

OCD Hobbs

HOBBS OCD

OCT 19 2015

ATS-15-360

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM124212 FTP NMNM108503 BHL
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator EOG Resources, Inc. (7377)		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 2267 Midland, TX 79702		8. Lease Name and Well No. (99817) Vaca 11 Fed Com 405H
3b. Phone No. (include area code) 432-686-3689		9. API Well No. 30-025- 42889
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 170' FSL & 1140' FWL, SWSW (M), Sec 11, 25S, 33E At proposed prod. zone 230' FSL & 590' FWL, SWSW (M), Sec 14		10. Field and Pool, or Exploratory (51020) RED HILLS; LWR BS
14. Distance in miles and direction from nearest town or post office* Approximately +/- 30 miles Southwest from Jal, NM		11. Sec., T. R. M. or Blk. and Survey or Area Section 11, T25S, R33E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease 1520.00	12. County or Parish Lea
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. 630' frm 406H	13. State NM
19. Proposed Depth 15284' MD, 10500' TVD	20. BLM/BIA Bond No. on file NM 2308	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3369' GL	22. Approximate date work will start* 07/01/2015	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 <i>Stan Wagner</i>	Name (Printed/Typed) Stan Wagner	Date 01/21/2014
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Title
Regulatory Specialist

Approved by (Signature) Steve Caffey	Name (Printed/Typed) Office CARLSBAD FIELD OFFICE	Date OCT 13 2015
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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

Kz
10/19/15

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

OCT 20 2015

EOG RESOURCES, INC.
VACA 11 FED COM NO. 405H

HOBBS OCD

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1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,121'
Top of Salt	1,462'
Base of Salt / Top Anhydrite	4,810'
Base Anhydrite	5,054'
Lamar	5,054'
Bell Canyon	5,082'
Cherry Canyon	6,149'
Brushy Canyon	7,768'
Bone Spring Lime	9,236'
1 st Bone Spring Sand	10,179'
2 nd Bone Spring Shale	10,400'
TD	10,500'

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

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,149'	Oil
Brushy Canyon	7,768'	Oil
Bone Spring Lime	9,236'	Oil
1 st Bone Spring Sand	10,179'	Oil
2 nd Bone Spring Shale	10,400'	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 1,145' and circulating cement back to surface.

4. CASING PROGRAM - NEW

See
COP

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
17.5"	0 - 1,145'	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' - 4,900'	9.625"	40#	HCK55	LTC	1.125	1.25	1.60
8.75"	0'-15,284'	5.500"	17#	P110 or HCP110	LTC	1.125	1.25	1.60

EOG RESOURCES, INC.
VACA 11 FED COM NO. 405H

Cementing Program:

Depth	No. Sacks	Wt. lb/gal	Yld Ft ³ /ft	Mix Water Gal/sk	Slurry Description
13-3/8" 1,145' 1200	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" 4,900'	900	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)
	450	14.8	1.32	6.33	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
5-1/2" 15,284'	400	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 @ 4400')
	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
	1600	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:

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

3000 psi BOPE is adequate for this application. Due to the 3000 psi BOPE requirement no FIT tests are planned.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 2000/ 250 psig and the annular preventer to 2000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

EOG RESOURCES, INC.
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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.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,145' 1200	Fresh Water Gel	8.6-8.8	28-34	N/c
1,145' – 4,900'	Saturated Brine	10.0-10.2	28-34	N/c
4,900' – 9,982'	Fresh Water	8.4-8.6	28-34	N/c
9,982' – 15,284' Lateral	Cut Brine Water	9.0-9.5	28-34	N/c

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

EOG RESOURCES, INC.
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See COA
8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logs are not planned for this well.

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

See COA
9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom-hole temperature (BHT) at TD is 163 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 4546 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:

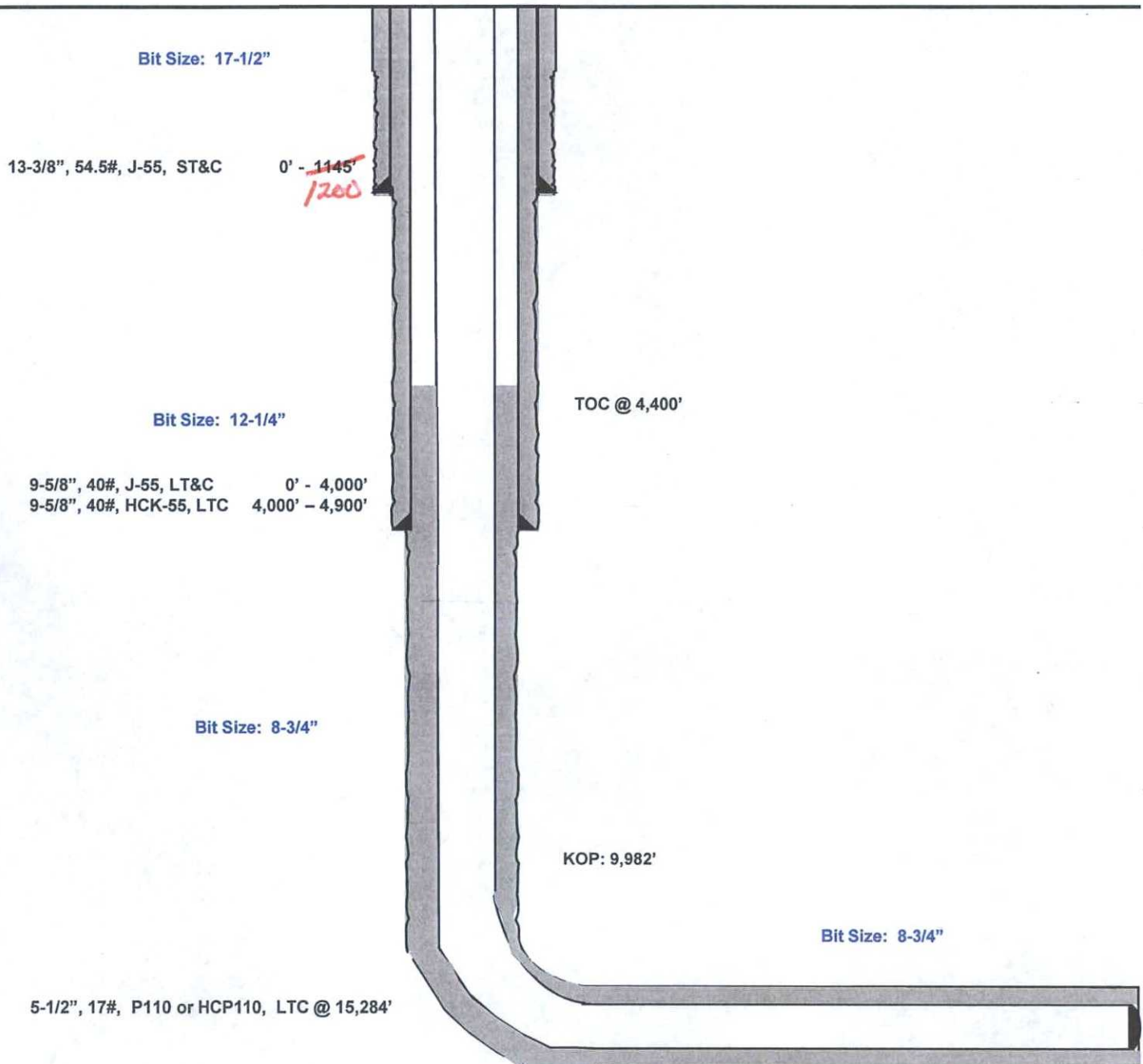
The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

Vaca 11 Fed Com #405H
Lea County, New Mexico
Proposed Wellbore

170' FSL
1140' FWL
Section 11
T-25-S, R-33-E

API: 30-025-*****

KB: 3,399'
GL: 3,369'



Lateral:
15,284' MD, 10,500' TVD
Upper Most Perf:
330' FNL & 590' FWL
Lower Most Perf:
330' FSL & 590' FWL
BH Location: 230' FSL & 590' FWL
Section 14
T-25-S, R-33-E



Lea County, NM (NAD 27 NME)

Vaca 11 Fed Com #405H

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 27 NME)

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



Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.71°
Magnetic Field
Strength: 48211.5 nT
Dip Angle: 66.02°
Date: 1/8/2015
Model: IGRF201014

To convert a Magnetic Direction to a Grid Direction, Add 6.71°
To convert a Magnetic Direction to a True Direction, Add 7.13° East
To convert a True Direction to a Grid Direction, Subtract 0.42°

