

Permit Information:

Well Name: Thor 21 No. 501H

Location:

SL: 230' FNL & 645' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

BHL: 50' FSL & 330' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

30-025-42615

HOBBS OCD

JUN 02 2015

RECEIVED

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
17.5"	0 - 855'	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' - 4900'	9.625"	40#	HCK-55	LTC	1.125	1.25	1.60
8.75"	0'-15,859'	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
855'	400	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
4,900'	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 (TOC @ Surface)
	200	14.8	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
15,859'	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 (TOC @ 4400')
	300	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 - 855'	Fresh - Gel	8.6-8.8	28-34	N/c
855' - 4,900'	Oil Base	8.7-9.4	58-68	N/c - 6
4,900' - 10,340'	Oil Base	8.7-9.4	58-68	N/c - 6
10,340' - 15,859' Lateral	Oil Base	9.0-9.5	58-68	N/c - 6

'JUN 08 2015'

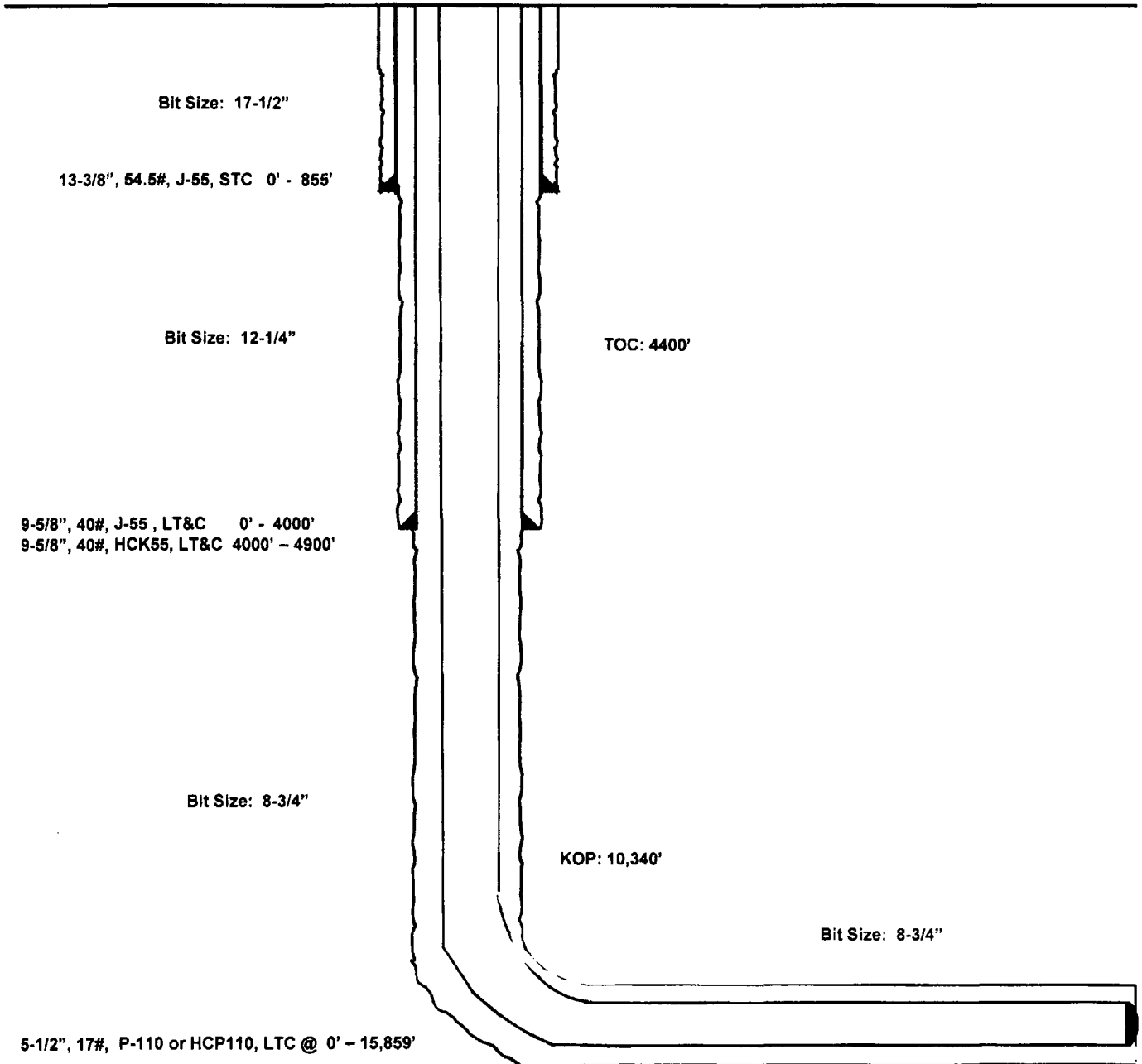
Thor 21 #501H
Lea County, New Mexico

230' FNL
645' FEL
Section 21
T-26-S, R-33-E

Proposed Wellbore

API: 30-025-

KB: 3,313'
GL: 3,288'



Lateral: 15,859' MD, 10,839' TVD

BH Location: 50' FSL & 330' FEL
Section 21
T-26-S, R-33-E



EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Thor 21

#501H

OH

Plan: Plan #1

Standard Planning Report

