

OCD-ARTESIA

ATS-08-118  
ET-08-1146Form 3160-3  
(February 2005)

AUG - 6 2008

OCD-ARTESIA

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 20075 Lease Serial No. **95630**  
~~NM 400844~~6 If Indian, Allottee or Tribe Name  
N/A

7 If Unit or CA Agreement, Name and No

8 Lease Name and Well No. **37327**  
**Blackhawk "11" Federal Com #1**9 API Well No.  
**30-015-34541**1a. Type of work ☒ DRILL ☐ REENTER1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone2 Name of Operator  
**COG OPERATING, LLC****229137**3a Address **550 W. Texas Suite 1300**  
**Midland, Texas 79701**3b Phone No. (include area code)  
**432-683-7443**10 Field and Pool, or Exploratory  
**Wolfcamp- Crow Flats**

4. Location of Well (Report location clearly and in accordance with any State requirements \*)

At surface **430' FSL & 430' FWL**At proposed prod zone **330' FSL & 330' FEL**

11 Sec, T R M or Blk and Survey or Area

**Section 11 T16S R28E**

14 Distance in miles and direction from nearest town or post office\*

12 County or Parish

**Eddy County**

13 State

**NM**15 Distance from proposed\*  
location to nearest  
property or lease line, ft  
(Also to nearest drg unit line, if any)  
**330'**

16 No. of acres in lease

17 Spacing Unit dedicated to this well

**160**18 Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft19 Proposed Depth **11130' MD**  
**6680' TVD**

20 BLM/BIA Bond No. on file

**NMB 000215**21 Elevations (Show whether DF, KDB, RT, GL, etc.)  
**3570 GL**22 Approximate date work will start\*  
**06/01/2008**23 Estimated duration  
**45 days**

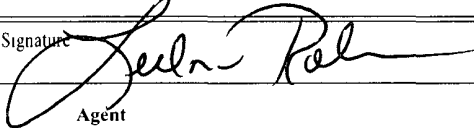
## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, must be attached to this form

1. Well plat certified by a registered surveyor
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)

5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25 Signature   
Title **Agent**Name (Printed Typed)  
**Lee Ann Rollins**Date  
**04/30/2008**Approved by (Signature) **/s/ James Stovall**Name (Printed Typed) **/s/ James Stovall**Date **AUG 04 2008**Title **FIELD MANAGER**Office **CARLSBAD FIELD OFFICE**

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.

**APPROVAL FOR TWO YEARS**

Title 18 USC Section 1001 and Title 43 USC Section 1212, make it a crime for any person knowingly and States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

**NOTE: NEW PIT RULE****19-15-17 NMAC PART 17****A form C-144 must be approved before starting drilling operations.**

\*(Instructions on page 2)

**ROSWELL CONTROLLED WATER BASIN****SEE ATTACHED FOR  
CONDITIONS OF APPROVAL****APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED**

**STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS**

C.O.G. Operating, LLC (229137)  
550 W. Texas Avenue, Ste. 1300  
Midland, TX 79701

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No – Surface Location: State Of New Mexico  
Lease No – Bottom Hole Location: NM 103873

Well Name: Blackhawk "11" Federal #1


Legal Description of Land: SL: 430' FSL & 430' FWL, Unit M  
BHL: 330' FSL & 330' FWL, Unit P  
Sec 11, T16S, R28E  
Eddy County, New Mexico

Formation(s) (if applicable): Wolfcamp – Crow Flats

Bond Coverage: \$25,000 statewide bond of C.O.G. Operating, LLC

BLM Bond File No: NMB 000215

5-2-08  
Date

  
John Coffman  
C.O.G. Operating, LLC

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 2007

## 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.

**SUBMIT IN TRIPLICATE- Other instructions on reverse side.**1 Type of Well  
☐ Oil Well ☐ ☐ Gas Well ☐ Other

AUG - 6 2008

2. Name of Operator  
COG Operating LLC

OCD-ARTESIA

3a Address  
550 W. Texas Ave., Suite 1300 Midland, TX 797013b Phone No. (include area code)  
432-685-4340

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

VARIOUS NM COUNTY LOCATIONS

5 Lease Serial No

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

9 API Well No.

10 Field and Pool, or Exploratory Area

11. County or Parish, State

Various NM Counties

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal
			<input type="checkbox"/> Water Shut-Off
			<input type="checkbox"/> Well Integrity
			<input type="checkbox"/> Other <b>Drill with</b>
			<b>Closed Loop</b>
			<b>System</b>

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.)

COG Operating LLC respectfully requests permission to drill the attached list of Eddy County wells with a closed loop system.

14. I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)

Phyllis Edwards

Title Regulatory Analyst

Signature

Date

06/23/2008

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

SEPS

Date

6-27-08

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.

(Instructions on page 2)

**CLOSED LOOP SYSTEM - ATTACHMENT TO BLM SUNDRY DATED 6-23-08**

<u>WELL NAME</u>	<u>CTY</u>	<u>LEASE #</u>	<u>API #</u>	<u>FOOTAGES</u>	<u>SECTION, TWN, RNG, UL</u>
Andromeda Federal #1H	Chaves	NM105887	3000527975	660 FNL, 330 FEL	Sec 14, T15S, R31E, Unit A
Andromeda Federal #2H	Chaves	NM105887	3000527976	1980 FNL, 850 FEL	Sec 14, T15S, R31E, Unit H
Andromeda Federal #3H	Chaves	NM105887	3000527977	1650 FSL, 330 FWL	Sec 14, T15S, R31E, Unit L
Gemini Federal #1H	Chaves	NM105886	3000527972	330 FSL, 330 FEL	Sec 12, T15S, R31E, Unit P
Hercules Federal Com #2H	Chaves	NM105885		660 FNL, 430 FWL	Sec 15, T15S, R31E, Unit D
Hercules Federal Com #3H	Chaves	NM105885		1980 FSL, 430 FWL	Sec 15, T15S, R31E, Unit L
Hercules Federal Com #4H	Chaves	NM105885		660 FSL, 330 FEL	Sec 15, T15S, R31E, Unit P
Orion Federal #1H	Chaves	NM105887	3000527978	1980 FNL, 330 FEL	Sec 13, T15S, R31E, Unit H
Orion Federal #2H	Chaves	NM105887	3000527994	1980 FSL, 330 FEL	Sec 13, T15S, R31E, Unit I
Orion Federal #3H	Chaves	NM105887	3000528001	660 FSL, 330 FEL	Sec 13, T15S, R31E, Unit P
Polaris Federal #1	Chaves	NM105885	3000527999	1980 FNL, 330 FWL	Sec 15, T15S, R31E, Unit E
Taurus Federal #1H	Chaves	NM105885	3000528000	330 FSL, 330 FWL	Sec 10, T15S, R31E, Unit M
Blue Thunder 5 Fed #2	Eddy	LC069033	3001535550	1200 FNL, 1980 FWL	Sec 5, T19S, R31E, Unit C
Blackhawk 11 Federal 1	Eddy	NM 15630		430 FSL, 430 FWL	Sec 11, T16S, R28E, Unit M
Blitzen 35 Federal 1	Eddy	NM103876	3001536044	330 FNL, 990 FEL	Sec 35, T16S, R28E, Unit A
Blitzen 35 Federal 2	Eddy	NM103876	3001536058	1800 FNL, 330 FEL	Sec 35, T16S, R28E, Unit H
Caribou 19 Federal #1	Eddy	NM103872		430 FSL, 430 FEL	Sec 19, T16S, R28E, Unit P
Caribou 19 Federal #2	Eddy	NM103872		1980 FSL, 790 FEL	Sec 19, T16S, R28E, Unit I
Comet 22 Federal #1	Eddy	NM100844	3001535832	660 FSL, 330 FWL	Sec 22, T16S, R28E, Unit
Comet 22 Federal #2	Eddy	NM100844	3001535818	1980 FSL, 330 FWL	Sec 22, T16S, R28E, Unit
Comet 22 Federal #3	Eddy	NM100844	3001535821	1980 FNL, 330 FWL	Sec 22, T16S, R28E, Unit
Comet 22 Federal #4	Eddy	NM100844	3001535716	330 FNL, 1650 FWL	Sec 22, T16S, R28E, Unit C
Donner 30 Federal #1	Eddy	NM054856	3001535826	330 FSL, 330 FEL	Sec 30, T16S, R28E, Unit
Donner 30 Federal #2	Eddy	NM054856	3001535819	1800 FSL, 330 FEL	Sec 30, T16S, R28E, Unit
Donner 30 Federal #3	Eddy	NM054856	3001535807	1800 FNL, 1980 FEL	Sec 30, T16S, R28E, Unit
Donner 30 Federal #4	Eddy	NM054856	3001535715	330 FNL, 330 FEL	Sec 30, T16S, R28E, Unit A
High Lonesome 23 Fed Com 1H	Eddy	LC118710	3001535949	900 FSL, 330 FEL	Sec 23, T16S, R29E, Unit P
High Lonesome 26 Fed Com 1H	Eddy	LC118710	3001535893	660 FNL, 1150 FEL	Sec 26, T16S, R29E, Unit A
High Lonesome 26 Fed Com 2H	Eddy	LC118710	3501535894	2030 FNL, 530 FEL	Sec 26, T16S, R29E, Unit H
Reindeer 21 Federal #3	Eddy	NM100844	77874	1980 FNL, 430 FWL	Sec 21, T16S, R28E, Unit E
Reindeer 21 Federal #4	Eddy	NM100844		1980 FSL, 430 FWL	Sec 21, T16S, R28E, Unit L
Eagle Feather State #1	Lea	LC13430	3002538272	1650 FSL, 1600 FEL	Sec 16, T26S, R36E, Unit J
Eagle Feather State #2	Lea	LC13430	3002538885	660 FNL, 1630 FEL	Sec 21, T26S, R36E, Unit H

DISTRICT I  
1025 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

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

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

AUG 15 2008

**OCD-ARTESIA** AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-	Pool Code 97102	Pool Name CROW FLATS: WOLFCAMP
Property Code	Property Name BLACKHAWK "11" FEDERAL COM	Well Number 1
OGRID No. 229137	Operator Name C.O.G. OPERATING L.L.C.	Elevation 3570'

Surface Location

UL or lot No. M	Section 11	Township 16 S	Range 28 E	Lot Idn	Feet from the 430	North/South line SOUTH	Feet from the 430	East/West line WEST	County EDDY
--------------------	---------------	------------------	---------------	---------	----------------------	---------------------------	----------------------	------------------------	----------------

Bottom Hole Location If Different From Surface

UL or lot No. P	Section 11	Township 16 S	Range 28 E	Lot Idn	Feet from the 330	North/South line SOUTH	Feet from the 330	East/West line EAST	County EDDY
--------------------	---------------	------------------	---------------	---------	----------------------	---------------------------	----------------------	------------------------	----------------

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

		<b>OPERATOR CERTIFICATION</b>  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.  _____ Signature Date Phyllis A. Edwards 8-14-08 Printed Name Regulatory Analyst	
		<b>SURVEYOR CERTIFICATION</b>  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.  DECEMBER 16, 2007 Date Surveyed _____ Signature of Gary L. Jones Professional Surveyor W.O. 100-10000 Certificate No. Gary L. Jones 7977 BASIN SURVEYS	



**ATTACHMENT TO FORM 3160-3**  
**COG Operating LLC**  
**Blackhawk "11" Federal Com # 1**  
**Page 2 of 3**

**7. Cement Program**

13 3/8" Surface Casing set at +/- 500', Circ to Surf with +/- 500 sx Class "C" w/ 2% CaCl<sub>2</sub>, 1.35 yd.

