

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

Form 3160-3  
(August 1999)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

JUN 27 2005

FORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator *Undes. Collins Ranch; Wolfcamp*  
EOG Resources, Inc. *7377* *JNE*

3a. Address  
P.O. Box 2267 Midland, TX 79702

3b. Phone No. (include area code)  
(432) 686-3714

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

At surface *1680* 150' FEL & 1880' FSL (U/L I)

At proposed prod. Zone 660' FWL & 1880' FSL (U/L L)

**SUBJECT TO LIKE APPROVAL BY STATE**

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

4 Mi. SW from Artesia NM

12. County or Parish

Eddy

13. State

NM

15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. Unit line, if any)

150

16. No. of Acres in lease  
1,360

17. Spacing Unit dedicated to this well  
320 ac. S/2 Sec.13

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18. Distance from proposed location\*  
to nearest well, drilling, completed  
applied for, on this lease, ft.

na

19. Proposed Depth  
TVD 5200  
TMD 9702

20. BLM/BIA Bond No. on file  
NM2308

JUN 27 2005

OOD-ARTECIA

21. Elevations (Show whether DF, KDB, RT, GL, etc)  
Gr 3666

22. Approximate date work will start\*  
6/15/2005

23. Estimated duration  
30 days

24. Attachments

The following completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall 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 shall 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 authorized officer.

25. Signature

Title Agent

Name (Printed/Typed)

Mike Francis

Date

4/7/2005

Approved by (Signature)

Title

FIELD MANAGER

Name (Printed/Typed)

Office

CARLSBAD FIELD OFFICE

Date

JUN 23 2005

Application approval does not warrant or certify 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 1 YEAR

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 reverse)

Keenwell Controlled Water Basin

WITNESS *9 5/8"* SURFACE CSE CEMENT JOB

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED

French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-144  
March 12, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.  
For downstream facilities, submit to Santa Fe office

**Pit or Below-Grade Tank Registration or Closure**

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: EOG Resources, Inc. Telephone: 432 686-3714 e-mail address: mike.francis@eogresources.com  
Address: P.O. Box 2267 Midland Texas 79702  
Facility or well name: Rhine 13 Fed No 1 API #: 30-015-34184 U/L or Qtr/Qtr I Sec 13 T 17 R 24  
County: Eddy Latitude 32.83350 Longitude 104.53341 NAD: 1927 ☒ 1983 ☐ Surface Owner Federal ☐ State ☐ Private ☐ Indian ☐

**Pit**

Type: Drilling ☒ Production ☐ Disposal ☐

Workover ☐ Emergency ☐

Lined ☒ Unlined ☐

Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Volume

Zero bbl

**Below-grade tank**

Volume: \_\_\_\_\_ bbl Type of fluid: \_\_\_\_\_

Construction material: \_\_\_\_\_

Double-walled, with leak detection? Yes ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)

Less than 50 feet

(20 points)

50 feet or more, but less than 100 feet

(10 points)

100 feet or more

( 0 points)

Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)

Yes

(20 points)

No

( 0 points)

Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)

Less than 200 feet

(20 points)

200 feet or more, but less than 1000 feet

(10 points)

1000 feet or more

( 0 points)

Ranking Score (Total Points)

0

**If this is a pit closure:** (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location:

onsite ☐ offsite ☐ If offsite, name of facility \_\_\_\_\_

(3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface \_\_\_\_\_ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: 5/6/05

Printed Name/Title Mike Francis Agent

Signature Mike Francis

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approved MAY 12 2005

Date: \_\_\_\_\_

Printed Name/Title Wild Dog ID

Signature [Signature]

French Dr., Hobbs, NM 88240

Energy, Minerals, and Natural Resources Department

Revised August 15, 2000

**DISTRICT II**

1301 W. Grand Avenue, Artesia, NM 88210

**OIL CONSERVATION DIVISION**

Submit to Appropriate District Office

State Lease - 4 copies

Fee Lease - 3 copies

**DISTRICT III**

1000 Rio Brazos Rd., Aztec, NM 87410

1220 South St. Francis Dr.

Santa Fe, New Mexico 87505

**DISTRICT IV**

1220 S. St. Francis Dr., Santa Fe, NM 87505

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number	<sup>2</sup> Pool Code	<sup>3</sup> Pool Name Wildcat
<sup>4</sup> Property Code	<sup>5</sup> Property Name RHINE "13" FED	<sup>6</sup> Well Number 1H
<sup>7</sup> OGRID No. 7377	<sup>8</sup> Operator Name EOG RESOURCES, INC.	<sup>9</sup> Elevation 3666'