01 June, 2015



Lea County, NM (NAD 27 NME)

Thor 21 #501H

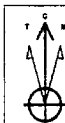
Plan #1

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

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1886
Zone: New Mexico East 3001
System Datum: Mean Sea Level

WELL DETAILS: #501H

Ground Level: 3288.0
KB = 25 @ 3313.0 ustr
Northing: 377469.00
Easting: 736439.00
Latitude: 32° 2' 7.692 N
Longitude: 103° 54' 13.187 W



Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.78°

Magnetic Field
Strength: 48038.8 nT
Dip Angle: 88.92°
Date: 6/1/2015
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.78°
To convert a Magnetic Direction to a True Direction, Add 7.18° East
To convert a True Direction to a Grid Direction, Subtract 0.40°

SECTION DETAILS

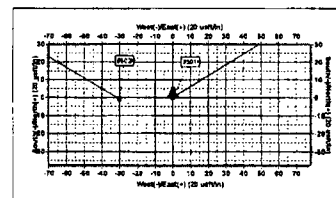
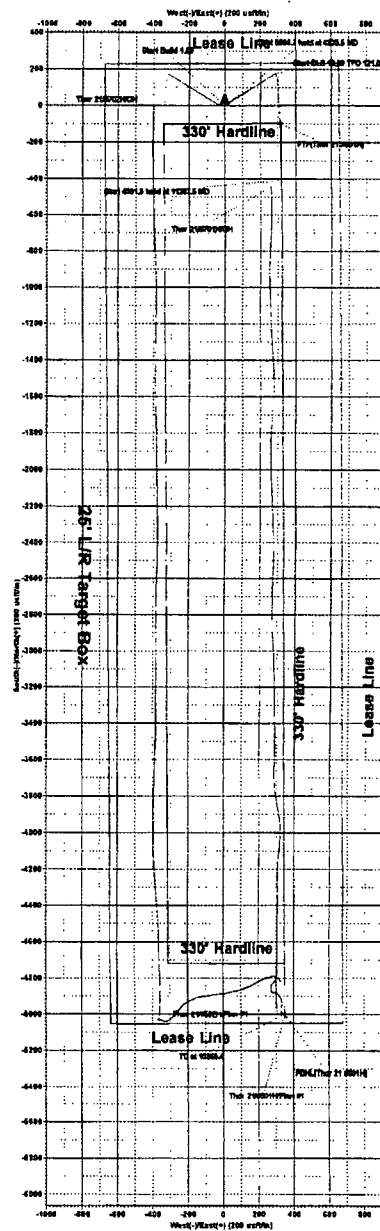
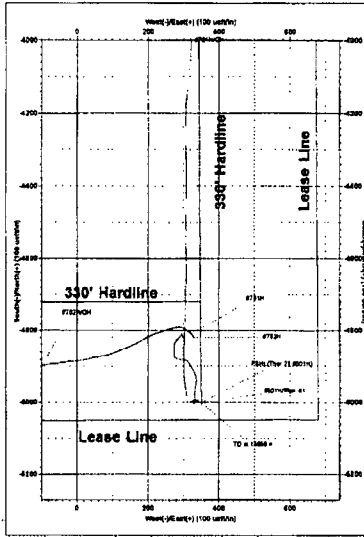
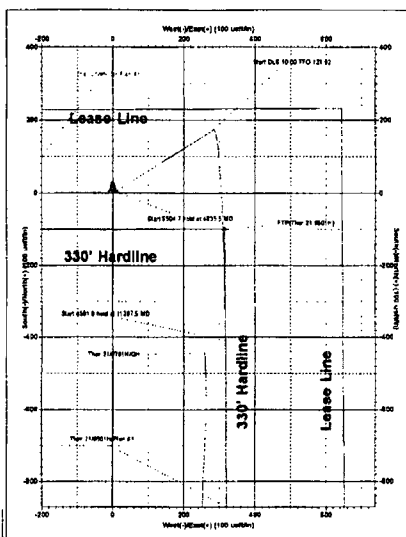
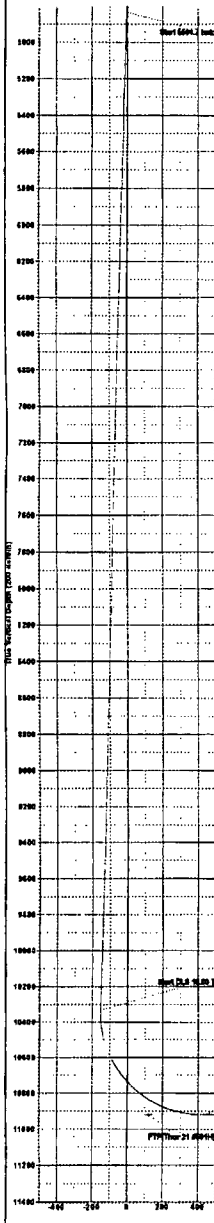
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Diag	TFace	VFace	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4900.0	0.00	0.00	4900.0	0.0	0.0	0.00	0.00	0.0		
3	4835.5	3.38	88.48	4835.3	0.1	8.4	1.00	58.48	-4.5		
4	10340.2	3.38	88.48	10330.8	173.5	282.9	0.00	0.00	-183.4		
5	11287.6	91.00	178.08	10920.0	-488.9	317.2	10.90	121.02	430.1		
6	16555.4	91.00	178.08	10839.9	-6000.0	360.0	0.00	0.00	5612.2	PBHL(Thor 21 #501H)	