9 5/8" Intermediate Casing set at +/- 2300', Circ. to Surf with +/- 700 sx 50/50 Poz "C", 2.45 yd. & 200 sx Class "C" w/ 2% CaCl<sub>2</sub>, 1.35 yd.

5 1/2" Production Casing set at +/- 11130' MD, 6680' TVD, Cement with +/- 200 sx. 50/50/2 "C", 1.37 yd & +/- 650 sx Class "H", 1.18 yd. Est. TOC @ 6000'. *See COA*

**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 1000 psi w/ rig pump.

After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000 psi annular BOP. Test double ram BOP and manifold to 3000# with clear fluid and annular to 1500 psi using an independent tester, this equipment will be 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 WP rating.

**9. Proposed Mud Circulating System**

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 500'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
<i>casing</i> 500' - <del>1800'</del> <i>2300'</i>	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps. <i>See COA</i>
<i>cement plug</i> 1800' - 5300' <i>2300'</i>	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.
5300' - <del>11130'</del> <i>10856'</i>	9.5	36	10	Drill 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. Production Hole Drilling Summary:**

Drill 8-3/4" hole thru Wolfcamp, run open hole logs. Spot 150 sx. "H" Kick off plug from +/- 6500' to +/- 6100'. Time drill and kick off 7-7/8" hole at +/- 6100', building curve over +/- 475' to horizontal at 6610' TVD. Drill horizontal section in an easterly direction for +/-4500' lateral. Run production casing and cement.

**ATTACHMENT TO FORM 3160-3  
COG Operating LLC  
Blackhawk "11" Federal # 1  
Page 3 of 3**

**11. 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.

**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 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 110 degrees and estimated maximum bottom hole pressure is 2838 psig. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H<sub>2</sub>S may be present while drilling of the well. An H<sub>2</sub>S 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 July 1, 2008 with drilling and completion operations lasting approximately 45 days.



# **COG Operating LLC**

**Eddy County**

**S11T16S R28E**

**Blackhawk 11 Federal Com 1**

**Original Hole**

**Plan: Plan #1**

## **Pathfinder Survey Report**

**21 February, 2008**

# C.O.G. Operating L.L.C.



Azimuths to Grid North  
True North: -0.10°  
Magnetic North: 8.19°

Magnetic Field  
Strength: 49331.5nT  
Dip Angle: 60.83°  
Date: 2/21/2008  
Model: IGRF200510

Project: Eddy County  
Site: S11 T16S R28E  
Well: Blackhawk 11 Federal Com 1  
Wellbore: Original Hole  
Plan: Plan #1 (Blackhawk 11 Federal Com 1/Original Hole)

## PATHFINDER ENERGY SERVICES

### WELL DETAILS Blackhawk 11 Federal Com 1

Ground Elevation 3570.00  
RKB Elevation EST RKB @ 3570.00ft  
Rig Name.

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	702670.627	596395.029	32° 55' 55.470 N	104° 9' 13.977 W	

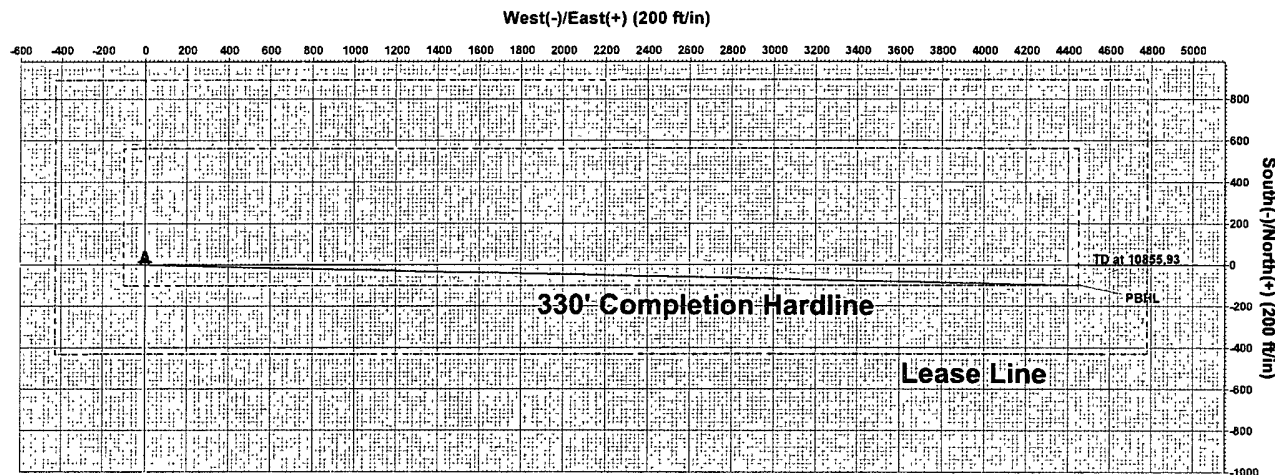
### SECTION DETAILS

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	6132.61	0.00	0.00	6132.61	0.00	0.00	0.00	0.00	0.00	
3	6874.19	88.99	91.27	6610.00	-10.40	468.93	12.00	91.27	468.05	
4	6925.74	88.99	91.27	6610.91	-11.54	520.46	0.01	-27.01	520.59	
5	10855.93	88.99	91.27	6680.00	-98.54	4449.08	0.00	0.00	4450.17	PbHI

### WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

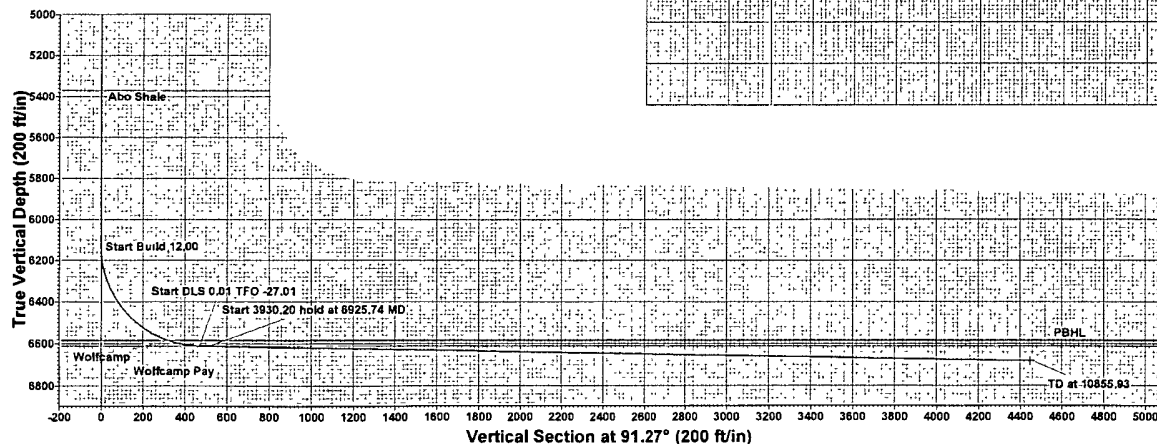
Name	TVD	+N-S	+E-W	Northing	Easting	Shape
PbHI	6680.00	-98.54	4449.08	702772.089	800844.111	Point

PROJECT DETAILS: Eddy County  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level  
Local North: Grid



### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
385.00	385.00	Yates
1120.00	1120.00	Queen
1850.00	1850.00	San Andres D
3375.00	3375.00	Glorieta
5370.00	5370.00	Abo Shale
5585.00	5727.18	Wolfcamp
5610.00	5874.16	Wolfcamp Pay



Plan Plan #1 (Blackhawk 11 Federal Com 1/Original Hole)

Created By: Mark Freeman Date 14 00, February 21 2008

Checked \_\_\_\_\_ Date \_\_\_\_\_

**WHS**  
Pathfinder Survey Report

<b>Company:</b>	COG Operating LLC	<b>Local Co-ordinate Reference:</b>	Well Blackhawk 11 Federal Com 1
<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	EST RKB @ 3570.00ft
<b>Site:</b>	S11 T16S R28E	<b>MD Reference:</b>	EST RKB @ 3570.00ft
<b>Well:</b>	Blackhawk 11 Federal Com 1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 2003.16 Single User Db

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

Site		S11 T16S R28E			
Site Position:		Northing:	702,870.627 ft	Latitude:	32° 55' 55.470 N
From:	Map	Easting:	596,395.029 ft	Longitude:	104° 9' 13.977 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.10 °

<b>Well</b>	Blackhawk 11 Federal Com 1					
<b>Well Position</b>	<b>+N-S</b>	0.00 ft	<b>Northing:</b>	702,870.627 ft	<b>Latitude:</b>	32° 55' 55.470 N
	<b>+E-W</b>	0.00 ft	<b>Easting:</b>	596,395.029 ft	<b>Longitude:</b>	104° 9' 13.977 W
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	3,570.00 ft	

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2/21/2008	8.29	60.83	49,331

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	91.27

Survey Tool Program		Date 2/21/2008		
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
0.00	10,855.86	Plan #1 (Original Hole)	MWD	MWD - Standard

Planned Survey								
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	
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
200.00	0.00	0.00	200.00	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
400.00	0.00	0.00	400.00	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
600.00	0.00	0.00	600.00	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
800.00	0.00	0.00	800.00	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
1,000.00	0.00	0.00	1,000.00	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

**WHS**  
Pathfinder Survey Report

<b>Company:</b>	COG Operating LLC	<b>Local Co-ordinate Reference:</b>	Well Blackhawk 11 Federal Com 1
<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	EST RKB @ 3570.00ft
<b>Site:</b>	S11 T16S R28E	<b>MD Reference:</b>	EST RKB @ 3570.00ft
<b>Well:</b>	Blackhawk 11 Federal Com 1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 2003.16 Single User Db

Planned Survey								
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLog (°/100ft)	
1,200.00	0.00	0.00	1,200.00	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	
1,400.00	0.00	0.00	1,400.00	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	
1,600.00	0.00	0.00	1,600.00	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	
1,800.00	0.00	0.00	1,800.00	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	
2,000.00	0.00	0.00	2,000.00	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	
2,200.00	0.00	0.00	2,200.00	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	
2,400.00	0.00	0.00	2,400.00	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	
2,600.00	0.00	0.00	2,600.00	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	
2,800.00	0.00	0.00	2,800.00	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	
3,000.00	0.00	0.00	3,000.00	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	
3,200.00	0.00	0.00	3,200.00	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	
3,400.00	0.00	0.00	3,400.00	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	
3,600.00	0.00	0.00	3,600.00	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	
3,800.00	0.00	0.00	3,800.00	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	
4,000.00	0.00	0.00	4,000.00	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	
4,200.00	0.00	0.00	4,200.00	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	
4,400.00	0.00	0.00	4,400.00	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	
4,600.00	0.00	0.00	4,600.00	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	
4,800.00	0.00	0.00	4,800.00	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	
5,000.00	0.00	0.00	5,000.00	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	
5,200.00	0.00	0.00	5,200.00	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	
5,400.00	0.00	0.00	5,400.00	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	

