

Results of Directional Survey

API number:	30-025-41193		
OGRID:		Operator:	COG OPERATING LLC
		Property:	GREY HAWK STATE # 1H

surface	ULSTR:	P	31	T 21S	R 34E
				190 FSL	330 FEL

BH Loc	ULSTR:	A	31	T 21S	R 34E
15505	MD	10912.4	TVD	360 FNL	744 FEL
				4920 FSL	

Top Perf/OH	ULSTR:	P	31	T 21S	R 34E
11085	MD	10902.5	TVD	482 FSL	459 FEL

Bot Perf/OH	ULSTR:	A	31	T 21S	R 34E
15335	MD	10917.5	TVD	529 FNL	728 FEL
				4751 FSL	

	MD	N/S	E/W	VD
	11054	292.00	-128.48	10902.45
TOP PERFS/OH	11085	292.22	-128.52	10902.50
	15296	322.13	-134.16	10909.94
	15296	4521.84	-394.93	10918.86
BOT PERFS/OH	15335	4560.67	-398.33	10917.54
	15390	4615.43	-403.12	10915.67

NEXT TO LAST	15460	4685.09	-409.65	10913.41
LAST READING	15505	4729.88	-413.84	10912.39
TD	15505	4729.88	-413.84	10912.39

Surface Location	190	FS	330	FE
Projected BHL	4920	FS	744	FE
Location of				
Top Perfs/OH	482	FS	459	FE
Bottom Perfs/OH	4751	FS	728	FE

SUMMARY of Subsurface Locations

Surface Location	P-31-21S-34E	190	FS	330	FE	Vert. Depth
Top Perfs/OH	P-31-21S-34E	482	FS	459	FE	10902.50
Bottom Perfs/OH	A-31-21S-34E	4751	FS	728	FE	10917.54
Projected TD	A-31-21S-34E	4920	FS	744	FE	10912.39

AUG 19 2014



A GYRO TECHNOLOGIES INC. COMPANY

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

May 7, 2014

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

Attn: Kanicia Castillo

RE: GREY HAWK STATE NO 001H

Please find enclosed a copy of the survey from 0.00' to 12,300.00' ran on the
above referenced well.

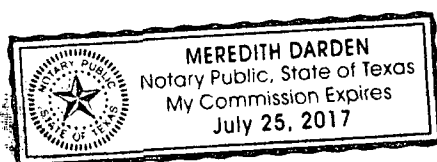
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 7th day of May,
A.D., 2014, by Keith Havelka.


Meredith Darden
Notary Public, State of Texas



Company: COG OPERATING, LLC (CONCHO)
Lease/Well: GREY HAWK STATE NO./001H



Rig Name: PRECISION 105
State/County: NEW MEXICO /LEA
Latitude: 32.43, Longitude: -103.50
GRID North is 0.45 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : R.K.B= 25

