



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

December 3, 2012

COG Operating LLC (Concho)
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanica Castillo

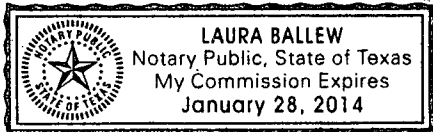
RE: **Puckett 13 Federal No. 007H**

Please find enclosed a copy of the survey from 0.00' to 5860.00' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

STATE OF TEXAS §
 §
COUNTY OF NUECES §

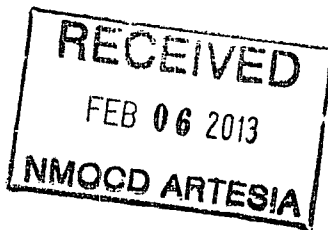
This instrument was acknowledged before me on the 6th day of December, A.D., 2012, by Keith Havelka.



Laura Ballew
Notary Public, State of Texas

Sincerely,

Keith Havelka
Operations



30-015-39178

Company: COG Operating LLC (Concho)
Lease/Well: Puckett 13 Federal / No. 007H



Rig Name: JW Rig 2
State/County: New Mexico / Eddy
Latitude: 32.84, Longitude: -103.82
GRID North is 0.28 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB=18.5'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: final survey .ut
Minimum Curvature Method
Report Date/Time: 12/3/2012 / 14:18