**WHS**  
Pathfinder Survey Report

<b>Company:</b>	COG Operating LLC	<b>Local Co-ordinate Reference:</b>	Well Blackhawk 11 Federal Com 1
<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	EST RKB @ 3570.00ft
<b>Site:</b>	S11 T16S R28E	<b>MD Reference:</b>	EST RKB @ 3570.00ft
<b>Well:</b>	Blackhawk 11 Federal Com 1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 2003.16 Single User Db

Planned Survey								
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	
5,600.00	0.00	0.00	5,600.00	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	
5,800.00	0.00	0.00	5,800.00	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	
6,000.00	0.00	0.00	6,000.00	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	
6,132.61	0.00	0.00	6,132.61	0.00	0.00	0.00	0.00	
6,150.00	2.09	91.27	6,150.00	-0.01	0.32	0.32	12.00	
6,175.00	5.09	91.27	6,174.94	-0.04	1.88	1.88	12.00	
6,200.00	8.09	91.27	6,199.78	-0.11	4.75	4.75	12.00	
6,225.00	11.09	91.27	6,224.42	-0.20	8.91	8.91	12.00	
6,250.00	14.09	91.27	6,248.82	-0.32	14.35	14.36	12.00	
6,275.00	17.09	91.27	6,272.90	-0.47	21.07	21.07	12.00	
6,300.00	20.09	91.27	6,296.59	-0.64	29.04	29.04	12.00	
6,325.00	23.09	91.27	6,319.84	-0.85	38.23	38.24	12.00	
6,350.00	26.09	91.27	6,342.57	-1.08	48.63	48.64	12.00	
6,375.00	29.09	91.27	6,364.72	-1.33	60.20	60.22	12.00	
6,400.00	32.09	91.27	6,386.24	-1.62	72.92	72.94	12.00	
6,425.00	35.09	91.27	6,407.06	-1.92	86.74	86.76	12.00	
6,450.00	38.09	91.27	6,427.14	-2.25	101.64	101.66	12.00	
6,475.00	41.09	91.27	6,446.40	-2.61	117.56	117.59	12.00	
6,500.00	44.09	91.27	6,464.80	-2.98	134.48	134.51	12.00	
6,525.00	47.09	91.27	6,482.30	-3.38	152.33	152.36	12.00	
6,550.00	50.09	91.27	6,498.83	-3.79	171.07	171.11	12.00	
6,575.00	53.09	91.27	6,514.37	-4.23	190.65	190.70	12.00	
6,600.00	56.09	91.27	6,528.85	-4.68	211.02	211.07	12.00	
6,625.00	59.09	91.27	6,542.25	-5.15	232.12	232.17	12.00	
6,650.00	62.09	91.27	6,554.53	-5.63	253.89	253.95	12.00	
6,675.00	65.09	91.27	6,565.65	-6.12	276.27	276.34	12.00	
6,700.00	68.09	91.27	6,575.58	-6.63	299.20	299.27	12.00	
6,725.00	71.09	91.27	6,584.30	-7.15	322.62	322.70	12.00	
6,750.00	74.09	91.27	6,591.78	-7.68	346.47	346.55	12.00	
6,775.00	77.09	91.27	6,598.00	-8.22	370.67	370.76	12.00	
6,800.00	80.09	91.27	6,602.95	-8.76	395.17	395.27	12.00	
6,825.00	83.09	91.27	6,606.60	-9.31	419.89	419.99	12.00	
6,850.00	86.09	91.27	6,608.96	-9.86	444.77	444.88	12.00	
6,874.19	88.99	91.27	6,610.00	-10.40	468.93	469.05	12.00	
6,900.00	88.99	91.27	6,610.46	-10.97	494.73	494.85	0.01	
6,925.74	88.99	91.27	6,610.91	-11.54	520.46	520.59	0.01	
7,000.00	88.99	91.27	6,612.21	-13.18	594.69	594.84	0.00	
7,100.00	88.99	91.27	6,613.97	-15.40	694.65	694.82	0.00	
7,200.00	88.99	91.27	6,615.73	-17.61	794.61	794.80	0.00	
7,300.00	88.99	91.27	6,617.49	-19.82	894.57	894.79	0.00	
7,400.00	88.99	91.27	6,619.25	-22.04	994.53	994.77	0.00	

# WHS

## Pathfinder Survey Report

<b>Company:</b>	COG Operating LLC	<b>Local Co-ordinate Reference:</b>	Well Blackhawk 11 Federal Com 1
<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	EST RKB @ 3570.00ft
<b>Site:</b>	S11 T16S R28E	<b>MD Reference:</b>	EST RKB @ 3570.00ft
<b>Well:</b>	Blackhawk 11 Federal Com 1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 2003.16 Single User Db

Planned Survey								
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	
7,500.00	88.99	91.27	6,621.00	-24.25	1,094.49	1,094.76	0.00	
7,600.00	88.99	91.27	6,622.76	-26.46	1,194.45	1,194.74	0.00	
7,700.00	88.99	91.27	6,624.52	-28.68	1,294.41	1,294.73	0.00	
7,800.00	88.99	91.27	6,626.28	-30.89	1,394.37	1,394.71	0.00	
7,900.00	88.99	91.27	6,628.04	-33.10	1,494.33	1,494.70	0.00	
8,000.00	88.99	91.27	6,629.79	-35.32	1,594.29	1,594.68	0.00	
8,100.00	88.99	91.27	6,631.55	-37.53	1,694.25	1,694.67	0.00	
8,200.00	88.99	91.27	6,633.31	-39.75	1,794.21	1,794.65	0.00	
8,300.00	88.99	91.27	6,635.07	-41.96	1,894.17	1,894.63	0.00	
8,400.00	88.99	91.27	6,636.83	-44.17	1,994.13	1,994.62	0.00	
8,500.00	88.99	91.27	6,638.58	-46.39	2,094.09	2,094.60	0.00	
8,600.00	88.99	91.27	6,640.34	-48.60	2,194.05	2,194.59	0.00	
8,700.00	88.99	91.27	6,642.10	-50.81	2,294.01	2,294.57	0.00	
8,800.00	88.99	91.27	6,643.86	-53.03	2,393.97	2,394.56	0.00	
8,900.00	88.99	91.27	6,645.62	-55.24	2,493.93	2,494.54	0.00	
9,000.00	88.99	91.27	6,647.37	-57.45	2,593.89	2,594.53	0.00	
9,100.00	88.99	91.27	6,649.13	-59.67	2,693.85	2,694.51	0.00	
9,200.00	88.99	91.27	6,650.89	-61.88	2,793.81	2,794.50	0.00	
9,300.00	88.99	91.27	6,652.65	-64.10	2,893.77	2,894.48	0.00	
9,400.00	88.99	91.27	6,654.41	-66.31	2,993.73	2,994.46	0.00	
9,500.00	88.99	91.27	6,656.16	-68.52	3,093.69	3,094.45	0.00	
9,600.00	88.99	91.27	6,657.92	-70.74	3,193.65	3,194.43	0.00	
9,700.00	88.99	91.27	6,659.68	-72.95	3,293.61	3,294.42	0.00	
9,800.00	88.99	91.27	6,661.44	-75.16	3,393.57	3,394.40	0.00	
9,900.00	88.99	91.27	6,663.19	-77.38	3,493.53	3,494.39	0.00	
10,000.00	88.99	91.27	6,664.95	-79.59	3,593.49	3,594.37	0.00	
10,100.00	88.99	91.27	6,666.71	-81.80	3,693.45	3,694.36	0.00	
10,200.00	88.99	91.27	6,668.47	-84.02	3,793.41	3,794.34	0.00	
10,300.00	88.99	91.27	6,670.23	-86.23	3,893.37	3,894.33	0.00	
10,400.00	88.99	91.27	6,671.98	-88.45	3,993.33	3,994.31	0.00	
10,500.00	88.99	91.27	6,673.74	-90.66	4,093.29	4,094.29	0.00	
10,600.00	88.99	91.27	6,675.50	-92.87	4,193.25	4,194.28	0.00	
10,700.00	88.99	91.27	6,677.26	-95.09	4,293.21	4,294.26	0.00	
10,800.00	88.99	91.27	6,679.02	-97.30	4,393.17	4,394.25	0.00	
10,855.93	88.99	91.27	6,680.00	-98.54	4,449.08	4,450.17	0.00	

# WHS

## Pathfinder Survey Report

<b>Company:</b>	COG Operating LLC	<b>Local Co-ordinate Reference:</b>	Well Blackhawk 11 Federal Com 1
<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	EST RKB @ 3570.00ft
<b>Site:</b>	S11 T16S R28E	<b>MD Reference:</b>	EST RKB @ 3570.00ft
<b>Well:</b>	Blackhawk 11 Federal Com 1	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 2003.16 Single User Db

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PbHl	0.00	0.00	6,680.00	-98.54	4,449.08	702,772.089	600,844.111	32° 55' 54.417 N	104° 8' 21.776 W
- plan hits target									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,850.00	1,850.00	San Andres D		0.00		
6,874.16	6,610.00	Wolfcamp Pay		0.00		
3,375.00	3,375.00	Glorieta		0.00		
385.00	385.00	Yates		0.00		
1,120.00	1,120.00	Queen		0.00		
6,727.18	6,585.00	Wolfcamp		0.00		
5,370.00	5,370.00	Abo Shale		0.00		

