

Submit 1 Copy To Appropriate District
Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
October 13, 2009

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-015-41210 ✓
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☐ FEE ☒
2. Name of Operator COG Production LLC		6. State Oil & Gas Lease No.
3. Address of Operator 2208 W. Main Street, Artesia, NM 88210		7. Lease Name or Unit Agreement Name Copperhead Fee A 38318
4. Well Location Unit Letter F : 350 feet from the South line and 2065 feet from the West line Section 31 Township 26S Range 29E NMPM Eddy County		8. Well Number 4H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 2913.4'		9. OGRID Number 217955
		10. Pool name or Wildcat WC-015-604 Wildcat; Wolfcamp 5262931H 98190

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
OTHER: ☒ SHL & BHL Change

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

COG Production LLC respectfully requests approval for a SHL, BHL, and drilling changes on the above referenced APD.

From: SHL: 330' FSL & 1965' FWL Section 31. T26S. R29E
BHL: 1320' FNL & 1750' FWL Section 30. T26S. R29E

To: SHL: 350' FSL & 2065' FWL Section 31. T26S. R29E
BHL: 330' FNL & 1650' FWL Section 30. T26S. R29E

Formation: From: Wildcat; G-03 S262932E; Bone Spring
To: WC-015 G-04 S262931H; UPR Wolfcamp

C102 Attached.

Drilling and directional plans attached.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Mayte Reyes TITLE: Regulatory Analyst DATE: 1/30/2017

Type or print name: Mayte Reyes E-mail address: mreyes1@conchoresources.com PHONE: (575) 748-6945

For State Use Only

APPROVED BY: Raymond W. Roden TITLE: Geologist DATE: 1/31/2017
Conditions of Approval (if any):

Xerox® WorkCentre® 7835

SMTP Transfer Report



Job Status: **FAILED**

Job failed. No messages were sent. One or more of the email addresses are invalid. Check your recipient addresses, remove invalid addresses and resend.

Job Information

Device Name: OCART-XWC7835
Submission Date: 01/31/17
Submission Time: 03:18 PM
Images Scanned: 1
Size: 0
Attachment Name: Scanned from a Xerox Multifunction Printer.pdf
Format: Image-Only PDF
Encrypted E-mail: No

SMTP Server

Address: webmail.state.nm.us:25

Message Settings:

Subject: Scanned from a Xerox Multifunction ...
From: EMNRDOCD7835XWC@state.nm.us
Reply To: EMNRDOCD7835XWC@state.nm.us
To:

1. mireyes1@conchoresources.com

Sundry to State APD for Copperhead Fee A 4H (Plat Attached)

Proposed Depth **17,595'** MD.

Proposed Revised Casing and Cement Program

TYPE	HOLE SIZE	CASING SIZE	CASING WT.	SETTING DEPTH	SACKS OF CEMENT	ESTIMATED TOC
SURF	18.5	16.0	75	450	450	Surface
INT 1	13.5	10.75	45.5	2645	1250	Surface
INT 2	9.875	7.625	29.7	9850'	1325	2000
PROD	6.75	5.5 x 5.0	23/18	17595'	1500	2000

Casing/Cement Program: Additional Comments

Plan to drill a 18-1/2" hole to 450' with Fresh Water. Run 16", 75# J-55 casing and cement to surface. Drill 13-1/2" hole to 2645' with Brine, and run 10-3/4", 45.5# L-80 and cement to surface. Drill 9-7/8" hole to 9850' with Cut Brine, run 7-5/8" 2nd Intermediate and cement to 2000'. Drill 6-3/4" curve and lateral with Oil Based Mud (11.5 – 12.5) to approximately 17,595' MD. Run a combination 5-1/2" 23# P-110 x 5" 18# P-110 casing and cement to 2,000'.

22. PROPOSED BLOWOUT PREVENTION PROGRAM

Surface to 1st Intermediate Casing Point

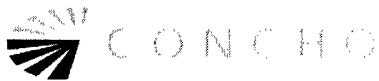
DOUBLE RAM 2000 PSI WP 2000 PSI TEST PRESS CAMERON

1st Intermediate Casing Point to 2nd Intermediate Casing Point

DOUBLE RAM 3000 PSI WP 3000 PSI TEST PRESS CAMERON

Below 2nd Intermediate to TD

DOUBLE RAM 5000 PSI WP 5000 PSI TEST PRESS CAMERON



COG PRODUCTION LLC

Survey Report - Geographic

Company: COG PRODUCTION LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: COPPERHEAD FEE A #4H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well COPPERHEAD FEE A #4H
TVD Reference: RKB=2913.4+24 @ 2937.4usft (ENSIGN 155)
MD Reference: RKB=2913.4+24 @ 2937.4usft (ENSIGN 155)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
17,400.0	89.66	359.70	10,654.8	6,708.0	-351.6	370,904.79	595,139.41	32° 1' 9.696 N	104° 1' 34.906 W
17,500.0	89.66	359.70	10,655.4	6,808.0	-352.1	371,004.79	595,138.90	32° 1' 10.685 N	104° 1' 34.909 W
17,595.2	89.66	359.70	10,656.0	6,903.2	-352.6	371,100.00	595,138.40	32° 1' 11.627 N	104° 1' 34.912 W

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL-Copperhead	0.00	0.00	10,656.0	6,903.2	-352.6	371,100.00	595,138.40	32° 1' 11.627 N	104° 1' 34.912 W
- plan hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____