Vaughn Energy Services
Fort Worth, Texas

817-741-3610

Surveyor: Tim Kaczor

Puckett 13 Federal No. 007H / API 30-015-39178

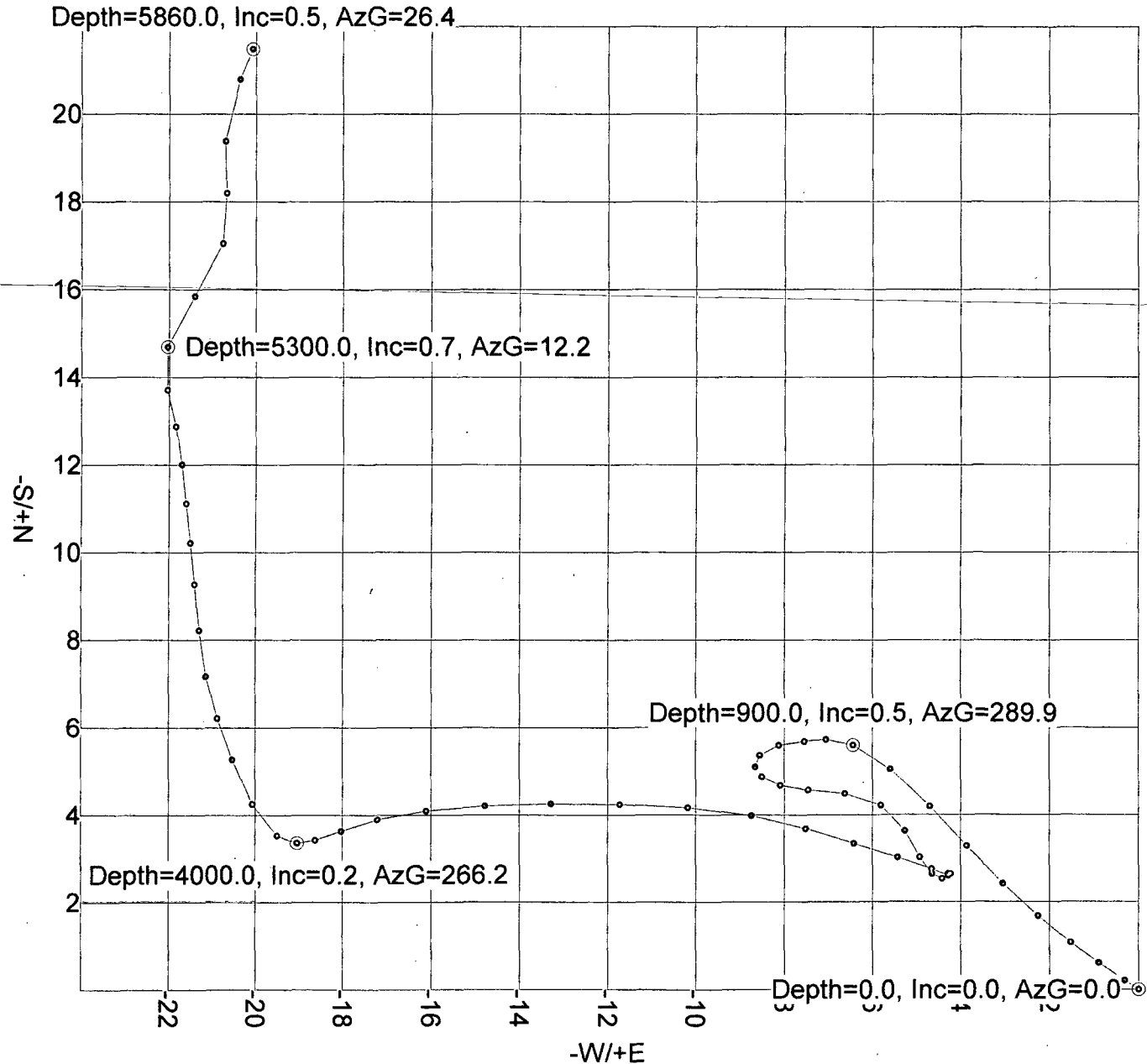
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.43	303.16	100.00	0.21	-0.31	0.21	0.38	303.16	0.43
200.00	0.39	305.84	200.00	0.61	-0.91	0.61	1.09	304.00	0.04
300.00	0.49	308.19	299.99	1.08	-1.52	1.08	1.87	305.30	0.10
400.00	0.60	310.54	399.99	1.68	-2.26	1.68	2.82	306.71	0.10
500.00	0.65	314.69	499.98	2.42	-3.06	2.42	3.90	308.38	0.07
600.00	0.71	318.84	599.98	3.28	-3.87	3.28	5.07	310.35	0.07
700.00	0.71	315.48	699.97	4.19	-4.70	4.19	6.30	311.68	0.04
800.00	0.71	312.12	799.96	5.04	-5.59	5.04	7.53	312.02	0.04
900.00	0.48	289.86	899.96	5.60	-6.44	5.60	8.53	310.97	0.32
1000.00	0.25	267.60	999.95	5.73	-7.05	5.73	9.09	309.08	0.26
1100.00	0.31	263.37	1099.95	5.69	-7.54	5.69	9.45	307.02	0.06
1200.00	0.37	259.13	1199.95	5.60	-8.12	5.60	9.87	304.56	0.06
1300.00	0.24	213.88	1299.95	5.36	-8.56	5.36	10.10	302.08	0.26
1400.00	0.11	168.62	1399.95	5.10	-8.65	5.10	10.04	300.51	0.18
1500.00	0.21	135.40	1499.95	4.87	-8.50	4.87	9.80	299.81	0.14
1600.00	0.32	102.19	1599.95	4.68	-8.10	4.68	9.35	300.03	0.18
1700.00	0.42	98.03	1699.95	4.57	-7.46	4.57	8.75	301.49	0.11
1800.00	0.53	93.88	1799.94	4.49	-6.63	4.49	8.01	304.07	0.11

