

Permit Information:

Well Name: Thor 21 No. 502H

Location:

SL: 230' FNL & 675' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

BHL: 50' FSL & 990' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

30-025-42614 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'-15,857'	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
15,857'	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' - 15,857' Lateral	Oil Base	9.0-9.5	58-68	N/c - 6

JUN 08 2015

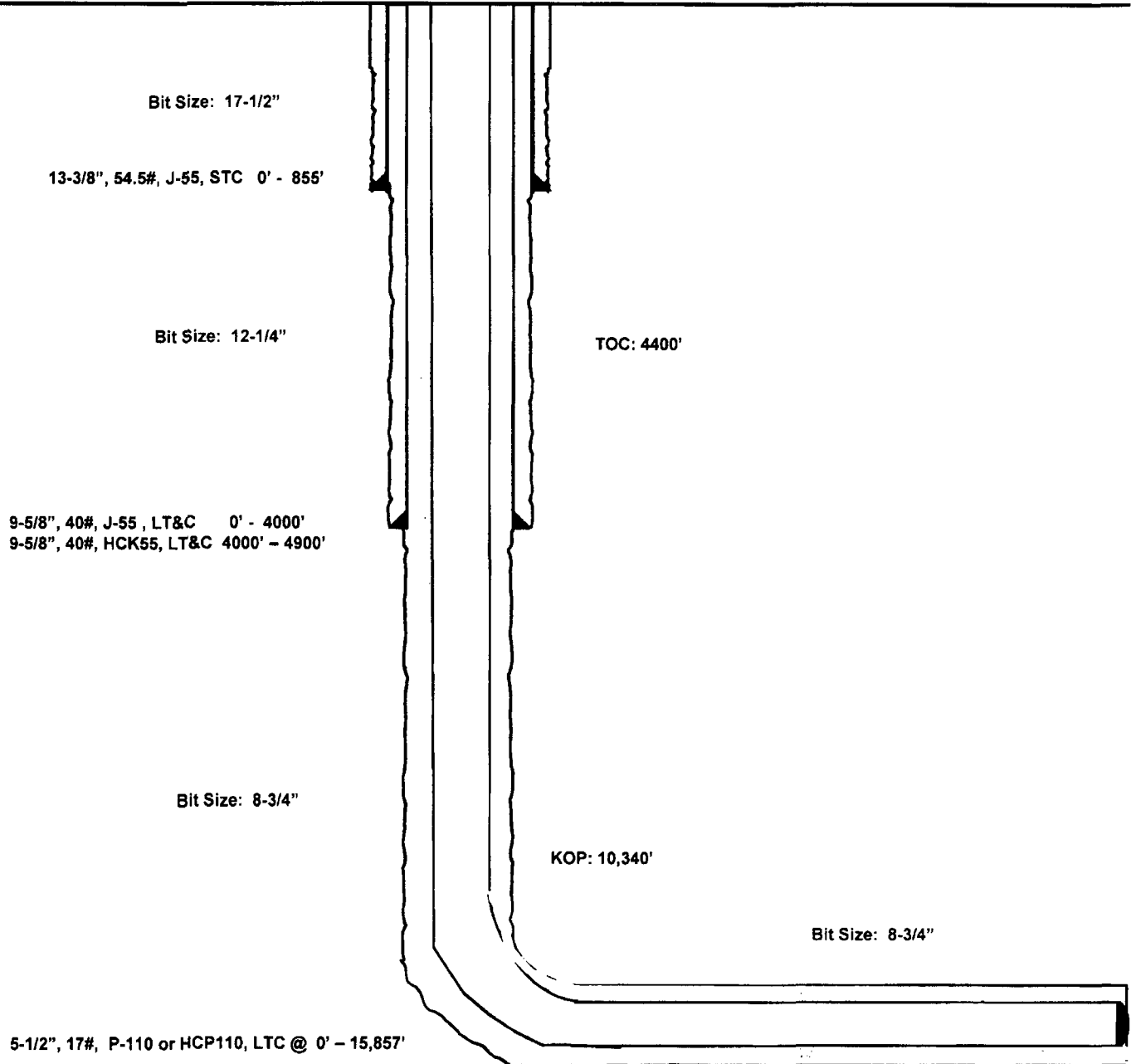
Thor 21 #502H
Lea County, New Mexico

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

Proposed Wellbore

API: 30-025-

KB: 3,312'
GL: 3,287'



