



9/21/15

State of New Mexico
County of Eddy

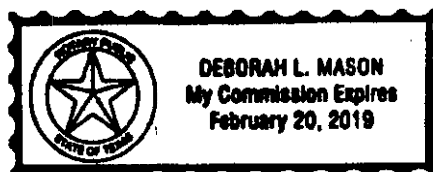
I, Donald D. Mason, certify that: I am employed by Terra Directional Services LLC; that I did on the day(s) of 08/15/2015 through 09/20/2015 conduct or supervise the taking of a MWD survey from a depth of 10237 feet to a depth of 14865 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Terra Directional Services LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of COG Production, LLC for the Patron 23 Federal #4H Well API 30-015-42451 in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Terra Directional Services LLC.

A handwritten signature of Donald D. Mason in black ink, written over a horizontal line.

Donald D. Mason
President

State of Texas
County of Burnet

Before me, a notary public, on this day personally appeared Donald D. Mason, known to me to be the person whose name is subscribed to the foregoing document and, being by me first duly sworn, declared that the statements therein contained are true and correct.

A handwritten signature of Deborah L. Mason in black ink, written over a horizontal line.
Notary Public's Signature



Customer Name: COG Production, LLC
 Well Name: Patron 23 Federal # 4
 API Number: 30-015-42451
 County / Parish: Eddy

M.W.D. Operator: Rusty Whitfield
 Directional Driller: Armond McKey
 Total Magnetic Correction: 7.06
 Job #: NM-561

Vertical Section: 179.85

Tie In Survey(s) Provided By:

VES Gyro

	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	10200.00	0.38	236.53	10193.64	28.66	-29.00	-133.54	0.00	0.00	0.00
1	10237.00	3.30	164.60	10230.62	29.75	-30.09	-133.36	136.71	257.28	8.66
2	10269.00	8.40	161.10	10262.44	32.85	-33.20	-132.36	136.46	255.92	15.97
3	10300.00	13.50	163.20	10292.87	38.46	-38.81	-130.58	136.22	253.45	16.50
4	10332.00	18.80	167.90	10323.59	47.09	-47.43	-128.41	136.89	249.73	17.05
5	10364.00	22.90	173.20	10353.50	58.33	-58.66	-126.60	139.53	245.14	14.09
6	10395.00	27.30	174.60	10381.56	71.40	-71.73	-125.21	144.30	240.19	14.32
7	10427.00	32.30	174.10	10409.32	87.23	-87.55	-123.64	151.50	234.70	15.64
8	10459.00	36.70	173.30	10435.69	105.24	-105.56	-121.65	161.06	229.05	13.82
9	10490.00	41.70	172.00	10459.70	124.67	-124.99	-119.13	172.66	223.63	16.34
10	10522.00	47.10	171.20	10482.56	146.82	-147.13	-115.85	187.26	218.22	16.97
11	10554.00	52.00	170.70	10503.31	170.87	-171.17	-112.02	204.56	213.20	15.36
12	10585.00	56.40	169.10	10521.44	195.63	-195.91	-107.60	223.51	208.78	14.80
13	10617.00	60.10	168.70	10538.28	222.34	-222.61	-102.36	245.01	204.69	11.61
14	10649.00	65.60	169.90	10552.88	250.32	-250.58	-97.08	268.73	201.18	17.51
15	10681.00	72.20	172.30	10564.39	279.81	-280.05	-92.48	294.93	198.27	21.78
16	10709.00	79.60	173.90	10571.21	306.76	-306.99	-89.23	319.70	196.21	27.00
17	10744.00	89.40	172.50	10574.56	341.32	-341.54	-85.10	351.99	193.99	28.28
18	10776.00	93.30	171.50	10573.80	373.01	-373.22	-80.65	381.83	192.19	12.58
19	10871.00	91.30	169.20	10569.99	466.62	-466.79	-64.74	471.26	187.90	3.21
20	10966.00	91.40	169.80	10567.75	560.04	-560.17	-47.43	562.17	184.84	0.64
21	11061.00	90.20	169.70	10566.43	653.56	-653.64	-30.53	654.36	182.67	1.27
22	11156.00	89.70	171.40	10566.51	747.31	-747.35	-14.93	747.50	181.14	1.87
23	11251.00	89.70	173.90	10567.01	841.55	-841.56	-2.78	841.57	180.19	2.63
24	11346.00	92.00	177.80	10565.60	936.28	-936.28	4.09	936.29	179.75	4.77
25	11441.00	92.70	178.70	10561.70	1031.17	-1031.15	6.99	1031.17	179.61	1.20
26	11536.00	91.90	178.40	10557.89	1126.06	-1126.04	9.39	1126.08	179.52	0.90
27	11631.00	90.40	179.80	10555.98	1221.03	-1221.01	10.88	1221.06	179.49	2.16
28	11726.00	88.20	178.40	10557.14	1316.01	-1315.98	12.37	1316.04	179.46	2.74
29	11822.00	87.50	178.30	10560.75	1411.91	-1411.87	15.14	1411.95	179.39	0.74
30	11917.00	89.10	181.10	10563.56	1506.85	-1506.82	15.63	1506.90	179.41	3.39
31	12012.00	89.00	181.70	10565.14	1601.80	-1601.77	13.31	1601.83	179.52	0.64
32	12107.00	88.40	181.20	10567.29	1696.74	-1696.72	10.91	1696.75	179.63	0.82
33	12202.00	90.80	182.10	10567.96	1791.68	-1791.67	8.17	1791.69	179.74	2.70
34	12297.00	93.60	184.00	10564.31	1886.45	-1886.45	3.13	1886.45	179.91	3.56
35	12392.00	90.30	183.10	10561.08	1981.19	-1981.20	-2.75	1981.20	180.08	3.60
36	12487.00	89.70	183.70	10561.08	2076.00	-2076.03	-8.39	2076.05	180.23	0.89
37	12582.00	87.20	182.60	10563.65	2170.80	-2170.84	-13.60	2170.89	180.36	2.87
38	12677.00	86.80	182.00	10568.62	2265.58	-2265.64	-17.41	2265.70	180.44	0.76
39	12772.00	90.40	180.90	10570.94	2360.50	-2360.56	-19.81	2360.64	180.48	3.96
40	12868.00	90.30	180.20	10570.35	2456.49	-2456.55	-20.74	2456.64	180.48	0.74