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MD Reference: RKB=2913.4+24 @ 2937.4usft (ENSIGN 155)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,900.0	89.66	359.70	10,622.0	1,208.2	-323.1	365,404.97	595,167.89	32° 0' 15.265 N	104° 1' 34.757 W
12,000.0	89.66	359.70	10,622.6	1,308.2	-323.6	365,504.96	595,167.37	32° 0' 16.255 N	104° 1' 34.760 W
12,100.0	89.66	359.70	10,623.2	1,408.2	-324.1	365,604.96	595,166.85	32° 0' 17.245 N	104° 1' 34.762 W
12,200.0	89.66	359.70	10,623.8	1,508.2	-324.7	365,704.96	595,166.34	32° 0' 18.234 N	104° 1' 34.765 W
12,300.0	89.66	359.70	10,624.4	1,608.2	-325.2	365,804.95	595,165.82	32° 0' 19.224 N	104° 1' 34.768 W
12,400.0	89.66	359.70	10,625.0	1,708.2	-325.7	365,904.95	595,165.30	32° 0' 20.214 N	104° 1' 34.771 W
12,500.0	89.66	359.70	10,625.5	1,808.1	-326.2	366,004.95	595,164.78	32° 0' 21.203 N	104° 1' 34.773 W
12,600.0	89.66	359.70	10,626.1	1,908.1	-326.7	366,104.94	595,164.27	32° 0' 22.193 N	104° 1' 34.776 W
12,700.0	89.66	359.70	10,626.7	2,008.1	-327.3	366,204.94	595,163.75	32° 0' 23.182 N	104° 1' 34.779 W
12,800.0	89.66	359.70	10,627.3	2,108.1	-327.8	366,304.94	595,163.23	32° 0' 24.172 N	104° 1' 34.781 W
12,900.0	89.66	359.70	10,627.9	2,208.1	-328.3	366,404.93	595,162.71	32° 0' 25.162 N	104° 1' 34.784 W
13,000.0	89.66	359.70	10,628.5	2,308.1	-328.8	366,504.93	595,162.19	32° 0' 26.151 N	104° 1' 34.787 W
13,100.0	89.66	359.70	10,629.1	2,408.1	-329.3	366,604.93	595,161.68	32° 0' 27.141 N	104° 1' 34.790 W
13,200.0	89.66	359.70	10,629.7	2,508.1	-329.8	366,704.92	595,161.16	32° 0' 28.131 N	104° 1' 34.792 W
13,300.0	89.66	359.70	10,630.3	2,608.1	-330.4	366,804.92	595,160.64	32° 0' 29.120 N	104° 1' 34.795 W
13,400.0	89.66	359.70	10,630.9	2,708.1	-330.9	366,904.92	595,160.12	32° 0' 30.110 N	104° 1' 34.798 W
13,500.0	89.66	359.70	10,631.5	2,808.1	-331.4	367,004.92	595,159.61	32° 0' 31.100 N	104° 1' 34.800 W
13,600.0	89.66	359.70	10,632.1	2,908.1	-331.9	367,104.91	595,159.09	32° 0' 32.089 N	104° 1' 34.803 W
13,700.0	89.66	359.70	10,632.7	3,008.1	-332.4	367,204.91	595,158.57	32° 0' 33.079 N	104° 1' 34.806 W
13,800.0	89.66	359.70	10,633.3	3,108.1	-333.0	367,304.91	595,158.05	32° 0' 34.069 N	104° 1' 34.809 W
13,900.0	89.66	359.70	10,633.9	3,208.1	-333.5	367,404.90	595,157.53	32° 0' 35.058 N	104° 1' 34.811 W
14,000.0	89.66	359.70	10,634.5	3,308.1	-334.0	367,504.90	595,157.02	32° 0' 36.048 N	104° 1' 34.814 W
14,100.0	89.66	359.70	10,635.1	3,408.1	-334.5	367,604.90	595,156.50	32° 0' 37.037 N	104° 1' 34.817 W
14,200.0	89.66	359.70	10,635.7	3,508.1	-335.0	367,704.89	595,155.98	32° 0' 38.027 N	104° 1' 34.819 W
14,300.0	89.66	359.70	10,636.3	3,608.1	-335.5	367,804.89	595,155.46	32° 0' 39.017 N	104° 1' 34.822 W
14,400.0	89.66	359.70	10,636.9	3,708.1	-336.1	367,904.89	595,154.95	32° 0' 40.006 N	104° 1' 34.825 W
14,500.0	89.66	359.70	10,637.5	3,808.1	-336.6	368,004.88	595,154.43	32° 0' 40.996 N	104° 1' 34.828 W