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.49	123.10	1899.94	4.22	-5.82	4.22	7.19	305.97	0.26
2000.00	0.46	152.33	1999.93	3.63	-5.27	3.63	6.40	304.55	0.24
2100.00	0.33	147.43	2099.93	3.03	-4.92	3.03	5.78	301.57	0.13
2200.00	0.20	142.54	2199.93	2.64	-4.66	2.64	5.36	299.54	0.13
2300.00	0.15	75.60	2299.93	2.53	-4.43	2.53	5.10	299.77	0.20
2400.00	0.09	8.65	2399.93	2.64	-4.29	2.64	5.04	301.64	0.14
2500.00	0.11	151.12	2499.93	2.64	-4.24	2.64	4.99	301.96	0.19
2600.00	0.12	293.58	2599.93	2.60	-4.29	2.60	5.02	301.26	0.22
2700.00	0.35	290.96	2699.93	2.75	-4.67	2.75	5.42	300.53	0.23
2800.00	0.57	288.33	2799.93	3.02	-5.43	3.02	6.21	299.09	0.23
2900.00	0.63	287.80	2899.92	3.35	-6.42	3.35	7.24	297.51	0.05
3000.00	0.68	287.28	2999.91	3.69	-7.51	3.69	8.37	296.15	0.05
3100.00	0.78	280.57	3099.91	3.99	-8.75	3.99	9.61	294.52	0.13
3200.00	0.88	273.87	3199.90	4.17	-10.18	4.17	11.00	292.26	0.14
3300.00	0.89	271.69	3299.88	4.24	-11.72	4.24	12.47	289.89	0.04
3400.00	0.91	269.50	3399.87	4.26	-13.29	4.26	13.96	287.76	0.04
3500.00	0.81	266.58	3499.86	4.21	-14.79	4.21	15.37	285.89	0.11
3600.00	0.71	263.66	3599.85	4.10	-16.11	4.10	16.62	284.27	0.10
3700.00	0.57	255.40	3699.85	3.90	-17.21	3.90	17.65	282.78	0.17
3800.00	0.42	247.14	3799.84	3.63	-18.03	3.63	18.39	281.40	0.16
3900.00	0.30	256.68	3899.84	3.43	-18.63	3.43	18.94	280.43	0.14
4000.00	0.17	266.22	3999.84	3.36	-19.03	3.36	19.32	280.01	0.13
4100.00	0.42	300.20	4099.84	3.54	-19.50	3.54	19.82	280.28	0.30
4200.00	0.67	334.19	4199.83	4.25	-20.07	4.25	20.52	281.96	0.40
4300.00	0.61	337.73	4299.83	5.28	-20.53	5.28	21.20	284.41	0.08
4400.00	0.54	341.28	4399.82	6.22	-20.89	6.22	21.79	286.58	0.07
4500.00	0.59	347.95	4499.82	7.17	-21.15	7.17	22.33	288.73	0.08
4600.00	0.63	354.63	4599.81	8.22	-21.31	8.22	22.84	291.10	0.08
4700.00	0.58	354.15	4699.81	9.27	-21.41	9.27	23.33	293.42	0.06
4800.00	0.52	353.68	4799.80	10.22	-21.51	10.22	23.82	295.42	0.06
4900.00	0.51	353.59	4899.80	11.12	-21.61	11.12	24.30	297.23	0.01
5000.00	0.51	353.50	4999.79	12.01	-21.71	12.01	24.81	298.95	0.01
5100.00	0.50	349.00	5099.79	12.87	-21.84	12.87	25.36	300.51	0.04
5200.00	0.49	344.50	5199.79	13.71	-22.04	13.71	25.96	301.88	0.04
5300.00	0.68	12.22	5299.78	14.69	-22.03	14.69	26.48	303.70	0.33
5400.00	0.87	39.93	5399.77	15.85	-21.42	15.85	26.64	306.50	0.41
5500.00	0.74	15.11	5499.76	17.05	-20.77	17.05	26.87	309.39	0.37
5600.00	0.61	350.28	5599.76	18.20	-20.69	18.20	27.55	311.34	0.32
5700.00	0.76	5.41	5699.75	19.38	-20.71	19.38	28.37	313.10	0.23

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	0.91	20.54	5799.74	20.79	-20.37	20.79	29.11	315.58	0.27
5860.00	0.53	26.43	5859.73	21.49	-20.08	21.49	29.41	316.93	0.65



Vaughn Energy Services
Fort Worth, Texas
817-741-3610
Surveyor: Tim Kaczor
Puckett 13 Federal No. 007H / API 30-015-39178



VES Survey Date: 11/23/2012



Company: COG Operating, LLC

Job Number:

03926-433-21

Calculation Method

Minimum Curvature

Well: Puckett 13 Federal #7H

Mag Decl.:

7.30

Proposed Azimuth

179.3

Location: Eddy County, New Mexico

Dir Driller:

Cody Styles

Depth Reference

KBG

Rig: JW #2

MWD Eng:

Raul Lopez

Tie Into:

