

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION

ARTESIA DISTRICT

OCD Artesia

JAN 13 2015

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NNNM115409
2. Name of Operator COG OPERATING LLC		6. If Indian, Allottee or Tribe Name
Contact: STORMI DAVIS E-Mail: sdavis@concho.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 2208 WEST MAIN ARTESIA, NM 88210	3b. Phone No. (include area code) Ph: 575-748-6946	8. Well Name and No. RUNNING BUFFALO 1 FEDERAL COM 1H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 1 T21S R28E Mer NMP NESE 1980FSL 1090FEL		9. API Well No. 30-015-41538
		10. Field and Pool, or Exploratory WC015 G05 S202935P; BS
		11. County or Parish, and State EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Please find attached, the surveys for this well.

Accepted for record
LRO NM/OCD 1/14/2015

14. I hereby certify that the foregoing is true and correct. Electronic Submission #272961 verified by the BLM Well Information System. For COG OPERATING LLC, sent to the Carlsbad Committed to AFMSS for processing by DEBORAH HAM on 01/02/2015 ()		ACCEPTED FOR RECORD
Name (Printed/Typed) STORMI DAVIS	Title PREPARER	
Signature (Electronic Submission)	Date 10/23/2014	JAN 7 2015 <i>Deborah Ham</i>
THIS SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved By _____	Title _____	BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		
Office _____		

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****



PATRIOT DRILLING, LLC

OPERATOR: COG Operating, LLC
WELL/LEASE: Running Buffalo 1 Fed Com #1H
COUNTY: Eddy Co., New Mexico
Sec. 1, T 21S, R 28E

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 13 2015

RECEIVED

STATE OF NEW MEXICO
DEVIATION REPORT

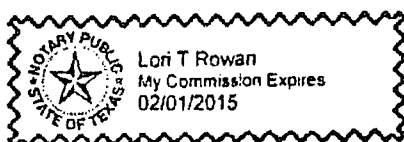
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
321	1 1/2	6,249	3/4
818	2 3/4	6,629	1
1,055	3 1/2	6,819	1
1,364	2	7,199	2 1/2
1,478	1 1/4	7,294	1 1/2
1,533	3/4	7,579	2
1,653	1	7,959	1 1/4
2,090	1 1/4	8,147	1 3/4
2,500	1 1/4		
2,984	1 1/4		
3,170	1 1/4		
3,361	1/2		
3,584	1/2		
4,156	1 1/4		
4,728	1 1/2		
5,298	1/2		
5,489	1		
5,869	3/4		

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 23rd day of July, 2014 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2015



Lori T. Rowan
Notary Public for Ector Co., Texas



NM OIL CONSERVATION

ARTESIA DISTRICT

JAN 13 2015

RECEIVED

July 15, 2014

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

Attn: Kanicia Castillo

RE: Running Buffalo 1 Federal Com No. 001H

Please find enclosed a copy of the survey from 0.00' to 7985.00' ran on the above referenced well.

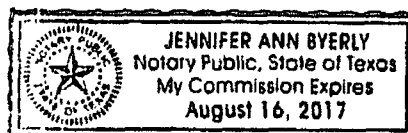
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 15 day of July, A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG Operating, LLC (Concho)
Lease/Well: Running Buffalo 1 Federal Com /No. 001H
Location: Sec 1 T 21S R28E
Rig Name: Patriot 6
State/County: New Mexico/Eddy
Latitude: 32.51, Longitude: -104.03
GRID North is 0.16 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB=17 feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...o 1 fed com #1h gyro-de_01.ut

Minimum Curvature Method

Report Date/Time: 7/15/2014 / 16:32

VES Survey International

West Texas

432-563-5444

Surveyor: Chris Bankson

Running Buffalo 1 Federal Com No. 001H / API 30-015-41538

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	0.69	125.32	100.00	-0.35	0.49	-0.35	0.60	125.32	0.69
200.00	1.08	138.51	199.99	-1.40	1.60	-1.40	2.13	131.10	0.44
300.00	1.41	134.82	299.96	-2.97	3.10	-2.97	4.30	133.79	0.35
400.00	1.01	127.54	399.94	-4.38	4.68	-4.38	6.41	133.13	0.43
500.00	0.88	144.93	499.93	-5.54	5.81	-5.54	8.03	133.63	0.31
600.00	0.26	174.59	599.92	-6.40	6.27	-6.40	8.96	135.56	0.66
700.00	2.35	256.59	699.89	-7.10	4.30	-7.10	8.30	148.78	2.32
800.00	2.44	257.44	799.80	-8.04	0.23	-8.04	8.04	178.33	0.10
900.00	2.74	274.57	899.70	-8.31	-4.22	-8.31	9.32	206.94	0.83
1000.00	2.57	292.05	999.60	-7.28	-8.69	-7.28	11.33	230.05	0.82
1100.00	2.47	309.98	1099.50	-5.05	-12.42	-5.05	13.41	247.85	0.79
1200.00	2.25	317.19	1199.42	-2.23	-15.40	-2.23	15.56	261.74	0.37
1300.00	1.85	330.48	1299.36	0.61	-17.52	0.61	17.53	271.99	0.61
1400.00	1.45	340.05	1399.31	3.20	-18.75	3.20	19.02	279.69	0.49
1500.00	1.07	350.29	1499.29	5.31	-19.34	5.31	20.05	285.35	0.44
1600.00	1.28	349.59	1599.27	7.32	-19.70	7.32	21.01	290.39	0.21
1700.00	0.95	335.12	1699.25	9.17	-20.25	9.17	22.22	294.36	0.43
1800.00	1.15	340.09	1799.23	10.86	-20.94	10.86	23.59	297.42	0.22

