

HOBBSOCD

FEB 02 2015

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

ATS-14-708

FORM APPROVED
OMB NO. 1004-0137
Expires October 31, 2014

5. Lease Serial No.

NMNM19858

6. If Indian, Allottee or Tribe Name

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

7. Unit or CA Agreement Name and No.

8. Lease Name and Well No.

Hawk 26 Fed 7H

9. API Well No.

30-025- 42400

2. Name of Operator

EOG Resources, Inc.

3a. Address

P.O. Box 2267 Midland, TX 79702

3b. Phone No. (include area code)

432-686-3689

10. Field and Pool, or Exploratory

Red Hills; Upper BS Shale

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

At surface 500 FSL & 1709 FEL, SWSE (0), Sec 26, T24S, R33E

At proposed prod. zone 230 FSL & 1897 FEL, SWSE (0), Sec 35, T24S, R33E

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

Sec 26, T24S, R33E

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

Approximately +/- 21 miles Northwest from Jal, NM

12. County or Parish

Lea

13. State

NM

15. Distance from proposed*

location to nearest
property or lease line, ft.
(Also to nearest drg. unit line, if any)

10'

16. No. of Acres in lease

1440

17. Spacing Unit dedicated to this well

160 ac

18. Distance from proposed location*

to nearest well, drilling, completed,
applied for, on this lease, ft.

30' from 8H

19. Proposed Depth

14865 MD - 9544 TVD

20. BLM/BIA Bond No. on file

NM 2308

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

3528' GL

22. Approximate date work will start*

12/1/14

23. Estimated duration

25 days

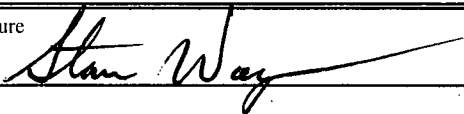
24. Attachments

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

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

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

25. Signature



Name (Printed/Typed)

Stan Wagner

Date

4/7/14

Title

Regulatory Analyst

Approved by (Signature)



Name (Printed/Typed)

Date

JAN 26 2015

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 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

FEB 03 2015

EOG RESOURCES, INC.
HAWK 26 FED NO. 7H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,218'
Top of Salt	1,710'
Base of Salt / Top Anhydrite	5,000'
Base Anhydrite	5,248'
Lamar	5,248'
Bell Canyon	5,279'
Cherry Canyon	6,273'
Brushy Canyon	7,725'
Bone Spring Lime	9,250'
TD	9,544'

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

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,273'	Oil
Brushy Canyon	7,725'	Oil
Bone Spring Lime	9,250'	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 ~~1,245'~~ and circulating cement back to surface. **1300'**

4. CASING PROGRAM - NEW

See COA

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
17.5"	0 - 1,245' 1300'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4,000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4,000' - 5,100'	9.625"	40#	HCK55	LTC	1.125	1.25	1.60
8.75"	0'-14,865'	5.500"	17#	P110 or HCP110	LTC	1.125	1.25	1.60

**EOG RESOURCES, INC.
HAWK 26 FED NO. 7H**

Cementing Program:

Depth	No. Sacks	Wt. lb/gal	Yld Ft ³ /ft	Mix Water Gal/sk	Slurry Description
13-3/8" 1,245'	600	13.5	1.73	9.13	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ surface)
	300	14.8	1.34	6.34	Tail: Class C + 0.005 pps Static Free + 2% CaCl ₂ + 0.25 pps CelloFlake + 0.005 gps FP-6L
9-5/8" 5,100'	1000	12.7	2.22	12.38	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	6.33	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
5-1/2" 14,865'	375	10.8	3.67	21.7	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 @ 4600')
	400	11.8	2.38	13.25	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
	1425	14.2	1.28	5.75	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:

*See
COA*

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.

EOG RESOURCES, INC.
HAWK 26 FED NO. 7H

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 2000/ 250 psig and the annular preventer to 2000/ 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 3000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

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:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

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

See COA

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 - 1,245'	Fresh Water Gel	8.6-8.8	28-34	N/c
1,245' - 5,100'	Saturated Brine	10.0-10.2	28-34	N/c
5,100' - 9,022'	Fresh Water	8.4-8.6	28-34	N/c
9,022' - 14,865'	Cut Brine Water	9.0-9.5	28-34	N/c
Lateral				

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

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.

