

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTCarlsbad Field Office
COO ArtesiaFORM 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.*5. Lease Serial No.
NMNM114970

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.
SCREECH OWL FEDERAL 1H9. API Well No.
30-015-4282510. Field and Pool, or Exploratory
WELCH; BONE SPRING11. County or Parish, and State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
COG OPERATING LLCContact: MAYTE X REYES
E-Mail: mreyes1@concho.com3a. Address
2208 WEST MAIN STREET
ARTESIA, NM 882103b. Phone No. (include area code)
Ph: 575-748-6945

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 19 T26S R27E NWNW 50FNL 660FWL

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

TYPE OF SUBMISSION

- ☒
- Notice of Intent
-
- ☐
- Subsequent Report
-
- ☐
- Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|---|---|--|---|
| ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Alter Casing | ☐ Fracture Treat | ☐ Reclamation | ☐ Well Integrity |
| ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other |
| ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |
- Change to Original APD

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 recomple 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 recompletion 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.)

COG Operating LLC, respectfully requests approval for the following BHL change and to add a Flex Hose Variance to the approved referenced APD.

BHL

From: 330' FSL & 420' FWL Section 30, T26S, R27E
To: 330' FSL & 700' FWL Section 30, T26S, R27E

C102 Attached.

Flex Hose Variance report attached.

Directional plan attached.

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 21 2016

RECEIVED

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 21 2016

RECEIVED

Accepted for record
NMOCD

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #333448 verified by the BLM Well Information System
For COG OPERATING LLC, sent to the Carlsbad
Committed to AFMSS for processing by KENNETH RENNICK on 03/15/2016 ()

Name (Printed/Typed) MAYTE X REYES

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 03/11/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Kenneth Rennick

Title

Petroleum Engineering

Date

3/15/2016

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

Carlsbad Field 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 **

Screech Owl Federal 1H
API 30-015-42825
Eddy County
COG Production LLC
Conditions of Approval

Original COA still applies, except for the addition of the approval for a flex hose. See the following:

1. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

KGR 03152016

DISTRICT I
1625 N. FRENCH DR., HOBBBS, NM 86240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
611 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1253 Fax: (575) 748-0720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-5162

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-15-42825	Pool Code 64010	Pool Name Welch; Bone Spring
Property Code 313961	Property Name SCREECH OWL FEDERAL	Well Number 1H
GRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3342.5'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	19	26-S	27-E		50	NORTH	660	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	30	26-S	27-E		330	SOUTH	700	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

Y=376500.5 N X=529754.9 E NAD 27 SURFACE LOCATION Y=376447.4 N X=530415.4 E LAT.=32.034930° N LONG.=104.235180° W NAD 27 PROPOSED BOTTOM HOLE LOCATION Y=366139.5 N X=530566.7 E LAT.=32.006593° N LONG.=104.234722° W Y=365808.6 N X=529870.3 E	LOT 1 40.15 Ac LOT 2 40.05 Ac LOT 3 39.95 Ac LOT 4 39.85 Ac SECTION 19 SECTION 30 LOT 1 39.85 Ac LOT 2 39.95 LOT 3 40.05 AC LOT 4 40.15	As per LR 2000 Lot 1 40.15 Ac As per LR2000 Lot 2 40.05 Ac As per LR2000 Lot 3 39.95 Ac As per LR2000 Lot 4 39.85 Ac As per LR2000 Lot 1 39.85 Ac As per LR2000 Lot 2 39.95 As per LR2000 Lot 3 40.05 AC As per LR2000 Lot 4 40.15	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Mayte Reyes</i> 3-11-16 Signature Date Mayte Reyes Printed Name mreyes1@concho.com E-mail Address SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. AUGUST 28, 2013 Date of Survey Signature & Seal of Professional Surveyor <i>Chad L. Harcrow</i> 3/8/16 Certificate No. CHAD HARCROW 17777 W.O. # 16-148 DRAWN BY: AF
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COG Operating LLC

Eddy County, NM (NAD-27 2015)

Screech Owl Federal #1H

Screech Owl Federal #1H

30-015-42825

Lateral #1

Plan: Design #1

Standard Planning Report

10 March, 2016



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Screech Owl Federal #1H
Well: Screech Owl Federal #1H
Wellbore: Lateral #1
Design: Design #1