measured Depth FT	inci Angle Deg	Unit 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	1.14	347.87	1899.21	12.78	-21.49	12.78	25.00	300.74	0.16
2000.00	1.19	347.19	1999.19	14.76	-21.93	14.76	26.43	303.95	0.06
2100.00	0.82	354.37	2099.18	16.49	-22.23	16.49	27.68	306.57	0.40
2200.00	1.07	369.11	2199.16	18.13	-22.31	18.13	28.75	309.09	0.26
2300.00	1.03	357.69	2299.15	19.96	-22.36	19.96	29.98	311.75	0.04
2400.00	1.35	355.25	2399.12	22.04	-22.50	22.04	31.49	314.41	0.32
2500.00	1.23	359.68	2499.10	24.29	-22.60	24.29	33.17	317.06	0.15
2600.00	1.35	0.73	2599.07	26.54	-22.59	26.54	34.85	319.60	0.12
2700.00	0.96	4.82	2699.05	28.55	-22.51	28.55	36.36	321.75	0.40
2800.00	1.04	2.08	2799.04	30.29	-22.40	30.29	37.68	323.51	0.10
2900.00	1.12	355.26	2899.02	32.18	-22.45	32.18	39.24	325.10	0.15
3000.00	1.11	358.14	2999.00	34.13	-22.56	34.13	40.91	326.53	0.06
3100.00	1.26	353.75	3098.98	36.19	-22.71	36.19	42.73	327.89	0.17
3200.00	1.18	354.91	3198.96	38.30	-22.93	38.30	44.64	329.10	0.08
3300.00	0.35	40.41	3298.95	39.56	-22.82	39.56	45.67	330.02	0.96
3400.00	0.59	80.39	3398.95	39.88	-22.12	39.88	45.60	330.99	0.39
3500.00	0.40	100.11	3498.94	39.90	-21.27	39.90	45.22	331.94	0.25
3600.00	0.58	124.33	3598.94	39.55	-20.51	39.55	44.56	332.59	0.27
3700.00	1.17	126.88	3698.93	38.66	-19.28	38.66	43.20	333.49	0.59
3800.00	1.20	129.85	3798.90	37.38	-17.66	37.38	41.34	334.71	0.07
3900.00	1.35	124.49	3898.88	36.04	-15.89	36.04	39.39	336.21	0.20
4000.00	1.27	116.53	3998.85	34.87	-13.92	34.87	37.55	338.24	0.20
4100.00	1.27	108.70	4098.83	34.02	-11.87	34.02	36.03	340.76	0.17
4200.00	1.44	99.51	4198.80	33.46	-9.58	33.46	34.80	344.02	0.28
4300.00	1.15	96.72	4298.78	33.13	-7.34	33.13	33.93	347.51	0.30
4400.00	1.52	104.00	4398.75	32.69	-5.05	32.69	33.08	351.21	0.41
4500.00	1.59	108.46	4498.71	31.93	-2.45	31.93	32.03	355.61	0.14
4600.00	1.42	106.79	4598.68	31.14	0.05	31.14	31.14	0.09	0.18
4700.00	1.53	108.17	4698.64	30.36	2.50	30.36	30.47	4.71	0.12
4800.00	1.38	116.35	4798.61	29.41	4.85	29.41	29.81	9.36	0.25
4900.00	1.33	118.35	4898.58	28.33	6.95	28.33	29.17	13.78	0.07
5000.00	0.76	117.28	4998.57	27.47	8.56	27.47	28.77	17.30	0.57
5100.00	0.81	104.13	5098.56	27.00	9.83	27.00	28.73	20.02	0.19
5200.00	0.85	100.00	5198.55	26.69	11.25	26.69	28.97	22.86	0.07
5300.00	0.78	95.14	5298.54	26.50	12.66	26.50	29.37	25.54	0.09
5400.00	0.79	84.37	5398.53	26.51	14.03	26.51	29.99	27.88	0.15
5500.00	1.11	83.23	5498.51	26.69	15.67	26.69	30.95	30.42	0.33
5600.00	0.93	83.04	5598.50	26.90	17.44	26.90	32.06	32.95	0.18
5700.00	0.45	85.14	5698.49	27.04	18.64	27.04	32.84	34.59	0.48

Measured Depth FT	Inc Angle Deg	Dir 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	0.57	77.78	5798.49	27.17	19.52	27.17	33.46	35.69	0.14
5900.00	0.83	77.59	5898.48	27.44	20.72	27.44	34.38	37.06	0.26
6000.00	0.85	78.08	5998.47	27.75	22.16	27.75	35.51	38.61	0.02
6100.00	1.10	73.22	6098.45	28.18	23.80	28.18	36.89	40.19	0.26
6200.00	0.50	64.72	6198.44	28.64	25.12	28.64	38.10	41.25	0.61
6300.00	0.25	47.00	6298.44	28.98	25.68	28.98	38.72	41.54	0.28
6400.00	0.32	36.92	6398.44	29.35	26.00	29.35	39.21	41.54	0.09
6500.00	0.43	23.56	6498.44	29.92	26.32	29.92	39.85	41.34	0.14
6600.00	0.40	348.35	6598.43	30.61	26.40	30.61	40.42	40.78	0.25
6700.00	0.55	278.02	6698.43	31.01	25.86	31.01	40.38	39.82	0.56
6800.00	0.66	205.16	6798.43	30.56	25.14	30.56	39.57	39.43	0.72
6900.00	0.83	204.95	6898.42	29.38	24.59	29.38	38.31	39.92	0.18
7000.00	0.28	180.28	6998.41	28.48	24.28	28.48	37.42	40.45	0.59
7100.00	0.99	174.73	7098.41	27.37	24.36	27.37	36.64	41.66	0.71
7200.00	2.13	164.52	7198.37	24.72	24.93	24.72	35.11	45.24	1.17
7300.00	1.53	141.08	7298.32	21.89	26.27	21.89	34.19	50.19	0.94
7400.00	1.35	144.17	7398.29	19.90	27.80	19.90	34.18	54.40	0.20
7500.00	1.17	145.06	7498.26	18.11	29.07	18.11	34.25	58.08	0.18
7600.00	1.62	153.13	7598.23	16.01	30.30	16.01	34.26	62.15	0.49
7700.00	1.18	164.52	7698.20	13.76	31.21	13.76	34.11	66.21	0.52
7800.00	1.30	174.44	7798.18	11.64	31.59	11.64	33.67	69.77	0.24
7900.00	1.13	186.42	7898.16	9.53	31.59	9.53	33.00	73.21	0.30
7985.00	1.09	202.05	7983.14	7.94	31.19	7.94	32.19	75.71	0.36