See COA

(C) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

EOG RESOURCES, INC.
HAWK 26 FED NO. 7H

8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logs are not planned for this well.
See
COA 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 4132 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:

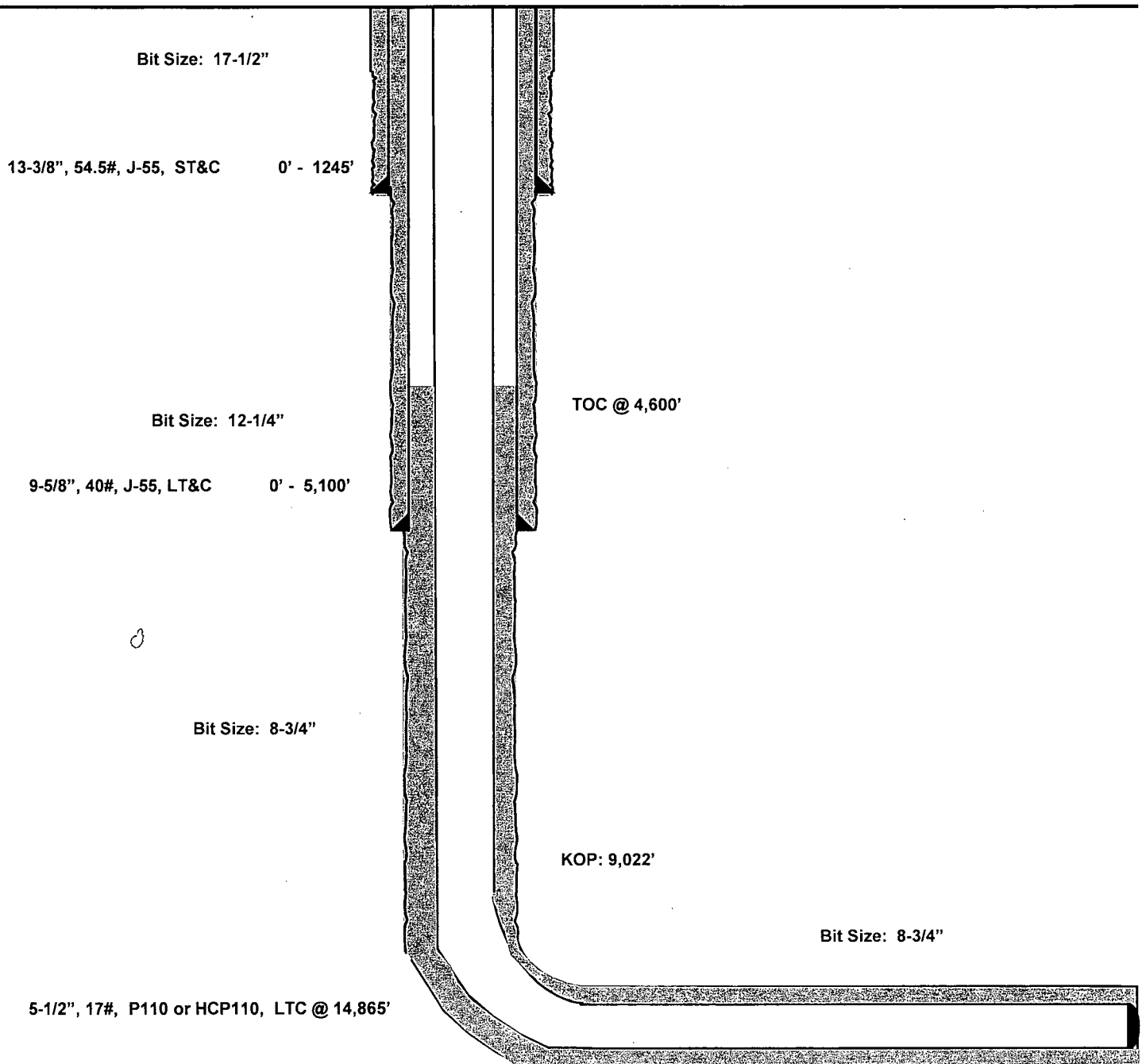
The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

Hawk 26 Fed #7H
Lea County, New Mexico
Proposed Wellbore

500' FSL
1709' FEL
Section 26
T-24-S, R-33-E

API: 30-025-*****

KB: 3,558'
GL: 3,528'



Lateral:
14,865' MD, 9,544' TVD
Upper Most Perf:
10' FNL & 1889' FEL
Lower Most Perf:
330' FSL & 1897' FEL
BH Location: 230' FSL & 1897' FEL
Section 35
T-24-S, R-33-E