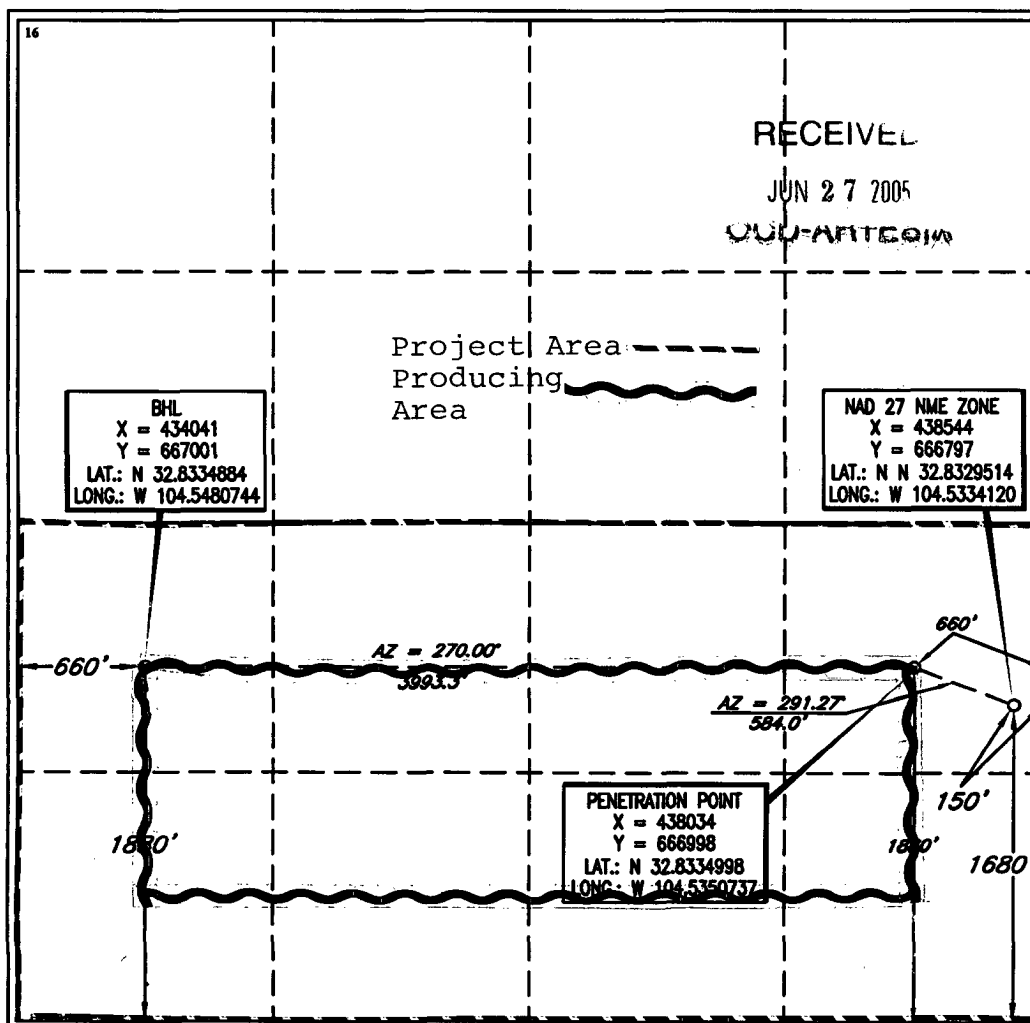
<sup>10</sup> Surface Location

UL or lot no. I	Section 13	Township 17 SOUTH	Range 24 EAST, N.M.P.M.	Lot Idn	Feet from the 1680'	North/South line SOUTH	Feet from the 150'	East/West line EAST	County EDDY
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no. L	Section 13	Township 17 SOUTH	Range 24 EAST, N.M.P.M.	Lot Idn	Feet from the 1680'	North/South line SOUTH	Feet from the 660'	East/West line WEST	County EDDY
<sup>12</sup> Dedicated Acres 320	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.						

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

**17 OPERATOR CERTIFICATION**

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

*Mike Francis*  
Signature

Mike Francis  
Printed Name

Agent  
Title

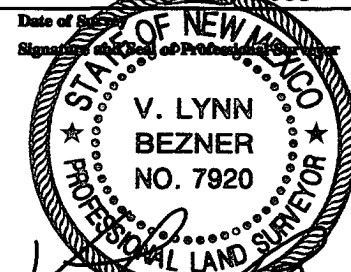
6/22/2005  
Date

**18 SURVEYOR CERTIFICATION**

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

MARCH 2005

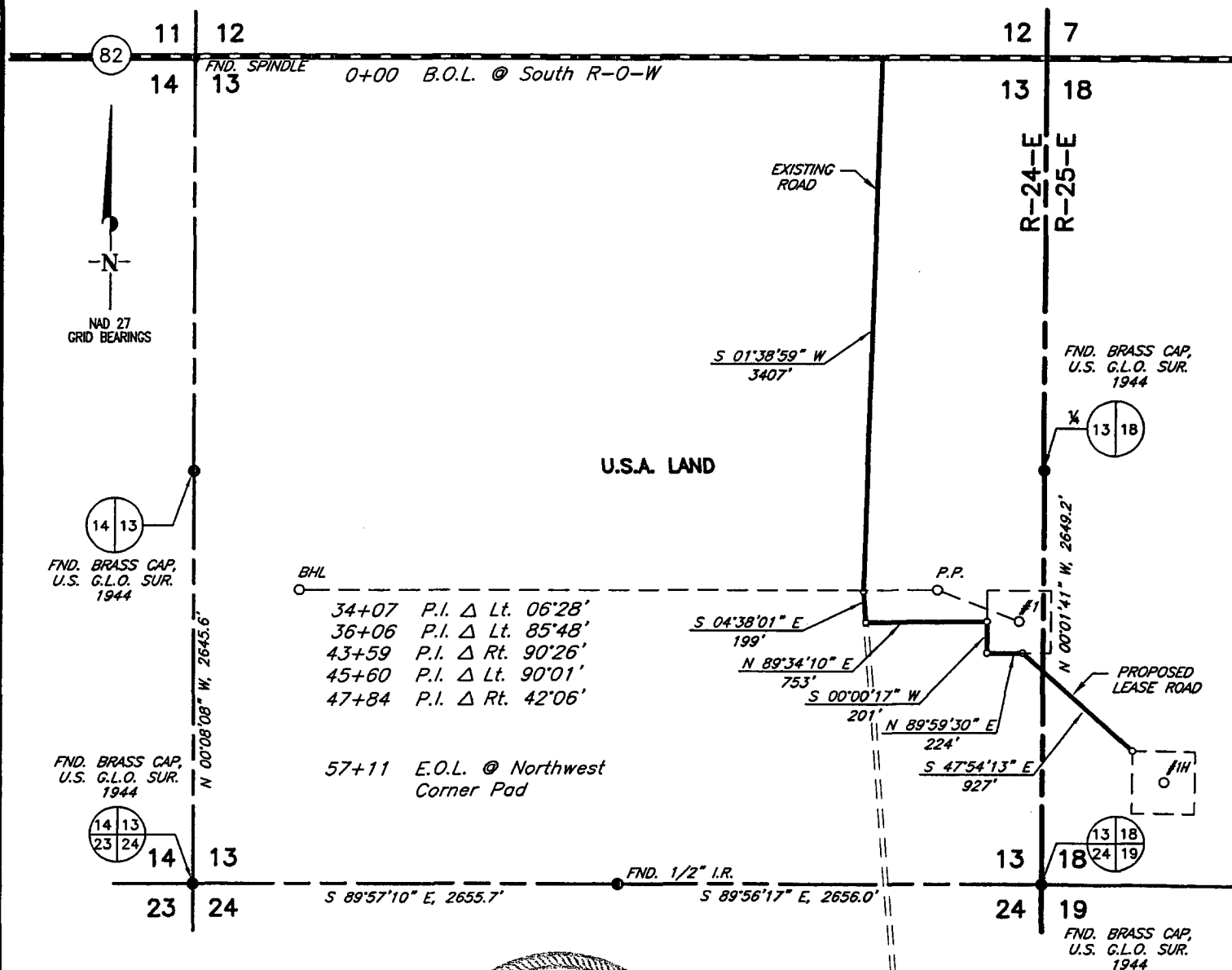
Date of Survey  
Signature of Professional Surveyor