41	12963.00	89.70	178.50	10570.35	2551.48	-2551.54	-19.66	2551.62	180.44	1.90
42	13058.00	90.10	177.40	10570.52	2646.43	-2646.48	-16.26	2646.53	180.35	1.23
43	13153.00	89.20	176.20	10571.10	2741.29	-2741.33	-10.96	2741.35	180.23	1.58
44	13248.00	88.80	177.70	10572.76	2836.15	-2836.18	-5.90	2836.18	180.12	1.63
45	13343.00	89.00	178.80	10574.58	2931.10	-2931.11	-3.00	2931.12	180.06	1.18
46	13439.00	88.70	178.90	10576.51	3027.06	-3027.08	-1.08	3027.08	180.02	0.33
47	13534.00	89.30	179.00	10578.17	3122.04	-3122.04	0.66	3122.04	179.99	0.64
48	13629.00	88.40	179.20	10580.07	3217.01	-3217.01	2.16	3217.01	179.96	0.97
49	13724.00	89.80	179.90	10581.57	3311.99	-3312.00	2.90	3312.00	179.95	1.65
50	13819.00	88.80	179.90	10582.73	3406.98	-3406.99	3.07	3406.99	179.95	1.05
51	13914.00	90.10	180.70	10583.64	3501.97	-3501.98	2.57	3501.98	179.96	1.61
52	14009.00	90.00	180.30	10583.56	3596.97	-3596.97	1.74	3596.97	179.97	0.43
53	14104.00	89.50	180.80	10583.97	3691.96	-3691.97	0.83	3691.97	179.99	0.74
54	14200.00	90.30	179.50	10584.14	3787.95	-3787.97	0.58	3787.97	179.99	1.59
55	14295.00	91.80	179.40	10582.40	3882.93	-3882.94	1.49	3882.94	179.98	1.58
56	14390.00	92.00	179.80	10579.25	3977.88	-3977.89	2.15	3977.89	179.97	0.47
57	14485.00	92.00	180.20	10575.93	4072.82	-4072.83	2.15	4072.83	179.97	0.42
58	14580.00	92.40	181.20	10572.28	4167.74	-4167.75	0.99	4167.75	179.99	1.13
59	14675.00	91.20	181.60	10569.30	4262.66	-4262.67	-1.33	4262.67	180.02	1.33
60	14770.00	88.30	179.10	10569.72	4357.63	-4357.65	-1.91	4357.65	180.03	4.03
61	14810.00	87.50	178.40	10571.18	4397.60	-4397.62	-1.04	4397.62	180.01	2.66
PTB	14865.00	87.50	178.40	10573.58	4452.53	-4452.54	0.50	4452.54	179.99	0.18



NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 10 2016

September 3, 2015

RECEIVED

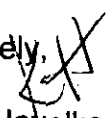
300154

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

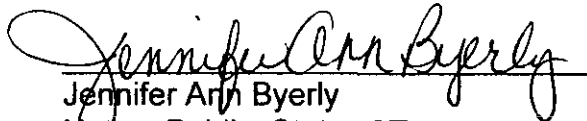
RE: **Patron 23 Federal No 004H**

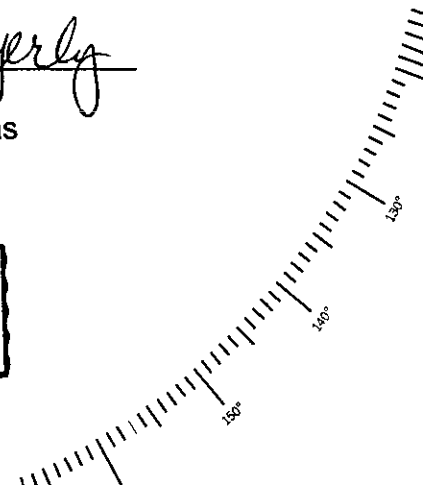
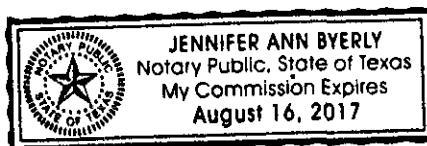
Please find enclosed a copy of the survey from 0' to 12,103' ran on the above referenced well.

Sincerely, 
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 3 day of September,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

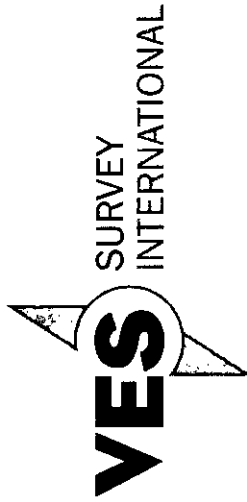




Company: Cog Operating LLC
Lease/Well: Patron 23 Federal No/004H

Rig Name: Latshaw 44
State/County: New Mexico /Eddy
VS-Azi: 0.00 Degrees

Latitude: 32.12210, Longitude: -103.94821
Grid North = True North -0.20 degs (NAD 27)



NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 10 2016
RECEIVED

Depth Reference : R.k.B = 25 FT

DRILLOG HA GYRO SURVEY CALCULATIONS
Filename: patron 23 fed 3h -de_02.ut
Minimum Curvature Method
Report Date/Time: 9/3/2015 / 15:42