Lea County, NM

Hawk 26 Fed #7H

GL 3528' + 30' KB

Plan #1

PROJECT DETAILS: Lea County, NM

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

WELL DETAILS: Hawk 26 Fed #7H

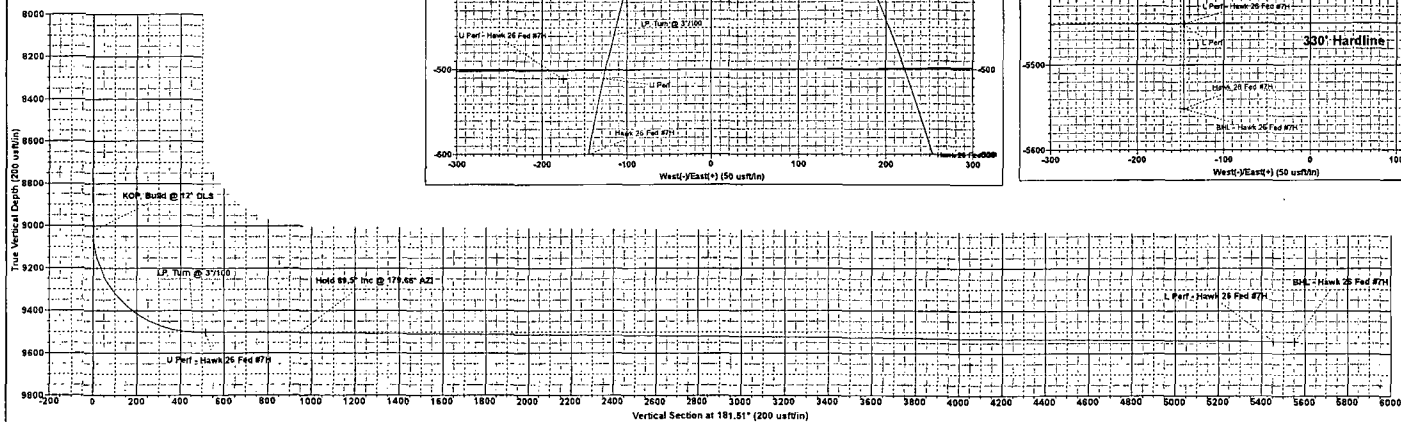
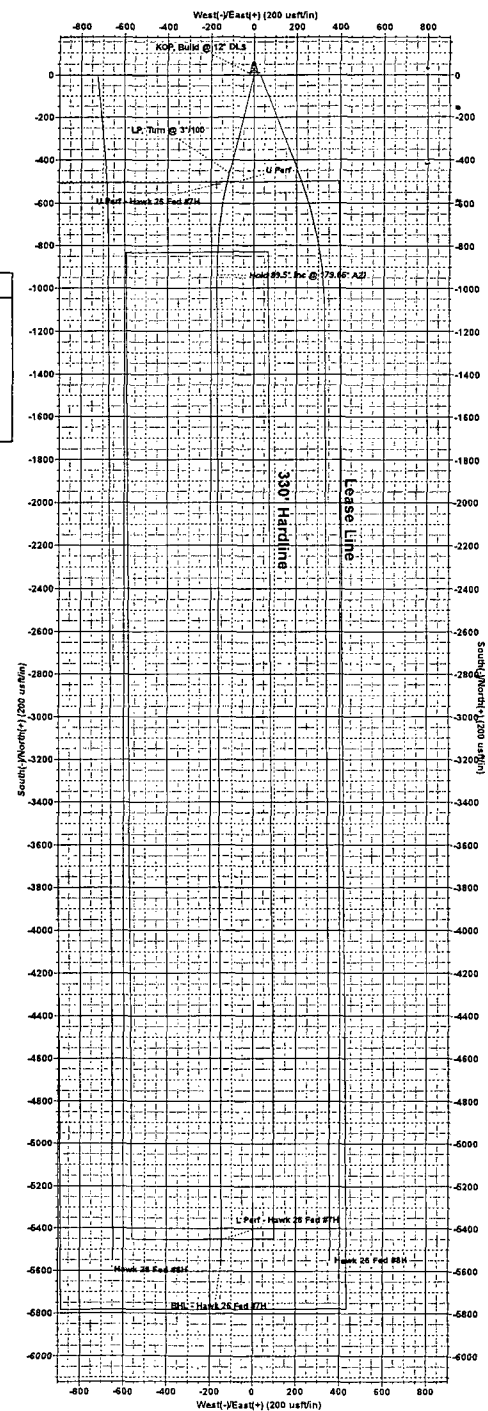
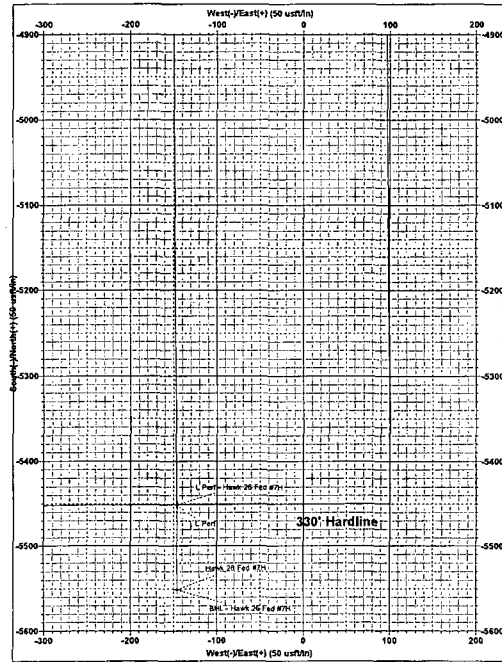
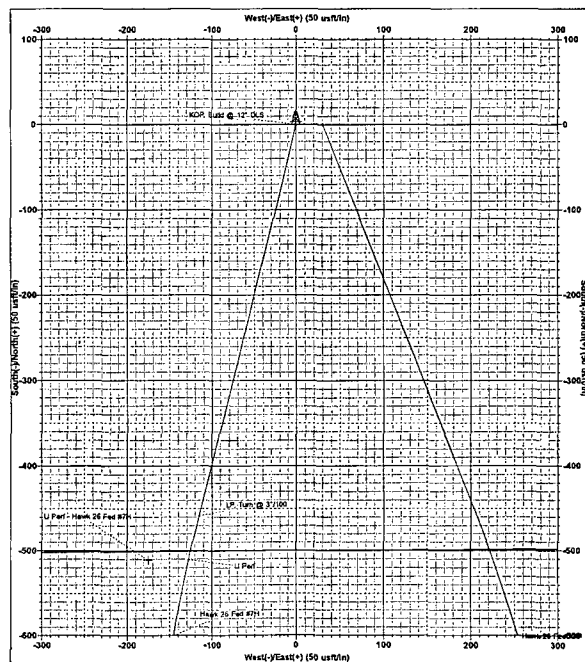
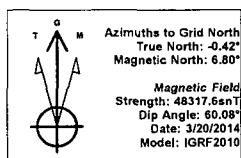
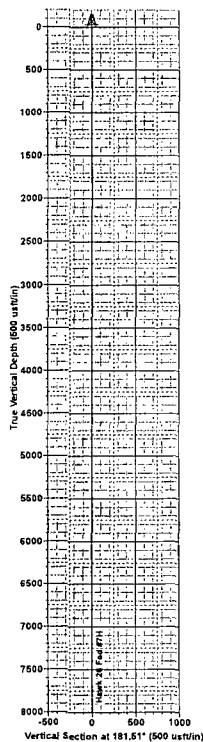
Ground Level:	3528.00
Northing	431052.00
Easting	745558.00
Latitude	32° 10' 57.319 N
Longitude	103° 32' 22.673 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	9022.55	0.00	0.00	9022.55	0.00	0.00	0.00	0.00	0.00		
3	9768.38	89.50	194.15	9500.00	-458.94	-115.70	12.00	194.15	461.82		KOP Build @ 12° DLS
4	10251.46	89.50	179.86	9504.23	-337.22	-173.51	3.00	-90.96	941.46		LP Turn @ 3°/100
5	14885.50	89.50	179.86	9544.50	-5551.00	-146.00	0.00	0.00	5552.92		Hold 89.5° Inc @ 179.86° AZI TD at 14885.50

