

8/26/2016



Minimum Curvature Calculation

HOBBS OCD
JAN 11 2017
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Client: EOG Resources
Well: Foghorn 32 State Com #501H
County, ST: Les County, NM
Rig: H&P 651
Lat / Long: 32° 21' 17.481 / -103° 35' 8.732
API#: 30-025-43005
RKB / GL: 3618' / 3593'
Vertical Section Angle: 182.35

Job #: PB-161221
M.W.D. Operators: S. Hardy / T. Nawara
Directional Drillers: Ken Smith / Matt Greer
Tool Azimuth to Grid North: 6.55
Geomagnetic Model: HDGM
Single or Multi-well Pad (# / total): 1 of 2
DSI Corrected Runs:

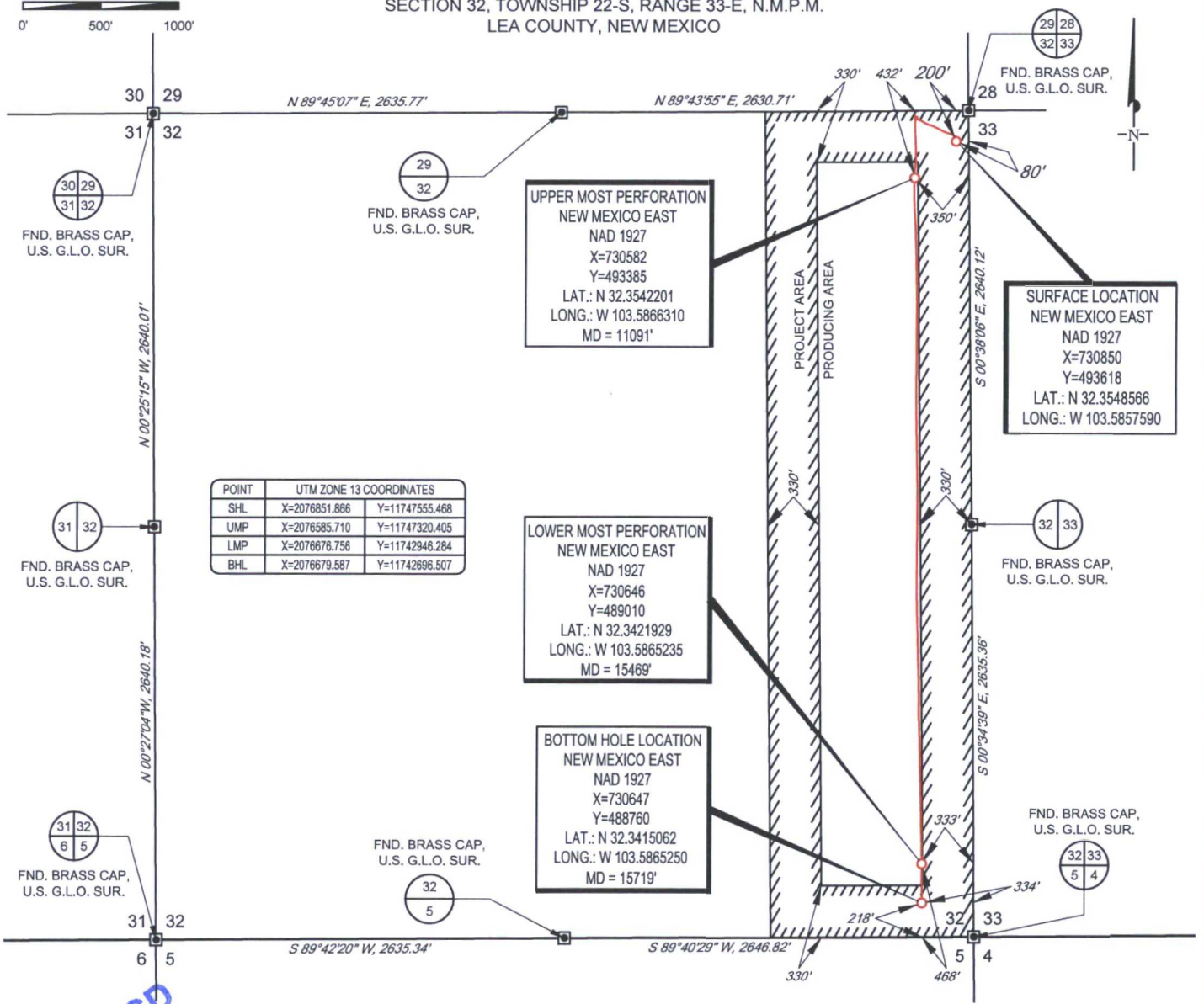
Survey #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	DLS
Tie In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	140.00	0.18	92.44	140.00	0.00	-0.01	0.22	0.13
2	337.00	0.26	181.74	337.00	0.45	-0.47	0.52	0.16
3	525.00	0.53	112.22	524.99	1.17	-1.22	1.31	0.27
4	705.00	0.97	104.92	704.98	1.78	-1.93	3.55	0.25
5	895.00	1.23	78.03	894.95	1.63	-1.92	7.10	0.30
6	1051.00	1.85	65.20	1050.89	0.07	-0.52	11.02	0.45
7	1123.00	1.85	60.62	1122.85	-1.07	0.54	13.09	0.21
8	1235.00	2.11	52.01	1234.78	-3.36	2.69	16.29	0.35
9	1427.00	3.69	327.90	1426.60	-10.75	10.11	15.79	2.11
10	1619.00	4.22	321.22	1618.14	-21.16	20.85	8.09	0.37
11	1811.00	4.66	302.15	1809.58	-30.36	30.51	-2.94	0.80
12	2003.00	4.40	300.13	2000.98	-37.67	38.35	-15.92	0.16
13	2196.00	3.87	298.02	2193.47	-43.94	45.13	-28.07	0.29
14	2388.00	4.40	291.69	2384.98	-49.19	50.90	-40.63	0.36
15	2580.00	4.22	289.23	2576.43	-53.68	55.94	-54.15	0.13
16	2772.00	4.48	290.81	2767.88	-58.10	60.93	-67.83	0.15
17	2964.00	3.87	292.74	2959.37	-62.73	66.10	-80.81	0.33
18	3156.00	4.04	296.44	3150.91	-67.75	71.62	-92.84	0.16
19	3348.00	3.78	294.15	3342.46	-72.86	77.22	-104.67	0.16
20	3541.00	4.13	297.05	3535.01	-78.13	82.98	-116.67	0.21