VES Survey International

West Texas

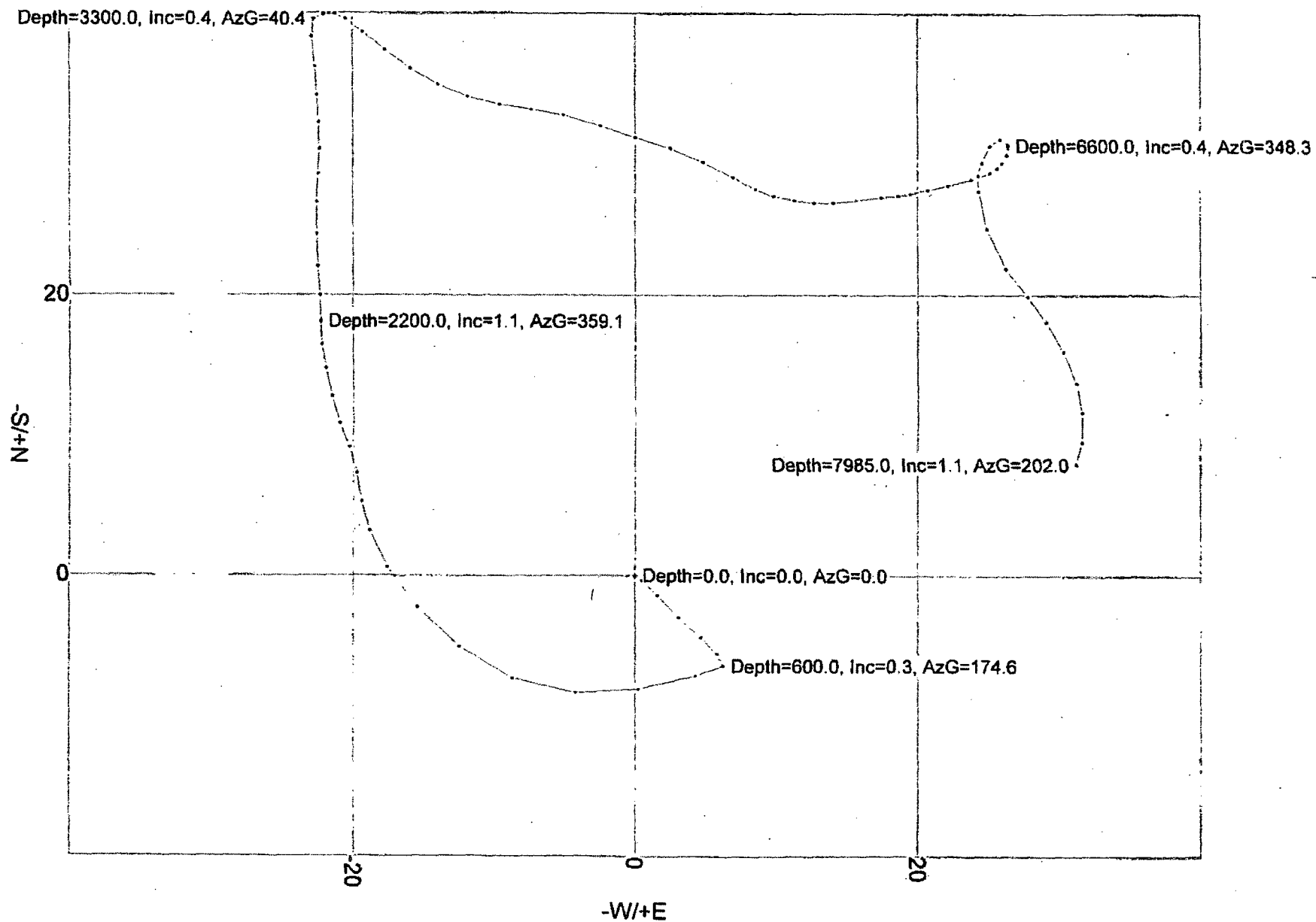
432-563-5444

Surveyor: Chris Bankson

Running Buffalo 1 Federal Com No. 001H / API 30-015-41538



SURVEY
INTERNATIONAL



VES Survey Date: 07/05/2014



Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Running Buffalo 1 Federal Com Well 1H
Project:	Eddy County, New Mexico NAD83	TVD Reference:	RKB=3448.9+18 @ 3486.90usft (Patriot 6)
Site:	Running Buffalo 1 Federal Com	MD Reference:	RKB=3448.9+18 @ 3486.90usft (Patriot 6)
Well:	Running Buffalo 1 Federal Com Well 1H	North Reference:	Grid
Wellbore:	Original hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original hole	Database:	EDM 5000.1 Database

Project:	Eddy County, New Mexico NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Running Buffalo 1 Federal Com			
Site Position:		Northing:	548,472.44 usft	Latitude:	32° 30' 28.84681801 N
From:	Map	Easting:	633,313.89 usft	Longitude:	104° 2' 5.89011194 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.16 °

Well:	Running Buffalo 1 Federal Com Well 1H, Surf Loc 1880 FSL 1090 FEL Sect 1					
Well Position	+N-S	0.00 usft	Northing:	548,472.44 usft	Latitude:	32° 30' 28.64661801 N
	+E-W	0.00 usft	Easting:	633,313.89 usft	Longitude:	104° 2' 5.89011184 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,448.90 usft

Wellbore	Original hole				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	6/6/2014	(°) 7.45	(°) 80.33	(nT) 48,467

Design:	Surveys Original hole				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	7.89	

Survey Program		Date	7/16/2014	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	7,985.00	Gyro (Original hole)	NS-GYRO-MS	North sensing gyrocompassing m/s
8,111.00	13,617.00	MWD (Original hole)	MWD	MWD - Standard

