

Permit Information:

HOBBS OCD

Well Name: Opal 36 State No. 1H

MAY 05 2014

Location:

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

RECEIVED

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'-14,103'	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
14,103'	375	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
	400	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
	1300	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' - 8,994'	Cut Brine	8.4-9.0	28-34	N/c
KOP - 14,103' Lateral	Cut Brine	9.0-9.5	40-42	8-10

MAY 07 2014

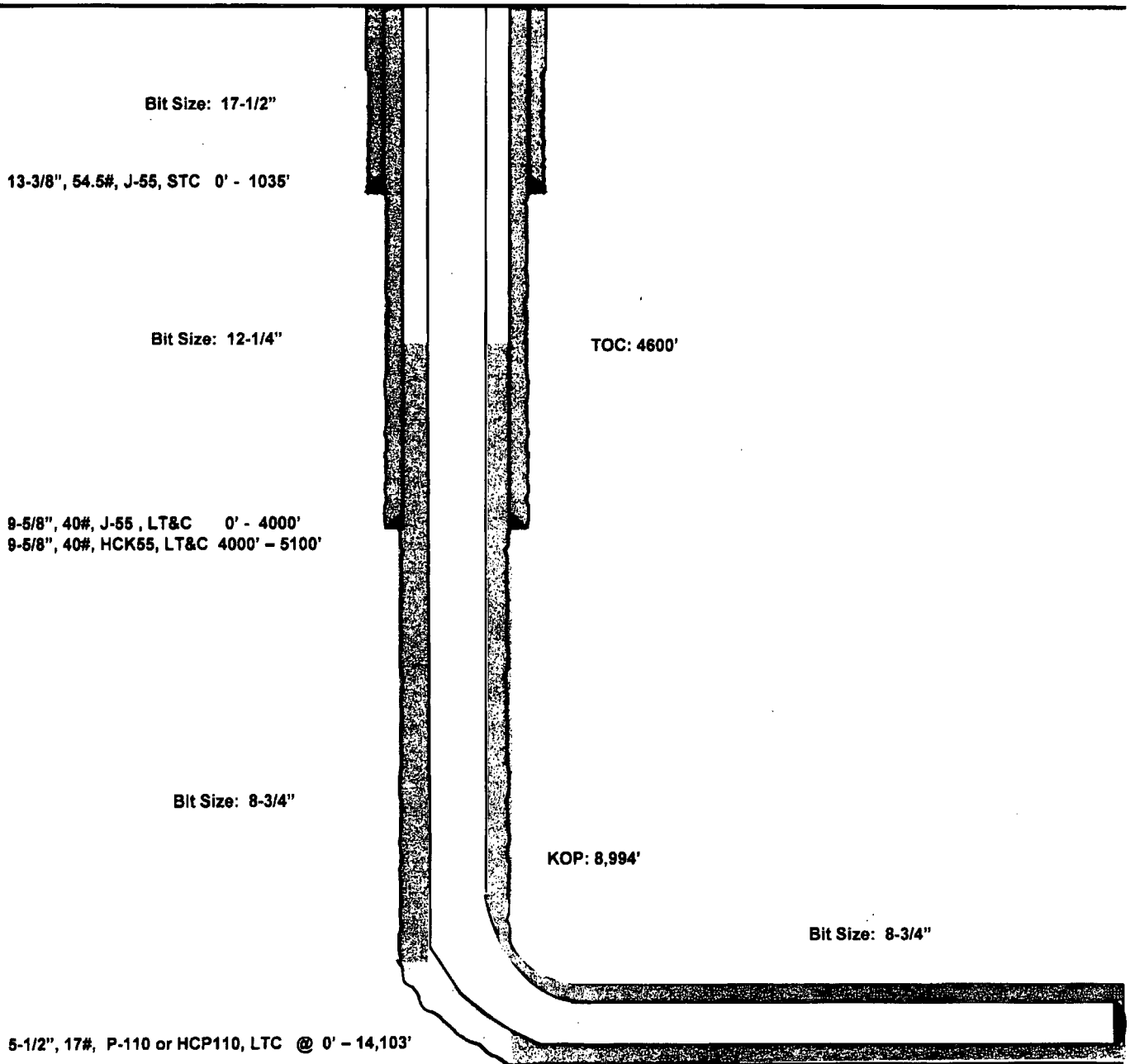
Opal 36 State #1H
Red Hills
Lea County, New Mexico