21	3733.00	3.52	303.99	3726.58	-84.11	89.42	-127.71	0.40
22	3925.00	3.25	298.11	3918.24	-89.57	95.28	-137.40	0.23
23	4116.00	3.96	292.22	4108.86	-94.16	100.33	-148.28	0.42
24	4309.00	4.22	286.94	4301.37	-98.22	104.92	-161.24	0.24
25	4501.00	3.43	283.69	4492.94	-101.13	108.33	-173.58	0.43
26	4693.00	4.22	294.41	4684.52	-104.91	112.61	-185.60	0.55
27	4885.00	4.22	298.98	4876.00	-110.73	118.96	-198.21	0.18
28	5077.00	3.78	299.51	5067.53	-116.78	125.50	-209.90	0.23
29	5175.00	3.43	296.87	5165.34	-119.47	128.41	-215.32	0.40
30	5368.00	3.08	298.72	5358.02	-124.17	133.51	-225.02	0.19
31	5561.00	2.55	298.28	5550.79	-128.35	138.04	-233.35	0.27
32	5753.00	2.37	296.52	5742.61	-131.85	141.83	-240.66	0.10
33	5945.00	2.02	292.74	5934.47	-134.65	144.92	-247.34	0.20
34	6137.00	1.76	289.32	6126.37	-136.69	147.20	-253.24	0.15
35	6329.00	0.88	5.96	6318.33	-139.02	149.64	-255.87	0.93
36	6521.00	0.79	4.81	6510.31	-141.82	152.43	-255.60	0.05
37	6714.00	0.53	22.13	6703.29	-143.99	154.58	-255.16	0.17
38	6905.00	0.53	46.56	6894.29	-145.45	156.00	-254.18	0.12
39	7097.00	0.53	31.88	7086.28	-146.86	157.37	-253.07	0.07
40	7289.00	0.35	87.26	7278.27	-147.68	158.15	-252.01	0.23
41	7481.00	0.26	115.91	7470.27	-147.56	157.99	-251.04	0.09
42	7673.00	0.35	198.70	7662.27	-146.83	157.24	-250.83	0.21
43	7866.00	0.79	234.30	7855.26	-145.44	155.91	-252.10	0.28
44	8058.00	1.06	245.90	8047.23	-143.83	154.41	-254.80	0.17
45	8250.00	1.14	226.91	8239.20	-141.68	152.38	-257.81	0.19
46	8442.00	0.79	239.31	8431.17	-139.60	150.40	-260.35	0.21
47	8634.00	0.53	240.10	8623.16	-138.40	149.28	-262.25	0.14
48	8826.00	0.70	189.03	8815.15	-136.76	147.68	-263.21	0.29
49	9018.00	0.97	84.62	9007.14	-135.82	146.68	-261.77	0.69
50	9210.00	0.70	122.06	9199.12	-135.46	146.21	-259.16	0.31
51	9402.00	0.97	157.30	9391.10	-133.40	144.08	-257.54	0.30