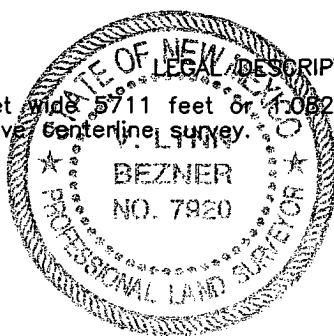
*V. Lynn Bezner*  
Certificate Number  
V. L. BEZNER R.P.S. #7920

JOB # 101799 / 101 SE / E.U.O.

SECTION 13, TOWNSHIP 17 SOUTH, RANGE 24 EAST, N.M.P.M.,  
EDDY COUNTY NEW MEXICO



A strip of land 30.0 feet wide 5711 feet or 1.082 miles in length and being 15.0 feet Left and 15.0 feet Right of the above Centerline survey.



I HEREBY CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

V. Lynn Bezner

				<b>EOG RESOURCES, INC.</b>	SCALE: 1" = 1000'
					DATE: MARCH 8, 2005
NO.	REVISION	DATE	BY		JOB NO.: 101799-RD
SURVEYED BY: J.T.					QUAD NO.: 101SE
DRAWN BY: E.U.O.					
APPROVED BY: V.L.B.					
				<i>SURVEYING AND MAPPING BY</i>	
				<b>TOPOGRAPHIC LAND SURVEYORS</b>	
				<i>MIDLAND, TEXAS</i>	SHEET : 1 OF 1

## DRILLING PROGRAM

EOG RESOURCES, INC.  
Rhine 13 Fed No. 1H  
Eddy Co. NM

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SEP 13 AM 9:19

300-221-1100  
FLOCELE

### 1. GEOLOGIC NAME OF SURFACE FORMATION:

Quaternary Alluvium 0-200

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

San Andres	665'
Glorieta	2,035'
Tubb	3,326'
Abo Shale	4,015'
Wolfcamp Pay	5,065'

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

Quaternary Alluvium	0- 200'	Fresh Water
San Andres	665'	Oil
Glorieta	2,035'	Oil/Gas
Tubb	3,326'	Oil/Gas
Abo/Wolfcamp Pay	5,065'	Gas

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 9 5/8" casing at 900' and circulating cement back to surface.

### 4. CASING PROGRAM

Hole Size	Interval	OD Casing	Weight	Grade	Jt. Conn.	Type
12-1/4"	0-900'	9-5/8"	40#	J-55		LT&C
8-3/4"	0-5100'	7"	23#	J-55		LT&C
6-1/8"	0-8500'	4-1/2"	11.6#	P-110		BT&C

#### Cementing Program:

9-5/8" Surface Casing: Cement to surface with 150 sx Prem Plus, 3% Econolite, 2% Calcium Chloride, 0.25#/sx Flocele; 175 sx Prem Plus, 2% Calcium Chloride, 0.25#/sx Flocele

7" Intermediate: Cement to surface with 300 sx Interfill C, .25#/sx flocele; 300 sx Premium Plus, 1% Calcium Chloride

4-1/2" Production Cement w/350sx Interfill C, + .25#/sx Flocele; 250 sx premium Cement, 100% Acid soluble Additive, .6% Halad-344 + .8% Econolite + .2% HR-55. .

### 5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

## DRILLING PROGRAM

EOG RESOURCES, INC.  
Rhine 13 Fed No. 1H  
Eddy Co. NM

(SEE EXHIBIT #1)

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (5000 psi WP) preventer and an annular preventer (5000-psi WP). Units will be hydraulically operated and the ram-type will be equipped with blind rams on top and drill pipe rams on bottom. All BOP's and accessory equipment will be tested in accordance with Onshore Oil & Gas order No. 2. EOG request authorization to use a 2M system, providing for an annular preventer to be used prior to drilling the surface casing shoe before drilling out of surface casing. Before drilling out of 1st intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/~~1000~~ psi and the annular to 3500/~~5000~~ psig pressure. <sup>5000</sup><sub>1000</sub>

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.

