

**Permit Information:**

Well Name: Ophelia 27 No. 7H

30-025-41682

HOBBS OCD

FEB 27 2014

**Location:**

SL: 2420' FNL &amp; 2029' FEL, Section 27, T-26-S, R-33-E, Lea Co., N.M.

BHL: 2410' FSL &amp; 2120' FEL, Section 22, T-26-S, R-33-E, Lea Co., N.M.

RECEIVED

**Casing Program:**

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF <sub>min</sub> Collapse	DF <sub>min</sub> Burst	DF <sub>min</sub> Tension
17.5"	0 - 875'	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'-14,151'	5.5"	17#	HCP-110	LTC	1.125	1.25	1.60

**Cement Program:**

Depth	No. Sacks	Wt. ppg	Yld Ft <sup>3</sup> /ft	Slurry Description
875'	300	13.5	1.73	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl <sub>2</sub> + 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
14,151'	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 - 875'	Fresh - Gel	8.6-8.8	28-34	N/c
875' - 5,100'	Brine	10.0-10.2	28-34	N/c
5,100' - 9,042'	Cut Brine	8.4-9.0	28-34	N/c
9,042' - 14,151' Lateral	Cut Brine	9.0-9.5	40-42	8-10

FEB 27 2014

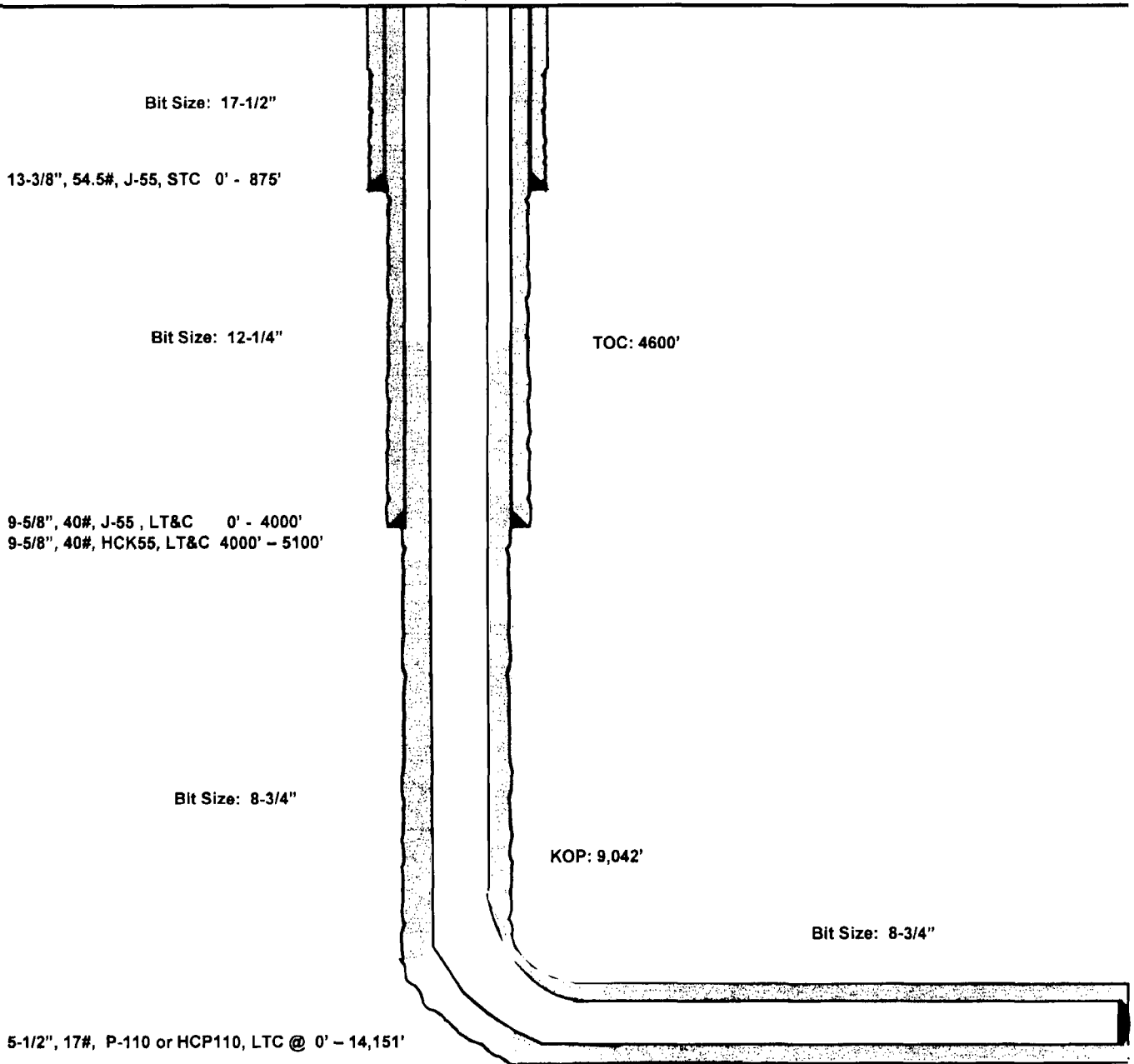
Ophelia 27 #7H  
Lea County, New Mexico

2420' FNL  
2029' FEL  
Section 27  
T-26-S, R-33-E

Proposed Wellbore

API: 30-025-

KB: 3,305'  
GL: 3,278'