14,600.0	89.66	359.70	10,638.1	3,908.1	-337.1	368,104.88	595,153.91	32° 0' 41.986 N	104° 1' 34.830 W
14,700.0	89.66	359.70	10,638.7	4,008.1	-337.6	368,204.88	595,153.39	32° 0' 42.975 N	104° 1' 34.833 W
14,800.0	89.66	359.70	10,639.3	4,108.1	-338.1	368,304.87	595,152.88	32° 0' 43.965 N	104° 1' 34.836 W
14,900.0	89.66	359.70	10,639.9	4,208.1	-338.6	368,404.87	595,152.36	32° 0' 44.955 N	104° 1' 34.838 W
15,000.0	89.66	359.70	10,640.5	4,308.1	-339.2	368,504.87	595,151.84	32° 0' 45.944 N	104° 1' 34.841 W
15,100.0	89.66	359.70	10,641.1	4,408.1	-339.7	368,604.87	595,151.32	32° 0' 46.934 N	104° 1' 34.844 W
15,200.0	89.66	359.70	10,641.7	4,508.1	-340.2	368,704.86	595,150.80	32° 0' 47.924 N	104° 1' 34.847 W
15,300.0	89.66	359.70	10,642.3	4,608.1	-340.7	368,804.86	595,150.29	32° 0' 48.913 N	104° 1' 34.849 W
15,400.0	89.66	359.70	10,642.9	4,708.1	-341.2	368,904.86	595,149.77	32° 0' 49.903 N	104° 1' 34.852 W
15,500.0	89.66	359.70	10,643.5	4,808.1	-341.8	369,004.85	595,149.25	32° 0' 50.892 N	104° 1' 34.855 W
15,600.0	89.66	359.70	10,644.1	4,908.1	-342.3	369,104.85	595,148.73	32° 0' 51.882 N	104° 1' 34.857 W
15,700.0	89.66	359.70	10,644.7	5,008.0	-342.8	369,204.85	595,148.22	32° 0' 52.872 N	104° 1' 34.860 W
15,800.0	89.66	359.70	10,645.3	5,108.0	-343.3	369,304.84	595,147.70	32° 0' 53.861 N	104° 1' 34.863 W
15,900.0	89.66	359.70	10,645.9	5,208.0	-343.8	369,404.84	595,147.18	32° 0' 54.851 N	104° 1' 34.866 W
16,000.0	89.66	359.70	10,646.5	5,308.0	-344.3	369,504.84	595,146.66	32° 0' 55.841 N	104° 1' 34.868 W
16,100.0	89.66	359.70	10,647.1	5,408.0	-344.9	369,604.83	595,146.14	32° 0' 56.830 N	104° 1' 34.871 W
16,200.0	89.66	359.70	10,647.7	5,508.0	-345.4	369,704.83	595,145.63	32° 0' 57.820 N	104° 1' 34.874 W
16,300.0	89.66	359.70	10,648.3	5,608.0	-345.9	369,804.83	595,145.11	32° 0' 58.810 N	104° 1' 34.876 W
16,400.0	89.66	359.70	10,648.9	5,708.0	-346.4	369,904.82	595,144.59	32° 0' 59.799 N	104° 1' 34.879 W
16,500.0	89.66	359.70	10,649.5	5,808.0	-346.9	370,004.82	595,144.07	32° 1' 0.789 N	104° 1' 34.882 W
16,600.0	89.66	359.70	10,650.1	5,908.0	-347.4	370,104.82	595,143.56	32° 1' 1.778 N	104° 1' 34.885 W
16,700.0	89.66	359.70	10,650.6	6,008.0	-348.0	370,204.82	595,143.04	32° 1' 2.768 N	104° 1' 34.887 W
16,800.0	89.66	359.70	10,651.2	6,108.0	-348.5	370,304.81	595,142.52	32° 1' 3.758 N	104° 1' 34.890 W
16,900.0	89.66	359.70	10,651.8	6,208.0	-349.0	370,404.81	595,142.00	32° 1' 4.747 N	104° 1' 34.893 W
17,000.0	89.66	359.70	10,652.4	6,308.0	-349.5	370,504.81	595,141.48	32° 1' 5.737 N	104° 1' 34.895 W
17,100.0	89.66	359.70	10,653.0	6,408.0	-350.0	370,604.80	595,140.97	32° 1' 6.727 N	104° 1' 34.898 W
17,200.0	89.66	359.70	10,653.6	6,508.0	-350.6	370,704.80	595,140.45	32° 1' 7.716 N	104° 1' 34.901 W
17,300.0	89.66	359.70	10,654.2	6,608.0	-351.1	370,804.80	595,139.93	32° 1' 8.706 N	104° 1' 34.904 W