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

The well will be drilled to TD with a combination of brine, cut brine, and polymer mud system. The applicable depths and properties of this system are as follows:

Depth	Type	Wt	ViscositWaterloss	
		(PPG)	(sec)	(cc)
0-900'	Fresh Water (Spud Mud)	8.6-8.8	28-34	N/c
900'-4400'	Cut Brine	8.8-9.2	28-34	N/c
4,400'-5,100'	Cut Brine	8.8-9.2	28-34	10-15
4,400'-8,500'	Polymer (Lateral)	9.0-9.4	40-45	10-25

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

### 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) A mud logging unit complete with H2S detector will be continuously monitoring drilling penetration rate and hydrocarbon shows from 5000' to TD.

## **DRILLING PROGRAM**

**EOG RESOURCES, INC.**

**Rhine 13 Fed No. 1H**

**Eddy Co. NM**

### **8. LOGGING, TESTING AND CORING PROGRAM:**

Electric logging will consist of GR-Dual Laterlog-MSFL and GR-Compensated Density-Neutron from TD to intermediate casing with a GR- Compensated Neutron ran from Intermediate casing to surface..

Possible sidewall cores based on shows.

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

The estimated bottom hole temperature (BHT) at TD is 125 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 5000 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.

### **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 30-60 days will be required for completion and testing before a decision is made to install permanent facilities.

## **DRILLING PROGRAM**

**EOG RESOURCES, INC.**  
**Rhine 13 Fed No. 1H**  
**Eddy Co. NM**

## **SURFACE USE AND OPERATIONS PLAN**

### **1. EXISTING ROADS:**

Access to location will be made as shown on Exhibit #2

Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

### **2. PROPOSED ACCESS ROAD:**

Upgraded existing Ranch Road, build 2489' of new road. See Exhibit 2

No turnouts necessary.

No culverts, cattleguards, gates, low-water crossings are necessary.

Surfacing material consists of native caliche to be obtained from the nearest BLM-approved caliche pit. Any additional materials required will be purchased from the dirt contractor.

### **3. LOCATION OF EXISTING WELLS:**

Exhibit #3 shows all existing wells within a one-mile radius of this well.

### **4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:**

There are no existing production facilities. If production is encountered, a temporary facility will be established on the drill pad, and if warranted, a production facility would be built at a later date in the immediate area of the drill pad location. If the well is productive, the flowline would also be located on the drill-pad site and no additional disturbance will occur.

### **5. LOCATION AND TYPE OF WATER SUPPLY:**

Fresh water and brine water for drilling will come from commercial sources and transported to the well site over the roads as shown on Exhibit #2.

### **6. PLANS FOR RESTORATION OF THE SURFACE:**



## **DRILLING PROGRAM**

**EOG RESOURCES, INC.**

**Rhine 13 Fed No. 1H**

**Eddy Co. NM**

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

Any unguarded pits containing fluid will be fenced until they are dry and back filled.

After abandonment of the well, surface restoration will be in accordance with current federal laws and regulations. Location will be cleaned, and the well pad removed to promote vegetation and disposal of human waste will be complied with. Trash, waste paper, garbage and junk will be hauled to an approved disposal site in an enclosed trash trailer.

All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

### **ANCILLARY FACILITIES:**

No airstrip, campsite, or other facilities will be built.

### **WELL SITE LAYOUT:**

Exhibit #4 shows the relative location and dimensions of the well pad.

**DRILLING PROGRAM**

**EOG RESOURCES, INC.**

**Rhine 13 Fed No. 1H**

**Eddy Co. NM**

**OTHER INFORMATION:**

The area around the well site is grassland and the topsoil is and sandy. The vegetation is native scrub grasses .

**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 performed by EOG Resources, Inc. and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

