

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Carlsbad Field Office

FORM APPROVED
OMB NO. 1004-0137
Expires January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

Lease Serial No.
NM118726

SUBMIT IN TRIPLICATE - Other instructions on page 2

6. If Indian, Allottee or Tribe Name

If Unit or CA/Agreement, Name and/or No.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

ANTIETAM 9 FED COM 714H

2. Name of Operator

EOG RESOURCES INCORPORATED

Contact:

SARAH MITCHELL

E-Mail: sarah_mitchell@eogresources.com

9. API Well No.

30-025-45477

3a. Address

MIDLAND, TX 79702

3b. Phone No. (include area code)

Ph: 432-848-9133

10. Field and Pool or Exploratory Area
RED HILLS

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 9 T25S R33E NENE 1052FNL 657FEL
32.149448 N Lat, 103.570892 W Lon

11. County or Parish, State

LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

EOG respectfully requests an amendment to our approved APD for this well to reflect changes in the BHL and the casing design.

Change BHL to: 2540' FNL 835' FEL SENE-16-25S-33E
Change casing design in accordance with the attached drill plan

Attached please find the following supporting documentation: Amended C-102 Plat, Revised Permit Information, Revised Wellbore Diagram, Revised Directional Plot, and Revised Directional Plan.

The API number for this well is pending.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #447737 verified by the BLM Well Information System

For EOG RESOURCES INCORPORATED, sent to the Hobbs

Committed to AFMSS for processing by PRISCILLA PEREZ on 12/14/2018 (19PP0632SE)

Name (Printed/Typed) BEN HOCHER

Title ENGINEERING ASSOCIATE

Signature (Electronic Submission)

Date 12/13/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By DYLAN ROSSMANGO

Title PETROLEUM ENGINEER

Date 01/10/2019

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Hobbs

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

K2

Revised Permit Information 12/11/18:

Well Name: Antietam 9 Fed Com No. 714H

Location:

SHL: 1052' FNL & 657' FEL, Section 9, T-25-S, R-33-E, Lea Co., N.M.

BHL: 2540' FNL & 835' FEL, Section 16, T-25-S, R-33-E, Lea Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
12.25"	0 – 1,135'	9.625"	40#	J55	LTC	1.125	1.25	1.60
8.75"	0 – 11,300'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.60
6.75"	0' – 10,800'	5.5"	20#	P-110EC	DWC/C-IS MS	1.125	1.25	1.60
6.75"	10,800' - 20,020'	5.5"	20#	P-110EC	VAM SFC	1.125	1.25	1.60

Variance is requested to wave the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to wave any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Slurry Description
9-5/8" 1,135'	600	13.5	1.73	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
7-5/8" 11,300'	390	9.0	3.71	Lead: Class C + 5% Salt + 12% HGS-4K28 + 22% B-52 + 0.15% GXT-C + 0.3% CPT-30 + 0.4% CPT-24 (TOC @ Surface)
	175	11	2.54	Middle: Class C + 3% Salt + 1% PreMag-M + 0.15% GXT-C + 0.15% CPT-30 + 4 pps Blitz + 0.35% CPT-23
	180	14.2	1.11	Tail: Class H + 5% Salt + 0.2% CD-3 + 0.15% CPT-51A + 0.35% CPT-23 + 1% PreMag-M
5-1/2" 20,020'	950	14.1	1.26	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 11,100')

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,150'	Fresh - Gel	8.6-8.8	28-34	N/c
1,150' – 11,300'	Oil Base	8.7-9.4	58-68	N/c - 6
11,300' – 20,020' Lateral	Oil Base	10.0-14.0	58-68	3 - 6

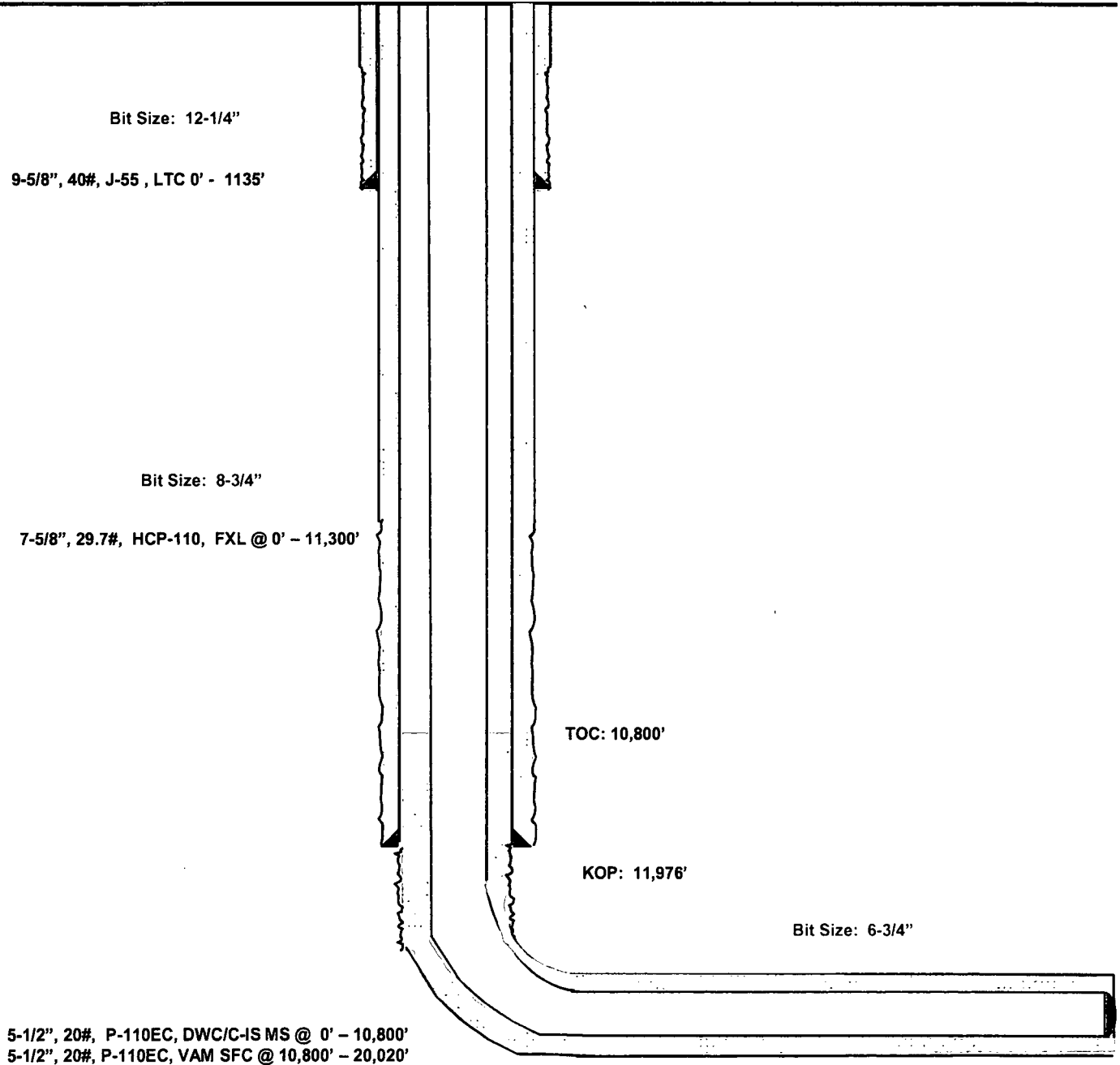
Antietam 9 Fed Com #714H
Lea County, New Mexico