WELL DETAILS: #405H

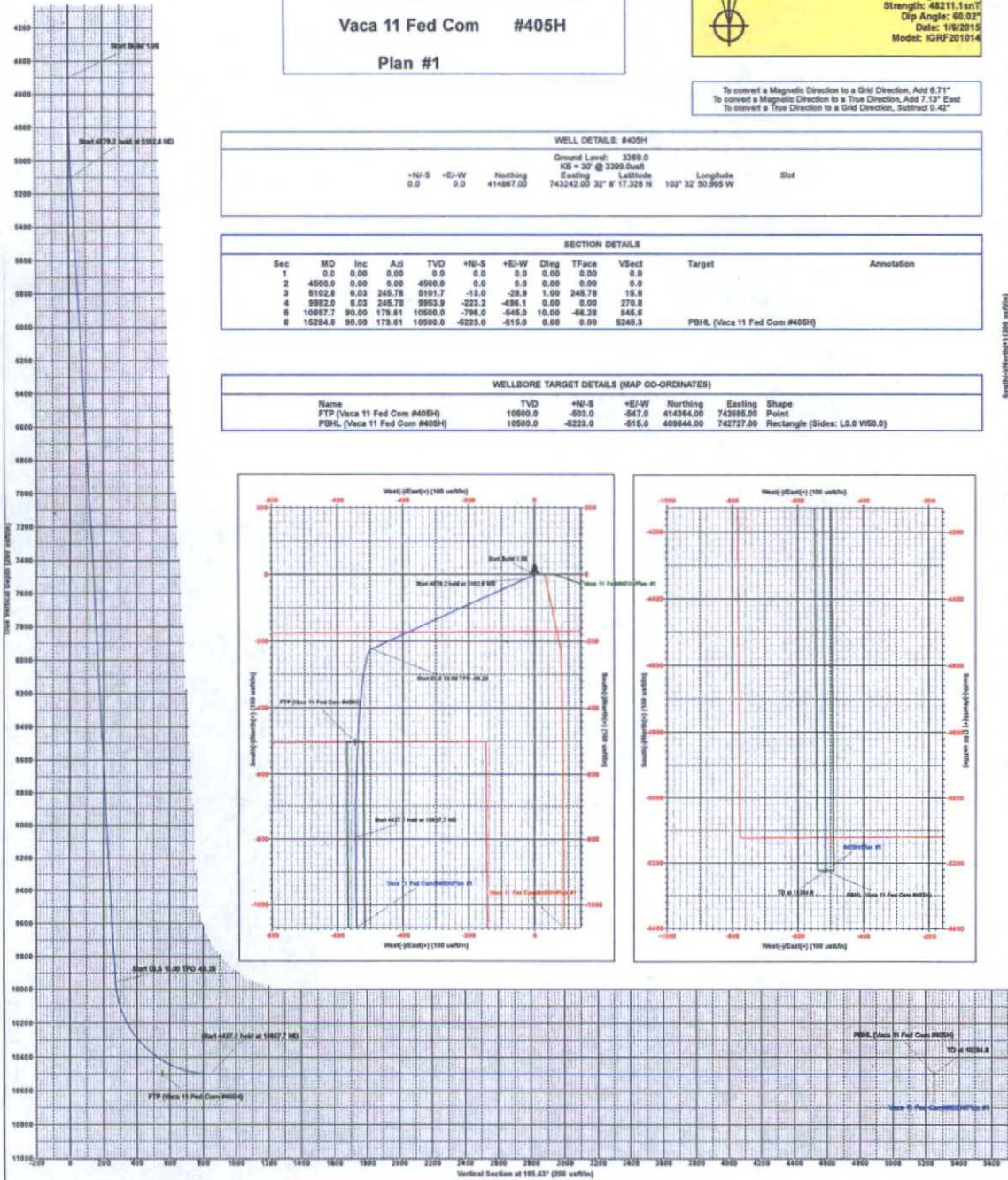
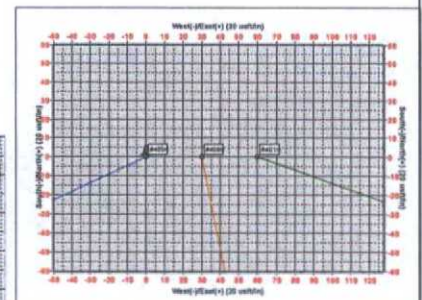
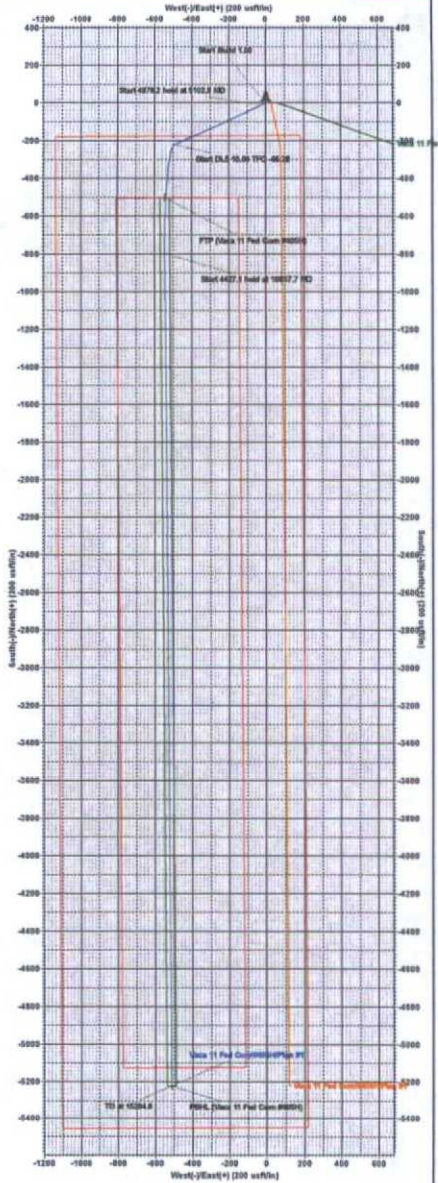
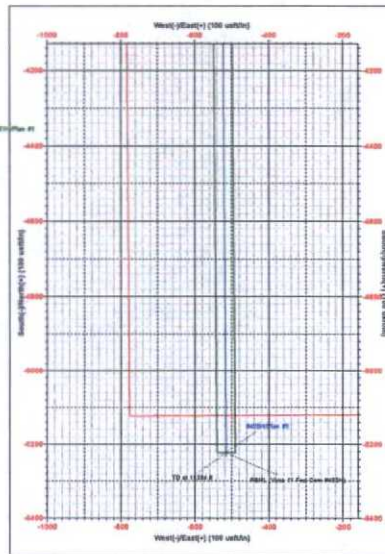
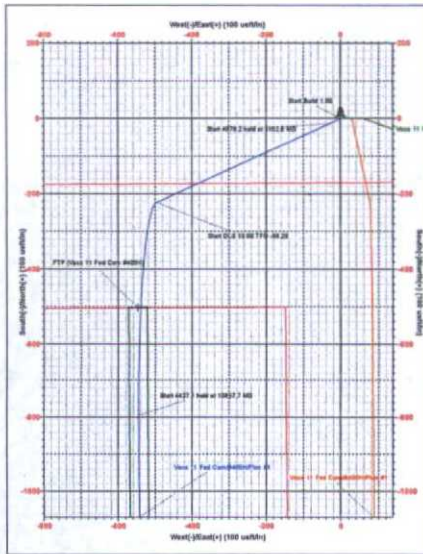
Ground Level: 3289.0
KB = 30' @ 3289.0 feet
Northing: 414867.00
Eastings: 743242.00 32' 8" 17.328 N
Longitude: 103° 32' 50.995 W
Shot

SECTION DETAILS

Sec	MD	Inc	Adj	TVD	+N-S	+E-W	Dlog	TFace	VSeet	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4500.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.0		
3	5102.6	6.03	245.78	5101.7	-13.0	-28.9	1.00	245.78	15.8		
4	9992.0	0.03	245.78	9993.9	-223.3	-486.1	0.00	0.00	276.8		
5	10857.7	90.00	179.61	10850.0	-796.0	-545.0	10.00	-56.28	845.6		
6	15284.6	90.00	179.61	10900.0	-5223.0	-515.0	0.00	0.00	8248.3		PSHL (Vaca 11 Fed Com #405H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Eastings	Shape
FTP (Vaca 11 Fed Com #405H)	10900.0	-503.0	-547.5	414364.00	743695.00	Point
PSHL (Vaca 11 Fed Com #405H)	10900.0	-5223.0	-515.0	409644.00	742727.00	Rectangle (Sides: L3.0 W50.0)



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EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Vaca 11 Fed Com

#405H

OH

Plan: Plan #1

Standard Survey Report

07 January, 2015



EOG Resources, Inc.