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
U Perf - Hawk 26 Fed #7H	9500.46	-511.00	-175.00	430541.00	745383.00	Point
L Perf - Hawk 26 Fed #7H	9543.63	-5451.00	-146.00	425601.00	745412.00	Point
BHL - Hawk 26 Fed #7H	9544.50	-5551.00	-146.00	425501.00	745412.00	Point





EOG Resources - Midland

Lea County, NM

Hawk 26 Fed

Hawk 26 Fed #7H

OH

Plan: Plan #1

Standard Survey Report

21 March, 2014



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
Project: Lea County, NM
Site: Hawk 26 Fed
Well: Hawk 26 Fed #7H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Hawk 26 Fed #7H
TVD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
MD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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

Site: Hawk 26 Fed
Site Position: Northing: 431,034.00 usft Latitude: 32° 10' 57.351 N
From: Map Easting: 742,667.00 usft Longitude: 103° 32' 56.312 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.42 °

Well: Hawk 26 Fed #7H
Well Position: +N/-S 0.00 usft Northing: 431,052.00 usft Latitude: 32° 10' 57.319 N
+E/-W 0.00 usft Easting: 745,558.00 usft Longitude: 103° 32' 22.673 W
Position Uncertainty: 0.00 usft Wellhead Elevation: usft Ground Level: 3,528.00 usft

Wellbore: OH
Magnetics: Model Name Sample Date Declination (°) Dip Angle (°) Field Strength (nT)
IGRF2010 3/20/2014 7.23 60.08 48,318

Design: Plan #1
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 0.00 181.51

Survey Tool Program Date: 3/21/2014
From (usft) To (usft) Survey (Wellbore) Tool Name Description
0.00 14,865.32 Plan #1 (OH) MWD MWD - Standard

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
Project: Lea County, NM
Site: Hawk 26 Fed
Well: Hawk 26 Fed #7H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Hawk 26 Fed #7H
TVD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
MD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
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1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
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1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
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2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
 Project: Lea County, NM
 Site: Hawk 26 Fed
 Well: Hawk 26 Fed #7H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well Hawk 26 Fed #7H
 TVD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
 MD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,022.55	0.00	0.00	9,022.55	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Build @ 12° DLS									
9,025.00	0.29	194.15	9,025.00	-0.01	0.00	0.01	12.00	12.00	0.00
9,050.00	3.29	194.15	9,049.99	-0.76	-0.19	0.77	12.00	12.00	0.00
9,075.00	6.29	194.15	9,074.89	-2.79	-0.70	2.81	12.00	12.00	0.00
9,100.00	9.29	194.15	9,099.66	-6.08	-1.53	6.12	12.00	12.00	0.00