Lateral: 15,857' MD, 10,845' TVD

BH Location: 50' FSL & 990' FEL
Section 21
T-26-S, R-33-E



Lea County, NM (NAD 27 NME)

Thor 21 #502H

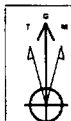
Plan #1

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

WELL DETAILS: #502H

Ground Level: 3288.0
KB = 25 @ 3313.0usft
Northing: 377464.00
Easting: 736409.50
Latitude: 32° 2' 7.555 N
Longitude: 103° 34' 13.536 W



Azimuths to Grid North
True North: 0.61°
Magnetic North: 8.78°

Magnetic Field
Strength: 48036.8nT
Dip Angle: 88.92°
Date: 6/1/2015
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 0.78°
To convert a Magnetic Direction to a True Direction, Add 7.16° (East)
To convert a True Direction to a Grid Direction, Subtract 0.40°

SECTION DETAILS

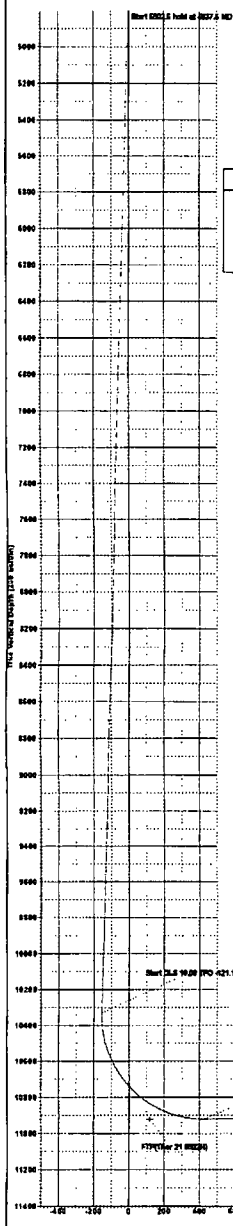