  
\_\_\_\_\_  
Jason LaSirega  
Division Drilling Engineer

DATE 4/12/2005

**DRILLING PROGRAM**

**EOG RESOURCES, INC.**

**Rhine 13 Fed No. 1H**

**Eddy Co. NM**

**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, Inc.

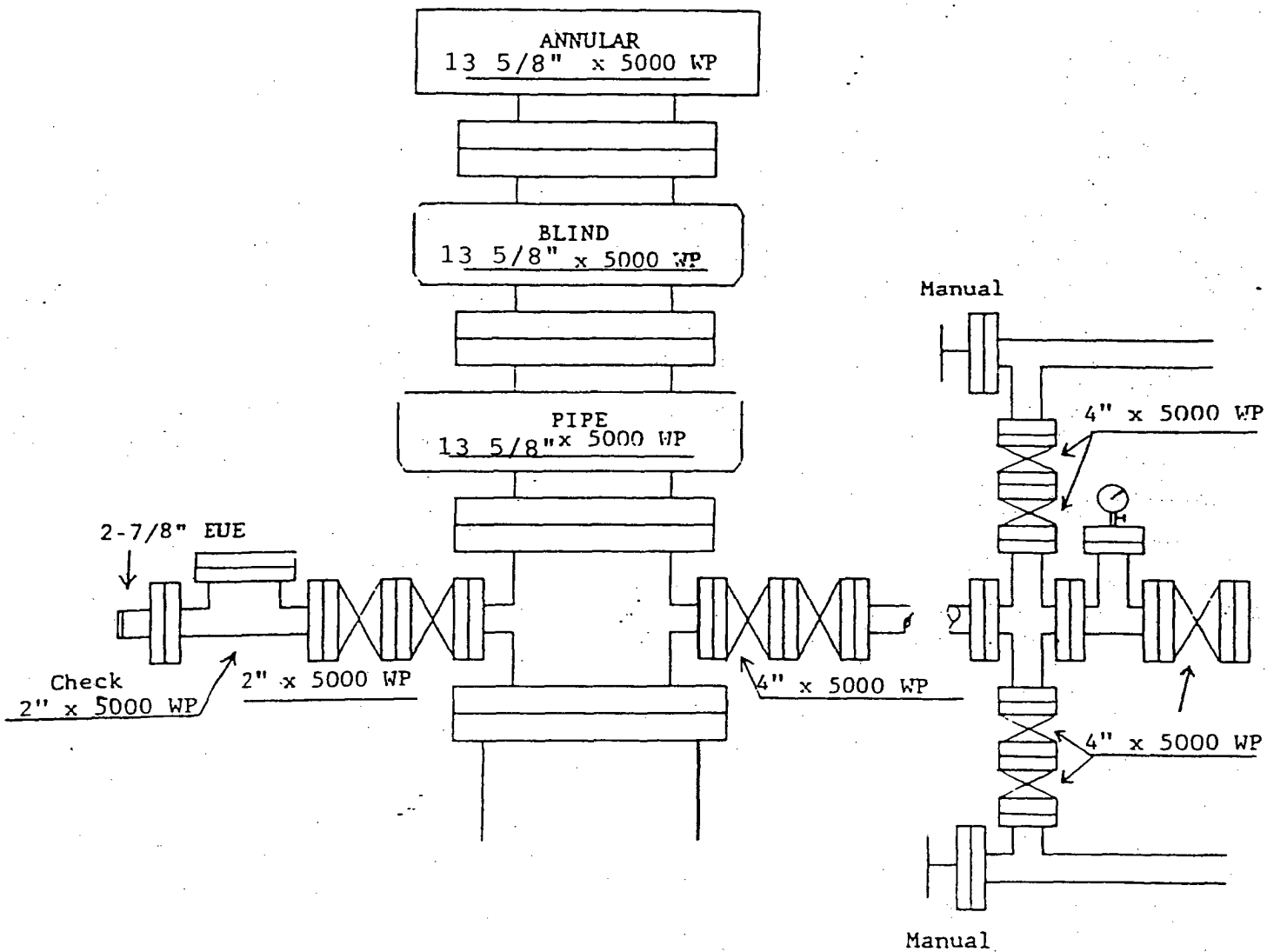


Exhibit 1



**Statement Accepting Responsibility For Operations**

**Operator Name:** EOG Resources, Inc.  
**Street or Box:** P.O. Box 2267  
**City, State:** Midland, TX  
**Zip Code:** 79702

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

**Lease No.:** NM NM 108958

**Legal Description of Land:** S/2 Sec. 13 T-17-S; R-24-E  
Eddy Co. NM **Formation(s) (if applicable):**

**Bond Coverage:** *(State if individually bonded or another's bond)* Individually

**BLM Bond File No.:** NM2308 with endorsement to State of NM

**Authorized Signature:**

  
Mike Francis

**Title:** Agent

**Date** 4/12/2005



**EOG Resources, Inc.**  
P.O. Box 2267  
Midland, TX 79702  
(432) 686-3600

June 1, 2005

State of New Mexico Energy, Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

**RECEIVED**

**JUN 27 2005**

**OCD-ARTS/14**

To Whom It May Concern:

I am writing to request a waiver for the inclusion of an H<sub>2</sub>S Contingency Plan for the Rhine 13 Fed #1H. The current plan is to complete this well in the Wolfcamp, which is sweet and I do not anticipate encountering any H<sub>2</sub>S bearing formations during drilling operations.

Sincerely,



Jason LaGrega  
Drilling Engineer

**Permit Information:**

Well Name: Rhine 13 Fed #1H

**Location:**

SL 2080' FSL &amp; 660' FEL, Section 13, T-17-S, R-24-E, Eddy Co., N.M.

BHL 1880' FSL &amp; 660' FWL, Section 13, T-17-S, R-24-E, Eddy Co., N.M.

**Casing Program:**

Casing	Setting Depth	Hole Size	Casing Size	Casing Weight	Casing Grade	Desired TOC
Surface	900'	12-1/4"	8-5/8"	32#	J-55	Surface
Production	8,500'	7-7/8"	5 1/2"	17#	P-110	Surface

**Cement Program:**

Depth	No. Sacks	Slurries:
900'	150	Lead: Premium Plus + 2% CaCl <sub>2</sub> + 3% Econolite + 1/4 pps Flocele
	175	Tail: Premium Plus + 2% CaCl <sub>2</sub> + 1/4 pps Flocele
8,500'	350	Lead: Interfill C + 1/4 pps Flocele
	400	Tail: Premium Cement + 100% Acid Soluble Additive + 0.6% Halad®-344 + 0.8% Econolite + 0.2% HR-55

**Mud Program:**

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 900'	Fresh - Gel	8.6-8.8	28-34	N/c
900' – 4,400'	Cut Brine	8.8-9.2	28-34	N/c
4,400' – 5,100'	Cut Brine	8.8-9.2	28-34	10-15
4,400' – 8,500'	Polymer (Lateral)	9.0-9.4	40-45	10-25



# EOG Resources Inc

## Planning Report

**Company:** EOG Resources  
**Field:** Thames  
**Site:** Rhine 13 Fed #1H  
**Well:** Rhine 13 Fed #1H  
**Wellpath:** Lateral

Date: 6/1/2005 Time: 11:10:16 Page:  
Co-ordinate(NE) Reference: Site: Rhine 13 Fed #1H, Grid North  
Vertical (TVD) Reference: SITE 3684.0  
Section (VS) Reference: Well (0.00N,0.00E,267.19Azi)  
Plan: Plan #1