Local Co-ordinate Reference: Well Screech Owl Federal #1H
TVD Reference: KB @ 3367.50usft (Latshaw 44)
MD Reference: KB @ 3367.50usft (Latshaw 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project: Eddy County, NM (NAD-27 2015)

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site: Screech Owl Federal #1H

Site Position: Northing: 376,447.40 usft Latitude: 32° 2' 5.750 N
From: Map Easting: 530,415.40 usft Longitude: 104° 14' 6.649 W
Position Uncertainty: 0.00 usft Slot Radius: 13.20 in Grid Convergence: 0.05 °

Well: Screech Owl Federal #1H

Well Position: +N/-S 0.00 usft Northing: 376,447.40 usft Latitude: 32° 2' 5.750 N
+E/-W 0.00 usft Easting: 530,415.40 usft Longitude: 104° 14' 6.649 W
Position Uncertainty: 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 3,342.50 usft

Wellbore: Lateral #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/10/2016	7.38	59.79	47,884

Design: Design #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.00

Vertical Section	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.16

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate ("/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,019.58	0.00	0.00	7,019.58	0.00	0.00	0.00	0.00	0.00	0.00	
7,775.90	90.76	179.16	7,497.00	-483.73	7.10	12.00	12.00	23.69	179.16	
17,601.99	90.76	179.16	7,367.00	-10,307.90	151.30	0.00	0.00	0.00	0.00	PBHL (SOF #1H/L1)



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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



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Planned Survey

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5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,019.58	0.00	0.00	7,019.58	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Start DLS 12.00 TFO 179.16									
7,025.00	0.65	179.16	7,025.00	-0.03	0.00	0.03	12.00	12.00	0.00
7,050.00	3.65	179.16	7,049.98	-0.97	0.01	0.97	12.00	12.00	0.00
7,075.00	6.65	179.16	7,074.88	-3.21	0.05	3.21	12.00	12.00	0.00
7,100.00	9.65	179.16	7,099.62	-6.76	0.10	6.76	12.00	12.00	0.00
7,125.00	12.65	179.16	7,124.15	-11.59	0.17	11.59	12.00	12.00	0.00
7,150.00	15.65	179.16	7,148.38	-17.70	0.26	17.70	12.00	12.00	0.00
7,175.00	18.65	179.16	7,172.27	-25.07	0.37	25.07	12.00	12.00	0.00
7,200.00	21.65	179.16	7,195.74	-33.68	0.49	33.68	12.00	12.00	0.00
7,225.00	24.65	179.16	7,218.72	-43.51	0.64	43.51	12.00	12.00	0.00
7,250.00	27.65	179.16	7,241.16	-54.52	0.80	54.53	12.00	12.00	0.00
7,275.00	30.65	179.16	7,262.99	-66.70	0.98	66.70	12.00	12.00	0.00
7,300.00	33.65	179.16	7,284.15	-80.00	1.17	80.01	12.00	12.00	0.00
7,325.00	36.65	179.16	7,304.59	-94.39	1.39	94.40	12.00	12.00	0.00
7,350.00	39.65	179.16	7,324.25	-109.83	1.61	109.84	12.00	12.00	0.00
7,375.00	42.65	179.16	7,343.07	-126.28	1.85	126.29	12.00	12.00	0.00
7,400.00	45.65	179.16	7,361.01	-143.68	2.11	143.70	12.00	12.00	0.00
7,425.00	48.65	179.16	7,378.01	-162.01	2.38	162.03	12.00	12.00	0.00
7,450.00	51.65	179.16	7,394.03	-181.20	2.66	181.22	12.00	12.00	0.00
7,475.00	54.65	179.16	7,409.02	-201.20	2.95	201.22	12.00	12.00	0.00
7,500.00	57.65	179.16	7,422.94	-221.96	3.26	221.98	12.00	12.00	0.00
7,525.00	60.65	179.16	7,435.76	-243.42	3.57	243.44	12.00	12.00	0.00
7,550.00	63.65	179.16	7,447.44	-265.51	3.90	265.54	12.00	12.00	0.00
7,575.00	66.65	179.16	7,457.94	-288.20	4.23	288.23	12.00	12.00	0.00
7,600.00	69.65	179.16	7,467.25	-311.39	4.57	311.43	12.00	12.00	0.00
7,625.00	72.65	179.16	7,475.32	-335.05	4.92	335.08	12.00	12.00	0.00
7,650.00	75.65	179.16	7,482.15	-359.09	5.27	359.13	12.00	12.00	0.00
7,675.00	78.65	179.16	7,487.71	-383.46	5.63	383.50	12.00	12.00	0.00
7,700.00	81.65	179.16	7,491.98	-408.09	5.99	408.13	12.00	12.00	0.00
7,725.00	84.65	179.16	7,494.97	-432.90	6.35	432.95	12.00	12.00	0.00
7,750.00	87.65	179.16	7,496.64	-457.84	6.72	457.89	12.00	12.00	0.00
7,775.90	90.76	179.16	7,497.00	-483.73	7.10	483.78	12.00	12.00	0.00
EOC - Start 9826.09 hold at 7775.90 MD									
7,800.00	90.76	179.16	7,496.68	-507.83	7.45	507.88	0.00	0.00	0.00
7,900.00	90.76	179.16	7,495.36	-607.81	8.92	607.87	0.00	0.00	0.00

Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Screech Owl Federal #1H
Well: Screech Owl Federal #1H
Wellbore: Lateral #1
Design: Design #1

Local Co-ordinate Reference: Well Screech Owl Federal #1H
TVD Reference: KB @ 3367.50usft (Latshaw 44)
MD Reference: KB @ 3367.50usft (Latshaw 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,000.00	90.76	179.16	7,494.04	-707.79	10.39	707.87	0.00	0.00	0.00
8,100.00	90.76	179.16	7,492.72	-807.77	11.86	807.86	0.00	0.00	0.00
8,200.00	90.76	179.16	7,491.39	-907.75	13.32	907.85	0.00	0.00	0.00
8,300.00	90.76	179.16	7,490.07	-1,007.73	14.79	1,007.84	0.00	0.00	0.00
8,400.00	90.76	179.16	7,488.75	-1,107.71	16.26	1,107.83	0.00	0.00	0.00
8,500.00	90.76	179.16	7,487.42	-1,207.69	17.73	1,207.82	0.00	0.00	0.00
8,600.00	90.76	179.16	7,486.10	-1,307.67	19.19	1,307.81	0.00	0.00	0.00
8,700.00	90.76	179.16	7,484.78	-1,407.65	20.66	1,407.80	0.00	0.00	0.00
8,800.00	90.76	179.16	7,483.45	-1,507.63	22.13	1,507.80	0.00	0.00	0.00
8,900.00	90.76	179.16	7,482.13	-1,607.61	23.60	1,607.79	0.00	0.00	0.00
9,000.00	90.76	179.16	7,480.81	-1,707.59	25.06	1,707.78	0.00	0.00	0.00
9,100.00	90.76	179.16	7,479.48	-1,807.57	26.53	1,807.77	0.00	0.00	0.00
9,200.00	90.76	179.16	7,478.16	-1,907.55	28.00	1,907.76	0.00	0.00	0.00
9,300.00	90.76	179.16	7,476.84	-2,007.54	29.47	2,007.75	0.00	0.00	0.00
9,400.00	90.76	179.16	7,475.52	-2,107.52	30.93	2,107.74	0.00	0.00	0.00
9,500.00	90.76	179.16	7,474.19	-2,207.50	32.40	2,207.73	0.00	0.00	0.00
9,600.00	90.76	179.16	7,472.87	-2,307.48	33.87	2,307.73	0.00	0.00	0.00
9,700.00	90.76	179.16	7,471.55	-2,407.46	35.34	2,407.72	0.00	0.00	0.00
9,800.00	90.76	179.16	7,470.22	-2,507.44	36.80	2,507.71	0.00	0.00	0.00
9,900.00	90.76	179.16	7,468.90	-2,607.42	38.27	2,607.70	0.00	0.00	0.00
10,000.00	90.76	179.16	7,467.58	-2,707.40	39.74	2,707.69	0.00	0.00	0.00
10,100.00	90.76	179.16	7,466.25	-2,807.38	41.21	2,807.68	0.00	0.00	0.00
10,200.00	90.76	179.16	7,464.93	-2,907.36	42.67	2,907.67	0.00	0.00	0.00
10,300.00	90.76	179.16	7,463.61	-3,007.34	44.14	3,007.66	0.00	0.00	0.00
10,400.00	90.76	179.16	7,462.29	-3,107.32	45.61	3,107.66	0.00	0.00	0.00
10,500.00	90.76	179.16	7,460.96	-3,207.30	47.08	3,207.65	0.00	0.00	0.00