1052' FNL
657' FEL
Section 9
T-25-S, R-33-E

Proposed Wellbore

API: 30-025-*****

KB: 3,442'
GL: 3,417'



Lateral: 20,020' MD, 12,394' TVD
Upper Most Perf:
100' FNL & 835' FEL Sec. 9
Lower Most Perf:
2540' FNL & 835' FEL Sec. 16
BH Location: 2540' FNL & 835' FEL
Section 16
T-25-S, R-33-E



Lea County, NM (NAD 83 NME)

Antietam 9 Fed Com #714H

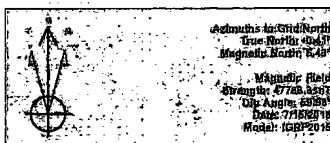
Plan #0.2

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: #714H

KB = 25 @ 3442.0usft 3417.0
Northing 418941.00 Easting 777305.00 Latitude 32° 8' 58.022 N Longitude 103° 34' 15.201 W



To convert a Magnetic Direction to a Grid Direction, Add 6.43°
To convert a Magnetic Direction to a True Direction, Add 6.83° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

SECTION DETAILS

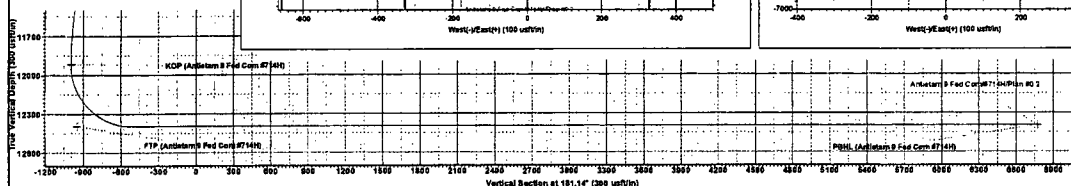
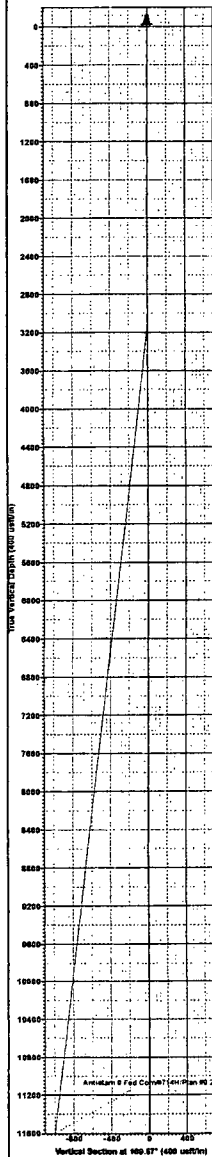
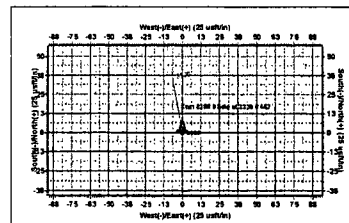
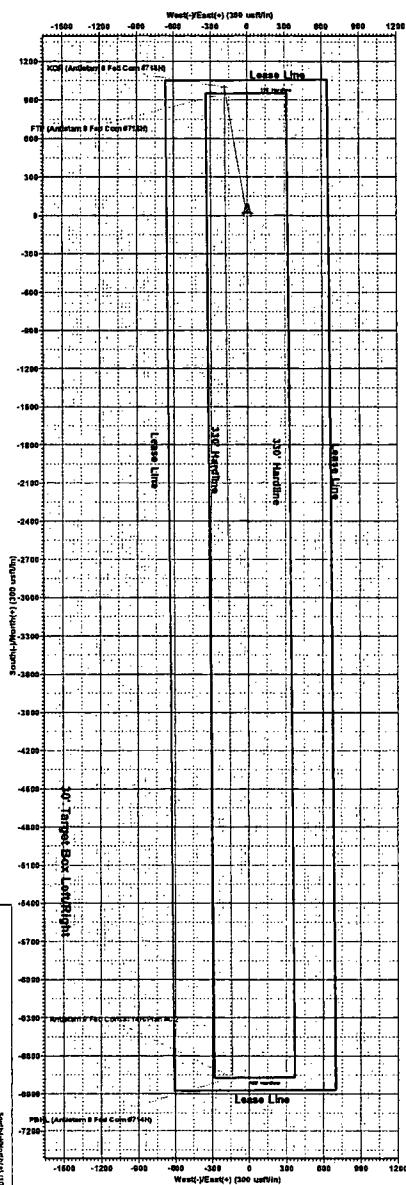
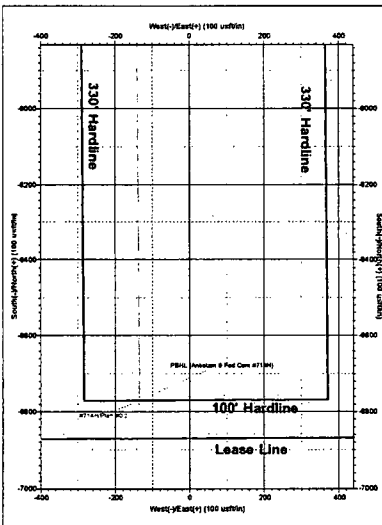
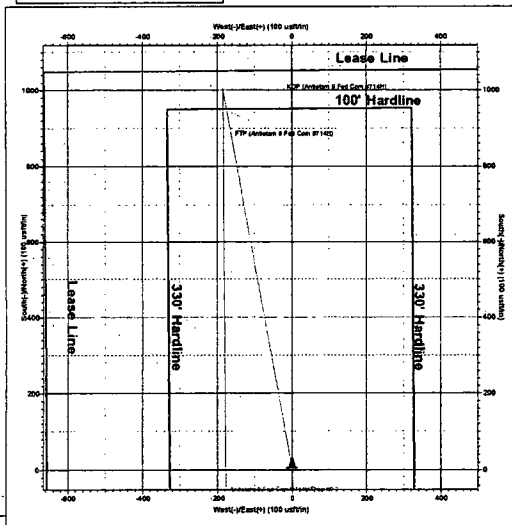
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	
3	3338.0	6.76	349.57	3337.2	19.6	-3.6	2.00	349.57	-19.5	
4	11637.8	6.76	349.57	11579.3	980.4	-180.4	0.00	0.00	-976.6	
5	11975.8	0.00	0.00	11916.5	1000.0	-184.0	2.00	180.00	-996.1	KOP (Antietam 9 Fed Com #714H)
6	12725.8	90.00	179.64	12394.0	522.5	-181.0	12.00	179.64	-518.8	PBHL (Antietam 9 Fed Com #714H)
7	20019.5	90.00	179.64	12394.0	-6771.0	-135.0	0.00	0.00	6772.3	