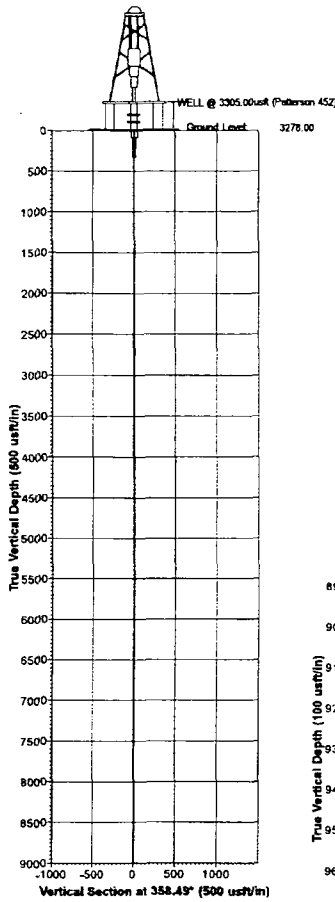
Lateral: 14,151' MD, 9,501' TVD  
BH Location: 2410' FSL & 2120' FEL  
Section 22  
T-26-S, R-33-E



Project: Lea County, NM (NAD27 NME)  
 Site: Ophelia 27  
 Well: #7H  
 Wellbore: Wellbore #1 Job #1410309  
 Design: Plan #1 02-24-14  
 Rig: Patterson 452



Azimuths to Grid North  
 True North: -0.41°  
 Magnetic North: 6.82°  
 Magnetic Field  
 Strength: 48224.1nT  
 Dip Angle: 59.93°  
 Date: 02/29/2014  
 Model: IGRF2010\_14



WELL DETAILS						
+N-S	+E-W	Northing	Ground Level	Latitude	Longitude	
0.00	0.00	370018.00	3278.00	32° 0' 53.71915 N	103° 33' 27.78388 W	
			Easting			
			740401.00			

