

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

ATS-12-591  
FORM APPROVED  
OMB NO 1004-0137  
Expires July 31, 2010

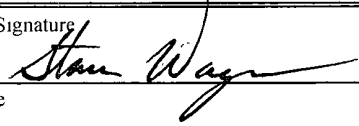
## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No <b>NM-0438001</b>
1b Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name <b>705 8/3/2012</b>
2 Name of Operator <b>EOG Resources Inc.</b>		7 Unit or CA Agreement Name and No <b>8/3/2012</b>
3a Address <b>P.O. Box 2267 Midland, Texas 79702</b>	3b Phone No (include area code) <b>432-686-3689</b>	8 Lease Name and Well No <b>Ross Draw 8 Fed 4H</b>
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface <b>330' FNL &amp; 610' FWL, U/L D</b> At proposed prod zone <b>330' FSL &amp; 940' FWL, U/L M</b>		9 API Well No. <b>30-015- 40565</b>
14. Distance in miles and direction from nearest town or post office* <b>+/- 49 miles NW from Jal NM</b>		10 Field and Pool, or Exploratory <b>JENNINGS Wildcat, Bone Spring, WEST</b>
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) <b>330'</b>	16 No. of Acres in lease <b>2201.36</b>	11 Sec, T, R., M., or Blk and Survey or Area <b>Sec 8, T26S, R31E</b>
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft <b>770' to RG 8 FC 2H</b>	19 Proposed Depth <b>8671 V - 13474 M</b>	12 County or Parish <b>Eddy</b>
21 Elevations (Show whether DF, KDB, RT, GL, etc) <b>3278' GL</b>	22. Approximate date work will start* <b>10/1/2012</b>	13 State <b>NM</b>
23. Estimated duration <b>30 days</b>		

## 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.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) |
| 2. A Drilling Plan   | 5. Operator certification  |
| 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). | 6. Such other site specific information and/or plans as may be required by the BLM             |

25 Signature 	Name (Printed/Typed) <b>Stan Wagner</b>	Date <b>4/4/2012</b>
Title <b>Regulatory Analyst</b>		

Approved by (Signature) <b>/s/ James A. Amos</b>	Name (Printed/Typed) <b>JAMES A. AMOS</b>	Date <b>JUL 30 2012</b>
Title <b>FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

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

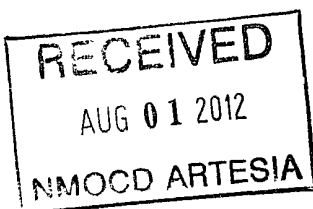
APPROVAL FOR TWO YEARS

Title 18 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)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements  
& Special Stipulations AttachedSEE ATTACHED FOR  
CONDITIONS OF APPROVAL

## OPERATOR CERTIFICATION

I certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true, and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 5<sup>th</sup> day of April, 2012.

Name: Roger Motley

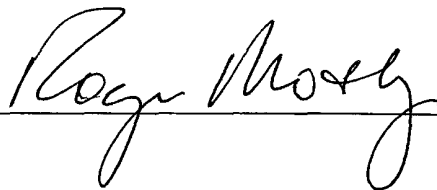
Position: Sr. Lease Operations ROW Representative

Address: P.O. Box 2267, Midland, TX 79705

Telephone: (432) 686-3642

Email: roger\_motley@eogresources.com

Signed

A handwritten signature in cursive script, reading "Roger Motley", is written over a horizontal line.

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 & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr  
Santa Fe, NM 87505

Form C-402  
Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease- 4 Copies  
Fee Lease- 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015- <b>40565</b>	Pool Code <b>96403</b>	Pool Name <b>SCANNINGS</b> <del>Wildcat</del> ; Bone Spring
Property Code <del>38686</del> <b>38727</b>	Property Name <b>ROSS DRAW "B" FED.</b>	
OCRID No. 7377	Operator Name <b>EOG RESOURCES, INC.</b>	
	Well Number <b>4H</b>	Elevation <b>3278.4'</b>

Surface Location

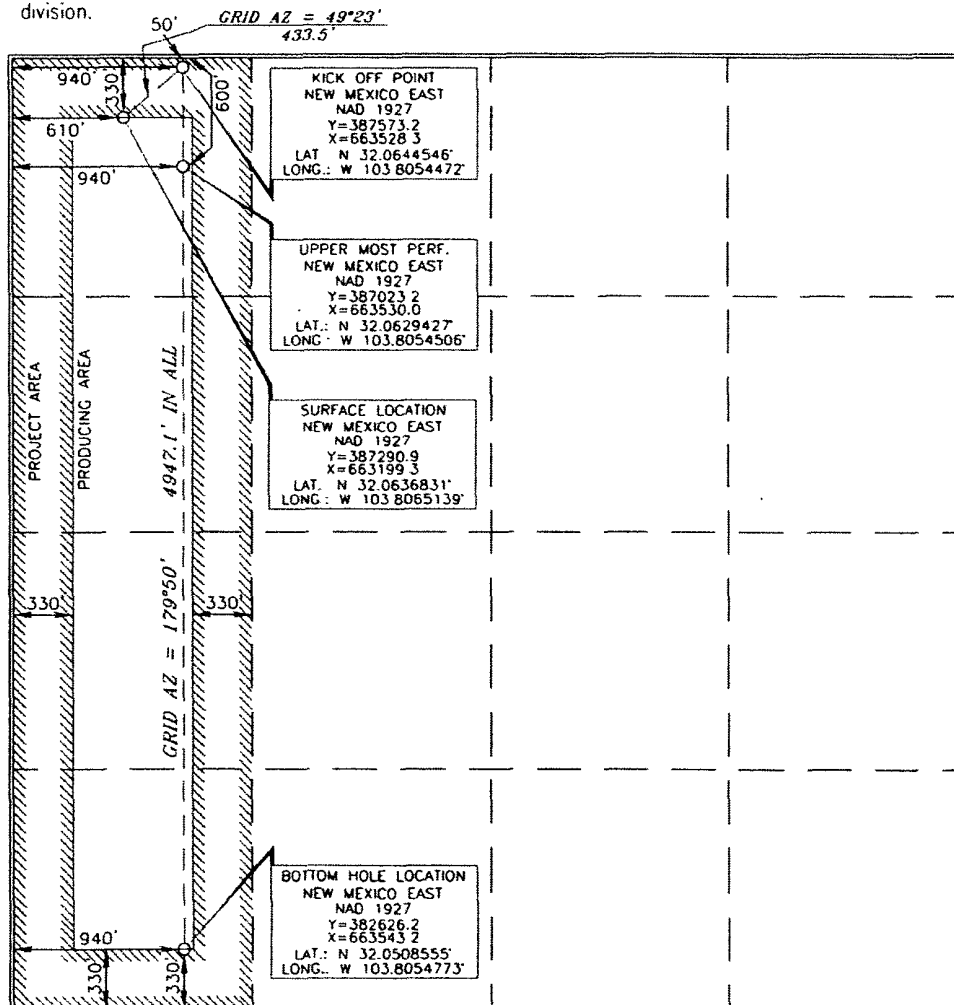
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>D</b>	<b>8</b>	<b>26 SOUTH</b>	<b>31 EAST, N.M.P.M.</b>		<b>330'</b>	<b>NORTH</b>	<b>610'</b>	<b>WEST</b>	<b>EDDY</b>

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
<b>M</b>	<b>8</b>	<b>26 SOUTH</b>	<b>31 EAST, N.M.P.M.</b>		<b>330'</b>	<b>SOUTH</b>	<b>940'</b>	<b>WEST</b>	<b>EDDY</b>

Dedicated Acres	Joint or Infill	Consolidation Code	Order No
<b>160</b>			<b>13474 7/30</b>

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.



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 or has a right to drill this well at this 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.

*Stan Wagner* 4/4/12  
Signature Date

Stan Wagner  
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes and actual survey made by me or under my supervision and that the same is true and correct to the best of my belief.