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------

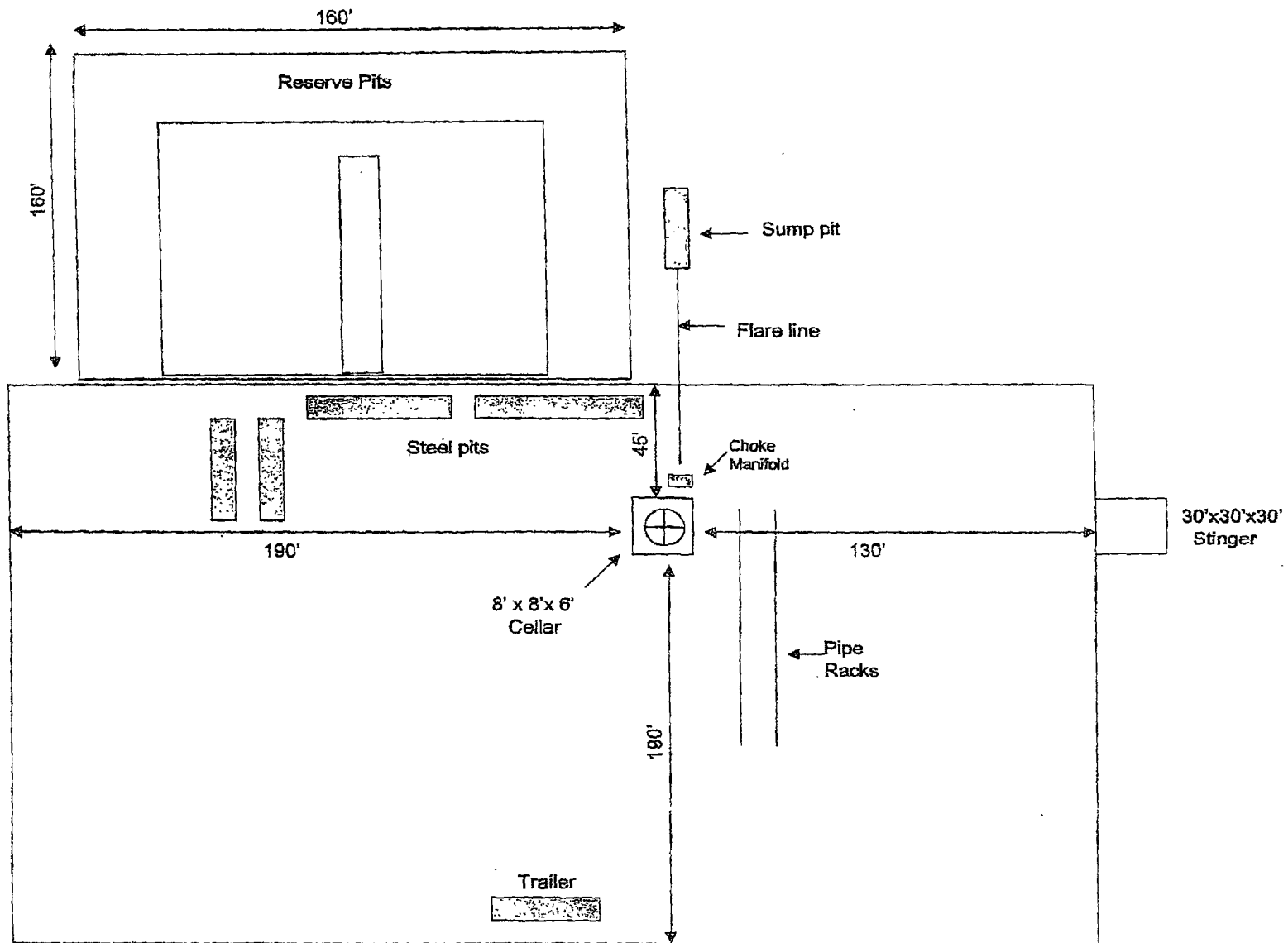




EXHIBIT "G"

BOPE SCHEMATIC

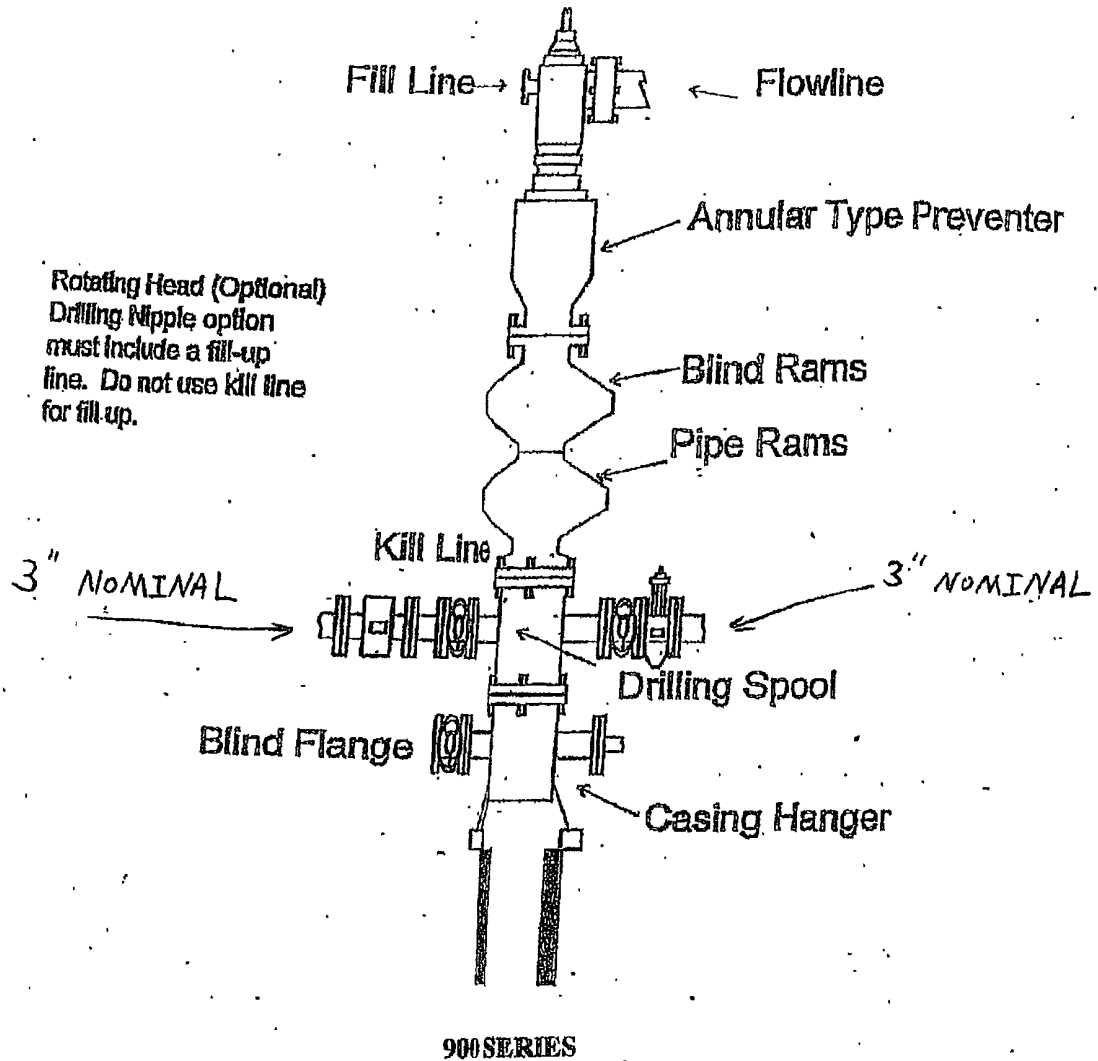
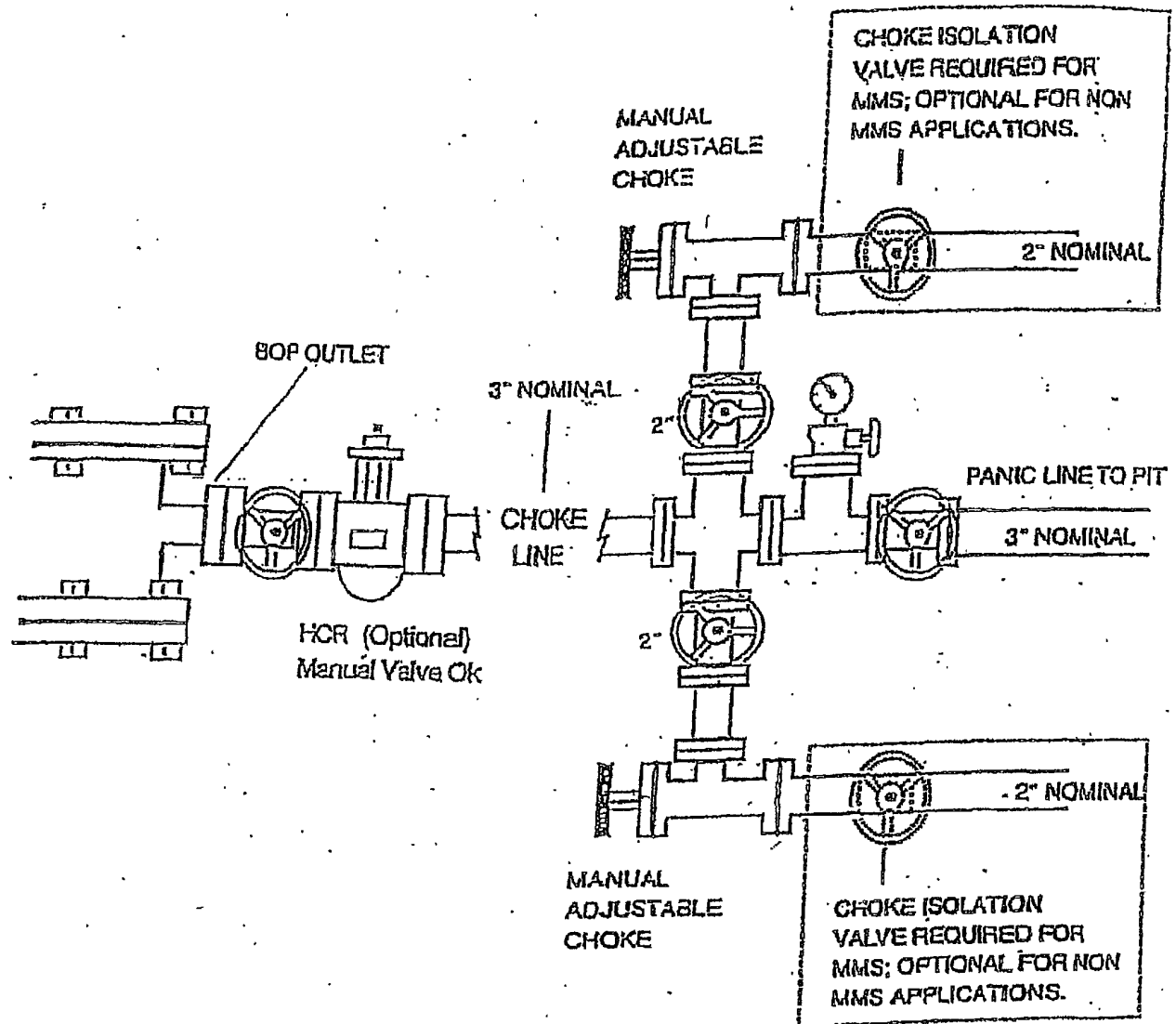


EXHIBIT "H"

CHOKE MANIFOLD

3M SERVICE



# **COG OPERATING, LLC**

## **HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN FOR DRILLING / COMPLETING / WORKOVER / FACILITY WITH THE EXPECTATION OF H<sub>2</sub>S IN EXCESS OF 100 PPM**

**C.O.G. Operating, LLC  
NEW DRILL WELL  
Blackhawk "11" Federal #1  
SL: 430' FSL & 430' FWL, Unit M  
BHL: 330' FSL & 330' FWL, Unit P  
Sec 11, T16S, R28E  
Eddy County, New Mexico**

**This well / facility is not expected to have H<sub>2</sub>S, but the following is submitted as requested.**

## TABLE OF CONTENTS

I.	General Emergency Plan	Page 3
II.	Emergency Procedure for Uncontrolled Release of H <sub>2</sub> S	Page 3
III.	Emergency Numbers for Notification	Page 4
IV.	Protection of the General (ROE) Radius of Exposure	Page 5
V.	Public Evacuation Plan	Page 6
VI.	Procedure for Igniting an Uncontrollable Condition	Page 7
VII.	Required Emergency Equipment	Page 8
VIII.	Using Self-Contained Breathing Air Equipment (SCBA)	Page 9
IX.	Rescue & First Aid for Victims of H <sub>2</sub> S Poisoning	Page 10
X.	H <sub>2</sub> S Toxic Effects	Pages 11-12
XI.	H <sub>2</sub> S Physical Effects	Pages 13-14
XII.	Location Map	Page 15
XIII.	Vicinity Map	Page 16

## **GENERAL H2S EMERGENCY ACTIONS**

In the event of any evidence of H2S emergency, the following plan will be initiated:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (self-contained breathing apparatus).
3. Always use the "buddy system".
4. Isolate the well / problem if possible.
5. Account for all personnel.
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the company representative as soon as possible if not at the location (use the enclosed call list as instructed).

