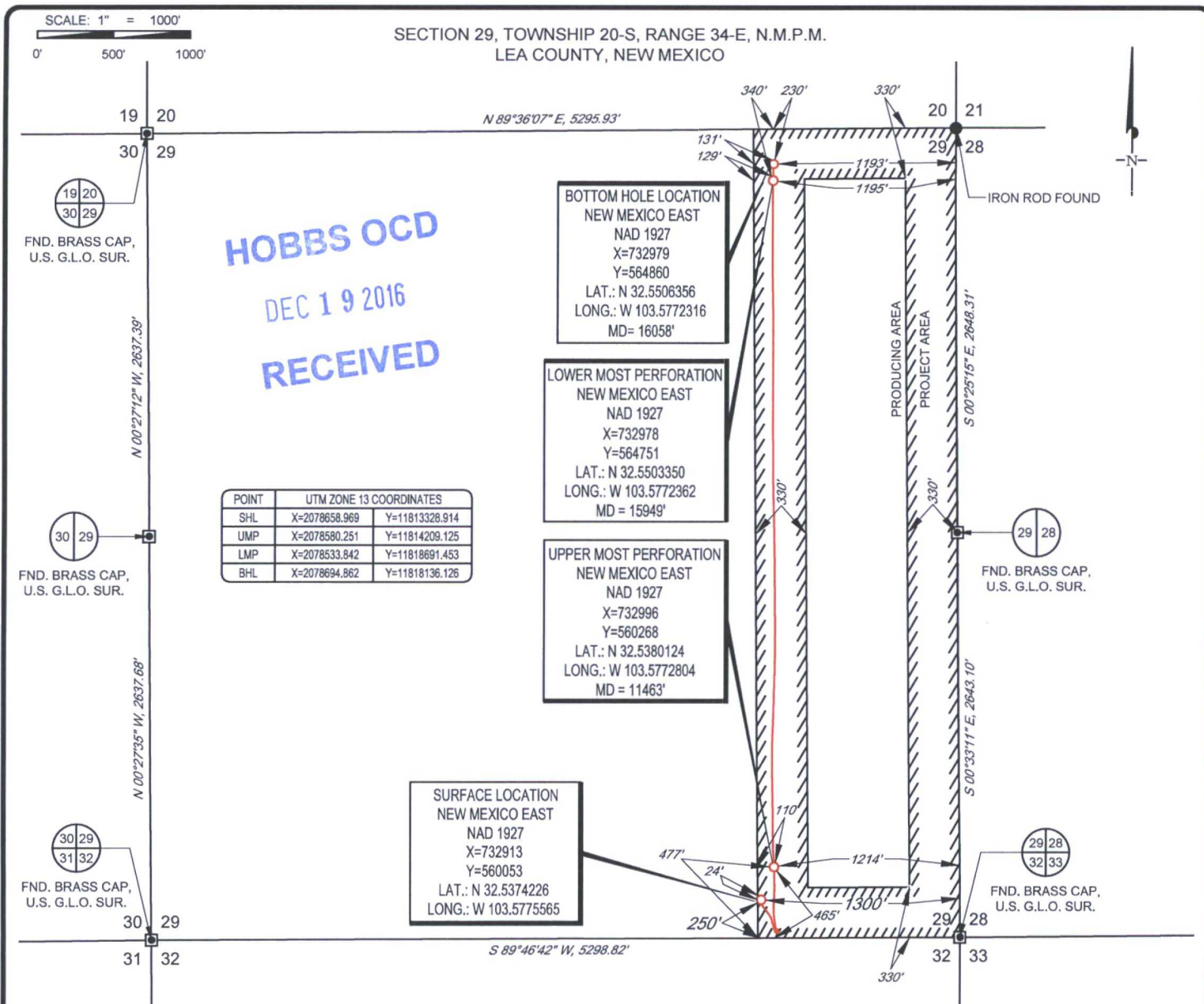
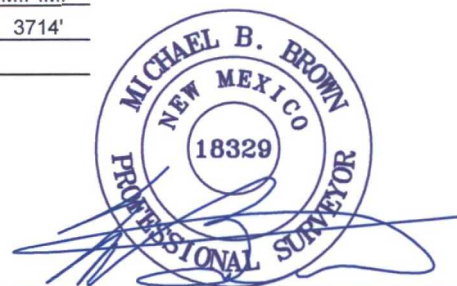




TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

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Michael Blake Brown, P.S. No. 18329
OCTOBER 25, 2016

DELLA 29 FED #602H AS-COMPLETED	REVISION:		NOTES:
	INT	DATE	
DATE: 10/25/16			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 1927. 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.
FILE: AD_DELLA29FED_602H			
DRAWN BY: A.C.C.			
SHEET: 1 OF 1			

HOBBS OIL & GAS

CRESCENT

DIRECTIONAL DRILLING

Minimum Curvature Calculation

Client: EOG Resources
Well: Della 29 Fed Com #602H
County, ST: Les County, NM
Rig: H&P 651
Lat / Long: 32° 32' 14.723 / -103° 34' 39.202
API#: 30-025-43063
RKB / GL: 3739' / 3714'
Vertical Section Angle: 0.58

Job #: PB-161192
M.W.D. Operators: Thomas Nawara / Sam Hardy
Directional Drillers: Ken Smith / Matt Greer
Tool Azimuth to Grid North: 6.48
Geomagnetic Model: HDGM
Single or Multi-well Pad (# / total): 2 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	138.00	0.26	314.29	138.00	0.22	0.22	-0.22	0.19
2	317.00	0.79	331.70	316.99	1.58	1.59	-1.10	0.31
3	501.00	1.06	321.83	500.97	4.02	4.04	-2.75	0.17
4	682.00	1.41	318.84	681.93	6.98	7.04	-5.25	0.20
5	867.00	1.41	314.01	866.87	10.25	10.33	-8.39	0.06
6	1059.00	1.76	304.52	1058.80	13.52	13.64	-12.52	0.23
7	1251.00	1.76	299.42	1250.71	16.58	16.76	-17.51	0.08
8	1443.00	1.49	289.80	1442.63	18.83	19.06	-22.43	0.20
9	1636.00	1.67	273.84	1635.56	19.81	20.10	-27.60	0.25
10	1684.00	1.67	273.14	1683.54	19.89	20.18	-28.99	0.04
11	1842.00	2.02	173.30	1841.48	17.23	17.54	-30.97	1.79
12	2035.00	4.92	149.92	2034.12	6.73	7.00	-26.42	1.64
13	2227.00	4.84	144.12	2225.42	-6.87	-6.69	-17.55	0.26
14	2419.00	5.98	138.84	2416.57	-20.85	-20.78	-6.22	0.65
15	2611.00	6.16	139.19	2607.49	-36.04	-36.11	7.10	0.10
16	2803.00	5.54	136.82	2798.49	-50.46	-50.67	20.17	0.35
17	2995.00	6.33	149.65	2989.47	-66.23	-66.56	31.86	0.80
18	3187.00	5.72	143.41	3180.41	-82.94	-83.37	42.91	0.47
19	3379.00	5.45	149.04	3371.50	-98.33	-98.88	53.31	0.32
20	3571.00	5.28	149.48	3562.66	-113.67	-114.31	62.48	0.09
21	3764.00	5.01	163.72	3754.89	-129.34	-130.05	69.36	0.67
22	3957.00	4.84	165.83	3947.17	-145.28	-146.03	73.71	0.13
23	4149.00	4.13	162.75	4138.59	-159.69	-160.49	77.75	0.39
24	4341.00	3.69	162.13	4330.14	-172.13	-172.97	81.69	0.23
25	4533.00	3.25	161.61	4521.79	-183.14	-184.01	85.31	0.23
26	4724.00	2.90	166.18	4712.51	-192.94	-193.84	88.17	0.22
27	4916.00	1.58	161.69	4904.36	-200.15	-201.07	90.16	0.69
28	5108.00	1.14	160.99	5096.30	-204.45	-205.39	91.61	0.23
29	5299.00	1.32	171.27	5287.26	-208.41	-209.36	92.57	0.15
30	5377.00	1.14	164.60	5365.24	-210.05	-211.00	92.91	0.29
31	5559.00	0.53	30.21	5547.23	-211.06	-212.02	93.81	0.86
32	5752.00	0.79	29.95	5740.22	-209.12	-210.09	94.93	0.13
33	5944.00	0.79	25.11	5932.20	-206.76	-207.75	96.15	0.03
34	6136.00	0.97	19.31	6124.18	-204.02	-205.01	97.25	0.10
35	6328.00	1.14	21.60	6316.15	-200.70	-201.71	98.49	0.09
36	6520.00	1.14	32.14	6508.11	-197.29	-198.31	100.21	0.11
37	6712.00	0.88	46.65	6700.08	-194.64	-195.68	102.30	0.19
38	6904.00	0.79	65.45	6892.06	-193.05	-194.12	104.57	0.15
39	7096.00	0.62	75.12	7084.04	-192.21	-193.30	106.78	0.11
40	7287.00	0.70	78.64	7275.03	-191.70	-192.81	108.92	0.05
41	7479.00	0.70	94.63	7467.02	-191.54	-192.67	111.24	0.10
42	7670.00	0.79	85.85	7658.00	-191.51	-192.67	113.72	0.08
43	7861.00	0.97	228.93	7848.99	-192.48	-193.64	113.81	0.87
44	8053.00	1.06	234.91	8040.96	-194.59	-195.73	111.13	0.07
45	8245.00	1.06	214.43	8232.93	-197.10	-198.21	108.68	0.20
46	8436.00	0.44	288.96	8423.92	-198.34	-199.43	106.98	0.54
47	8628.00	0.09	202.12	8615.91	-198.25	-199.33	106.23	0.23
48	8820.00	0.88	117.66	8807.91	-199.06	-200.16	107.48	0.46
49	9011.00	1.67	107.38	8998.86	-200.53	-201.67	111.43	0.43
50	9203.00	1.41	181.12	9190.80	-203.70	-204.87	114.06	0.97
51	9395.00	0.88	209.16	9382.77	-207.36	-208.52	113.29	0.39