10,600.00	90.76	179.16	7,459.64	-3,307.28	48.54	3,307.64	0.00	0.00	0.00
10,700.00	90.76	179.16	7,458.32	-3,407.26	50.01	3,407.63	0.00	0.00	0.00
10,800.00	90.76	179.16	7,456.99	-3,507.24	51.48	3,507.62	0.00	0.00	0.00
10,900.00	90.76	179.16	7,455.67	-3,607.22	52.95	3,607.61	0.00	0.00	0.00
11,000.00	90.76	179.16	7,454.35	-3,707.20	54.41	3,707.60	0.00	0.00	0.00
11,100.00	90.76	179.16	7,453.02	-3,807.18	55.88	3,807.59	0.00	0.00	0.00
11,200.00	90.76	179.16	7,451.70	-3,907.16	57.35	3,907.59	0.00	0.00	0.00
11,300.00	90.76	179.16	7,450.38	-4,007.14	58.82	4,007.58	0.00	0.00	0.00
11,400.00	90.76	179.16	7,449.05	-4,107.13	60.28	4,107.57	0.00	0.00	0.00
11,500.00	90.76	179.16	7,447.73	-4,207.11	61.75	4,207.56	0.00	0.00	0.00
11,600.00	90.76	179.16	7,446.41	-4,307.09	63.22	4,307.55	0.00	0.00	0.00
11,700.00	90.76	179.16	7,445.09	-4,407.07	64.69	4,407.54	0.00	0.00	0.00
11,800.00	90.76	179.16	7,443.76	-4,507.05	66.15	4,507.53	0.00	0.00	0.00
11,900.00	90.76	179.16	7,442.44	-4,607.03	67.62	4,607.52	0.00	0.00	0.00
12,000.00	90.76	179.16	7,441.12	-4,707.01	69.09	4,707.52	0.00	0.00	0.00
12,100.00	90.76	179.16	7,439.79	-4,806.99	70.56	4,807.51	0.00	0.00	0.00
12,200.00	90.76	179.16	7,438.47	-4,906.97	72.02	4,907.50	0.00	0.00	0.00
12,300.00	90.76	179.16	7,437.15	-5,006.95	73.49	5,007.49	0.00	0.00	0.00
12,400.00	90.76	179.16	7,435.82	-5,106.93	74.96	5,107.48	0.00	0.00	0.00
12,500.00	90.76	179.16	7,434.50	-5,206.91	76.43	5,207.47	0.00	0.00	0.00
12,600.00	90.76	179.16	7,433.18	-5,306.89	77.89	5,307.46	0.00	0.00	0.00
12,700.00	90.76	179.16	7,431.86	-5,406.87	79.36	5,407.45	0.00	0.00	0.00
12,800.00	90.76	179.16	7,430.53	-5,506.85	80.83	5,507.45	0.00	0.00	0.00
12,900.00	90.76	179.16	7,429.21	-5,606.83	82.30	5,607.44	0.00	0.00	0.00
13,000.00	90.76	179.16	7,427.89	-5,706.81	83.76	5,707.43	0.00	0.00	0.00
13,100.00	90.76	179.16	7,426.56	-5,806.79	85.23	5,807.42	0.00	0.00	0.00
13,200.00	90.76	179.16	7,425.24	-5,906.77	86.70	5,907.41	0.00	0.00	0.00
13,300.00	90.76	179.16	7,423.92	-6,006.75	88.17	6,007.40	0.00	0.00	0.00



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Screech Owl Federal #1H
Well: Screech Owl Federal #1H
Wellbore: Lateral #1
Design: Design #1