**Field:** Thames

**Map System:**US State Plane Coordinate System 1927  
**Geo Datum:** NAD27 (Clarke 1866)  
**Sys Datum:** Mean Sea Level

**Map Zone:** New Mexico, Eastern Zone  
**Coordinate System:** Site Centre  
**Geomagnetic Model:** igrf2000

**Site:** Rhine 13 Fed #1H

<b>Site Position:</b>	<b>Northing:</b>	667197.00 ft	<b>Latitude:</b>	32 50	2.573 N
<b>From: Map</b>	<b>Easting:</b>	438034.00 ft	<b>Longitude:</b>	104 32	6.268 W
<b>Position Uncertainty:</b>	0.00 ft		<b>North Reference:</b>		Grid
<b>Ground Level:</b>	3666.00 ft		<b>Grid Convergence:</b>		-0.11 deg

Well: Rhine 13 Fed #1H

**Slot Name:**

<b>Well Position:</b>	+N/-S	0.00 ft	<b>Northing:</b>	667197.00 ft	<b>Latitude:</b>	32	50	2.573 N
	+E/-W	0.00 ft	<b>Easting :</b>	438034.00 ft	<b>Longitude:</b>	104	32	6.268 W
<b>Position Uncertainty:</b>		0.00 ft						

**Wellpath:** Lateral

**Drilled From:** **Surface**

<b>Current Datum:</b>	<b>SITE</b>	<b>Height</b> 3684.00 ft
<b>Magnetic Data:</b>	6/1/2005	
<b>Field Strength:</b>	49668 nT	
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>
	ft	ft
	4850.00	0.00

<b>Above System Datum:</b>	<b>Mean Sea Level</b>
<b>Declination:</b>	9.03 deg
<b>Mag Dip Angle:</b>	60.82 deg
<b>+E/-W</b>	<b>Direction</b>
<b>ft</b>	<b>deg</b>
0.00	267.19

**Plan:** Plan #1

**Date Composed:** 6/1/2005

**Principal:** Yes

**Tied-to:** **From Surface**

### Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4468.00	0.00	0.00	4468.00	0.00	0.00	0.00	0.00	0.00	0.00	
4468.03	0.00	0.00	4468.03	0.00	0.00	0.00	0.00	0.00	0.00	
5068.03	90.00	267.19	4850.00	-18.73	-381.51	15.00	15.00	-15.47	267.19	LP
5068.03	90.00	267.19	4850.00	-18.73	-381.52	3.00	0.00	-3.00	-90.00	
8683.86	90.00	267.19	4850.00	-196.00	-3992.99	0.00	0.00	0.00	0.00	
8683.86	90.00	267.19	4850.00	-196.00	-3993.00	3.00	-0.01	3.00	90.25	BHL

## Survey

[illegible]

# EOG Resources Inc

## Planning Report

**Company:** EOG Resources  
**Field:** Thames  
**Site:** Rhine 13 Fed #1H  
**Well:** Rhine 13 Fed #1H  
**Wellpath:** Lateral

**Date:** 6/1/2005  
**Co-ordinate(NE) Reference:** Site: Rhine 13 Fed #1H, Grid North  
**Vertical (TVD) Reference:** SITE 3684.0  
**Section (VS) Reference:** Well (0.00N,0.00E,267.19Azi)  
**Plan:** Plan #1

**Page:** 2

### Survey

MD ft	Incl deg	Azim deg	TVD ft	+N-S ft	+E-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
4468.00	0.00	0.00	4468.00	0.00	0.00	0.00	0.00	0.00	0.00	Keeper Cone
4500.00	4.80	267.19	4499.96	-0.07	-1.34	1.34	14.99	14.99	0.00	Keeper Cone
4600.00	19.80	267.19	4597.39	-1.11	-22.55	22.57	15.00	15.00	0.00	Keeper Cone
4700.00	34.80	267.19	4686.00	-3.35	-68.22	68.30	15.00	15.00	0.00	Keeper Cone
4800.00	49.80	267.19	4759.76	-6.64	-135.24	135.40	15.00	15.00	0.00	Keeper Cone
4900.00	64.80	267.19	4813.63	-10.75	-219.05	219.31	15.00	15.00	0.00	Keeper Cone
5000.00	79.80	267.19	4843.96	-15.41	-313.92	314.30	15.00	15.00	0.00	Keeper Cone
5068.03	90.00	267.19	4850.00	-18.73	-381.51	381.97	15.00	15.00	0.00	Keeper Cone
5100.00	90.00	267.19	4850.00	-20.29	-413.45	413.94	0.00	0.00	0.00	Keeper Cone
5200.00	90.00	267.19	4850.00	-25.20	-513.33	513.94	0.00	0.00	0.00	Keeper Cone
5300.00	90.00	267.19	4850.00	-30.10	-613.21	613.94	0.00	0.00	0.00	Keeper Cone
5400.00	90.00	267.19	4850.00	-35.00	-713.09	713.94	0.00	0.00	0.00	Keeper Cone
5500.00	90.00	267.19	4850.00	-39.90	-812.96	813.94	0.00	0.00	0.00	Keeper Cone
5600.00	90.00	267.19	4850.00	-44.81	-912.84	913.94	0.00	0.00	0.00	Keeper Cone
5700.00	90.00	267.19	4850.00	-49.71	-1012.72	1013.94	0.00	0.00	0.00	Keeper Cone
5800.00	90.00	267.19	4850.00	-54.61	-1112.60	1113.94	0.00	0.00	0.00	Keeper Cone
5900.00	90.00	267.19	4850.00	-59.52	-1212.48	1213.94	0.00	0.00	0.00	Keeper Cone
6000.00	90.00	267.19	4850.00	-64.42	-1312.36	1313.94	0.00	0.00	0.00	Keeper Cone
6100.00	90.00	267.19	4850.00	-69.32	-1412.24	1413.94	0.00	0.00	0.00	Keeper Cone
6200.00	90.00	267.19	4850.00	-74.22	-1512.12	1513.94	0.00	0.00	0.00	Keeper Cone
6300.00	90.00	267.19	4850.00	-79.13	-1612.00	1613.94	0.00	0.00	0.00	Keeper Cone
6400.00	90.00	267.19	4850.00	-84.03	-1711.88	1713.94	0.00	0.00	0.00	Keeper Cone
6500.00	90.00	267.19	4850.00	-88.93	-1811.76	1813.94	0.00	0.00	0.00	Keeper Cone