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/S	+E/W	Northing	Easting
PBHL(Thor 21 #501H)	10839.9	-6000.0	360.0	373466.00	736789.00
FTP(Thor 21 #501H)	10920.0	-80.0	316.0	377369.00	736764.00



Vertical Section at 178.08° (200 ustr/in)



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Thor 21
Well: #501H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #501H
TVD Reference: KB = 25 @ 3313.0usft
MD Reference: KB = 25 @ 3313.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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	Thor 21		
Site Position:		Northing:	372,644.00 usft
From:	Map	Easting:	736,738.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 19.964 N
		Longitude:	103° 34' 10.110 W
		Grid Convergence:	0.41 °

Well	#501H		
Well Position	+N/-S	4,821.0 usft	Northing: 377,465.00 usft
	+E/-W	-299.0 usft	Easting: 736,439.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 2' 7.692 N
		Longitude:	103° 34' 13.187 W
		Ground Level:	3,288.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2015	6/1/2015	(°)	(°)	(nT)
			7.16	59.92	48,037

Design	Plan #1			
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	176.00

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	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,835.5	3.35	58.48	4,835.3	5.1	8.4	1.00	1.00	0.00	58.48	
10,340.2	3.35	58.48	10,330.6	173.5	282.9	0.00	0.00	0.00	0.00	
11,267.5	91.00	179.59	10,920.0	-408.9	317.2	10.00	9.45	13.06	121.02	
15,859.4	91.00	179.59	10,839.9	-5,000.0	350.0	0.00	0.00	0.00	0.00	PBHL(Thor 21 #501H)



EOG Resources, Inc.

