

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OC D Artesia

ATS-11-618  
FORM APPROVED  
OMB NO. 1004-0137  
Expires July 31, 2010

SECRETARY'S POSITION

APPLICATION FOR PERMIT TO DRILL OR REENTER

Wellbore Serial No.  
NM-063472 (SHL)

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		6. If Indian, Allottee or Tribe Name	
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		7. Unit or CA Agreement Name and No.	
2. Name of Operator EOG Resources Inc. <7377>		8. Lease Name and Well No. Sand Tank 17 Fed Com 4H <20944>	
3a. Address P.O. Box 2267 Midland, Texas 79702		9. API Well No. 30-015- 39169	
3b. Phone No. (include area code) 432-686-3689		10. Field and Pool, or Exploratory Sand Tank; Bone Spring <96832>	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface    1880' FSL & 2310' FEL, U/L J, Sec 17, T18S, R30E At proposed prod. zone    1980' FSL & 2310' FWL, U/L K, Sec 16, T18S, R30E		11. Sec, T., R., M., or Blk. and Survey or Area Sec 17, T18S, R30E	
14. Distance in miles and direction from nearest town or post office* Approximately +/- 6 miles South from Loco Hills, NM		12. County or Parish Eddy	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 560'	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1420' to ST 17-3H	19. Proposed Depth 8202 TVD - 12547 MD	20. BLM/BIA Bond No. on file NM 2308	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3482' GL	22. Approximate date work will start* 8/1/11	23. Estimated duration 25 days	

RECEIVED  
JUN 27 2011  
AMOC D ARTESIA

24. Attachments

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

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1. Well plat certified by a registered surveyor.</li> <li>2. A Drilling Plan.</li> <li>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)</li> </ul> | <ul style="list-style-type: none"> <li>4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).</li> <li>5. Operator certification.</li> <li>6. Such other site specific information and/or plans as may be required by the BLM</li> </ul> |
|--|---|

25. Signature 	Name (Printed/Typed) Stan Wagner	Date 4/15/11
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Title  
Regulatory Analyst

Approved by (Signature) /s/ Jesse J. Juen	Name (Printed/Typed) /s/ Jesse J. Juen	Date JUN 21 2011
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Title  
FOR STATE DIRECTOR      Office  
NM STATE 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 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)

*Ke 02/05/11*

ROSWELL CONTROLLED WATER BASIN

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

**EOG RESOURCES, INC.**  
**SAND TANK 17 FED COM NO. 4H**

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

Permian

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

Rustler	160'
Top of Salt	380'
Base of Salt	1,220'
Yates	1,385'
Seven Rivers	1,800'
Queen	2,445'
Grayburg	2,900'
San Andres	3,440'
Bone Spring 1	4,500'
1 <sup>st</sup> Bone Spring Sand	7,110'
2 <sup>nd</sup> Bone Spring	7,400'
2 <sup>nd</sup> Bone Spring Sand	7,670'
Top "F" Sand	8,090'

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

Upper Permian Sands	0- 160'	Fresh Water
Queen	2,445'	Oil
Grayburg	2,900'	Oil
San Andres	3,440'	Oil
Bone Spring 1	4,500'	Oil
1 <sup>st</sup> Bone Spring Sand	7,110'	Oil
2 <sup>nd</sup> Bone Spring	7,400'	Oil
2 <sup>nd</sup> Bone Spring Sand	7,670'	Oil
Top "F" Sand	8,090'	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 11.75" casing at 350' 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
14.75"	0 - 350' 255	11.75"	42#	H40	STC	1.125	1.25	1.60
11"	0-3,400'	8.625"	32#	J55	LTC	1.125	1.25	1.60
7.875"	0'-12,547'	5.500"	17#	L80 or N80	LTC	1.125	1.25	1.60

See COA

**EOG RESOURCES, INC.**  
**SAND TANK 17 FED COM NO. 4H**

**Cementing Program:**

Depth	No. Sacks	Wt. lb/gal	Yld Ft <sup>3</sup> /ft	Slurry Description
<del>350'</del>	250	14.8	1.35	Lead: Class C + 0.005 pps Static Free + 2% CaCl <sub>2</sub> + 0.25 pps CelloFlake + 0.005 gps FP-6L (TOC @ surface)
3,400'	400	12.7	2.21	Lead: Class C + 2% SMS + 1.0% R-3 + 0.25 pps CelloFlake + 0.005 pps Static Free (TOC @ surface)
	200	14.8	1.32	Tail: Class C + 0.25 pps Celloflake + 0.005 pps Static Free + 0.005 gps FL-6L
12,547'	500	11.8	2.31	Lead: 50:50:10 Class C + 1.25% FL-52A + 0.30% ASA-301 + 0.15% ASA-301 + 0.15% SMS + 0.25 pps Celloflake + 0.005 pps Static Free (TOC @ 2,900')
	850	14.2	1.30	Tail: 50:50:2 Class 'H' + Class H + 0.65% FL-52A + 0.20% CD-32 + 0.20% SMS + 5% Salt + 0.15% R-3 + 0.005 pps 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:**

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double ram-type (5,000 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.

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.

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.

**EOG RESOURCES, INC.**  
**SAND TANK 17 FED COM NO. 4H**

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

The applicable depths and properties of the drilling fluid systems are as follows. Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 - <del>350</del> 255	Fresh Water Gel	8.6-8.8	28-34	N/c
350' - 3,400'	Saturated Brine	10.0-10.2	28-34	N/c
3,400' - 7,652'	Fresh Water	8.4-8.6	28-34	N/c
7,652' - 12,547' Lateral	Cut Brine	8.5-9.0	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) A mud logging unit will be continuously monitoring drill penetration rate and hydrocarbon shows from intermediate casing point to TD.
- (D) 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*

No open hole logs are planned.

GR-CCL logs may be run in cased hole for depth control.

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

The estimated bottom-hole temperature (BHT) at TD is 144 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3550 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.  
SAND TANK 17 FED COM 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.