# EOG Resources Inc

## Planning Report

**Company:** EOG Resources  
**Field:** Thames  
**Site:** Rhine 13 Fed #1H  
**Well:** Rhine 13 Fed #1H  
**Wellpath:** Lateral

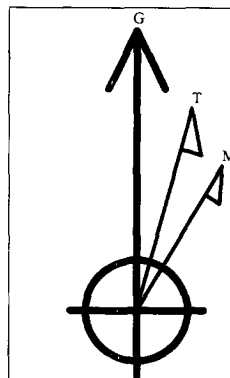
**Date:** 6/1/2005  
**Co-ordinate(NE) Reference:** Site: Rhine 13 Fed #1H, Grid North  
**Vertical (TVD) Reference:** SITE 3684.0  
**Section (VS) Reference:** Well (0.00N,0.00E,267.19Azi)  
**Plan:** Plan #1

**Page:** 3

### Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6600.00	90.00	267.19	4850.00	-93.83	-1911.64	1913.94	0.00	0.00	0.00	Keeper Cone
6700.00	90.00	267.19	4850.00	-98.74	-2011.52	2013.94	0.00	0.00	0.00	Keeper Cone
6800.00	90.00	267.19	4850.00	-103.64	-2111.40	2113.94	0.00	0.00	0.00	Keeper Cone
6900.00	90.00	267.19	4850.00	-108.54	-2211.28	2213.94	0.00	0.00	0.00	Keeper Cone
7000.00	90.00	267.19	4850.00	-113.44	-2311.16	2313.94	0.00	0.00	0.00	Keeper Cone
7100.00	90.00	267.19	4850.00	-118.35	-2411.04	2413.94	0.00	0.00	0.00	Keeper Cone
7200.00	90.00	267.19	4850.00	-123.25	-2510.92	2513.94	0.00	0.00	0.00	Keeper Cone
7300.00	90.00	267.19	4850.00	-128.15	-2610.80	2613.94	0.00	0.00	0.00	Keeper Cone
7400.00	90.00	267.19	4850.00	-133.06	-2710.68	2713.94	0.00	0.00	0.00	Keeper Cone
7500.00	90.00	267.19	4850.00	-137.96	-2810.56	2813.94	0.00	0.00	0.00	Keeper Cone
7600.00	90.00	267.19	4850.00	-142.86	-2910.44	2913.94	0.00	0.00	0.00	Keeper Cone
7700.00	90.00	267.19	4850.00	-147.76	-3010.32	3013.94	0.00	0.00	0.00	Keeper Cone
7800.00	90.00	267.19	4850.00	-152.67	-3110.20	3113.94	0.00	0.00	0.00	Keeper Cone
7900.00	90.00	267.19	4850.00	-157.57	-3210.08	3213.94	0.00	0.00	0.00	Keeper Cone
8000.00	90.00	267.19	4850.00	-162.47	-3309.96	3313.94	0.00	0.00	0.00	Keeper Cone
8100.00	90.00	267.19	4850.00	-167.37	-3409.84	3413.94	0.00	0.00	0.00	Keeper Cone
8200.00	90.00	267.19	4850.00	-172.28	-3509.72	3513.94	0.00	0.00	0.00	Keeper Cone
8300.00	90.00	267.19	4850.00	-177.18	-3609.60	3613.94	0.00	0.00	0.00	Keeper Cone
8400.00	90.00	267.19	4850.00	-182.08	-3709.48	3713.94	0.00	0.00	0.00	Keeper Cone
8500.00	90.00	267.19	4850.00	-186.99	-3809.36	3813.94	0.00	0.00	0.00	Keeper Cone
8600.00	90.00	267.19	4850.00	-191.89	-3909.24	3913.94	0.00	0.00	0.00	Keeper Cone
8683.86	90.00	267.19	4850.00	-196.00	-3993.00	3997.81	0.00	0.00	0.00	Keeper Cone