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: GREY HAWK STATE 1H.ut

Minimum Curvature Method

Report Date/Time: 5/7/2014 / 13:42

VES Survey International

(432) 563-5444

West, Texas

Surveyor: Javier Estrada

Grey Hawk State No. 001H / API 30-025-41193

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	0.19	240.51	100.00	-0.08	-0.14	-0.08	0.17	240.51	0.19
200.00	0.32	221.41	200.00	-0.37	-0.47	-0.37	0.60	231.78	0.15
300.00	0.31	208.44	300.00	-0.82	-0.79	-0.82	1.14	223.78	0.07
400.00	0.57	221.24	399.99	-1.44	-1.25	-1.44	1.90	220.93	0.27
500.00	0.46	210.38	499.99	-2.16	-1.78	-2.16	2.80	219.47	0.14
600.00	0.57	233.92	599.99	-2.81	-2.39	-2.81	3.69	220.42	0.24
700.00	0.52	231.88	699.98	-3.38	-3.15	-3.38	4.62	222.98	0.06
800.00	0.59	239.64	799.98	-3.92	-3.95	-3.92	5.57	225.22	0.10
900.00	0.59	249.71	899.97	-4.36	-4.88	-4.36	6.55	228.21	0.10
1000.00	0.60	242.54	999.97	-4.78	-5.83	-4.78	7.54	230.64	0.08
1100.00	0.90	232.03	1099.96	-5.51	-6.92	-5.51	8.84	231.47	0.32
1200.00	1.01	232.65	1199.94	-6.52	-8.23	-6.52	10.50	231.61	0.11
1300.00	1.17	227.15	1299.93	-7.75	-9.68	-7.75	12.40	231.32	0.19
1400.00	1.49	228.48	1399.90	-9.30	-11.40	-9.30	14.71	230.78	0.32
1500.00	1.46	228.88	1499.87	-11.00	-13.33	-11.00	17.28	230.46	0.03
1600.00	1.61	227.39	1599.83	-12.79	-15.32	-12.79	19.95	230.15	0.16
1700.00	1.39	230.03	1699.80	-14.51	-17.28	-14.51	22.56	229.97	0.23
1800.00	1.15	231.10	1799.77	-15.92	-18.99	-15.92	24.78	230.02	0.24