Survey	Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Map	Map	Latitude	Longitude
	Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting		
	(usft)			(usft)			(usft)	(usft)		
	0.00	0.00	0.00	0.00	0.00	0.00	548,472.44	633,313.89	2° 30' 28.84661801 N	104° 2' 5.89011194 W
	100.00	0.69	125.32	100.00	-0.35	0.49	548,472.09	633,314.39	2° 30' 28.84315961 N	104° 2' 5.88438582 W
Gyro										
	200.00	1.08	138.51	199.99	-1.40	1.61	548,471.04	633,315.50	2° 30' 28.83289828 N	104° 2' 5.87139191 W
	300.00	1.41	134.82	299.96	-2.08	3.10	548,469.47	633,317.00	2° 30' 28.81708939 N	104° 2' 5.85396077 W
	400.00	1.01	127.54	399.94	-4.38	4.88	548,468.06	633,318.57	2° 30' 28.80315000 N	104° 2' 5.83585408 W
	500.00	0.88	144.93	499.93	-5.55	5.82	548,466.90	633,319.71	2° 30' 28.79158504 N	104° 2' 5.82237844 W
	600.00	0.26	174.59	599.92	-6.40	6.28	548,466.04	633,320.17	2° 30' 28.78311761 N	104° 2' 5.81700387 W
	700.00	2.35	256.59	699.89	-7.10	4.31	548,465.34	633,318.20	2° 30' 26.77623104 N	104° 2' 5.64009940 W
	800.00	2.44	257.44	799.80	-8.04	0.23	548,464.40	633,314.13	2° 30' 28.76705812 N	104° 2' 5.88765283 W
	900.00	2.74	274.57	899.70	-8.31	-4.23	548,464.13	633,309.67	2° 30' 26.76448548 N	104° 2' 5.93974995 W



Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Running Buffalo 1 Federal Com Well 1H
Project:	Eddy County, New Mexico NAD83	TVD Reference:	RKB=3448.9+18 @ 3468.90usft (Patriot 6)
Site:	Running Buffalo 1 Federal Com	MD Reference:	RKB=3448.9+18 @ 3468.90usft (Patriot 6)
Well:	Running Buffalo 1 Federal Com Well 1H	North Reference:	Grid
Wellbore:	Original hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original hole	Database:	EDM 5000.1 Database