15079  
JANUARY 17, 2012  
Date of Survey

Signature and Seal of  
Professional Surveyor

*Termy O. Abel* 2/23/2012  
Certificate Number 15079

WO# 120117WL-d (KA)

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED NO. 4H**

**1. GEOLOGIC NAME OF SURFACE FORMATION:**

Permian

**2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:**

Rustler	1,160'
Top of Salt	1,520'
Base of Salt	3,797'
Lamar	4,008'
Bell Canyon	4,032'
Cherry Canyon	4,952'
Brushy Canyon	6,197'
Bone Spring Lime	7,990'
TD	8,710'

**3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Upper Permian Sands	0- 400'	Fresh Water
Brushy Canyon	6,197'	Oil
Bone Spring Lime	7,990'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 13.375" casing at 1185' and circulating cement back to surface.

**4. CASING PROGRAM - NEW**

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF <sub>min</sub> Collapse	DF <sub>min</sub> Burst	DF <sub>min</sub> Tension
17.5"	0 – 1185'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
8.75"	0'-13,474'	5.500"	17#	P110 or HCP110	LTC	1.125	1.25	1.60

**EOG RESOURCES, INC.  
ROSS DRAW 8 FED NO. 4H**

**Cementing Program:**

Depth	No. Sacks	Wt. lb/gal	Yld Ft <sup>3</sup> /ft	Slurry Description
1185'	500	13.5	1.73	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl <sub>2</sub> + 0.25 lb/sk Cello-Flake (TOC @ surface)
	300	14.8	1.34	Tail: Class C + 0.005 pps Static Free + 2% CaCl <sub>2</sub> + 0.25 pps CelloFlake + 0.005 gps FP-6L
4,000'	600	12.7	2.22	Lead: Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free (TOC @ surface)
	200	14.8	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
13,474'	300	10.8	3.67	Lead: 60:40:0 Class 'C' + 15.00 lb/sk BA-90 + 4.00% MPA-5 + 3.00% SMS + 5.00% A-10 + 1.00% BA-10A + 0.80% ASA-301 + 2.90% R-21 + 8.00 lb/sk LCM-1 + 0.005 lb/sk Static Free (TOC @ 3500')
	225	11.8	2.38	Middle: 50:50:10 Class 'H' + 0.80% FL-52 + 0.45% ASA-301 + 0.40% SMS + 2.00% Salt + 3.00 lb/sx LCM-1 + 0.20% R-21 + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
	1300	14.2	1.28	Tail: 50:50:2 Class 'H' + 0.65% FL-52 + 0.20% CD-32 + 0.15% SMS + 2.00% Salt + 0.10% R-3 + 0.005 lb/sk Static Free

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

**5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:**

- Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).
- The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.
- 3000 psi BOPE is adequate for this application. Due to the 3000 psi BOPE requirement no FIT tests are planned.
- Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 3000/ 250 psig and the annular preventer to 2500/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.
- Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 3000/ 250 psig and the annular preventer to 2500/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED NO. 4H**

- Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.
- A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

**6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:**

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1185'	Fresh Water Gel	8.6-8.8	28-34	N/c
1185' – 4,000'	Saturated Brine	10.0-10.2	28-34	N/c
4,000' – 8,254'	Fresh Water	8.4-8.6	28-34	N/c
8,254' – 13,474' Lateral	Cut Brine Water	9.0-9.5	28-34	N/c

**7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:**

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- (C) H<sub>2</sub>S monitoring and detection equipment will be utilized from surface casing point to TD.

**8. LOGGING, TESTING AND CORING PROGRAM:** *See COA*

Open-hole logs are not planned for this well.

GR-CCL Will be run in cased hole during completions phase of operations.

**9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:**

The estimated bottom-hole temperature (BHT) at TD is 155 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3800 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED NO. 4H**

**10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:**

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

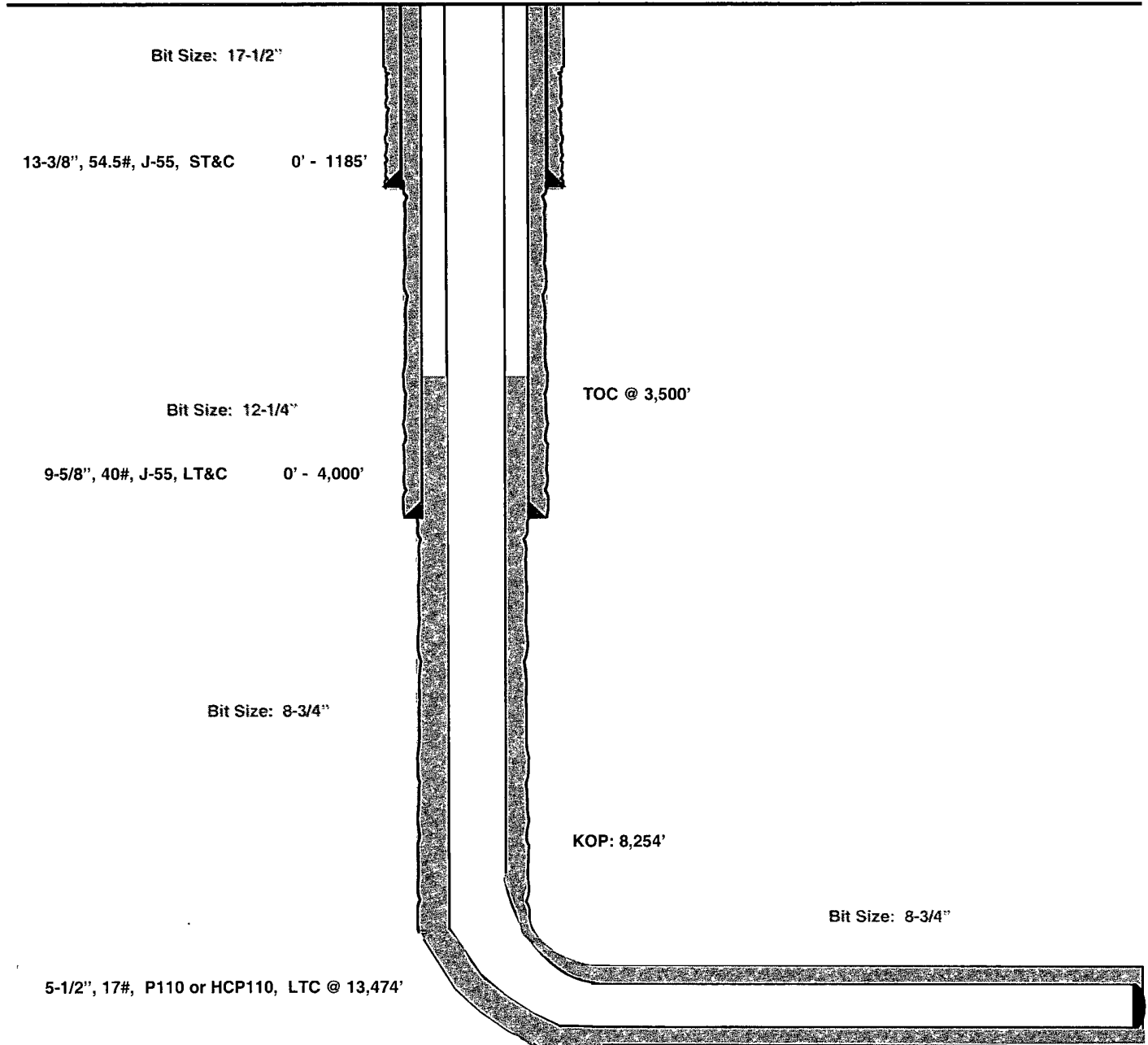
Ross Draw 8 Fed #4H  
Eddy County, New Mexico

330' FNL  
610' FWL  
Section 8  
T-26-S, R-31-E

Proposed Wellbore

API: 30-015-\*\*\*\*\*

KB: 3,308.4'  
GL: 3,278.4'



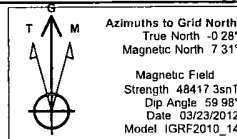
Lateral:  
13,474' MD, 8,671' TVD  
BH Location: 330' FSL & 940' FWL  
Section 8  
T-26-S, R-31-E



# EOG Resources

**Project: Eddy County, NM (Nad27)**  
**Site: Ross Draw 8 Fed**  
**Well: Ross Draw 8 Fed 4H**  
**Wellbore: Wellbore #1**  
**Plan: Plan#1 032312**  
**Rig: Cactus Rig No. 123**

**PROJECT DETAILS Eddy County, NM (Nad27)**  
 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  
 Location: North: Grid



## WELL DETAILS: Ross Draw 8 Fed 4H

Ground Level: 3278.40  
 Northing: 387290.90 Easting: 663199.30 Latitude: 32° 3' 49.2590 N Longitude: 103° 48' 23.4498 W

## WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
KOP Ross Draw 8 Fed 4H	8235.55	282.30	329.00	387573.20	663528.30	Point
BHL Ross Draw 8 Fed 4H	8671.03	-4664.70	343.90	382626.20	663543.20	Point

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2605.14	0.00	0.00	2605.14	0.00	0.00	0.00	0.00	0.00
2845.14	6.00	49.37	2844.71	8.18	9.53	2.50	49.37	-7.45
6722.23	6.00	49.37	6700.55	272.08	317.09	0.00	0.00	-248.03
7022.23	0.00	0.00	7000.00	282.30	329.00	2.00	180.00	-257.35
8254.78	0.00	0.00	8232.55	282.30	329.00	0.00	0.00	-257.35
9008.94	90.50	179.83	8710.00	-189.33	330.45	12.00	179.83	223.09
13474.51	90.50	179.83	8671.03	-4664.70	343.90	0.00	0.00	4677.36

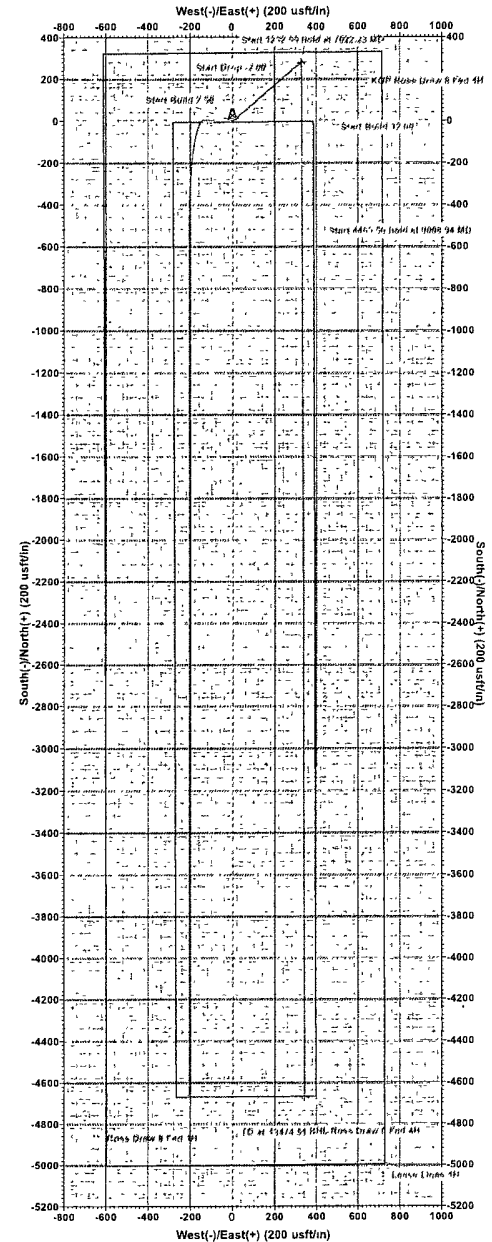
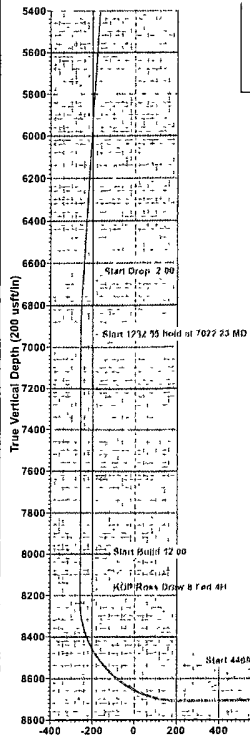
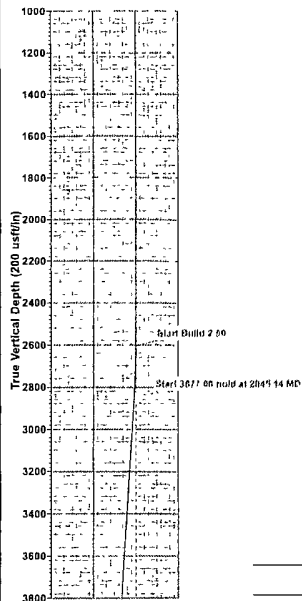
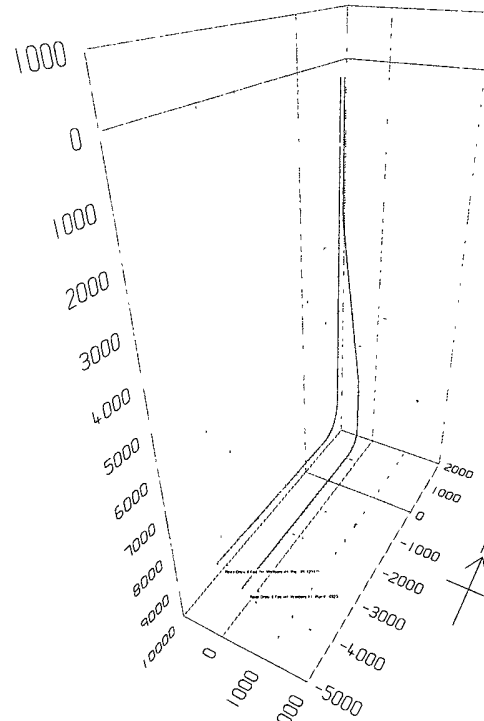
BHL Ross Draw 8 Fed 4H

## ANNOTATIONS

TVD	MD	Annotation
2605.14	2605.14	Start Build 2.50
2844.71	2845.14	Start 3877.08 hold at 2845.14 MD
6700.55	6722.23	Start Drop -2.00
7000.00	7022.23	Start 1232.55 hold at 7022.23 MD
8232.55	8254.78	Start Build 12.00
8710.00	9008.94	Start 4485.56 hold at 9008.94 MD
8671.03	13474.51	TD at 13474.51

## FORMATION TOP DETAILS

No formation data is available



# **EOG Resources**

**Eddy County, NM (Nad27)**

**Ross Draw 8 Fed**

**Ross Draw 8 Fed 4H**

**Wellbore #1**

**Plan: Plan#1 032312**

# **EOG Resources**

**26 March, 2012**



Phoenix Technology Services  
EOG Resources



<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 4H
<b>Project:</b>	Eddy County, NM (Nad27)	<b>TVD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Well:</b>	Ross Draw 8 Fed 4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 032312	<b>Database:</b>	GCR DB v5000

<b>Project:</b>	Eddy County, NM (Nad27)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site:</b>	Ross Draw 8 Fed		
<b>Site Position:</b>		<b>Northing:</b>	387,290.50 usft
<b>From:</b>	Map	<b>Easting:</b>	663,109.60 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	32° 3' 49.2593 N
		<b>Longitude:</b>	103° 48' 24.4920 W
		<b>Grid Convergence:</b>	0.28 °

<b>Well</b>	Ross Draw 8 Fed 4H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	387,290.90 usft	<b>Latitude:</b>	32° 3' 49.2590 N
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	663,199.30 usft	<b>Longitude:</b>	103° 48' 23.4496 W
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	3,278.40 usft

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	03/23/12	7.59	59.98	48,417

Design:	Plan#1 032312			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	175.78

<b>Survey Tool Program</b>	<b>Date</b>	03/26/12		
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
(usft)	(usft)			
0.00	13,474.48	Plan#1 032312 (Wellbore #1)	MWD	MWD - Standard

Phoenix Technology Services  
EOG Resources



Company:	EOG Resources	Local Co-ordinate Reference:	Well Ross Draw 8 Fed 4H
Project:	Eddy County, NM (Nad27)	TVD Reference:	WELL @ 3308.40usft (Original Well Elev)
Site:	Ross Draw 8 Fed	MD Reference:	WELL @ 3308.40usft (Original Well Elev)
Well:	Ross Draw 8 Fed 4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1 032312	Database:	GCR DB v5000