COG PRODUCTION LLC

Survey Report - Geographic

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,700.0	4.50	230.00	6,692.7	-121.0	-144.3	364,075.76	595,346.75	32° 0' 2.106 N	104° 1' 32.724 W
6,800.0	4.50	230.00	6,792.4	-126.1	-150.3	364,070.71	595,340.74	32° 0' 2.056 N	104° 1' 32.794 W
6,900.0	4.50	230.00	6,892.1	-131.1	-156.3	364,065.67	595,334.73	32° 0' 2.006 N	104° 1' 32.864 W
7,000.0	4.50	230.00	6,991.8	-136.2	-162.3	364,060.63	595,328.72	32° 0' 1.956 N	104° 1' 32.934 W
7,100.0	4.50	230.00	7,091.5	-141.2	-168.3	364,055.58	595,322.71	32° 0' 1.907 N	104° 1' 33.004 W
7,200.0	4.50	230.00	7,191.2	-146.3	-174.3	364,050.54	595,316.70	32° 0' 1.857 N	104° 1' 33.074 W
7,300.0	4.50	230.00	7,290.9	-151.3	-180.3	364,045.50	595,310.69	32° 0' 1.807 N	104° 1' 33.144 W
7,400.0	4.50	230.00	7,390.5	-156.3	-186.3	364,040.45	595,304.68	32° 0' 1.757 N	104° 1' 33.213 W
7,500.0	4.50	230.00	7,490.2	-161.4	-192.3	364,035.41	595,298.67	32° 0' 1.708 N	104° 1' 33.283 W
7,600.0	4.50	230.00	7,589.9	-166.4	-198.3	364,030.37	595,292.66	32° 0' 1.658 N	104° 1' 33.353 W
7,700.0	4.50	230.00	7,689.6	-171.5	-204.4	364,025.32	595,286.65	32° 0' 1.608 N	104° 1' 33.423 W
7,800.0	4.50	230.00	7,789.3	-176.5	-210.4	364,020.28	595,280.64	32° 0' 1.559 N	104° 1' 33.493 W
7,900.0	4.50	230.00	7,889.0	-181.6	-216.4	364,015.24	595,274.63	32° 0' 1.509 N	104° 1' 33.563 W
8,000.0	4.50	230.00	7,988.7	-186.6	-222.4	364,010.20	595,268.62	32° 0' 1.459 N	104° 1' 33.633 W
8,100.0	4.50	230.00	8,088.4	-191.6	-228.4	364,005.15	595,262.61	32° 0' 1.409 N	104° 1' 33.703 W
8,200.0	4.50	230.00	8,188.1	-196.7	-234.4	364,000.11	595,256.60	32° 0' 1.360 N	104° 1' 33.773 W
8,300.0	4.50	230.00	8,287.8	-201.7	-240.4	363,995.07	595,250.59	32° 0' 1.310 N	104° 1' 33.843 W
8,400.0	4.50	230.00	8,387.5	-206.8	-246.4	363,990.02	595,244.58	32° 0' 1.260 N	104° 1' 33.913 W
8,500.0	4.50	230.00	8,487.2	-211.8	-252.4	363,984.98	595,238.57	32° 0' 1.210 N	104° 1' 33.983 W
8,600.0	4.50	230.00	8,586.8	-216.9	-258.4	363,979.94	595,232.56	32° 0' 1.161 N	104° 1' 34.053 W
8,700.0	4.50	230.00	8,686.5	-221.9	-264.5	363,974.89	595,226.55	32° 0' 1.111 N	104° 1' 34.123 W
8,800.0	4.50	230.00	8,786.2	-226.9	-270.5	363,969.85	595,220.54	32° 0' 1.061 N	104° 1' 34.193 W
8,900.0	4.50	230.00	8,885.9	-232.0	-276.5	363,964.81	595,214.53	32° 0' 1.011 N	104° 1' 34.263 W
9,000.0	4.50	230.00	8,985.6	-237.0	-282.5	363,959.76	595,208.52	32° 0' 0.962 N	104° 1' 34.333 W
9,100.0	4.50	230.00	9,085.3	-242.1	-288.5	363,954.72	595,202.51	32° 0' 0.912 N	104° 1' 34.403 W
9,200.0	4.50	230.00	9,185.0	-247.1	-294.5	363,949.68	595,196.49	32° 0' 0.862 N	104° 1' 34.473 W
9,300.0	4.50	230.00	9,284.7	-252.2	-300.5	363,944.63	595,190.48	32° 0' 0.812 N	104° 1' 34.543 W
9,400.0	4.50	230.00	9,384.4	-257.2	-306.5	363,939.59	595,184.47	32° 0' 0.763 N	104° 1' 34.613 W
9,500.0	3.00	230.00	9,484.2	-261.4	-311.5	363,935.59	595,179.46	32° 0' 0.721 N	104° 1' 34.671 W
9,600.0	1.50	230.00	9,584.1	-263.9	-314.5	363,932.86	595,176.46	32° 0' 0.696 N	104° 1' 34.706 W
9,700.0	0.00	0.00	9,684.1	-264.8	-315.5	363,932.02	595,175.45	32° 0' 0.688 N	104° 1' 34.718 W
9,800.0	0.00	0.00	9,784.1	-264.8	-315.5	363,932.02	595,175.45	32° 0' 0.688 N	104° 1' 34.718 W
9,900.0	0.00	0.00	9,884.1	-264.8	-315.5	363,932.02	595,175.45	32° 0' 0.688 N	104° 1' 34.718 W
10,000.0	0.00	0.00	9,984.1	-264.8	-315.5	363,932.02	595,175.45	32° 0' 0.688 N	104° 1' 34.718 W
10,100.0	0.00	0.00	10,084.1	-264.8	-315.5	363,932.02	595,175.45	32° 0' 0.688 N	104° 1' 34.718 W
10,154.5	0.00	0.00	10,138.6	-264.8	-315.5	363,932.02	595,175.45	32° 0' 0.688 N	104° 1' 34.718 W
10,200.0	5.46	359.71	10,184.0	-262.6	-315.6	363,934.19	595,175.44	32° 0' 0.709 N	104° 1' 34.718 W
10,300.0	17.46	359.71	10,281.8	-242.8	-315.7	363,954.02	595,175.34	32° 0' 0.906 N	104° 1' 34.718 W
10,400.0	29.46	359.71	10,373.4	-203.0	-315.9	363,993.76	595,175.14	32° 0' 1.299 N	104° 1' 34.719 W
10,500.0	41.46	359.71	10,454.7	-145.1	-316.2	364,051.67	595,174.85	32° 0' 1.872 N	104° 1' 34.721 W
10,600.0	53.46	359.71	10,522.2	-71.6	-316.5	364,125.22	595,174.48	32° 0' 2.600 N	104° 1' 34.723 W
10,700.0	65.46	359.71	10,572.9	14.4	-317.0	364,211.19	595,174.04	32° 0' 3.451 N	104° 1' 34.725 W
10,800.0	77.46	359.71	10,604.6	109.0	-317.4	364,305.83	595,173.56	32° 0' 4.387 N	104° 1' 34.727 W
10,900.0	89.47	359.71	10,616.0	208.2	-317.9	364,405.00	595,173.06	32° 0' 5.369 N	104° 1' 34.730 W
10,901.6	89.66	359.71	10,616.0	209.8	-318.0	364,406.62	595,173.05	32° 0' 5.385 N	104° 1' 34.730 W
11,000.0	89.66	359.70	10,616.6	308.2	-318.5	364,504.99	595,172.55	32° 0' 6.359 N	104° 1' 34.733 W
11,020.7	89.66	359.70	10,616.7	328.9	-318.6	364,525.70	595,172.44	32° 0' 6.564 N	104° 1' 34.733 W
11,100.0	89.66	359.70	10,617.2	408.2	-319.0	364,604.99	595,172.03	32° 0' 7.348 N	104° 1' 34.735 W
11,200.0	89.66	359.70	10,617.8	508.2	-319.5	364,704.99	595,171.51	32° 0' 8.338 N	104° 1' 34.738 W
11,300.0	89.66	359.70	10,618.4	608.2	-320.0	364,804.98	595,171.00	32° 0' 9.327 N	104° 1' 34.741 W
11,400.0	89.66	359.70	10,619.0	708.2	-320.5	364,904.98	595,170.48	32° 0' 10.317 N	104° 1' 34.743 W
11,500.0	89.66	359.70	10,619.6	808.2	-321.0	365,004.98	595,169.96	32° 0' 11.307 N	104° 1' 34.746 W
11,600.0	89.66	359.70	10,620.2	908.2	-321.6	365,104.97	595,169.44	32° 0' 12.296 N	104° 1' 34.749 W
11,700.0	89.66	359.70	10,620.8	1,008.2	-322.1	365,204.97	595,168.93	32° 0' 13.286 N	104° 1' 34.752 W
11,800.0	89.66	359.70	10,621.4	1,108.2	-322.6	365,304.97	595,168.41	32° 0' 14.276 N	104° 1' 34.754 W