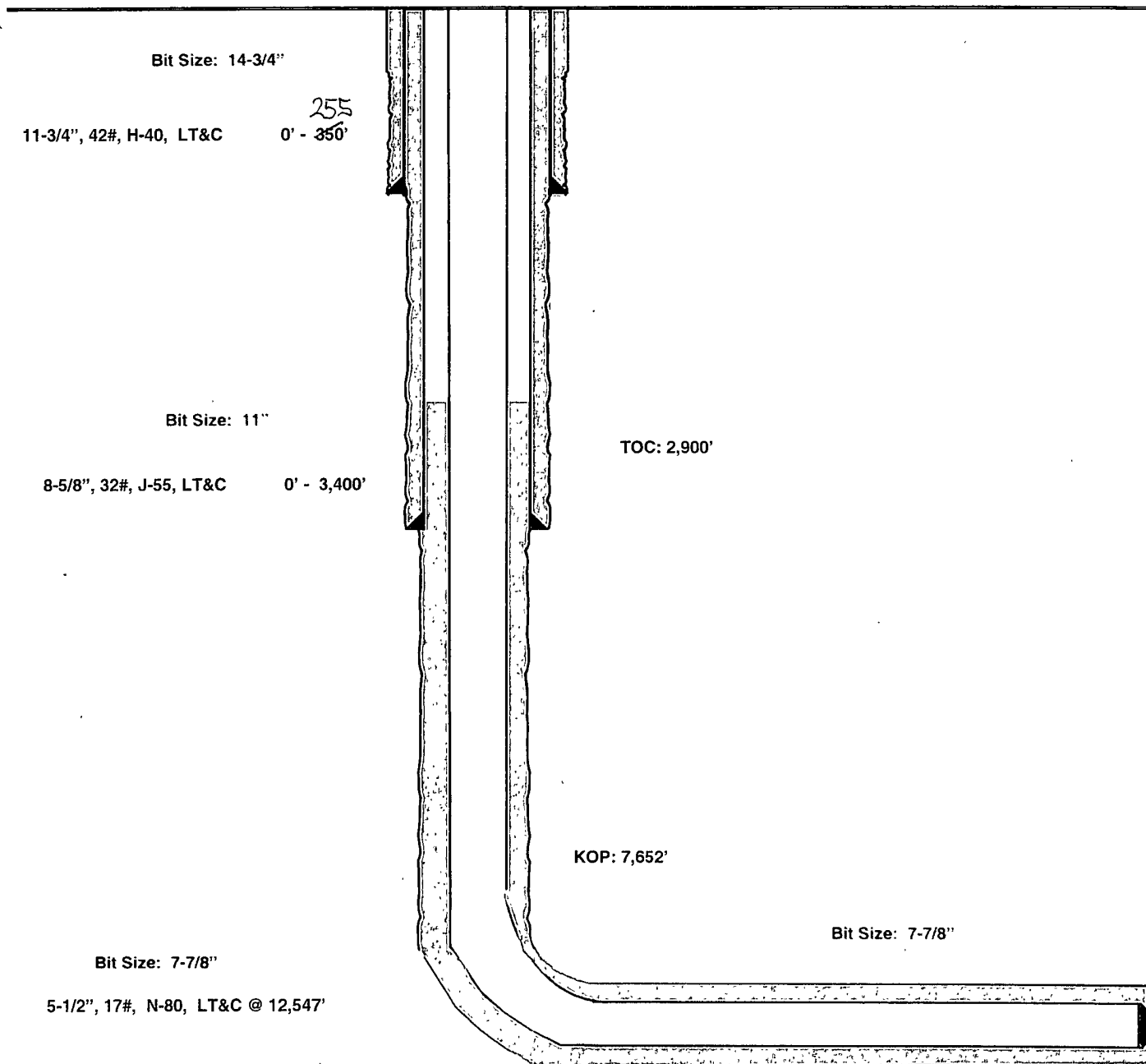
Sand Tank 17 Fed Com #4H  
Sand Tank  
Eddy County, New Mexico

1880' FSL  
2310' FEL  
Section 17  
T-18-S, R-30-E

Proposed Wellbore

KB: 3,501.9'  
GL: 3,482.9'

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



1st Bone Spring Sand Lateral:  
12,547' MD, 8202' TVD  
BH Location: 1980' FSL & 2310' FWL  
Section 16  
T-18-S, R-30-E



## **EOG Resources, Inc.**

Eddy County

Sand Tank "17" Fed. Com

#4H

OH

Plan: Design #1

## **Pathfinder X & Y Planning Report**

31 March, 2011

A vertical rectangular bar with a dense, stippled or textured pattern, located on the right side of the page.  
**PATHFINDER<sup>®</sup>**

A Schlumberger Company



**Pathfinder**  
Pathfinder X & Y Planning Report



<b>Company:</b> EOG Resources, Inc.	<b>Local Co-ordinate Reference:</b> Well #4H
<b>Project:</b> Eddy County	<b>TVD Reference:</b> WELL @ 3501.90usft (McVay #4)
<b>Site:</b> Sand Tank "17" Fed. Com	<b>MD Reference:</b> WELL @ 3501.90usft (McVay #4)
<b>Well:</b> #4H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Design #1	<b>Database:</b> EDM 5000.1 Single User Db

<b>Project:</b> Eddy County	
<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> Sand Tank "17" Fed. Com		
<b>Site Position:</b>	<b>Northing:</b> 637,852.200 usft	<b>Latitude:</b> 32° 45' 11.112 N
<b>From:</b> Map	<b>Easting:</b> 604,691.600 usft	<b>Longitude:</b> 103° 59' 34.083 W
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b> 0.18 °

<b>Well:</b> #4H			
<b>Well Position</b>	<b>+N/-S</b> 0.00 usft	<b>Northing:</b> 635,014.400 usft	<b>Latitude:</b> 32° 44' 43.028 N
	<b>+E/-W</b> 0.00 usft	<b>Easting:</b> 604,776.500 usft	<b>Longitude:</b> 103° 59' 33.196 W
<b>Position Uncertainty</b> 0.00 usft		<b>Wellhead Elevation:</b> usft	<b>Ground Level:</b> 3,482.90 usft

<b>Wellbore:</b> OH					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF200510	03/31/11	(°) 7.83	(°) 60.62	(nT) 48,939

<b>Design:</b> Design #1				
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b> PLAN	<b>Tie On Depth:</b> 0.00		
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft) 0.00	(usft) 0.00	(usft) 0.00	(°) 88.70

<b>Survey Tool Program</b>	<b>Date</b> 03/31/11			
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
(usft) 0.00	(usft) 12,546.09	Design #1 (OH)	MWD	MWD - Standard





**Pathfinder**  
Pathfinder X & Y Planning Report



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<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	0.00	0.00	3,501.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50
100.00	0.00	0.00	100.00	3,401.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
200.00	0.00	0.00	200.00	3,301.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
300.00	0.00	0.00	300.00	3,201.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
400.00	0.00	0.00	400.00	3,101.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
500.00	0.00	0.00	500.00	3,001.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
600.00	0.00	0.00	600.00	2,901.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
700.00	0.00	0.00	700.00	2,801.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
800.00	0.00	0.00	800.00	2,701.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
900.00	0.00	0.00	900.00	2,601.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,000.00	0.00	0.00	1,000.00	2,501.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,100.00	0.00	0.00	1,100.00	2,401.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,200.00	0.00	0.00	1,200.00	2,301.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,300.00	0.00	0.00	1,300.00	2,201.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,400.00	0.00	0.00	1,400.00	2,101.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,500.00	0.00	0.00	1,500.00	2,001.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,600.00	0.00	0.00	1,600.00	1,901.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,700.00	0.00	0.00	1,700.00	1,801.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,800.00	0.00	0.00	1,800.00	1,701.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
1,900.00	0.00	0.00	1,900.00	1,601.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
2,000.00	0.00	0.00	2,000.00	1,501.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
2,100.00	0.00	0.00	2,100.00	1,401.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
2,200.00	0.00	0.00	2,200.00	1,301.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
2,300.00	0.00	0.00	2,300.00	1,201.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
2,400.00	0.00	0.00	2,400.00	1,101.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
2,500.00	0.00	0.00	2,500.00	1,001.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50
2,600.00	0.00	0.00	2,600.00	901.90	0.00	0.00	0.00	0.00	0.00	635,014.40	604,776.50