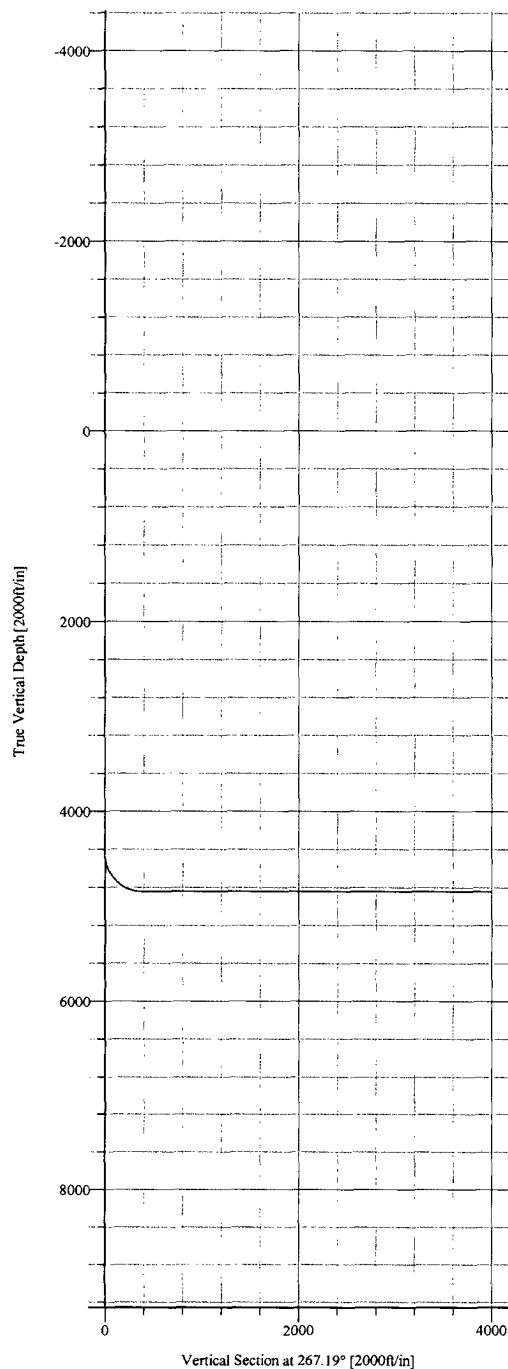
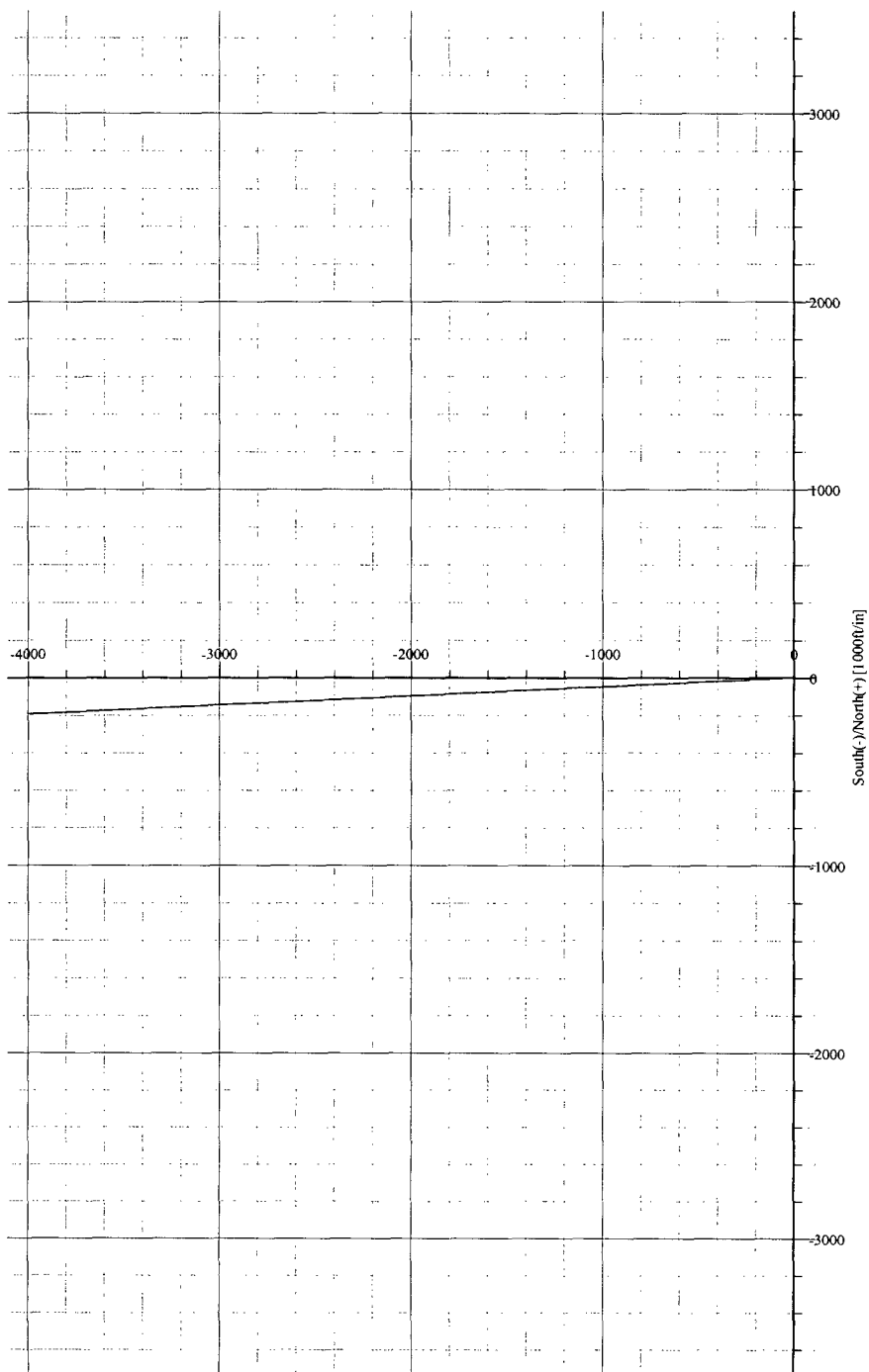
Field: Thames  
 Site: Rhine 13 Fed #1H  
 Well: Rhine 13 Fed #1H  
 Wellpath: Lateral  
 Plan: Plan #1



Azimuths to Grid North  
 True North: 0.11°  
 Magnetic North: 9.14°

Magnetic Field  
 Strength: 49668nT  
 Dip Angle: 60.82°  
 Date: 6/1/2005  
 Model: igrf2000

West(-)/East(+) [1000ft/in]



Vertical Section at 267.19° [2000ft/in]