Survey Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #405H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 30' @ 3399.0usft
Site:	Vaca 11 Fed Com	MD Reference:	KB = 30' @ 3399.0usft
Well:	#405H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM (NAD 27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Vaca 11 Fed Com			
Site Position:		Northing:	414,867.00 usft	Latitude:	32° 8' 17.328 N
From:	Map	Easting:	743,272.00 usft	Longitude:	103° 32' 50.646 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

Well	#405H					
Well Position	+N/-S	0.0 usft	Northing:	414,867.00 usft	Latitude:	32° 8' 17.328 N
	+E/-W	0.0 usft	Easting:	743,242.00 usft	Longitude:	103° 32' 50.995 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,369.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF201014	1/6/2015	7.13	60.02	48,211

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	185.63	

Survey Tool Program	Date	1/7/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	15,284.8	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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	



EOG Resources, Inc.

Survey Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #405H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 30' @ 3399.0usft
Site:	Vaca 11 Fed Com	MD Reference:	KB = 30' @ 3399.0usft
Well:	#405H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	1.00	245.78	4,600.0	-0.4	-0.8	0.4	1.00	1.00	0.00
4,700.0	2.00	245.78	4,700.0	-1.4	-3.2	1.7	1.00	1.00	0.00
4,800.0	3.00	245.78	4,799.9	-3.2	-7.2	3.9	1.00	1.00	0.00
4,900.0	4.00	245.78	4,899.7	-5.7	-12.7	6.9	1.00	1.00	0.00
5,000.0	5.00	245.78	4,999.4	-8.9	-19.9	10.9	1.00	1.00	0.00
5,102.8	6.03	245.78	5,101.7	-13.0	-28.9	15.8	1.00	1.00	0.00
5,200.0	6.03	245.78	5,198.4	-17.2	-38.2	20.9	0.00	0.00	0.00
5,300.0	6.03	245.78	5,297.8	-21.5	-47.8	26.1	0.00	0.00	0.00



EOG Resources, Inc.

Survey Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #405H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 30' @ 3399.0usft
Site:	Vaca 11 Fed Com	MD Reference:	KB = 30' @ 3399.0usft
Well:	#405H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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)
5,400.0	6.03	245.78	5,397.2	-25.8	-57.4	31.3	0.00	0.00	0.00
5,500.0	6.03	245.78	5,496.7	-30.1	-66.9	36.5	0.00	0.00	0.00
5,600.0	6.03	245.78	5,596.1	-34.4	-76.5	41.8	0.00	0.00	0.00
5,700.0	6.03	245.78	5,695.6	-38.7	-86.1	47.0	0.00	0.00	0.00
5,800.0	6.03	245.78	5,795.0	-43.0	-95.7	52.2	0.00	0.00	0.00
5,900.0	6.03	245.78	5,894.5	-47.3	-105.2	57.4	0.00	0.00	0.00
6,000.0	6.03	245.78	5,993.9	-51.7	-114.8	62.7	0.00	0.00	0.00
6,100.0	6.03	245.78	6,093.4	-56.0	-124.4	67.9	0.00	0.00	0.00
6,200.0	6.03	245.78	6,192.8	-60.3	-134.0	73.1	0.00	0.00	0.00
6,300.0	6.03	245.78	6,292.3	-64.6	-143.5	78.4	0.00	0.00	0.00
6,400.0	6.03	245.78	6,391.7	-68.9	-153.1	83.6	0.00	0.00	0.00
6,500.0	6.03	245.78	6,491.2	-73.2	-162.7	88.8	0.00	0.00	0.00
6,600.0	6.03	245.78	6,590.6	-77.5	-172.3	94.0	0.00	0.00	0.00
6,700.0	6.03	245.78	6,690.1	-81.8	-181.8	99.3	0.00	0.00	0.00
6,800.0	6.03	245.78	6,789.5	-86.1	-191.4	104.5	0.00	0.00	0.00
6,900.0	6.03	245.78	6,889.0	-90.4	-201.0	109.7	0.00	0.00	0.00
7,000.0	6.03	245.78	6,988.4	-94.7	-210.6	114.9	0.00	0.00	0.00
7,100.0	6.03	245.78	7,087.8	-99.0	-220.2	120.2	0.00	0.00	0.00
7,200.0	6.03	245.78	7,187.3	-103.4	-229.7	125.4	0.00	0.00	0.00
7,300.0	6.03	245.78	7,286.7	-107.7	-239.3	130.6	0.00	0.00	0.00
7,400.0	6.03	245.78	7,386.2	-112.0	-248.9	135.9	0.00	0.00	0.00
7,500.0	6.03	245.78	7,485.6	-116.3	-258.5	141.1	0.00	0.00	0.00
7,600.0	6.03	245.78	7,585.1	-120.6	-268.0	146.3	0.00	0.00	0.00
7,700.0	6.03	245.78	7,684.5	-124.9	-277.6	151.5	0.00	0.00	0.00
7,800.0	6.03	245.78	7,784.0	-129.2	-287.2	156.8	0.00	0.00	0.00
7,900.0	6.03	245.78	7,883.4	-133.5	-296.8	162.0	0.00	0.00	0.00
8,000.0	6.03	245.78	7,982.9	-137.8	-306.3	167.2	0.00	0.00	0.00
8,100.0	6.03	245.78	8,082.3	-142.1	-315.9	172.4	0.00	0.00	0.00
8,200.0	6.03	245.78	8,181.8	-146.4	-325.5	177.7	0.00	0.00	0.00
8,300.0	6.03	245.78	8,281.2	-150.7	-335.1	182.9	0.00	0.00	0.00
8,400.0	6.03	245.78	8,380.7	-155.1	-344.6	188.1	0.00	0.00	0.00
8,500.0	6.03	245.78	8,480.1	-159.4	-354.2	193.4	0.00	0.00	0.00
8,600.0	6.03	245.78	8,579.6	-163.7	-363.8	198.6	0.00	0.00	0.00
8,700.0	6.03	245.78	8,679.0	-168.0	-373.4	203.8	0.00	0.00	0.00
8,800.0	6.03	245.78	8,778.4	-172.3	-383.0	209.0	0.00	0.00	0.00
8,900.0	6.03	245.78	8,877.9	-176.6	-392.5	214.3	0.00	0.00	0.00
9,000.0	6.03	245.78	8,977.3	-180.9	-402.1	219.5	0.00	0.00	0.00
9,100.0	6.03	245.78	9,076.8	-185.2	-411.7	224.7	0.00	0.00	0.00
9,200.0	6.03	245.78	9,176.2	-189.5	-421.3	229.9	0.00	0.00	0.00
9,300.0	6.03	245.78	9,275.7	-193.8	-430.8	235.2	0.00	0.00	0.00
9,400.0	6.03	245.78	9,375.1	-198.1	-440.4	240.4	0.00	0.00	0.00
9,500.0	6.03	245.78	9,474.6	-202.4	-450.0	245.6	0.00	0.00	0.00
9,600.0	6.03	245.78	9,574.0	-206.8	-459.6	250.9	0.00	0.00	0.00