**Pathfinder**  
Pathfinder X & Y Planning Report



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<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	WELL @ 3501.90usft (McVay #4)
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<b>Well:</b>	#4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc. (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec. (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
2,700.00	0.00	0.00	2,700.00	801.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
2,800.00	0.00	0.00	2,800.00	701.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
2,900.00	0.00	0.00	2,900.00	601.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,000.00	0.00	0.00	3,000.00	501.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,100.00	0.00	0.00	3,100.00	401.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,200.00	0.00	0.00	3,200.00	301.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,300.00	0.00	0.00	3,300.00	201.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,400.00	0.00	0.00	3,400.00	101.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,500.00	0.00	0.00	3,500.00	1.90	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,600.00	0.00	0.00	3,600.00	-98.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,700.00	0.00	0.00	3,700.00	-198.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,800.00	0.00	0.00	3,800.00	-298.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
3,900.00	0.00	0.00	3,900.00	-398.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,000.00	0.00	0.00	4,000.00	-498.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,100.00	0.00	0.00	4,100.00	-598.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,200.00	0.00	0.00	4,200.00	-698.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,300.00	0.00	0.00	4,300.00	-798.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,400.00	0.00	0.00	4,400.00	-898.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,500.00	0.00	0.00	4,500.00	-998.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,600.00	0.00	0.00	4,600.00	-1,098.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,700.00	0.00	0.00	4,700.00	-1,198.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,800.00	0.00	0.00	4,800.00	-1,298.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
4,900.00	0.00	0.00	4,900.00	-1,398.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
5,000.00	0.00	0.00	5,000.00	-1,498.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
5,100.00	0.00	0.00	5,100.00	-1,598.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
5,200.00	0.00	0.00	5,200.00	-1,698.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	
5,300.00	0.00	0.00	5,300.00	-1,798.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50	



**Pathfinder**  
Pathfinder X & Y Planning Report



<b>Company:</b> EOG Resources, Inc. <b>Project:</b> Eddy County <b>Site:</b> Sand Tank "17" Fed. Com <b>Well:</b> #4H <b>Wellbore:</b> OH <b>Design:</b> Design #1	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b> <b>Database:</b>	<b>Well #4H</b> WELL @ 3501.90usft (McVay #4) WELL @ 3501.90usft (McVay #4) Grd Minimum Curvature EDM 5000 1 Single User Db
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Planned Survey												
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
5,400.00	0.00	0.00	5,400.00	-1,898.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
5,500.00	0.00	0.00	5,500.00	-1,998.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
5,600.00	0.00	0.00	5,600.00	-2,098.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
5,700.00	0.00	0.00	5,700.00	-2,198.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
5,800.00	0.00	0.00	5,800.00	-2,298.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
5,900.00	0.00	0.00	5,900.00	-2,398.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,000.00	0.00	0.00	6,000.00	-2,498.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,100.00	0.00	0.00	6,100.00	-2,598.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,200.00	0.00	0.00	6,200.00	-2,698.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,300.00	0.00	0.00	6,300.00	-2,798.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,400.00	0.00	0.00	6,400.00	-2,898.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,500.00	0.00	0.00	6,500.00	-2,998.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,600.00	0.00	0.00	6,600.00	-3,098.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,700.00	0.00	0.00	6,700.00	-3,198.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,800.00	0.00	0.00	6,800.00	-3,298.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
6,900.00	0.00	0.00	6,900.00	-3,398.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,000.00	0.00	0.00	7,000.00	-3,498.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,100.00	0.00	0.00	7,100.00	-3,598.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,200.00	0.00	0.00	7,200.00	-3,698.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,300.00	0.00	0.00	7,300.00	-3,798.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,400.00	0.00	0.00	7,400.00	-3,898.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,500.00	0.00	0.00	7,500.00	-3,998.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,600.00	0.00	0.00	7,600.00	-4,098.10	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
7,652.50	0.00	0.00	7,652.50	-4,150.60	0.00	0.00	0.00	0.00	635,014.40	604,776.50		
<b>KOP-7652.50°MD,0.00°INC,0.00°AZI,7652.50°TVD</b>												
7,675.00	2.70	88.70	7,674.99	-4,173.09	0.01	0.53	0.53	12.00	635,014.41	604,777.03		
7,700.00	5.70	88.70	7,699.92	-4,198.02	0.05	2.36	2.36	12.00	635,014.45	604,778.86		



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<b>Company:</b>	EOG Resources, Inc.	<b>Local Co-ordinate Reference:</b>	Well #4H
<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	WELL @ 3501.90usft (McVay #4)
<b>Site:</b>	Sand Tank "17" Fed. Com	<b>MD Reference:</b>	WELL @ 3501.90usft (McVay #4)
<b>Well:</b>	#4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
7,725.00	8.70	88.70	7,724.72	-4,222.82	0.12	5.49	5.49	12.00	635,014.52	604,781.99	
7,750.00	11.70	88.70	7,749.32	-4,247.42	0.23	9.92	9.92	12.00	635,014.63	604,786.42	
7,775.00	14.70	88.70	7,773.66	-4,271.76	0.35	15.62	15.63	12.00	635,014.75	604,792.12	
7,800.00	17.70	88.70	7,797.67	-4,295.77	0.51	22.59	22.60	12.00	635,014.91	604,799.09	
7,825.00	20.70	88.70	7,821.27	-4,319.37	0.70	30.81	30.82	12.00	635,015.10	604,807.31	
7,850.00	23.69	88.70	7,844.42	-4,342.52	0.91	40.25	40.26	12.00	635,015.31	604,816.75	
7,875.00	26.69	88.70	7,867.04	-4,365.14	1.15	50.89	50.90	12.00	635,015.55	604,827.39	
7,900.00	29.69	88.70	7,889.07	-4,387.17	1.42	62.69	62.71	12.00	635,015.82	604,839.19	
7,925.00	32.69	88.70	7,910.45	-4,408.55	1.72	75.64	75.66	12.00	635,016.12	604,852.14	
7,950.00	35.69	88.70	7,931.13	-4,429.23	2.04	89.68	89.70	12.00	635,016.44	604,866.18	
7,975.00	38.69	88.70	7,951.04	-4,449.14	2.38	104.79	104.81	12.00	635,016.78	604,881.29	
8,000.00	41.69	88.70	7,970.14	-4,468.24	2.74	120.92	120.95	12.00	635,017.14	604,897.42	
8,025.00	44.69	88.70	7,988.36	-4,486.46	3.13	138.02	138.06	12.00	635,017.53	604,914.52	
8,050.00	47.69	88.70	8,005.67	-4,503.77	3.54	156.05	156.09	12.00	635,017.94	604,932.55	
8,075.00	50.69	88.70	8,022.00	-4,520.10	3.97	174.97	175.01	12.00	635,018.37	604,951.47	
8,100.00	53.69	88.70	8,037.33	-4,535.43	4.42	194.71	194.76	12.00	635,018.82	604,971.21	
8,125.00	56.69	88.70	8,051.60	-4,549.70	4.88	215.23	215.29	12.00	635,019.28	604,991.73	
8,150.00	59.69	88.70	8,064.78	-4,562.88	5.37	236.47	236.53	12.00	635,019.77	605,012.97	
8,175.00	62.69	88.70	8,076.83	-4,574.93	5.86	258.36	258.43	12.00	635,020.26	605,034.86	
8,200.00	65.69	88.70	8,087.71	-4,585.81	6.37	280.86	280.93	12.00	635,020.77	605,057.36	
8,225.00	68.68	88.70	8,097.40	-4,595.50	6.90	303.90	303.97	12.00	635,021.30	605,080.40	
8,250.00	71.68	88.70	8,105.88	-4,603.98	7.43	327.41	327.49	12.00	635,021.83	605,103.91	
8,275.00	74.68	88.70	8,113.11	-4,611.21	7.97	351.33	351.42	12.00	635,022.37	605,127.83	
8,300.00	77.68	88.70	8,119.08	-4,617.18	8.52	375.60	375.69	12.00	635,022.92	605,152.10	
8,325.00	80.68	88.70	8,123.77	-4,621.87	9.08	400.14	400.25	12.00	635,023.48	605,176.64	
8,350.00	83.68	88.70	8,127.17	-4,625.27	9.64	424.90	425.01	12.00	635,024.04	605,201.40	
8,375.00	86.68	88.70	8,129.27	-4,627.37	10.21	449.80	449.92	12.00	635,024.61	605,226.30	