Survey #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	DLS
52	9594.00	1.06	269.37	9583.08	-131.84	142.56	-258.69	0.88
53	9786.00	2.37	355.50	9775.01	-135.69	146.50	-260.78	1.32
54	9978.00	2.37	348.12	9966.85	-143.48	154.35	-261.91	0.16
55	10170.00	1.93	341.87	10158.71	-150.35	161.30	-263.73	0.26
56	10353.00	1.85	338.97	10341.62	-155.95	166.99	-265.75	0.07
57	10494.00	9.76	173.10	10482.03	-146.21	157.22	-265.13	8.20
58	10544.00	15.30	180.13	10530.83	-135.43	146.40	-264.63	11.47
59	10591.00	19.61	179.96	10575.65	-121.34	132.31	-264.64	9.17
60	10639.00	25.24	181.45	10620.01	-103.05	114.01	-264.90	11.79
61	10686.00	31.30	178.64	10661.38	-80.83	91.76	-264.86	13.20
62	10736.00	36.58	177.06	10702.85	-53.01	63.88	-263.79	10.71
63	10783.00	41.50	178.73	10739.34	-23.50	34.31	-262.72	10.70
64	10831.00	49.15	178.82	10773.07	10.54	0.21	-261.99	15.94
65	10878.00	56.01	178.11	10801.61	47.76	-37.08	-260.98	14.64
66	10927.00	62.17	179.26	10826.77	89.69	-79.09	-260.03	12.73
67	10974.00	67.09	182.86	10846.91	132.12	-121.53	-260.85	12.55
68	11023.00	72.55	184.09	10863.80	178.09	-167.42	-263.64	11.39
69	11070.00	74.92	183.83	10876.97	223.19	-212.43	-266.76	5.07
70	11120.00	78.88	181.10	10888.30	271.87	-261.07	-268.84	9.54
71	11167.00	83.19	179.52	10895.62	318.25	-307.48	-269.09	9.75
72	11198.00	87.05	178.55	10898.26	349.08	-338.36	-268.57	12.84
73	11294.00	89.69	177.76	10900.99	444.78	-434.26	-265.48	2.87
74	11390.00	90.04	177.41	10901.22	540.45	-530.17	-261.43	0.52
75	11486.00	90.13	177.23	10901.07	636.08	-626.07	-256.94	0.21
76	11582.00	89.34	178.73	10901.52	731.79	-722.00	-253.56	1.77
77	11679.00	89.08	179.08	10902.85	828.61	-818.98	-251.71	0.45
78	11775.00	89.25	179.34	10904.25	924.45	-914.96	-250.38	0.32
79	11871.00	89.08	179.52	10905.65	1020.32	-1010.94	-249.43	0.26
80	11967.00	89.16	180.05	10907.13	1116.21	-1106.93	-249.07	0.56
81	12064.00	90.13	179.78	10907.73	1213.12	-1203.93	-248.92	1.04
82	12159.00	90.31	180.05	10907.36	1308.03	-1298.93	-248.78	0.34
83	12255.00	90.22	180.13	10906.92	1403.96	-1394.92	-248.93	0.13
84	12351.00	90.31	180.40	10906.48	1499.89	-1490.92	-249.38	0.30
85	12447.00	90.57	180.93	10905.74	1595.85	-1586.91	-250.49	0.61
86	12542.00	89.78	179.26	10905.45	1690.77	-1681.91	-250.65	1.94
87	12638.00	90.13	179.61	10905.52	1786.65	-1777.90	-249.70	0.52
88	12733.00	88.20	178.38	10906.91	1881.47	-1872.87	-248.04	2.41
89	12829.00	88.64	178.82	10909.55	1977.22	-1968.81	-245.69	0.65
90	12925.00	89.08	179.08	10911.46	2073.04	-2064.77	-243.93	0.53
91	13021.00	89.60	179.52	10912.57	2168.89	-2160.76	-242.76	0.71
92	13117.00	89.78	179.87	10913.09	2264.79	-2256.75	-242.25	0.41
93	13214.00	89.87	180.05	10913.39	2361.70	-2353.75	-242.18	0.21
94	13310.00	89.87	180.31	10913.60	2457.63	-2449.75	-242.48	0.27
95	13406.00	88.55	180.31	10914.93	2553.56	-2545.74	-243.00	1.38
96	13502.00	88.99	180.66	10916.99	2649.49	-2641.71	-243.82	0.59
97	13598.00	88.11	179.87	10919.42	2745.39	-2737.68	-244.26	1.23
98	13694.00	88.72	180.05	10922.07	2841.27	-2833.64	-244.19	0.66
99	13790.00	88.64	178.38	10924.28	2937.10	-2929.60	-242.88	1.74
100	13886.00	89.08	178.55	10926.19	3032.86	-3025.55	-240.31	0.49
101	13981.00	88.20	178.82	10928.45	3127.64	-3120.50	-238.13	0.97
102	14077.00	88.90	178.90	10930.88	3223.43	-3216.45	-236.22	0.73
103	14174.00	88.81	178.46	10932.82	3320.21	-3313.40	-233.98	0.46
104	14269.00	89.25	178.46	10934.43	3414.98	-3408.35	-231.43	0.46
105	14365.00	89.52	178.73	10935.46	3510.77	-3504.32	-229.08	0.40
106	14461.00	89.87	179.34	10935.97	3606.60	-3600.30	-227.46	0.73
107	14557.00	89.25	178.38	10936.70	3702.42	-3696.28	-225.55	1.19
108	14653.00	89.69	178.73	10937.59	3798.21	-3792.25	-223.13	0.59
109	14749.00	89.78	178.99	10938.04	3894.03	-3888.23	-221.22	0.29
110	14845.00	88.81	178.20	10939.22	3989.81	-3984.19	-218.87	1.30
111	14940.00	89.87	178.46	10940.31	4084.57	-4079.14	-216.10	1.15
112	15037.00	89.16	178.20	10941.13	4181.33	-4176.09	-213.27	0.78
113	15133.00	89.52	178.46	10942.24	4277.08	-4272.05	-210.47	0.46
114	15229.00	89.87	178.82	10942.75	4372.88	-4368.02	-208.20	0.52
115	15325.00	90.57	178.82	10942.38	4468.70	-4464.00	-206.22	0.73
116	15420.00	91.98	179.17	10940.27	4563.51	-4558.96	-204.55	1.53

