

Oil Cons.
N.M. Div-Dist. 2
1301 W. Grand Avenue
Artesia, NM 88210

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NOV 08 2007
OCD-ARTESIA

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		7. If Unit or CA Agreement, Name and No. N/A	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		8. Lease Name and Well No. Orion Federal #214 <36840>	
2. Name of Operator COG Operating, LLC		9. API Well No. 30-005-27984	
3a. Address 550 West Texas, Suite 1300 Midland, TX 79701	3b. Phone No. (include area code) (432)- 685-9158 <229137>	10. Field and Pool, or Exploratory Wildcat Undesignated Wolfcamp	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1980' FSL & 330' FEL, Unit I At proposed prod. zone 1980' FSL & 330' FWL, Unit L		11. Sec., T. R. M. or Blk. and Survey or Area Section 13, T15S, R31E	
14. Distance in miles and direction from nearest town or post office* Approx 15 miles North of Maljamar, New Mexico		12. County or Parish Chaves Co..	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 330	16. No. of acres in lease 640	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft N/A	19. Proposed Depth 13450' MD 8915' TVD	20. BLM/BIA Bond No. on file NMB 000215	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 4356' GL	22. Approximate date work will start* 01/15/2008	23. Estimated duration 45 Days	
24. Attachments			

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. I, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name (Printed/Typed) Dwaine Moore	Date 09/12/2007
Title Agent for COG Operating LLC		

Approved by (Signature) <i>/s/ Angel Mayes</i>	Name (Printed/Typed) <i>/s/ Angel Mayes</i>	Date NOV 01 2007
Title Assistant Field Manager, Lands And Minerals	Office ROSWELL FIELD OFFICE	APPROVED FOR 1 YEARS

Application approval 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.
Conditions of approval, if any, are attached.

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS ATTACHED

If earthen pits are used in
association with the drilling of this
well, an OCD pit permit must be
obtained prior to pit construction.

Exhibit "A"

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, 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 Department

Form C-102
Revised October 12, 2005

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-005-27994	Pool Code ✓	Pool Name Wildcat Undesignated Wolfcamp
Property Code 36840	Property Name ORION FEDERAL	Well Number 2H
OGRID No. 229137	Operator Name C.O.G. OPERATING L.L.C.	Elevation 4356'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	13	15 S	31 E		1980	SOUTH	330	EAST	CHAVES

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
L	13	15 S	31 E		1980	SOUTH	330	WEST	CHAVES
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.						

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

BOTTOM HOLE LOCATION LAT.: N 33°00'51.02" LONG.: W103°46'57.48" SPC- N.: 733144.864 E.: 710153.438 (NAD-83)	SURFACE LOCATION LAT.: N 33°00'51.28" LONG.: W103°46'03.17" SPC- N.: 733182.0 E.: 714768.9 (NAD-83)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>[Signature]</i> 8/31/07 Signature Date Dwaine Moore Agent, For Printed Name C O G
Project Area = 160 acres		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. JULY 25, 2007 Date Surveyed <i>[Signature]</i> Signature of Seal Professional Surveyor W. O. Jones Certificate No. Gary L. Jones 7977 BASIN SURVEYS

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 4356'
3. Proposed Depths: Pilot hole TD = 9195', Horizontal TVD = 8915', MD = 13450'
4. Estimated tops of geological markers:

5. Possible mineral bearing formations:

6. Casing Program - Proposed

<u>Hole size</u>	<u>Interval</u>	<u>OD of Casing</u>	<u>Weight</u>	<u>Cond.</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0' - +/-400'	13-3/8"	48#	New	STC	H40
Collapse sf – 3.78, Burst sf – 7.20, Tension sf – 15.72						
12 1/4"	0' - 4000'	9-5/8"	40#	New	STC	J-55
Collapse sf – 1.285, Burst sf – 1.17, Tension sf – 3.25						
8-3/4"	0' – 8500'	5-1/2"	17#	New	LTC	P-110
Collapse sf – 1.754, Burst sf – 2.42, Tension sf – 2.94						
7-7/8"	8500' – 13450'	5-1/2"	17#	New	BTC	P-110
Collapse sf – 1.68, Burst sf – 2.39, Tension sf – 79.28						