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<b>Company:</b> EOG Resources, Inc.	<b>Local Co-ordinate Reference:</b> Well #4H
<b>Project:</b> Eddy County	<b>TVD Reference:</b> WELL @ 3501.90usft (McVay #4)
<b>Site:</b> Sand Tank "17" Fed. Com	<b>MD Reference:</b> WELL @ 3501.90usft (McVay #4)
<b>Well:</b> #4H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Design #1	<b>Database:</b> EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	Northing (usft)	Easting (usft)	
8,394.33	89.00	88.70	8,130.00	-4,628.10	10.65	469.12	469.24	12.00	635,025.05	605,245.62	
<b>EOC-8394.33°MD,89.00°INC,88.70°AZI,8130.00°TVD</b>											
8,400.00	89.00	88.70	8,130.10	-4,628.20	10.77	474.78	474.90	0.00	635,025.17	605,251.28	
8,500.00	89.00	88.70	8,131.84	-4,629.94	13.04	574.74	574.89	0.00	635,027.44	605,351.24	
8,600.00	89.00	88.70	8,133.59	-4,631.69	15.31	674.70	674.87	0.00	635,029.71	605,451.20	
8,700.00	89.00	88.70	8,135.33	-4,633.43	17.58	774.66	774.86	0.00	635,031.98	605,551.16	
8,800.00	89.00	88.70	8,137.08	-4,635.18	19.85	874.62	874.84	0.00	635,034.25	605,651.12	
8,900.00	89.00	88.70	8,138.83	-4,636.93	22.12	974.58	974.83	0.00	635,036.52	605,751.08	
9,000.00	89.00	88.70	8,140.57	-4,638.67	24.38	1,074.53	1,074.81	0.00	635,038.78	605,851.03	
9,100.00	89.00	88.70	8,142.32	-4,640.42	26.65	1,174.49	1,174.80	0.00	635,041.05	605,950.99	
9,200.00	89.00	88.70	8,144.06	-4,642.16	28.92	1,274.45	1,274.78	0.00	635,043.32	606,050.95	
9,300.00	89.00	88.70	8,145.81	-4,643.91	31.19	1,374.41	1,374.77	0.00	635,045.59	606,150.91	
9,400.00	89.00	88.70	8,147.55	-4,645.65	33.46	1,474.37	1,474.75	0.00	635,047.86	606,250.87	
9,500.00	89.00	88.70	8,149.30	-4,647.40	35.73	1,574.33	1,574.74	0.00	635,050.13	606,350.83	
9,600.00	89.00	88.70	8,151.04	-4,649.14	37.99	1,674.29	1,674.72	0.00	635,052.39	606,450.79	
9,700.00	89.00	88.70	8,152.79	-4,650.89	40.26	1,774.25	1,774.70	0.00	635,054.66	606,550.75	
9,800.00	89.00	88.70	8,154.53	-4,652.63	42.53	1,874.21	1,874.69	0.00	635,056.93	606,650.71	
9,900.00	89.00	88.70	8,156.28	-4,654.38	44.80	1,974.17	1,974.67	0.00	635,059.20	606,750.67	
10,000.00	89.00	88.70	8,158.02	-4,656.12	47.07	2,074.13	2,074.66	0.00	635,061.47	606,850.63	
10,100.00	89.00	88.70	8,159.77	-4,657.87	49.34	2,174.08	2,174.64	0.00	635,063.74	606,950.58	
10,200.00	89.00	88.70	8,161.51	-4,659.61	51.61	2,274.04	2,274.63	0.00	635,066.01	607,050.54	
10,300.00	89.00	88.70	8,163.26	-4,661.36	53.87	2,374.00	2,374.61	0.00	635,068.27	607,150.50	
10,400.00	89.00	88.70	8,165.00	-4,663.10	56.14	2,473.96	2,474.60	0.00	635,070.54	607,250.46	
10,500.00	89.00	88.70	8,166.75	-4,664.85	58.41	2,573.92	2,574.58	0.00	635,072.81	607,350.42	
10,600.00	89.00	88.70	8,168.49	-4,666.59	60.68	2,673.88	2,674.57	0.00	635,075.08	607,450.38	
10,700.00	89.00	88.70	8,170.24	-4,668.34	62.95	2,773.84	2,774.55	0.00	635,077.35	607,550.34	
10,800.00	89.00	88.70	8,171.98	-4,670.08	65.22	2,873.80	2,874.54	0.00	635,079.62	607,650.30	