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Site: Thor 21
Well: #501H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #501H
TVD Reference: KB = 25 @ 3313.0usft
MD Reference: KB = 25 @ 3313.0usft
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)
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	1.00	58.48	4,600.0	0.5	0.7	-0.4	1.00	1.00	0.00
4,700.0	2.00	58.48	4,700.0	1.8	3.0	-1.6	1.00	1.00	0.00
4,800.0	3.00	58.48	4,799.9	4.1	6.7	-3.6	1.00	1.00	0.00
4,835.5	3.35	58.48	4,835.3	5.1	8.4	-4.5	1.00	1.00	0.00
4,900.0	3.35	58.48	4,899.7	7.1	11.6	-6.3	0.00	0.00	0.00
5,000.0	3.35	58.48	4,999.5	10.2	16.6	-9.0	0.00	0.00	0.00
5,100.0	3.35	58.48	5,099.4	13.2	21.6	-11.7	0.00	0.00	0.00
5,200.0	3.35	58.48	5,199.2	16.3	26.6	-14.4	0.00	0.00	0.00



EOG Resources, Inc.

Planning Report

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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	3.35	58.48	5,299.0	19.3	31.5	-17.1	0.00	0.00	0.00
5,400.0	3.35	58.48	5,398.8	22.4	36.5	-19.8	0.00	0.00	0.00
5,500.0	3.35	58.48	5,498.7	25.5	41.5	-22.5	0.00	0.00	0.00
5,600.0	3.35	58.48	5,598.5	28.5	46.5	-25.2	0.00	0.00	0.00
5,700.0	3.35	58.48	5,698.3	31.6	51.5	-27.9	0.00	0.00	0.00
5,800.0	3.35	58.48	5,798.2	34.6	56.5	-30.6	0.00	0.00	0.00
5,900.0	3.35	58.48	5,898.0	37.7	61.5	-33.3	0.00	0.00	0.00
6,000.0	3.35	58.48	5,997.8	40.8	66.5	-36.0	0.00	0.00	0.00
6,100.0	3.35	58.48	6,097.6	43.8	71.4	-38.7	0.00	0.00	0.00
6,200.0	3.35	58.48	6,197.5	46.9	76.4	-41.4	0.00	0.00	0.00
6,300.0	3.35	58.48	6,297.3	49.9	81.4	-44.1	0.00	0.00	0.00
6,400.0	3.35	58.48	6,397.1	53.0	86.4	-46.8	0.00	0.00	0.00
6,500.0	3.35	58.48	6,497.0	56.1	91.4	-49.5	0.00	0.00	0.00
6,600.0	3.35	58.48	6,596.8	59.1	96.4	-52.2	0.00	0.00	0.00
6,700.0	3.35	58.48	6,696.6	62.2	101.4	-54.9	0.00	0.00	0.00
6,800.0	3.35	58.48	6,796.4	65.2	106.4	-57.6	0.00	0.00	0.00
6,900.0	3.35	58.48	6,896.3	68.3	111.3	-60.4	0.00	0.00	0.00
7,000.0	3.35	58.48	6,996.1	71.4	116.3	-63.1	0.00	0.00	0.00
7,100.0	3.35	58.48	7,095.9	74.4	121.3	-65.8	0.00	0.00	0.00
7,200.0	3.35	58.48	7,195.8	77.5	126.3	-68.5	0.00	0.00	0.00