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Orion Federal # 2H
Page 2 of 3

7. Cement Program

13 3/8" Surf. Csg. Set at +/- 400', Circ to Surf with +/- 400 sx Class "C" w/ 2% CaCl₂, 1.35 yd. **WITNESS**
9 5/8" Intrmd. Csg. Set at +/- 4000'. Circ to Surf with +/- 800 sx 35/65 Poz "C", 2.05 yd. & 200 sx Class
"C" w/ 2% CaCl₂, 1.35 yd. **Cementing**
5 1/2" Prod. Csg. Set at +/- 13450' MD. Cement casing with +/- 200 sx. 50/50/2 "C", 1.37 yd & +/- 900 sx
Class "H", 1.18 yd. Est. TOC @ 8500'.

8. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 800 psi w/ rig pump. After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000psi annular BOP. Test double ram BOP and manifold to 3000# with clear fluid and annular to 1500 psi using an independent tester and used continuously until TD is reached. Blind rams will be operationally checked on each trip out of hole. Pipe rams will be operationally checked each 24 hour period. These checks will be noted on daily tour sheets. Other accessories to the BOP equipment include a Kelly cock and floor safety valves, choke lines and choke manifold with 3000 psi WVP rating.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 400'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
400' - 4000'	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps.
4000' - 7500'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.
7500' - 13450'	9.5	36	10	Drill pilot hole, curve and horizontal section with XCD polymer / cut brine / starch.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

10. Auxiliary Well Control and Monitoring Equipment

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

**ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Orion Federal # 2H
Page 3 of 3**

11. Production Hole Drilling Summary:

Drill 8-3/4" Pilot hole thru Wolfcamp, run open hole logs. Spot 150 sx. "H" Kick off plug from +/- 9000' to +/- 8500'. Time drill and kick off 7-7/8" hole at +/- 8500', building curve over +/- 475' to horizontal at 8915' TVD. Drill horizontal section in a westerly direction for +/- 4500' lateral. Run production casing and cement.

12. Logging, Testing and Coring Program:

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. in vertical pilot hole to 9 5/8" casing shoe.
- B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 5 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 3860 psig. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H2S may be present while drilling of the well. An H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on January 15, 2008 with drilling and completion operations lasting approximately 45 days.

Pathfinder Energy Planning Report

Company: COG Operating Company LLC. **Date:** 09/11/2007 **Time:** 11:15:41 **Page:** 1
Field: Orion Federal **Co-ordinate(NE) Reference:** Orion Federal #2H, Grid North
Site: Orion Federal #2H **Vertical (TVD) Reference:** SITE 4377.0
Well: Orion Federal #2H **Section (VS) Reference:** Well (0.00N,0.00E,269.54Azi)
Wellpath: OH **Plan:** Plan #1 9-10-07

Field: Orion Federal

Map System US State Plane Coordinate System 1983
Geo Datum GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Site Centre
Geomagnetic Model: igrf2005

Site: Orion Federal #2H

Site Position:		Northing:	733182.00 ft	Latitude:	33	0	51.231 N
From:	Map	Easting:	714768.90 ft	Longitude:	103	46	3.171 W
Position Uncertainty:	0.00 ft			North Reference:			Grid
Ground Level:	4356.00 ft			Grid Convergence:			0.31 deg

Well: Orion Federal #2H

Slot Name:

Well Position:	+N/S	0.00 ft	Northing:	733182.00 ft	Latitude:	33	0	51.231 N
	+E/W	0.00 ft	Easting :	714768.90 ft	Longitude:	103	46	3.171 W
Position Uncertainty:		0.00 ft						

Wellpath: OH

Drilled From: Surface

Current Datum: SITE **Height**4377.00 ft

Tie-on Depth: 0.00 ft

Magnetic Data: 09/10/2007

Above System Datum: Mean Sea Level

Field Strength: 49497 nT

Declination: 8.18 deg

Vertical Section: Depth From (TVD)
ft

Mag Dip Angle: 60.99 deg

0.00

ft Direction
deg

0.00

0.00

0.00

deg

Plan: Plan #1 9-10-07

Date Composed: 09/10/2007

Principal: No

Version:

Tied-to: From Surface

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8437.00	0.00	0.00	8437.00	0.00	0.00	0.00	0.00	0.00	0.00	
9187.84	90.00	269.54	8915.00	-3.84	-477.98	11.99	11.99	0.00	269.54	
9220.56	90.98	269.54	8914.72	-4.10	-510.70	3.00	3.00	0.00	-0.06	
13290.44	90.98	269.54	8845.00	-36.85	-4579.85	0.00	0.00	0.00	0.00	PBHL

Survey

[illegible]

Pathfinder Energy Planning Report

Field: Orion Federal

Site: Orion Federal #2H

Wellpath: OH

Summary

Time: 11:15:41

Page: 2

Co-ordinate(NE) Reference Site: Orion Federal #2H, Grid North

Vertical (TVD) Reference SITE 4377.0

Section (VS) Reference: Well (0.00N,0.00E,269.54Azi)

Plan: Plan #1 9-10-07

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.00	0.00	0.00	
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	0.00	
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00	0.00	
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	0.00	0.00	0.00	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	0.00	0.00	0.00	
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	0.00	0.00	0.00	
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00	0.00	
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	0.00	0.00	0.00	
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	0.00	0.00	0.00	
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	0.00	0.00	0.00	
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	0.00	0.00	0.00	
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	0.00	0.00	0.00	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	0.00	
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	0.00	0.00	0.00	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	0.00	0.00	0.00	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	0.00	0.00	0.00	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	0.00	0.00	0.00	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	0.00	0.00	0.00	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	0.00	0.00	0.00	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	0.00	0.00	0.00	
6600.00	0.00	0.00	6600.00	0.00	0.00	0.00	0.00	0.00	0.00	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	0.00	0.00	0.00	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	0.00	0.00	0.00	
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	0.00	0.00	0.00	

Pathfinder Energy

Planning Report

Company: COG Operating Company LLC.
 Field: Orion Federal
 Site: Orion Federal #2H
 Well: Orion Federal #2H
 Wellpath: OH

Date: 09/11/2007 Time: 11:15:41 Page: 3
 Co-ordinate(NE) Reference: Orion Federal #2H, Grid North
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 Plan: Plan #1 9-10-07