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<b>Company:</b>	EOG Resources, Inc.	<b>Local Co-ordinate Reference:</b>	Well #4H
<b>Project:</b>	Eddy County	<b>TVD Reference:</b>	WELL @ 3501.90usft (McVay #4)
<b>Site:</b>	Sand Tank "17" Fed. Com	<b>MD Reference:</b>	WELL @ 3501.90usft (McVay #4)
<b>Well:</b>	#4H	<b>North Reference:</b>	Gnd
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey												
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
10,900.00	89.00	88.70	8,173.73	-4,671.83	67.48	2,973.76	2,974.52	0.00	635,081.88	607,750.26		
11,000.00	89.00	88.70	8,175.48	-4,673.58	69.75	3,073.72	3,074.51	0.00	635,084.15	607,850.22		
11,100.00	89.00	88.70	8,177.22	-4,675.32	72.02	3,173.67	3,174.49	0.00	635,086.42	607,950.17		
11,200.00	89.00	88.70	8,178.97	-4,677.07	74.29	3,273.63	3,274.48	0.00	635,088.69	608,050.13		
11,300.00	89.00	88.70	8,180.71	-4,678.81	76.56	3,373.59	3,374.46	0.00	635,090.96	608,150.09		
11,400.00	89.00	88.70	8,182.46	-4,680.56	78.83	3,473.55	3,474.45	0.00	635,093.23	608,250.05		
11,500.00	89.00	88.70	8,184.20	-4,682.30	81.09	3,573.51	3,574.43	0.00	635,095.49	608,350.01		
11,600.00	89.00	88.70	8,185.95	-4,684.05	83.36	3,673.47	3,674.42	0.00	635,097.76	608,449.97		
11,700.00	89.00	88.70	8,187.69	-4,685.79	85.63	3,773.43	3,774.40	0.00	635,100.03	608,549.93		
11,800.00	89.00	88.70	8,189.44	-4,687.54	87.90	3,873.39	3,874.38	0.00	635,102.30	608,649.89		
11,900.00	89.00	88.70	8,191.18	-4,689.28	90.17	3,973.35	3,974.37	0.00	635,104.57	608,749.85		
12,000.00	89.00	88.70	8,192.93	-4,691.03	92.44	4,073.31	4,074.35	0.00	635,106.84	608,849.81		
12,100.00	89.00	88.70	8,194.67	-4,692.77	94.70	4,173.26	4,174.34	0.00	635,109.10	608,949.76		
12,200.00	89.00	88.70	8,196.42	-4,694.52	96.97	4,273.22	4,274.32	0.00	635,111.37	609,049.72		
12,300.00	89.00	88.70	8,198.16	-4,696.26	99.24	4,373.18	4,374.31	0.00	635,113.64	609,149.68		
12,400.00	89.00	88.70	8,199.91	-4,698.01	101.51	4,473.14	4,474.29	0.00	635,115.91	609,249.64		
12,500.00	89.00	88.70	8,201.65	-4,699.75	103.78	4,573.10	4,574.28	0.00	635,118.18	609,349.60		
12,546.61	89.00	88.70	8,202.47	-4,700.57	104.84	4,619.69	4,620.88	0.00	635,119.24	609,396.19		
PBHL(ST17#4)												

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
7,652.50	7,652.50	0.00	0.00	KOP-7652.50°MD,0.00°INC,0.00°AZI,7652.50°TVD	
8,394.33	8,130.00	10.65	469.12	EOC-8394.33°MD,89.00°INC,88.70°AZI,8130.00°TVD	
12,546.61	8,202.47	104.84	4,619.69	TD at 12546.61	

<b>Company:</b> EOG Resources, Inc.	<b>Local Co-ordinate Reference:</b>	<b>Well #4H</b>
<b>Project:</b> Eddy County	<b>TVD Reference:</b>	WELL @ 3501.90usft (McVay #4)
<b>Site:</b> Sand Tank "17" Fed. Com	<b>MD Reference:</b>	WELL @ 3501.90usft (McVay #4)
<b>Well:</b> #4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b> Design #1	<b>Database:</b>	EDM 5000.1 Single User Db

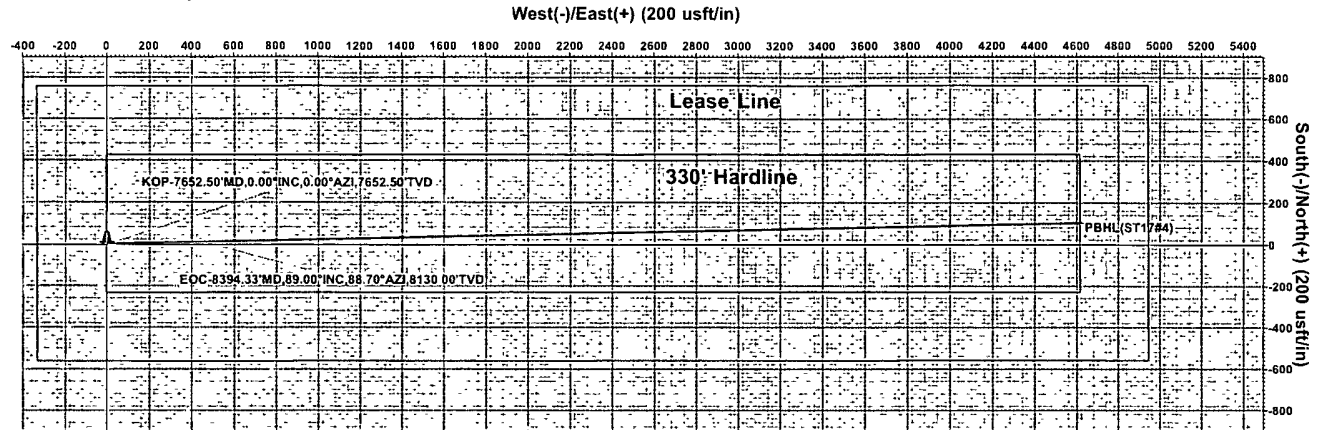
Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



Azimuths to Grid North  
 True North: -0.18°  
 Magnetic North: 7.65°  
 Magnetic Field  
 Strength: 48939.3snT  
 Dip Angle: 60.62°  
 Date: 03/31/2011  
 Model: IGRF200510



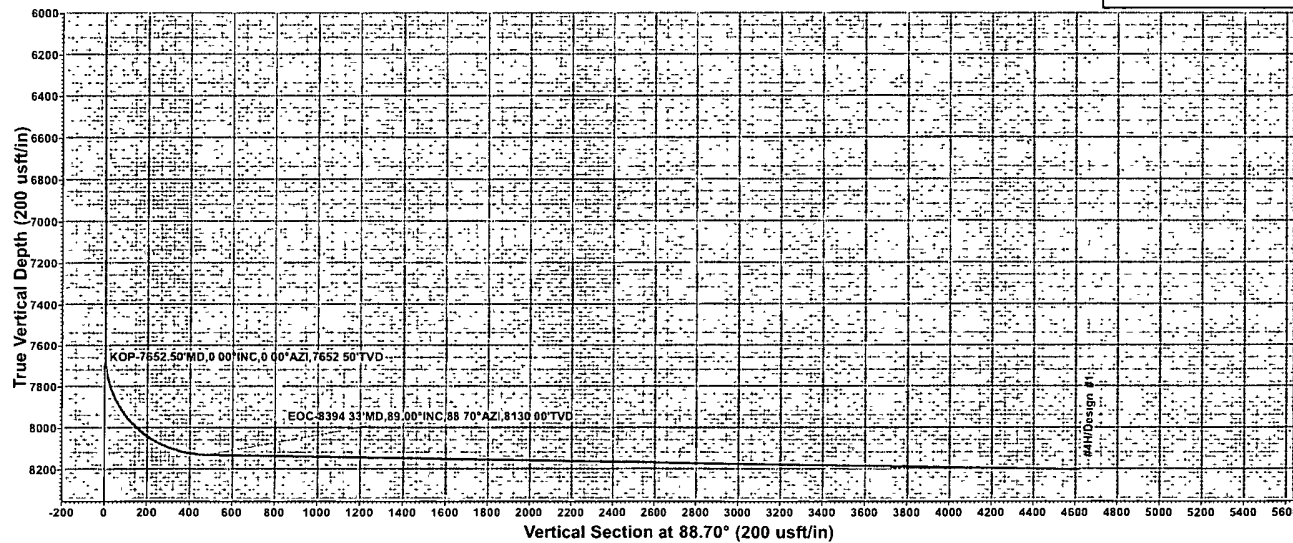
Project: Eddy County  
 Site: Sand Tank "17" Fed. Com  
 Well: #4H  
 Wellbore: OH  
 Plan: Design #1 (#4H/OH)