EOG Resources, Inc.

Survey Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #405H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 30' @ 3399.0usft
Site:	Vaca 11 Fed Com	MD Reference:	KB = 30' @ 3399.0usft
Well:	#405H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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)	
9,700.0	6.03	245.78	9,673.5	-211.1	-469.1	256.1	0.00	0.00	0.00	
9,800.0	6.03	245.78	9,772.9	-215.4	-478.7	261.3	0.00	0.00	0.00	
9,900.0	6.03	245.78	9,872.4	-219.7	-488.3	266.5	0.00	0.00	0.00	
9,982.0	6.03	245.78	9,953.9	-223.2	-496.1	270.8	0.00	0.00	0.00	
10,000.0	6.95	232.02	9,971.8	-224.3	-497.9	272.0	10.00	5.12	-76.38	
10,050.0	10.74	210.21	10,021.2	-230.2	-502.6	278.4	10.00	7.59	-43.61	
10,100.0	15.24	200.37	10,069.9	-240.4	-507.2	289.0	10.00	9.00	-19.69	
10,150.0	19.98	195.02	10,117.6	-254.8	-511.7	303.8	10.00	9.47	-10.70	
10,200.0	24.82	191.67	10,163.8	-273.3	-516.1	322.6	10.00	9.67	-6.70	
10,250.0	29.70	189.36	10,208.2	-295.8	-520.2	345.5	10.00	9.78	-4.62	
10,300.0	34.62	187.65	10,250.5	-322.2	-524.1	372.0	10.00	9.83	-3.41	
10,350.0	39.56	186.33	10,290.4	-352.1	-527.8	402.2	10.00	9.87	-2.65	
10,400.0	44.51	185.25	10,327.5	-385.4	-531.1	435.6	10.00	9.90	-2.15	
10,450.0	49.46	184.35	10,361.6	-421.8	-534.2	472.2	10.00	9.91	-1.80	
10,500.0	54.42	183.57	10,392.4	-461.1	-536.9	511.5	10.00	9.93	-1.55	
10,550.0	59.39	182.89	10,419.7	-502.9	-539.2	553.4	10.00	9.93	-1.37	
10,600.0	64.36	182.27	10,443.3	-546.9	-541.2	597.4	10.00	9.94	-1.24	
10,650.0	69.33	181.70	10,462.9	-592.8	-542.8	643.2	10.00	9.95	-1.14	
10,700.0	74.31	181.17	10,478.5	-640.3	-544.0	690.6	10.00	9.95	-1.07	
10,750.0	79.28	180.66	10,490.0	-689.0	-544.8	739.1	10.00	9.95	-1.02	
10,800.0	84.26	180.17	10,497.1	-738.4	-545.1	788.4	10.00	9.95	-0.98	
10,850.0	89.24	179.69	10,499.9	-788.3	-545.1	838.0	10.00	9.95	-0.97	
10,857.7	90.00	179.61	10,500.0	-796.0	-545.0	845.6	10.00	9.95	-0.96	
10,900.0	90.00	179.61	10,500.0	-838.3	-544.7	887.7	0.00	0.00	0.00	
11,000.0	90.00	179.61	10,500.0	-938.3	-544.0	987.2	0.00	0.00	0.00	
11,100.0	90.00	179.61	10,500.0	-1,038.3	-543.4	1,086.6	0.00	0.00	0.00	
11,200.0	90.00	179.61	10,500.0	-1,138.3	-542.7	1,186.1	0.00	0.00	0.00	
11,300.0	90.00	179.61	10,500.0	-1,238.3	-542.0	1,285.5	0.00	0.00	0.00	
11,400.0	90.00	179.61	10,500.0	-1,338.3	-541.3	1,385.0	0.00	0.00	0.00	
11,500.0	90.00	179.61	10,500.0	-1,438.3	-540.7	1,484.4	0.00	0.00	0.00	
11,600.0	90.00	179.61	10,500.0	-1,538.3	-540.0	1,583.9	0.00	0.00	0.00	
11,700.0	90.00	179.61	10,500.0	-1,638.3	-539.3	1,683.3	0.00	0.00	0.00	
11,800.0	90.00	179.61	10,500.0	-1,738.3	-538.6	1,782.8	0.00	0.00	0.00	
11,900.0	90.00	179.61	10,500.0	-1,838.3	-537.9	1,882.2	0.00	0.00	0.00	
12,000.0	90.00	179.61	10,500.0	-1,938.3	-537.3	1,981.7	0.00	0.00	0.00	
12,100.0	90.00	179.61	10,500.0	-2,038.3	-536.6	2,081.1	0.00	0.00	0.00	
12,200.0	90.00	179.61	10,500.0	-2,138.3	-535.9	2,180.6	0.00	0.00	0.00	
12,300.0	90.00	179.61	10,500.0	-2,238.3	-535.2	2,280.0	0.00	0.00	0.00	
12,400.0	90.00	179.61	10,500.0	-2,338.3	-534.6	2,379.5	0.00	0.00	0.00	
12,500.0	90.00	179.61	10,500.0	-2,438.3	-533.9	2,478.9	0.00	0.00	0.00	
12,600.0	90.00	179.61	10,500.0	-2,538.3	-533.2	2,578.4	0.00	0.00	0.00	
12,700.0	90.00	179.61	10,500.0	-2,638.3	-532.5	2,677.8	0.00	0.00	0.00	
12,800.0	90.00	179.61	10,500.0	-2,738.3	-531.8	2,777.3	0.00	0.00	0.00	