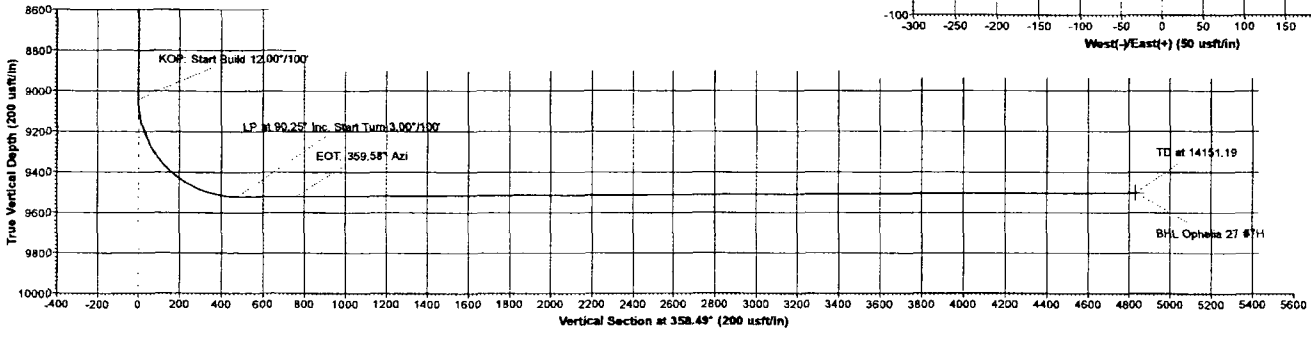
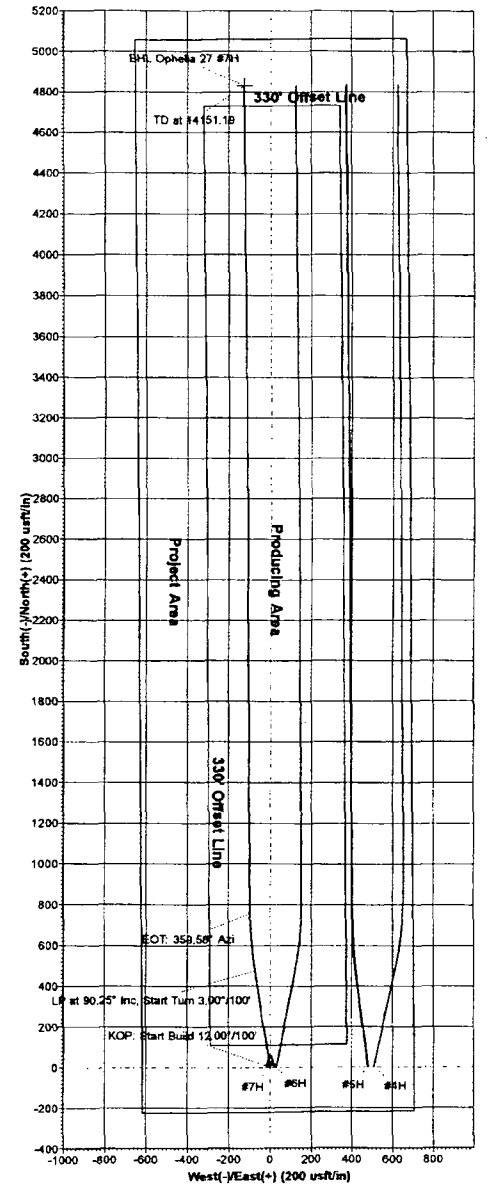
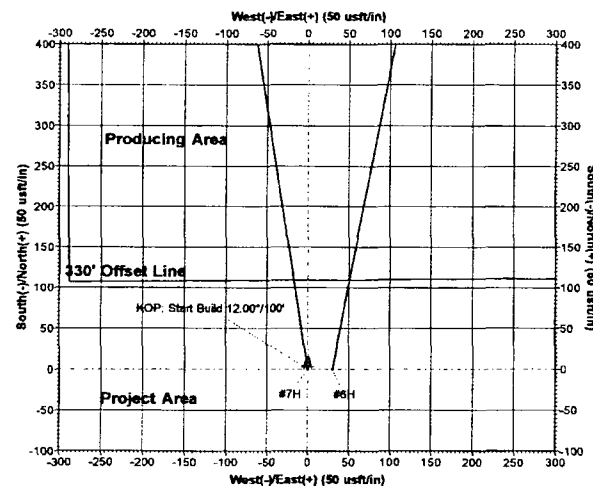
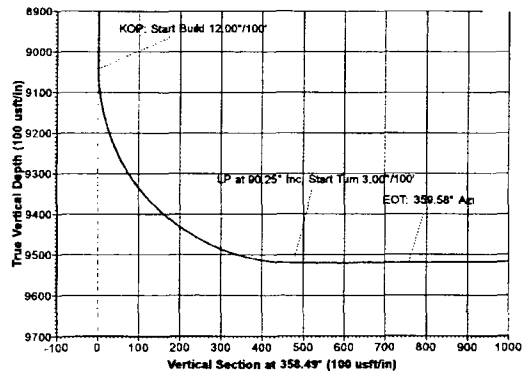
SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dlog	TFace	VSec	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP: Start Build 12.00°/100'
2	9042.54	0.00	0.00	9042.54	0.00	0.00	0.00	0.00	0.00	0.00	LP at 90.25° Inc, Start Turn 3.00°/100'
3	9794.62	90.25	951.10	9520.00	473.77	-74.19	12.00	351.10	475.58		EOT: 359.58° Azi
4	10077.29	90.25	359.58	9518.77	755.24	-97.13	3.00	89.88	757.57		TD at 14151.19
5	14151.19	90.25	359.58	9501.02	4829.00	-127.00	0.00	0.00	4830.67		

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape	
BHL Ophelia 27 #7H	9501.02	4829.00	-127.00	374847.90	746274.00	32° 1' 41.51496 N	103° 33' 28.85642 W	Point	

Map System: US State Plane 1927 (Exact solution)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone Name: New Mexico East 3001  
 Local Origin: Well #7H, Grid North  
 Latitude: 32° 0' 53.71915 N  
 Longitude: 103° 33' 27.78388 W  
 Grid East: 740401.00  
 Grid North: 370018.00  
 Scale Factor: 1.000  
 Geomagnetic Model: IGRF2010\_14  
 Sample Date: 20-Feb-14  
 Magnetic Declination: 7.23°  
 Dip Angle from Horizontal: 59.93°  
 Magnetic Field Strength: 48224  
 To convert a Magnetic Direction to a Grid Direction, Add 6.82°  
 To convert a Magnetic Direction to a True Direction, Add 7.23° East  
 To convert a True Direction to a Grid Direction, Subtract 0.41°

**LEGEND**

- #6H, Wellbore #1 Job #1410308, Plan #1 02-24-14 V0
- #4H, Wellbore #1 Job #1410306, Plan #1 02-24-14 V0
- #5H, Wellbore #1 Job #1410307, Plan #1 02-24-14 V0
- Plan #1 02-24-14





## **EOG Resources**

**Lea County, NM (NAD27 NME)**

**Ophelia 27**

**#7H**

**Wellbore #1 Job #1410309**

**Plan: Plan #1 02-24-14**

## **Planning Report**

**24 February, 2014**





Phoenix Technology Services  
Planning Report



**Company:** EOG Resources  
**Project:** Lea County, NM (NAD27 NME)  
**Site:** Ophelia 27  
**Well:** #7H  
**Wellbore:** Wellbore #1 Job #1410309  
**Design:** Plan #1 02-24-14