Previous MWD Survey

Job Date: 11/23/12 - 12/02/12

Survey Number	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)	Direction Azimuth			
Tie In	5860.00	0.53	26.43	0	5859.73	21.74	21.51 N	20.09 W					
1	5922	0.1	35.9	62	5921.73	-22.04	21.81 N	19.93 W	29.55	317.58	0.70	-0.69	15.27
2	5953	1.5	155.3	31	5952.73	-21.69	21.46 N	19.75 W	29.16	317.39	5.00	4.52	385.16
3	5985	4.0	165.5	32	5984.69	-20.23	20.00 N	19.29 W	27.79	316.04	7.93	7.81	31.88
4	6016	6.3	166.2	31	6015.56	-17.52	17.30 N	18.61 W	25.41	312.91	7.42	7.42	2.26
5	6047	8.7	168.0	31	6046.29	-13.56	13.36 N	17.72 W	22.19	307.01	7.78	7.74	5.81
6	6079	11.0	169.7	32	6077.82	-8.18	7.99 N	16.67 W	18.49	295.60	7.24	7.19	5.31
7	6110	13.5	170.7	31	6108.11	-1.69	1.50 N	15.56 W	15.63	275.52	8.09	8.06	3.23
8	6142	16.1	172.7	32	6139.05	6.42	6.58 S	14.39 W	15.83	245.41	8.28	8.13	6.25
9	6173	19.2	172.9	31	6168.58	15.75	15.91 S	13.21 W	20.68	219.71	10.00	10.00	0.65
10	6204	22.6	174.2	31	6197.54	26.75	26.90 S	11.98 W	29.44	204.01	11.07	10.97	4.19
11	6235	26.3	175.1	31	6225.75	39.54	39.67 S	10.79 W	41.11	195.22	12.00	11.94	2.90
12	6267	29.9	174.8	32	6253.98	54.57	54.68 S	9.46 W	55.49	189.82	11.26	11.25	-0.94
13	6298	34.1	173.8	31	6280.26	70.93	71.02 S	7.82 W	71.45	186.29	13.66	13.55	-3.23
14	6329	38.3	172.4	31	6305.27	89.12	89.19 S	5.61 W	89.37	183.60	13.81	13.55	-4.52
15	6360	42.4	172.0	31	6328.89	109.03	109.07 S	2.89 W	109.11	181.52	13.25	13.23	-1.29
16	6392	46.5	172.0	32	6351.73	131.25	131.26 S	0.23 E	131.26	179.90	12.81	12.81	0.00
17	6423	50.1	172.3	31	6372.35	154.21	154.18 S	3.39 E	154.22	178.74	11.64	11.61	0.97
18	6454	53.8	173.0	31	6391.45	178.45	178.39 S	6.51 E	178.51	177.91	12.07	11.94	2.26
19	6486	57.4	173.9	32	6409.53	204.71	204.62 S	9.51 E	204.84	177.34	11.49	11.25	2.81
20	6517	61.1	174.5	31	6425.38	231.25	231.12 S	12.20 E	231.44	176.98	12.05	11.94	1.94
21	6548	64.9	174.6	31	6439.45	258.77	258.61 S	14.83 E	259.03	176.72	12.26	12.26	0.32
22	6579	68.3	174.4	31	6451.76	287.11	286.92 S	17.55 E	287.46	176.50	10.98	10.97	-0.65
23	6611	71.0	174.3	32	6462.88	317.00	316.78 S	20.51 E	317.44	176.30	8.44	8.44	-0.31
24	6642	73.4	173.8	31	6472.36	346.39	346.13 S	23.57 E	346.94	176.10	7.89	7.74	-1.61
25	6673	76.1	173.5	31	6480.51	376.14	375.86 S	26.88 E	376.82	175.91	8.76	8.71	-0.97
26	6704	78.7	173.5	31	6487.28	406.24	405.91 S	30.30 E	407.04	175.73	8.39	8.39	0.00
27	6736	81.1	173.9	32	6492.89	437.59	437.22 S	33.76 E	438.52	175.59	7.60	7.50	1.25
28	6767	84.8	174.0	31	6496.69	468.21	467.81 S	37.00 E	469.27	175.48	11.94	11.94	0.32
29	6798	87.4	174.4	31	6498.80	499.01	498.58 S	40.12 E	500.19	175.40	8.49	8.39	1.29
30	6829	89.5	174.6	31	6499.64	529.89	529.42 S	43.09 E	531.18	175.35	6.80	6.77	0.65
31	6861	90.2	174.8	32	6499.72	561.79	561.29 S	46.05 E	563.17	175.31	2.28	2.19	0.63
32	6892	90.4	174.5	31	6499.56	592.68	592.15 S	48.94 E	594.17	175.28	1.16	0.65	-0.97
33	6985	90.3	177.0	93	6498.99	685.49	684.89 S	55.83 E	687.16	175.34	2.69	-0.11	2.69
34	7079	91.1	179.1	94	6497.84	779.46	778.82 S	59.03 E	781.05	175.67	2.39	0.85	2.23
35	7173	91.0	179.5	94	6496.12	873.44	872.80 S	60.18 E	874.87	176.06	0.44	-0.11	0.43
36	7267	91.0	179.4	94	6494.48	967.43	966.78 S	61.08 E	968.70	176.38	0.11	0.00	-0.11
37	7360	90.9	179.6	93	6492.94	1060.41	1059.76 S	61.89 E	1061.57	176.66	0.24	-0.11	0.22