COG PRODUCTION LLC

Survey Report - Geographic

Company: COG PRODUCTION LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: COPPERHEAD FEE A #4H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well COPPERHEAD FEE A #4H
TVD Reference: RKB=2913.4+24 @ 2937.4usft (ENSIGN 155)
MD Reference: RKB=2913.4+24 @ 2937.4usft (ENSIGN 155)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,200.0	0.00	0.00	1,200.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
4,300.0	2.25	230.00	4,300.0	-1.3	-1.5	364,195.54	595,489.50	32° 0' 3.287 N	104° 1' 31.062 W
4,400.0	4.50	230.00	4,399.8	-5.0	-6.0	364,191.75	595,484.99	32° 0' 3.250 N	104° 1' 31.115 W
4,500.0	4.50	230.00	4,499.5	-10.1	-12.0	364,186.71	595,478.98	32° 0' 3.200 N	104° 1' 31.185 W
4,600.0	4.50	230.00	4,599.2	-15.1	-18.0	364,181.67	595,472.97	32° 0' 3.150 N	104° 1' 31.254 W
4,700.0	4.50	230.00	4,698.9	-20.2	-24.0	364,176.62	595,466.96	32° 0' 3.101 N	104° 1' 31.324 W
4,800.0	4.50	230.00	4,798.6	-25.2	-30.1	364,171.58	595,460.95	32° 0' 3.051 N	104° 1' 31.394 W
4,900.0	4.50	230.00	4,898.3	-30.3	-36.1	364,166.54	595,454.94	32° 0' 3.001 N	104° 1' 31.464 W
5,000.0	4.50	230.00	4,997.9	-35.3	-42.1	364,161.49	595,448.93	32° 0' 2.951 N	104° 1' 31.534 W
5,100.0	4.50	230.00	5,097.6	-40.3	-48.1	364,156.45	595,442.92	32° 0' 2.902 N	104° 1' 31.604 W
5,200.0	4.50	230.00	5,197.3	-45.4	-54.1	364,151.41	595,436.91	32° 0' 2.852 N	104° 1' 31.674 W
5,300.0	4.50	230.00	5,297.0	-50.4	-60.1	364,146.36	595,430.90	32° 0' 2.802 N	104° 1' 31.744 W
5,400.0	4.50	230.00	5,396.7	-55.5	-66.1	364,141.32	595,424.89	32° 0' 2.752 N	104° 1' 31.814 W
5,500.0	4.50	230.00	5,496.4	-60.5	-72.1	364,136.28	595,418.88	32° 0' 2.703 N	104° 1' 31.884 W
5,600.0	4.50	230.00	5,596.1	-65.6	-78.1	364,131.23	595,412.87	32° 0' 2.653 N	104° 1' 31.954 W
5,700.0	4.50	230.00	5,695.8	-70.6	-84.1	364,126.19	595,406.86	32° 0' 2.603 N	104° 1' 32.024 W
5,800.0	4.50	230.00	5,795.5	-75.7	-90.2	364,121.15	595,400.85	32° 0' 2.553 N	104° 1' 32.094 W
5,900.0	4.50	230.00	5,895.2	-80.7	-96.2	364,116.10	595,394.84	32° 0' 2.504 N	104° 1' 32.164 W
6,000.0	4.50	230.00	5,994.9	-85.7	-102.2	364,111.06	595,388.82	32° 0' 2.454 N	104° 1' 32.234 W
6,100.0	4.50	230.00	6,094.6	-90.8	-108.2	364,106.02	595,382.81	32° 0' 2.404 N	104° 1' 32.304 W
6,200.0	4.50	230.00	6,194.2	-95.8	-114.2	364,100.97	595,376.80	32° 0' 2.354 N	104° 1' 32.374 W
6,300.0	4.50	230.00	6,293.9	-100.9	-120.2	364,095.93	595,370.79	32° 0' 2.305 N	104° 1' 32.444 W
6,400.0	4.50	230.00	6,393.6	-105.9	-126.2	364,090.89	595,364.78	32° 0' 2.255 N	104° 1' 32.514 W
6,500.0	4.50	230.00	6,493.3	-111.0	-132.2	364,085.84	595,358.77	32° 0' 2.205 N	104° 1' 32.584 W
6,600.0	4.50	230.00	6,593.0	-116.0	-138.2	364,080.80	595,352.76	32° 0' 2.155 N	104° 1' 32.654 W