**Local Co-ordinate Reference:** Well #7H  
**TVD Reference:** WELL @ 3305.00usft (Patterson 452)  
**MD Reference:** WELL @ 3305.00usft (Patterson 452)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Compass 5000 GCR DB

<b>Project</b>	Lea County, NM (NAD27 NME)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site</b>	Ophelia 27		
<b>Site Position:</b>		<b>Northing:</b>	370,025.00 usft
<b>From:</b>	Map	<b>Easting:</b>	741,483.00 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	32° 0' 53.71140 N
		<b>Longitude:</b>	103° 33' 15.21704 W
		<b>Grid Convergence:</b>	0.41 °

<b>Well</b>	#7H			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	370,018.00 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	740,401.00 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	usft
			<b>Latitude:</b>	32° 0' 53.71915 N
			<b>Longitude:</b>	103° 33' 27.78388 W
			<b>Ground Level:</b>	3,278.00 usft

<b>Wellbore</b>	Wellbore #1 Job #1410309				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010_14	02/20/14	7.23	59.93	48,224

<b>Design</b>	Plan #1 02-24-14			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	358.49

<b>Survey Tool Program</b>	<b>Date</b>	02/24/14		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	14,151.19	Plan #1 02-24-14 (Wellbore #1 Job #1410)	MWD	MWD - Standard



Phoenix Technology Services  
Planning Report



Company: EOG Resources  
 Project: Lea County, NM (NAD27 NME)  
 Site: Ophelia 27  
 Well: #7H  
 Wellbore: Wellbore #1 Job #1410309  
 Design: Plan #1 02-24-14

Local Co-ordinate Reference: Well #7H  
 TVD Reference: WELL @ 3305.00usft (Patterson 452)  
 MD Reference: WELL @ 3305.00usft (Patterson 452)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (")	Azi (azimuth) (")	TVDSS (usft)	TVD (usft)	N/S (usft)	EW (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLog ("/100usft)
0.00	0.00	0.00	-3,305.00	0.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
100.00	0.00	0.00	-3,205.00	100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
200.00	0.00	0.00	-3,105.00	200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
300.00	0.00	0.00	-3,005.00	300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
400.00	0.00	0.00	-2,905.00	400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
500.00	0.00	0.00	-2,805.00	500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
600.00	0.00	0.00	-2,705.00	600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
700.00	0.00	0.00	-2,605.00	700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
800.00	0.00	0.00	-2,505.00	800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
900.00	0.00	0.00	-2,405.00	900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,000.00	0.00	0.00	-2,305.00	1,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,100.00	0.00	0.00	-2,205.00	1,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,200.00	0.00	0.00	-2,105.00	1,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,300.00	0.00	0.00	-2,005.00	1,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,400.00	0.00	0.00	-1,905.00	1,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,500.00	0.00	0.00	-1,805.00	1,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,600.00	0.00	0.00	-1,705.00	1,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,700.00	0.00	0.00	-1,605.00	1,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,800.00	0.00	0.00	-1,505.00	1,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
1,900.00	0.00	0.00	-1,405.00	1,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,000.00	0.00	0.00	-1,305.00	2,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,100.00	0.00	0.00	-1,205.00	2,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,200.00	0.00	0.00	-1,105.00	2,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,300.00	0.00	0.00	-1,005.00	2,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,400.00	0.00	0.00	-905.00	2,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,500.00	0.00	0.00	-805.00	2,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,600.00	0.00	0.00	-705.00	2,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00



Phoenix Technology Services  
Planning Report



Company: EOG Resources  
 Project: Lea County, NM (NAD27 NME)  
 Site: Ophelia 27  
 Well: #7H  
 Wellbore: Wellbore #1 Job #1410309  
 Design: Plan #1 02-24-14

Local Co-ordinate Reference: Well #7H  
 TVD Reference: WELL @ 3305.00usft (Patterson 452)  
 MD Reference: WELL @ 3305.00usft (Patterson 452)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (")	Azi (azimuth) (")	TVDSS (usft)	TVD (usft)	N/S (usft)	EW (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (*/100usft)
2,700.00	0.00	0.00	-605.00	2,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,800.00	0.00	0.00	-505.00	2,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
2,900.00	0.00	0.00	-405.00	2,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,000.00	0.00	0.00	-305.00	3,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,100.00	0.00	0.00	-205.00	3,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,200.00	0.00	0.00	-105.00	3,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,300.00	0.00	0.00	-5.00	3,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,400.00	0.00	0.00	95.00	3,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,500.00	0.00	0.00	195.00	3,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,600.00	0.00	0.00	295.00	3,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,700.00	0.00	0.00	395.00	3,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,800.00	0.00	0.00	495.00	3,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
3,900.00	0.00	0.00	595.00	3,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,000.00	0.00	0.00	695.00	4,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,100.00	0.00	0.00	795.00	4,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,200.00	0.00	0.00	895.00	4,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,300.00	0.00	0.00	995.00	4,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,400.00	0.00	0.00	1,095.00	4,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,500.00	0.00	0.00	1,195.00	4,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,600.00	0.00	0.00	1,295.00	4,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,700.00	0.00	0.00	1,395.00	4,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,800.00	0.00	0.00	1,495.00	4,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
4,900.00	0.00	0.00	1,595.00	4,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,000.00	0.00	0.00	1,695.00	5,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,100.00	0.00	0.00	1,795.00	5,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,200.00	0.00	0.00	1,895.00	5,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,300.00	0.00	0.00	1,995.00	5,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00



