

SILO_OPAL36 STATE 1H.DWG 4/11/2014
JUL 28 2014

Revised Permit Information:

Well Name: Opal 36 State No. 1H

Location:

SL: 220' FSL & 289' FEL, Section 36, T-25-S, R-34-E, Lea Co., N.M.

BHL: 230' FNL & 380' FEL, Section 36, T-25-S, R-34-E, Lea Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
17.5"	0 – 1,035'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4000' – 5100'	9.625"	40#	HCK-55	LTC	1.125	1.25	1.60
8.75"	0'-17,131'	5.5"	17#	HCP-110	LTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Slurry Description
1,035'	500	13.5	1.73	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	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
5,100'	800	12.7	2.22	Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free
	200	14.8	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
17,131'	400	10.8	3.67	60:40:0 Class C + 15.0 pps BA-90 + 4% MPA-5 + 3.0% SMS + 5.0% A-10 + 1.0% BA-10A + 0.80% ASA-301 + 2.55% R-21 + 8.0 pps LCM-1
	550	11.8	2.38	50:50:10 Class H + 0.80% FL-52 + 0.30% ASA-301 + 0.40% SMS + 2.0% Salt + 0.30% R-21 + 3.0 pps LCM-1 + 0.25 pps Celloflake
	1325	14.2	1.28	50:50:2 Class H + 0.65% FL-52 + 0.45% CD-32 + 0.10% SMS + 2.0% Salt

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1035'	Fresh - Gel	8.6-8.8	28-34	N/c
1035' – 5,100'	Brine	10.0-10.2	28-34	N/c
5,100' – 12,022'	Cut Brine	8.4-9.0	28-34	N/c
KOP – 17,131' Lateral	Cut Brine	9.0-9.5	40-42	8-10

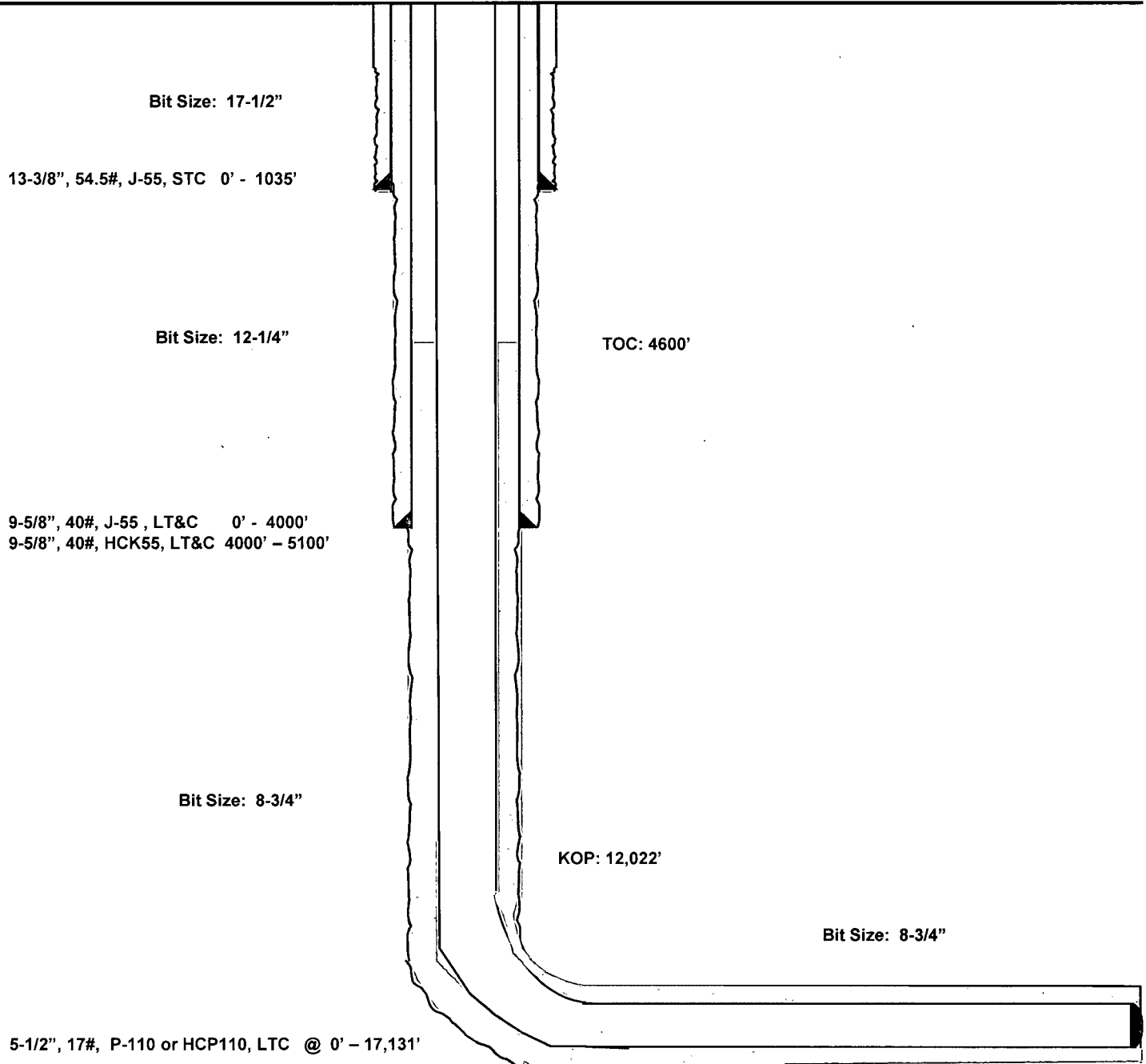
Opal 36 State #1H
Red Hills
Lea County, New Mexico