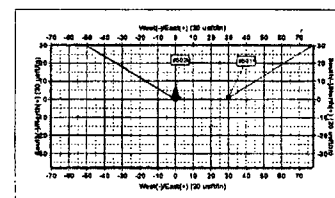
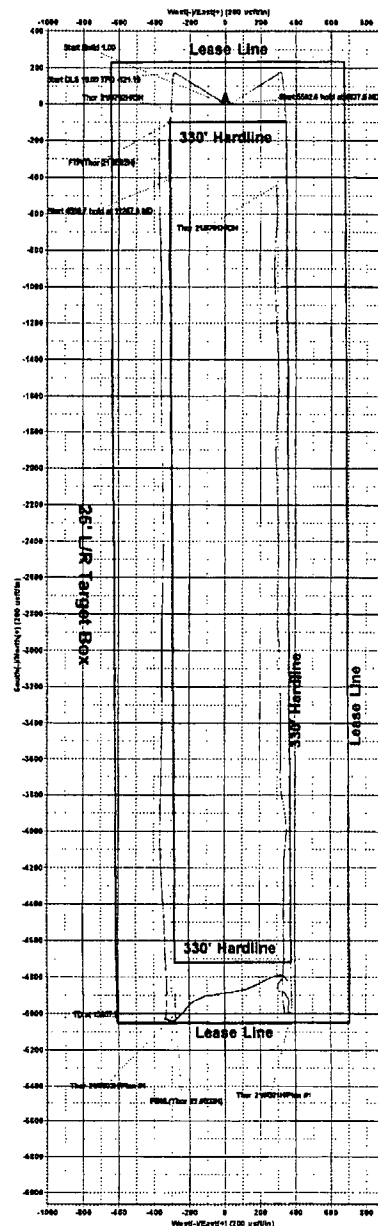
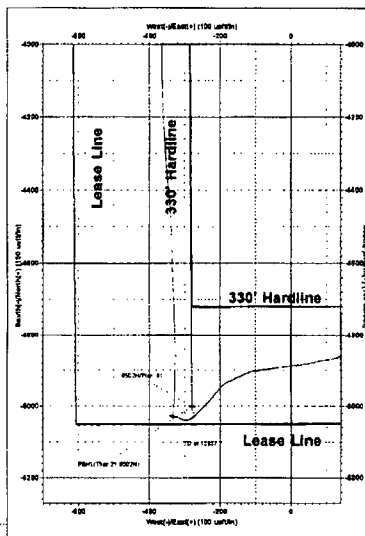
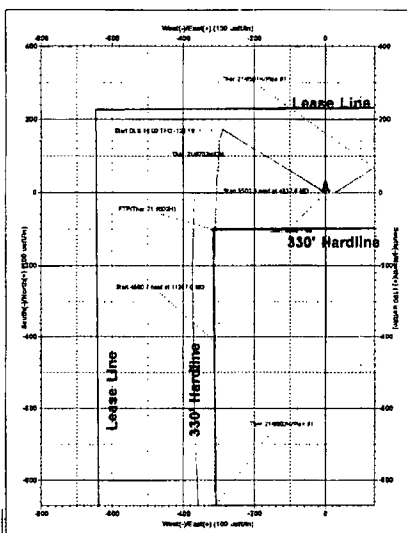
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	V-Sect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00		
2	4500.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.00		
3	4527.8	3.38	300.34	4537.4	6.1	-6.5	1.00	300.34	-4.8		
4	10340.2	3.38	300.34	10350.4	171.2	-288.7	0.00	0.00	-154.9		
5	11247.0	90.84	178.69	10920.0	-411.0	-312.8	16.00	-121.16	427.9		
6	12557.7	90.84	178.69	10945.0	-6001.0	-220.0	0.00	0.00	5028.9		PEHL(Thor 21 #502H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
PEHL(Thor 21 #502H)	10848.0	-6001.0	-280.0	372463.00	736129.00
FTF(Thor 21 #502H)	10920.0	-101.0	-316.0	377363.00	736094.00





EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Thor 21

#502H

OH

Plan: Plan #1

Standard Planning Report

01 June, 2015



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: #502H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #502H
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	Latitude: 32° 1' 19.964 N
From:	Map	Easting:	736,738.00 usft	Longitude: 103° 34' 10.110 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.41 °

Well	#502H			
Well Position	+N/-S	4,820.0 usft	Northing:	377,464.00 usft
	+E/-W	-329.0 usft	Easting:	736,409.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level: 3,288.0 usft

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

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)	Direction (°)
	0.0	0.0	0.0	183.20

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	
4,837.6	3.38	300.84	4,837.4	5.1	-8.5	1.00	1.00	0.00	300.84	
10,340.2	3.38	300.84	10,330.4	171.2	-286.7	0.00	0.00	0.00	0.00	
11,267.0	90.94	179.59	10,920.0	-411.0	-312.8	10.00	9.45	-13.08	-121.16	
15,857.7	90.94	179.59	10,845.0	-5,001.0	-280.0	0.00	0.00	0.00	0.00	PBHL(Thor 21 #502H)



EOG Resources, Inc.

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 Project: Lea County, NM (NAD 27 NME)
 Site: Thor 21
 Well: #502H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well #502H
 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	300.84	4,600.0	0.4	-0.7	-0.4	1.00	1.00	0.00
4,700.0	2.00	300.84	4,700.0	1.8	-3.0	-1.6	1.00	1.00	0.00
4,800.0	3.00	300.84	4,799.9	4.0	-6.7	-3.6	1.00	1.00	0.00
4,837.6	3.38	300.84	4,837.4	5.1	-8.5	-4.6	1.00	1.00	0.00
4,900.0	3.38	300.84	4,899.7	7.0	-11.7	-6.3	0.00	0.00	0.00
5,000.0	3.38	300.84	4,999.5	10.0	-16.7	-9.0	0.00	0.00	0.00
5,100.0	3.38	300.84	5,099.3	13.0	-21.8	-11.8	0.00	0.00	0.00
5,200.0	3.38	300.84	5,199.2	16.0	-26.9	-14.5	0.00	0.00	0.00



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 Wellbore: OH
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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)
5,300.0	3.38	300.84	5,299.0	19.1	-31.9	-17.2	0.00	0.00	0.00
5,400.0	3.38	300.84	5,398.8	22.1	-37.0	-20.0	0.00	0.00	0.00
5,500.0	3.38	300.84	5,498.7	25.1	-42.0	-22.7	0.00	0.00	0.00
5,600.0	3.38	300.84	5,598.5	28.1	-47.1	-25.4	0.00	0.00	0.00
5,700.0	3.38	300.84	5,698.3	31.1	-52.1	-28.2	0.00	0.00	0.00
5,800.0	3.38	300.84	5,798.1	34.1	-57.2	-30.9	0.00	0.00	0.00
5,900.0	3.38	300.84	5,898.0	37.2	-62.2	-33.6	0.00	0.00	0.00
6,000.0	3.38	300.84	5,997.8	40.2	-67.3	-36.4	0.00	0.00	0.00
6,100.0	3.38	300.84	6,097.6	43.2	-72.4	-39.1	0.00	0.00	0.00
6,200.0	3.38	300.84	6,197.4	46.2	-77.4	-41.8	0.00	0.00	0.00
6,300.0	3.38	300.84	6,297.3	49.2	-82.5	-44.6	0.00	0.00	0.00