VES Survey International
Midland, Texas
432-563-5444

Surveyor: Javier Estrada
Patron 23 Federal No 004H / API 30-015-42451

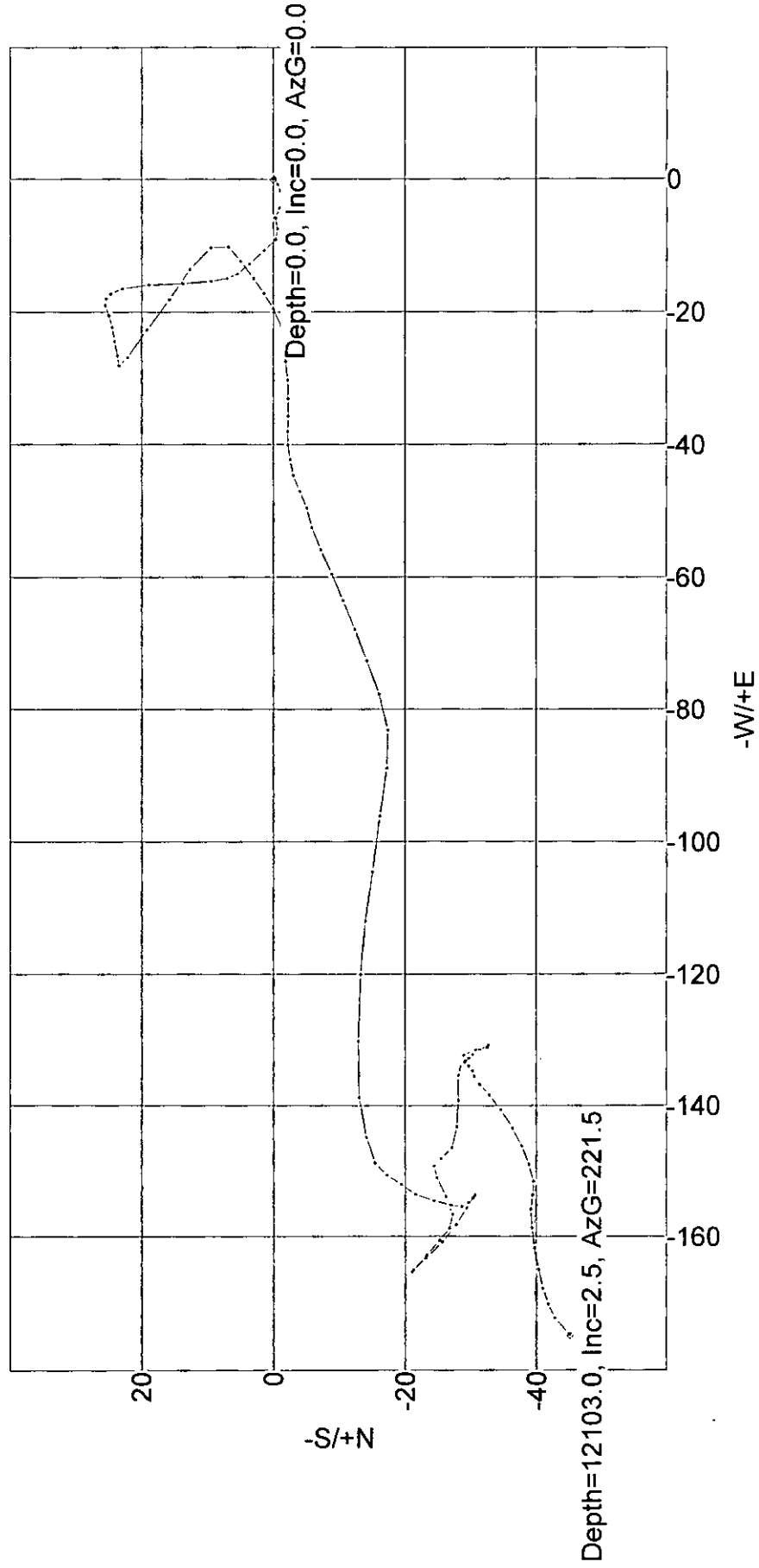
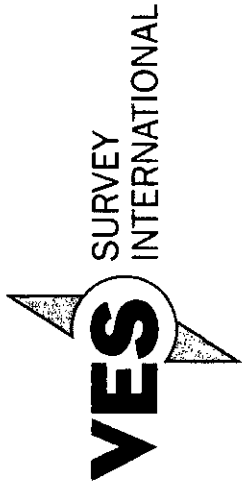
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.18	98.28	100.00	-0.02	0.15	-0.02	0.16	98.28	0.18
200.00	0.08	137.76	200.00	-0.10	0.36	-0.10	0.37	105.25	0.13
300.00	0.44	246.80	300.00	-0.30	0.05	-0.30	0.30	170.09	0.47
400.00	0.59	246.70	399.99	-0.65	-0.77	-0.65	1.01	229.77	0.16
500.00	0.67	251.02	499.99	-1.05	-1.80	-1.05	2.09	239.79	0.09
600.00	0.77	265.37	599.98	-1.29	-3.02	-1.29	3.29	246.83	0.20
700.00	-0.93	302.28	699.97	-0.91	-4.38	-0.91	4.47	258.21	0.56
800.00	0.93	279.76	799.96	-0.34	-5.86	-0.34	5.87	265.65	0.36
900.00	1.05	243.72	899.94	-0.61	-7.48	-0.61	7.50	265.33	0.62
1000.00	1.15	309.74	999.93	-0.37	-9.08	-0.37	9.08	267.65	1.20
1100.00	1.68	322.10	1099.90	1.43	-10.75	1.43	10.84	277.57	0.60
1200.00	1.77	312.97	1199.85	3.64	-12.78	3.64	13.29	285.88	0.29
1300.00	1.05	334.37	1299.82	5.52	-14.30	5.52	15.33	291.09	0.87
1400.00	0.87	341.04	1399.81	7.07	-14.95	7.07	16.54	295.30	0.21
1500.00	1.97	353.51	1499.78	9.49	-15.39	9.49	18.08	301.66	1.13
1600.00	2.97	356.77	1599.68	13.78	-15.73	13.78	20.92	311.22	1.01
1700.00	2.94	358.64	1699.55	18.93	-15.94	18.93	24.74	319.90	0.10
1800.00	1.79	340.90	1799.46	22.97	-16.51	22.97	28.29	324.29	1.34