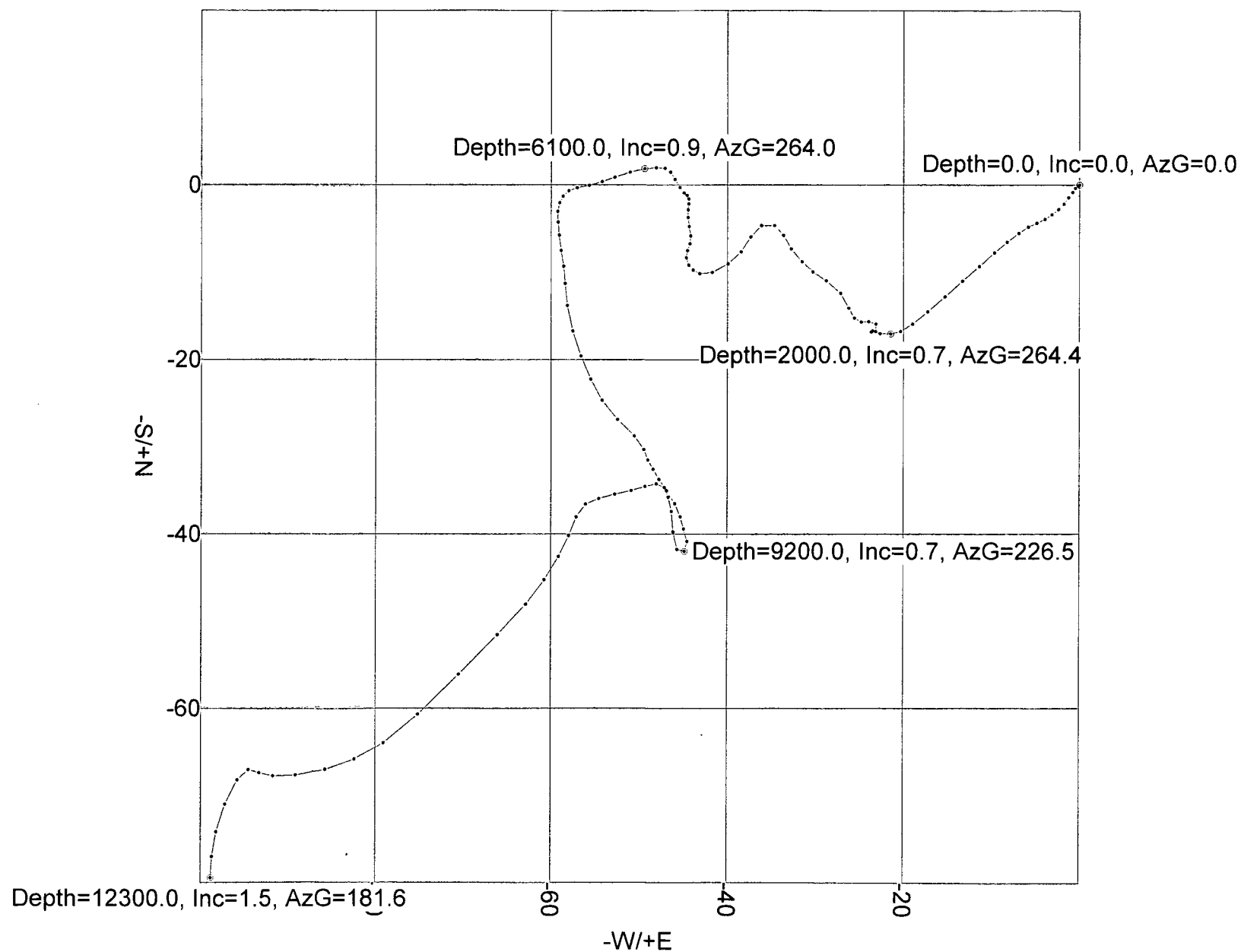
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.69	248.19	1899.76	-16.78	-20.33	-16.78	26.36	230.47	0.53
2000.00	0.65	264.37	1999.75	-17.06	-21.46	-17.06	27.41	231.52	0.19
2100.00	0.72	279.30	2099.74	-17.01	-22.64	-17.01	28.32	233.08	0.19
2200.00	0.38	308.13	2199.74	-16.70	-23.52	-16.70	28.85	234.62	0.42
2300.00	0.43	157.12	2299.74	-16.84	-23.64	-16.84	29.02	234.53	0.79
2400.00	0.62	39.58	2399.74	-16.77	-23.15	-16.77	28.59	234.07	0.90
2500.00	0.62	323.85	2499.73	-15.92	-23.12	-15.92	28.08	235.45	0.76
2600.00	0.57	252.65	2599.73	-15.64	-23.92	-15.64	28.58	236.82	0.69
2700.00	0.45	287.56	2699.72	-15.67	-24.77	-15.67	29.31	237.69	0.33
2800.00	0.59	307.91	2799.72	-15.23	-25.56	-15.23	29.75	239.20	0.23
2900.00	0.96	345.02	2899.71	-14.11	-26.18	-14.11	29.74	241.68	0.60
3000.00	1.34	320.66	2999.69	-12.40	-27.13	-12.40	29.83	245.44	0.61
3100.00	1.18	302.27	3099.67	-10.95	-28.74	-10.95	30.76	249.15	0.43
3200.00	0.90	306.41	3199.65	-9.93	-30.25	-9.93	31.84	251.83	0.29
3300.00	1.08	316.25	3299.64	-8.78	-31.53	-8.78	32.73	254.44	0.25
3400.00	1.13	324.33	3399.62	-7.30	-32.76	-7.30	33.56	257.44	0.16
3500.00	0.93	338.95	3499.60	-5.75	-33.62	-5.75	34.11	260.30	0.33
3600.00	0.95	295.33	3599.59	-4.64	-34.66	-4.64	34.97	262.37	0.70
3700.00	0.91	243.63	3699.58	-4.64	-36.12	-4.64	36.41	262.68	0.81
3800.00	1.24	208.76	3799.56	-5.93	-37.34	-5.93	37.81	260.97	0.71
3900.00	1.11	219.27	3899.54	-7.63	-38.47	-7.63	39.22	258.78	0.25
4000.00	1.24	233.98	3999.52	-9.02	-39.96	-9.02	40.97	257.29	0.33
4100.00	1.13	249.47	4099.50	-10.00	-41.76	-10.00	42.94	256.54	0.34
4200.00	0.60	292.12	4199.49	-10.15	-43.17	-10.15	44.35	256.77	0.80
4300.00	0.38	308.10	4299.48	-9.75	-43.92	-9.75	44.99	257.49	0.26
4400.00	0.51	328.35	4399.48	-9.16	-44.41	-9.16	45.35	258.34	0.21
4500.00	0.50	353.86	4499.48	-8.35	-44.69	-8.35	45.47	259.42	0.22
4600.00	0.50	21.52	4599.47	-7.50	-44.58	-7.50	45.21	260.44	0.24
4700.00	0.46	18.73	4699.47	-6.72	-44.29	-6.72	44.80	261.38	0.04
4800.00	0.58	354.66	4799.47	-5.83	-44.21	-5.83	44.59	262.49	0.25
4900.00	0.68	348.33	4899.46	-4.74	-44.38	-4.74	44.63	263.90	0.12
5000.00	0.51	359.30	4999.45	-3.71	-44.50	-3.71	44.66	265.23	0.20
5100.00	0.47	3.07	5099.45	-2.85	-44.49	-2.85	44.58	266.33	0.05
5200.00	0.32	7.13	5199.45	-2.17	-44.43	-2.17	44.48	267.21	0.16
5300.00	0.33	354.92	5299.45	-1.61	-44.42	-1.61	44.45	267.93	0.07
5400.00	0.22	302.49	5399.45	-1.21	-44.61	-1.21	44.63	268.44	0.26
5500.00	0.31	316.42	5499.45	-0.92	-44.96	-0.92	44.97	268.83	0.11
5600.00	0.58	325.78	5599.44	-0.30	-45.43	-0.30	45.43	269.62	0.29
5700.00	0.67	330.79	5699.44	0.63	-46.00	0.63	46.01	270.78	0.10