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP (Antietam 9 Fed Com #714H)	11916.5	1000.0	-184.0	418941.00	777121.00
PBHL (Antietam 9 Fed Com #714H)	12394.0	-6771.0	-135.0	412170.00	777170.00
FTP (Antietam 9 Fed Com #714H)	12394.0	980.0	-184.0	418941.00	777121.00





EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Antietam 9 Fed Com

#714H

OH

Plan: Plan #0.2

Standard Planning Report

11 December, 2018

Database: EDM 5000.14
 Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 83 NME)
 Site: Antietam 9 Fed Com
 Well: #714H
 Wellbore: OH
 Design: Plan #0.2

Local Co-ordinate Reference:
 TVD Reference: KB = 25 @ 3442.0usft
 MD Reference: KB = 25 @ 3442.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Project: Lea County, NM (NAD 83 NME)
 Map System: US State Plane 1983
 Geo Datum: North American Datum 1983
 Map Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level

Site: Antietam 9 Fed Com
 Site Position: Northing: 419,815.00 usft Latitude: 32° 9' 6.852 N
 From: Map Easting: 774,698.00 usft Longitude: 103° 34' 45.452 W
 Position Uncertainty: 0.0 usft Slot Radius: 13-3/16" Grid Convergence: 0.40°

Well: #714H
 Well Position: +N-S -874.0 usft Northing: 418,941.00 usft Latitude: 32° 8' 58.022 N
 +E-W 2,607.0 usft Easting: 777,305.00 usft Longitude: 103° 34' 15.201 W
 Position Uncertainty: 0.0 usft Wellhead Elevation: Ground Level: 3,417.0 usft

Wellbore: OH
 Magnetics: Model Name Sample Date Declination (°) Dip Angle (°) Field Strength (nT)
 IGRF2015 7/15/2018 6.83 59.98 47,783.31527565

Design: Plan #0.2
 Audit Notes:
 Version: Phase: PLAN Tie On Depth: 0.0
 Vertical Section: Depth From (TVD) +N-S +E-W Direction
 (usft) (usft) (usft) (°)
 0.0 0.0 0.0 181.14

Plan Survey Tool Program: Date: 12/11/2018
 Depth From (usft) Depth To (usft) Survey (Wellbore) Tool Name Remarks
 1 0.0 20,019.5 Plan #0.2 (OH) MWD
 OWSG MWD - Standard

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,338.0	6.76	349.57	3,337.2	19.6	-3.6	2.00	2.00	0.00	349.57	
11,637.8	6.76	349.57	11,579.3	980.4	-180.4	0.00	0.00	0.00	0.00	
11,975.8	0.00	0.00	11,916.5	1,000.0	-184.0	2.00	-2.00	0.00	180.00	KOP (Antietam 9 Fed
12,725.8	90.00	179.64	12,394.0	522.5	-181.0	12.00	12.00	23.95	179.64	
20,019.5	90.00	179.64	12,394.0	-6,771.0	-135.0	0.00	0.00	0.00	0.00	PBHL (Antietam 9 Fed

Database:	EDM 5000.14	Local Co-ordinate Reference:	Well #714H
Company:	EOG Resources - Midland	TVD Reference:	KB = 25 @ 3442.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB = 25 @ 3442.0usft
Site:	Antietam 9 Fed Com	North Reference:	Grid
Well:	#714H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