EOG Resources, Inc.

Survey Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #405H
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB = 30' @ 3399.0usft
Site:	Vaca 11 Fed Com	MD Reference:	KB = 30' @ 3399.0usft
Well:	#405H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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)
12,900.0	90.00	179.61	10,500.0	-2,838.3	-531.2	2,876.7	0.00	0.00	0.00
13,000.0	90.00	179.61	10,500.0	-2,938.3	-530.5	2,976.2	0.00	0.00	0.00
13,100.0	90.00	179.61	10,500.0	-3,038.3	-529.8	3,075.6	0.00	0.00	0.00
13,200.0	90.00	179.61	10,500.0	-3,138.3	-529.1	3,175.1	0.00	0.00	0.00
13,300.0	90.00	179.61	10,500.0	-3,238.3	-528.5	3,274.5	0.00	0.00	0.00
13,400.0	90.00	179.61	10,500.0	-3,338.3	-527.8	3,374.0	0.00	0.00	0.00
13,500.0	90.00	179.61	10,500.0	-3,438.3	-527.1	3,473.4	0.00	0.00	0.00
13,600.0	90.00	179.61	10,500.0	-3,538.3	-526.4	3,572.9	0.00	0.00	0.00
13,700.0	90.00	179.61	10,500.0	-3,638.3	-525.7	3,672.3	0.00	0.00	0.00
13,800.0	90.00	179.61	10,500.0	-3,738.3	-525.1	3,771.8	0.00	0.00	0.00
13,900.0	90.00	179.61	10,500.0	-3,838.3	-524.4	3,871.2	0.00	0.00	0.00
14,000.0	90.00	179.61	10,500.0	-3,938.3	-523.7	3,970.6	0.00	0.00	0.00
14,100.0	90.00	179.61	10,500.0	-4,038.3	-523.0	4,070.1	0.00	0.00	0.00
14,200.0	90.00	179.61	10,500.0	-4,138.3	-522.4	4,169.5	0.00	0.00	0.00
14,300.0	90.00	179.61	10,500.0	-4,238.3	-521.7	4,269.0	0.00	0.00	0.00
14,400.0	90.00	179.61	10,500.0	-4,338.3	-521.0	4,368.4	0.00	0.00	0.00
14,500.0	90.00	179.61	10,500.0	-4,438.3	-520.3	4,467.9	0.00	0.00	0.00
14,600.0	90.00	179.61	10,500.0	-4,538.3	-519.6	4,567.3	0.00	0.00	0.00
14,700.0	90.00	179.61	10,500.0	-4,638.2	-519.0	4,666.8	0.00	0.00	0.00
14,800.0	90.00	179.61	10,500.0	-4,738.2	-518.3	4,766.2	0.00	0.00	0.00
14,900.0	90.00	179.61	10,500.0	-4,838.2	-517.6	4,865.7	0.00	0.00	0.00
15,000.0	90.00	179.61	10,500.0	-4,938.2	-516.9	4,965.1	0.00	0.00	0.00
15,100.0	90.00	179.61	10,500.0	-5,038.2	-516.3	5,064.6	0.00	0.00	0.00
15,200.0	90.00	179.61	10,500.0	-5,138.2	-515.6	5,164.0	0.00	0.00	0.00
15,284.8	90.00	179.61	10,500.0	-5,223.0	-515.0	5,248.3	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
FTP (Vaca 11 Fed Com ;	0.00	0.00	10,500.0	-503.0	-547.0	414,364.00	742,695.00	32° 8' 12.390 N	103° 32' 57.399 W
- plan misses target center by 70.6usft at 10588.3usft MD (10438.1 TVD, -536.4 N, -540.8 E)									
- Point									
PBHL (Vaca 11 Fed Con	90.00	179.62	10,500.0	-5,223.0	-515.0	409,644.00	742,727.00	32° 7' 25.680 N	103° 32' 57.426 W
- plan hits target center									
- Rectangle (sides W50.0 H0.0 D4,720.9)									