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

## **EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S**

1. All personnel will don the self-contained breathing apparatus.
2. Remove all personnel to the "safe area: (always use the "buddy system")".
3. Contact company representative if not on location.
4. Set in motion the steps to protect and / or remove the general public to any upwind "safe are". Maintain strict security and safety procedures while dealing with the source.
5. No entry to any unauthorized personnel.
6. Notify the appropriate agencies:  
City Police - City streets  
State Police - State Roads  
County Sheriff - County Roads
7. Call the NMOCD.

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**  
**Eddy County, New Mexico**

<b>State Police</b>	<b>505-748-9718</b>
<b>Eddy County Sheriff</b>	<b>505-746-2701</b>
<b>Emergency Medical Services (Ambulance)</b>	<b>911 or 505-746-2701</b>
<b>Eddy County Emergency Management (Harry Burgess)</b>	<b>505-887-9511</b>
<b>State Emergency Response Center (SERC)</b>	<b>505-476-9620</b>
<b>Carlsbad Police Department</b>	<b>505-885-2111</b>
<b>Carlsbad Fire Department</b>	<b>505-885-3125</b>
<b>New Mexico Oil Conservation Division</b>	<b>505-748-1283</b>
<b>Callaway Safety Equipment, Inc.</b>	<b>505-392-2973</b>

## **PROTECTION OF THE GENERAL (ROE) RADIUS OF EXPOSURE**

In the event greater than 100 ppg H<sub>2</sub>S is present, the ROE calculations will be done to determine if the following is warranted:

- \* 100 ppm at any public area (any place not associated with this site)
- \* 500 ppm at any public road (any road which the general public may travel).
- \* 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture.

**Calculation for the 100 ppm ROE:** (H<sub>2</sub>S concentrations in decimal form)

$$X = [(1.589)(\text{concentration})(Q)] (0.6258) \quad 10,000 \text{ ppm} + = .01$$

$$1,000 \text{ ppm} + = .001$$

**Calculation for the 500 ppm ROE:** 100 ppm + = .0001

$$10 \text{ ppm} + = .00001$$

$$X = [(0.4546)(\text{concentration})(Q)] (.06258)$$

EXAMPLE: If a well / facility has been determined to have 150 ppm H<sub>2</sub>S in the gas mixture and the well / facility is producing at a gas rate of 200 MCFD then:

$$\text{ROE for 100 ppm} \quad X = [(1.589)(.00010)(200,000)] (0.6258)$$

$$X = 8.8'$$

$$\text{ROE for 500 ppm} \quad X = [(0.4546)(.00050)(200,000)] (0.6258)$$

$$X = 10.9'$$

These calculations will be forwarded to the appropriate NMOCD district office when applicable.

## **PUBLIC EVACUATION PLAN**

When the supervisor has determined that the general public will be involved, the following plan will be implemented.

1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
2. A trained person in H<sub>2</sub>S safety shall monitor with detection equipment the H<sub>2</sub>S concentration, wind and area of exposure. This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. All monitoring equipment shall be UL approved for use in Class I Groups A, B, C & D, Division I hazardous locations. All monitors will have a minimum capability of measuring H<sub>2</sub>S, oxygen, and flammable values.
3. Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
4. The company representative shall stay in communication with all agencies throughout the duration of the situation and inform such agencies when the situation has been contained and the effected area is safe to enter.



## **PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION**

The decision to ignite a well should be a last resort and one, if not both, of the following pertain:

1. Human life and / or property are endangered.
2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

### **Instructions for Igniting the Well:**

1. Two people are required. They must be equipped with positive pressure, self-contained breathing apparatus and "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
2. One of the people will be a qualified safety person who will test the atmosphere for H<sub>2</sub>S, oxygen and LFL. The other person will be the company representative.
3. Ignite upwind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun with a range of approximately +/- 500 feet shall be used to ignite the gas.
4. Before igniting, check for the presence of combustible gases.
5. After igniting, continue emergency actions and procedures as before.

## **REQUIRED EMERGENCY EQUIPMENT**

### **1. Breathing Apparatus**

- \* Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- \* Work / Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- \* Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

### **2. Signage and Flagging**

- \* One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- \* A Colored Condition flag will be on display reflecting the condition at the site at that time.

### **3. Briefing Area**

- \* Two perpendicular areas will be designated by signs and readily accessible.

### **4. Windsocks**

- \* Two windsocks will be placed in strategic locations, visible from all angles.

### **5. H2S Detectors and Alarms**

\* The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible alarm @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The three sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer):

- \* Rig Floor
- \* Bell Nipple
- \* End of flow line or where well bore fluid is being discharged

### **6. Auxiliary Rescue Equipment**

- \* Stretcher
- \* Two OSHA full body harnesses
- \* 100' of 5/8" OSHA approved rope
- \* One 20 lb. Class ABC fire extinguisher
- \* Communication via cell phones on location and vehicles on location

## **USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA)**

1. SCBA should be worn when any of the following are performed:
  - \* Working near the top or on top of a tank
  - \* Disconnecting any line where H<sub>2</sub>S can reasonably be expected.
  - \* Sampling air in the area to determine if toxic concentrations of H<sub>2</sub>S exist.
  - \* Working in areas where over 10 ppm of H<sub>2</sub>S has been detected.
  - \* At any time there is a doubt of the level of H<sub>2</sub>S in the area.
2. All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
3. Facial hair and standard eyeglasses are not allowed with SCBA.
4. Contact lenses are never allowed with SCBA.
5. When breaking out any line where H<sub>2</sub>S can reasonably be expected.
6. After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
7. All SCBA shall be inspected monthly.

## **RESCUE & FIRST AID FOR VICTIMS OF H<sub>2</sub>S POISONING**

- \* Do not panic.
- \* Remain calm and think.
- \* Get on the breathing apparatus.
- \* Remove the victim to the safe breathing area as quickly as possible, upwind and uphill from source or crosswind to achieve upwind.
- \* Notify emergency response personnel.
- \* Provide artificial respiration and / or CPR as necessary.
- \* Remove all contaminated clothing to avoid further exposure.
- \* A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

## Toxic Effects of H2S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table 1. toxicity table for H2S and physical effects are shown in Table II.

**Table 1**  
Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO2	1.52	5000 ppm	30,000 ppm	
Methane	CH4	.55	4.7% LEL	14% UEL	

### Definitions

- A. TLV – Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.
- B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H2S is 19 PPM.
- C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H2S is 100 PPM.
- D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.

**TABLE II**  
Toxicity Table of H<sub>2</sub>S

Percent %	PPM	Physical Effects
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure
.0015	15	STEL for 15 minutes of exposure
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins in a few minutes.
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

## **PHYSICAL PROPERTIES OF H<sub>2</sub>S**

The properties of all gasses are usually described in the context of seven major categories:

COLOR  
ODOR  
VAPOR DENSITY  
EXPLOSIVE LIMITS  
FLAMMABILITY  
SOLUBILITY (IN WATER)  
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

### **COLOR – TRANSPARENT**

Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence, a fact that makes the gas extremely dangerous to be around.

### **ODOR – ROTTEN EGGS**

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However, H<sub>2</sub>S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

### **VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192**

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H<sub>2</sub>S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

### **EXPLOSIVE LIMITS – 4.3% TO 46%**

Mixed with the right proportion of air or oxygen, H<sub>2</sub>S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

### **FLAMMABILITY**

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO<sub>2</sub>), another hazardous gas that irritates the eyes and lungs.

### **SOLUBILITY – 4 TO 1 RATIO WITH WATER**

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H<sub>2</sub>S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H<sub>2</sub>S may release the gas into the air.

### **BOILING POINT – (-76 degrees Fahrenheit)**

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.



**SURFACE USE AND OPERATIONS PLAN**  
**FOR DRILLING, COMPLETION, AND PRODUCING**

**C.O.G. Operating, LLC**  
**Blackhawk "11" Federal #1**  
**SL: 430' FSL & 430' FWL, Unit M**  
**BHL: 330' FSL & 330' FWL, Unit P**  
**Sec 11, T16S, R28E**  
**Eddy County, New Mexico**

**LOCATED:**

Approximately 10 miles Northwest of Loco Hills

**OIL & GAS LEASE**

SL: State  
BHL: NMNM # 103873

**RECORD TITLE LESSEE**

SL: CHASE OIL CORP- P.O. Box 1767, Artesia, NM 88211-1767  
(Operating rights: COG Oil & Gas, LP)

BHL: COG Oil & Gas, LP – 550 West Texas Ave., Suite 1300, Midland, TX 79701

**BOND COVERAGE**

\$25,000 statewide bond of C.O.G. Operating, L.L.C. NMB 000215

**SURFACE OWNER**

State of New Mexico

**MINERAL OWNER**

Bureau of Land Management

**GRAZING TENANT**

SL; Bogle LTD Co., LLC, P.O. Box 460, Dexter, NM 88230, (505) 734-5442  
BHL: Bogle LTD Co., LLC, P.O. Box 460, Dexter, NM 88230, (505) 734-5442

**POOL**

Wolfcamp – Crow Flats

**PROPOSED TOTAL DEPTH**

This well will be drilled to a Horizontal Total Vertical Depth of approximately 6,680' and a Horizontal Total Measured Depth of approximately 11,130'.

**EXHIBITS**

- A. Well Location & Acreage Dedication Map
- B. Area Road Map
- C. Vicinity Oil & Gas Map
- D-1- D-2. Topographic & Location Verification Map
- E-1- E-4. Proposed Lease Road and Pad Layout Map
- F. Drilling Rig Layout
- G. BOPE Schematic
- H. Choke Manifold Schematic

**EXISTING ROADS**

- A. Exhibit A is a portion of a section map showing the location of the proposed well as staked.
- B. Exhibit B is a map showing existing roads in the vicinity of the proposed well site.
- C. Directions to well location:  
From the junction of US Hwy 82 and County Road Southern Union, go north on Southern Union for 2.5 miles winding northeast for 1.2 miles to lease road, on lease road go north 1.3 miles to lease road, on lease road go east 1.5 miles to lease road, on lease road go north 3.0 miles to lease road, thence east 2.0 miles to proposed lease road.

**ACCESS ROADS**

- A. Length and Width: 5,40.7' long and 30' wide.  
Approximately 4,275.2' of Road Right-of-Way has been obtained from BLM (NM 119633) and approximately 1,065.5' of Road Right-of-Way in the SW/4SW/4 and the NW/4SW/4 of Section 11 has been obtained from the State (RW 30883).
- B. Surface Material: Existing
- C. Maximum Grad: Less than five percent
- D. Turnouts: None necessary
- E. Drainage Design: Existing
- F. Culverts: None necessary
- G. Gates and Cattle Guards: None needed

**LOCATION OF EXISTING WELLS**

Existing wells in the immediate area are shown in Exhibit C.

**LOCATION OF EXISTING AND/OR PROPOSED FACILITIES**

Necessary production facilities for this well will be located on the well pad.

**LOCATION AND TYPE OF WATER SUPPLY**

It is not contemplated that a water well will be drilled. Water necessary for drilling will be purchased and hauled to the site over existing roads shown on Exhibit E.