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
0.00	0.00	0.00	-3,308.40	0.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
100.00	0.00	0.00	-3,208.40	100.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
200.00	0.00	0.00	-3,108.40	200.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
300.00	0.00	0.00	-3,008.40	300.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
400.00	0.00	0.00	-2,908.40	400.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
500.00	0.00	0.00	-2,808.40	500.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
600.00	0.00	0.00	-2,708.40	600.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
700.00	0.00	0.00	-2,608.40	700.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
800.00	0.00	0.00	-2,508.40	800.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
900.00	0.00	0.00	-2,408.40	900.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,000.00	0.00	0.00	-2,308.40	1,000.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,100.00	0.00	0.00	-2,208.40	1,100.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,200.00	0.00	0.00	-2,108.40	1,200.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,300.00	0.00	0.00	-2,008.40	1,300.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,400.00	0.00	0.00	-1,908.40	1,400.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,500.00	0.00	0.00	-1,808.40	1,500.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,600.00	0.00	0.00	-1,708.40	1,600.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,700.00	0.00	0.00	-1,608.40	1,700.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,800.00	0.00	0.00	-1,508.40	1,800.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
1,900.00	0.00	0.00	-1,408.40	1,900.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
2,000.00	0.00	0.00	-1,308.40	2,000.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
2,100.00	0.00	0.00	-1,208.40	2,100.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
2,200.00	0.00	0.00	-1,108.40	2,200.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
2,300.00	0.00	0.00	-1,008.40	2,300.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
2,400.00	0.00	0.00	-908.40	2,400.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
2,500.00	0.00	0.00	-808.40	2,500.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		
2,600.00	0.00	0.00	-708.40	2,600.00	0.00	0.00	0.00	0.00	387,290.90	663,199.30		

Phoenix Technology Services  
EOG Resources



<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 4H
<b>Project:</b>	Eddy County, NM (Nad27)	<b>TVD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Well:</b>	Ross Draw 8 Fed 4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 032312	<b>Database:</b>	GCR DB v5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
2,605.14	0.00	0 00	-703.26	2,605.14	0.00	0.00	0.00	0.00	387,290.90	663,199.30	
<b>Start Build 2.50</b>											
2,700.00	2.37	49.37	-608.43	2,699.97	1.28	1.49	-1 17	2.50	387,292.18	663,200.79	
2,800.00	4.87	49.37	-508.63	2,799.77	5.39	6.28	-4 91	2.50	387,296.29	663,205.58	
2,845.14	6.00	49.37	-463.69	2,844.71	8.18	9.53	-7.45	2.50	387,299.08	663,208.83	
<b>Start 3877.08 hold at 2845.14 MD</b>											
2,900.00	6.00	49.37	-409.14	2,899.26	11.91	13.88	-10.86	0.00	387,302.81	663,213.18	
3,000.00	6.00	49.37	-309.69	2,998.71	18.72	21.81	-17.06	0.00	387,309.62	663,221.11	
3,100.00	6.00	49.37	-210.23	3,098.17	25.52	29.75	-23.27	0.00	387,316.42	663,229.05	
3,200.00	6.00	49.37	-110.78	3,197.62	32.33	37.68	-29.47	0.00	387,323.23	663,236.98	
3,300.00	6.00	49.37	-11.33	3,297.07	39.14	45.61	-35.68	0.00	387,330.04	663,244.91	
3,400.00	6.00	49.37	88.12	3,396.52	45.94	53.54	-41.88	0.00	387,336.84	663,252.84	
3,500.00	6.00	49.37	187.57	3,495.97	52.75	61.48	-48.09	0.00	387,343.65	663,260.78	
3,600.00	6.00	49.37	287.03	3,595.43	59.56	69.41	-54.29	0.00	387,350.46	663,268.71	
3,700.00	6.00	49.37	386.48	3,694.88	66.36	77.34	-60.50	0.00	387,357.26	663,276.64	
3,800.00	6.00	49.37	485.93	3,794.33	73.17	85.28	-66.70	0.00	387,364.07	663,284.58	
3,900.00	6.00	49.37	585.38	3,893.78	79.98	93.21	-72.91	0.00	387,370.88	663,292.51	
4,000.00	6.00	49.37	684.84	3,993.24	86.78	101.14	-79.11	0.00	387,377.68	663,300.44	
4,100.00	6.00	49.37	784.29	4,092.69	93.59	109.07	-85.32	0.00	387,384.49	663,308.37	
4,200.00	6.00	49.37	883.74	4,192.14	100.40	117.01	-91.52	0.00	387,391.30	663,316.31	
4,300.00	6.00	49.37	983.19	4,291.59	107.20	124.94	-97.73	0.00	387,398.10	663,324.24	
4,400.00	6.00	49.37	1,082.64	4,391.04	114.01	132.87	-103.93	0.00	387,404.91	663,332.17	
4,500.00	6.00	49.37	1,182.10	4,490.50	120.82	140.80	-110.14	0.00	387,411.72	663,340.10	
4,600.00	6.00	49.37	1,281.55	4,589.95	127.63	148.74	-116.34	0.00	387,418.53	663,348.04	
4,700.00	6.00	49.37	1,381.00	4,689.40	134.43	156.67	-122.55	0.00	387,425.33	663,355.97	
4,800.00	6.00	49.37	1,480.45	4,788.85	141.24	164.60	-128.75	0.00	387,432.14	663,363.90	
4,900.00	6.00	49.37	1,579.90	4,888.30	148.05	172.54	-134.96	0.00	387,438.95	663,371.84	

Phoenix Technology Services  
EOG Resources



<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 4H
<b>Project:</b>	Eddy County, NM (Nad27)	<b>TVD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Well:</b>	Ross Draw 8 Fed 4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 032312	<b>Database:</b>	GCR DB v5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	Northing (usft)	Easting (usft)	
5,000.00	6.00	49.37	1,679.36	4,987.76	154.85	180.47	-141.16	0.00	387,445.75	663,379.77	
5,100.00	6.00	49.37	1,778.81	5,087.21	161.66	188.40	-147.37	0.00	387,452.56	663,387.70	
5,200.00	6.00	49.37	1,878.26	5,186.66	168.47	196.33	-153.57	0.00	387,459.37	663,395.63	
5,300.00	6.00	49.37	1,977.71	5,286.11	175.27	204.27	-159.78	0.00	387,466.17	663,403.57	
5,400.00	6.00	49.37	2,077.17	5,385.57	182.08	212.20	-165.98	0.00	387,472.98	663,411.50	
5,500.00	6.00	49.37	2,176.62	5,485.02	188.89	220.13	-172.19	0.00	387,479.79	663,419.43	
5,600.00	6.00	49.37	2,276.07	5,584.47	195.69	228.07	-178.39	0.00	387,486.59	663,427.37	
5,700.00	6.00	49.37	2,375.52	5,683.92	202.50	236.00	-184.60	0.00	387,493.40	663,435.30	
5,800.00	6.00	49.37	2,474.97	5,783.37	209.31	243.93	-190.81	0.00	387,500.21	663,443.23	
5,900.00	6.00	49.37	2,574.43	5,882.83	216.11	251.86	-197.01	0.00	387,507.01	663,451.16	
6,000.00	6.00	49.37	2,673.88	5,982.28	222.92	259.80	-203.22	0.00	387,513.82	663,459.10	
6,100.00	6.00	49.37	2,773.33	6,081.73	229.73	267.73	-209.42	0.00	387,520.63	663,467.03	
6,200.00	6.00	49.37	2,872.78	6,181.18	236.53	275.66	-215.63	0.00	387,527.43	663,474.96	
6,300.00	6.00	49.37	2,972.24	6,280.64	243.34	283.60	-221.83	0.00	387,534.24	663,482.90	
6,400.00	6.00	49.37	3,071.69	6,380.09	250.15	291.53	-228.04	0.00	387,541.05	663,490.83	
6,500.00	6.00	49.37	3,171.14	6,479.54	256.95	299.46	-234.24	0.00	387,547.85	663,498.76	
6,600.00	6.00	49.37	3,270.59	6,578.99	263.76	307.39	-240.45	0.00	387,554.66	663,506.69	
6,700.00	6.00	49.37	3,370.04	6,678.44	270.57	315.33	-246.65	0.00	387,561.47	663,514.63	
6,722.23	6.00	49.37	3,392.15	6,700.55	272.08	317.09	-248.03	0.00	387,562.98	663,516.39	
<b>Start Drop -2.00</b>											
6,800.00	4.44	49.37	3,469.60	6,778.00	276.69	322.46	-252.23	2.00	387,567.59	663,521.76	
6,900.00	2.44	49.37	3,569.41	6,877.81	280.60	327.02	-255.80	2.00	387,571.50	663,526.32	
7,000.00	0.44	49.37	3,669.37	6,977.77	282.24	328.93	-257.30	2.00	387,573.14	663,528.23	
7,022.23	0.00	0.00	3,691.60	7,000.00	282.30	329.00	-257.35	2.00	387,573.20	663,528.30	
<b>Start 1232.55 hold at 7022.23 MD</b>											
7,100.00	0.00	0.00	3,769.37	7,077.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30	
7,200.00	0.00	0.00	3,869.37	7,177.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30	