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7652.50	0.00	0.00	7652.50	0.00	0.00	0.00	0.00	0.00	0.00
8394.33	89.00	88.70	8130.00	10.65	469.12	12.00	88.70	469.24	
12546.61	89.00	88.70	8202.47	104.84	4619.69	0.00	0.00	4620.88	PBHL(ST17#4)

WELL DETAILS, #4H						
Ground Elevation: 3482.90						
RKB Elevation: WELL @ 3501.90usft (McVay #4)						
Rig Name: McVay #4						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	635014.400	604776.500	32° 44' 43.028 N	103° 59' 33.196 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)					
TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(ST17#4)8202.47	104.50	4619.70	635118.900	609396.200	Point



**LEGEND**  
 ◆ Design #1

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

Plan: Design #1 (#4H/OH)  
 Created By: Nate Bingham Date: 14 53, March 31 2011  
 Checked \_\_\_\_\_ Date \_\_\_\_\_



EXHIBIT 1

EOG Resources  
5000 PSI BOPE  
Sand Tank Fed Com #4H

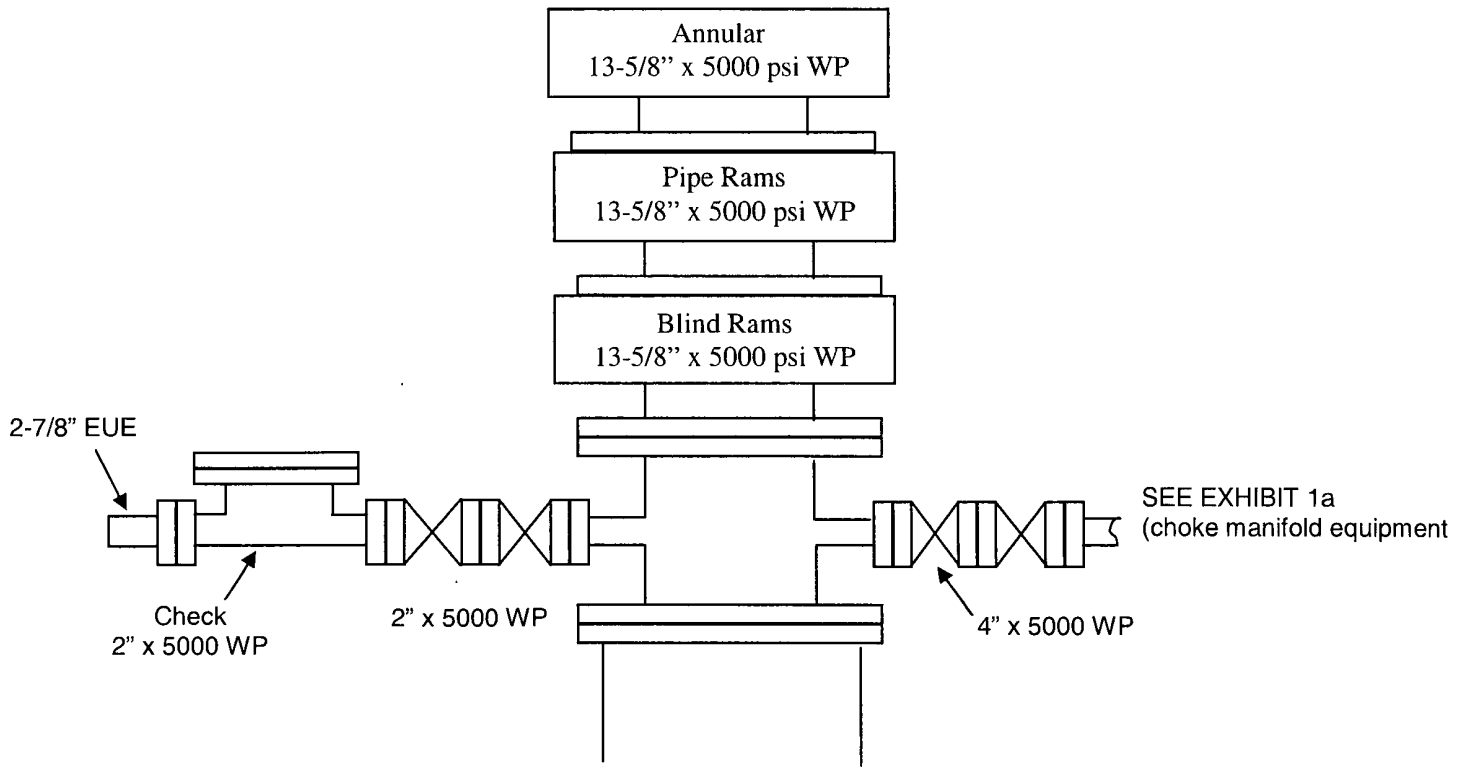
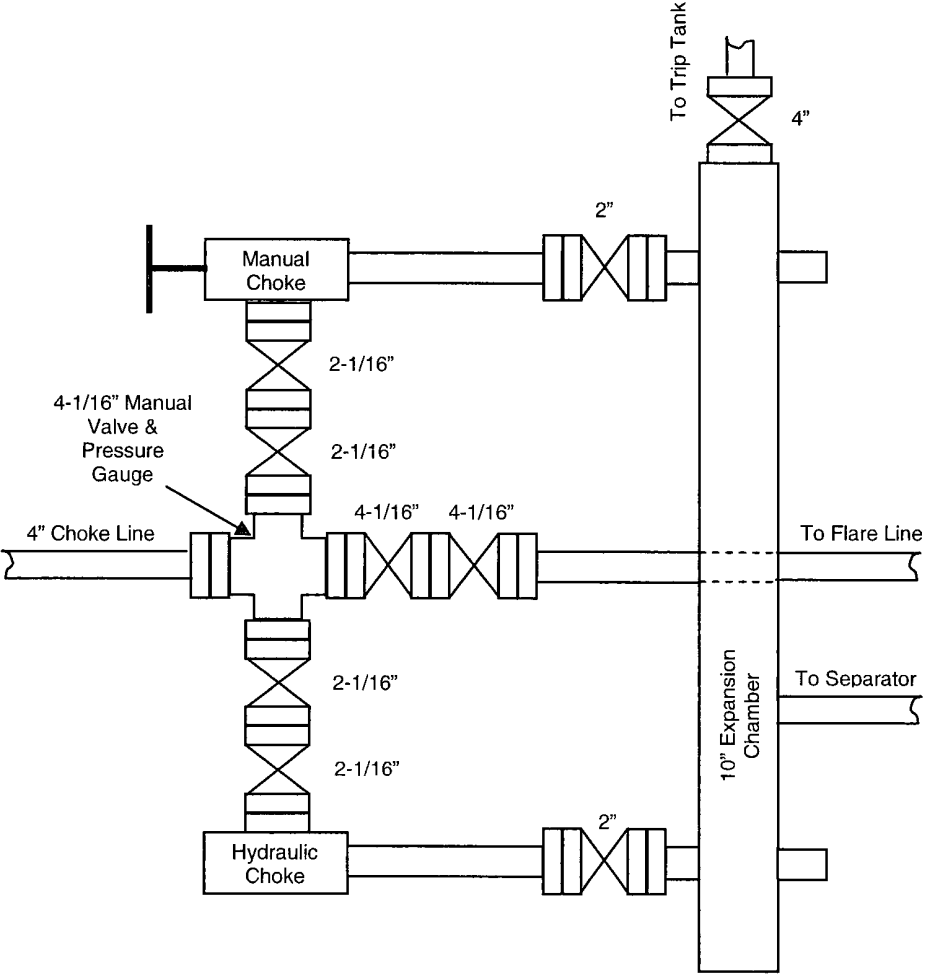