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

Proposed Wellbore

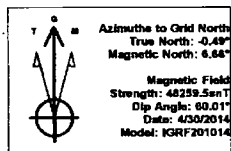
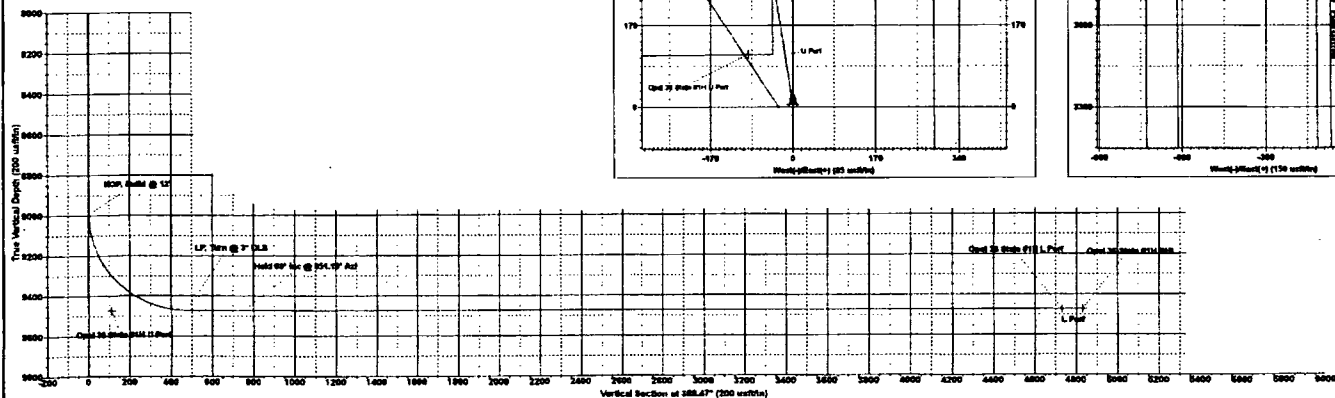
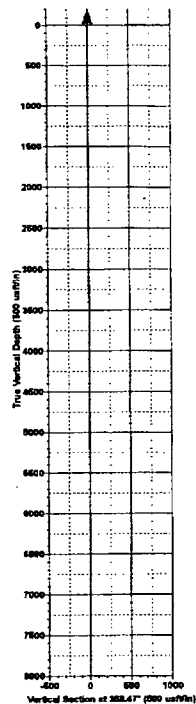
API: 30-025-

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



Lateral: 14,103' MD, 9,472' TVD

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



Lea County, NM

Opal 36 State #1H

3284' GL + 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: Opal 36 State #1H