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
Project: Lea County, NM
Site: Hawk 26 Fed
Well: Hawk 26 Fed #7H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Hawk 26 Fed #7H
TVD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
MD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,125.00	12.29	194.15	9,124.22	-10.62	-2.68	10.68	12.00	12.00	0.00
9,150.00	15.29	194.15	9,148.49	-16.40	-4.13	16.50	12.00	12.00	0.00
9,175.00	18.29	194.15	9,172.42	-23.40	-5.90	23.55	12.00	12.00	0.00
9,200.00	21.29	194.15	9,195.94	-31.61	-7.97	31.81	12.00	12.00	0.00
9,225.00	24.29	194.15	9,218.99	-41.00	-10.34	41.26	12.00	12.00	0.00
9,250.00	27.29	194.15	9,241.49	-51.55	-13.00	51.87	12.00	12.00	0.00
9,275.00	30.29	194.15	9,263.40	-63.22	-15.94	63.62	12.00	12.00	0.00
9,300.00	33.29	194.15	9,284.65	-75.99	-19.16	76.47	12.00	12.00	0.00
9,325.00	36.29	194.15	9,305.18	-89.82	-22.65	90.39	12.00	12.00	0.00
9,350.00	39.29	194.15	9,324.93	-104.68	-26.39	105.33	12.00	12.00	0.00
9,375.00	42.29	194.15	9,343.85	-120.51	-30.38	121.27	12.00	12.00	0.00
9,400.00	45.29	194.15	9,361.90	-137.29	-34.61	138.15	12.00	12.00	0.00
9,425.00	48.29	194.15	9,379.01	-154.95	-39.07	155.93	12.00	12.00	0.00
9,450.00	51.29	194.15	9,395.15	-173.47	-43.73	174.56	12.00	12.00	0.00
9,475.00	54.29	194.15	9,410.26	-192.77	-48.60	193.98	12.00	12.00	0.00
9,500.00	57.29	194.15	9,424.31	-212.82	-53.65	214.15	12.00	12.00	0.00
9,525.00	60.29	194.15	9,437.27	-233.55	-58.88	235.02	12.00	12.00	0.00
9,550.00	63.29	194.15	9,449.08	-254.91	-64.27	256.51	12.00	12.00	0.00
9,575.00	66.29	194.15	9,459.73	-276.84	-69.79	278.58	12.00	12.00	0.00
9,600.00	69.29	194.15	9,469.17	-299.28	-75.45	301.16	12.00	12.00	0.00
9,625.00	72.29	194.15	9,477.40	-322.17	-81.22	324.20	12.00	12.00	0.00
9,650.00	75.29	194.15	9,484.37	-345.45	-87.09	347.62	12.00	12.00	0.00
9,675.00	78.29	194.15	9,490.08	-369.04	-93.04	371.36	12.00	12.00	0.00
9,700.00	81.29	194.15	9,494.51	-392.90	-99.05	395.37	12.00	12.00	0.00
9,725.00	84.29	194.15	9,497.65	-416.95	-105.12	419.57	12.00	12.00	0.00
9,750.00	87.29	194.15	9,499.48	-441.12	-111.21	443.89	12.00	12.00	0.00
9,768.38	89.50	194.15	9,500.00	-458.94	-115.70	461.82	12.00	12.00	0.00
LP, Turn @ 3°/100									
9,800.00	89.50	193.20	9,500.27	-489.66	-123.18	492.73	3.00	0.00	-3.00
9,821.39	89.50	192.56	9,500.46	-510.51	-127.95	513.70	3.00	0.00	-3.00
U Perf									
9,900.00	89.50	190.20	9,501.15	-587.56	-143.46	591.13	3.00	0.00	-3.00
10,000.00	89.50	187.20	9,502.03	-686.40	-158.58	690.33	3.00	0.00	-3.00
10,100.00	89.50	184.20	9,502.91	-785.89	-168.51	790.05	3.00	0.00	-3.00
10,200.00	89.50	181.20	9,503.79	-885.76	-173.23	890.01	3.00	0.00	-3.00
10,251.46	89.50	179.66	9,504.24	-937.22	-173.61	941.46	3.00	0.00	-3.00
Hold 89.5° Inc @ 179.66° AZI									
10,300.00	89.50	179.66	9,504.66	-985.75	-173.32	989.97	0.00	0.00	0.00
10,400.00	89.50	179.66	9,505.53	-1,085.75	-172.72	1,089.91	0.00	0.00	0.00
10,500.00	89.50	179.66	9,506.40	-1,185.74	-172.12	1,189.86	0.00	0.00	0.00
10,600.00	89.50	179.66	9,507.28	-1,285.74	-171.53	1,289.80	0.00	0.00	0.00
10,700.00	89.50	179.66	9,508.15	-1,385.73	-170.93	1,389.75	0.00	0.00	0.00
10,800.00	89.50	179.66	9,509.02	-1,485.73	-170.33	1,489.69	0.00	0.00	0.00
10,900.00	89.50	179.66	9,509.89	-1,585.72	-169.73	1,589.63	0.00	0.00	0.00