**METHODS OF HANDLING WASTE DISPOSAL**

- A. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.
- B. Water produced during tests will be disposed of in the drilling pits.
- C. Oil produced during tests will be stored in test tanks.
- D. Trash will be contained in a trash trailer and removed from well site.
- E. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

**ANCILLARY FACILITIES**

None required.

**WELL SITE LAYOUT**

Exhibits G and H show the relative location and dimensions of the well pad, mud pits, reserve pit, and trash pit, and the location of major rig components.

**PLANS FOR RESTORATION OF THE SURFACE**

- A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. The well site will be cleaned of all trash and junk to leave the site in an as aesthetically pleasing condition as possible.
- B. After abandonment, all equipment, trash, and junk will be removed and the site will be clean.

**OPERATOR'S REPRESENTATIVE**

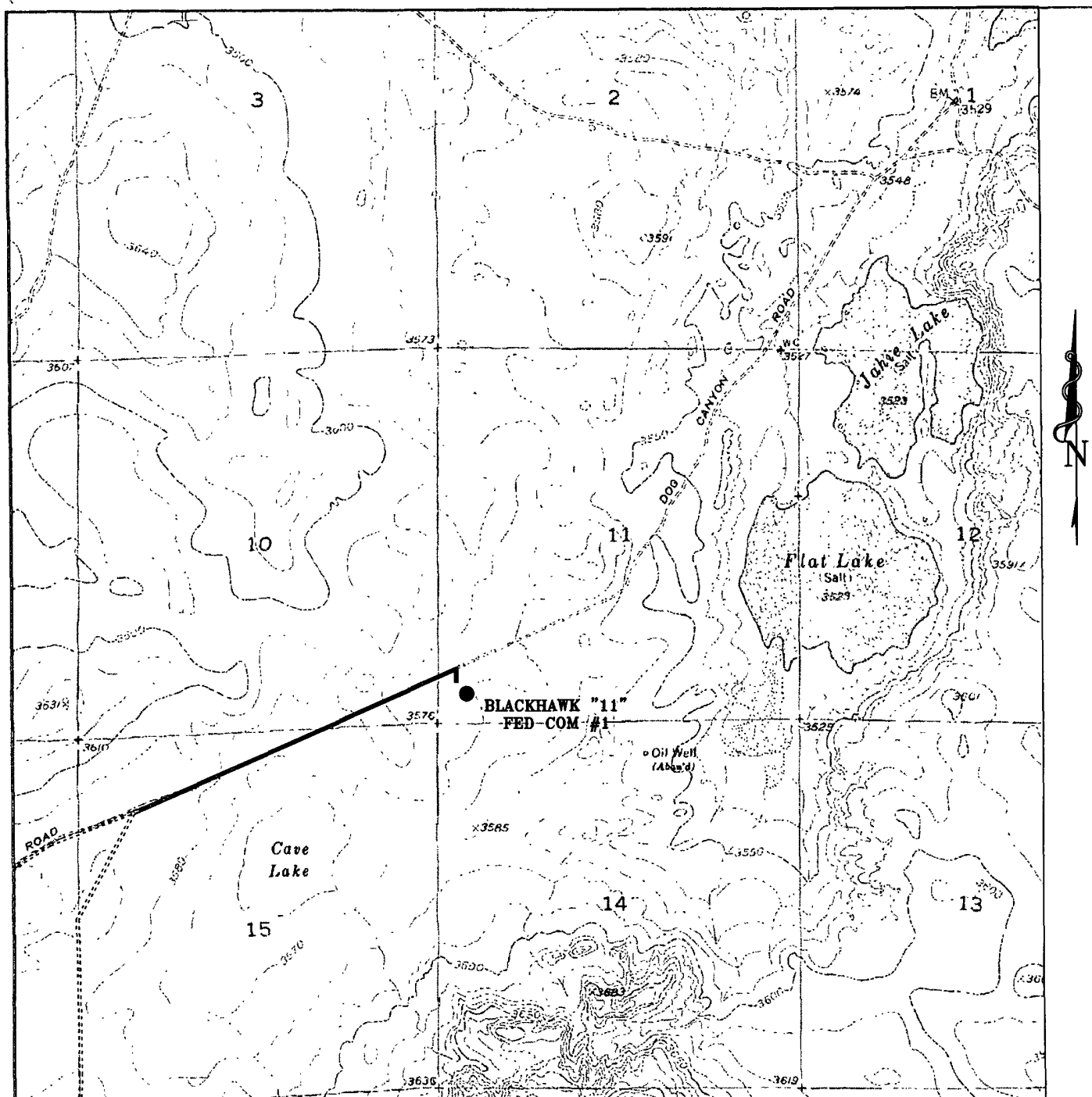
John Coffman  
C.O.G. Operating, LLC  
550 W. Texas Ave, Suite 1300  
Midland, TX 79701  
(432) 683-7443

## CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be preformed by the C.O.G. Operating, LLC Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

5-8-08  
Date

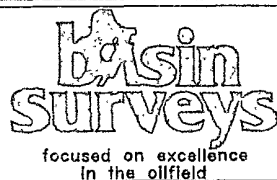
John Coffman  
John Coffman  
C.O.G. Operating, LLC



### BLACKHAWK "11" FEDERAL COM #1

Located at 430' FSL and 430 FWL

Section 11, Township 16 South, Range 28 East,  
N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786  
1120 N. West County Rd.  
Hobbs, New Mexico 88241  
(505) 393-7316 - Office  
(505) 392-3074 - Fax  
basinsurveys.com

W.O. Number: JMS 18743T

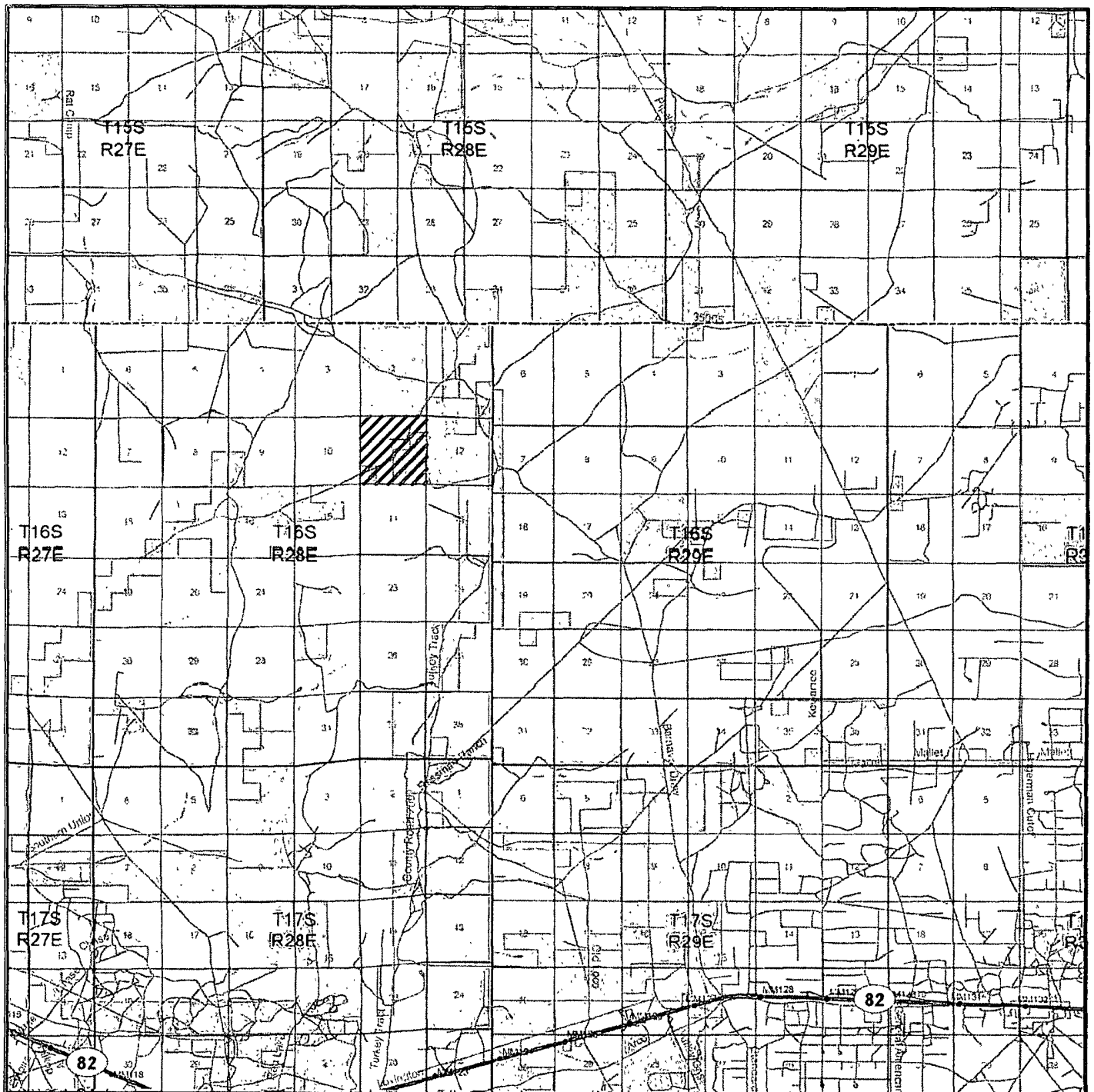
Survey Date: 12-16-2007

Scale: 1" = 2000'

Date: 12-17-2007

**C.O.G.**  
**OPERATING**  
**L.L.C.**

# EXHIBIT "C"



**BLACKHAWK "11" FEDERAL COM #1**  
 Located at 430' FSL and 430' FWL  
 Section 11, Township 16 South, Range 28 East,  
 N.M.P.M., Eddy County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basinsurveys.com