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
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	2.00	349.57	3,100.0	1.7	-0.3	-1.7	2.00	2.00	0.00
3,200.0	4.00	349.57	3,199.8	6.9	-1.3	-6.8	2.00	2.00	0.00
3,300.0	6.00	349.57	3,299.5	15.4	-2.8	-15.4	2.00	2.00	0.00
3,338.0	6.76	349.57	3,337.2	19.6	-3.6	-19.5	2.00	2.00	0.00
3,400.0	6.76	349.57	3,398.8	26.8	-4.9	-26.7	0.00	0.00	0.00
3,500.0	6.76	349.57	3,498.1	38.3	-7.1	-38.2	0.00	0.00	0.00
3,600.0	6.76	349.57	3,597.4	49.9	-9.2	-49.7	0.00	0.00	0.00
3,700.0	6.76	349.57	3,696.7	61.5	-11.3	-61.3	0.00	0.00	0.00
3,800.0	6.76	349.57	3,796.0	73.1	-13.4	-72.8	0.00	0.00	0.00
3,900.0	6.76	349.57	3,895.3	84.6	-15.6	-84.3	0.00	0.00	0.00
4,000.0	6.76	349.57	3,994.6	96.2	-17.7	-95.9	0.00	0.00	0.00
4,100.0	6.76	349.57	4,093.9	107.8	-19.8	-107.4	0.00	0.00	0.00
4,200.0	6.76	349.57	4,193.2	119.4	-22.0	-118.9	0.00	0.00	0.00
4,300.0	6.76	349.57	4,292.5	131.0	-24.1	-130.4	0.00	0.00	0.00
4,400.0	6.76	349.57	4,391.8	142.5	-26.2	-142.0	0.00	0.00	0.00
4,500.0	6.76	349.57	4,491.1	154.1	-28.4	-153.5	0.00	0.00	0.00
4,600.0	6.76	349.57	4,590.4	165.7	-30.5	-165.0	0.00	0.00	0.00
4,700.0	6.76	349.57	4,689.7	177.3	-32.6	-176.6	0.00	0.00	0.00
4,800.0	6.76	349.57	4,789.1	188.8	-34.7	-188.1	0.00	0.00	0.00
4,900.0	6.76	349.57	4,888.4	200.4	-36.9	-199.6	0.00	0.00	0.00
5,000.0	6.76	349.57	4,987.7	212.0	-39.0	-211.2	0.00	0.00	0.00
5,100.0	6.76	349.57	5,087.0	223.6	-41.1	-222.7	0.00	0.00	0.00
5,200.0	6.76	349.57	5,186.3	235.1	-43.3	-234.2	0.00	0.00	0.00

Database: EDM 5000.14
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Antietam 9 Fed Com
Well: #714H
Wellbore: OH
Design: Plan #0.2

Local Co-ordinate Reference: Well #714H
TVD Reference: KB = 25 @ 3442.0usft
MD Reference: KB = 25 @ 3442.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
5,300.0	6.76	349.57	5,285.6	246.7	-45.4	-245.8	0.00	0.00	0.00
5,400.0	6.76	349.57	5,384.9	258.3	-47.5	-257.3	0.00	0.00	0.00
5,500.0	6.76	349.57	5,484.2	269.9	-49.7	-268.8	0.00	0.00	0.00
5,600.0	6.76	349.57	5,583.5	281.4	-51.8	-280.4	0.00	0.00	0.00
5,700.0	6.76	349.57	5,682.8	293.0	-53.9	-291.9	0.00	0.00	0.00
5,800.0	6.76	349.57	5,782.1	304.6	-56.0	-303.4	0.00	0.00	0.00
5,900.0	6.76	349.57	5,881.4	316.2	-58.2	-315.0	0.00	0.00	0.00
6,000.0	6.76	349.57	5,980.7	327.8	-60.3	-326.5	0.00	0.00	0.00
6,100.0	6.76	349.57	6,080.0	339.3	-62.4	-338.0	0.00	0.00	0.00
6,200.0	6.76	349.57	6,179.3	350.9	-64.6	-349.6	0.00	0.00	0.00
6,300.0	6.76	349.57	6,278.6	362.5	-66.7	-361.1	0.00	0.00	0.00
6,400.0	6.76	349.57	6,377.9	374.1	-68.8	-372.6	0.00	0.00	0.00
6,500.0	6.76	349.57	6,477.2	385.6	-71.0	-384.1	0.00	0.00	0.00