Phoenix Technology Services  
Planning Report



Company: EOG Resources  
 Project: Lea County, NM (NAD27 NME)  
 Site: Ophelia 27  
 Well: #7H  
 Wellbore: Wellbore #1 Job #1410309  
 Design: Plan #1 02-24-14

Local Co-ordinate Reference: Well #7H  
 TVD Reference: WELL @ 3305.00usft (Patterson 452)  
 MD Reference: WELL @ 3305.00usft (Patterson 452)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (")	Azi (azimuth) (")	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg ("/100usft)
5,400.00	0.00	0.00	2,095.00	5,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,500.00	0.00	0.00	2,195.00	5,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,600.00	0.00	0.00	2,295.00	5,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,700.00	0.00	0.00	2,395.00	5,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,800.00	0.00	0.00	2,495.00	5,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
5,900.00	0.00	0.00	2,595.00	5,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,000.00	0.00	0.00	2,695.00	6,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,100.00	0.00	0.00	2,795.00	6,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,200.00	0.00	0.00	2,895.00	6,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,300.00	0.00	0.00	2,995.00	6,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,400.00	0.00	0.00	3,095.00	6,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,500.00	0.00	0.00	3,195.00	6,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,600.00	0.00	0.00	3,295.00	6,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,700.00	0.00	0.00	3,395.00	6,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,800.00	0.00	0.00	3,495.00	6,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
6,900.00	0.00	0.00	3,595.00	6,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,000.00	0.00	0.00	3,695.00	7,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,100.00	0.00	0.00	3,795.00	7,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,200.00	0.00	0.00	3,895.00	7,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,300.00	0.00	0.00	3,995.00	7,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,400.00	0.00	0.00	4,095.00	7,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,500.00	0.00	0.00	4,195.00	7,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,600.00	0.00	0.00	4,295.00	7,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,700.00	0.00	0.00	4,395.00	7,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,800.00	0.00	0.00	4,495.00	7,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
7,900.00	0.00	0.00	4,595.00	7,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,000.00	0.00	0.00	4,695.00	8,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00





Phoenix Technology Services  
Planning Report



Company: EOG Resources  
 Project: Lea County, NM (NAD27 NME)  
 Site: Ophelia 27  
 Well: #7H  
 Wellbore: Wellbore #1 Job #1410309  
 Design: Plan #1 02-24-14

Local Co-ordinate Reference: Well #7H  
 TVD Reference: WELL @ 3305.00usft (Patterson 452)  
 MD Reference: WELL @ 3305.00usft (Patterson 452)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
8,100.00	0.00	0.00	4,795.00	8,100.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,200.00	0.00	0.00	4,895.00	8,200.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,300.00	0.00	0.00	4,995.00	8,300.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,400.00	0.00	0.00	5,095.00	8,400.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,500.00	0.00	0.00	5,195.00	8,500.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,600.00	0.00	0.00	5,295.00	8,600.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,700.00	0.00	0.00	5,395.00	8,700.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,800.00	0.00	0.00	5,495.00	8,800.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
8,900.00	0.00	0.00	5,595.00	8,900.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
9,000.00	0.00	0.00	5,695.00	9,000.00	0.00	0.00	370,018.00	740,401.00	0.00	0.00
9,042.54	0.00	0.00	5,737.54	9,042.54	0.00	0.00	370,018.00	740,401.00	0.00	0.00
<b>KOP: Start Build 12.00°/100'</b>										
9,050.00	0.90	351.10	5,745.00	9,050.00	0.06	-0.01	370,018.06	740,400.99	0.06	12.00
9,075.00	3.90	351.10	5,769.98	9,074.98	1.09	-0.17	370,019.09	740,400.83	1.09	12.00
9,100.00	6.90	351.10	5,794.86	9,099.86	3.41	-0.53	370,021.41	740,400.47	3.42	12.00
9,125.00	9.90	351.10	5,819.59	9,124.59	7.02	-1.10	370,025.02	740,399.90	7.04	12.00
9,150.00	12.90	351.10	5,844.10	9,149.10	11.90	-1.86	370,029.90	740,399.14	11.94	12.00
9,175.00	15.90	351.10	5,868.31	9,173.31	18.04	-2.82	370,036.04	740,398.18	18.10	12.00
9,200.00	18.90	351.10	5,892.16	9,197.16	25.42	-3.98	370,043.42	740,397.02	25.52	12.00
9,225.00	21.90	351.10	5,915.59	9,220.59	34.03	-5.33	370,052.03	740,395.67	34.15	12.00
9,250.00	24.90	351.10	5,938.53	9,243.53	43.83	-6.86	370,061.83	740,394.14	44.00	12.00
9,275.00	27.90	351.10	5,960.92	9,265.92	54.81	-8.58	370,072.81	740,392.42	55.02	12.00
9,300.00	30.90	351.10	5,982.70	9,287.70	66.93	-10.48	370,084.93	740,390.52	67.19	12.00
9,325.00	33.90	351.10	6,003.81	9,308.81	80.16	-12.55	370,098.16	740,388.45	80.47	12.00
9,350.00	36.90	351.10	6,024.19	9,329.19	94.47	-14.79	370,112.47	740,386.21	94.82	12.00
9,375.00	39.90	351.10	6,043.78	9,348.78	109.81	-17.20	370,127.81	740,383.80	110.22	12.00
9,400.00	42.90	351.10	6,062.53	9,367.53	126.14	-19.75	370,144.14	740,381.25	126.61	12.00