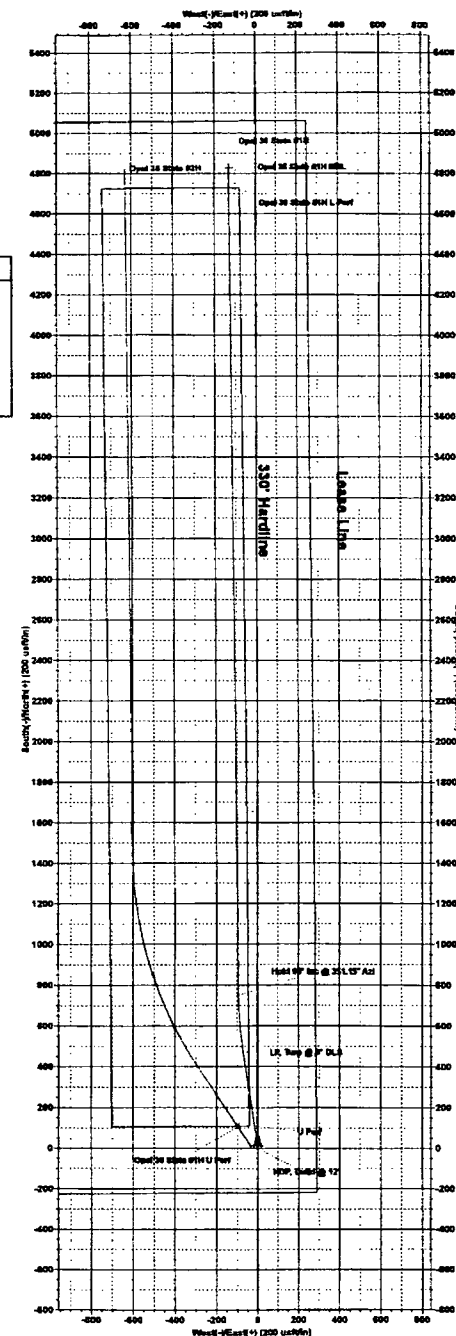
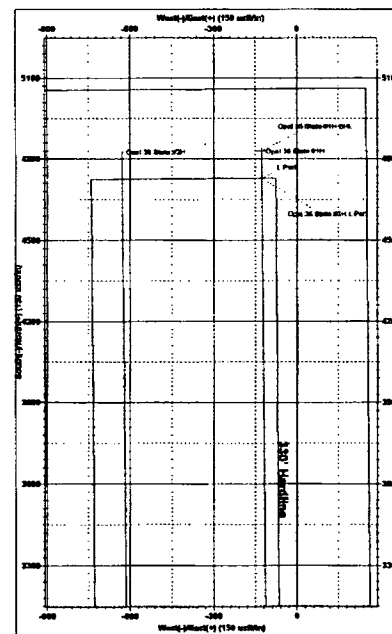
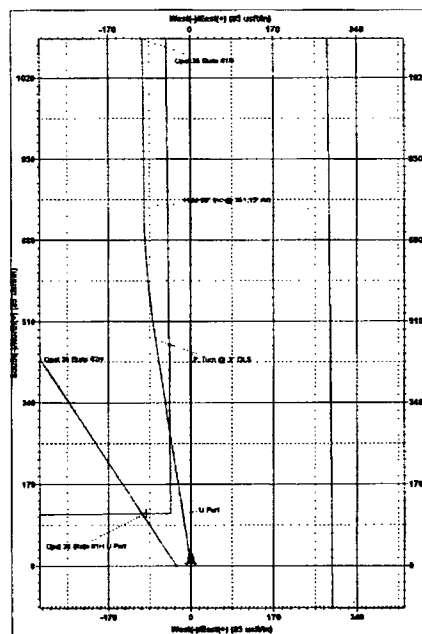
Ground Level: 3284.00
Northing: 394083.00
Easting: 784250.00
Latitude: 32° 4' 48.454 N
Longitude: 103° 24' 56.161 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	8994.84	0.00	0.00	8994.84	0.00	0.00	0.00	0.00	0.00		KOP, Build @ 12°
3	9744.94	90.00	351.15	9472.00	471.78	-71.48	12.00	351.15	473.67		L.P. Turn @ 3° DLS
4	10024.18	90.00	359.84	9472.00	785.22	-84.13	3.00	90.00	782.83		Hold 90° Inc @ 351.15° Azi
5	14103.06	90.00	359.84	9472.00	4829.00	-129.00	0.00	0.00	4830.72	Opal 36 State #1H BHL	TD at 14103.06

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Shape
Opal 36 State #1H BHL	9472.00	-129.00	398912.00	784121.00	Point	
Opal 36 State #1H L Perf	9472.00	-129.00	398912.00	784121.00	Point	
Opal 36 State #1H U Perf	9472.00	-129.00	394193.00	784168.00	Point	





HOBBS OCD

MAY 05 2014

RECEIVED

EOG Resources - Midland

Lea County, NM

Opal 36 State

Opal 36 State #1H

OH

Plan: Plan #1

Standard Survey Report

30 April, 2014



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
Project: Lea County, NM
Site: Opal 36 State
Well: Opal 36 State #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Opal 36 State #1H
TVD Reference: Well @ 3314.00usft (3284' GL + 30' KB)
MD Reference: Well @ 3314.00usft (3284' GL + 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)	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	Latitude:	32° 4' 48.454 N	
From:	Map	Easting:	784,250.00 usft	Longitude:	103° 24' 56.161 W	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.49 °