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,000.00	2.57	292.05	999.80	-7.28	-8.68	548,465.16	833,305.21	2° 30' 28.77482254 N	104° 2' 5.99180785 W	
1,100.00	2.47	309.98	1,099.50	-5.05	-12.42	548,467.39	833,301.48	2° 30' 28.79895540 N	104° 2' 8.03528498 W	
1,200.00	2.25	317.19	1,199.42	-2.23	-15.40	548,470.21	833,298.49	2° 30' 26.82498877 N	104° 2' 8.07005334 W	
1,300.00	1.85	330.48	1,299.35	0.82	-17.53	548,473.06	833,298.38	2° 30' 26.85319748 N	104° 2' 8.09482881 W	
1,400.00	1.45	340.05	1,399.31	3.21	-18.76	548,475.65	833,295.14	2° 30' 26.87889860 N	104° 2' 6.10907137 W	
1,500.00	1.07	350.29	1,499.29	5.32	-19.35	548,477.78	833,294.55	2° 30' 26.89979177 N	104° 2' 6.11588283 W	
1,600.00	1.28	349.59	1,599.27	7.34	-19.71	548,479.78	833,294.19	2° 30' 26.91977928 N	104° 2' 6.12001271 W	
1,700.00	0.95	335.12	1,699.25	9.19	-20.26	548,481.63	833,293.64	2° 30' 26.93810708 N	104° 2' 6.12838205 W	
1,800.00	1.15	340.09	1,799.23	10.88	-20.95	548,483.33	833,292.95	2° 30' 26.95490473 N	104° 2' 6.13439039 W	
1,900.00	1.14	347.87	1,899.21	12.80	-21.50	548,485.24	833,292.40	2° 30' 26.97388051 N	104° 2' 6.14075963 W	
2,000.00	1.19	347.19	1,999.19	14.78	-21.94	548,487.23	833,291.96	2° 30' 26.99353834 N	104° 2' 6.14582448 W	
2,100.00	0.82	354.37	2,099.18	16.51	-22.24	548,488.95	833,291.66	2° 30' 27.01061107 N	104° 2' 6.14927857 W	
2,200.00	1.07	359.11	2,199.16	18.16	-22.32	548,490.60	833,291.57	2° 30' 27.02689837 N	104° 2' 6.15021185 W	
2,300.00	1.03	357.69	2,299.15	19.99	-22.37	548,492.43	833,291.52	2° 30' 27.04502485 N	104° 2' 6.15074453 W	
2,400.00	1.35	355.25	2,399.12	22.06	-22.51	548,494.50	833,291.39	2° 30' 27.06553213 N	104° 2' 6.15223804 W	
2,500.00	1.23	359.88	2,499.10	24.31	-22.61	548,496.75	833,291.28	2° 30' 27.08777235 N	104° 2' 6.15337478 W	
2,600.00	1.35	0.73	2,599.07	26.58	-22.60	548,499.00	833,291.29	2° 30' 27.11004854 N	104° 2' 6.15319588 W	
2,700.00	0.98	4.82	2,699.05	28.57	-22.52	548,501.01	833,291.38	2° 30' 27.12996239 N	104° 2' 6.15213292 W	
2,800.00	1.04	2.08	2,799.04	30.31	-22.41	548,502.75	833,291.48	2° 30' 27.14719430 N	104° 2' 6.15088934 W	
2,900.00	1.12	355.26	2,899.02	32.19	-22.46	548,504.64	833,291.43	2° 30' 27.16580807 N	104° 2' 6.15136835 W	
3,000.00	1.11	358.14	2,999.00	34.14	-22.57	548,506.58	833,291.32	2° 30' 27.18502887 N	104° 2' 6.15261315 W	
3,100.00	1.26	353.75	3,098.98	36.20	-22.72	548,508.64	833,291.17	2° 30' 27.20542787 N	104° 2' 6.15431075 W	
3,200.00	1.18	354.91	3,198.96	38.31	-22.94	548,510.78	833,290.88	2° 30' 27.22639775 N	104° 2' 6.15670615 W	
3,300.00	0.35	40.41	3,298.95	39.57	-22.83	548,512.02	833,291.06	2° 30' 27.23884533 N	104° 2' 6.15541963 W	
3,400.00	0.59	80.39	3,398.94	39.89	-22.12	548,512.33	833,291.77	2° 30' 27.24197766 N	104° 2' 6.14716881 W	
3,500.00	0.40	100.11	3,498.94	39.92	-21.27	548,512.36	833,292.62	2° 30' 27.24219829 N	104° 2' 6.13722674 W	
3,600.00	0.58	124.33	3,598.94	39.57	-20.51	548,512.01	833,293.38	2° 30' 27.23874629 N	104° 2' 6.12834396 W	
3,700.00	1.17	128.88	3,698.93	38.67	-19.28	548,511.11	833,294.62	2° 30' 27.22982438 N	104° 2' 6.11385533 W	
3,800.00	1.20	129.85	3,798.90	37.39	-17.68	548,509.83	833,296.24	2° 30' 27.21707681 N	104° 2' 6.09507252 W	