6,400.0	3.38	300.84	6,397.1	52.3	-87.5	-47.3	0.00	0.00	0.00
6,500.0	3.38	300.84	6,496.9	55.3	-92.6	-50.0	0.00	0.00	0.00
6,600.0	3.38	300.84	6,596.7	58.3	-97.6	-52.8	0.00	0.00	0.00
6,700.0	3.38	300.84	6,696.6	61.3	-102.7	-55.5	0.00	0.00	0.00
6,800.0	3.38	300.84	6,796.4	64.3	-107.7	-58.2	0.00	0.00	0.00
6,900.0	3.38	300.84	6,896.2	67.4	-112.8	-60.9	0.00	0.00	0.00
7,000.0	3.38	300.84	6,996.1	70.4	-117.9	-63.7	0.00	0.00	0.00
7,100.0	3.38	300.84	7,095.9	73.4	-122.9	-66.4	0.00	0.00	0.00
7,200.0	3.38	300.84	7,195.7	76.4	-128.0	-69.1	0.00	0.00	0.00
7,300.0	3.38	300.84	7,295.5	79.4	-133.0	-71.9	0.00	0.00	0.00
7,400.0	3.38	300.84	7,395.4	82.4	-138.1	-74.6	0.00	0.00	0.00
7,500.0	3.38	300.84	7,495.2	85.5	-143.1	-77.3	0.00	0.00	0.00
7,600.0	3.38	300.84	7,595.0	88.5	-148.2	-80.1	0.00	0.00	0.00
7,700.0	3.38	300.84	7,694.8	91.5	-153.2	-82.8	0.00	0.00	0.00
7,800.0	3.38	300.84	7,794.7	94.5	-158.3	-85.5	0.00	0.00	0.00
7,900.0	3.38	300.84	7,894.5	97.5	-163.4	-88.3	0.00	0.00	0.00
8,000.0	3.38	300.84	7,994.3	100.6	-168.4	-91.0	0.00	0.00	0.00
8,100.0	3.38	300.84	8,094.1	103.6	-173.5	-93.7	0.00	0.00	0.00
8,200.0	3.38	300.84	8,194.0	106.6	-178.5	-96.5	0.00	0.00	0.00
8,300.0	3.38	300.84	8,293.8	109.6	-183.6	-99.2	0.00	0.00	0.00
8,400.0	3.38	300.84	8,393.6	112.6	-188.6	-101.9	0.00	0.00	0.00
8,500.0	3.38	300.84	8,493.5	115.7	-193.7	-104.6	0.00	0.00	0.00
8,600.0	3.38	300.84	8,593.3	118.7	-198.7	-107.4	0.00	0.00	0.00
8,700.0	3.38	300.84	8,693.1	121.7	-203.8	-110.1	0.00	0.00	0.00
8,800.0	3.38	300.84	8,792.9	124.7	-208.9	-112.8	0.00	0.00	0.00
8,900.0	3.38	300.84	8,892.8	127.7	-213.9	-115.6	0.00	0.00	0.00
9,000.0	3.38	300.84	8,992.6	130.7	-219.0	-118.3	0.00	0.00	0.00
9,100.0	3.38	300.84	9,092.4	133.8	-224.0	-121.0	0.00	0.00	0.00
9,200.0	3.38	300.84	9,192.2	136.8	-229.1	-123.8	0.00	0.00	0.00
9,300.0	3.38	300.84	9,292.1	139.8	-234.1	-126.5	0.00	0.00	0.00
9,400.0	3.38	300.84	9,391.9	142.8	-239.2	-129.2	0.00	0.00	0.00
9,500.0	3.38	300.84	9,491.7	145.8	-244.2	-132.0	0.00	0.00	0.00
9,600.0	3.38	300.84	9,591.5	148.9	-249.3	-134.7	0.00	0.00	0.00
9,700.0	3.38	300.84	9,691.4	151.9	-254.4	-137.4	0.00	0.00	0.00
9,800.0	3.38	300.84	9,791.2	154.9	-259.4	-140.2	0.00	0.00	0.00
9,900.0	3.38	300.84	9,891.0	157.9	-264.5	-142.9	0.00	0.00	0.00
10,000.0	3.38	300.84	9,990.8	160.9	-269.5	-145.6	0.00	0.00	0.00
10,100.0	3.38	300.84	10,090.7	164.0	-274.6	-148.3	0.00	0.00	0.00
10,200.0	3.38	300.84	10,190.5	167.0	-279.6	-151.1	0.00	0.00	0.00
10,300.0	3.38	300.84	10,290.3	170.0	-284.7	-153.8	0.00	0.00	0.00
10,340.2	3.38	300.84	10,330.4	171.2	-286.7	-154.9	0.00	0.00	0.00
10,350.0	2.99	284.47	10,340.2	171.4	-287.2	-155.1	10.00	-3.95	-166.43
10,400.0	5.12	213.87	10,390.1	169.9	-289.7	-153.4	10.00	4.27	-141.21