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	0.45	326.17	5799.43	1.46	-46.50	1.46	46.53	271.80	0.22
5900.00	0.49	286.08	5899.43	1.91	-47.13	1.91	47.17	272.32	0.32
6000.00	0.67	264.96	5999.42	1.97	-48.12	1.97	48.16	272.35	0.28
6100.00	0.85	264.00	6099.41	1.84	-49.44	1.84	49.47	272.14	0.18
6200.00	1.10	250.64	6199.40	1.45	-51.08	1.45	51.10	271.62	0.33
6300.00	0.98	252.27	6299.38	0.87	-52.80	0.87	52.80	270.95	0.12
6400.00	0.75	248.70	6399.37	0.37	-54.22	0.37	54.22	270.39	0.23
6500.00	1.01	256.15	6499.36	-0.08	-55.69	-0.08	55.69	269.92	0.28
6600.00	0.58	265.04	6599.35	-0.33	-57.05	-0.33	57.05	269.67	0.44
6700.00	0.62	235.98	6699.35	-0.68	-58.00	-0.68	58.01	269.33	0.30
6800.00	0.45	211.74	6799.34	-1.32	-58.66	-1.32	58.68	268.71	0.28
6900.00	0.51	203.25	6899.34	-2.07	-59.05	-2.07	59.08	268.00	0.09
7000.00	0.65	184.05	6999.33	-3.04	-59.26	-3.04	59.34	267.06	0.23
7100.00	0.76	173.03	7099.32	-4.27	-59.22	-4.27	59.38	265.88	0.18
7200.00	0.95	176.06	7199.31	-5.76	-59.08	-5.76	59.36	264.44	0.19
7300.00	1.06	169.67	7299.30	-7.50	-58.86	-7.50	59.34	262.74	0.16
7400.00	1.02	172.90	7399.28	-9.29	-58.58	-9.29	59.32	260.99	0.07
7500.00	1.25	177.05	7499.26	-11.27	-58.42	-11.27	59.49	259.09	0.25
7600.00	1.67	172.10	7599.23	-13.80	-58.16	-13.80	59.78	256.65	0.44
7700.00	1.77	163.98	7699.18	-16.73	-57.54	-16.73	59.92	253.79	0.26
7800.00	1.69	160.42	7799.14	-19.60	-56.62	-19.60	59.91	250.90	0.13
7900.00	1.58	154.54	7899.10	-22.23	-55.53	-22.23	59.81	248.18	0.20
8000.00	1.60	149.08	7999.06	-24.67	-54.22	-24.67	59.57	245.53	0.15
8100.00	1.63	133.95	8099.02	-26.85	-52.48	-26.85	58.95	242.90	0.43
8200.00	1.47	136.08	8198.98	-28.76	-50.57	-28.76	58.18	240.37	0.17
8300.00	0.76	164.75	8298.97	-30.33	-49.51	-30.33	58.06	238.51	0.88
8400.00	0.71	151.14	8398.96	-31.51	-49.03	-31.51	58.29	237.27	0.18
8500.00	0.70	150.43	8498.95	-32.58	-48.43	-32.58	58.37	236.07	0.01
8600.00	0.82	149.59	8598.94	-33.73	-47.77	-33.73	58.48	234.77	0.12
8700.00	0.97	144.01	8698.93	-35.04	-46.91	-35.04	58.55	233.24	0.18
8800.00	1.04	151.07	8798.91	-36.52	-45.97	-36.52	58.71	231.53	0.14
8900.00	0.80	166.11	8898.90	-38.00	-45.36	-38.00	59.17	230.05	0.34
9000.00	0.88	162.79	8998.89	-39.41	-44.96	-39.41	59.79	228.77	0.09
9100.00	0.81	166.09	9098.88	-40.83	-44.57	-40.83	60.44	227.51	0.09
9200.00	0.74	226.53	9198.87	-41.96	-44.87	-41.96	61.43	226.92	0.78
9300.00	0.85	331.10	9298.86	-41.76	-45.70	-41.76	61.91	227.58	1.27
9400.00	1.58	355.38	9398.84	-39.73	-46.17	-39.73	60.91	229.29	0.87
9500.00	1.12	354.73	9498.81	-37.38	-46.37	-37.38	59.57	231.13	0.46
9600.00	0.79	338.80	9598.80	-35.76	-46.71	-35.76	58.83	232.56	0.42