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
 Project: Lea County, NM
 Site: Hawk 26 Fed
 Well: Hawk 26 Fed #7H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well Hawk 26 Fed #7H
 TVD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
 MD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,000.00	89.50	179.66	9,510.77	-1,685.71	-169.13	1,689.58	0.00	0.00	0.00
11,100.00	89.50	179.66	9,511.64	-1,785.71	-168.53	1,789.52	0.00	0.00	0.00
11,200.00	89.50	179.66	9,512.51	-1,885.70	-167.94	1,889.47	0.00	0.00	0.00
11,300.00	89.50	179.66	9,513.39	-1,985.70	-167.34	1,989.41	0.00	0.00	0.00
11,400.00	89.50	179.66	9,514.26	-2,085.69	-166.74	2,089.35	0.00	0.00	0.00
11,500.00	89.50	179.66	9,515.13	-2,185.69	-166.14	2,189.30	0.00	0.00	0.00
11,600.00	89.50	179.66	9,516.00	-2,285.68	-165.54	2,289.24	0.00	0.00	0.00
11,700.00	89.50	179.66	9,516.88	-2,385.68	-164.94	2,389.19	0.00	0.00	0.00
11,800.00	89.50	179.66	9,517.75	-2,485.67	-164.34	2,489.13	0.00	0.00	0.00
11,900.00	89.50	179.66	9,518.62	-2,585.66	-163.75	2,589.08	0.00	0.00	0.00
12,000.00	89.50	179.66	9,519.49	-2,685.66	-163.15	2,689.02	0.00	0.00	0.00
12,100.00	89.50	179.66	9,520.37	-2,785.65	-162.55	2,788.96	0.00	0.00	0.00
12,200.00	89.50	179.66	9,521.24	-2,885.65	-161.95	2,888.91	0.00	0.00	0.00
12,300.00	89.50	179.66	9,522.11	-2,985.64	-161.35	2,988.85	0.00	0.00	0.00
12,400.00	89.50	179.66	9,522.98	-3,085.64	-160.75	3,088.80	0.00	0.00	0.00
12,500.00	89.50	179.66	9,523.86	-3,185.63	-160.16	3,188.74	0.00	0.00	0.00
12,600.00	89.50	179.66	9,524.73	-3,285.62	-159.56	3,288.68	0.00	0.00	0.00
12,700.00	89.50	179.66	9,525.60	-3,385.62	-158.96	3,388.63	0.00	0.00	0.00
12,800.00	89.50	179.66	9,526.48	-3,485.61	-158.36	3,488.57	0.00	0.00	0.00
12,900.00	89.50	179.66	9,527.35	-3,585.61	-157.76	3,588.52	0.00	0.00	0.00
13,000.00	89.50	179.66	9,528.22	-3,685.60	-157.16	3,688.46	0.00	0.00	0.00
13,100.00	89.50	179.66	9,529.09	-3,785.60	-156.57	3,788.40	0.00	0.00	0.00
13,200.00	89.50	179.66	9,529.97	-3,885.59	-155.97	3,888.35	0.00	0.00	0.00
13,300.00	89.50	179.66	9,530.84	-3,985.59	-155.37	3,988.29	0.00	0.00	0.00
13,400.00	89.50	179.66	9,531.71	-4,085.58	-154.77	4,088.24	0.00	0.00	0.00
13,500.00	89.50	179.66	9,532.58	-4,185.57	-154.17	4,188.18	0.00	0.00	0.00
13,600.00	89.50	179.66	9,533.46	-4,285.57	-153.57	4,288.13	0.00	0.00	0.00
13,700.00	89.50	179.66	9,534.33	-4,385.56	-152.97	4,388.07	0.00	0.00	0.00
13,800.00	89.50	179.66	9,535.20	-4,485.56	-152.38	4,488.01	0.00	0.00	0.00
13,900.00	89.50	179.66	9,536.07	-4,585.55	-151.78	4,587.96	0.00	0.00	0.00
14,000.00	89.50	179.66	9,536.95	-4,685.55	-151.18	4,687.90	0.00	0.00	0.00
14,100.00	89.50	179.66	9,537.82	-4,785.54	-150.58	4,787.85	0.00	0.00	0.00
14,200.00	89.50	179.66	9,538.69	-4,885.54	-149.98	4,887.79	0.00	0.00	0.00
14,300.00	89.50	179.66	9,539.57	-4,985.53	-149.38	4,987.73	0.00	0.00	0.00
14,400.00	89.50	179.66	9,540.44	-5,085.52	-148.79	5,087.68	0.00	0.00	0.00
14,500.00	89.50	179.66	9,541.31	-5,185.52	-148.19	5,187.62	0.00	0.00	0.00
14,600.00	89.50	179.66	9,542.18	-5,285.51	-147.59	5,287.57	0.00	0.00	0.00
14,700.00	89.50	179.66	9,543.06	-5,385.51	-146.99	5,387.51	0.00	0.00	0.00
14,765.81	89.50	179.66	9,543.63	-5,451.31	-146.60	5,453.28	0.00	0.00	0.00
L Perf									
14,800.00	89.50	179.66	9,543.93	-5,485.50	-146.39	5,487.45	0.00	0.00	0.00
14,865.50	89.50	179.66	9,544.50	-5,551.00	-146.00	5,552.92	0.00	0.00	0.00