6,600.0	6.76	349.57	6,576.5	397.2	-73.1	-395.7	0.00	0.00	0.00
6,700.0	6.76	349.57	6,675.8	408.8	-75.2	-407.2	0.00	0.00	0.00
6,800.0	6.76	349.57	6,775.1	420.4	-77.3	-418.7	0.00	0.00	0.00
6,900.0	6.76	349.57	6,874.5	431.9	-79.5	-430.3	0.00	0.00	0.00
7,000.0	6.76	349.57	6,973.8	443.5	-81.6	-441.8	0.00	0.00	0.00
7,100.0	6.76	349.57	7,073.1	455.1	-83.7	-453.3	0.00	0.00	0.00
7,200.0	6.76	349.57	7,172.4	466.7	-85.9	-464.9	0.00	0.00	0.00
7,300.0	6.76	349.57	7,271.7	478.2	-88.0	-476.4	0.00	0.00	0.00
7,400.0	6.76	349.57	7,371.0	489.8	-90.1	-487.9	0.00	0.00	0.00
7,500.0	6.76	349.57	7,470.3	501.4	-92.3	-499.5	0.00	0.00	0.00
7,600.0	6.76	349.57	7,569.6	513.0	-94.4	-511.0	0.00	0.00	0.00
7,700.0	6.76	349.57	7,668.9	524.6	-96.5	-522.5	0.00	0.00	0.00
7,800.0	6.76	349.57	7,768.2	536.1	-98.6	-534.1	0.00	0.00	0.00
7,900.0	6.76	349.57	7,867.5	547.7	-100.8	-545.6	0.00	0.00	0.00
8,000.0	6.76	349.57	7,966.8	559.3	-102.9	-557.1	0.00	0.00	0.00
8,100.0	6.76	349.57	8,066.1	570.9	-105.0	-568.7	0.00	0.00	0.00
8,200.0	6.76	349.57	8,165.4	582.4	-107.2	-580.2	0.00	0.00	0.00
8,300.0	6.76	349.57	8,264.7	594.0	-109.3	-591.7	0.00	0.00	0.00
8,400.0	6.76	349.57	8,364.0	605.6	-111.4	-603.2	0.00	0.00	0.00
8,500.0	6.76	349.57	8,463.3	617.2	-113.6	-614.8	0.00	0.00	0.00
8,600.0	6.76	349.57	8,562.6	628.7	-115.7	-626.3	0.00	0.00	0.00
8,700.0	6.76	349.57	8,661.9	640.3	-117.8	-637.8	0.00	0.00	0.00
8,800.0	6.76	349.57	8,761.2	651.9	-119.9	-649.4	0.00	0.00	0.00
8,900.0	6.76	349.57	8,860.6	663.5	-122.1	-660.9	0.00	0.00	0.00
9,000.0	6.76	349.57	8,959.9	675.1	-124.2	-672.4	0.00	0.00	0.00
9,100.0	6.76	349.57	9,059.2	686.6	-126.3	-684.0	0.00	0.00	0.00
9,200.0	6.76	349.57	9,158.5	698.2	-128.5	-695.5	0.00	0.00	0.00
9,300.0	6.76	349.57	9,257.8	709.8	-130.6	-707.0	0.00	0.00	0.00
9,400.0	6.76	349.57	9,357.1	721.4	-132.7	-718.6	0.00	0.00	0.00
9,500.0	6.76	349.57	9,456.4	732.9	-134.9	-730.1	0.00	0.00	0.00
9,600.0	6.76	349.57	9,555.7	744.5	-137.0	-741.6	0.00	0.00	0.00
9,700.0	6.76	349.57	9,655.0	756.1	-139.1	-753.2	0.00	0.00	0.00
9,800.0	6.76	349.57	9,754.3	767.7	-141.2	-764.7	0.00	0.00	0.00
9,900.0	6.76	349.57	9,853.6	779.2	-143.4	-776.2	0.00	0.00	0.00
10,000.0	6.76	349.57	9,952.9	790.8	-145.5	-787.8	0.00	0.00	0.00
10,100.0	6.76	349.57	10,052.2	802.4	-147.6	-799.3	0.00	0.00	0.00
10,200.0	6.76	349.57	10,151.5	814.0	-149.8	-810.8	0.00	0.00	0.00
10,300.0	6.76	349.57	10,250.8	825.5	-151.9	-822.4	0.00	0.00	0.00
10,400.0	6.76	349.57	10,350.1	837.1	-154.0	-833.9	0.00	0.00	0.00
10,500.0	6.76	349.57	10,449.4	848.7	-156.2	-845.4	0.00	0.00	0.00
10,600.0	6.76	349.57	10,548.7	860.3	-158.3	-856.9	0.00	0.00	0.00