Survey #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	DLS
52	9586.00	1.14	152.73	9573.74	-210.33	-211.48	113.45	0.51
53	9777.00	0.44	205.55	9764.72	-212.67	-213.84	114.00	0.49
54	9968.00	1.06	263.21	9955.71	-213.56	-214.71	111.93	0.47
55	10160.00	1.14	264.79	10147.67	-213.98	-215.09	108.27	0.04
56	10351.00	0.26	236.93	10338.66	-214.41	-215.50	106.01	0.48
57	10544.00	0.53	227.96	10531.65	-215.26	-216.34	104.98	0.14
58	10719.00	0.53	243.26	10706.65	-216.18	-217.24	103.66	0.08
59	10768.00	0.79	282.98	10755.64	-216.21	-217.27	103.13	1.04
60	10816.00	7.12	351.63	10803.51	-213.20	-214.25	102.37	14.32
61	10864.00	14.51	346.62	10850.63	-204.41	-205.44	100.54	15.51
62	10912.00	20.22	345.39	10896.42	-190.56	-191.55	97.06	11.92
63	10960.00	25.76	347.23	10940.59	-172.39	-173.34	92.65	11.64
64	11008.00	30.86	353.82	10982.85	-150.00	-150.91	89.02	12.45
65	11056.00	35.17	351.27	11023.09	-124.12	-124.99	85.60	9.43
66	11104.00	40.01	355.85	11061.12	-95.08	-95.91	82.38	11.64
67	11152.00	46.60	0.77	11096.04	-62.21	-63.04	81.49	15.42
68	11200.00	53.82	3.23	11126.74	-25.37	-26.21	82.82	15.55
69	11248.00	58.74	3.40	11153.38	14.49	13.63	85.13	10.25
70	11296.00	64.28	1.82	11176.27	56.64	55.76	87.04	11.90
71	11344.00	69.20	359.36	11195.22	100.72	99.84	87.47	11.28
72	11393.00	73.95	358.39	11210.70	147.17	146.30	86.56	9.87
73	11441.00	79.67	356.90	11221.65	193.82	192.97	84.63	12.29
74	11488.00	85.21	357.69	11227.83	240.32	239.50	82.43	11.90
75	11568.00	91.98	357.16	11229.80	320.13	319.34	78.84	8.49
76	11663.00	88.46	358.92	11229.43	415.01	414.27	75.59	4.14
77	11760.00	88.55	359.80	11231.96	511.96	511.23	74.51	0.91
78	11856.00	88.46	359.98	11234.47	607.92	607.20	74.33	0.21
79	11952.00	86.88	359.10	11238.37	703.82	703.11	73.56	1.88
80	12048.00	83.10	357.95	11246.75	799.37	798.69	71.10	4.11
81	12145.00	85.65	359.98	11256.26	895.85	895.20	69.36	3.35
82	12240.00	90.48	1.03	11259.47	990.77	990.11	70.20	5.20
83	12336.00	92.51	1.91	11256.96	1086.72	1086.04	72.66	2.30
84	12432.00	92.77	1.91	11252.54	1182.59	1181.88	75.85	0.27
85	12528.00	92.77	1.82	11247.90	1278.46	1277.72	78.97	0.09
86	12624.00	93.03	1.65	11243.04	1374.31	1373.55	81.88	0.32
87	12720.00	93.30	1.82	11237.74	1470.15	1469.36	84.78	0.33