7,300.0	3.35	58.48	7,295.6	80.5	131.3	-71.2	0.00	0.00	0.00
7,400.0	3.35	58.48	7,395.4	83.6	136.3	-73.9	0.00	0.00	0.00
7,500.0	3.35	58.48	7,495.2	86.6	141.3	-76.6	0.00	0.00	0.00
7,600.0	3.35	58.48	7,595.1	89.7	146.3	-79.3	0.00	0.00	0.00
7,700.0	3.35	58.48	7,694.9	92.8	151.3	-82.0	0.00	0.00	0.00
7,800.0	3.35	58.48	7,794.7	95.8	156.2	-84.7	0.00	0.00	0.00
7,900.0	3.35	58.48	7,894.6	98.9	161.2	-87.4	0.00	0.00	0.00
8,000.0	3.35	58.48	7,994.4	101.9	166.2	-90.1	0.00	0.00	0.00
8,100.0	3.35	58.48	8,094.2	105.0	171.2	-92.8	0.00	0.00	0.00
8,200.0	3.35	58.48	8,194.0	108.1	176.2	-95.5	0.00	0.00	0.00
8,300.0	3.35	58.48	8,293.9	111.1	181.2	-98.2	0.00	0.00	0.00
8,400.0	3.35	58.48	8,393.7	114.2	186.2	-100.9	0.00	0.00	0.00
8,500.0	3.35	58.48	8,493.5	117.2	191.2	-103.6	0.00	0.00	0.00
8,600.0	3.35	58.48	8,593.4	120.3	196.1	-106.3	0.00	0.00	0.00
8,700.0	3.35	58.48	8,693.2	123.4	201.1	-109.0	0.00	0.00	0.00
8,800.0	3.35	58.48	8,793.0	126.4	206.1	-111.7	0.00	0.00	0.00
8,900.0	3.35	58.48	8,892.8	129.5	211.1	-114.4	0.00	0.00	0.00
9,000.0	3.35	58.48	8,992.7	132.5	216.1	-117.1	0.00	0.00	0.00
9,100.0	3.35	58.48	9,092.5	135.6	221.1	-119.8	0.00	0.00	0.00
9,200.0	3.35	58.48	9,192.3	138.7	226.1	-122.5	0.00	0.00	0.00
9,300.0	3.35	58.48	9,292.2	141.7	231.1	-125.2	0.00	0.00	0.00
9,400.0	3.35	58.48	9,392.0	144.8	236.1	-127.9	0.00	0.00	0.00
9,500.0	3.35	58.48	9,491.8	147.8	241.0	-130.6	0.00	0.00	0.00
9,600.0	3.35	58.48	9,591.6	150.9	246.0	-133.3	0.00	0.00	0.00
9,700.0	3.35	58.48	9,691.5	154.0	251.0	-136.0	0.00	0.00	0.00
9,800.0	3.35	58.48	9,791.3	157.0	256.0	-138.8	0.00	0.00	0.00
9,900.0	3.35	58.48	9,891.1	160.1	261.0	-141.5	0.00	0.00	0.00
10,000.0	3.35	58.48	9,991.0	163.1	266.0	-144.2	0.00	0.00	0.00
10,100.0	3.35	58.48	10,090.8	166.2	271.0	-146.9	0.00	0.00	0.00
10,200.0	3.35	58.48	10,190.6	169.2	276.0	-149.6	0.00	0.00	0.00
10,300.0	3.35	58.48	10,290.4	172.3	280.9	-152.3	0.00	0.00	0.00
10,340.2	3.35	58.48	10,330.6	173.5	282.9	-153.4	0.00	0.00	0.00
10,350.0	2.97	74.93	10,340.4	173.8	283.4	-153.5	10.00	-3.92	167.67
10,400.0	5.13	145.53	10,390.3	172.2	286.0	-151.9	10.00	4.32	141.22