Phoenix Technology Services  
EOG Resources



<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 4H
<b>Project:</b>	Eddy County, NM (Nad27)	<b>TVD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Well:</b>	Ross Draw 8 Fed 4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 032312	<b>Database:</b>	GCR DB v5000

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	Northing (usft)	Easting (usft)
7,300.00	0.00	0 00	3,969.37	7,277.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
7,400.00	0.00	0.00	4,069.37	7,377.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
7,500.00	0.00	0.00	4,169.37	7,477.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
7,600.00	0.00	0.00	4,269.37	7,577.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
7,700.00	0.00	0.00	4,369.37	7,677.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
7,800.00	0.00	0.00	4,469.37	7,777.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
7,900.00	0.00	0.00	4,569.37	7,877.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
8,000.00	0.00	0.00	4,669.37	7,977.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
8,100.00	0.00	0.00	4,769.37	8,077.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
8,200.00	0.00	0.00	4,869.37	8,177.77	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
8,254.78	0.00	0.00	4,924.15	8,232.55	282.30	329.00	-257.35	0.00	387,573.20	663,528.30
<b>Start Build 12.00</b>										
8,300.00	5.43	179.83	4,969.31	8,277.71	280.16	329.01	-255.21	12.00	387,571.06	663,528.31
8,400.00	17.43	179.83	5,067.15	8,375.55	260.38	329.07	-235.49	12.00	387,551.28	663,528.37
8,500.00	29.43	179.83	5,158.74	8,467.14	220.70	329.19	-195.90	12.00	387,511.60	663,528.49
8,600.00	41.43	179.83	5,240.07	8,548.47	162.84	329.36	-138.18	12.00	387,453.74	663,528.66
8,700.00	53.43	179.83	5,307.60	8,616.00	89.33	329.58	-64.86	12.00	387,380.23	663,528.88
8,800.00	65.43	179.83	5,358.37	8,666.77	3.39	329.84	20.87	12.00	387,294.29	663,529.14
8,900.00	77.43	179.83	5,390.17	8,698.57	-91.22	330.13	115.25	12.00	387,199.68	663,529.43
9,000.00	89.43	179.83	5,401.59	8,709.99	-190.39	330.42	214.16	12.00	387,100.51	663,529.72
9,008.94	90.50	179.83	5,401.60	8,710.00	-199.33	330.45	223.09	12.00	387,091.57	663,529.75
<b>Start 4465.56 hold at 9008.94 MD</b>										
9,100.00	90.50	179.83	5,400.80	8,709.20	-290.38	330.72	313.91	0.00	387,000.52	663,530.02
9,200.00	90.50	179.83	5,399.93	8,708.33	-390.38	331.03	413.66	0.00	386,900.52	663,530.33
9,300.00	90.50	179.83	5,399.06	8,707.46	-490.37	331.33	513.41	0.00	386,800.53	663,530.63
9,400.00	90.50	179.83	5,398.19	8,706.59	-590.37	331.63	613.15	0.00	386,700.53	663,530.93
9,500.00	90.50	179.83	5,397.31	8,705.71	-690.36	331.93	712.90	0.00	386,600.54	663,531.23

Phoenix Technology Services  
EOG Resources



<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 4H
<b>Project:</b>	Eddy County, NM (Nad27)	<b>TVD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Well:</b>	Ross Draw 8 Fed 4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 032312	<b>Database:</b>	GCR DB v5000

Planned Survey											
MD (usft)	Inc (°)	Azi:(azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
9,600.00	90.50	179.83	5,396.44	8,704.84	-790.36	332.23	812.65	0.00	386,500.54	663,531.53	
9,700.00	90.50	179.83	5,395.57	8,703.97	-890.36	332.53	912.39	0.00	386,400.54	663,531.83	
9,800.00	90.50	179.83	5,394.70	8,703.10	-990.35	332.83	1,012.14	0.00	386,300.55	663,532.13	
9,900.00	90.50	179.83	5,393.82	8,702.22	-1,090.35	333.13	1,111.89	0.00	386,200.55	663,532.43	
10,000.00	90.50	179.83	5,392.95	8,701.35	-1,190.34	333.44	1,211.64	0.00	386,100.56	663,532.74	
10,100.00	90.50	179.83	5,392.08	8,700.48	-1,290.34	333.74	1,311.38	0.00	386,000.56	663,533.04	
10,200.00	90.50	179.83	5,391.21	8,699.61	-1,390.33	334.04	1,411.13	0.00	385,900.57	663,533.34	
10,300.00	90.50	179.83	5,390.33	8,698.73	-1,490.33	334.34	1,510.88	0.00	385,800.57	663,533.64	
10,400.00	90.50	179.83	5,389.46	8,697.86	-1,590.33	334.64	1,610.63	0.00	385,700.57	663,533.94	
10,500.00	90.50	179.83	5,388.59	8,696.99	-1,690.32	334.94	1,710.37	0.00	385,600.58	663,534.24	
10,600.00	90.50	179.83	5,387.71	8,696.11	-1,790.32	335.24	1,810.12	0.00	385,500.58	663,534.54	
10,700.00	90.50	179.83	5,386.84	8,695.24	-1,890.31	335.54	1,909.87	0.00	385,400.59	663,534.84	
10,800.00	90.50	179.83	5,385.97	8,694.37	-1,990.31	335.84	2,009.61	0.00	385,300.59	663,535.14	
10,900.00	90.50	179.83	5,385.10	8,693.50	-2,090.30	336.15	2,109.36	0.00	385,200.60	663,535.45	
11,000.00	90.50	179.83	5,384.22	8,692.62	-2,190.30	336.45	2,209.11	0.00	385,100.60	663,535.75	
11,100.00	90.50	179.83	5,383.35	8,691.75	-2,290.30	336.75	2,308.86	0.00	385,000.60	663,536.05	
11,200.00	90.50	179.83	5,382.48	8,690.88	-2,390.29	337.05	2,408.60	0.00	384,900.61	663,536.35	
11,300.00	90.50	179.83	5,381.61	8,690.01	-2,490.29	337.35	2,508.35	0.00	384,800.61	663,536.65	
11,400.00	90.50	179.83	5,380.73	8,689.13	-2,590.28	337.65	2,608.10	0.00	384,700.62	663,536.95	
11,500.00	90.50	179.83	5,379.86	8,688.26	-2,690.28	337.95	2,707.85	0.00	384,600.62	663,537.25	
11,600.00	90.50	179.83	5,378.99	8,687.39	-2,790.27	338.25	2,807.59	0.00	384,500.63	663,537.55	
11,700.00	90.50	179.83	5,378.12	8,686.52	-2,890.27	338.56	2,907.34	0.00	384,400.63	663,537.86	
11,800.00	90.50	179.83	5,377.24	8,685.64	-2,990.27	338.86	3,007.09	0.00	384,300.63	663,538.16	
11,900.00	90.50	179.83	5,376.37	8,684.77	-3,090.26	339.16	3,106.83	0.00	384,200.64	663,538.46	
12,000.00	90.50	179.83	5,375.50	8,683.90	-3,190.26	339.46	3,206.58	0.00	384,100.64	663,538.76	
12,100.00	90.50	179.83	5,374.62	8,683.02	-3,290.25	339.76	3,306.33	0.00	384,000.65	663,539.06	
12,200.00	90.50	179.83	5,373.75	8,682.15	-3,390.25	340.06	3,406.08	0.00	383,900.65	663,539.36	



**Phoenix Technology Services**  
EOG Resources



<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 4H
<b>Project:</b>	Eddy County, NM (Nad27)	<b>TVD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.40usft (Original Well Elev)
<b>Well:</b>	Ross Draw 8 Fed 4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 032312	<b>Database:</b>	GCR DB v5000