Phoenix Technology Services  
Planning Report



Company: EOG Resources  
 Project: Lea County, NM (NAD27 NME)  
 Site: Ophelia 27  
 Well: #7H  
 Wellbore: Wellbore #1 Job #1410309  
 Design: Plan #1 02-24-14

Local Co-ordinate Reference: Well #7H  
 TVD Reference: WELL @ 3305.00usft (Patterson 452)  
 MD Reference: WELL @ 3305.00usft (Patterson 452)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
9,425.00	45.90	351.10	6,080.39	9,385.39	143.41	-22.46	370,161.41	740,378.54	143.96	12.00
9,450.00	48.90	351.10	6,097.31	9,402.31	161.59	-25.30	370,179.59	740,375.70	162.20	12.00
9,475.00	51.90	351.10	6,113.25	9,418.25	180.62	-28.28	370,198.62	740,372.72	181.30	12.00
9,500.00	54.90	351.10	6,128.15	9,433.15	200.44	-31.39	370,218.44	740,369.61	201.20	12.00
9,525.00	57.90	351.10	6,141.99	9,446.99	221.01	-34.61	370,239.01	740,366.39	221.85	12.00
9,550.00	60.90	351.10	6,154.72	9,459.72	242.27	-37.94	370,260.27	740,363.06	243.18	12.00
9,575.00	63.90	351.10	6,166.30	9,471.30	264.15	-41.37	370,282.15	740,359.63	265.15	12.00
9,600.00	66.90	351.10	6,176.71	9,481.71	286.61	-44.88	370,304.61	740,356.12	287.69	12.00
9,625.00	69.90	351.10	6,185.91	9,490.91	309.57	-48.48	370,327.57	740,352.52	310.74	12.00
9,650.00	72.90	351.10	6,193.89	9,498.89	332.97	-52.14	370,350.97	740,348.86	334.23	12.00
9,675.00	75.90	351.10	6,200.61	9,505.61	356.76	-55.87	370,374.76	740,345.13	358.11	12.00
9,700.00	78.90	351.10	6,206.07	9,511.07	380.86	-59.64	370,398.86	740,341.36	382.30	12.00
9,725.00	81.90	351.10	6,210.24	9,515.24	405.21	-63.45	370,423.21	740,337.55	406.74	12.00
9,750.00	84.90	351.10	6,213.11	9,518.11	429.74	-67.30	370,447.74	740,333.70	431.36	12.00
9,775.00	87.90	351.10	6,214.68	9,519.68	454.39	-71.16	370,472.39	740,329.84	456.10	12.00
9,794.62	90.25	351.10	6,215.00	9,520.00	473.77	-74.19	370,491.77	740,326.81	475.56	12.00
<b>LP at 90.25° Inc, Start Turn 3.00°/100'</b>										
9,800.00	90.25	351.26	6,214.98	9,519.98	479.09	-75.02	370,497.09	740,325.98	480.89	3.00
9,900.00	90.25	354.26	6,214.54	9,519.54	578.28	-87.61	370,596.28	740,313.39	580.38	3.00
10,000.00	90.25	357.26	6,214.10	9,519.10	677.99	-95.00	370,695.99	740,306.00	680.26	3.00
10,077.29	90.25	359.58	6,213.77	9,518.77	755.24	-97.13	370,773.24	740,303.87	757.54	3.00
<b>EOT: 359.58° Azi</b>										
10,100.00	90.25	359.58	6,213.67	9,518.67	777.96	-97.30	370,795.96	740,303.70	780.25	0.00
10,200.00	90.25	359.58	6,213.23	9,518.23	877.95	-98.03	370,895.95	740,302.97	880.23	0.00
10,300.00	90.25	359.58	6,212.80	9,517.80	977.95	-98.77	370,995.95	740,302.23	980.21	0.00
10,400.00	90.25	359.58	6,212.36	9,517.36	1,077.95	-99.50	371,095.95	740,301.50	1,080.19	0.00
10,500.00	90.25	359.58	6,211.92	9,516.92	1,177.94	-100.23	371,195.94	740,300.77	1,180.17	0.00