COG PRODUCTION LLC

Survey Report - Geographic

Company: COG PRODUCTION LLC
Project: EDDY COUNTY, NM
Site: ATLAS
Well: COPPERHEAD FEE A #4H
Wellbore: OWB
Design: PWP1

Local Co-ordinate Reference: Well COPPERHEAD FEE A #4H
TVD Reference: RKB=2913.4+24 @ 2937.4usft (ENSIGN 155)
MD Reference: RKB=2913.4+24 @ 2937.4usft (ENSIGN 155)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Project	EDDY COUNTY, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	ATLAS			
Site Position:		Northing:	371,480.80 usft	Latitude: 32° 1' 15.933 N
From:	Map	Easting:	573,599.60 usft	Longitude: 104° 5' 45.086 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.13 °

Well	COPPERHEAD FEE A #4H			
Well Position	+N/-S	0.0 usft	Northing:	364,196.80 usf
	+E/-W	0.0 usft	Easting:	595,491.00 usf
Position Uncertainty	3.0 usft	Wellhead Elevation:	usf	Ground Level: 2,913.4 usf

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	1/4/2017	7.21	59.78	47,795.91164800

Design	PWP1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	357.08

Survey Tool Program	Date 1/13/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	17,595.0	PWP1 (OWB)	MWD	OWSG MWD - Standard

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
100.0	0.00	0.00	100.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
200.0	0.00	0.00	200.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
300.0	0.00	0.00	300.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
400.0	0.00	0.00	400.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
500.0	0.00	0.00	500.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
600.0	0.00	0.00	600.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
700.0	0.00	0.00	700.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
800.0	0.00	0.00	800.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
900.0	0.00	0.00	900.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	364,196.80	595,491.00	32° 0' 3.300 N	104° 1' 31.045 W