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	0.50	316.32	1899.44	24.76	-17.33	24.76	30.22	325.02	1.35
2000.00	0.57	311.22	1999.44	25.41	-18.00	25.41	31.14	324.68	0.08
2100.00	0.80	255.39	2099.43	25.56	-19.05	25.56	31.88	323.29	0.68
2200.00	1.00	245.33	2199.42	25.01	-20.53	25.01	32.36	320.63	0.25
2300.00	1.18	262.75	2299.40	24.52	-22.34	24.52	33.17	317.66	0.37
2400.00	1.25	256.52	2399.38	24.14	-24.42	24.14	34.33	314.67	0.15
2500.00	1.28	260.15	2499.36	23.69	-26.58	23.69	35.60	311.72	0.09
2600.00	0.52	266.72	2599.34	23.47	-28.13	23.47	36.64	309.84	0.77
2700.00	2.40	127.34	2699.32	22.18	-26.92	22.18	34.88	309.48	2.82
2800.00	3.47	123.80	2799.18	19.23	-22.74	19.23	29.78	310.21	1.08
2900.00	3.10	129.45	2899.02	15.82	-18.14	15.82	24.07	311.10	0.49
3000.00	3.26	119.77	2998.87	12.69	-13.58	12.69	18.59	313.06	0.56
3100.00	2.25	156.18	3098.76	9.48	-10.32	9.48	14.01	312.58	1.97
3200.00	1.26	218.79	3198.72	6.83	-10.21	6.83	12.29	303.76	2.01
3300.00	2.06	236.19	3298.67	4.97	-12.40	4.97	13.35	291.85	0.93
3400.00	1.64	228.29	3398.62	3.02	-14.95	3.02	15.26	281.42	0.49
3500.00	1.57	241.60	3498.58	1.42	-17.22	1.42	17.28	274.71	0.38
3600.00	1.53	236.64	3598.55	0.04	-19.54	0.04	19.54	270.10	0.14
3700.00	1.71	251.67	3698.51	-1.17	-22.07	-1.17	22.10	266.97	0.46
3800.00	1.53	268.96	3798.47	-1.66	-24.82	-1.66	24.88	266.17	0.52
3900.00	1.54	262.82	3898.43	-1.85	-27.49	-1.85	27.55	266.15	0.16
4000.00	1.68	263.73	3998.39	-2.18	-30.28	-2.18	30.36	265.88	0.15
4100.00	1.56	273.72	4098.35	-2.25	-33.10	-2.25	33.18	266.11	0.31
4200.00	1.43	266.89	4198.32	-2.23	-35.71	-2.23	35.78	266.43	0.22
4300.00	1.20	275.81	4298.29	-2.19	-38.00	-2.19	38.06	266.70	0.30
4400.00	1.18	263.29	4398.27	-2.21	-40.06	-2.21	40.12	266.85	0.26
4500.00	1.36	260.08	4498.25	-2.53	-42.26	-2.53	42.33	266.57	0.19
4600.00	1.43	258.49	4598.22	-2.99	-44.65	-2.99	44.75	266.18	0.09
4700.00	1.61	237.46	4698.18	-3.99	-47.06	-3.99	47.23	265.15	0.58
4800.00	1.59	255.91	4798.14	-5.08	-49.60	-5.08	49.86	264.15	0.51
4900.00	1.87	255.53	4898.10	-5.83	-52.53	-5.83	52.85	263.66	0.28
5000.00	2.30	242.43	4998.03	-7.17	-55.89	-7.17	56.35	262.69	0.64
5100.00	2.36	247.32	5097.95	-8.90	-59.58	-8.90	60.24	261.51	0.21
5200.00	2.59	246.32	5197.86	-10.60	-63.54	-10.60	64.42	260.53	0.23
5300.00	2.85	248.80	5297.74	-12.40	-67.93	-12.40	69.05	259.65	0.29
5400.00	2.96	249.11	5397.61	-14.22	-72.66	-14.22	74.04	258.93	0.11
5500.00	3.17	249.80	5497.47	-16.10	-77.67	-16.10	79.32	258.29	0.21
5600.00	3.34	263.17	5597.31	-17.40	-83.16	-17.40	84.96	258.18	0.78
5700.00	3.35	280.14	5697.14	-17.23	-88.93	-17.23	90.58	259.03	0.99