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	0.59	336.62	9698.79	-34.65	-47.17	-34.65	58.53	233.70	0.21
9800.00	0.81	264.79	9798.79	-34.24	-48.07	-34.24	59.02	234.54	0.84
9900.00	0.74	248.27	9898.78	-34.54	-49.38	-34.54	60.26	235.02	0.23
10000.00	1.12	257.20	9998.76	-35.00	-50.93	-35.00	61.79	235.50	0.41
10100.00	1.07	256.96	10098.75	-35.43	-52.79	-35.43	63.58	236.14	0.05
10200.00	1.05	251.33	10198.73	-35.93	-54.57	-35.93	65.33	236.64	0.11
10300.00	0.83	241.56	10298.72	-36.56	-56.07	-36.56	66.94	236.89	0.27
10400.00	1.36	200.21	10398.70	-38.02	-57.11	-38.02	68.61	236.35	0.92
10500.00	1.33	203.08	10498.67	-40.20	-57.98	-40.20	70.55	235.26	0.08
10600.00	1.68	208.95	10598.64	-42.55	-59.14	-42.55	72.86	234.27	0.38
10700.00	1.90	212.26	10698.59	-45.24	-60.73	-45.24	75.73	233.32	0.25
10800.00	2.10	220.76	10798.53	-48.02	-62.81	-48.02	79.07	232.60	0.35
10900.00	3.36	223.62	10898.41	-51.53	-66.03	-51.53	83.76	232.03	1.27
11000.00	3.92	224.77	10998.21	-56.08	-70.46	-56.08	90.06	231.48	0.57
11100.00	3.61	225.84	11097.99	-60.70	-75.13	-60.70	96.59	231.06	0.32
11200.00	2.30	235.98	11197.86	-64.02	-79.05	-64.02	101.72	231.00	1.41
11300.00	2.07	246.67	11297.79	-65.85	-82.37	-65.85	105.46	231.36	0.47
11400.00	2.02	255.17	11397.72	-67.02	-85.73	-67.02	108.82	231.98	0.31
11500.00	1.99	263.46	11497.66	-67.67	-89.16	-67.67	111.93	232.80	0.29
11600.00	0.95	276.84	11597.63	-67.77	-91.71	-67.77	114.03	233.54	1.08
11700.00	0.95	290.09	11697.62	-67.38	-93.31	-67.38	115.10	234.16	0.22
11800.00	0.52	281.98	11797.61	-67.01	-94.53	-67.01	115.87	234.67	0.44
11900.00	1.75	212.45	11897.59	-68.20	-95.79	-68.20	117.59	234.55	1.64
12000.00	1.85	202.66	11997.54	-70.97	-97.23	-70.97	120.38	233.87	0.32
12100.00	1.99	192.81	12097.48	-74.15	-98.24	-74.15	123.08	232.95	0.36
12200.00	1.30	185.18	12197.44	-76.98	-98.72	-76.98	125.19	232.06	0.73
12300.00	1.52	181.62	12297.41	-79.43	-98.86	-79.43	126.82	231.22	0.24