Phoenix Technology Services  
Planning Report



Company: EOG Resources  
 Project: Lea County, NM (NAD27 NME)  
 Site: Ophelia 27  
 Well: #7H  
 Wellbore: Wellbore #1 Job #1410309  
 Design: Plan #1 02-24-14

Local Co-ordinate Reference: Well #7H  
 TVD Reference: WELL @ 3305.00usft (Patterson 452)  
 MD Reference: WELL @ 3305.00usft (Patterson 452)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (")	Azi (azimuth) (")	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg ("/100usft)
10,600.00	90.25	359.58	6,211.49	9,516.49	1,277.94	-100.97	371,295.94	740,300.03	1,280.15	0.00
10,700.00	90.25	359.58	6,211.05	9,516.05	1,377.93	-101.70	371,395.93	740,299.30	1,380.13	0.00
10,800.00	90.25	359.58	6,210.62	9,515.62	1,477.93	-102.43	371,495.93	740,298.57	1,480.11	0.00
10,900.00	90.25	359.58	6,210.18	9,515.18	1,577.93	-103.17	371,595.93	740,297.83	1,580.09	0.00
11,000.00	90.25	359.58	6,209.75	9,514.75	1,677.92	-103.90	371,695.92	740,297.10	1,680.07	0.00
11,100.00	90.25	359.58	6,209.31	9,514.31	1,777.92	-104.63	371,795.92	740,296.37	1,780.06	0.00
11,200.00	90.25	359.58	6,208.88	9,513.88	1,877.92	-105.36	371,895.92	740,295.64	1,880.04	0.00
11,300.00	90.25	359.58	6,208.44	9,513.44	1,977.91	-106.10	371,995.91	740,294.90	1,980.02	0.00
11,400.00	90.25	359.58	6,208.00	9,513.00	2,077.91	-106.83	372,095.91	740,294.17	2,080.00	0.00
11,500.00	90.25	359.58	6,207.57	9,512.57	2,177.91	-107.56	372,195.91	740,293.44	2,179.98	0.00
11,600.00	90.25	359.58	6,207.13	9,512.13	2,277.90	-108.30	372,295.90	740,292.70	2,279.96	0.00
11,700.00	90.25	359.58	6,206.70	9,511.70	2,377.90	-109.03	372,395.90	740,291.97	2,379.94	0.00
11,800.00	90.25	359.58	6,206.26	9,511.26	2,477.89	-109.76	372,495.89	740,291.24	2,479.92	0.00
11,900.00	90.25	359.58	6,205.83	9,510.83	2,577.89	-110.50	372,595.89	740,290.50	2,579.90	0.00
12,000.00	90.25	359.58	6,205.39	9,510.39	2,677.89	-111.23	372,695.89	740,289.77	2,679.89	0.00
12,100.00	90.25	359.58	6,204.95	9,509.95	2,777.88	-111.96	372,795.88	740,289.04	2,779.87	0.00
12,200.00	90.25	359.58	6,204.52	9,509.52	2,877.88	-112.70	372,895.88	740,288.30	2,879.85	0.00
12,300.00	90.25	359.58	6,204.08	9,509.08	2,977.88	-113.43	372,995.88	740,287.57	2,979.83	0.00
12,400.00	90.25	359.58	6,203.65	9,508.65	3,077.87	-114.16	373,095.87	740,286.84	3,079.81	0.00
12,500.00	90.25	359.58	6,203.21	9,508.21	3,177.87	-114.90	373,195.87	740,286.10	3,179.79	0.00
12,600.00	90.25	359.58	6,202.78	9,507.78	3,277.87	-115.63	373,295.87	740,285.37	3,279.77	0.00
12,700.00	90.25	359.58	6,202.34	9,507.34	3,377.86	-116.36	373,395.86	740,284.64	3,379.75	0.00
12,800.00	90.25	359.58	6,201.91	9,506.91	3,477.86	-117.09	373,495.86	740,283.91	3,479.73	0.00
12,900.00	90.25	359.58	6,201.47	9,506.47	3,577.85	-117.83	373,595.85	740,283.17	3,579.72	0.00
13,000.00	90.25	359.58	6,201.03	9,506.03	3,677.85	-118.56	373,695.85	740,282.44	3,679.70	0.00
13,100.00	90.25	359.58	6,200.60	9,505.60	3,777.85	-119.29	373,795.85	740,281.71	3,779.68	0.00
13,200.00	90.25	359.58	6,200.16	9,505.16	3,877.84	-120.03	373,895.84	740,280.97	3,879.66	0.00