COG PRODUCTION LLC

EDDY COUNTY, NM

ATLAS

COPPERHEAD FEE A #4H

OWB

Plan: PWP1

Survey Report - Geographic

31 January, 2017



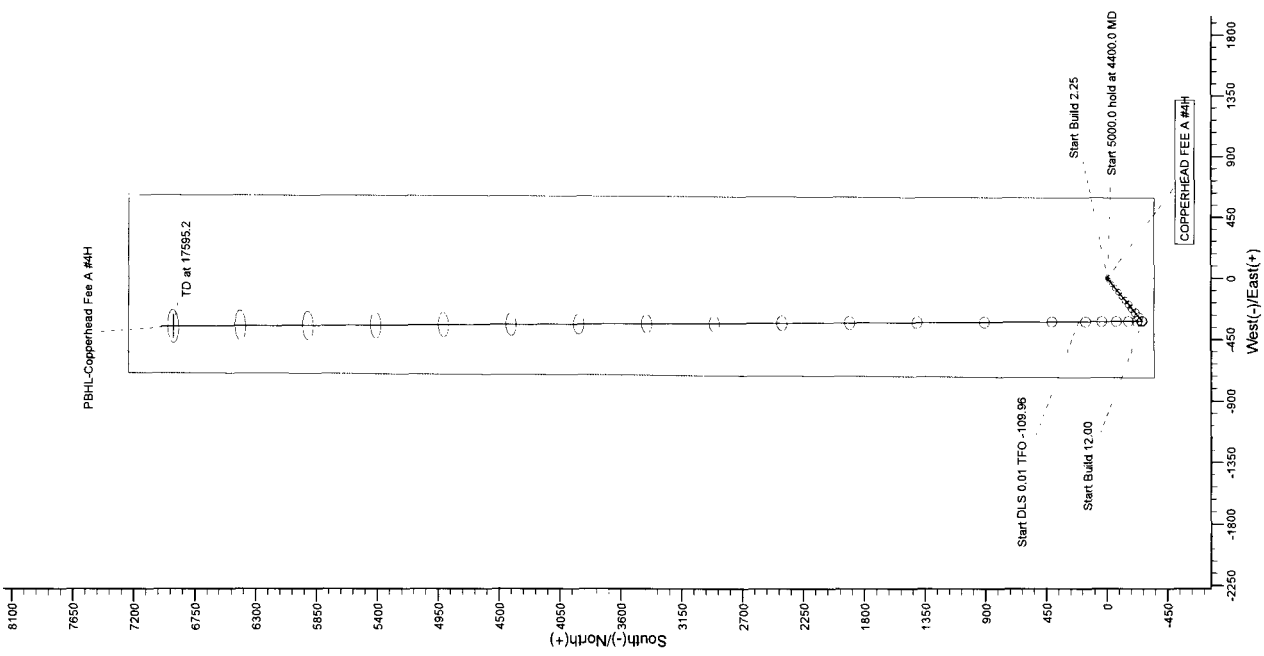
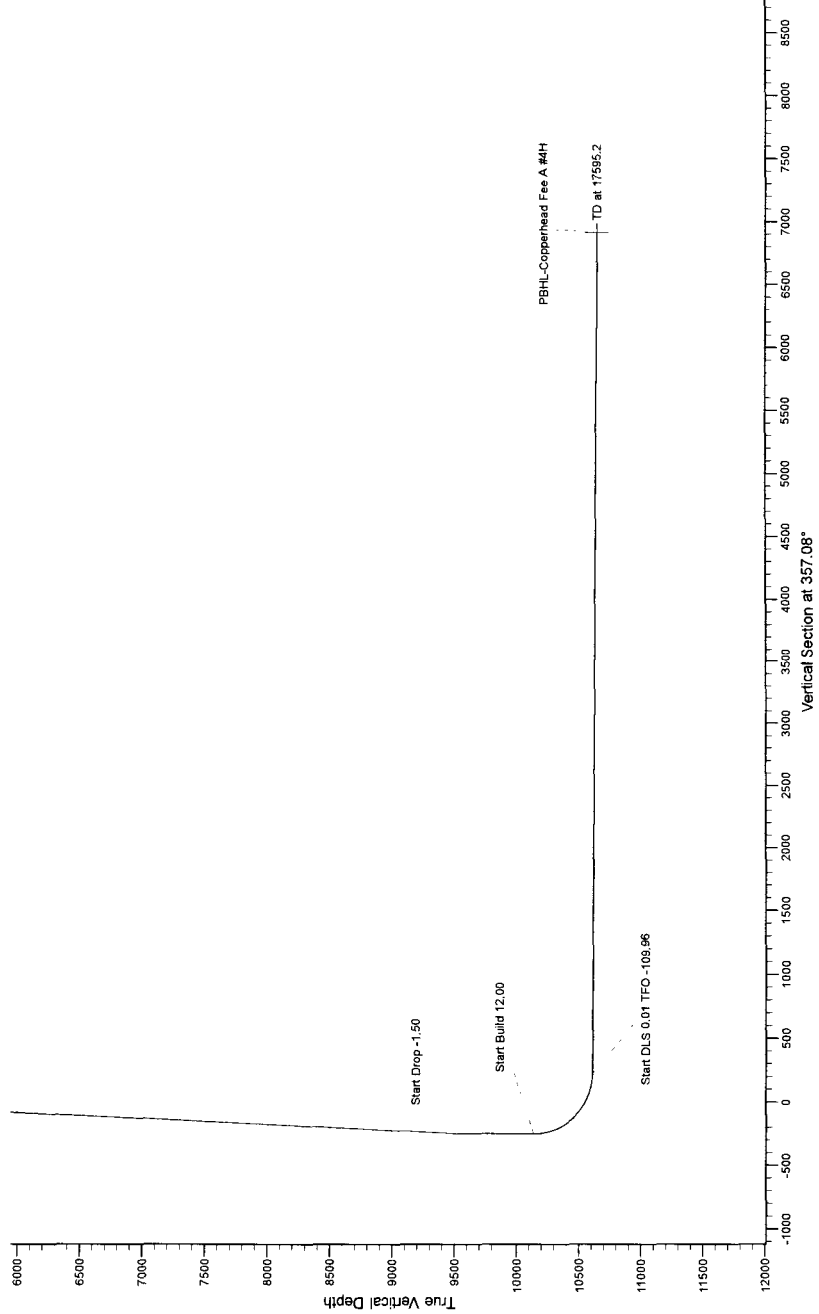
Project: EDDY COUNTY, NM
Site: ATLAS
Well: COPPERHEAD FEE A #4H
Wellbore: OWB
Design: PWP1

WELL DETAILS COPPERHEAD FEE A #4H

North 364196.80 Easting 595491.00 Latitude 32° 0' 3.300 N Longitude 104° 1' 31.045 W

Sec	MD	Inc	Azi	SECTION DETAILS			Dleg	TFace	Vsect	Annotation
				+N/-S	+E/-W	TVD				
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4200.0	0.00	0.00	0.0	0.0	4200.0	0.00	0.00	0.0	
3	4400.0	4.50	230.00	-5.0	-6.0	4399.8	2.25	230.00	-4.7	
4	9400.0	4.50	230.00	-257.2	-306.5	9384.4	0.00	0.00	-241.2	
5	9700.0	0.00	0.00	-264.8	-315.5	9684.1	1.50	180.00	-248.3	
6	10154.5	0.00	0.00	-264.8	-315.5	10138.6	0.00	0.00	-248.3	
7	10901.6	89.66	359.71	209.8	-318.0	10616.0	12.00	359.71	225.8	
8	11020.7	89.66	359.70	328.9	-318.6	10616.7	0.01	-109.96	344.7	
9	17595.2	89.66	359.70	6903.2	-352.6	10656.0	0.00	0.00	6912.2	