Revised
Proposed Wellbore

220' FSL
289' FEL
Section 36
T-25-S, R-34-E

API: 30-025-41823

KB: 3,314'
GL: 3,284'



Lateral: 17,131' MD, 12,463' TVD

BH Location: 230' FNL & 380' FEL
Section 36
T-25-S, R-34-E



Lea County, NM (NAD 27 NME)

Opal 36 State #1H

3284' GL + 30' KB

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: -0.49°
Magnetic North: 5.66°
Magnetic Field
Strength: 48259.5nT
Dip Angle: 60.01°
Date: 4/30/2014
Model: IGRF201014

To convert a Magnetic Direction to a Grid Direction, Add 5.66°
To convert a Magnetic Direction to a True Direction, Add 7.15° East
To convert a True Direction to a Grid Direction, Subtract 0.49°

WELL DETAILS: Opal 36 State #1H

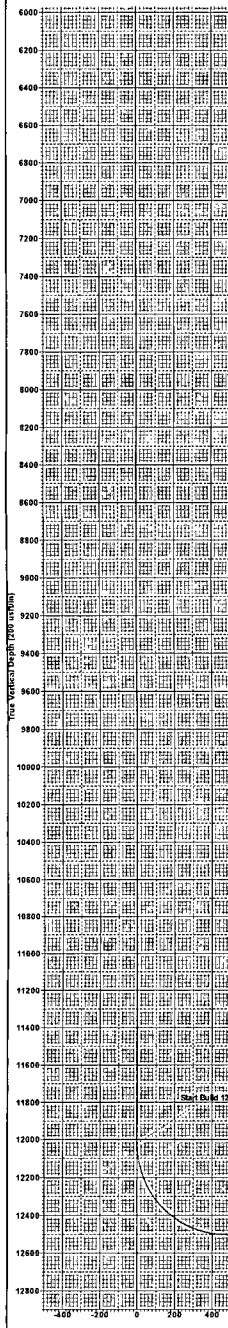
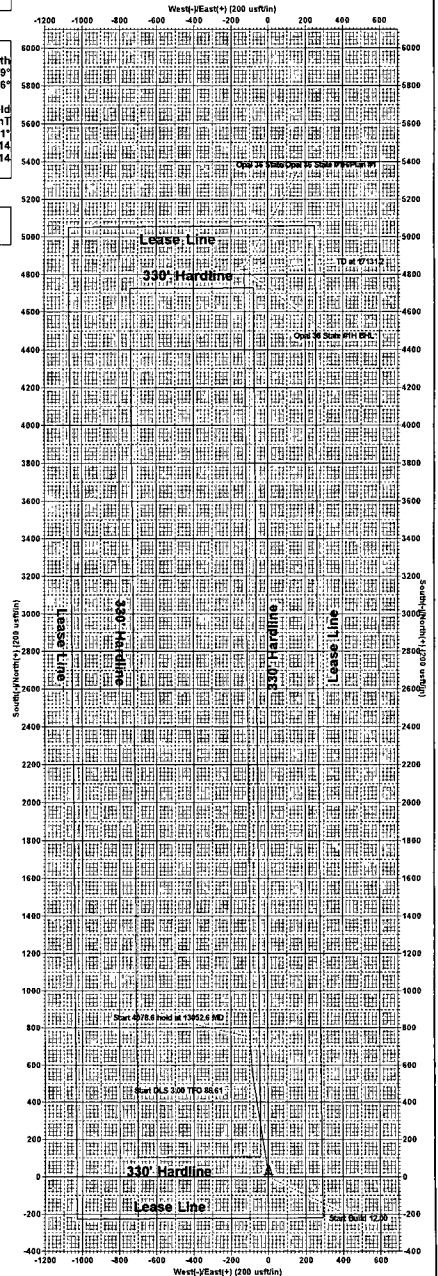
Ground Level: 3284.0
Well @ 3214.00ft (3284' GL + 30' KB)
+N/-S +E/-W Northing Easting Longitude Slot
0.0 0.0 394083.00 784250.00 32° 4' 48.454 N 103° 24' 58.161 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dlog	TFace	VFace	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	12022.5	0.00	0.00	12022.5	0.0	0.0	0.00	0.00	0.0		
3	12772.5	90.00	351.15	12500.0	471.8	-73.6	12.00	351.15	473.6		
4	13052.6	90.50	359.54	12498.8	760.7	-65.2	3.00	66.61	753.0		
5	17131.2	90.50	359.54	12463.5	4829.0	-129.0	0.00	0.00	4830.7	Opal 36 State #1H BHL	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Opal 36 State #1H BHL	12460.5	4829.0	-129.0	398912.00	784121.00	Point



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



EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Opal 36 State

Opal 36 State #1H

OH

Plan: Plan #1

Standard Planning Report

18 July, 2014



EOG Resources, Inc.

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Opal 36 State #1H
Company:	EOG Resources - Midland	TVD Reference:	Well @ 3314.0usft (3284' GL + 30' KB)
Project:	Lea County, NM (NAD 27 NME)	MD Reference:	Well @ 3314.0usft (3284' GL + 30' KB)
Site:	Opal 36 State	North Reference:	Grid
Well:	Opal 36 State #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	Opal 36 State		
Site Position:		Northing:	394,083.00 usft
From:	Map	Easting:	784,250.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 48.454 N
		Longitude:	103° 24' 56.161 W
		Grid Convergence:	0.49 °

Well	Opal 36 State #1H		
Well Position	+N/-S	0.0 usft	Northing: 394,083.00 usft
	+E/-W	0.0 usft	Easting: 784,250.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 32° 4' 48.454 N
			Longitude: 103° 24' 56.161 W
			Ground Level: 3,284.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF201014	4/30/2014	7.15
			Dip Angle (°) 60.01
			Field Strength (nT) 48,260

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)
	0.0	0.0	0.0
			Direction (°) 358.47

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	
12,022.5	0.00	0.00	12,022.5	0.0	0.0	0.00	0.00	0.00	0.00	
12,772.5	90.00	351.15	12,500.0	471.8	-73.5	12.00	12.00	0.00	351.15	
13,052.6	90.50	359.54	12,498.8	750.7	-96.2	3.00	0.18	2.99	86.61	
17,131.2	90.50	359.54	12,463.5	4,829.0	-129.0	0.00	0.00	0.00	0.00	Opal 36 State #1H Bl



EOG Resources, Inc.