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: #502H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well #502H
 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	9.67	196.86	10,439.7	164.0	-292.2	-147.4	10.00	9.10	-34.03
10,500.0	14.52	190.87	10,488.6	153.8	-294.6	-137.1	10.00	9.69	-11.97
10,550.0	19.44	187.85	10,536.4	139.4	-296.9	-122.6	10.00	9.85	-6.03
10,600.0	24.40	186.02	10,582.8	120.9	-299.1	-104.0	10.00	9.91	-3.66
10,650.0	29.37	184.78	10,627.4	98.4	-301.2	-81.4	10.00	9.94	-2.48
10,700.0	34.34	183.87	10,669.8	72.1	-303.2	-55.0	10.00	9.95	-1.82
10,750.0	39.32	183.17	10,709.8	42.2	-305.0	-25.1	10.00	9.96	-1.41
10,800.0	44.31	182.60	10,747.1	8.9	-306.7	8.3	10.00	9.97	-1.14
10,850.0	49.30	182.13	10,781.3	-27.5	-308.2	44.7	10.00	9.98	-0.95
10,900.0	54.29	181.72	10,812.2	-66.8	-309.5	84.0	10.00	9.98	-0.82
10,950.0	59.28	181.36	10,839.6	-108.6	-310.6	125.8	10.00	9.98	-0.72
10,981.5	62.42	181.15	10,854.9	-136.0	-311.2	153.2	10.00	9.98	-0.66
FTP(Thor 21 #502H)									
11,000.0	64.27	181.03	10,863.2	-152.6	-311.6	169.8	10.00	9.98	-0.63
11,050.0	69.26	180.73	10,882.9	-198.5	-312.3	215.7	10.00	9.98	-0.60
11,100.0	74.26	180.45	10,898.6	-246.0	-312.7	263.1	10.00	9.99	-0.56
11,150.0	79.25	180.19	10,910.0	-294.6	-313.0	311.7	10.00	9.99	-0.53
11,200.0	84.24	179.93	10,917.2	-344.1	-313.1	361.1	10.00	9.99	-0.51
11,250.0	89.24	179.68	10,920.1	-394.0	-312.9	410.9	10.00	9.99	-0.51
11,267.0	90.94	179.59	10,920.0	-411.0	-312.8	427.9	10.00	9.99	-0.50
11,300.0	90.94	179.59	10,919.5	-444.0	-312.5	460.8	0.00	0.00	0.00
11,400.0	90.94	179.59	10,917.9	-544.0	-311.8	560.6	0.00	0.00	0.00
11,500.0	90.94	179.59	10,916.2	-644.0	-311.1	660.4	0.00	0.00	0.00
11,600.0	90.94	179.59	10,914.6	-744.0	-310.4	760.2	0.00	0.00	0.00
11,700.0	90.94	179.59	10,913.0	-843.9	-309.7	859.9	0.00	0.00	0.00
11,800.0	90.94	179.59	10,911.3	-943.9	-309.0	959.7	0.00	0.00	0.00
11,900.0	90.94	179.59	10,909.7	-1,043.9	-308.3	1,059.5	0.00	0.00	0.00
12,000.0	90.94	179.59	10,908.1	-1,143.9	-307.6	1,159.3	0.00	0.00	0.00
12,100.0	90.94	179.59	10,906.4	-1,243.9	-306.8	1,259.1	0.00	0.00	0.00
12,200.0	90.94	179.59	10,904.8	-1,343.9	-306.1	1,358.9	0.00	0.00	0.00
12,300.0	90.94	179.59	10,903.1	-1,443.9	-305.4	1,458.7	0.00	0.00	0.00
12,400.0	90.94	179.59	10,901.5	-1,543.8	-304.7	1,558.5	0.00	0.00	0.00
12,500.0	90.94	179.59	10,899.9	-1,643.8	-304.0	1,658.2	0.00	0.00	0.00
12,600.0	90.94	179.59	10,898.2	-1,743.8	-303.3	1,758.0	0.00	0.00	0.00
12,700.0	90.94	179.59	10,896.6	-1,843.8	-302.6	1,857.8	0.00	0.00	0.00
12,800.0	90.94	179.59	10,895.0	-1,943.8	-301.8	1,957.6	0.00	0.00	0.00
12,900.0	90.94	179.59	10,893.3	-2,043.8	-301.1	2,057.4	0.00	0.00	0.00
13,000.0	90.94	179.59	10,891.7	-2,143.7	-300.4	2,157.2	0.00	0.00	0.00
13,100.0	90.94	179.59	10,890.1	-2,243.7	-299.7	2,257.0	0.00	0.00	0.00
13,200.0	90.94	179.59	10,888.4	-2,343.7	-299.0	2,356.8	0.00	0.00	0.00