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
 Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Thor 21
 Well: #501H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well #501H
 TVD Reference: KB = 25 @ 3313.0usft
 MD Reference: KB = 25 @ 3313.0usft
 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)
10,450.0	9.68	162.43	10,439.8	166.4	288.5	-145.8	10.00	9.11	33.79
10,500.0	14.53	168.37	10,488.7	156.2	291.0	-135.5	10.00	9.70	11.89
10,550.0	19.46	171.37	10,536.5	141.8	293.5	-121.0	10.00	9.85	6.00
10,600.0	24.41	173.19	10,582.9	123.3	296.0	-102.4	10.00	9.91	3.64
10,650.0	29.38	174.42	10,627.5	100.9	298.4	-79.8	10.00	9.94	2.47
10,700.0	34.36	175.33	10,669.9	74.6	300.8	-53.4	10.00	9.95	1.81
10,750.0	39.34	176.03	10,709.9	44.7	303.0	-23.4	10.00	9.96	1.40
10,800.0	44.32	176.59	10,747.2	11.4	305.2	9.9	10.00	9.97	1.13
10,850.0	49.31	177.07	10,781.4	-25.0	307.2	46.4	10.00	9.98	0.95
10,900.0	54.30	177.47	10,812.3	-64.2	309.0	85.6	10.00	9.98	0.81
10,950.0	59.29	177.83	10,839.6	-106.0	310.7	127.4	10.00	9.98	0.72
10,982.0	62.48	178.04	10,855.2	-133.9	311.8	155.4	10.00	9.98	0.66
FTP(Thor 21 #501H)									
11,000.0	64.29	178.16	10,863.3	-150.0	312.3	171.5	10.00	9.98	0.63
11,050.0	69.28	178.45	10,883.0	-195.9	313.6	217.4	10.00	9.99	0.59
11,100.0	74.27	178.73	10,898.6	-243.4	314.8	264.8	10.00	9.99	0.56
11,150.0	79.26	179.00	10,910.0	-292.0	315.8	313.4	10.00	9.99	0.53
11,200.0	84.26	179.25	10,917.2	-341.5	316.5	362.8	10.00	9.99	0.51
11,250.0	89.25	179.50	10,920.0	-391.4	317.1	412.6	10.00	9.99	0.50
11,267.5	91.00	179.59	10,920.0	-408.9	317.2	430.1	10.00	9.99	0.50
11,300.0	91.00	179.59	10,919.4	-441.4	317.4	462.5	0.00	0.00	0.00
11,400.0	91.00	179.59	10,917.7	-541.4	318.2	562.3	0.00	0.00	0.00
11,500.0	91.00	179.59	10,915.9	-641.4	318.9	662.1	0.00	0.00	0.00
11,600.0	91.00	179.59	10,914.2	-741.4	319.6	761.9	0.00	0.00	0.00
11,700.0	91.00	179.59	10,912.4	-841.3	320.3	861.6	0.00	0.00	0.00
11,800.0	91.00	179.59	10,910.7	-941.3	321.0	961.4	0.00	0.00	0.00
11,900.0	91.00	179.59	10,909.0	-1,041.3	321.7	1,061.2	0.00	0.00	0.00
12,000.0	91.00	179.59	10,907.2	-1,141.3	322.4	1,161.0	0.00	0.00	0.00
12,100.0	91.00	179.59	10,905.5	-1,241.3	323.2	1,260.8	0.00	0.00	0.00
12,200.0	91.00	179.59	10,903.7	-1,341.2	323.9	1,360.6	0.00	0.00	0.00
12,300.0	91.00	179.59	10,902.0	-1,441.2	324.6	1,460.4	0.00	0.00	0.00
12,400.0	91.00	179.59	10,900.2	-1,541.2	325.3	1,560.2	0.00	0.00	0.00
12,500.0	91.00	179.59	10,898.5	-1,641.2	326.0	1,660.0	0.00	0.00	0.00
12,600.0	91.00	179.59	10,896.8	-1,741.2	326.7	1,759.7	0.00	0.00	0.00
12,700.0	91.00	179.59	10,895.0	-1,841.2	327.4	1,859.5	0.00	0.00	0.00
12,800.0	91.00	179.59	10,893.3	-1,941.1	328.2	1,959.3	0.00	0.00	0.00
12,900.0	91.00	179.59	10,891.5	-2,041.1	328.9	2,059.1	0.00	0.00	0.00
13,000.0	91.00	179.59	10,889.8	-2,141.1	329.6	2,158.9	0.00	0.00	0.00
13,100.0	91.00	179.59	10,888.0	-2,241.1	330.3	2,258.7	0.00	0.00	0.00
13,200.0	91.00	179.59	10,886.3	-2,341.1	331.0	2,358.5	0.00	0.00	0.00
13,300.0	91.00	179.59	10,884.5	-2,441.0	331.7	2,458.3	0.00	0.00	0.00
13,400.0	91.00	179.59	10,882.8	-2,541.0	332.4	2,558.0	0.00	0.00	0.00
13,500.0	91.00	179.59	10,881.1	-2,641.0	333.2	2,657.8	0.00	0.00	0.00
13,600.0	91.00	179.59	10,879.3	-2,741.0	333.9	2,757.6	0.00	0.00	0.00
13,700.0	91.00	179.59	10,877.6	-2,841.0	334.6	2,857.4	0.00	0.00	0.00
13,800.0	91.00	179.59	10,875.8	-2,941.0	335.3	2,957.2	0.00	0.00	0.00
13,900.0	91.00	179.59	10,874.1	-3,040.9	336.0	3,057.0	0.00	0.00	0.00
14,000.0	91.00	179.59	10,872.3	-3,140.9	336.7	3,156.8	0.00	0.00	0.00
14,100.0	91.00	179.59	10,870.6	-3,240.9	337.4	3,256.6	0.00	0.00	0.00
14,200.0	91.00	179.59	10,868.8	-3,340.9	338.2	3,356.3	0.00	0.00	0.00
14,300.0	91.00	179.59	10,867.1	-3,440.9	338.9	3,456.1	0.00	0.00	0.00
14,400.0	91.00	179.59	10,865.4	-3,540.9	339.6	3,555.9	0.00	0.00	0.00
14,500.0	91.00	179.59	10,863.6	-3,640.8	340.3	3,655.7	0.00	0.00	0.00