88	12816.00	90.75	0.94	11234.35	1566.07	1565.27	87.09	2.81
89	12912.00	89.08	359.27	11234.49	1662.06	1661.26	87.26	2.46
90	13008.00	89.16	359.71	11235.97	1758.03	1757.24	86.41	0.47
91	13104.00	89.43	359.62	11237.15	1854.01	1853.24	85.85	0.30
92	13200.00	90.40	359.54	11237.29	1949.99	1949.23	85.15	1.01
93	13296.00	91.01	359.62	11236.11	2045.97	2045.22	84.44	0.64
94	13392.00	91.28	359.45	11234.19	2141.94	2141.20	83.66	0.33
95	13488.00	91.63	359.36	11231.75	2237.88	2237.16	82.67	0.38
96	13584.00	91.10	359.19	11229.47	2333.83	2333.13	81.45	0.58
97	13680.00	91.63	359.10	11227.18	2429.77	2429.09	80.02	0.56
98	13776.00	90.48	358.04	11225.41	2525.70	2525.04	77.62	1.63
99	13872.00	90.92	358.04	11224.24	2621.59	2620.98	74.34	0.46
100	13968.00	90.04	359.54	11223.44	2717.54	2716.95	72.31	1.81
101	14064.00	90.22	359.71	11223.22	2813.53	2812.95	71.69	0.26
102	14161.00	90.75	359.80	11222.40	2910.51	2909.94	71.27	0.55
103	14257.00	91.10	359.54	11220.85	3006.49	3005.93	70.72	0.45
104	14353.00	89.43	359.62	11220.40	3102.47	3101.92	70.01	1.74
105	14449.00	89.25	359.71	11221.51	3198.45	3197.91	69.45	0.21
106	14546.00	89.60	359.89	11222.48	3295.44	3294.91	69.11	0.41
107	14641.00	90.13	0.06	11222.71	3390.43	3389.91	69.07	0.59
108	14738.00	90.48	0.15	11222.19	3487.43	3486.90	69.25	0.37
109	14834.00	91.10	0.24	11220.87	3583.41	3582.89	69.58	0.65
110	14930.00	91.54	0.15	11218.65	3679.39	3678.87	69.90	0.47
111	15026.00	92.07	0.15	11215.63	3775.34	3774.82	70.16	0.55
112	15122.00	90.48	359.19	11213.49	3871.30	3870.79	69.60	1.93
113	15218.00	88.81	358.83	11214.09	3967.25	3966.77	67.94	1.78
114	15314.00	89.25	358.92	11215.71	4063.20	4062.74	66.06	0.47
115	15410.00	90.31	359.19	11216.08	4159.16	4158.72	64.48	1.14
116	15506.00	91.36	359.80	11214.68	4255.13	4254.71	63.63	1.26

<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	15603.00	91.98	0.33	11211.86	4352.09	4351.66	63.74	0.84
118	15699.00	90.57	0.42	11209.72	4448.06	4447.64	64.37	1.47
119	15795.00	89.34	0.06	11209.80	4544.06	4543.63	64.77	1.33
120	15891.00	89.43	0.24	11210.83	4640.05	4639.63	65.02	0.21
121	15987.00	89.69	0.42	11211.56	4736.04	4735.62	65.57	0.33
122	16006.00	89.78	0.33	11211.65	4755.04	4754.62	65.70	0.67
PTB	16059.00	89.78	0.33	11211.86	4808.04	4807.62	66.00	0.00