13,300.0	90.94	179.59	10,886.8	-2,443.7	-298.3	2,456.5	0.00	0.00	0.00
13,400.0	90.94	179.59	10,885.2	-2,543.7	-297.6	2,556.3	0.00	0.00	0.00
13,500.0	90.94	179.59	10,883.5	-2,643.7	-296.8	2,656.1	0.00	0.00	0.00
13,600.0	90.94	179.59	10,881.9	-2,743.6	-296.1	2,755.9	0.00	0.00	0.00
13,700.0	90.94	179.59	10,880.3	-2,843.6	-295.4	2,855.7	0.00	0.00	0.00
13,800.0	90.94	179.59	10,878.6	-2,943.6	-294.7	2,955.5	0.00	0.00	0.00
13,900.0	90.94	179.59	10,877.0	-3,043.6	-294.0	3,055.3	0.00	0.00	0.00
14,000.0	90.94	179.59	10,875.4	-3,143.6	-293.3	3,155.1	0.00	0.00	0.00
14,100.0	90.94	179.59	10,873.7	-3,243.6	-292.6	3,254.8	0.00	0.00	0.00
14,200.0	90.94	179.59	10,872.1	-3,343.6	-291.8	3,354.6	0.00	0.00	0.00
14,300.0	90.94	179.59	10,870.5	-3,443.5	-291.1	3,454.4	0.00	0.00	0.00
14,400.0	90.94	179.59	10,868.8	-3,543.5	-290.4	3,554.2	0.00	0.00	0.00
14,500.0	90.94	179.59	10,867.2	-3,643.5	-289.7	3,654.0	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: #502H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #502H
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	90.94	179.59	10,865.6	-3,743.5	-289.0	3,753.8	0.00	0.00	0.00
14,700.0	90.94	179.59	10,863.9	-3,843.5	-288.3	3,853.6	0.00	0.00	0.00
14,800.0	90.94	179.59	10,862.3	-3,943.5	-287.6	3,953.4	0.00	0.00	0.00
14,900.0	90.94	179.59	10,860.7	-4,043.4	-286.8	4,053.2	0.00	0.00	0.00
15,000.0	90.94	179.59	10,859.0	-4,143.4	-286.1	4,152.9	0.00	0.00	0.00
15,100.0	90.94	179.59	10,857.4	-4,243.4	-285.4	4,252.7	0.00	0.00	0.00
15,200.0	90.94	179.59	10,855.7	-4,343.4	-284.7	4,352.5	0.00	0.00	0.00
15,300.0	90.94	179.59	10,854.1	-4,443.4	-284.0	4,452.3	0.00	0.00	0.00
15,400.0	90.94	179.59	10,852.5	-4,543.4	-283.3	4,552.1	0.00	0.00	0.00
15,500.0	90.94	179.59	10,850.8	-4,643.3	-282.6	4,651.9	0.00	0.00	0.00
15,600.0	90.94	179.59	10,849.2	-4,743.3	-281.8	4,751.7	0.00	0.00	0.00
15,700.0	90.94	179.59	10,847.6	-4,843.3	-281.1	4,851.5	0.00	0.00	0.00
15,800.0	90.94	179.59	10,845.9	-4,943.3	-280.4	4,951.2	0.00	0.00	0.00
15,857.7	90.94	179.59	10,845.0	-5,001.0	-280.0	5,008.8	0.00	0.00	0.00

PBHL(Thor 21 #502H)

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 #502H)	0.00	0.01	10,845.0	-5,001.0	-280.0	372,463.00	736,129.00	32° 1' 18.215 N	103° 34' 17.198 W
- plan hits target center									
- Point									
FTP(Thor 21 #502H)	0.00	0.00	10,920.0	-101.0	-315.0	377,363.00	736,094.00	32° 2' 6.707 N	103° 34' 17.204 W
- plan misses target center by 74.0usft at 10981.5usft MD (10854.9 TVD, -136.0 N, -311.2 E)									
- Point									

EOG RESOURCES, INC.
THOR 21 #502H

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/Escape 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
 - 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 #502H

- **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 #502H

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