VES Survey International
(432) 563-5444
West, Texas
Surveyor: Javier Estrada
Grey Hawk State No. 001H / API 30-025-41193



VES Survey Date: 04/20/2014



State of New Mexico
County of Lea

I, Michael K. Baber, certify that: I am employed by Terra Directional Services LLC; that I did on the day(s) of 4/17/14 through 5/4/14 conduct or supervise the taking of a MWD survey from a depth of 10360 feet to a depth 15505 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 Concho Oil & Gas for the Grey Hawk State #1H Well API 30-025-41193 in Lea 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.

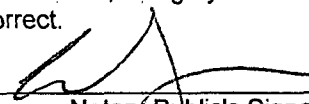


Michael K. Baber
MWD Operations Manager

State of Texas
County of Brewer

Before me, a notary public, on this day personally appeared Michael K. Baber, 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.





Notary Public's Signature



Customer Name: COG LLC.
Well Name: Grey Hawk State #1H
API Number: 30-025-41193
County / Parish: Lea County, New Mexico

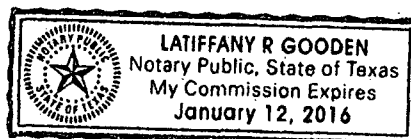
M.W.D. Operator: Richard Page
Directional Driller: Corey Owens
Total Magnetic Correction: 6.78
Job #: NM-427

Vertical Section: 355.50

Tie In Survey(s) Provided By:

NES

	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	10300.00	0.83	241.56	10298.72	-32.03	-36.54	-56.07	66.93	236.91	0.92
1	10360.00	1.20	206.80	10358.71	-32.74	-37.31	-56.74	67.90	236.67	1.17
2	10422.00	1.00	229.00	10420.70	-33.62	-38.24	-57.44	69.00	236.34	0.75
3	10447.00	0.90	302.40	10445.70	-33.63	-38.28	-57.77	69.30	236.47	4.55
4	10490.00	5.70	349.60	10488.62	-31.30	-36.00	-58.44	68.64	238.37	11.93
5	10521.00	9.60	349.60	10519.34	-27.20	-31.94	-59.18	67.25	241.65	12.58
6	10552.00	13.20	348.90	10549.72	-21.11	-25.92	-60.33	65.66	246.75	11.62
7	10583.00	17.20	348.50	10579.63	-13.04	-17.95	-61.93	64.48	253.83	12.91
8	10615.00	21.20	349.00	10609.84	-2.59	-7.63	-63.98	64.43	263.20	12.51
9	10647.00	24.80	349.60	10639.29	9.84	4.65	-66.29	66.45	274.01	11.27
10	10678.00	28.60	348.90	10666.98	23.68	18.33	-68.89	71.29	284.90	12.30
11	10709.00	31.90	348.10	10693.76	39.18	33.63	-72.01	79.48	295.03	10.72
12	10740.00	35.20	348.30	10719.59	56.17	50.40	-75.51	90.79	303.72	10.65
13	10772.00	38.70	348.10	10745.16	75.25	69.23	-79.45	105.38	311.07	10.94
14	10803.00	42.20	348.50	10768.75	95.20	88.92	-83.52	122.00	316.79	11.32
15	10835.00	45.50	348.30	10791.82	117.19	110.63	-87.98	141.35	321.51	10.32
16	10866.00	49.50	348.00	10812.76	139.86	132.99	-92.68	162.10	325.13	12.92
17	10897.00	53.10	347.60	10832.14	163.83	156.64	-97.79	184.66	328.02	11.66
18	10929.00	56.80	347.10	10850.51	189.75	182.19	-103.53	209.55	330.39	11.63
19	10960.00	61.00	346.70	10866.52	215.99	208.04	-109.55	235.12	332.23	13.59
20	10991.00	65.50	347.10	10880.47	243.36	235.00	-115.82	261.99	333.76	14.56
21	11023.00	69.50	347.40	10892.71	272.61	263.82	-122.34	290.81	335.12	12.53
22	11054.00	73.90	348.50	10902.45	301.78	292.60	-128.48	319.57	336.29	14.59
23	11085.00	78.10	349.70	10909.94	331.66	322.13	-134.16	348.95	337.39	14.06
24	11117.00	82.00	351.00	10915.47	363.05	353.20	-139.44	379.73	338.46	12.83
25	11148.00	85.10	353.80	10918.95	393.80	383.72	-143.51	409.68	339.49	13.44
26	11181.00	87.60	357.60	10921.06	426.73	416.56	-145.98	441.39	340.69	13.76
27	11213.00	88.70	358.30	10922.09	458.68	448.52	-147.12	472.03	341.84	4.07
28	11244.00	89.20	358.00	10922.66	489.64	479.50	-148.12	501.85	342.83	1.88
29	11338.00	89.70	357.30	10923.56	583.57	573.41	-151.98	593.21	345.16	0.92
30	11432.00	90.30	356.60	10923.56	677.54	667.28	-156.98	685.50	346.76	0.98
31	11527.00	91.00	356.20	10922.48	772.52	762.08	-162.95	779.31	347.93	0.85
32	11621.00	89.70	356.60	10921.91	866.50	855.89	-168.85	872.39	348.84	1.45
33	11715.00	89.20	357.30	10922.81	960.47	949.76	-173.85	965.54	349.63	0.92
34	11808.00	89.70	356.90	10923.70	1053.43	1042.63	-178.55	1057.81	350.28	0.69
35	11903.00	89.60	358.70	10924.28	1148.35	1137.56	-182.20	1152.06	350.90	1.90
36	11997.00	90.10	358.00	10924.53	1242.23	1231.52	-184.91	1245.32	351.46	0.92
37	12090.00	90.60	356.60	10923.96	1335.18	1324.41	-189.29	1337.87	351.87	1.60
38	12184.00	92.00	356.20	10921.83	1429.14	1418.20	-195.19	1431.57	352.16	1.55
39	12279.00	91.10	356.90	10919.26	1524.09	1512.99	-200.90	1526.27	352.44	1.20
40	12373.00	91.50	356.60	10917.13	1618.04	1606.81	-206.23	1619.99	352.69	0.53
41	12468.00	90.60	358.30	10915.39	1712.96	1701.70	-210.46	1714.66	352.95	2.02
42	12562.00	91.00	358.00	10914.07	1806.85	1795.64	-213.49	1808.29	353.22	0.53
43	12656.00	89.90	358.00	10913.33	1900.76	1889.58	-216.77	1901.97	353.46	1.17
44	12750.00	91.50	358.00	10912.19	1994.66	1983.51	-220.05	1995.68	353.67	1.70