Database:	EDM 5000.14	Local Co-ordinate Reference:	Well #714H
Company:	EOG Resources - Midland	TVD Reference:	KB = 25 @ 3442.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB = 25 @ 3442.0usft
Site:	Antietam 9 Fed Com	North Reference:	Grid
Well:	#714H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

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)
10,700.0	6.76	349.57	10,648.0	871.9	-160.4	-868.5	0.00	0.00	0.00
10,800.0	6.76	349.57	10,747.3	883.4	-162.6	-880.0	0.00	0.00	0.00
10,900.0	6.76	349.57	10,846.6	895.0	-164.7	-891.5	0.00	0.00	0.00
11,000.0	6.76	349.57	10,946.0	906.6	-166.8	-903.1	0.00	0.00	0.00
11,100.0	6.76	349.57	11,045.3	918.2	-168.9	-914.6	0.00	0.00	0.00
11,200.0	6.76	349.57	11,144.6	929.7	-171.1	-926.1	0.00	0.00	0.00
11,300.0	6.76	349.57	11,243.9	941.3	-173.2	-937.7	0.00	0.00	0.00
11,400.0	6.76	349.57	11,343.2	952.9	-175.3	-949.2	0.00	0.00	0.00
11,500.0	6.76	349.57	11,442.5	964.5	-177.5	-960.7	0.00	0.00	0.00
11,600.0	6.76	349.57	11,541.8	976.0	-179.6	-972.3	0.00	0.00	0.00
11,637.8	6.76	349.57	11,579.3	980.4	-180.4	-976.6	0.00	0.00	0.00
11,700.0	5.52	349.57	11,641.2	987.0	-181.6	-983.1	2.00	-2.00	0.00
11,800.0	3.52	349.57	11,740.8	994.7	-183.0	-990.9	2.00	-2.00	0.00
11,900.0	1.52	349.57	11,840.7	999.0	-183.8	-995.2	2.00	-2.00	0.00
11,975.8	0.00	0.00	11,916.5	1,000.0	-184.0	-996.1	2.00	-2.00	0.00
12,000.0	2.91	179.64	11,940.7	999.4	-184.0	-995.5	12.00	12.00	0.00
12,025.0	5.91	179.64	11,965.6	997.5	-184.0	-993.6	12.00	12.00	0.00
12,050.0	8.91	179.64	11,990.4	994.2	-184.0	-990.4	12.00	12.00	0.00
12,075.0	11.91	179.64	12,015.0	989.7	-183.9	-985.9	12.00	12.00	0.00
12,100.0	14.91	179.64	12,039.3	983.9	-183.9	-980.1	12.00	12.00	0.00
12,125.0	17.91	179.64	12,063.3	976.9	-183.9	-973.0	12.00	12.00	0.00
12,150.0	20.91	179.64	12,086.9	968.6	-183.8	-964.7	12.00	12.00	0.00
12,175.0	23.91	179.64	12,110.0	959.0	-183.7	-955.2	12.00	12.00	0.00
12,200.0	26.91	179.64	12,132.6	948.3	-183.7	-944.5	12.00	12.00	0.00
12,225.0	29.91	179.64	12,154.6	936.4	-183.6	-932.6	12.00	12.00	0.00
12,250.0	32.91	179.64	12,175.9	923.4	-183.5	-919.5	12.00	12.00	0.00
12,275.0	35.91	179.64	12,196.5	909.3	-183.4	-905.4	12.00	12.00	0.00
12,300.0	38.91	179.64	12,216.4	894.1	-183.3	-890.2	12.00	12.00	0.00
12,325.0	41.91	179.64	12,235.4	877.9	-183.2	-874.0	12.00	12.00	0.00
12,350.0	44.91	179.64	12,253.6	860.7	-183.1	-856.9	12.00	12.00	0.00
12,375.0	47.91	179.64	12,270.8	842.6	-183.0	-838.8	12.00	12.00	0.00
12,400.0	50.91	179.64	12,287.1	823.6	-182.9	-819.8	12.00	12.00	0.00
12,425.0	53.91	179.64	12,302.3	803.8	-182.8	-800.0	12.00	12.00	0.00
12,450.0	56.91	179.64	12,316.5	783.2	-182.6	-779.4	12.00	12.00	0.00
12,475.0	59.91	179.64	12,329.6	761.9	-182.5	-758.1	12.00	12.00	0.00
12,500.0	62.91	179.64	12,341.6	740.0	-182.4	-736.2	12.00	12.00	0.00
12,525.0	65.91	179.64	12,352.4	717.4	-182.2	-713.7	12.00	12.00	0.00
12,550.0	68.91	179.64	12,362.0	694.4	-182.1	-690.6	12.00	12.00	0.00
12,575.0	71.91	179.64	12,370.4	670.8	-181.9	-667.1	12.00	12.00	0.00
12,600.0	74.91	179.64	12,377.5	646.9	-181.8	-643.1	12.00	12.00	0.00
12,625.0	77.91	179.64	12,383.4	622.6	-181.6	-618.8	12.00	12.00	0.00
12,650.0	80.91	179.64	12,388.0	598.0	-181.5	-594.3	12.00	12.00	0.00
12,675.0	83.91	179.64	12,391.3	573.2	-181.3	-569.5	12.00	12.00	0.00
12,700.0	86.91	179.64	12,393.3	548.3	-181.2	-544.6	12.00	12.00	0.00
12,725.8	90.00	179.64	12,394.0	522.5	-181.0	-518.8	12.00	12.00	0.00
12,800.0	90.00	179.64	12,394.0	448.3	-180.5	-444.6	0.00	0.00	0.00
12,900.0	90.00	179.64	12,394.0	348.3	-179.9	-344.7	0.00	0.00	0.00
13,000.0	90.00	179.64	12,394.0	248.3	-179.3	-244.7	0.00	0.00	0.00
13,100.0	90.00	179.64	12,394.0	148.3	-178.6	-144.7	0.00	0.00	0.00
13,200.0	90.00	179.64	12,394.0	48.3	-178.0	-44.8	0.00	0.00	0.00
13,300.0	90.00	179.64	12,394.0	-51.7	-177.4	55.2	0.00	0.00	0.00
13,400.0	90.00	179.64	12,394.0	-151.7	-176.7	155.2	0.00	0.00	0.00
13,500.0	90.00	179.64	12,394.0	-251.7	-176.1	255.1	0.00	0.00	0.00
13,600.0	90.00	179.64	12,394.0	-351.7	-175.5	355.1	0.00	0.00	0.00

Database:	EDM 5000.14	Local Co-ordinate Reference:	Well #714H
Company:	EOG Resources - Midland	TVD Reference:	KB = 25 @ 3442.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB = 25 @ 3442.0usft
Site:	Antietam 9 Fed Com	North Reference:	Grid
Well:	#714H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