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
12,300.00	90.50	179.83	5,372.88	8,681.28	-3,490.24	340.36	3,505.82	0.00	383,800.66	663,539.66	
12,400.00	90.50	179.83	5,372.01	8,680.41	-3,590.24	340.66	3,605.57	0.00	383,700.66	663,539.96	
12,500.00	90.50	179.83	5,371.13	8,679.53	-3,690.24	340.96	3,705.32	0.00	383,600.66	663,540.26	
12,600.00	90.50	179.83	5,370.26	8,678.66	-3,790.23	341.27	3,805.06	0.00	383,500.67	663,540.57	
12,700.00	90.50	179.83	5,369.39	8,677.79	-3,890.23	341.57	3,904.81	0.00	383,400.67	663,540.87	
12,800.00	90.50	179.83	5,368.52	8,676.92	-3,990.22	341.87	4,004.56	0.00	383,300.68	663,541.17	
12,900.00	90.50	179.83	5,367.64	8,676.04	-4,090.22	342.17	4,104.31	0.00	383,200.68	663,541.47	
13,000.00	90.50	179.83	5,366.77	8,675.17	-4,190.21	342.47	4,204.05	0.00	383,100.69	663,541.77	
13,100.00	90.50	179.83	5,365.90	8,674.30	-4,290.21	342.77	4,303.80	0.00	383,000.69	663,542.07	
13,200.00	90.50	179.83	5,365.03	8,673.43	-4,390.21	343.07	4,403.55	0.00	382,900.69	663,542.37	
13,300.00	90.50	179.83	5,364.15	8,672.55	-4,490.20	343.37	4,503.30	0.00	382,800.70	663,542.67	
13,400.00	90.50	179.83	5,363.28	8,671.68	-4,590.20	343.68	4,603.04	0.00	382,700.70	663,542.98	
13,474.51	90.50	179.83	5,362.63	8,671.03	-4,664.70	343.90	4,677.36	0.00	382,626.20	663,543.20	
TD at 13474.51											

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,605.14	2,605.14	0.00	0.00	Start Build 2.50	
2,845.14	2,844.71	8.18	9.53	Start 3877.08 hold at 2845.14 MD	
6,722.23	6,700.55	272.08	317.09	Start Drop -2.00	
7,022.23	7,000.00	282.30	329.00	Start 1232.55 hold at 7022.23 MD	
8,254.78	8,232.55	282.30	329.00	Start Build 12.00	
9,008.94	8,710.00	-199.33	330.45	Start 4465.56 hold at 9008.94 MD	
13,474.51	8,671.03	-4,664.70	343.90	TD at 13474.51	

Checked By: _____	Approved By: _____	Date: _____
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**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED 4H**

ATTACHMENT TO EXHIBIT #1

1. Wear ring to be properly installed in head.
2. Blow out preventer and all fittings must be in good condition, 5000 psi W.P. minimum. Exhibit #1.
3. All fittings to be flanged
4. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 5000 psi W.P. minimum.
5. All choke and fill lines to be securely anchored especially ends of choke lines.
6. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
7. Kelly cock on kelly.
8. Extension wrenches and hand wheels to be properly installed.
9. Blow out preventer control to be located as close to driller's position as feasible.
10. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.