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	0.00	0.00	0.00	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	0.00	0.00	0.00	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	0.00	0.00	0.00	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	0.00	0.00	0.00	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	0.00	0.00	0.00	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	0.00	0.00	0.00	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	0.00	0.00	0.00	
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	0.00	0.00	0.00	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	0.00	0.00	0.00	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	0.00	0.00	0.00	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	0.00	0.00	0.00	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	0.00	0.00	0.00	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	0.00	0.00	0.00	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	0.00	0.00	0.00	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	0.00	0.00	0.00	
8437.00	0.00	0.00	8437.00	0.00	0.00	0.00	0.00	0.00	0.00	
8500.00	7.55	269.54	8499.82	-0.03	-4.15	4.15	11.99	11.99	0.00	KOP @ 8437' MD, Begin Bui
8600.00	19.54	269.54	8596.86	-0.22	-27.52	27.52	11.99	11.99	0.00	
8700.00	31.52	269.54	8686.93	-0.57	-70.54	70.55	11.99	11.99	0.00	
8800.00	43.51	269.54	8766.10	-1.05	-131.33	131.34	11.99	11.99	0.00	
8900.00	55.50	269.54	8830.92	-1.66	-207.24	207.24	11.99	11.99	0.00	
9000.00	67.48	269.54	8878.56	-2.37	-294.95	294.96	11.99	11.99	0.00	
9100.00	79.47	269.54	8906.95	-3.14	-390.64	390.65	11.99	11.99	0.00	
9187.84	90.00	269.54	8915.00	-3.84	-477.98	478.00	11.99	11.99	0.00	
9200.00	90.36	269.54	8914.96	-3.94	-490.14	490.16	3.00	3.00	0.00	EOC @ 9188' MD, 8915' TVD
9220.56	90.98	269.54	8914.72	-4.10	-510.70	510.72	3.00	3.00	0.00	
9300.00	90.98	269.54	8913.36	-4.74	-590.13	590.15	0.00	0.00	0.00	EOB @ 9221' MD, 90.98° Ir
9400.00	90.98	269.54	8911.65	-5.54	-690.11	690.13	0.00	0.00	0.00	
9500.00	90.98	269.54	8909.93	-6.35	-790.09	790.12	0.00	0.00	0.00	
9600.00	90.98	269.54	8908.22	-7.15	-890.07	890.10	0.00	0.00	0.00	
9700.00	90.98	269.54	8906.51	-7.96	-990.06	990.09	0.00	0.00	0.00	
9800.00	90.98	269.54	8904.79	-8.76	-1090.04	1090.07	0.00	0.00	0.00	
9900.00	90.98	269.54	8903.08	-9.57	-1190.02	1190.06	0.00	0.00	0.00	
10000.00	90.98	269.54	8901.37	-10.37	-1290.00	1290.04	0.00	0.00	0.00	
10100.00	90.98	269.54	8899.65	-11.18	-1389.98	1390.03	0.00	0.00	0.00	
10200.00	90.98	269.54	8897.94	-11.98	-1489.97	1490.01	0.00	0.00	0.00	
10300.00	90.98	269.54	8896.23	-12.79	-1589.95	1590.00	0.00	0.00	0.00	
10400.00	90.98	269.54	8894.52	-13.59	-1689.93	1689.98	0.00	0.00	0.00	
10500.00	90.98	269.54	8892.80	-14.40	-1789.91	1789.97	0.00	0.00	0.00	
10600.00	90.98	269.54	8891.09	-15.20	-1889.89	1889.96	0.00	0.00	0.00	
10700.00	90.98	269.54	8889.38	-16.01	-1989.88	1989.94	0.00	0.00	0.00	
10800.00	90.98	269.54	8887.66	-16.81	-2089.86	2089.93	0.00	0.00	0.00	
10900.00	90.98	269.54	8885.95	-17.61	-2189.84	2189.91	0.00	0.00	0.00	
11000.00	90.98	269.54	8884.24	-18.42	-2289.82	2289.90	0.00	0.00	0.00	
11100.00	90.98	269.54	8882.52	-19.22	-2389.80	2389.88	0.00	0.00	0.00	
11200.00	90.98	269.54	8880.81	-20.03	-2489.79	2489.87	0.00	0.00	0.00	
11300.00	90.98	269.54	8879.10	-20.83	-2589.77	2589.85	0.00	0.00	0.00	
11400.00	90.98	269.54	8877.38	-21.64	-2689.75	2689.84	0.00	0.00	0.00	
11500.00	90.98	269.54	8875.67	-22.44	-2789.73	2789.82	0.00	0.00	0.00	
11600.00	90.98	269.54	8873.96	-23.25	-2889.72	2889.81	0.00	0.00	0.00	
11700.00	90.98	269.54	8872.25	-24.05	-2989.70	2989.79	0.00	0.00	0.00	
11800.00	90.98	269.54	8870.53	-24.86	-3089.68	3089.78	0.00	0.00	0.00	
11900.00	90.98	269.54	8868.82	-25.66	-3189.66	3189.76	0.00	0.00	0.00	

Pathfinder Energy Planning Report

Company: COG Operating Company LLC.
Field: Orion Federal
Site: Orion Federal #2H
Well: Orion Federal #2H
Wellpath: OH

Date: 09/11/2007 Time: 11:15:41 Page: 4
Co-ordinate(NE) Reference: Orion Federal #2H, Grid North
Vertical (TVD) Reference: SITE 4377.0
Section (VS) Reference: Well (0 00N,0.00E,269.54Azi)
Plan: Plan #1.9-10-07