EXHIBIT 1a  
EOG Resources, Inc.  
5M Choke Manifold Equipment

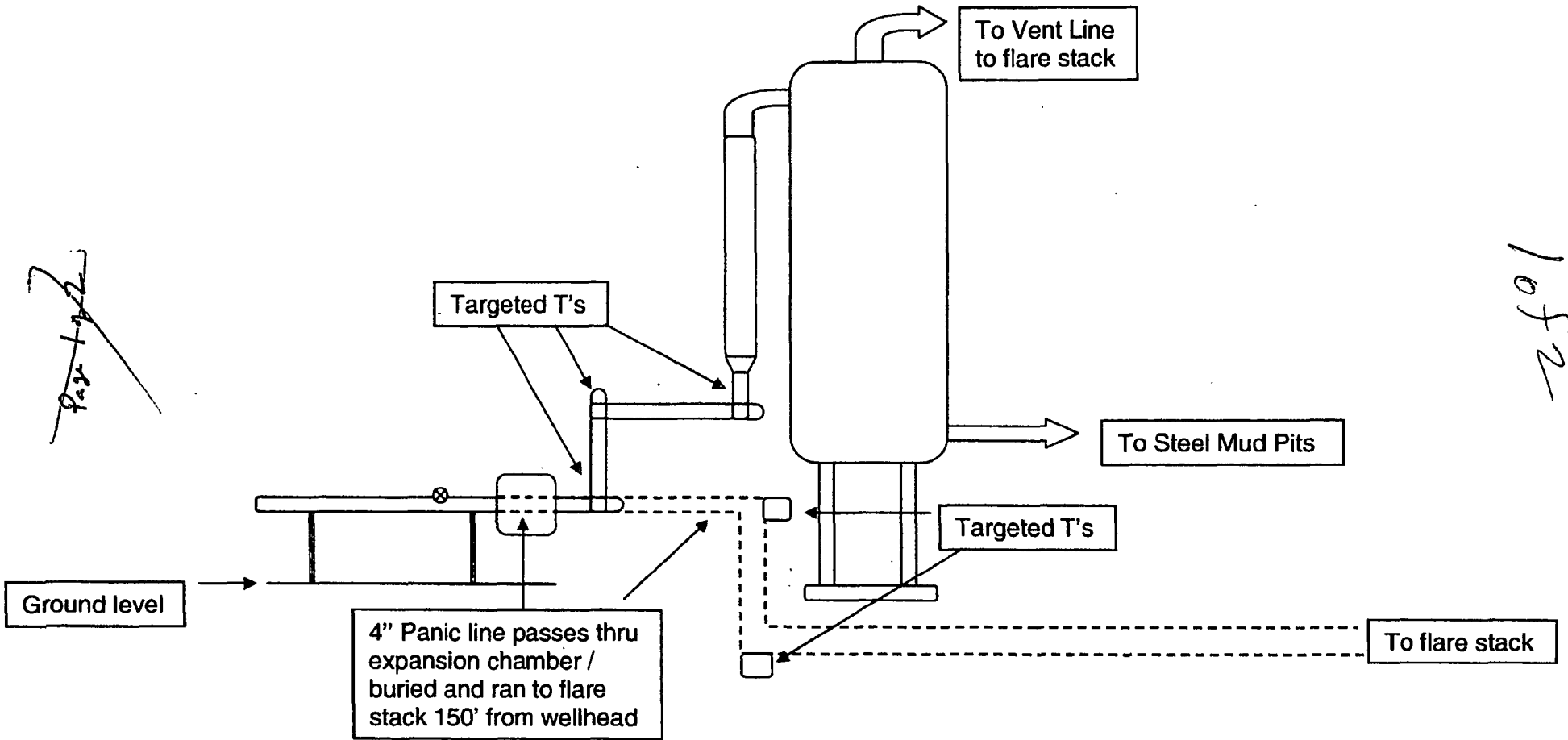


**EOG RESOURCES, INC.**  
**SAND TANK 17 FED COM 4H**

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.

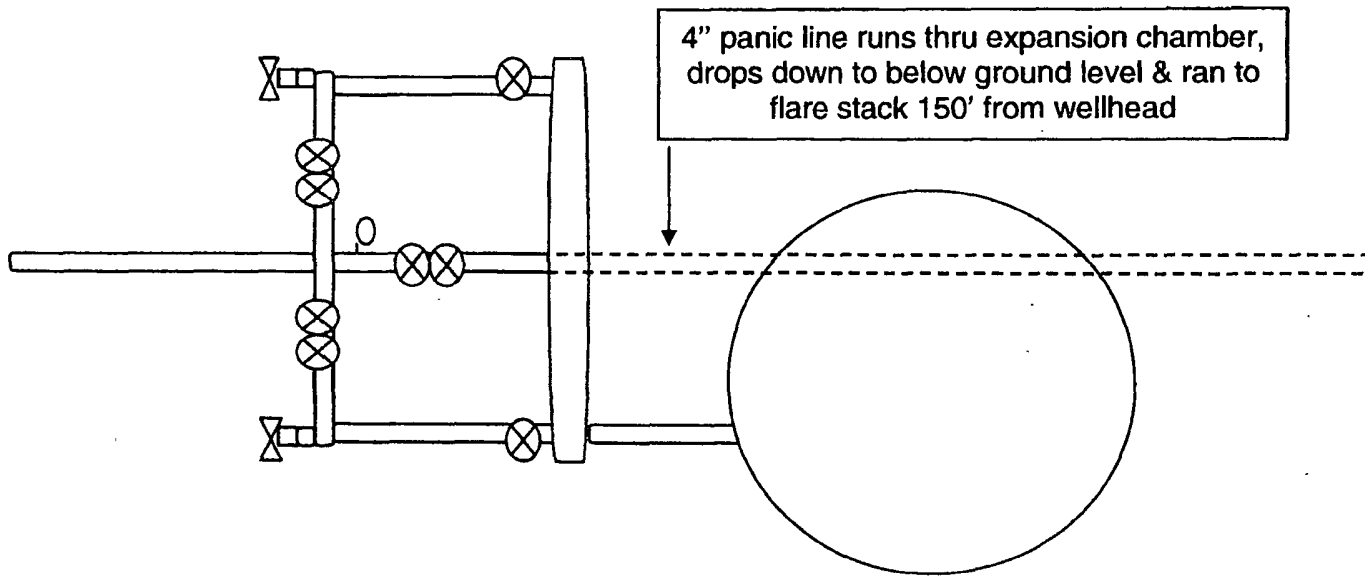
Profile View of Piping from Choke Manifold to the Mud Gas Separator