Planning Report

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Company:	EOG Resources - Midland	TVD Reference:	Well @ 3314.0usft (3284' GL + 30' KB)
Project:	Lea County, NM (NAD 27 NME)	MD Reference:	Well @ 3314.0usft (3284' GL + 30' KB)
Site:	Opal 36 State	North Reference:	Grid
Well:	Opal 36 State #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	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	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00



EOG Resources, Inc.

Planning Report

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Site:	Opal 36 State	North Reference:	Grid
Well:	Opal 36 State #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,100.0	0.0	0.0	0.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00
10,300.0	0.00	0.00	10,300.0	0.0	0.0	0.0	0.00	0.00	0.00
10,400.0	0.00	0.00	10,400.0	0.0	0.0	0.0	0.00	0.00	0.00
10,500.0	0.00	0.00	10,500.0	0.0	0.0	0.0	0.00	0.00	0.00
10,600.0	0.00	0.00	10,600.0	0.0	0.0	0.0	0.00	0.00	0.00
10,700.0	0.00	0.00	10,700.0	0.0	0.0	0.0	0.00	0.00	0.00



EOG Resources, Inc.

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Opal 36 State #1H
Company:	EOG Resources - Midland	TVD Reference:	Well @ 3314.0usft (3284' GL + 30' KB)
Project:	Lea County, NM (NAD 27 NME)	MD Reference:	Well @ 3314.0usft (3284' GL + 30' KB)
Site:	Opal 36 State	North Reference:	Grid
Well:	Opal 36 State #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)	
10,800.0	0.00	0.00	10,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
10,900.0	0.00	0.00	10,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,000.0	0.00	0.00	11,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,100.0	0.00	0.00	11,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,200.0	0.00	0.00	11,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,300.0	0.00	0.00	11,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,400.0	0.00	0.00	11,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,500.0	0.00	0.00	11,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,600.0	0.00	0.00	11,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,700.0	0.00	0.00	11,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,800.0	0.00	0.00	11,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
11,900.0	0.00	0.00	11,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
12,000.0	0.00	0.00	12,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
12,022.5	0.00	0.00	12,022.5	0.0	0.0	0.0	0.00	0.00	0.00	
12,025.0	0.30	351.15	12,025.0	0.0	0.0	0.0	12.00	12.00	0.00	
12,050.0	3.30	351.15	12,050.0	0.8	-0.1	0.8	12.00	12.00	0.00	