45	12845.00	90.60	358.30	10910.45	2089.54	2078.44	-223.12	2090.39	353.87	1.00
46	12939.00	89.70	359.70	10910.20	2183.36	2172.43	-224.76	2184.02	354.09	1.77
47	13034.00	86.90	358.00	10913.02	2278.15	2267.35	-226.66	2278.65	354.29	3.45
48	13130.00	86.20	357.30	10918.79	2373.90	2363.10	-230.59	2374.32	354.43	1.03
49	13224.00	87.60	358.30	10923.88	2467.69	2456.89	-234.19	2468.02	354.55	1.83
50	13318.00	87.80	357.60	10927.65	2561.53	2550.75	-237.55	2561.79	354.68	0.77
51	13413.00	88.30	356.90	10930.88	2656.43	2645.59	-242.11	2656.64	354.77	0.91
52	13507.00	90.10	356.60	10932.20	2750.39	2739.42	-247.44	2750.57	354.84	1.94
53	13601.00	90.10	355.90	10932.03	2844.38	2833.22	-253.58	2844.54	354.89	0.74
54	13695.00	91.30	354.80	10930.88	2938.37	2926.90	-261.20	2938.53	354.90	1.73
55	13789.00	89.90	355.20	10929.90	3032.36	3020.53	-269.40	3032.52	354.90	1.55
56	13883.00	89.60	354.50	10930.31	3126.35	3114.15	-277.83	3126.52	354.90	0.81
57	13976.00	90.80	353.40	10929.98	3219.31	3206.63	-287.64	3219.51	354.87	1.75
58	14070.00	91.30	354.50	10928.26	3313.26	3300.09	-297.54	3313.48	354.85	1.29
59	14164.00	91.30	356.20	10926.13	3407.23	3393.75	-305.16	3407.45	354.86	1.81
60	14258.00	92.00	355.90	10923.42	3501.19	3487.49	-311.63	3501.39	354.89	0.81
61	14353.00	90.40	356.20	10921.43	3596.16	3582.24	-318.17	3596.34	354.92	1.71
62	14447.00	90.40	355.50	10920.78	3690.16	3675.99	-324.98	3690.33	354.95	0.74
63	14541.00	89.70	355.20	10920.69	3784.16	3769.68	-332.60	3784.33	354.96	0.81
64	14635.00	89.70	354.10	10921.19	3878.14	3863.27	-341.36	3878.32	354.95	1.17
65	14730.00	88.00	354.80	10923.09	3973.10	3957.80	-350.55	3973.29	354.94	1.94
66	14824.00	87.80	355.50	10926.54	4067.04	4051.40	-358.49	4067.23	354.94	0.77
67	14918.00	90.40	355.90	10928.01	4161.02	4145.12	-365.54	4161.20	354.96	2.80
68	15012.00	92.00	355.50	10926.05	4254.99	4238.83	-372.58	4255.17	354.98	1.75
69	15106.00	90.40	355.90	10924.08	4348.97	4332.54	-379.63	4349.14	354.99	1.75
70	15202.00	92.20	355.20	10921.90	4444.94	4428.22	-387.07	4445.11	355.00	2.01
71	15296.00	91.50	355.20	10918.86	4538.89	4521.84	-394.93	4539.06	355.01	0.74
72	15390.00	92.40	354.80	10915.67	4632.83	4615.43	-403.12	4633.00	355.01	1.05
73	15460.00	91.30	354.50	10913.41	4702.78	4685.09	-409.65	4702.96	355.00	1.63
ptb	15505.00	91.30	354.80	10912.39	4747.77	4729.88	-413.84	4747.95	355.00	0.67