W.O. Number: JMS 18743TR

Survey Date: 12-16-2007

Scale: 1" = 2 MILES

Date: 12-17-2007

**C.O.G.  
 OPERATING  
 L.L.C.**

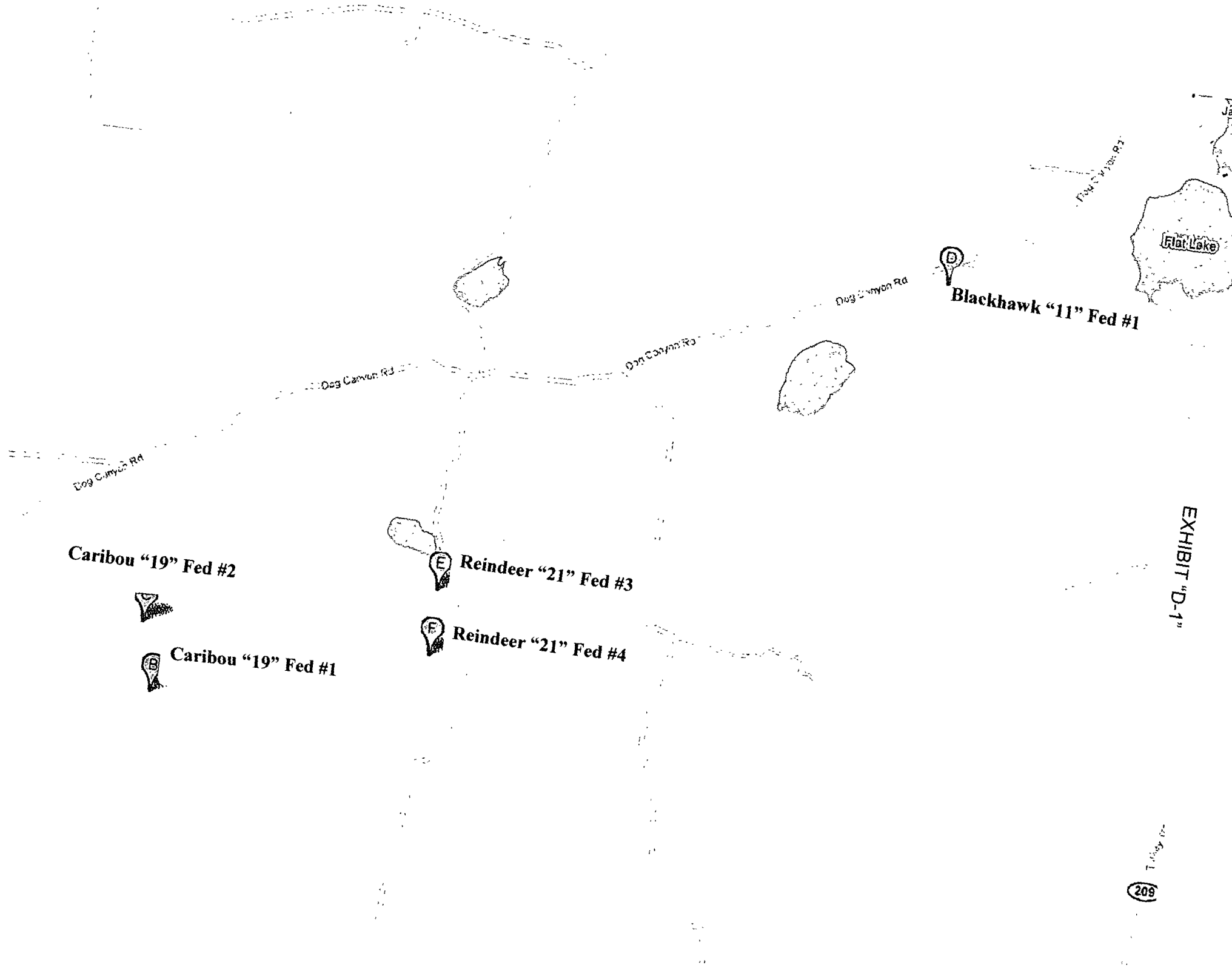


EXHIBIT "D-1"



Blackhawk "11" Fed #1

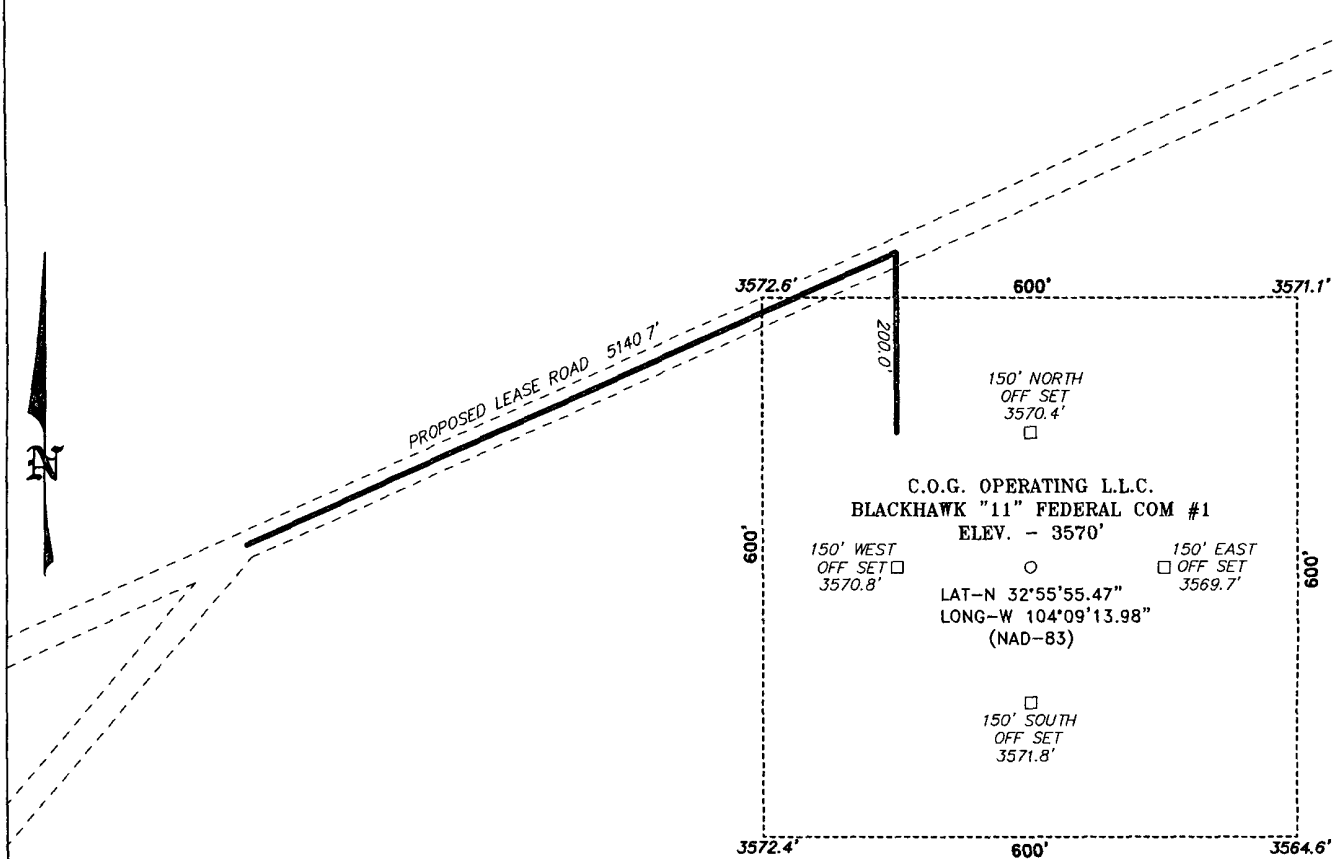
Reindeer "21" Fed #3

Reindeer "21" Fed #4

Caribou "19" Fed #2

Caribou "19" Fed #1

SECTION 11, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

**DIRECTIONS TO LOCATION:**

FROM THE JUNCTION OF US HWY 82 AND CO. RD.  
SOUTHERN UNION, GO NORTH ON SOUTHERN UNION  
FOR 2.5 MILES WINDING NORTHEAST FOR 1.2 MILES TO  
LEASE ROAD, ON LEASE ROAD GO NORTH 1.3 MILES  
TO LEASE ROAD, ON LEASE ROAD GO EAST 1.5 MILES  
TO LEASE ROAD, ON LEASE ROAD GO NORTH 3.0  
MILES TO LEASE ROAD, THENCE EAST 2.0 MILES TO  
PROPOSED LEASE ROAD.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 18743

Drawn By: J. M. SMALL

Date: 12-17-2007

Disk: JMS 18743W

**C.O.G. OPERATING L.L.C.**

REF: BLACKHAWK "11" FEDERAL COM #1 / Well Pad Topo

THE BLACKHAWK "11" FEDERAL COM #1 LOCATED 430' FROM

THE SOUTH LINE AND 430' FROM THE WEST LINE OF

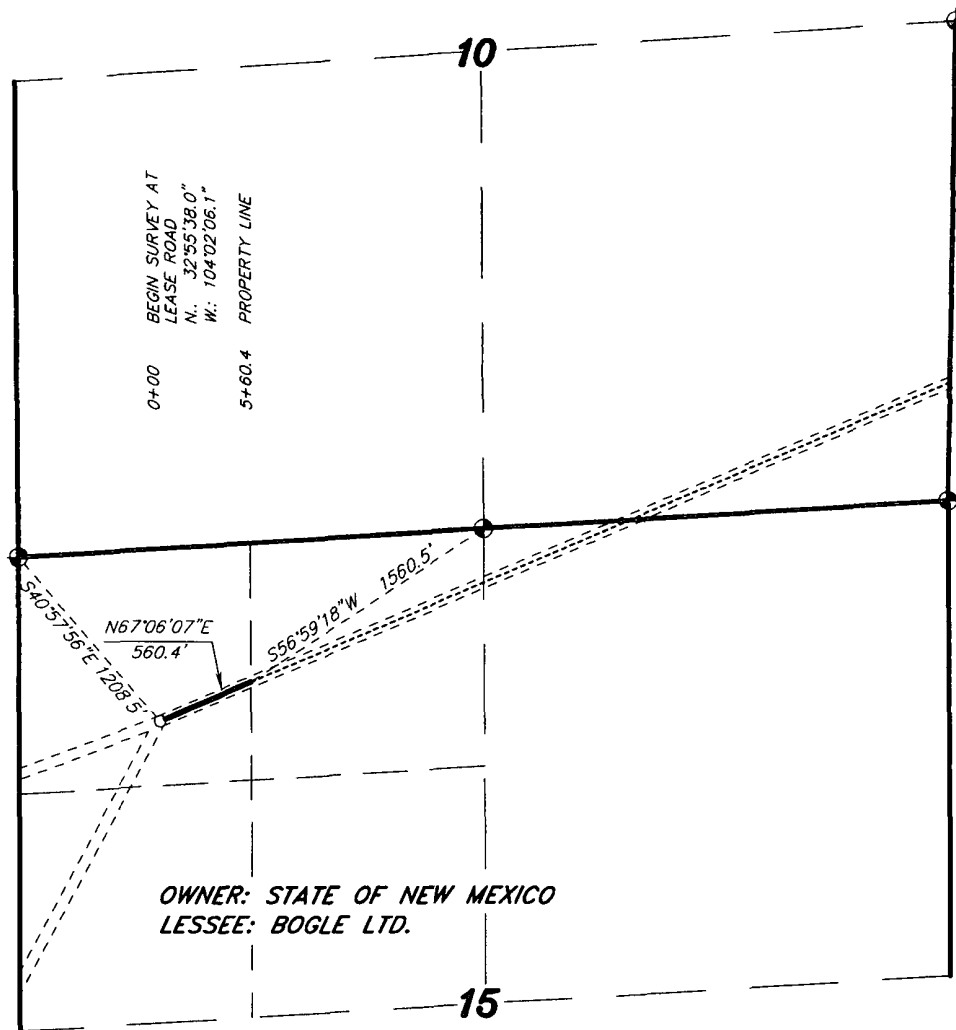
SECTION 11, TOWNSHIP 16 SOUTH, RANGE 28 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 12-16-2007

Sheet 1 of 1 Sheets

**SECTION 15, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**

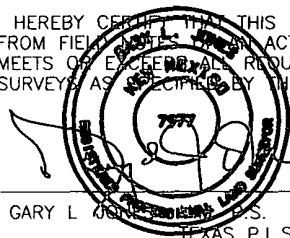


**LEGAL DESCRIPTION**

A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTION 15, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY BEGINNING AT A POINT WHICH LIES S.40°57'56\"E., 1208.5 FEET FROM THE NORTHWEST CORNER OF SAID SECTION 15; THENCE N.67°06'07\"E., 560.4 FEET TO A POINT ON THE EAST PROPERTY LINE WHICH LIES S.56°59'18\"W., 1560.5 FEET FROM THE NORTH QUARTER CORNER OF SAID SECTION 15. SAID STRIP OF LAND BEING 560.4 FEET OR 33.96 FEET IN LENGTH AND CONTAINING 0.26 ACRES, MORE OR LESS, AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

$$NW/4 \text{ NW/4} = 33.96 \text{ RODS} = 0.26 \text{ ACRES}$$

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. SMALL  
STATE OF NEW MEXICO  
TEXAS P.L.S.