Well	Opal 36 State #1H					
Well Position	+N/-S	0.00 usft	Northing:	394,083.00 usft	Latitude:	32° 4' 48.454 N
	+E/-W	0.00 usft	Easting:	784,250.00 usft	Longitude:	103° 24' 56.161 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,284.00 usft	

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

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	358.47

Survey Tool Program		Date	4/30/2014		
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
0.00	14,102.53	Plan #1 (OH)	MWD	MWD - Standard	

Planned Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/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



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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
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
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: Opal 36 State
Well: Opal 36 State #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Opal 36 State #1H
TVD Reference: Well @ 3314.00usft (3284' GL + 30' KB)
MD Reference: Well @ 3314.00usft (3284' GL + 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
8,994.54	0.00	0.00	8,994.54	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Build @ 12°									
9,000.00	0.66	351.15	9,000.00	0.03	0.00	0.03	12.00	12.00	0.00
9,025.00	3.66	351.15	9,024.98	0.96	-0.15	0.96	12.00	12.00	0.00
9,050.00	6.66	351.15	9,049.88	3.18	-0.49	3.19	12.00	12.00	0.00
9,075.00	9.66	351.15	9,074.62	6.68	-1.04	6.71	12.00	12.00	0.00
9,100.00	12.66	351.15	9,099.14	11.46	-1.78	11.50	12.00	12.00	0.00



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 Wellbore: OH
 Design: Plan #1

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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	15.66	351.15	9,123.38	17.50	-2.73	17.57	12.00	12.00	0.00
9,150.00	18.66	351.15	9,147.27	24.79	-3.86	24.88	12.00	12.00	0.00
9,175.00	21.66	351.15	9,170.73	33.30	-5.18	33.42	12.00	12.00	0.00
9,200.00	24.66	351.15	9,193.72	43.01	-6.70	43.17	12.00	12.00	0.00
9,225.00	27.66	351.15	9,216.16	53.90	-8.39	54.10	12.00	12.00	0.00
9,250.00	30.66	351.15	9,237.99	65.93	-10.27	66.18	12.00	12.00	0.00
9,275.00	33.66	351.15	9,259.15	79.08	-12.31	79.38	12.00	12.00	0.00
9,300.00	36.66	351.15	9,279.59	93.30	-14.53	93.65	12.00	12.00	0.00
9,325.00	39.66	351.15	9,299.24	108.56	-16.90	108.97	12.00	12.00	0.00
9,327.28	39.93	351.15	9,300.99	110.00	-17.13	110.42	12.00	12.00	0.00
U Perf									
9,350.00	42.66	351.15	9,318.06	124.81	-19.43	125.29	12.00	12.00	0.00
9,375.00	45.66	351.15	9,336.00	142.02	-22.11	142.56	12.00	12.00	0.00
9,400.00	48.66	351.15	9,353.00	160.13	-24.93	160.74	12.00	12.00	0.00
9,425.00	51.66	351.15	9,369.01	179.09	-27.88	179.77	12.00	12.00	0.00
9,450.00	54.66	351.15	9,384.00	198.86	-30.96	199.61	12.00	12.00	0.00
9,475.00	57.66	351.15	9,397.92	219.37	-34.16	220.21	12.00	12.00	0.00
9,500.00	60.66	351.15	9,410.74	240.58	-37.46	241.49	12.00	12.00	0.00
9,525.00	63.66	351.15	9,422.42	262.42	-40.86	263.41	12.00	12.00	0.00
9,550.00	66.66	351.15	9,432.92	284.83	-44.35	285.91	12.00	12.00	0.00
9,575.00	69.66	351.15	9,442.22	307.76	-47.92	308.93	12.00	12.00	0.00
9,600.00	72.66	351.15	9,450.29	331.13	-51.56	332.39	12.00	12.00	0.00
9,625.00	75.66	351.15	9,457.12	354.89	-55.26	356.24	12.00	12.00	0.00
9,650.00	78.66	351.15	9,462.68	378.98	-59.01	380.42	12.00	12.00	0.00
9,675.00	81.66	351.15	9,466.95	403.31	-62.80	404.84	12.00	12.00	0.00
9,700.00	84.66	351.15	9,469.93	427.83	-66.61	429.46	12.00	12.00	0.00
9,725.00	87.66	351.15	9,471.61	452.48	-70.45	454.20	12.00	12.00	0.00
9,744.54	90.00	351.15	9,472.01	471.78	-73.46	473.57	12.00	12.00	0.00
LP, Turn @ 3° DLS									
9,800.00	90.00	352.81	9,472.01	526.70	-81.19	528.68	3.00	0.00	3.00
9,900.00	90.00	355.81	9,472.00	626.19	-91.10	628.40	3.00	0.00	3.00
10,000.00	90.00	358.81	9,472.00	726.07	-95.79	728.37	3.00	0.00	3.00
10,024.15	90.00	359.54	9,472.00	750.22	-96.13	752.52	3.00	0.00	3.00
Hold 90° Inc @ 351.15° Azi									
10,100.00	90.00	359.54	9,472.00	826.07	-96.74	828.38	0.00	0.00	0.00
10,200.00	90.00	359.54	9,472.00	926.06	-97.55	928.34	0.00	0.00	0.00
10,300.00	90.00	359.54	9,472.00	1,026.06	-98.36	1,028.32	0.00	0.00	0.00
10,400.00	90.00	359.54	9,472.00	1,126.06	-99.16	1,128.30	0.00	0.00	0.00
10,500.00	90.00	359.54	9,472.00	1,226.05	-99.97	1,228.29	0.00	0.00	0.00
10,600.00	90.00	359.54	9,472.00	1,326.05	-100.77	1,328.27	0.00	0.00	0.00
10,700.00	90.00	359.54	9,472.00	1,426.05	-101.58	1,428.25	0.00	0.00	0.00
10,800.00	90.00	359.54	9,472.00	1,526.04	-102.38	1,528.23	0.00	0.00	0.00
10,900.00	90.00	359.54	9,472.00	1,626.04	-103.19	1,628.22	0.00	0.00	0.00
11,000.00	90.00	359.54	9,472.00	1,726.04	-104.00	1,728.20	0.00	0.00	0.00