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	4.95	277.06	5796.88	-16.19	-96.08	-16.19	97.44	260.44	1.62
5900.00	4.85	277.86	5896.51	-15.08	-104.55	-15.08	105.63	261.79	0.13
6000.00	3.78	278.95	5996.23	-13.99	-111.99	-13.99	112.86	262.88	1.07
6100.00	5.54	272.56	6095.89	-13.26	-120.06	-13.26	120.79	263.70	1.84
6200.00	6.00	271.84	6195.39	-12.88	-130.12	-12.88	130.75	264.35	0.47
6300.00	4.01	264.96	6295.00	-13.01	-138.82	-13.01	139.43	264.64	2.08
6400.00	3.05	253.05	6394.81	-14.10	-144.85	-14.10	145.53	264.44	1.20
6500.00	1.70	248.58	6494.72	-15.42	-148.78	-15.42	149.57	264.08	1.36
6600.00	1.59	201.75	6594.69	-17.25	-150.67	-17.25	151.66	263.47	1.31
6700.00	1.44	224.62	6694.65	-19.43	-152.07	-19.43	153.31	262.72	0.62
6800.00	1.58	206.04	6794.62	-21.56	-153.56	-21.56	155.06	262.01	0.51
6900.00	1.84	194.30	6894.57	-24.36	-154.56	-24.36	156.47	261.04	0.43
7000.00	1.28	194.69	6994.54	-26.99	-155.24	-26.99	157.57	260.14	0.56
7100.00	0.65	172.23	7094.52	-28.64	-155.45	-28.64	158.06	259.56	0.72
7200.00	0.79	131.09	7194.52	-29.65	-154.85	-29.65	157.66	259.16	0.52
7300.00	0.53	130.94	7294.51	-30.41	-153.98	-30.41	156.95	258.83	0.26
7400.00	0.08	319.94	7394.51	-30.66	-153.67	-30.66	156.70	258.72	0.61
7500.00	0.70	300.46	7494.50	-30.30	-154.24	-30.30	157.19	258.89	0.62
7600.00	1.25	305.14	7594.49	-29.36	-155.66	-29.36	158.40	259.32	0.55
7700.00	2.16	300.93	7694.44	-27.77	-158.16	-27.77	160.58	260.04	0.92
7800.00	1.81	314.82	7794.39	-25.69	-160.89	-25.69	162.93	260.93	0.59
7900.00	2.22	318.06	7894.32	-23.14	-163.30	-23.14	164.93	261.93	0.43
8000.00	1.12	312.03	7994.28	-21.05	-165.32	-21.05	166.66	262.74	1.11
8100.00	1.53	131.55	8094.27	-21.28	-165.05	-21.28	166.42	262.65	2.65
8200.00	1.87	132.12	8194.23	-23.26	-162.84	-23.26	164.49	261.87	0.34
8300.00	1.56	131.92	8294.18	-25.26	-160.62	-25.26	162.60	261.06	0.31
8400.00	1.23	123.83	8394.15	-26.76	-158.72	-26.76	160.96	260.43	0.38
8500.00	1.37	83.49	8494.13	-27.23	-156.64	-27.23	158.99	260.14	0.91
8600.00	2.06	60.41	8594.08	-26.21	-153.89	-26.21	156.10	260.34	0.97
8700.00	1.53	69.27	8694.03	-24.84	-151.08	-24.84	153.10	260.66	0.60
8800.00	0.66	93.78	8794.02	-24.41	-149.26	-24.41	151.24	260.71	0.97
8900.00	1.32	152.56	8894.00	-25.47	-148.15	-25.47	150.32	260.24	1.13
9000.00	1.42	119.70	8993.97	-27.11	-146.54	-27.11	149.03	259.52	0.78
9100.00	2.46	94.07	9093.92	-27.88	-143.31	-27.88	146.00	258.99	1.33
9200.00	2.20	92.01	9193.83	-28.10	-139.25	-28.10	142.05	258.59	0.27
9300.00	2.20	88.08	9293.76	-28.11	-135.41	-28.11	138.30	258.27	0.15
9400.00	1.57	129.91	9393.71	-28.92	-132.44	-28.92	135.56	257.68	1.47
9500.00	1.09	189.85	9493.69	-30.74	-131.55	-30.74	135.10	256.85	1.39
9600.00	1.17	145.20	9593.67	-32.51	-131.13	-32.51	135.10	256.08	0.86