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
12000.00	90.98	269.54	8867.11	-26.47	-3289.64	3289.75	0.00	0.00	0.00	
12100.00	90.98	269.54	8865.39	-27.27	-3389.63	3389.74	0.00	0.00	0.00	
12200.00	90.98	269.54	8863.68	-28.08	-3489.61	3489.72	0.00	0.00	0.00	
12300.00	90.98	269.54	8861.97	-28.88	-3589.59	3589.71	0.00	0.00	0.00	
12400.00	90.98	269.54	8860.25	-29.68	-3689.57	3689.69	0.00	0.00	0.00	
12500.00	90.98	269.54	8858.54	-30.49	-3789.55	3789.68	0.00	0.00	0.00	
12600.00	90.98	269.54	8856.83	-31.29	-3889.54	3889.66	0.00	0.00	0.00	
12700.00	90.98	269.54	8855.11	-32.10	-3989.52	3989.65	0.00	0.00	0.00	
12800.00	90.98	269.54	8853.40	-32.90	-4089.50	4089.63	0.00	0.00	0.00	
12900.00	90.98	269.54	8851.69	-33.71	-4189.48	4189.62	0.00	0.00	0.00	
13000.00	90.98	269.54	8849.98	-34.51	-4289.46	4289.60	0.00	0.00	0.00	
13100.00	90.98	269.54	8848.26	-35.32	-4389.45	4389.59	0.00	0.00	0.00	
13200.00	90.98	269.54	8846.55	-36.12	-4489.43	4489.57	0.00	0.00	0.00	
13290.44	90.98	269.54	8845.00	-36.85	-4579.85	4580.00	0.00	0.00	0.00	PBHL

Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	Latitude Deg Min Sec			Longitude Deg Min Sec		
PBHL		8845.00	-36.85	-4579.85	733145.15	710189.05	33	0	51.107 N	103	46	56.959 W

Annotation

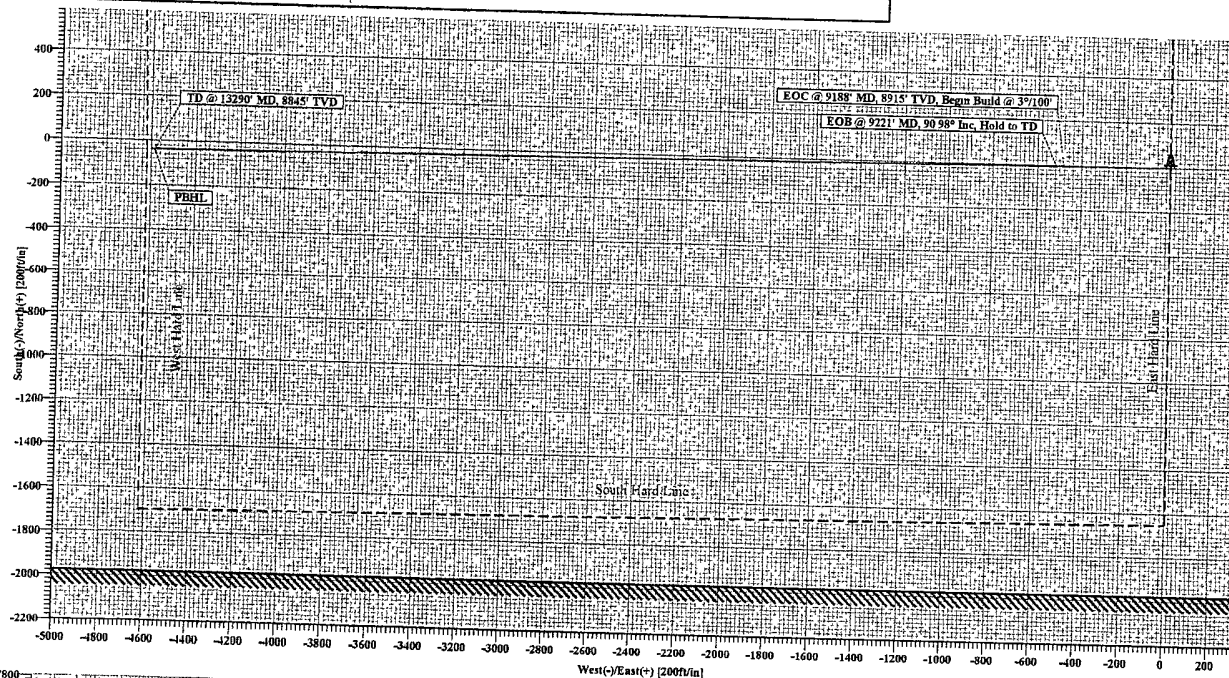
MD ft	TVD ft	
8437.00	8437.00	KOP @ 8437' MD, Begin Build @ 11.99°/100'
9187.84	8915.00	EOC @ 9188' MD, 8915' TVD, Begin Build @ 3°/100'
9220.56	8914.72	EOB @ 9221' MD, 90.98° Inc, Hold to TD
13290.43	8845.00	TD @ 13290' MD, 8845' TVD

COG Operating Company LLC.