TD at 14865.50



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
Project: Lea County, NM
Site: Hawk 26 Fed
Well: Hawk 26 Fed #7H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Hawk 26 Fed #7H
TVD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
MD Reference: WELL @ 3558.00usft (GL 3528' + 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
U Perf - Hawk 26 Fed #7	0.00	0.00	9,500.46	-511.00	-175.00	430,541.00	745,383.00	32° 10' 52.275 N	103° 32' 24.753 W
- plan misses target center by 45.86usft at 9831.16usft MD (9500.55 TVD, -520.05 N, -130.05 E)									
- Point									
L Perf - Hawk 26 Fed #7	0.00	0.00	9,543.63	-5,451.00	-146.00	425,601.00	745,412.00	32° 10' 3.389 N	103° 32' 24.839 W
- plan misses target center by 0.60usft at 14765.50usft MD (9543.63 TVD, -5451.00 N, -146.60 E)									
- Point									
BHL - Hawk 26 Fed #7H	0.00	0.00	9,544.50	-5,551.00	-146.00	425,501.00	745,412.00	32° 10' 2.400 N	103° 32' 24.848 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
9023	9023	0	0	KOP, Build @ 12° DLS
9768	9500	-459	-116	LP, Turn @ 3°/100
9821	9500	-511	-128	U Perf
10,251	9504	-937	-174	Hold 89.5° Inc @ 179.66° AZI
14,766	9544	-5451	-147	L Perf
14,866	9545	-5551	-146	TD at 14865.50