Checked By: _____	Approved By: _____	Date: _____
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Exhibit 1

EOG Resources

5M BOPE

Rig Floor

1. 13 5/8" Rotating Head
2. NOV 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. 6" OD x 3" ID 10,000 PSI WP Steel Armoured 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" Cameron Type "U" 10,000 PSI WP Pipe Rams
16. Flow Line
17. 2" Fill Line

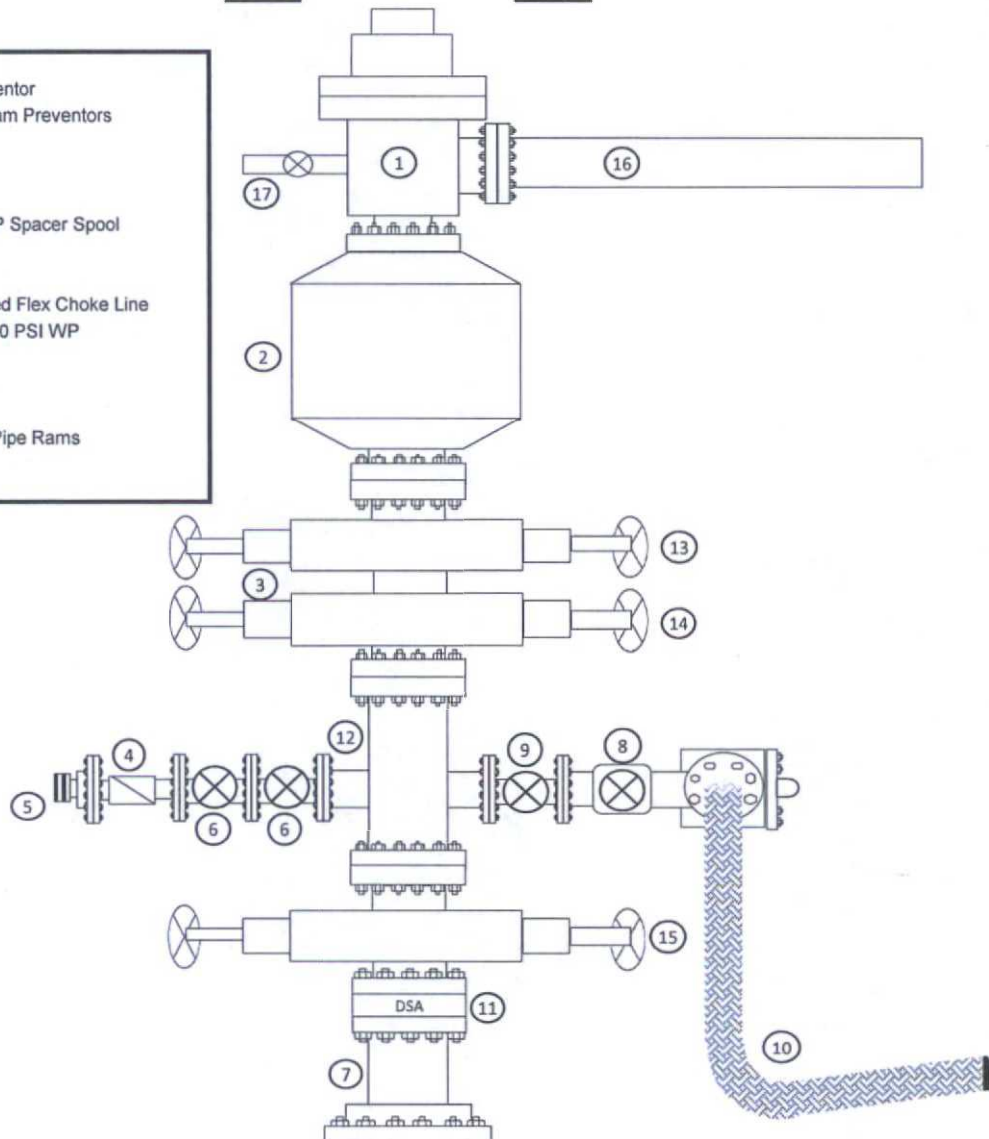
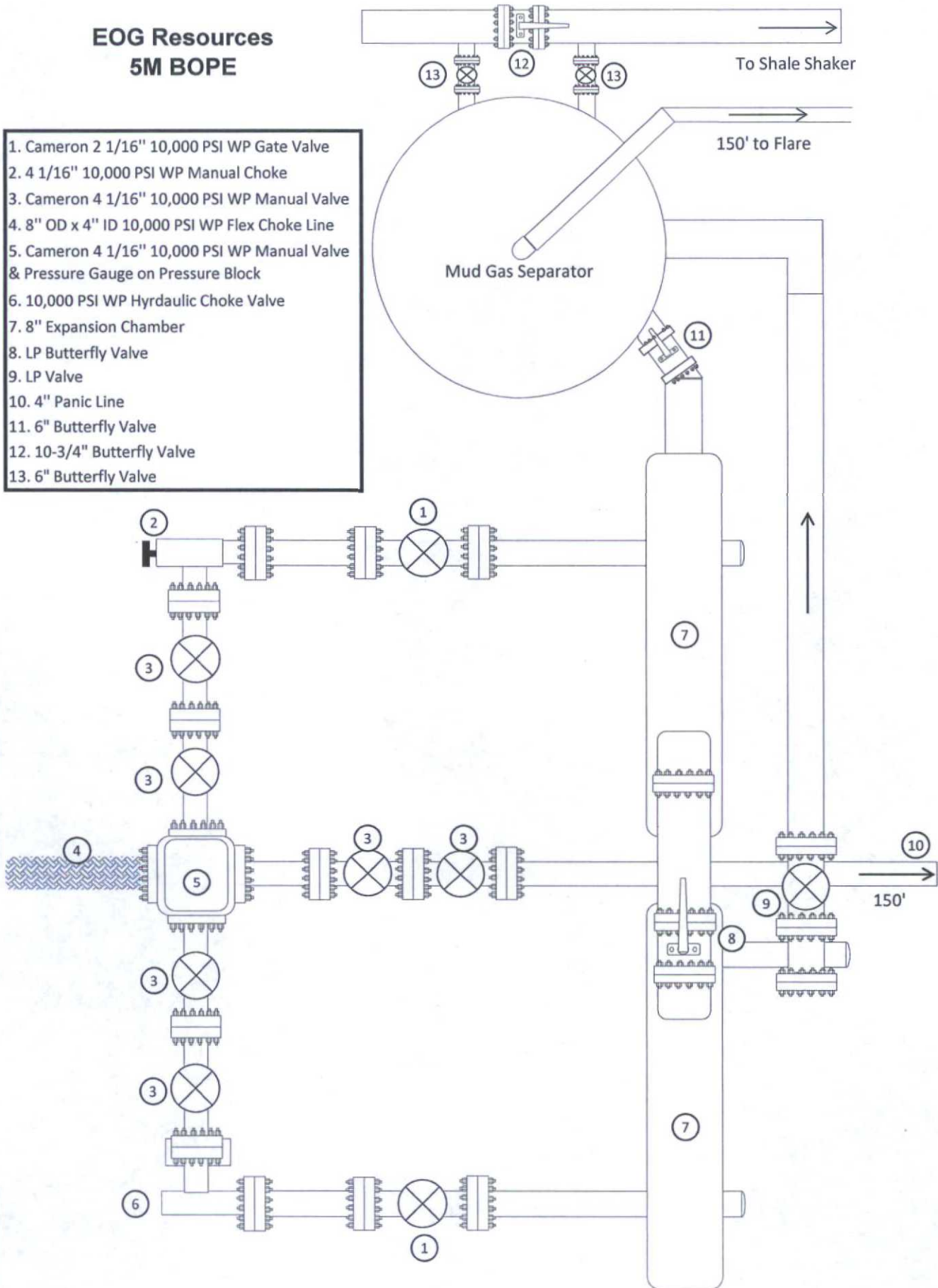