Local Co-ordinate Reference: Well Screech Owl Federal #1H
TVD Reference: KB @ 3367.50usft (Latshaw 44)
MD Reference: KB @ 3367.50usft (Latshaw 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,400.00	90.76	179.16	7,422.59	-6,106.73	89.64	6,107.39	0.00	0.00	0.00
13,500.00	90.76	179.16	7,421.27	-6,206.72	91.10	6,207.38	0.00	0.00	0.00
13,600.00	90.76	179.16	7,419.95	-6,306.70	92.57	6,307.38	0.00	0.00	0.00
13,700.00	90.76	179.16	7,418.62	-6,406.68	94.04	6,407.37	0.00	0.00	0.00
13,800.00	90.76	179.16	7,417.30	-6,506.66	95.51	6,507.36	0.00	0.00	0.00
13,900.00	90.76	179.16	7,415.98	-6,606.64	96.97	6,607.35	0.00	0.00	0.00
14,000.00	90.76	179.16	7,414.66	-6,706.62	98.44	6,707.34	0.00	0.00	0.00
14,100.00	90.76	179.16	7,413.33	-6,806.60	99.91	6,807.33	0.00	0.00	0.00
14,200.00	90.76	179.16	7,412.01	-6,906.58	101.38	6,907.32	0.00	0.00	0.00
14,300.00	90.76	179.16	7,410.69	-7,006.56	102.84	7,007.31	0.00	0.00	0.00
14,400.00	90.76	179.16	7,409.36	-7,106.54	104.31	7,107.31	0.00	0.00	0.00
14,500.00	90.76	179.16	7,408.04	-7,206.52	105.78	7,207.30	0.00	0.00	0.00
14,600.00	90.76	179.16	7,406.72	-7,306.50	107.25	7,307.29	0.00	0.00	0.00
14,700.00	90.76	179.16	7,405.39	-7,406.48	108.71	7,407.28	0.00	0.00	0.00
14,800.00	90.76	179.16	7,404.07	-7,506.46	110.18	7,507.27	0.00	0.00	0.00
14,900.00	90.76	179.16	7,402.75	-7,606.44	111.65	7,607.26	0.00	0.00	0.00
15,000.00	90.76	179.16	7,401.43	-7,706.42	113.12	7,707.25	0.00	0.00	0.00
15,100.00	90.76	179.16	7,400.10	-7,806.40	114.58	7,807.24	0.00	0.00	0.00
15,200.00	90.76	179.16	7,398.78	-7,906.38	116.05	7,907.24	0.00	0.00	0.00
15,300.00	90.76	179.16	7,397.46	-8,006.36	117.52	8,007.23	0.00	0.00	0.00
15,400.00	90.76	179.16	7,396.13	-8,106.34	118.99	8,107.22	0.00	0.00	0.00
15,500.00	90.76	179.16	7,394.81	-8,206.32	120.45	8,207.21	0.00	0.00	0.00
15,600.00	90.76	179.16	7,393.49	-8,306.31	121.92	8,307.20	0.00	0.00	0.00
15,700.00	90.76	179.16	7,392.16	-8,406.29	123.39	8,407.19	0.00	0.00	0.00
15,800.00	90.76	179.16	7,390.84	-8,506.27	124.86	8,507.18	0.00	0.00	0.00
15,900.00	90.76	179.16	7,389.52	-8,606.25	126.32	8,607.17	0.00	0.00	0.00
16,000.00	90.76	179.16	7,388.20	-8,706.23	127.79	8,707.17	0.00	0.00	0.00
16,100.00	90.76	179.16	7,386.87	-8,806.21	129.26	8,807.16	0.00	0.00	0.00
16,200.00	90.76	179.16	7,385.55	-8,906.19	130.73	8,907.15	0.00	0.00	0.00
16,300.00	90.76	179.16	7,384.23	-9,006.17	132.19	9,007.14	0.00	0.00	0.00
16,400.00	90.76	179.16	7,382.90	-9,106.15	133.66	9,107.13	0.00	0.00	0.00
16,500.00	90.76	179.16	7,381.58	-9,206.13	135.13	9,207.12	0.00	0.00	0.00
16,600.00	90.76	179.16	7,380.26	-9,306.11	136.60	9,307.11	0.00	0.00	0.00
16,700.00	90.76	179.16	7,378.93	-9,406.09	138.06	9,407.10	0.00	0.00	0.00
16,800.00	90.76	179.16	7,377.61	-9,506.07	139.53	9,507.10	0.00	0.00	0.00
16,900.00	90.76	179.16	7,376.29	-9,606.05	141.00	9,607.09	0.00	0.00	0.00
17,000.00	90.76	179.16	7,374.96	-9,706.03	142.47	9,707.08	0.00	0.00	0.00
17,100.00	90.76	179.16	7,373.64	-9,806.01	143.93	9,807.07	0.00	0.00	0.00
17,200.00	90.76	179.16	7,372.32	-9,905.99	145.40	9,907.06	0.00	0.00	0.00
17,300.00	90.76	179.16	7,371.00	-10,005.97	146.87	10,007.05	0.00	0.00	0.00
17,400.00	90.76	179.16	7,369.67	-10,105.95	148.34	10,107.04	0.00	0.00	0.00
17,500.00	90.76	179.16	7,368.35	-10,205.93	149.80	10,207.03	0.00	0.00	0.00
17,601.99	90.76	179.16	7,367.00	-10,307.90	151.30	10,309.01	0.00	0.00	0.00