<i>Survey #</i>	<i>Meas. Depth</i>	<i>Inc.</i>	<i>Azm.</i>	<i>T.V.D.</i>	<i>Ver. Sect.</i>	<i>+N / -S</i>	<i>+E / -W</i>	<i>DLS</i>
117	15516.00	93.12	179.43	10935.99	4659.28	-4654.85	-203.38	1.22
118	15611.00	93.91	179.87	10930.17	4753.99	-4749.67	-202.80	0.95
119	15663.00	94.18	179.96	10926.50	4805.81	-4801.54	-202.72	0.55
PTB	15720.00	94.18	179.96	10922.35	4862.61	-4858.39	-202.68	0.00

SCALE: 1" = 1000'

SECTION 32, TOWNSHIP 22-S, RANGE 33-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: FOGHORN 32 STATE #501H
SECTION 32 TWP 22-S RGE 33-E SURVEY N.M.P.M.
COUNTY LEA STATE NM ELEVATION 3592'
DESCRIPTION 200' FNL & 80' FEL

HOBBS OCD
JAN 11 2017
RECEIVED



1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM



Michael Blake Brown, P.S. No. 18329
OCTOBER 11, 2016

FOGHORN 32 STATE #501H AS-COMPLETED	REVISION:	NOTES: 1. ORIGINAL DOCUMENT SIZE: 8.5" X 11" 2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 19 27. 3. THIS WELL LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
DATE: 10/11/16		
FILE:AD_FOGHORN32STATE_501H		
DRAWN BY: A.C.C.		
SHEET: 1 OF 1		