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)
13,700.0	90.00	179.64	12,394.0	-451.7	-174.8	455.1	0.00	0.00	0.00
13,800.0	90.00	179.64	12,394.0	-551.7	-174.2	555.0	0.00	0.00	0.00
13,900.0	90.00	179.64	12,394.0	-651.7	-173.6	655.0	0.00	0.00	0.00
14,000.0	90.00	179.64	12,394.0	-751.7	-173.0	755.0	0.00	0.00	0.00
14,100.0	90.00	179.64	12,394.0	-851.7	-172.3	854.9	0.00	0.00	0.00
14,200.0	90.00	179.64	12,394.0	-951.7	-171.7	954.9	0.00	0.00	0.00
14,300.0	90.00	179.64	12,394.0	-1,051.7	-171.1	1,054.9	0.00	0.00	0.00
14,400.0	90.00	179.64	12,394.0	-1,151.7	-170.4	1,154.8	0.00	0.00	0.00
14,500.0	90.00	179.64	12,394.0	-1,251.7	-169.8	1,254.8	0.00	0.00	0.00
14,600.0	90.00	179.64	12,394.0	-1,351.7	-169.2	1,354.8	0.00	0.00	0.00
14,700.0	90.00	179.64	12,394.0	-1,451.7	-168.5	1,454.7	0.00	0.00	0.00
14,800.0	90.00	179.64	12,394.0	-1,551.6	-167.9	1,554.7	0.00	0.00	0.00
14,900.0	90.00	179.64	12,394.0	-1,651.6	-167.3	1,654.7	0.00	0.00	0.00
15,000.0	90.00	179.64	12,394.0	-1,751.6	-166.6	1,754.6	0.00	0.00	0.00
15,100.0	90.00	179.64	12,394.0	-1,851.6	-166.0	1,854.6	0.00	0.00	0.00
15,200.0	90.00	179.64	12,394.0	-1,951.6	-165.4	1,954.5	0.00	0.00	0.00
15,300.0	90.00	179.64	12,394.0	-2,051.6	-164.8	2,054.5	0.00	0.00	0.00
15,400.0	90.00	179.64	12,394.0	-2,151.6	-164.1	2,154.5	0.00	0.00	0.00
15,500.0	90.00	179.64	12,394.0	-2,251.6	-163.5	2,254.4	0.00	0.00	0.00
15,600.0	90.00	179.64	12,394.0	-2,351.6	-162.9	2,354.4	0.00	0.00	0.00
15,700.0	90.00	179.64	12,394.0	-2,451.6	-162.2	2,454.4	0.00	0.00	0.00
15,800.0	90.00	179.64	12,394.0	-2,551.6	-161.6	2,554.3	0.00	0.00	0.00
15,900.0	90.00	179.64	12,394.0	-2,651.6	-161.0	2,654.3	0.00	0.00	0.00
16,000.0	90.00	179.64	12,394.0	-2,751.6	-160.3	2,754.3	0.00	0.00	0.00
16,100.0	90.00	179.64	12,394.0	-2,851.6	-159.7	2,854.2	0.00	0.00	0.00
16,200.0	90.00	179.64	12,394.0	-2,951.6	-159.1	2,954.2	0.00	0.00	0.00
16,300.0	90.00	179.64	12,394.0	-3,051.6	-158.5	3,054.2	0.00	0.00	0.00
16,400.0	90.00	179.64	12,394.0	-3,151.6	-157.8	3,154.1	0.00	0.00	0.00
16,500.0	90.00	179.64	12,394.0	-3,251.6	-157.2	3,254.1	0.00	0.00	0.00
16,600.0	90.00	179.64	12,394.0	-3,351.6	-156.6	3,354.1	0.00	0.00	0.00
16,700.0	90.00	179.64	12,394.0	-3,451.6	-155.9	3,454.0	0.00	0.00	0.00
16,800.0	90.00	179.64	12,394.0	-3,551.6	-155.3	3,554.0	0.00	0.00	0.00
16,900.0	90.00	179.64	12,394.0	-3,651.6	-154.7	3,654.0	0.00	0.00	0.00
17,000.0	90.00	179.64	12,394.0	-3,751.6	-154.0	3,753.9	0.00	0.00	0.00
17,100.0	90.00	179.64	12,394.0	-3,851.6	-153.4	3,853.9	0.00	0.00	0.00
17,200.0	90.00	179.64	12,394.0	-3,951.6	-152.8	3,953.9	0.00	0.00	0.00
17,300.0	90.00	179.64	12,394.0	-4,051.6	-152.1	4,053.8	0.00	0.00	0.00
17,400.0	90.00	179.64	12,394.0	-4,151.6	-151.5	4,153.8	0.00	0.00	0.00
17,500.0	90.00	179.64	12,394.0	-4,251.6	-150.9	4,253.8	0.00	0.00	0.00
17,600.0	90.00	179.64	12,394.0	-4,351.6	-150.3	4,353.7	0.00	0.00	0.00
17,700.0	90.00	179.64	12,394.0	-4,451.6	-149.6	4,453.7	0.00	0.00	0.00
17,800.0	90.00	179.64	12,394.0	-4,551.6	-149.0	4,553.7	0.00	0.00	0.00
17,900.0	90.00	179.64	12,394.0	-4,651.6	-148.4	4,653.6	0.00	0.00	0.00
18,000.0	90.00	179.64	12,394.0	-4,751.6	-147.7	4,753.6	0.00	0.00	0.00
18,100.0	90.00	179.64	12,394.0	-4,851.6	-147.1	4,853.6	0.00	0.00	0.00
18,200.0	90.00	179.64	12,394.0	-4,951.6	-146.5	4,953.5	0.00	0.00	0.00
18,300.0	90.00	179.64	12,394.0	-5,051.6	-145.8	5,053.5	0.00	0.00	0.00
18,400.0	90.00	179.64	12,394.0	-5,151.6	-145.2	5,153.4	0.00	0.00	0.00
18,500.0	90.00	179.64	12,394.0	-5,251.6	-144.6	5,253.4	0.00	0.00	0.00
18,600.0	90.00	179.64	12,394.0	-5,351.6	-144.0	5,353.4	0.00	0.00	0.00
18,700.0	90.00	179.64	12,394.0	-5,451.6	-143.3	5,453.3	0.00	0.00	0.00
18,800.0	90.00	179.64	12,394.0	-5,551.6	-142.7	5,553.3	0.00	0.00	0.00
18,900.0	90.00	179.64	12,394.0	-5,651.6	-142.1	5,653.3	0.00	0.00	0.00
19,000.0	90.00	179.64	12,394.0	-5,751.6	-141.4	5,753.2	0.00	0.00	0.00

Database: EDM 5000.14
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 83 NME)
Site: Antietam 9 Fed Com
Well: #714H
Wellbore: OH
Design: Plan #0.2