3,900.00	1.35	124.49	3,898.88	38.05	-15.88	548,508.49	833,298.01	2° 30' 27.20378725 N	104° 2' 6.07438981 W	
4,000.00	1.27	116.53	3,998.85	34.89	-13.92	548,507.33	833,299.98	2° 30' 27.19223382 N	104° 2' 6.05151055 W	
4,100.00	1.27	108.70	4,098.83	34.04	-11.88	548,506.48	833,302.02	2° 30' 27.18376333 N	104° 2' 6.02770131 W	
4,200.00	1.44	99.51	4,198.80	33.47	-9.59	548,505.92	833,304.31	2° 30' 27.17812976 N	104° 2' 6.00098959 W	
4,300.00	1.15	98.72	4,298.77	33.15	-7.35	548,505.59	833,308.54	2° 30' 27.17485155 N	104° 2' 5.97489906 W	
4,400.00	1.52	104.00	4,398.75	32.71	-5.07	548,505.15	833,308.83	2° 30' 27.17045125 N	104° 2' 5.94823780 W	
4,500.00	1.59	108.46	4,498.71	31.95	-2.47	548,504.39	833,311.43	2° 30' 27.16285705 N	104° 2' 5.91786616 W	
4,600.00	1.42	106.78	4,598.68	31.15	0.04	548,503.60	833,313.93	2° 30' 27.15489890 N	104° 2' 5.88867146 W	
4,700.00	1.53	108.17	4,698.64	30.38	2.49	548,502.82	833,316.39	2° 30' 27.14716957 N	104° 2' 5.86003101 W	
4,800.00	1.38	116.35	4,798.61	29.43	4.84	548,501.87	833,318.73	2° 30' 27.13768611 N	104° 2' 5.83264803 W	
4,900.00	1.33	118.35	4,898.58	28.34	6.94	548,500.79	833,320.83	2° 30' 27.12889580 N	104° 2' 5.80815512 W	
5,000.00	0.76	117.28	4,998.57	27.49	8.55	548,499.93	833,322.44	2° 30' 27.11838985 N	104° 2' 5.78937214 W	
5,100.00	0.81	104.13	5,098.56	27.01	9.82	548,499.45	833,323.72	2° 30' 27.11363906 N	104° 2' 5.77449955 W	
5,200.00	0.85	100.00	5,198.55	26.71	11.24	548,499.15	833,325.13	2° 30' 27.11061779 N	104° 2' 5.75797435 W	
5,300.00	0.78	95.14	5,298.54	26.52	12.65	548,498.98	833,326.54	2° 30' 27.10870080 N	104° 2' 5.74153341 W	
5,400.00	0.79	84.37	5,398.53	26.53	14.01	548,498.97	833,327.91	2° 30' 27.10872884 N	104° 2' 5.72560468 W	
5,500.00	1.11	83.23	5,498.51	26.71	15.66	548,499.15	833,329.55	2° 30' 27.11048233 N	104° 2' 5.70835453 W	
5,600.00	0.93	83.04	5,598.50	26.92	17.43	548,499.38	833,331.32	2° 30' 27.11253639 N	104° 2' 5.68570784 W	
5,700.00	0.45	85.14	5,698.49	27.05	18.62	548,499.50	833,332.52	2° 30' 27.11380559 N	104° 2' 5.67172873 W	
5,800.00	0.57	77.78	5,798.49	27.19	19.50	548,499.63	833,333.40	2° 30' 27.11515235 N	104° 2' 5.66147566 W	
5,900.00	0.83	77.59	5,898.48	27.45	20.70	548,499.89	833,334.59	2° 30' 27.11770140 N	104° 2' 5.64752940 W	
6,000.00	0.85	78.08	5,998.47	27.76	22.13	548,500.20	833,336.02	2° 30' 27.12071799 N	104° 2' 5.63078351 W	
6,100.00	1.10	73.22	6,098.45	28.19	23.77	548,500.63	833,337.67	2° 30' 27.12493062 N	104° 2' 5.61156212 W	
6,200.00	0.50	64.72	6,198.44	28.66	25.08	548,501.10	833,338.98	2° 30' 27.12948026 N	104° 2' 5.59620731 W	
6,300.00	0.25	47.00	6,298.44	28.99	25.64	548,501.43	833,339.54	2° 30' 27.13278108 N	104° 2' 5.58972562 W	
6,400.00	0.32	36.92	6,398.44	29.36	25.97	548,501.80	833,339.86	2° 30' 27.13645356 N	104° 2' 5.58589123 W	



Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Running Buffalo 1 Federal Com Well 1H
Project:	Eddy County, New Mexico NAD83	TVD Reference:	RKB=3448.9+18 @ 3468.90usft (Patriot 8)
Site:	Running Buffalo 1 Federal Com	MD Reference:	RKB=3448.9+18 @ 3468.90usft (Patriot 8)
Well:	Running Buffalo 1 Federal Com Well 1H	North Reference:	Grid
Wellbore:	Original hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original hole	Database:	EDM 5000.1 Ddatabase