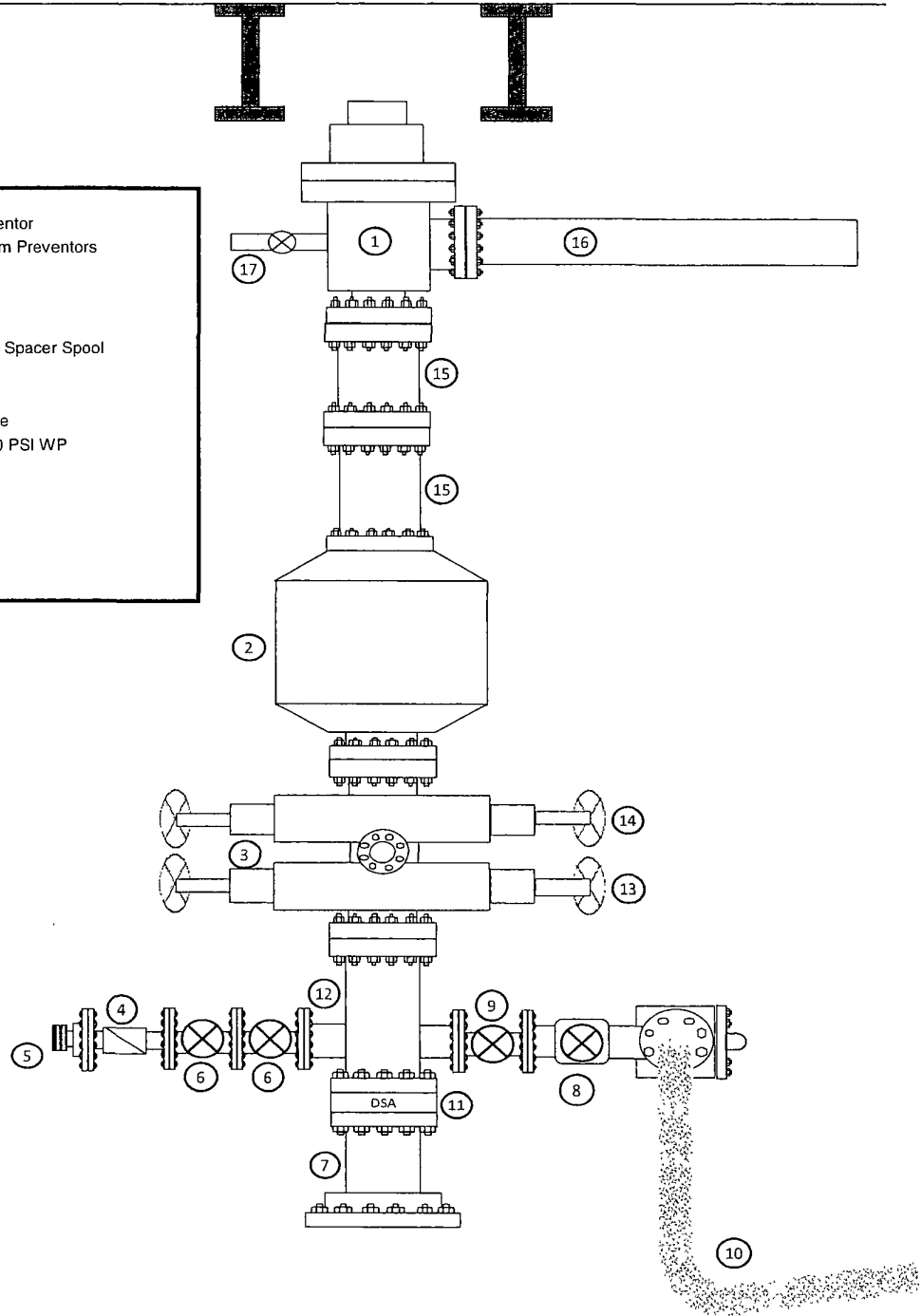
# EOG Resources

## 10M BOPE

### Exhibit #1

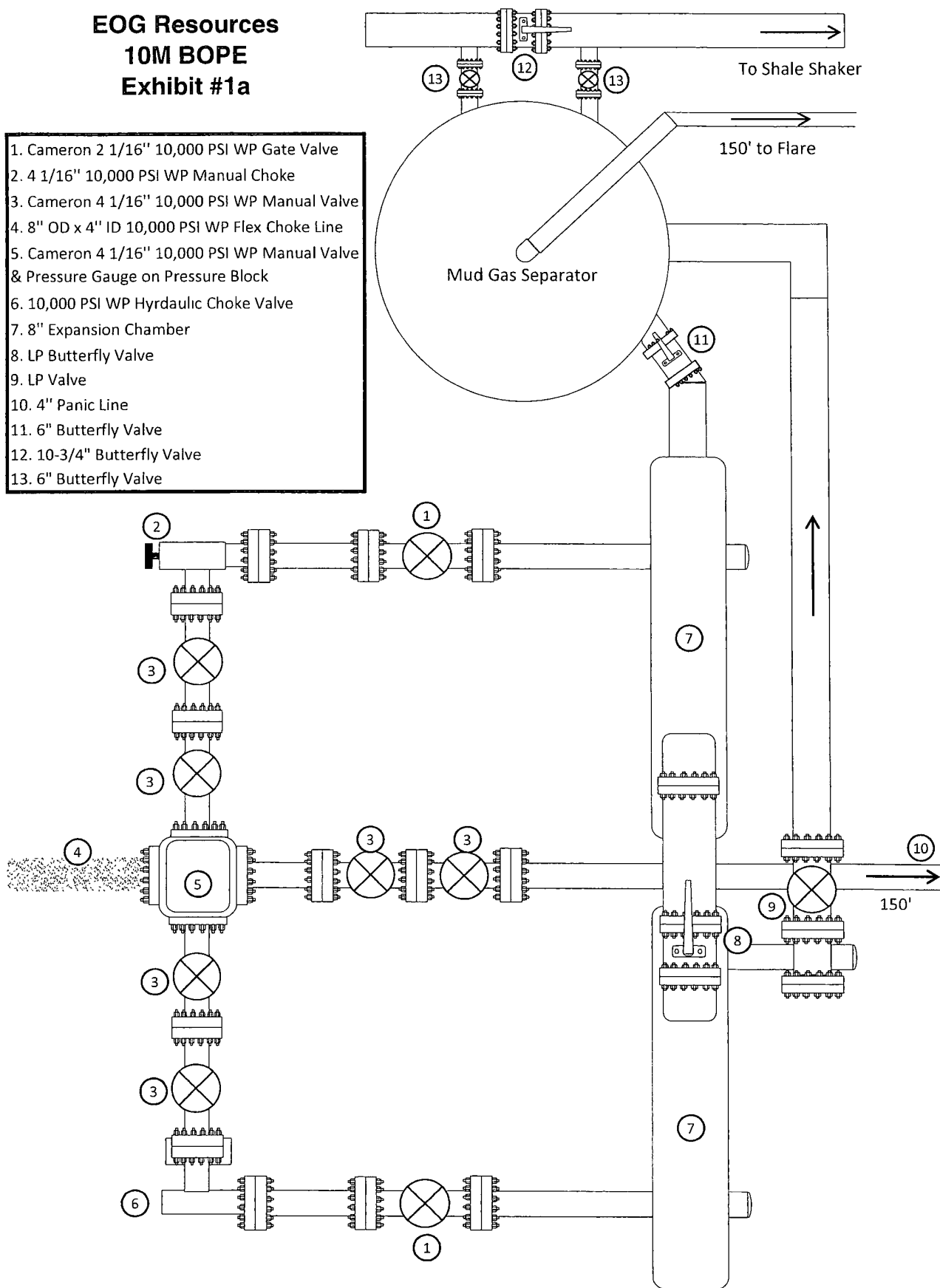
Rig Floor

- 1 13 5/8" Rotating Head
- 2 Hydrit 13 5/8" 5,000 PSI WP GK Annular Preventor
- 3 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors
- 4 2 1/16" - 10,000 PSI WP Check Valve
- 5 10,000 PSI WP - 1502 Union to kill line
- 6 2 1/16" - 10,000 PSI WP Manual Valves
- 7 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool
- 8 4 1/16" 10,000 PSI WP HCR Valve
- 9 4 1/16" 10,000 PSI WP Manual Valve
- 10 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
- 11 DSA - 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP
- 12 Mud Cross - 13 5/8" 10,000 PSI WP
- 13 Blind Rams
- 14 Pipe Rams
- 15 13 5/8" 5,000 PSI WP Spacer Spools
- 16 Flow Line
- 17 2" Fill Line



**EOG Resources  
10M BOPE  
Exhibit #1a**

1. Cameron 2 1/16" 10,000 PSI WP Gate Valve
2. 4 1/16" 10,000 PSI WP Manual Choke
3. Cameron 4 1/16" 10,000 PSI WP Manual Valve
4. 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
5. Cameron 4 1/16" 10,000 PSI WP Manual Valve & Pressure Gauge on Pressure Block
6. 10,000 PSI WP Hydraulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line
11. 6" Butterfly Valve
12. 10-3/4" Butterfly Valve
13. 6" Butterfly Valve



**Manufacturer: Midwest Hose & Specialty**

**Serial Number: SN#90067**

**Length: 35'**

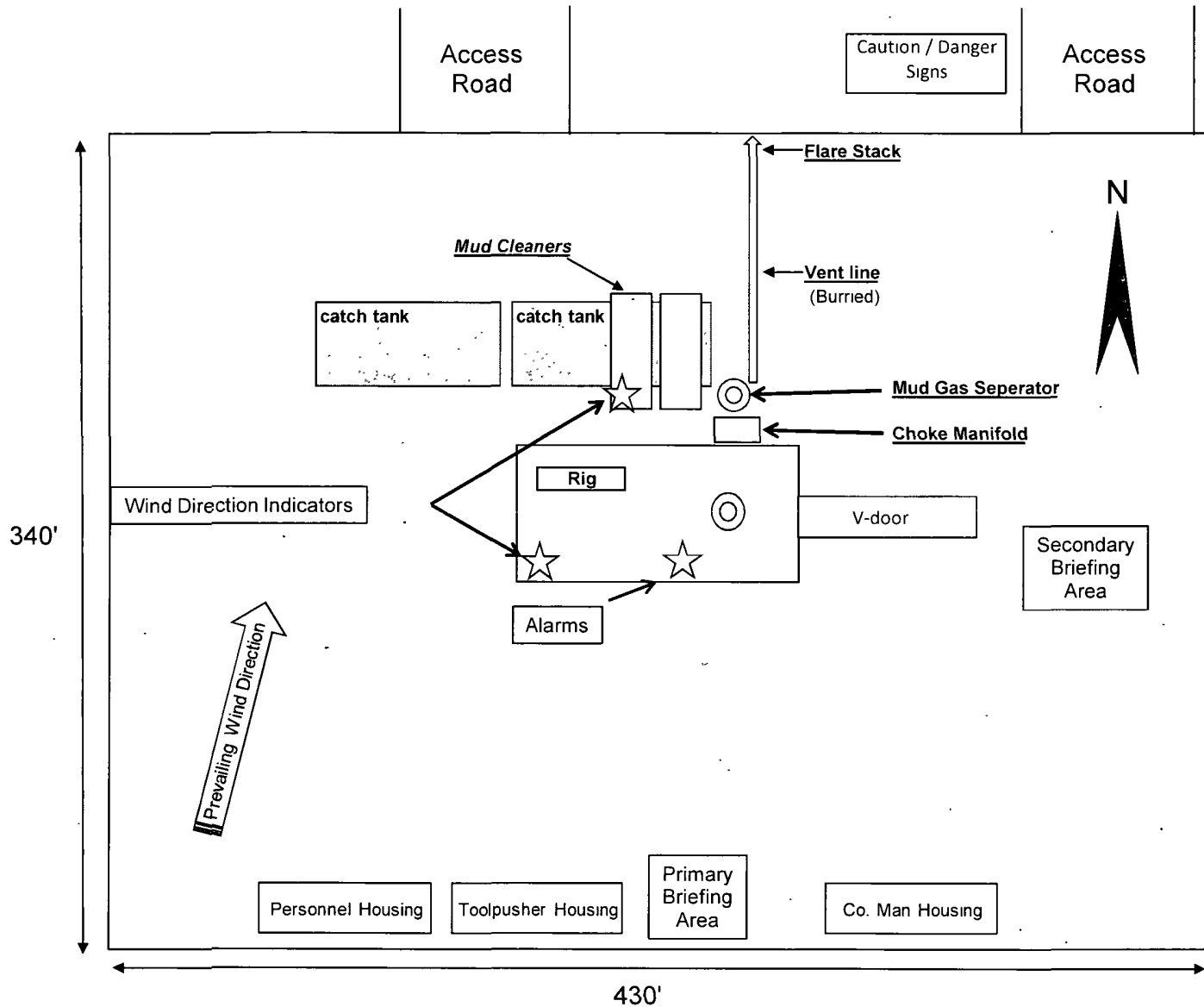
**Size: OD = 8" ID = 4"**

**Ends: Flanges Size: 4-1/16"**

**WP Rating: 10,000 psi    Anchors required by manufacturer: No**

**M I D W E S T**  
**HOSE AND SPECIALTY INC.**

<b>INTERNAL HYDROSTATIC TEST REPORT</b>			
<b>Customer:</b> CACTUS		<b>P.O. Number:</b> RIG #123 Asset # M10761	
<b>HOSE SPECIFICATIONS</b>			
<b>Type:</b> CHOKER LINE		<b>Length:</b> 35'	
<b>I.D.</b> 4" INCHES		<b>O.D.</b> 8" INCHES	
<b>WORKING PRESSURE</b> 10,000 PSI	<b>TEST PRESSURE</b> 15,000 PSI		<b>BURST PRESSURE</b> PSI
<b>COUPLINGS</b>			
<b>Type of End Fitting</b> 4 1/16 10K FLANGE			
<b>Type of Coupling:</b> SWEDGED		<b>MANUFACTURED BY</b> MIDWEST HOSE & SPECIALTY	
<b>PROCEDURE</b>			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
<b>TIME HELD AT TEST PRESSURE</b> 1 MIN.		<b>ACTUAL BURST PRESSURE:</b> 0 PSI	
<b>COMMENTS:</b> SN#90067 M10761 Hose is covered with stainless steel armour cover and wrapped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes			
<b>Date:</b> 6/6/2011	<b>Tested By:</b> BOBBY FINK		<b>Approved:</b> MENDI JACKSON