Company: COG Operating, LLCJob Number: 03926-433-21

Calculation Method

Minimum Curvature

Well: Puckett 13 Federal #7HMag Decl.: 7.30

Proposed Azimuth

179.3Location: Eddy County, New MexicoDir Driller: Cody Styles

Depth Reference

KBGRig: JW #2MWD Eng: Raul LopezTie Into: Previous MWD SurveyJob Date: 11/23/12 - 12/02/12

Survey Number	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)	Direction Azimuth			
38	7455	90.9	179.6	95	6491.45	1155.40	1154.75 S	62.55 E	1156.44	176.90	0.00	0.00	0.00
39	7548	91.4	180.5	93	6489.58	1248.37	1247.73 S	62.47 E	1249.29	177.13	1.11	0.54	0.97
40	7641	91.3	180.7	93	6487.39	1341.32	1340.70 S	61.50 E	1342.11	177.37	0.24	-0.11	0.22
41	7734	91.2	181.0	93	6485.36	1434.27	1433.66 S	60.12 E	1434.92	177.60	0.34	-0.11	0.32
42	7827	91.3	181.3	93	6483.33	1527.20	1526.62 S	58.25 E	1527.73	177.81	0.34	0.11	0.32
43	7921	91.3	181.3	94	6481.20	1621.12	1620.57 S	56.12 E	1621.55	178.02	0.00	0.00	0.00
44	8014	90.9	181.0	93	6479.41	1714.06	1713.54 S	54.26 E	1714.40	178.19	0.54	-0.43	-0.32
45	8108	90.9	180.8	94	6477.94	1808.01	1807.51 S	52.78 E	1808.28	178.33	0.21	0.00	-0.21
46	8202	90.5	180.2	94	6476.79	1901.98	1901.50 S	51.96 E	1902.21	178.43	0.77	-0.43	-0.64
47	8295	90.3	179.7	93	6476.14	1994.97	1994.50 S	52.04 E	1995.18	178.51	0.58	-0.22	-0.54
48	8389	91.4	180.1	94	6474.74	2088.96	2088.49 S	52.20 E	2089.14	178.57	1.25	1.17	0.43
49	8483	91.8	179.7	94	6472.12	2182.91	2182.45 S	52.37 E	2183.08	178.63	0.60	0.43	-0.43
50	8576	92.4	179.7	93	6468.71	2275.85	2275.39 S	52.86 E	2276.00	178.67	0.65	0.65	0.00
51	8670	93.0	179.2	94	6464.28	2369.74	2369.28 S	53.76 E	2369.89	178.70	0.83	0.64	-0.53
52	8764	91.7	178.8	94	6460.43	2463.66	2463.18 S	55.40 E	2463.81	178.71	1.45	-1.38	-0.43
53	8858	90.3	179.2	94	6458.79	2557.64	2557.15 S	57.04 E	2557.79	178.72	1.55	-1.49	0.43
54	8952	90.4	178.9	94	6458.21	2651.64	2651.14 S	58.59 E	2651.78	178.73	0.34	0.11	-0.32
55	9045	90.3	179.0	93	6457.65	2744.64	2744.12 S	60.30 E	2744.78	178.74	0.15	-0.11	0.11
56	9139	91.2	179.7	94	6456.42	2838.63	2838.10 S	61.37 E	2838.77	178.76	1.21	0.96	0.74
57	9233	91.3	179.8	94	6454.37	2932.60	2932.08 S	61.78 E	2932.73	178.79	0.15	0.11	0.11
58	9326	92.2	179.6	93	6451.53	3025.56	3025.03 S	62.26 E	3025.67	178.82	0.99	0.97	-0.22