Checked By: _____ Approved By: _____ Date: _____

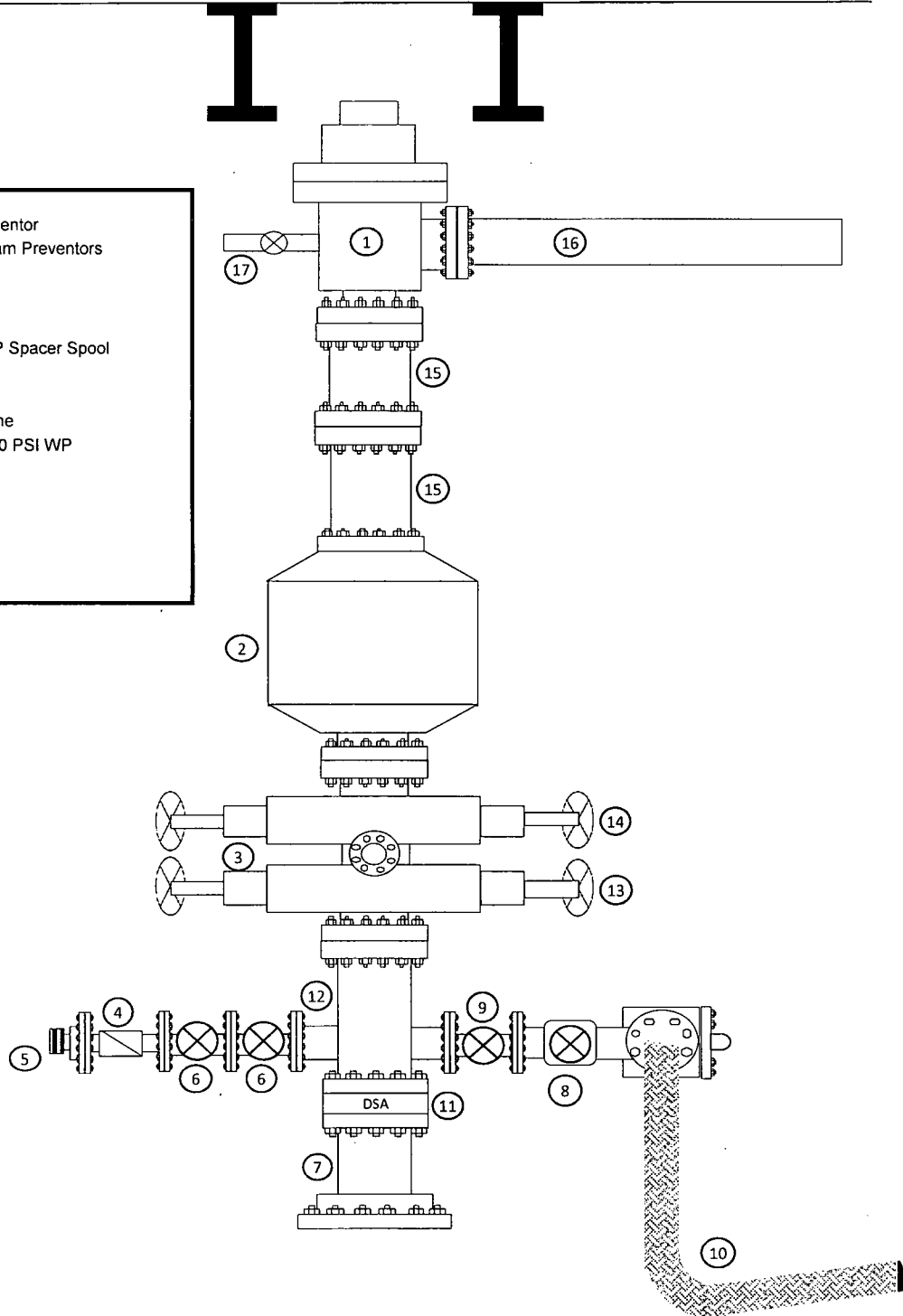
Exhibit 1

EOG Resources

5M BOPE

Rig Floor

1. 13 5/8" Rotating Head
2. Hydril 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

5M BOPE

-
- The diagram illustrates a shale gas processing system. At the top left is a circular **Mud Gas Separator**. A line from its top right connects to a vertical separator, labeled **7**, with the text **150' to Flare** and an arrow indicating the flow direction. Above the Mud Gas Separator, a horizontal line with an arrow points **To Shale Shaker**. This line includes a pump (10) and several valves (12, 13). The vertical separator (7) has multiple inlet and outlet lines, each equipped with valves (1, 3, 8, 9, 11). An upward arrow on the right side of the vertical separator indicates the flow direction within it.

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.

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: RIG #123 Asset # M10761	
HOSE SPECIFICATIONS			
Type: CHOKER LINE		Length: 35'	
I.D. 4" INCHES		O.D. 8" INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI	BURST PRESSURE PSI	
COUPLINGS			
Type of End Fitting 4 1/16 10K FLANGE			
Type of Coupling: SWEDGED		MANUFACTURED BY MIDWEST HOSE & SPECIALTY	
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 1 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
COMMENTS: 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			
Date: 6/6/2011	Tested By: BOBBY FINK	Approved: MENDI JACKSON	



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

replacement 10.1.4.11

Customer: CACTUS

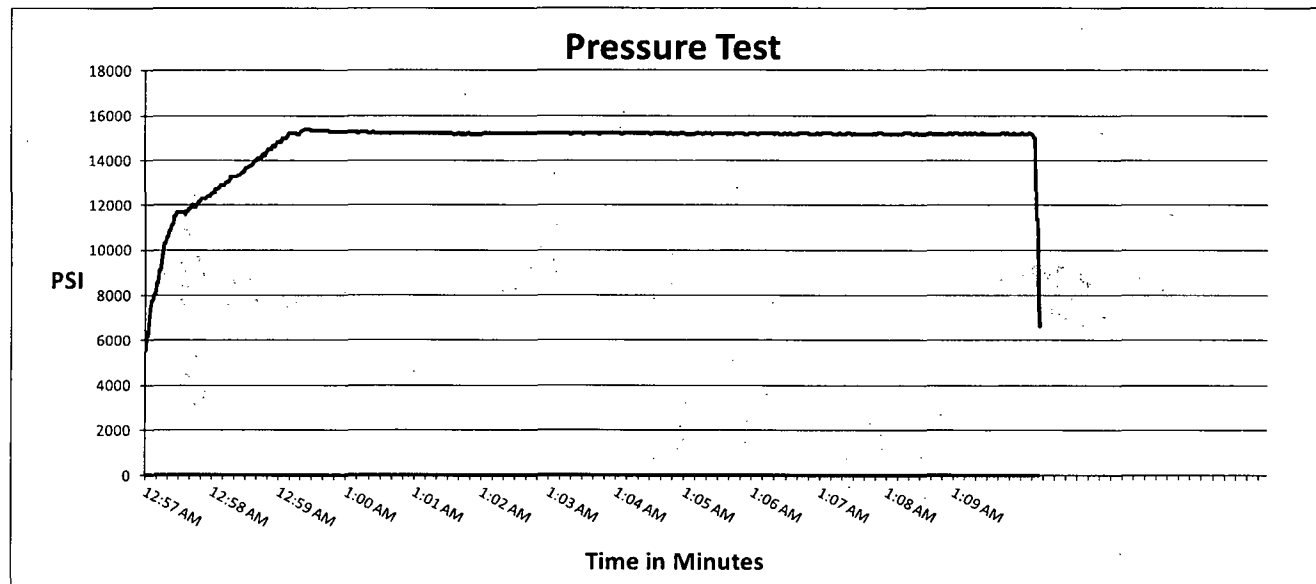
SALES ORDER# 90067

Hose Specifications

<u>Hose Type</u>	<u>Length</u>
C & K	35'
<u>I.D.</u>	<u>O.D.</u>
4"	8"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiplier Applies

Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
4 1/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
6.62"	6.68"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
	90067



Test Pressure
15000 PSI

Time Held at Test Pressure
11 1/4 Minutes

Actual Burst Pressure

Peak Pressure
15439 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Bobby Fink

Approved By: Mendi Jackson

Exhibit 4
EOG Resources
Hawk 26 Fed #7H

Well Site Diagram