PATHFINDER

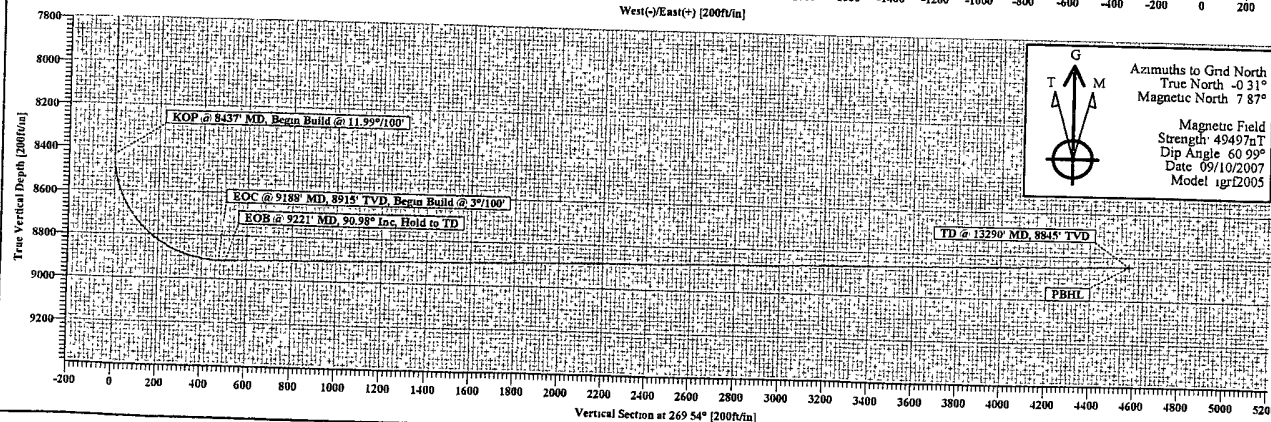
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	8437 00	0 00	0 00	8437 00	0 00	0 00	0 00	0 00	0 00	
3	9187 84	90 00	269 54	8915 00	-3 84	-477 98	11 99	269 54	478 00	
4	9220 56	90 98	269 54	8914 72	-4 10	-510 70	3 00	-0 06	510 72	
5	13290 44	90 98	269 54	8845 00	-36 85	-4579 85	0 00	0 00	4580 00	PBHL

Field: Orion Federal
 Site: Orion Federal #2H
 Well: Orion Federal #2H
 Wellpath: OH
 Plan: Plan #1 9-10-07



SITE DETAILS	
Orion Federal #2H	
Site Centre Northing	733182 00
Easting	714768 90
Ground Level	4356 00
Positional Uncertainty	0 00
Convergence	0 31

TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape
None				

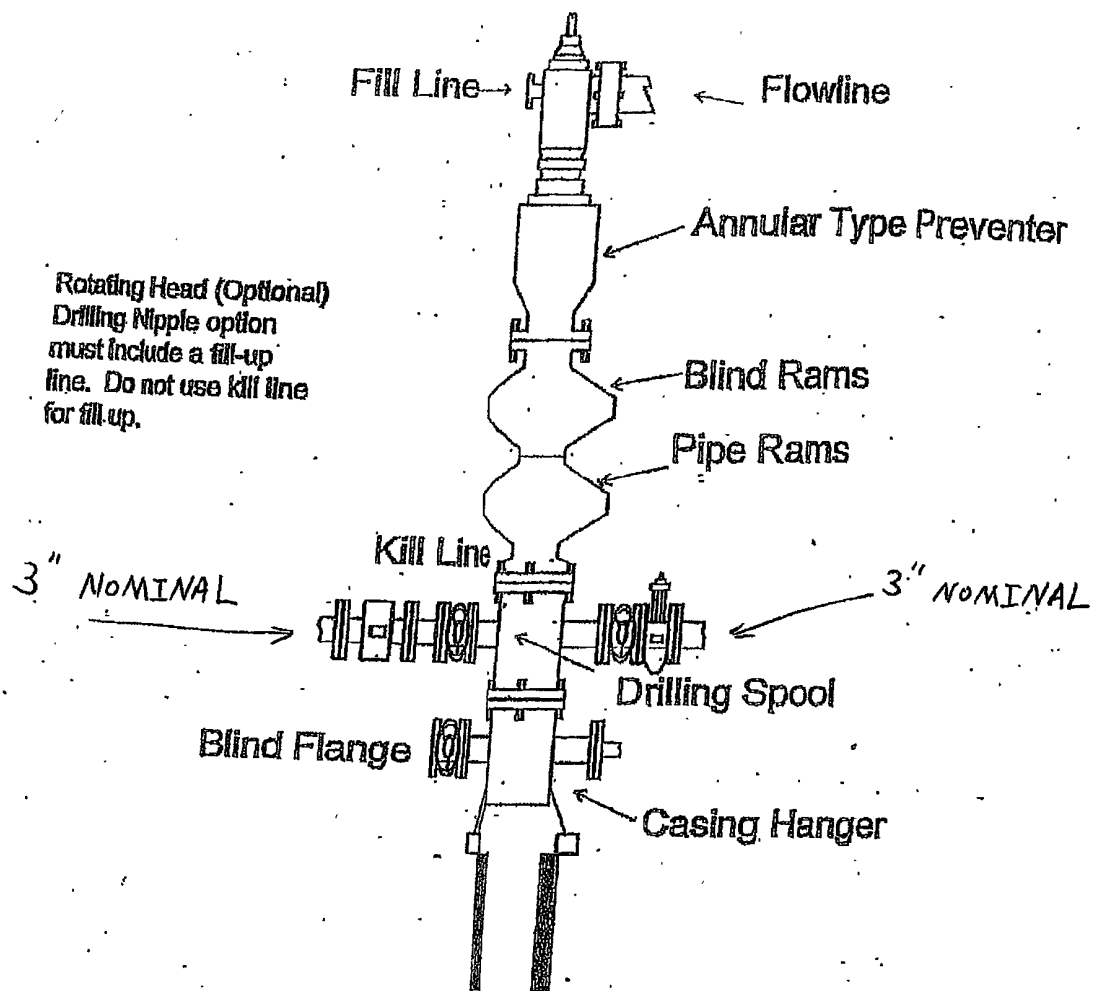


WELLPATH DETAILS				
OH				
Rug Ref Datum	SITE 4377 00R			
V Section Angle	Origin +N/-S	Origin +E/-W	Starting From TVD	
269 54°	0 00	0 00	0 00	

ANNOTATIONS			
No	TVD	MD	Annotation
1	8437 00	8437 00	KOP @ 8437' MD, Begin Build @ 11.99°/100'
2	8915 00	9187 84	EOC @ 9188' MD, 8915' TVD, Begin Build @ 3°/100'
3	8914.72	9220 56	EOB @ 9221' MD, 90 98° Inc. Hold to TD
4	8845 00	13290 43	TD @ 13290 MD, 8845' TVD

Exhibit "I"