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,500.00	0.43	23.56	6,488.44	29.93	26.28	548,502.37	633,340.18	2° 30' 27.14205785 N	104° 2' 5.58216220 W
6,600.00	0.40	348.35	6,598.43	30.62	26.37	548,503.06	633,340.26	2° 30' 27.14884213 N	104° 2' 5.58121137 W
6,700.00	0.55	278.02	6,698.43	31.02	25.82	548,503.47	633,338.71	2° 30' 27.15290288 N	104° 2' 5.58757132 W
6,800.00	0.86	205.16	6,798.43	30.57	25.10	548,503.01	633,338.99	2° 30' 27.14842688 N	104° 2' 5.59599590 W
6,900.00	0.83	204.95	6,898.42	29.39	24.55	548,501.83	633,338.44	2° 30' 27.13678528 N	104° 2' 5.60246181 W
7,000.00	0.28	180.28	6,998.41	28.49	24.24	548,500.93	633,338.14	2° 30' 27.12787752 N	104° 2' 5.60807314 W
7,100.00	0.99	174.73	7,098.41	27.39	24.32	548,499.83	633,338.22	2° 30' 27.11894480 N	104° 2' 5.60519856 W
7,200.00	2.13	184.52	7,198.37	24.73	24.90	548,497.18	633,338.79	2° 30' 27.09089328 N	104° 2' 5.59856413 W
7,300.00	1.53	141.08	7,298.32	21.91	26.23	548,484.35	633,340.13	2° 30' 27.06265530 N	104° 2' 5.58306967 W
7,400.00	1.35	144.17	7,398.29	19.91	27.76	548,482.35	633,341.65	2° 30' 27.04288394 N	104° 2' 5.56528763 W
7,500.00	1.17	145.06	7,498.26	18.12	29.03	548,480.56	633,342.93	2° 30' 27.02511605 N	104° 2' 5.55048510 W
7,600.00	1.62	153.13	7,598.23	16.02	30.26	548,488.46	633,344.15	2° 30' 27.00432290 N	104° 2' 5.53624461 W
7,700.00	1.18	164.52	7,698.20	13.77	31.17	548,486.21	633,345.07	2° 30' 26.98200058 N	104° 2' 5.52564815 W
7,800.00	1.30	174.44	7,798.18	11.65	31.56	548,484.09	633,345.45	2° 30' 26.96099812 N	104° 2' 5.52122465 W
7,900.00	1.13	186.42	7,898.16	9.54	31.56	548,481.98	633,345.45	2° 30' 26.94012958 N	104° 2' 5.52129768 W
7,985.00	1.09	202.05	7,983.14	7.98	31.18	548,480.40	633,345.05	2° 30' 26.92448365 N	104° 2' 5.52598827 W
8,111.00	1.10	250.40	8,109.12	6.44	29.57	548,478.88	633,343.46	2° 30' 26.90952091 N	104° 2' 5.54459774 W
MWD surveys									
8,147.00	1.60	0.10	8,145.12	6.83	29.24	548,479.27	633,343.14	2° 30' 26.91335870 N	104° 2' 5.54837689 W
8,179.00	6.30	16.60	8,177.03	8.96	29.75	548,481.40	633,343.64	2° 30' 26.93442569 N	104° 2' 5.54243708 W
8,211.00	11.10	18.30	8,208.65	13.57	31.22	548,486.01	633,345.11	2° 30' 26.96000160 N	104° 2' 5.52512385 W
8,242.00	15.50	18.70	8,238.81	20.33	33.48	548,492.77	633,347.38	2° 30' 27.04683254 N	104° 2' 5.49843875 W
8,274.00	18.70	19.60	8,269.40	29.21	36.59	548,501.65	633,350.49	2° 30' 27.13460808 N	104° 2' 5.46183744 W
8,306.00	20.80	19.10	8,299.51	39.40	40.19	548,511.84	633,354.08	2° 30' 27.23540889 N	104° 2' 5.41949573 W
8,337.00	23.60	19.80	8,328.21	50.44	44.09	548,522.89	633,357.99	2° 30' 27.34456585 N	104° 2' 5.37354560 W
8,369.00	26.90	19.40	8,357.15	63.30	48.67	548,535.74	633,362.56	2° 30' 27.47167919 N	104° 2' 5.31989155 W
8,401.00	29.40	19.10	8,385.36	77.55	53.64	548,550.00	633,367.54	2° 30' 27.61257454 N	104° 2' 5.26112269 W
8,432.00	31.80	17.60	8,412.04	92.53	56.60	548,564.98	633,372.50	2° 30' 27.76065186 N	104° 2' 5.20270847 W
8,464.00	34.80	16.20	8,438.79	109.34	63.70	548,581.78	633,377.60	2° 30' 27.92684936 N	104° 2' 5.14262000 W
8,495.00	38.20	16.60	8,463.70	127.03	68.91	548,599.47	633,382.80	2° 30' 28.10171528 N	104° 2' 5.08122338 W
8,527.00	42.10	17.60	8,488.16	146.74	74.98	548,619.19	633,388.88	2° 30' 28.26663334 N	104° 2' 5.00966227 W
8,559.00	46.30	17.30	8,511.09	168.02	81.67	548,640.46	633,395.56	2° 30' 28.50700842 N	104° 2' 4.93088293 W
8,591.00	49.40	17.30	8,532.57	190.67	88.72	548,663.11	633,402.62	2° 30' 28.73093032 N	104° 2' 4.84776278 W
8,622.00	51.20	17.60	8,552.37	213.42	95.88	548,685.86	633,409.77	2° 30' 28.95587897 N	104° 2' 4.76348700 W
8,630.00	52.03	17.60	8,557.33	219.40	97.77	548,691.64	633,411.67	2° 30' 29.01497227 N	104° 2' 4.74114948 W
330 Hard line Intercept @ 8630 MD									
8,654.00	54.50	17.60	8,571.69	237.73	103.59	548,710.17	633,417.48	2° 30' 29.18621018 N	104° 2' 4.67264073 W
8,686.00	59.50	16.60	8,589.11	263.38	111.47	548,735.82	633,425.36	2° 30' 29.44975488 N	104° 2' 4.57975164 W
8,717.00	64.60	15.20	8,603.64	289.70	118.95	548,762.15	633,432.86	2° 30' 29.71008447 N	104° 2' 4.49140087 W
8,749.00	67.70	14.50	8,616.58	317.99	126.46	548,790.43	633,440.35	2° 30' 29.98978778 N	104° 2' 4.40291426 W
8,781.00	70.80	14.50	8,627.89	348.97	133.95	548,819.41	633,447.85	2° 30' 30.27632102 N	104° 2' 4.31445084 W
8,813.00	75.80	14.10	8,637.05	378.67	141.52	548,849.11	633,455.42	2° 30' 30.57000319 N	104° 2' 4.22508807 W
8,844.00	79.50	13.80	8,643.68	408.05	148.82	548,878.49	633,462.72	2° 30' 30.86057446 N	104° 2' 4.13889273 W
8,876.00	79.80	14.50	8,649.40	438.58	156.52	548,909.02	633,470.41	2° 30' 31.16245290 N	104° 2' 4.04800978 W
8,901.00	82.70	14.30	8,653.18	460.51	162.66	548,932.96	633,478.56	2° 30' 31.39912194 N	104° 2' 3.97546479 W
8,932.00	86.90	13.40	8,655.99	490.48	170.05	548,962.92	633,483.94	2° 30' 31.68546473 N	104° 2' 3.88820643 W
8,964.00	88.00	12.90	8,657.42	521.61	177.32	548,994.05	633,491.22	2° 30' 32.00330406 N	104° 2' 3.80225818 W
8,996.00	88.40	11.70	8,658.42	552.86	184.14	549,025.30	633,498.03	2° 30' 32.31234290 N	104° 2' 3.72166646 W
9,027.00	89.90	9.80	8,658.88	583.31	189.92	549,055.75	633,503.81	2° 30' 32.61350350 N	104° 2' 3.65315677 W
9,122.00	91.60	6.60	8,657.64	677.32	203.46	549,149.78	633,517.36	2° 30' 33.54335172 N	104° 2' 3.49187514 W
9,217.00	92.40	6.40	8,654.32	771.65	214.21	549,244.09	633,528.11	2° 30' 34.47650411 N	104° 2' 3.36327090 W
9,312.00	90.10	6.80	8,652.25	865.99	225.13	549,338.43	633,539.02	2° 30' 35.40975470 N	104° 2' 3.23270222 W
9,407.00	89.50	7.60	8,652.58	960.24	237.03	549,432.68	633,550.93	2° 30' 36.34208453 N	104° 2' 3.09058725 W
9,502.00	89.20	7.30	8,653.66	1,054.43	248.35	549,526.87	633,563.25	2° 30' 37.27379526 N	104° 2' 2.94363872 W
9,597.00	89.40	6.00	8,654.82	1,148.78	260.35	549,621.22	633,574.25	2° 30' 38.20714543 N	104° 2' 2.81208080 W



Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Running Buffalo 1 Federal Com Well 1H
Project:	Eddy County, New Mexico NAD83	IVD Reference:	RKB=3448.9+18 @ 3488.80usft (Patriot 8)
Site:	Running Buffalo 1 Federal Corn	MD Reference:	RKB=3448.9+18 @ 3488.80usft (Patriot 8)
Well:	Running Buffalo 1 Federal Corn Well 1H	North Reference:	Grid
Wellbore:	Original hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original hole	Database:	EDM 5000.1 Database

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	(Map) Northing (usft)	(Map) Easting (usft)	Latitude	Longitude
9,892.00	89.60	5.50	8,655.65	1,243.30	269.87	549,715.74	633,583.76	2° 30' 39.14218259 N	104° 2' 2.89783378 W
9,788.00	89.80	5.10	8,656.15	1,338.89	278.74	549,811.33	633,592.63	2° 30' 40.08782546 N	104° 2' 2.59114234 W
9,882.00	90.20	5.10	8,656.15	1,432.52	287.09	549,904.96	633,600.89	2° 30' 41.01408388 N	104° 2' 2.49048872 W
9,978.00	90.20	4.80	8,655.82	1,528.18	295.38	550,000.80	633,609.27	2° 30' 41.96026973 N	104° 2' 2.39081252 W
10,072.00	88.90	5.70	8,656.55	1,621.76	303.98	550,094.20	633,617.87	2° 30' 42.88624556 N	104° 2' 2.28710119 W
10,135.00	89.30	6.00	8,657.54	1,664.42	310.40	550,156.86	633,624.29	2° 30' 43.50615705 N	104° 2' 2.21006453 W
10,189.00	90.50	6.70	8,657.66	1,748.03	317.48	550,220.47	633,631.37	2° 30' 44.13538897 N	104° 2' 2.12531341 W
10,262.00	90.70	7.00	8,657.00	1,810.57	324.99	550,283.02	633,638.88	2° 30' 44.75409013 N	104° 2' 2.03551321 W
10,357.00	91.30	7.50	8,655.34	1,904.80	336.98	550,377.24	633,650.87	2° 30' 45.68616203 N	104° 2' 1.89243087 W
10,452.00	91.50	6.50	8,653.02	1,999.06	348.55	550,471.50	633,662.44	2° 30' 46.81861240 N	104° 2' 1.75416887 W
10,547.00	90.90	6.60	8,651.03	2,093.42	359.38	550,565.86	633,673.28	2° 30' 47.55203593 N	104° 2' 1.62454255 W
10,642.00	90.70	6.40	8,649.70	2,187.80	370.14	550,660.24	633,684.03	2° 30' 48.48567210 N	104° 2' 1.48586077 W
10,737.00	90.20	6.80	8,648.86	2,282.19	380.89	550,754.63	633,694.79	2° 30' 49.41936791 N	104° 2' 1.36716988 W
10,832.00	90.20	6.30	8,648.62	2,376.58	391.58	550,849.03	633,705.48	2° 30' 50.35318392 N	104° 2' 1.23943850 W
10,927.00	91.10	6.00	8,647.55	2,471.03	401.74	550,943.47	633,715.63	2° 30' 51.28748988 N	104° 2' 1.11748283 W
11,022.00	90.70	6.50	8,646.05	2,565.45	412.08	551,037.90	633,725.98	2° 30' 52.22156426 N	104° 2' 0.99381060 W
11,116.00	90.60	6.80	8,644.89	2,658.80	423.05	551,131.25	633,736.94	2° 30' 53.14501980 N	104° 2' 0.86247026 W
11,211.00	90.70	7.20	8,643.91	2,753.08	434.71	551,225.52	633,746.60	2° 30' 54.07759628 N	104° 2' 0.72320791 W
11,306.00	90.00	7.70	8,643.33	2,847.28	447.02	551,319.72	633,760.92	2° 30' 55.00936138 N	104° 2' 0.57625841 W
11,401.00	92.00	7.90	8,641.67	2,941.38	459.91	551,413.82	633,773.81	2° 30' 55.94018509 N	104° 2' 0.42282086 W
11,466.00	91.90	6.40	8,638.44	3,035.58	471.73	551,508.02	633,785.83	2° 30' 56.87204862 N	104° 2' 0.28151212 W
11,591.00	92.20	6.30	8,635.04	3,129.94	482.23	551,602.38	633,796.13	2° 30' 57.80545925 N	104° 2' 0.15577599 W
11,686.00	92.60	5.60	8,631.06	3,224.34	492.07	551,696.79	633,805.97	2° 30' 58.73936250 N	104° 2' 0.03778107 W
11,781.00	91.10	5.50	8,628.00	3,318.85	501.25	551,791.29	633,815.15	2° 30' 59.67425498 N	104° 1' 59.92740770 W
11,876.00	91.30	4.80	8,626.01	3,413.44	509.78	551,885.88	633,823.67	32° 31' 0.61098044 N	104° 1' 59.82472565 W
11,971.00	92.00	4.50	8,623.27	3,508.09	517.48	551,980.53	633,831.37	32° 31' 1.54644583 N	104° 1' 59.73170347 W
12,062.00	91.80	5.40	8,620.25	3,598.70	525.33	552,071.14	633,839.22	32° 31' 2.44285336 N	104° 1' 59.63706892 W
12,162.00	91.50	6.00	8,617.37	3,698.16	535.25	552,170.60	633,849.15	32° 31' 3.42681683 N	104° 1' 59.51784811 W
12,257.00	92.40	6.20	8,614.14	3,792.57	545.34	552,265.01	633,859.24	32° 31' 4.38073099 N	104° 1' 59.39690863 W
12,353.00	91.50	7.00	8,610.87	3,887.87	556.37	552,360.32	633,870.28	32° 31' 5.30352878 N	104° 1' 59.26498018 W
12,447.00	93.10	6.80	8,607.10	3,981.12	567.65	552,453.56	633,881.55	32° 31' 6.22587669 N	104° 1' 59.13012674 W
12,510.00	92.70	6.90	8,603.91	4,043.59	575.16	552,516.03	633,889.05	32° 31' 6.84383778 N	104° 1' 59.04042640 W
12,574.00	91.10	6.20	8,601.79	4,107.13	582.45	552,579.57	633,898.35	32° 31' 7.47244030 N	104° 1' 58.95312222 W
12,637.00	91.30	6.00	8,600.47	4,169.76	589.15	552,642.20	633,903.04	32° 31' 8.09200162 N	104° 1' 58.87288881 W
12,700.00	92.20	5.70	8,598.55	4,232.40	595.57	552,704.84	633,909.46	32° 31' 8.71189394 N	104° 1' 58.79586598 W
12,795.00	91.40	5.80	8,595.57	4,326.88	605.08	552,799.32	633,918.97	32° 31' 9.64629860 N	104° 1' 58.68164823 W
12,890.00	90.50	5.90	8,593.69	4,421.37	614.76	552,893.81	633,928.65	2° 31' 10.58106387 N	104° 1' 58.58546367 W
12,985.00	91.10	5.60	8,592.68	4,515.88	624.28	552,988.32	633,938.17	2° 31' 11.51604081 N	104° 1' 58.45119902 W
13,080.00	91.70	5.70	8,590.34	4,610.39	633.63	553,082.83	633,947.52	2° 31' 12.45098839 N	104° 1' 58.33888274 W
13,175.00	92.30	5.70	8,587.03	4,704.86	643.06	553,177.30	633,956.95	2° 31' 13.38558210 N	104° 1' 58.22583789 W
13,270.00	91.50	5.80	8,583.88	4,799.33	652.57	553,271.77	633,966.48	2° 31' 14.32013371 N	104° 1' 58.11142317 W
13,418.00	92.90	6.10	8,578.20	4,846.42	667.90	553,418.86	633,981.79	2° 31' 15.77523313 N	104° 1' 57.92753008 W
13,617.00	92.80	6.10	8,568.13	5,144.04	689.02	553,616.48	634,002.91	2° 31' 17.73018317 N	104° 1' 57.67434920 W

Survey projected to 13617.00 MD



Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Running Buffalo 1 Federal Com Well 1H
Project:	Eddy County, New Mexico NAD83	TVD Reference:	RKB=3448.9+18 @ 3466.90usft (Patriot 8)
Site:	Running Buffalo 1 Federal Com	MD Reference:	RKB=3448.9+18 @ 3466.90usft (Patriot 8)
Well:	Running Buffalo 1 Federal Com Well 1H	North Reference:	Grid
Wellbore:	Original hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original hole	Database:	EDM 5000.1 Ddatabase

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comments
		+N-S (usft)	+E-W (usft)	
100.00	100.00	-0.35	0.49	Gyro
8,111.00	8,109.12	6.44	29.57	MWD surveys
8,630.00	8,557.33	219.40	97.77	330 Hard line intercept @ 8630 MD
13,617.00	8,568.13	5,144.04	689.02	Survey projected to 13617.00 MD