12,075.0	6.30	351.15	12,074.9	2.8	-0.4	2.9	12.00	12.00	0.00	
12,100.0	9.30	351.15	12,099.7	6.2	-1.0	6.2	12.00	12.00	0.00	
12,125.0	12.30	351.15	12,124.2	10.8	-1.7	10.9	12.00	12.00	0.00	
12,150.0	15.30	351.15	12,148.5	16.7	-2.6	16.8	12.00	12.00	0.00	
12,175.0	18.30	351.15	12,172.4	23.9	-3.7	24.0	12.00	12.00	0.00	
12,200.0	21.30	351.15	12,195.9	32.2	-5.0	32.3	12.00	12.00	0.00	
12,225.0	24.30	351.15	12,219.0	41.8	-6.5	42.0	12.00	12.00	0.00	
12,250.0	27.30	351.15	12,241.5	52.5	-8.2	52.7	12.00	12.00	0.00	
12,275.0	30.30	351.15	12,263.4	64.4	-10.0	64.7	12.00	12.00	0.00	
12,300.0	33.30	351.15	12,284.6	77.5	-12.1	77.8	12.00	12.00	0.00	
12,325.0	36.30	351.15	12,305.2	91.6	-14.3	91.9	12.00	12.00	0.00	
12,350.0	39.30	351.15	12,324.9	106.7	-16.6	107.1	12.00	12.00	0.00	
12,375.0	42.30	351.15	12,343.8	122.8	-19.1	123.3	12.00	12.00	0.00	
12,400.0	45.30	351.15	12,361.9	139.9	-21.8	140.5	12.00	12.00	0.00	
12,425.0	48.30	351.15	12,379.0	157.9	-24.6	158.5	12.00	12.00	0.00	
12,450.0	51.30	351.15	12,395.1	176.8	-27.5	177.5	12.00	12.00	0.00	
12,475.0	54.30	351.15	12,410.2	196.5	-30.6	197.2	12.00	12.00	0.00	
12,500.0	57.30	351.15	12,424.3	216.9	-33.8	217.7	12.00	12.00	0.00	
12,525.0	60.30	351.15	12,437.2	238.0	-37.1	238.9	12.00	12.00	0.00	
12,550.0	63.30	351.15	12,449.1	259.8	-40.5	260.8	12.00	12.00	0.00	
12,575.0	66.30	351.15	12,459.7	282.1	-43.9	283.2	12.00	12.00	0.00	
12,600.0	69.30	351.15	12,469.1	305.0	-47.5	306.2	12.00	12.00	0.00	
12,625.0	72.30	351.15	12,477.4	328.3	-51.1	329.6	12.00	12.00	0.00	
12,650.0	75.30	351.15	12,484.3	352.1	-54.8	353.4	12.00	12.00	0.00	
12,675.0	78.30	351.15	12,490.0	376.1	-58.6	377.5	12.00	12.00	0.00	
12,700.0	81.30	351.15	12,494.5	400.4	-62.3	401.9	12.00	12.00	0.00	
12,725.0	84.30	351.15	12,497.6	424.9	-66.2	426.5	12.00	12.00	0.00	
12,750.0	87.30	351.15	12,499.4	449.6	-70.0	451.3	12.00	12.00	0.00	
12,772.5	90.00	351.15	12,500.0	471.8	-73.5	473.6	12.00	12.00	0.00	
12,800.0	90.05	351.97	12,500.0	499.0	-77.5	500.9	3.00	0.18	2.99	
12,900.0	90.23	354.97	12,499.7	598.3	-88.9	600.5	3.00	0.18	2.99	
13,000.0	90.40	357.96	12,499.2	698.1	-95.0	700.4	3.00	0.18	2.99	
13,052.6	90.50	359.54	12,498.8	750.7	-96.2	753.0	3.00	0.18	2.99	
13,100.0	90.50	359.54	12,498.3	798.1	-96.6	800.4	0.00	0.00	0.00	
13,200.0	90.50	359.54	12,497.5	898.1	-97.4	900.4	0.00	0.00	0.00	
13,300.0	90.50	359.54	12,496.6	998.1	-98.2	1,000.4	0.00	0.00	0.00	
13,400.0	90.50	359.54	12,495.7	1,098.1	-99.0	1,100.3	0.00	0.00	0.00	
13,500.0	90.50	359.54	12,494.9	1,198.1	-99.8	1,200.3	0.00	0.00	0.00	



EOG Resources, Inc.