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
 Project: Lea County, NM
 Site: Opal 36 State
 Well: Opal 36 State #1H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well Opal 36 State #1H
 TVD Reference: Well @ 3314.00usft (3284' GL + 30' KB)
 MD Reference: Well @ 3314.00usft (3284' GL + 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)
11,100.00	90.00	359.54	9,472.00	1,826.03	-104.80	1,828.18	0.00	0.00	0.00
11,200.00	90.00	359.54	9,472.00	1,926.03	-105.61	1,928.16	0.00	0.00	0.00
11,300.00	90.00	359.54	9,472.00	2,026.03	-106.41	2,028.15	0.00	0.00	0.00
11,400.00	90.00	359.54	9,472.00	2,126.02	-107.22	2,128.13	0.00	0.00	0.00
11,500.00	90.00	359.54	9,472.00	2,226.02	-108.03	2,228.11	0.00	0.00	0.00
11,600.00	90.00	359.54	9,472.00	2,326.02	-108.83	2,328.09	0.00	0.00	0.00
11,700.00	90.00	359.54	9,472.00	2,426.01	-109.64	2,428.08	0.00	0.00	0.00
11,800.00	90.00	359.54	9,472.00	2,526.01	-110.44	2,528.06	0.00	0.00	0.00
11,900.00	90.00	359.54	9,472.00	2,626.01	-111.25	2,628.04	0.00	0.00	0.00
12,000.00	90.00	359.54	9,472.00	2,726.00	-112.05	2,728.02	0.00	0.00	0.00
12,100.00	90.00	359.54	9,472.00	2,826.00	-112.86	2,828.01	0.00	0.00	0.00
12,200.00	90.00	359.54	9,472.00	2,926.00	-113.67	2,927.99	0.00	0.00	0.00
12,300.00	90.00	359.54	9,472.00	3,026.00	-114.47	3,027.97	0.00	0.00	0.00
12,400.00	90.00	359.54	9,472.00	3,125.99	-115.28	3,127.96	0.00	0.00	0.00
12,500.00	90.00	359.54	9,472.00	3,225.99	-116.08	3,227.94	0.00	0.00	0.00
12,600.00	90.00	359.54	9,472.00	3,325.99	-116.89	3,327.92	0.00	0.00	0.00
12,700.00	90.00	359.54	9,472.00	3,425.98	-117.69	3,427.90	0.00	0.00	0.00
12,800.00	90.00	359.54	9,472.00	3,525.98	-118.50	3,527.88	0.00	0.00	0.00
12,900.00	90.00	359.54	9,472.00	3,625.98	-119.31	3,627.87	0.00	0.00	0.00
13,000.00	90.00	359.54	9,472.00	3,725.97	-120.11	3,727.85	0.00	0.00	0.00
13,100.00	90.00	359.54	9,472.00	3,825.97	-120.92	3,827.83	0.00	0.00	0.00
13,200.00	90.00	359.54	9,472.00	3,925.97	-121.72	3,927.82	0.00	0.00	0.00
13,300.00	90.00	359.54	9,472.00	4,025.96	-122.53	4,027.80	0.00	0.00	0.00
13,400.00	90.00	359.54	9,472.00	4,125.96	-123.33	4,127.78	0.00	0.00	0.00
13,500.00	90.00	359.54	9,472.00	4,225.96	-124.14	4,227.76	0.00	0.00	0.00
13,600.00	90.00	359.54	9,472.00	4,325.95	-124.95	4,327.75	0.00	0.00	0.00
13,700.00	90.00	359.54	9,472.00	4,425.95	-125.75	4,427.73	0.00	0.00	0.00
13,800.00	90.00	359.54	9,472.00	4,525.95	-126.56	4,527.71	0.00	0.00	0.00
13,900.00	90.00	359.54	9,472.00	4,625.94	-127.36	4,627.69	0.00	0.00	0.00
14,000.00	90.00	359.54	9,472.00	4,725.94	-128.17	4,727.68	0.00	0.00	0.00
14,003.06	90.00	359.54	9,472.00	4,729.00	-128.19	4,730.74	0.00	0.00	0.00
L Perf									
14,103.06	90.00	359.54	9,472.00	4,829.00	-129.00	4,830.72	0.00	0.00	0.00
TD at 14103.06									