Exhibit 1a

EOG Resources 5M BOPE

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



Manufacturer: Midwest Hose & Specialty

Serial Number: SN#90067

Length: 35'

Size: OD = 8" ID = 4"

Ends: Flanges Size: 4-1/16"

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

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

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

Customer: CACTUS

SALES ORDER# 90067

Hose Specifications

Hose Type

C & K

Length

35'

I.D.

4"

O.D.

8"

Verification

Type of Fitting

4 1/16 10K

Coupling Method

Swage

Final O.D.

6.68"

Working Pressure

10000 PSI

Burst Pressure

Standard Safety Multiplier Applies

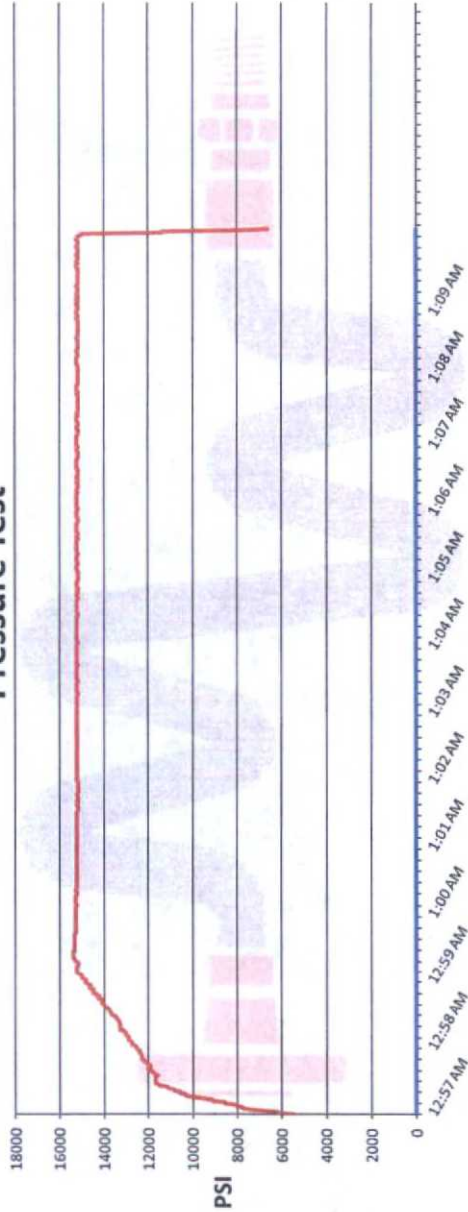
Hose Serial #

90067

Hose Assembly Serial #

90067

Pressure Test



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

Mendi Jackson