LEGEND
PWP1



KING AIR 8 FEDERAL COM 4H BATTERY
SWSW SECTION 8, T19S, R32E, UNIT M
LEA COUNTY, NM

WELLS:
KING AIR 8 FEDERAL COM #004H: 30-025-42200

Production Phase - Oil Tank #1
- Valve 1 open
- Valves 2, 3, and 4 closed
- Valves 5, 6, 7, and 8 open
- Valves 9, 10, 11, and 12 closed
- Valve 13 open
- Valves 14, 15, and 16 closed

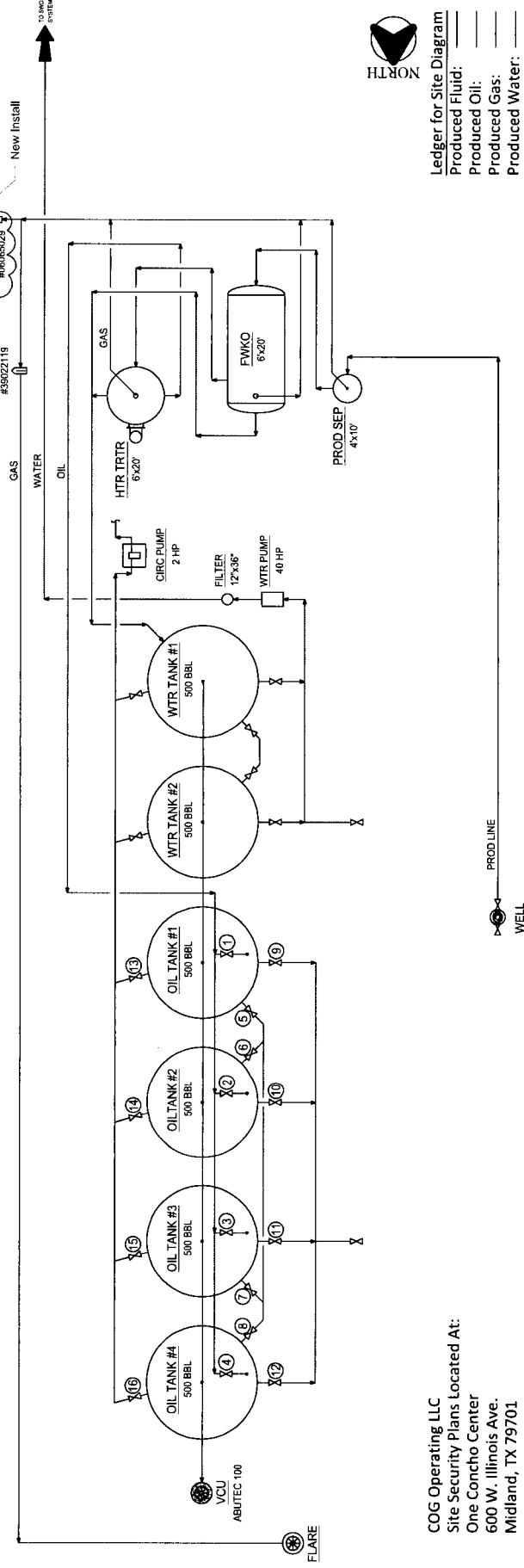
Sales Phase - Oil Tank #1
- Valve 1 closed
- Valves 2, 3, or 4 open
- Valve 5 closed
- Valves 6, 7, and 8 open
- Valve 9 open
- Valves 10, 11, and 12 closed
- Valve 13 closed
- Valves 14, 15, or 16 open

TO FRONTIER GAS SALES LINE
METER #06065029 LOCATED:
FED LEASE #: NMNM 095641
NENW SEC 8, T19S, R32E, UNIT C

FROM KING AIR 8 FED COM
3H BATTERY LOCATED:
FED LEASE #: NMNM 038100
NENW SEC 17, T19S, R32E, UNIT C

GAS METER
Flare Meter
#35022119

GAS METER
Allocation Meter
#06065029



COG Operating LLC
Site Security Plans Located At:
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

Ledger for Site Diagram
Produced Fluid: _____
Produced Oil: _____
Produced Gas: _____
Produced Water: _____
Modification: _____

NOTES:

Type of Lease: Federal
Federal Lease SHL #: NMNM 092771
CA/Agreement #: NMNM 134754
Property Code: 40109
OGRID #: 229137

CONCHO
NEW MEXICO SHELF ASSET
OPERATING ASSETS
SITE FACILITY DIAGRAM
KING AIR 8 FEDERAL COM 4H BATTERY
NEW MEXICO
COUNTY
LEASE NO. D-1700-81-005
NET METER

REFERENCE DRAWINGS		REVISIONS		ENGINEERING RECORD	
NO.	TITLE	NO.	DATE	BY	DATE
A	ISSUE FOR SITE FORMING	1	06/07/12	CHB	06/07/12
B	ISSUE FOR KING AIR 8 FED 4H BTRY	2	06/07/12	CHB	06/07/12
COG OPERATING LLC 600 WEST ILLINOIS AVENUE MIDLAND, TEXAS 79701		DATE MOD DATE MOD DATE MOD		DATE MOD DATE MOD DATE MOD	
		SCALE		SCALE	
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