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Site:	Opal 36 State	North Reference:	Grid
Well:	Opal 36 State #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
13,600.0	90.50	359.54	12,494.0	1,298.1	-100.6	1,300.3	0.00	0.00	0.00
13,700.0	90.50	359.54	12,493.2	1,398.1	-101.4	1,400.3	0.00	0.00	0.00
13,800.0	90.50	359.54	12,492.3	1,498.1	-102.2	1,500.2	0.00	0.00	0.00
13,900.0	90.50	359.54	12,491.4	1,598.0	-103.0	1,600.2	0.00	0.00	0.00
14,000.0	90.50	359.54	12,490.6	1,698.0	-103.8	1,700.2	0.00	0.00	0.00
14,100.0	90.50	359.54	12,489.7	1,798.0	-104.6	1,800.2	0.00	0.00	0.00
14,200.0	90.50	359.54	12,488.8	1,898.0	-105.4	1,900.2	0.00	0.00	0.00
14,300.0	90.50	359.54	12,488.0	1,998.0	-106.2	2,000.1	0.00	0.00	0.00
14,400.0	90.50	359.54	12,487.1	2,098.0	-107.0	2,100.1	0.00	0.00	0.00
14,500.0	90.50	359.54	12,486.2	2,198.0	-107.8	2,200.1	0.00	0.00	0.00
14,600.0	90.50	359.54	12,485.4	2,298.0	-108.6	2,300.1	0.00	0.00	0.00
14,700.0	90.50	359.54	12,484.5	2,398.0	-109.4	2,400.1	0.00	0.00	0.00
14,800.0	90.50	359.54	12,483.6	2,498.0	-110.2	2,500.0	0.00	0.00	0.00
14,900.0	90.50	359.54	12,482.8	2,598.0	-111.0	2,600.0	0.00	0.00	0.00
15,000.0	90.50	359.54	12,481.9	2,698.0	-111.8	2,700.0	0.00	0.00	0.00
15,100.0	90.50	359.54	12,481.1	2,798.0	-112.7	2,800.0	0.00	0.00	0.00
15,200.0	90.50	359.54	12,480.2	2,898.0	-113.5	2,899.9	0.00	0.00	0.00
15,300.0	90.50	359.54	12,479.3	2,997.9	-114.3	2,999.9	0.00	0.00	0.00
15,400.0	90.50	359.54	12,478.5	3,097.9	-115.1	3,099.9	0.00	0.00	0.00
15,500.0	90.50	359.54	12,477.6	3,197.9	-115.9	3,199.9	0.00	0.00	0.00
15,600.0	90.50	359.54	12,476.7	3,297.9	-116.7	3,299.9	0.00	0.00	0.00
15,700.0	90.50	359.54	12,475.9	3,397.9	-117.5	3,399.8	0.00	0.00	0.00
15,800.0	90.50	359.54	12,475.0	3,497.9	-118.3	3,499.8	0.00	0.00	0.00
15,900.0	90.50	359.54	12,474.1	3,597.9	-119.1	3,599.8	0.00	0.00	0.00
16,000.0	90.50	359.54	12,473.3	3,697.9	-119.9	3,699.8	0.00	0.00	0.00
16,100.0	90.50	359.54	12,472.4	3,797.9	-120.7	3,799.8	0.00	0.00	0.00
16,200.0	90.50	359.54	12,471.5	3,897.9	-121.5	3,899.7	0.00	0.00	0.00
16,300.0	90.50	359.54	12,470.7	3,997.9	-122.3	3,999.7	0.00	0.00	0.00
16,400.0	90.50	359.54	12,469.8	4,097.9	-123.1	4,099.7	0.00	0.00	0.00
16,500.0	90.50	359.54	12,469.0	4,197.9	-123.9	4,199.7	0.00	0.00	0.00
16,600.0	90.50	359.54	12,468.1	4,297.9	-124.7	4,299.7	0.00	0.00	0.00
16,700.0	90.50	359.54	12,467.2	4,397.8	-125.5	4,399.6	0.00	0.00	0.00
16,800.0	90.50	359.54	12,466.4	4,497.8	-126.3	4,499.6	0.00	0.00	0.00
16,900.0	90.50	359.54	12,465.5	4,597.8	-127.1	4,599.6	0.00	0.00	0.00
17,000.0	90.50	359.54	12,464.6	4,697.8	-127.9	4,699.6	0.00	0.00	0.00
17,100.0	90.50	359.54	12,463.8	4,797.8	-128.7	4,799.5	0.00	0.00	0.00
17,131.2	90.50	359.54	12,463.5	4,829.0	-129.0	4,830.7	0.00	0.00	0.00

Opal 36 State #1H BHL

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Opal 36 State #1H BHL	0.00	0.00	12,463.5	4,829.0	-129.0	398,912.00	784,121.00	32° 5' 36.249 N	103° 24' 57.183 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									