59	9420	91.9	179.8	94	6448.16	3119.49	3118.97 S	62.75 E	3119.60	178.85	0.38	-0.32	0.21
60	9514	90.9	180.9	94	6445.87	3213.45	3212.94 S	62.18 E	3213.54	178.89	1.58	-1.06	1.17
61	9607	89.4	180.4	93	6445.62	3306.42	3305.93 S	61.12 E	3306.50	178.94	1.70	-1.61	-0.54
62	9700	89.5	180.1	93	6446.52	3399.40	3398.93 S	60.72 E	3399.47	178.98	0.34	0.11	-0.32
63	9794	90.1	180.0	94	6446.84	3493.39	3492.92 S	60.64 E	3493.45	179.01	0.65	0.64	-0.11
64	9887	90.4	179.9	93	6446.44	3586.39	3585.92 S	60.72 E	3586.44	179.03	0.34	0.32	-0.11
65	9981	90.8	180.1	94	6445.45	3680.38	3679.92 S	60.72 E	3680.42	179.05	0.48	0.43	0.21
66	10075	91.1	180.0	94	6443.89	3774.36	3773.90 S	60.64 E	3774.39	179.08	0.34	0.32	-0.11
67	10168	91.3	179.7	93	6441.95	3867.33	3866.88 S	60.88 E	3867.36	179.10	0.39	0.22	-0.32
68	10262	91.6	179.5	94	6439.57	3961.30	3960.85 S	61.54 E	3961.33	179.11	0.38	0.32	-0.21
69	10355	91.1	178.5	93	6437.38	4054.27	4053.81 S	63.16 E	4054.30	179.11	1.20	-0.54	-1.08
70	10448	91.0	178.1	93	6435.67	4147.24	4146.75 S	65.92 E	4147.28	179.09	0.44	-0.11	-0.43
71	10542	91.2	179.2	94	6433.87	4241.22	4240.71 S	68.13 E	4241.26	179.08	1.19	0.21	1.17
72	10635	91.2	180.3	93	6431.92	4334.19	4333.69 S	68.54 E	4334.23	179.09	1.18	0.00	1.18
73	10729	91.9	180.1	94	6429.38	4428.15	4427.65 S	68.21 E	4428.18	179.12	0.77	0.74	-0.21
74	10822	91.7	180.2	93	6426.46	4521.09	4520.60 S	67.97 E	4521.11	179.14	0.24	-0.22	0.11
75	10916	92.1	180.0	94	6423.34	4615.03	4614.55 S	67.80 E	4615.05	179.16	0.48	0.43	-0.21
76	11009	92.7	179.7	93	6419.45	4707.94	4707.47 S	68.04 E	4707.96	179.17	0.72	0.65	-0.32

ArcherCompany: COG Operating, LLCJob Number: 03926-433-21

Calculation Method

Minimum Curvature

Well: Puckett 13 Federal #7HMag Decl.: 7.30Proposed Azimuth 179.3Location: Eddy County, New MexicoDir Driller: Cody StylesDepth Reference KBGRig: JW #2MWD Eng: Raul LopezTie Into: Previous MWD SurveyJob Date: 11/23/12 - 12/02/12

Survey Number	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)	Direction Azimuth			
77	11106	92.8	179.7	97	6414.79	4804.83	4804.36 S	68.55 E	4804.85	179.18	0.10	0.10	0.00
Proj.	11155	92.8	179.7	49	6412.40	4853.77	4853.30 S	68.81 E	4853.78	179.19	0.00	0.00	0.00