BOPE SCHEMATIC

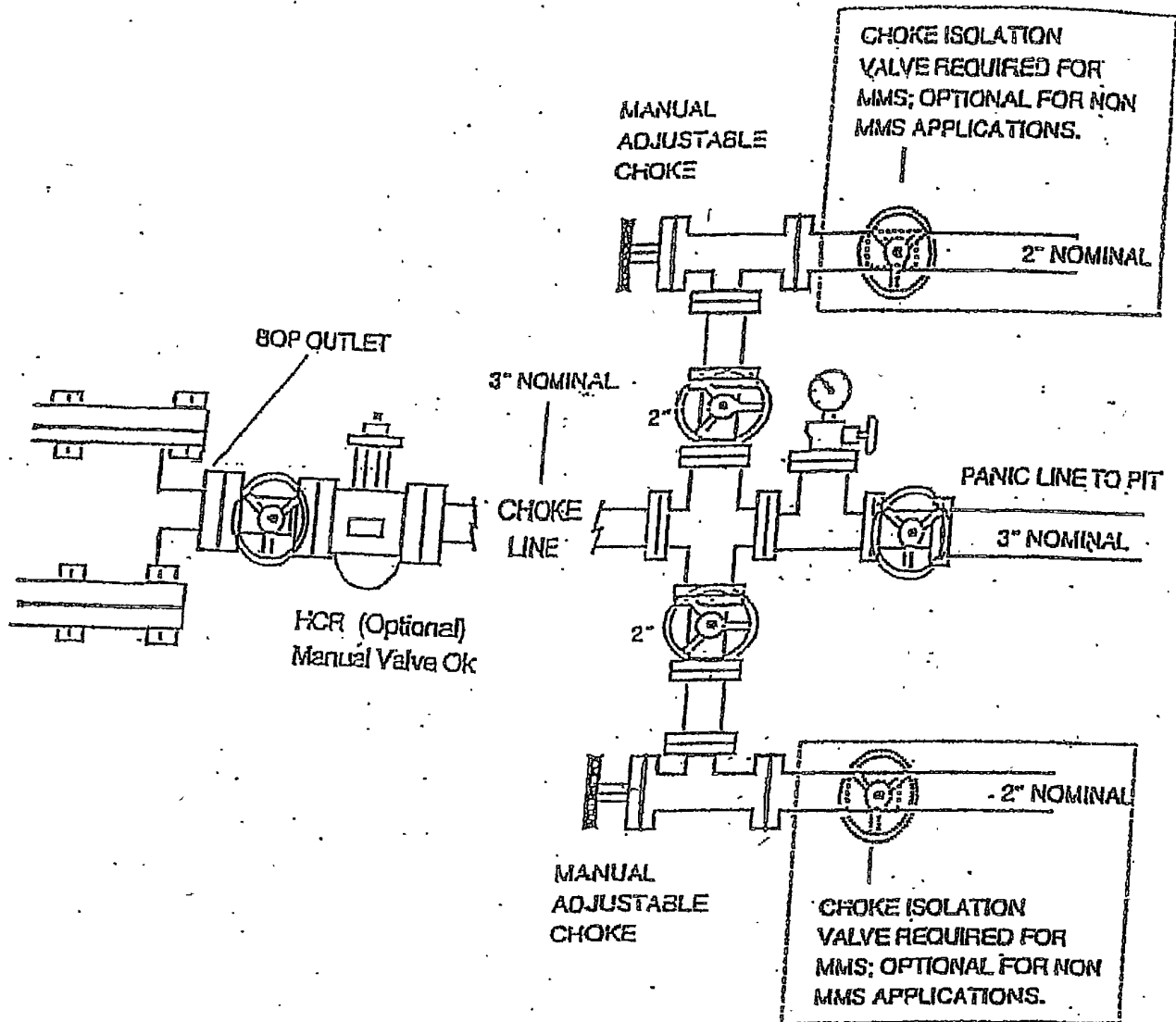


900SERIES

Exhibit "J"

CHOKE MANIFOLD

3M SERVICE



COG OPERATING, LLC

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN FOR DRILLING / COMPLETING / WORKOVER / FACILITY WITH THE EXPECTATION OF H₂S IN EXCESS OF 100 PPM

**Orion Federal Com #2H
NEW DRILL WELL
SL: 1980' FSL & 330' FEL, Unit I
BHL: 1980' FSL & 330' FWL, Unit L
Sec 13, T15S, R31E
Chaves County, New Mexico**

This well / facility is not expected to have H₂S, but the following is submitted as requested.

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way, he will immediately notify public safety personnel.

EMERGENCY CALL LIST

	<u>Office</u>	<u>Cell</u>	<u>Home</u>
John Coffman	432-683-7443	432-631-9762	432-699-5552
Erick Nelson	432-683-7443	432-238-7591	
Matt Corser	432-683-7443	432-413-0071	

EMERGENCY RESPONSE NUMBERS

Chaves County, New Mexico

State Police	505-748-9718
Chaves County Sheriff	505-624-6500
Emergency Medical Services (Ambulance)	911 or 505-624-6500
Chaves County Emergency Management	505-476-9600
State Emergency Response Center (SERC)	505-476-9620
New Mexico Oil Conservation Division	505-748-1283
Callaway Safety Equipment, Inc.	505-392-2973