EOG Resources, Inc.
Planning Report

Database: EDM 5000.1 Single User Db
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Thor 21
Well: #501H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #501H
TVD Reference: KB = 25 @ 3313.0usft
MD Reference: KB = 25 @ 3313.0usft
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)
14,600.0	91.00	179.59	10,861.9	-3,740.8	341.0	3,755.5	0.00	0.00	0.00
14,700.0	91.00	179.59	10,860.1	-3,840.8	341.7	3,855.3	0.00	0.00	0.00
14,800.0	91.00	179.59	10,858.4	-3,940.8	342.4	3,955.1	0.00	0.00	0.00
14,900.0	91.00	179.59	10,856.6	-4,040.8	343.1	4,054.9	0.00	0.00	0.00
15,000.0	91.00	179.59	10,854.9	-4,140.7	343.9	4,154.7	0.00	0.00	0.00
15,100.0	91.00	179.59	10,853.1	-4,240.7	344.6	4,254.4	0.00	0.00	0.00
15,200.0	91.00	179.59	10,851.4	-4,340.7	345.3	4,354.2	0.00	0.00	0.00
15,300.0	91.00	179.59	10,849.7	-4,440.7	346.0	4,454.0	0.00	0.00	0.00
15,400.0	91.00	179.59	10,847.9	-4,540.7	346.7	4,553.8	0.00	0.00	0.00
15,500.0	91.00	179.59	10,846.2	-4,640.7	347.4	4,653.6	0.00	0.00	0.00
15,600.0	91.00	179.59	10,844.4	-4,740.6	348.1	4,753.4	0.00	0.00	0.00
15,700.0	91.00	179.59	10,842.7	-4,840.6	348.9	4,853.2	0.00	0.00	0.00
15,800.0	91.00	179.59	10,840.9	-4,940.6	349.6	4,953.0	0.00	0.00	0.00
15,859.4	91.00	179.59	10,839.9	-5,000.0	350.0	5,012.2	0.00	0.00	0.00

PBHL(Thor 21 #501H)

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									
PBHL(Thor 21 #501H)	0.00	0.01	10,839.9	-5,000.0	350.0	372,465.00	736,789.00	32° 1' 18.189 N	103° 34' 9.532 W
- plan hits target center									
- Point									
FTP(Thor 21 #501H)	0.00	0.00	10,920.0	-99.0	315.0	377,366.00	736,754.00	32° 2' 6.691 N	103° 34' 9.536 W
- plan misses target center by 73.7usft at 10982.0usft MD (10855.2 TVD, -133.9 N, 311.8 E)									
- Point									

EOG RESOURCES, INC.
THOR 21 #501H

Hydrogen Sulfide Plan Summary

- A. All personnel shall receive proper H₂S 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 with 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
 - H₂S 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.
THOR 21 #501H

- **Mud program:**
The mud program has been designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S 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 H₂S service.
- **Communication:**
Communication will be via cell phones and land lines where available.

EOG RESOURCES, INC.
THOR 21 #501H

Emergency Assistance Telephone List

PUBLIC SAFETY: **911 or**

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

EOG Resources, Inc.

EOG / Midland Office (432) 686-3600

Company Drilling Consultants:

Jett Dueitt Cell (432) 230-4840

Blake Burney

Drilling Engineer

Robert Brosig Office (432) 686-3737

Cell (432) 770-0705

Drilling Manager

Heath Work Office (432) 686-6716

Cell (903) 780-1179

Drilling Superintendent

Jason Richey Office (432) 686-3665

Cell (817) 879-6521

H&P Drilling

H&P Drilling Office (432) 563-5757

H&P 415 Drilling Rig Rig (432) 230-4840

Tool Pusher:

Johnathan Craig Cell (817) 760-6374

Brad Garrett

Safety

Reggie Phillips (HSE Manager) Office (432) 686-3747

Cell (432) 250-7507