EOG Resources, Inc.

Survey Report

Company: EOG Resources - Midland
Project: Lea County, NM
Site: Opal 36 State
Well: Opal 36 State #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Opal 36 State #1H
TVD Reference: Well @ 3314.00usft (3284' GL + 30' KB)
MD Reference: Well @ 3314.00usft (3284' GL + 30' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Opal 36 State #1H L Per - plan misses target center by 0.81usft at 14003.06usft MD (9472.00 TVD, 4729.00 N, -128.19 E) - Point	0.00	0.00	9,472.00	4,729.00	-129.00	398,812.00	784,121.00	32° 5' 35.259 N	103° 24' 57.193 W
Opal 36 State #1H BHL - plan hits target center - Point	0.00	0.00	9,472.00	4,829.00	-129.00	398,912.00	784,121.00	32° 5' 36.249 N	103° 24' 57.183 W
Opal 36 State #1H U Pe - plan misses target center by 138.67usft at 9440.02usft MD (9378.14 TVD, 190.87 N, -29.72 E) - Point	0.00	0.00	9,472.00	110.00	-92.00	394,193.00	784,158.00	32° 4' 49.550 N	103° 24' 57.220 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8995	8995	0	0	KOP, Build @ 12°
9327	9301	110	-17	U Perf
9745	9472	472	-73	LP, Turn @ 3° DLS
10,024	9472	750	-96	Hold 90° Inc @ 351.15° Azi
14,003	9472	4729	-128	L Perf
14,103	9472	4829	-129	TD at 14103.06

Checked By: _____ Approved By: _____ Date: _____