	179.73	12500.93	3842.27	-3806.95	-523.67	1.26
128	16922.00	90.48	179.20	12500.21	3935.48	-3900.95	-522.79	0.57
129	17017.00	88.81	177.53	12500.80	4029.43	-3995.90	-520.08	2.49
130	17110.00	90.75	177.79	12501.16	4121.22	-4088.82	-516.29	2.10
131	17205.00	93.30	178.58	12497.80	4215.06	-4183.70	-513.28	2.81
132	17294.00	90.75	177.44	12494.65	4302.93	-4272.58	-510.19	3.14
PTB	17355.00	90.75	177.44	12493.86	4363.10	-4333.52	-507.47	0.00