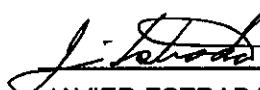
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
9700.00	0.80	346.13	9693.66	-32.67	-130.71	-32.67	134.74	255.97	1.94
9800.00	1.02	315.26	9793.65	-31.36	-131.51	-31.36	135.20	256.59	0.53
9900.00	0.55	335.87	9893.64	-30.30	-132.33	-30.30	135.75	257.10	0.54
10000.00	0.47	294.64	9993.64	-29.69	-132.90	-29.69	136.17	257.41	0.37
10100.00	0.38	1.85	10093.64	-29.19	-133.26	-29.19	136.42	257.65	0.48
10200.00	0.38	236.53	10193.64	-29.04	-133.53	-29.04	136.65	257.73	0.68
10300.00	0.56	209.06	10293.63	-29.65	-134.04	-29.65	137.28	257.53	0.28
10400.00	0.57	254.66	10393.63	-30.21	-134.76	-30.21	138.10	257.36	0.44
10500.00	0.42	241.79	10493.62	-30.51	-135.55	-30.51	138.95	257.31	0.18
10600.00	1.37	236.57	10593.61	-31.35	-136.88	-31.35	140.42	257.10	0.96
10700.00	1.22	218.53	10693.59	-32.84	-138.54	-32.84	142.38	256.66	0.43
10800.00	2.00	238.86	10793.55	-34.58	-140.70	-34.58	144.89	256.19	0.96
10900.00	1.80	238.31	10893.49	-36.31	-143.54	-36.31	148.06	255.80	0.20
11000.00	1.71	246.15	10993.44	-37.74	-146.24	-37.74	151.03	255.53	0.26
11100.00	1.72	251.48	11093.40	-38.82	-149.02	-38.82	154.00	255.40	0.16
11200.00	1.38	257.73	11193.36	-39.55	-151.62	-39.55	156.69	255.38	0.38
11300.00	1.13	293.78	11293.34	-39.41	-153.70	-39.41	158.67	255.62	0.81
11400.00	1.45	262.95	11393.32	-39.16	-155.86	-39.16	160.70	255.90	0.75
11500.00	1.76	269.66	11493.28	-39.33	-158.65	-39.33	163.45	256.08	0.36
11600.00	1.90	257.50	11593.23	-39.70	-161.81	-39.70	166.61	256.22	0.41
11700.00	1.87	259.15	11693.17	-40.36	-165.03	-40.36	169.90	256.26	0.06
11800.00	1.42	254.96	11793.13	-40.99	-167.83	-40.99	172.76	256.27	0.47
11900.00	1.39	246.59	11893.10	-41.79	-170.14	-41.79	175.20	256.20	0.21
12000.00	1.26	240.29	11993.07	-42.82	-172.21	-42.82	177.46	256.04	0.20
12103.00	2.50	221.47	12096.02	-45.07	-174.69	-45.07	180.41	255.53	1.33

VES Survey International
Midland, Texas
432-563-5444
Surveyor: Javier Estrada
Patron 23 Federal No 004H / API 30-015-42451





I JAVIER ESTRADA certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 08/31/15 through 08/31/15 conduct or supervise the taking of a RATE GYRO survey from a depth of 0 feet to a depth of 12103 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of COG OPERATING LLC for the PATRON 23 FEDERAL No Well # 004H API # 30-015-42451 in EDDY County / Parish NEW MEXICO; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services



JAVIER ESTRADA
Service Technician
Vaughn Energy Services