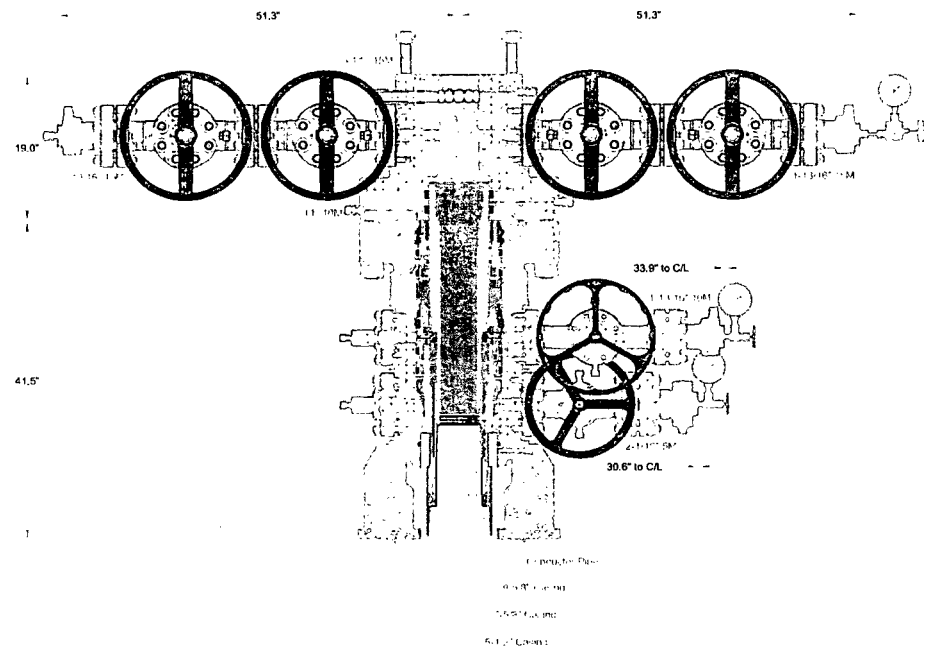
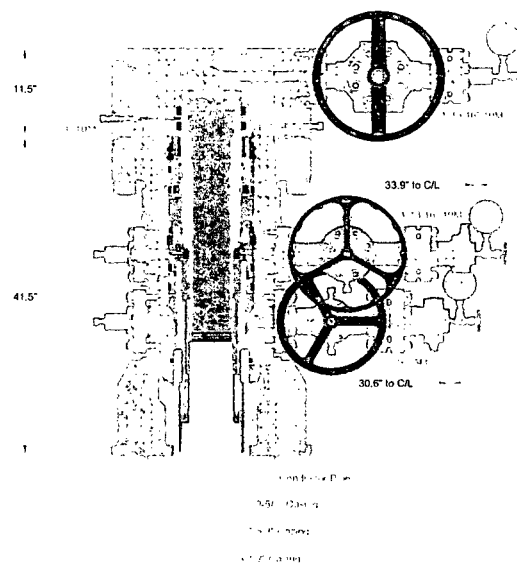
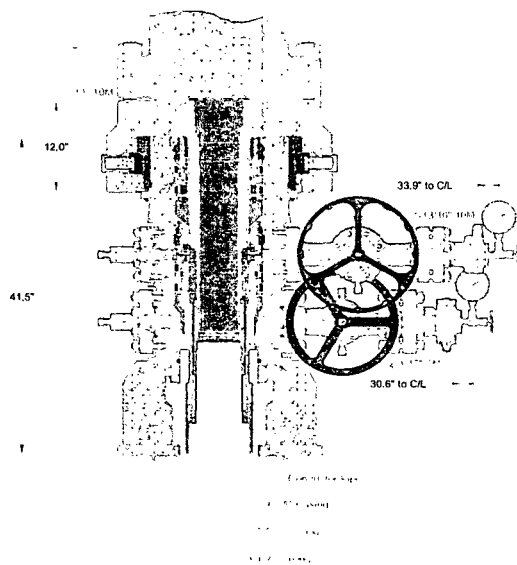
Local Co-ordinate Reference: Well #714H
TVD Reference: KB = 25 @ 3442.0usft
MD Reference: KB = 25 @ 3442.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
19,100.0	90.00	179.64	12,394.0	-5,851.6	-140.8	5,853.2	0.00	0.00	0.00
19,200.0	90.00	179.64	12,394.0	-5,951.6	-140.2	5,953.2	0.00	0.00	0.00
19,300.0	90.00	179.64	12,394.0	-6,051.6	-139.5	6,053.1	0.00	0.00	0.00
19,400.0	90.00	179.64	12,394.0	-6,151.6	-138.9	6,153.1	0.00	0.00	0.00
19,500.0	90.00	179.64	12,394.0	-6,251.6	-138.3	6,253.1	0.00	0.00	0.00
19,600.0	90.00	179.64	12,394.0	-6,351.6	-137.6	6,353.0	0.00	0.00	0.00
19,700.0	90.00	179.64	12,394.0	-6,451.6	-137.0	6,453.0	0.00	0.00	0.00
19,800.0	90.00	179.64	12,394.0	-6,551.5	-136.4	6,553.0	0.00	0.00	0.00
19,900.0	90.00	179.64	12,394.0	-6,651.5	-135.8	6,652.9	0.00	0.00	0.00
20,000.0	90.00	179.64	12,394.0	-6,751.5	-135.1	6,752.9	0.00	0.00	0.00
20,019.5	90.00	179.64	12,394.0	-6,771.0	-135.0	6,772.3	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									
KOP (Antietam 9 Fed Cc - plan hits target center - Point	0.00	0.00	11,916.5	1,000.0	-184.0	419,941.00	777,121.00	32° 9' 7.930 N	103° 34' 17.258 W
PBHL (Antietam 9 Fed C - plan hits target center - Point	0.00	0.00	12,394.0	-6,771.0	-135.0	412,170.00	777,170.00	32° 7' 51.030 N	103° 34' 17.328 W
FTP (Antietam 9 Fed Co - plan misses target center by 163.4usft at 12375.0usft MD (12270.8 TVD, 842.6 N, -183.0 E) - Point	0.00	0.00	12,394.0	950.0	-184.0	419,891.00	777,121.00	32° 9' 7.435 N	103° 34' 17.263 W



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CACTUS WELLHEAD LLC

20" x 9-5/8" x 7-5/8" x 5-1/2" MBU-T-SF SOW Wellhead System
With 11" 10M x 5-1/8" 15M CMT-DBLHPS-SB Tubing Head,
Mandrel Hangers, Quick Connect Drilling Adapter And TA Cap

ALL DIMENSIONS APPROXIMATE
EOG RESOURCES
DELAWARE

DLE 23OCT18

HBE0000010

PECOS DISTRICT DRILLING OPERATIONS CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG RESOURCES INCORPORATED
LEASE NO.:	NMNM118726
WELL NAME & NO.:	ANTIETAM 9 FED COM 714H
SURFACE HOLE FOOTAGE:	1052'/N & 657'/E
BOTTOM HOLE FOOTAGE	2540'/N & 660'/E
LOCATION:	T-25S, R-33E, S9. NMPM
COUNTY:	LEA, NM

Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All previous conditions of approval still apply aside from the following:

A. CASING

1. The **9-5/8** inch surface casing shall be set at approximately **1135** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:
 - a. Cement to surface. If cement does not circulate see B.1.a, c-d above.
 - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is: Cement should tie-back 200' into the previous casing. Operator shall provide method of verification.

DR 1/8/2019