TD at 17601.99

Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Screech Owl Federal #1H
Well: Screech Owl Federal #1H
Wellbore: Lateral #1
Design: Design #1

Local Co-ordinate Reference: Well Screech Owl Federal #1H
TVD Reference: KB @ 3367.50usft (Latshaw 44)
MD Reference: KB @ 3367.50usft (Latshaw 44)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
KOP (SOF #1H/L1 Design)	0.00	0.00	7,019.58	0.00	0.00	376,447.40	530,415.40	32° 2' 5.750 N	104° 14' 6.649 W	
- plan hits target center										
- Point										
PBHL (SOF #1H/L1)	0.00	0.00	7,367.00	-10,307.90	151.30	366,139.50	530,566.70	32° 0' 23.734 N	104° 14' 5.000 W	
- plan hits target center										
- Point										
EOC (SOF #1H/L1 Design)	0.00	0.00	7,497.00	-483.73	7.10	375,963.67	530,422.50	32° 2' 0.962 N	104° 14' 6.572 W	
- plan hits target center										
- Point										

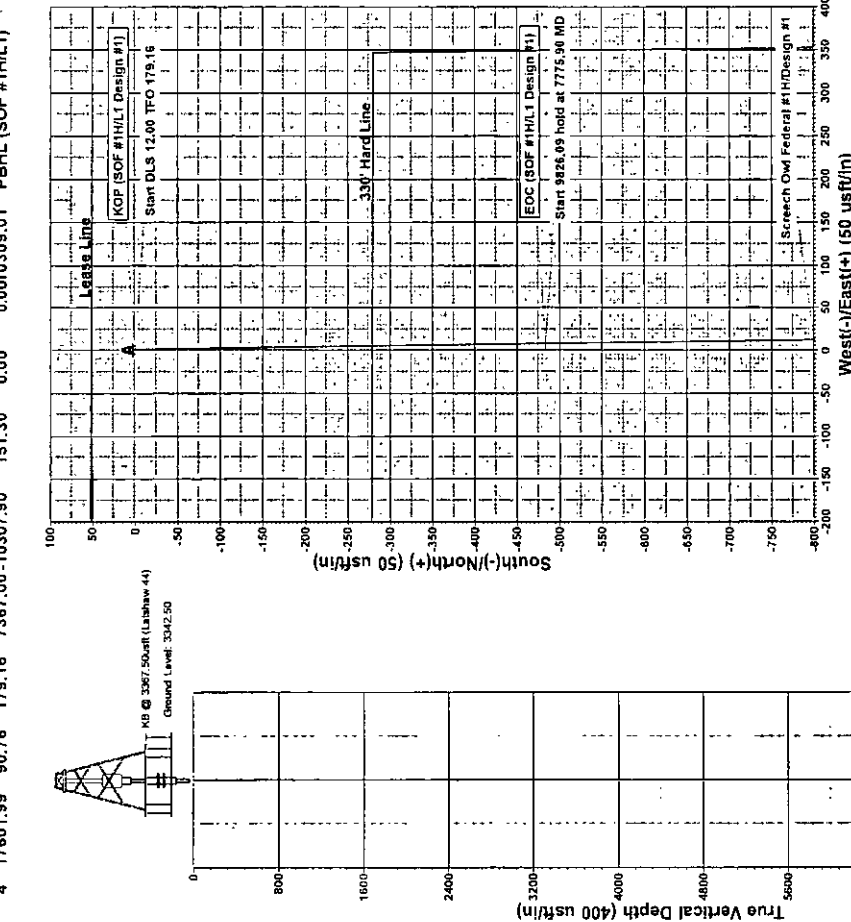
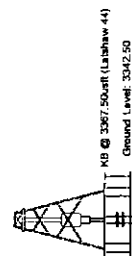
Plan Annotations					
Measured	Vertical	Local Coordinates			
Depth	Depth	+N/-S	+E/-W		
(usft)	(usft)	(usft)	(usft)		
7,019.58	7,019.58	0.00	0.00	KOP - Start DLS 12.00 TFO 179.16	
7,775.90	7,497.00	-483.73	7.10	EOC - Start 9826.09 hold at 7775.90 MD	
17,601.99	7,367.00	-10,307.90	151.30	TD at 17601.99	



COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Screech Owl Federal #1H
Well: Screech Owl Federal #1H
Wellbore: Lateral #1
Plan: Design #1 (Screech Owl Federal #1H/Lateral #1)

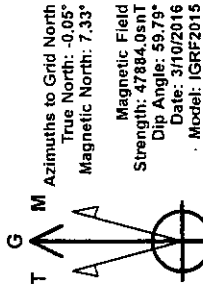
Section Details

Sec	MD	inc	Azi	TVD	+N/S	+ELW	Deg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	7019.58	0.00	0.00	7019.58	0.00	0.00	0.00	0.00	0.00
3	7775.90	90.76	179.16	7497.00	-483.73	7.10	12.00	179.16	483.78
4	17601.99	90.76	179.16	7367.00	-10307.90	151.30	0.00	0.00	0.00



WELL DETAILS: Screech Owl Federal #1H
Ground Elevation: 3342.50
RKB Elevation: KB @ 3367.50ufl (Lateral #1)
Rig Name: Lateral #1

Northing 376447.40
Easting 530415.40
Latitude 32° 2' 5.750 N
Longitude 104° 14' 6.649 W



South(-)/North(+) (400 usft/in)

South(-)/North(+) (50 usft/in)

West(-)/East(+) (50 usft/in)

West(-)/East(+) (400 usft/in)



Terra Directional Services
3705 South County Road 1210, Midland, TX 79706
432.618.1210

Plan: Design #1 (Screech Owl Federal #1H/Lateral #1)
Created By: Debbie Mason Date: 2/24/16, March 10 2016

PROJECT DETAILS: Eddy County, NM (NAD-27 2015)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: LATSHAW DRILLING

Customer P.O.# RIG#44

Sales Order # 242739

Date Assembled: 2/9/2015

Specifications

Hose Assembly Type:

Choke & Kill

Assembly Serial #

292614-1

Hose Lot # and Date Code

10900-08/13

Hose Working Pressure (psi) 10000

Test Pressure (psi)

15000

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

Midwest Hose & Specialty, Inc.

3312 S I-35 Service Rd

Oklahoma City, OK 73129

Comments:

Approved By

Date

2/10/2015



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: LATSHAW DRILLING

Customer P.O.# RIG#44

Sales Order # 242739

Date Assembled: 2/9/2015

Specifications

Hose Assembly Type: Choke & Kill

Assembly Serial # 292614-2

Hose Lot # and Date Code 11794-10/14

Hose Working Pressure (psi) 10000

Test Pressure (psi) 15000

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:

Midwest Hose & Specialty, Inc.

3312 S I-35 Service Rd

Oklahoma City, OK 73129

Comments:

Approved By

Date

2/10/2015