Phoenix Technology Services  
Planning Report



**Company:** EOG Resources  
**Project:** Lea County, NM (NAD27 NME)  
**Site:** Ophelia 27  
**Well:** #7H  
**Wellbore:** Wellbore #1 Job #1410309  
**Design:** Plan #1 02-24-14

**Local Co-ordinate Reference:** Well #7H  
**TVD Reference:** WELL @ 3305.00usft (Patterson 452)  
**MD Reference:** WELL @ 3305.00usft (Patterson 452)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Compass 5000 GCR DB

**Planned Survey**

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
13,300.00	90.25	359.58	6,199.73	9,504.73	3,977.84	-120.76	373,995.84	740,280.24	3,979.64	0.00
13,400.00	90.25	359.58	6,199.29	9,504.29	4,077.84	-121.49	374,095.84	740,279.51	4,078.62	0.00
13,500.00	90.25	359.58	6,198.86	9,503.86	4,177.83	-122.23	374,195.83	740,278.77	4,179.60	0.00
13,600.00	90.25	359.58	6,198.42	9,503.42	4,277.83	-122.96	374,295.83	740,278.04	4,279.58	0.00
13,700.00	90.25	359.58	6,197.99	9,502.99	4,377.83	-123.69	374,395.83	740,277.31	4,379.56	0.00
13,800.00	90.25	359.58	6,197.55	9,502.55	4,477.82	-124.43	374,495.82	740,276.57	4,479.54	0.00
13,900.00	90.25	359.58	6,197.11	9,502.11	4,577.82	-125.16	374,595.82	740,275.84	4,579.53	0.00
14,000.00	90.25	359.58	6,196.68	9,501.68	4,677.81	-125.89	374,695.81	740,275.11	4,679.51	0.00
14,100.00	90.25	359.58	6,196.24	9,501.24	4,777.81	-126.62	374,795.81	740,274.38	4,779.49	0.00
14,151.19	90.25	359.58	6,196.02	9,501.02	4,829.00	-127.00	374,847.00	740,274.00	4,830.67	0.00

TD at 14151.19

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,042.54	9,042.54	0.00	0.00	KOP: Start Build 12.00°/100'
9,794.62	9,520.00	473.77	-74.19	LP at 90.25° Inc, Start Tum 3.00°/100'
10,077.29	9,518.77	755.24	-97.13	EOT: 359.58° Azi
14,151.19	9,501.02	4,829.00	-127.00	TD at 14151.19

**EOG RESOURCES, INC.**  
**OPHELIA 27 #7H**

## **Hydrogen Sulfide Plan Summary**

- A. All personnel shall receive proper H<sub>2</sub>S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:
- Well control equipment
    - a. Flare line 150' from wellhead to be ignited by flare gun.
    - b. Choke manifold with a remotely operated choke.
    - c. Mud/gas separator
  - Protective equipment for essential personnel.

Breathing apparatus:

    - a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
    - b. Work/Escapes packs — 4 packs shall be stored on the rig floor th sufficient air hose not to restrict work activity.
    - c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

    - a. Stretcher
    - b. Two OSHA full body harness
    - c. 100 ft 5/8 inch OSHA approved rope
    - d. 1-20# class ABC fire extinguisher
  - H<sub>2</sub>S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.  
(Gas sample tubes will be stored in the safety trailer)
  - Visual warning systems.
    - a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
    - b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
    - c. Two wind socks will be placed in strategic locations, visible from all angles.

**EOG RESOURCES, INC.**  
**OPHELIA 27 #7H**

- **Mud program:**  
The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H<sub>2</sub>S bearing zones.
- **Metallurgy:**  
All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
- **Communication:**  
Communication will be via cell phones and land lines where available.

**EOG RESOURCES, INC.  
OPHELIA 27 #7H**

**Emergency Assistance Telephone List**

<b>PUBLIC SAFETY:</b>	<b>911 or</b>
Lea County Sheriff's Department	(575) 396-3611
Rod Coffman	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174
 <b>EOG Resources, Inc.</b>	
EOG/Midland	Office (432) 686-3600
 <b>Company Drilling Consultants:</b>	
Lonnie Byrd	Cell (432) 894-2389
Rickie Poindexter	
 <b>Drilling Engineer</b>	
Robert Brosig	Office (432) 686-3737
	Cell (432) 770-0705
 <b>Drilling Manager</b>	
Steve Munsell	Office (432) 686-3609
	Cell (432) 894-1256
 <b>Drilling Superintendent</b>	
Ron Welch	Office (432) 686-3695
	Cell (432) 386-0592
 <b>Cactus Drilling</b>	
Patterson Drilling	Office (432) 682-9401
Patterson 452 Drilling Rig	Rig (432) 894-2389
 <b>Tool Pusher:</b>	
Robert Merchant	Cell (903) 477-3751
Patrick Ford	Cell (903) 539-7889
 <b>Safety</b>	
Reggie Phillips (HSE Manager)	Office (432) 686-3747
	Cell (432) 250-7507