EOG Resources  
Ross Draw 8 Fed #4H

Well Site Diagram

# EOG Resources, Inc.

Legal's:

Ross Draw 8 Fed No. 4H

Eddy Co. New Mexico

330' FNL & 610' FWL Surface Location

330' FSL & 940' FWL Bottom Hole Location

Section 8

Section 8

T-26-S, R-31-E

T-26-S, R-31-E

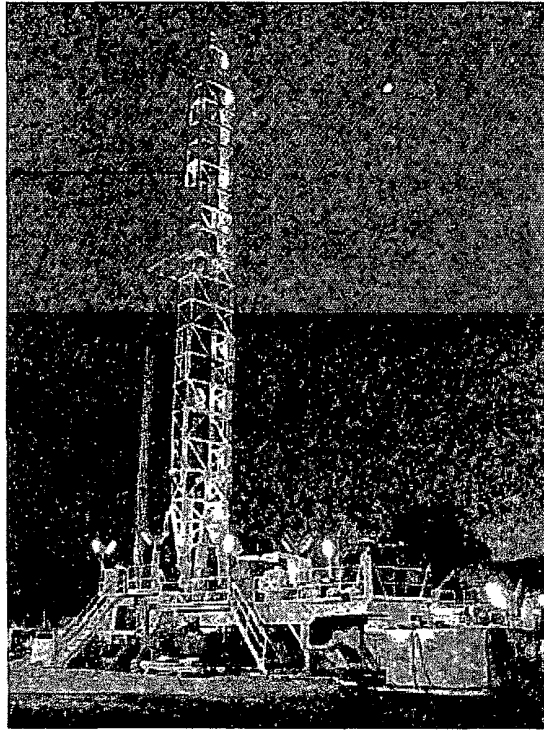
Lat: N 32.0636831

Lat: N 32.0508555

Long: W 103.8065139

Long: W 103.8054773

## H<sub>2</sub>S "Contingency Plan"



Safety Solutions, LLC  
3222 Commercial Dr.

(432) 686-8555  
Midland, TX 79701



## **Procedural Check List**

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to insure that they have not been tampered with.
3. Check pressure on the supply air bottles to make sure they are capable of recharging.
4. Make sure all of the Hydrogen Sulfide detection systems are operative.

Perform the following each week:

1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.
2. BOP skills.
3. Check supply pressure on BOP accumulator stand-by source.
4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready for use.
5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
6. Check all cascade system regulators to make sure they work properly.
7. Perform breathing drills with on-site personnel.
8. Check the following supplies for availability:
  - Stretcher
  - Safety Belts and Ropes
  - Spare air Bottles
  - Spare Oxygen Bottles (if resuscitator required)
  - Gas Detector Pump and Tubes
  - Emergency telephone lists
9. Test the Confined Space Monitor to verify the batteries are good

## BRIEFING PROCEDURES

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

### Pre-Spud Meeting

Date: Prior to spudding the well.

Attendance:   Drilling Supervisor  
                  Drilling Engineer  
                  Drilling Foreman  
                  Rig Tool Pushers  
                  Rig Drillers  
                  Mud Engineer  
                  All Safety Personnel  
                  Key Service Company Personnel

Purpose:       Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

# **EVACUATION PLAN**

## **General Plan**

The direct lines of action prepared by SAFETY SOLUTIONS, LLC to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foreman, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the area map.
2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation needs to be implemented.
3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.
4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

## **See Emergency Action Plan**

## Emergency Assistance Telephone List

### **PUBLIC SAFETY:** **911 or**

Eddy County Sheriff's Department	(575) 887-7551
Kent Waller	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174

### **EOG Resources, Inc.**

EOG / Midland	Office	(432) 686-3600
<b>Company Drilling Consultants:</b>		
Pearl Turner Tommy Turner	Cell	(432) 894-3416

### **Drilling Engineer**

Steve Munsell	Office	(432) 686-3609
	Cell	(432) 894-1256

### **Operations Manager**

Travis Lain	Office	(432) 686-3740
	Cell	(432) 254-3521

### **Drilling Superintendent**

Barney Thompson	Office	(432) 686-3678
	Cell	(432) 254-9056

### **Field Drilling Superintendent**

Ron Welch	Cell	(432) 386-0592
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### **McVay Drilling**

Cactus Drilling	Office	(580) 799-2752
Cactus Drilling Rig #123	Rig	(432) 894-3417

### **Tool Pusher:**

Jackie Herndon	Cell	(580) 799-2752
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### **Safety Consultants**

Safety Solutions, LLC	Office	(432) 686-8555
Cliff Strasner	Cell	(432) 894-9789
Craig Strasner	Cell	(432) 894-0341

## Toxic Effects of H<sub>2</sub>S 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 gases are compared below in Table 1. Toxicity table for H<sub>2</sub>S and physical effects are shown in Table 2.

Table 1  
Permissible Exposure Limits of Various Gases

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H <sub>2</sub> S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO <sub>2</sub>	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO <sub>2</sub>	1.52	5000 ppm	30,000 ppm	
Methane	CH <sub>4</sub>	.55	4.7% LEL	14% UEL	

## Definitions

- A. TLV – Threshold Limit Value is the concentration employees may be exposed 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 H<sub>2</sub>S 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 H<sub>2</sub>S 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 based on an TWA.

**TABLE 2**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 <b>a few minutes</b> .
.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 gases 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. In fact that makes this 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.

## RESPIRATOR USE

The Occupational Safety and Health Administration (OSHA) regulate the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete a OSHA mandated medical evaluation questionnaire. The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gases.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone that may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

- A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H<sub>2</sub>S.
- B. When breaking out any line where H<sub>2</sub>S can reasonably be expected.
- C. When sampling air in areas where H<sub>2</sub>S may be present.
- D. When working in areas where the concentration of H<sub>2</sub>S exceeds the Threshold Limit Value for H<sub>2</sub>S (10 ppm).
- E. At any time where there is a doubt as to the H<sub>2</sub>S level in the area to be entered.



## **EMERGENCY RESCUE PROCEDURES**

***DO NOT PANIC!!!***

**Remain Calm – Think**

1. Before attempting any rescue you must first get out of the hazardous area yourself. Go to a safe briefing area.
2. Sound alarm and activate the 911 system.
3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.
4. Rescue the victim and return them to a safe briefing area.
5. Perform an initial assessment and begin proper First Aid/CPR procedures.
6. Keep victim lying down with a blanket or coat, etc., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.
7. If the eyes are affected by H<sub>2</sub>S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.
8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.
9. Any personnel overcome by H<sub>2</sub>S should always be examined by medical personnel. They should always be transported to a hospital or doctor.

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG Resources
LEASE NO.:	NM0438001
WELL NAME & NO.:	4H Ross Draw 8 Fed
SURFACE HOLE FOOTAGE:	330' FNL & 610' FWL
BOTTOM HOLE FOOTAGE:	330' FSL & 940' FL
LOCATION:	Section 8, T.26 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

### TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Berm Well Pad
  - Pipeline Requirement
  - Phantom Banks SMA Requirements
- ☒ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - Waste Material and Fluids
  - Logging Requirements
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**