*Pass to 2*

*1 of 2*

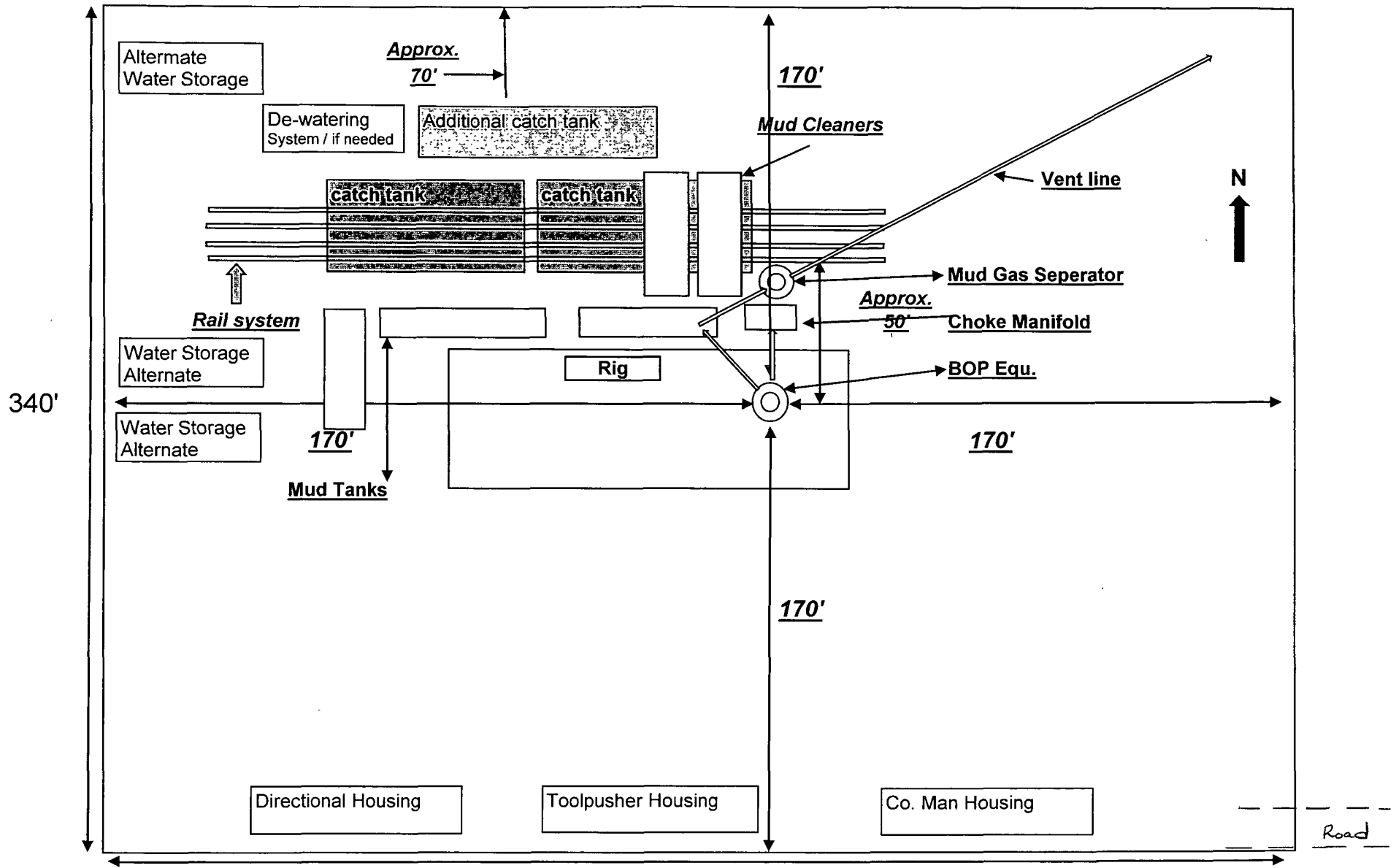
Aerial View of the Piping from the Choke  
Manifold to the Mud Gas Separator



~~Page 2 of 2~~

2 of 2

EXHIBIT 4  
Sand Tank 17 Fed Com 4H



DISTRICT I --- CHECKLIST FOR INTENTS TO DRILL

Operator EOG RESOURCES INC OGRID # 7377  
20944 Well Name & # SAND TANK 17 FED COM # 4 H Surface Type (F)(S)(P)  
Location: UL J, Sect 17, Township 18 s, RNG 30 e, Sub-surface Type (F)(S)(P)  
K 18 - 18 - 30

A. Date C101 rec'd      /      /      C101 reviewed      /      /     

- B. 1. Check mark, Information is OK on Forms:  
OGRID  BONDING (FED), PROP CODE , WELL # , SIGNATURE
2. Inactive Well list as of: 2/5/14 # wells 471, # Inactive wells 4
- a. District Grant APD but see number of inactive wells:  
No letter required ; Sent Letter to Operator     , to Santa Fe
3. Additional Bonding as of: 2/11/14
- a. District Denial because operator needs addition bonding:  
No Letter required ; Sent Letter to Operator     , To Santa Fe
- b. District Denial because of Inactive well list and Financial Assurance:  
No Letter required ; Sent Letter to Operator     , To Santa Fe

- C. C102 YES  NO     , Signature
1. Pool SAND TANK; BONE SPRING, Code 96832
- a. Dedicated acreage 160, What Units 17: IJ 16: KL
- b. SUR. Location Standard  Non-Standard Location 1 OP Standard
- c. Well shares acres: Yes     , No , # of wells      plus this well #
2. 2<sup>nd</sup>. Operator in same acreage, Yes     , No   
Agreement Letter     , Disagreement letter
3. Intent to Directional Drill Yes  No
- a. Dedicated acreage 160, What Units 17: IJ 16: KL
- b. Bottomhole Location Standard     , Non-Standard Bottomhole
4. Downhole Commingle: Yes     , No
- a. Pool #2     , Code     , Acres       
Pool #3     , Code     , Acres       
Pool #4     , Code     , Acres
5. POTASH Area Yes     , No

D. Blowout Preventer Yes  No     

E. H2S Yes  No     

F. C144 Pit Registration Yes  No     

- G. Does APD require Santa Fe Approval:
1. Non-Standard Location: Yes     , No , NSL #
2. Non-Standard Proration: Yes     , No , NSP #
3. Simultaneous Dedication: Yes     , No , SD #       
Number of wells      Plus #
4. Injection order Yes     , No ; PMX #      or WFX #
5. SWD order Yes     , NO ; SWD #
6. DHC from SF     ; DHC-HOB     ; Holding

7. OCD Approval Date 02/05/14 API #30-0 15-39169  
8. Reviewers KZ