No. 7977  
No. 5074

1000 0 1000 2000 FEET

**C.O.G. OPERATING L.L.C.**

REF: PROP. LEASE ROAD TO THE BLACKHAWK "11" FEDERAL COM #1

A ROAD CROSSING STATE LAND IN  
SECTION 15, TOWNSHIP 16 SOUTH, RANGE 28 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number. 18743

Drawn By: J. M. SMALL

Date: 12-17-2007

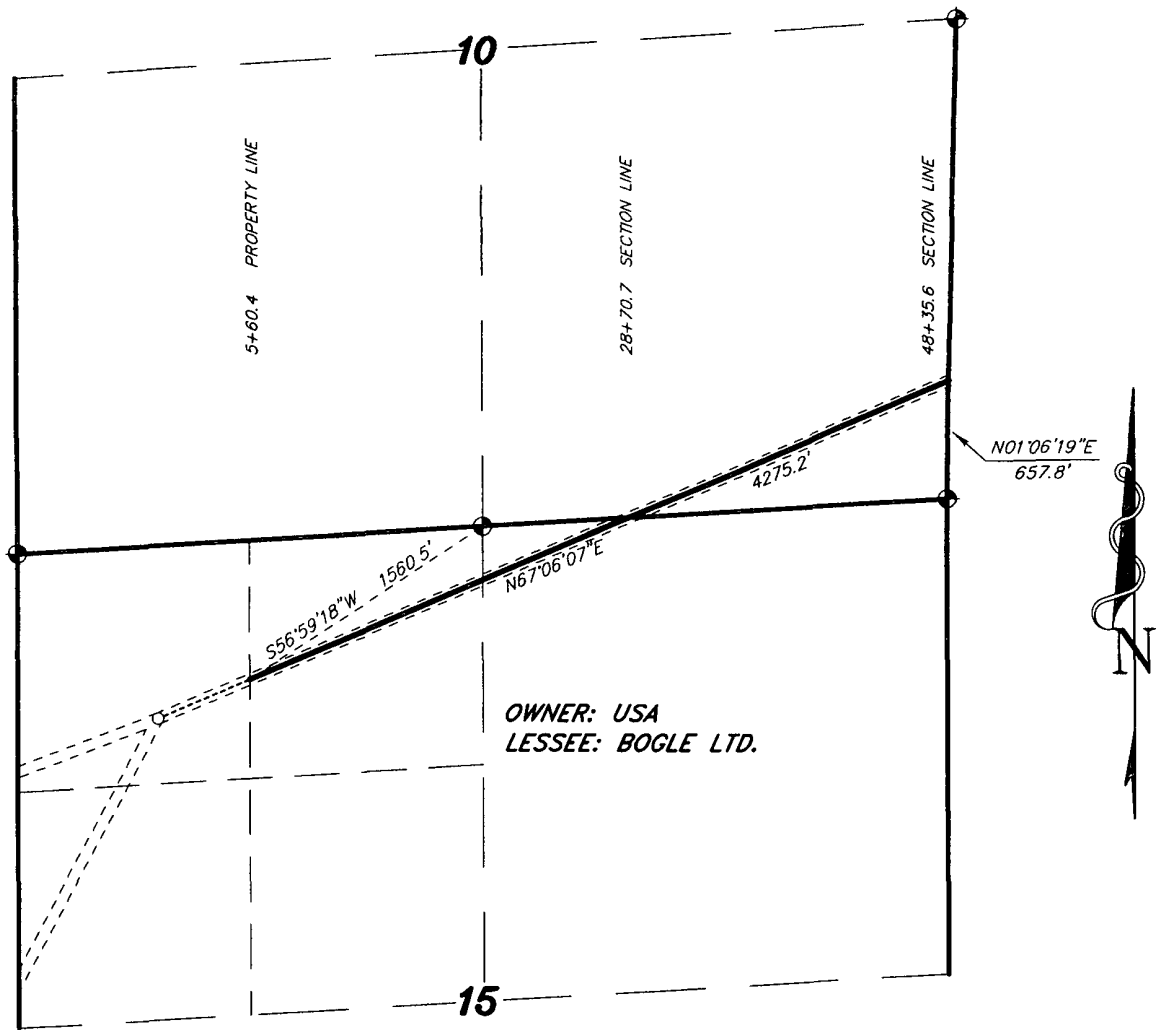
Disk: JMS 18743R

Survey Date: 12-16-2007

Sheet 1 of 3 Sheets

EXHIBIT "E-3"

SECTIONS 10&15, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



LEGAL DESCRIPTION

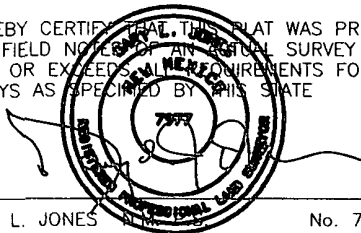
A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTIONS 10&15, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

SECTION 15 = 2310.3 FEET = 140.01 RODS = 0.44 MILES = 1.06 ACRES

SECTION 10 = 1964.9 FEET = 119.09 RODS = 0.37 MILES = 0.90 ACRES

TOTAL = 4275.2 FEET = 259.10 RODS = 0.81 MILES = 1.96 ACRES

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE



GARY L. JONES No. 7977  
TEXAS P.L.S. No. 5074

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 18743 Drawn By: J. M. SMALL

Date: 12-17-2007 Disk: JMS 18743R

1000 0 1000 2000 FEET

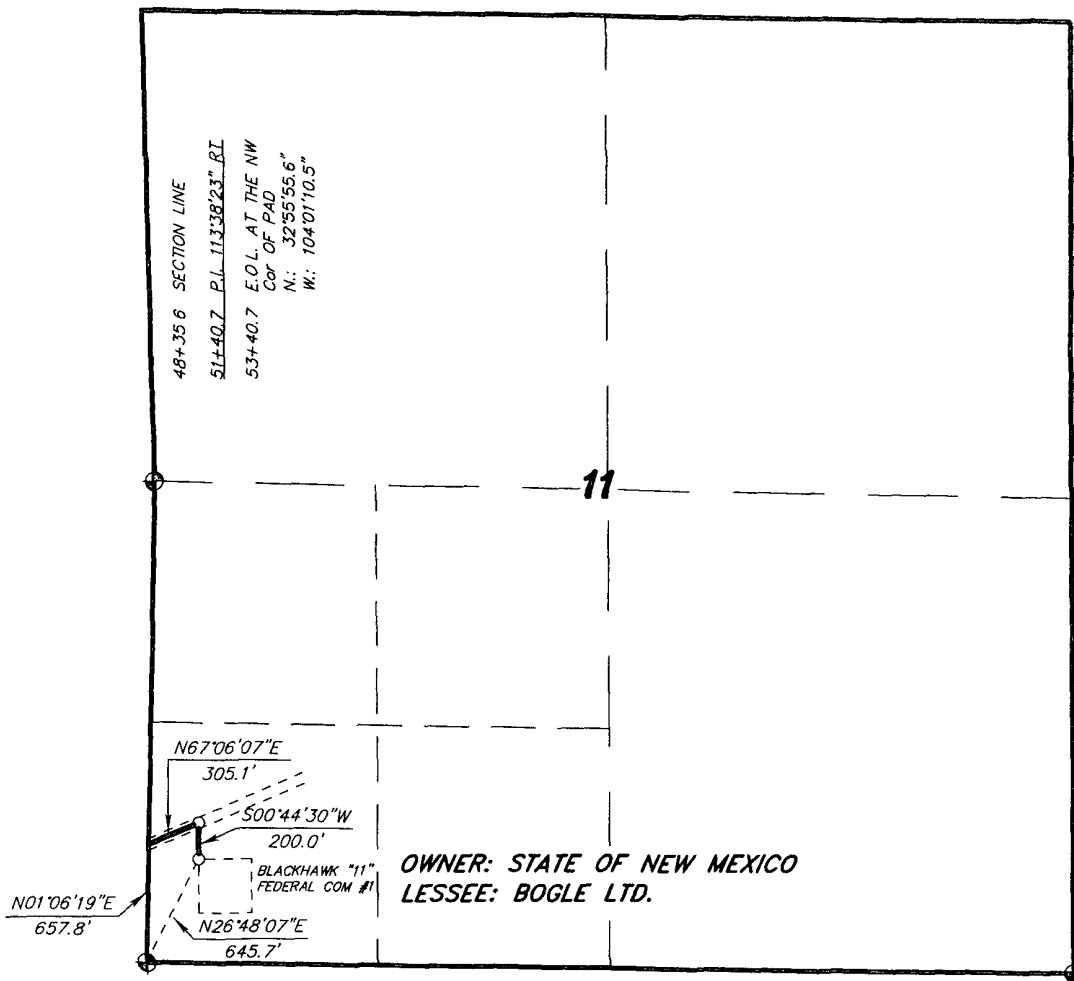
**C.O.G. OPERATING L.L.C.**

REF: PROP. LEASE ROAD TO THE BLACKHAWK "11" FEDERAL COM #1

A ROAD CROSSING USA LAND IN  
SECTIONS 10&15, TOWNSHIP 16 SOUTH, RANGE 28 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 12-16-2007 Sheet 2 of 3 Sheets

**SECTION 11, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.**



**OWNER: STATE OF NEW MEXICO  
LESSEE: BOGLE LTD.**

**LEGAL DESCRIPTION**

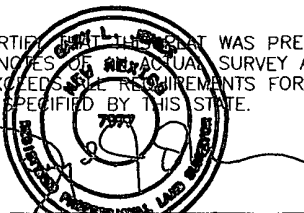
A STRIP OF LAND 20.0 FEET WIDE, LOCATED IN SECTION 11, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 10.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT WHICH LIES N.01°06'19"E., 657.8 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 11; THENCE N 67°06'07"E., 305.1 FEET; THENCE S.00°44'30"W., 200.0 FEET TO THE END OF THIS LINE WHICH LIES N.26°48'07"E., 645.7 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 11. SAID STRIP OF LAND BEING 505.1 FEET OR 30.61 RODS IN LENGTH AND CONTAINING 0.23 ACRES, MORE OR LESS, AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

$$SW/4 \ SW/4 = 30.61 \text{ RODS} = 0.23 \text{ ACRES}$$

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L JONES N.M.P.S. No. 7977  
TEXAS P.L.S. No. 5074



1000 0 1000 2000 FEET

**C.O.G. OPERATING L.L.C.**

REF: PROP. LEASE ROAD TO THE BLACKHAWK "11" FEDERAL COM #1

A ROAD CROSSING STATE LAND IN  
SECTION 11, TOWNSHIP 16 SOUTH, RANGE 28 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 18743 Drawn By: J. M. SMALL

Date: 12-17-2007 Disk: JMS 18743R

Survey Date: 12-16-2007 Sheet 3 of 3 Sheets