

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-42480
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☐ FEE ☒
2. Name of Operator EOG Resources, Inc.		6. State Oil & Gas Lease No.
3. Address of Operator P.O. Box 2267 Midland, TX 79702		7. Lease Name or Unit Agreement Name Thor 21
4. Well Location Unit Letter P 230 feet from the South line and 350 feet from the East line Section 21 Township 26S Range 33E NMPM County Lea		8. Well Number 501H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3252' GR		9. OGRID Number 7377
		10. Pool name or Wildcat Bradley; Bone Spring

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

EOG Resources requests changes to the APD for this well to reflect a change in casing design, TVD, BHL, and Pool as attached.

New target is Wolfcamp, changing TVD from 11000', (15763' MD) TO: 12378' TVD; 17202' MD.

New BHL change from 230' FNL & 380' FEL TO: 230' FNL & 1040' FEL, Sec 21, T26S, R33E

New casing design attached.

Pool change from Bradley; Bone Spring TO: WC-025 G-09 S26327G; Upper Wolfcamp
We also request that the well number be changed to 702H to reflect the wolfcamp pool.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Stan Wagner TITLE Regulatory Analyst DATE 4/16/15

Type or print name Stan Wagner E-mail address: _____ PHONE: 432-686-3689

For State Use Only

APPROVED BY: [Signature] TITLE Petroleum Engineer DATE 04/18/15
Conditions of Approval (if any): _____

APR 20 2015

E-PERM Ke

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1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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District IV
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Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Sante Fe, NM 87505

FORM C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-42480	² Pool Code 98097	³ Pool Name WC-025 G-09 5263276 5263276; Upper Wolfcamp
⁴ Property Code 40402	⁵ Property Name THOR 21	⁶ Well Number #702H
⁷ GRID No. 7377	⁸ Operator Name EOG RESOURCES, INC.	⁹ Elevation 3252'

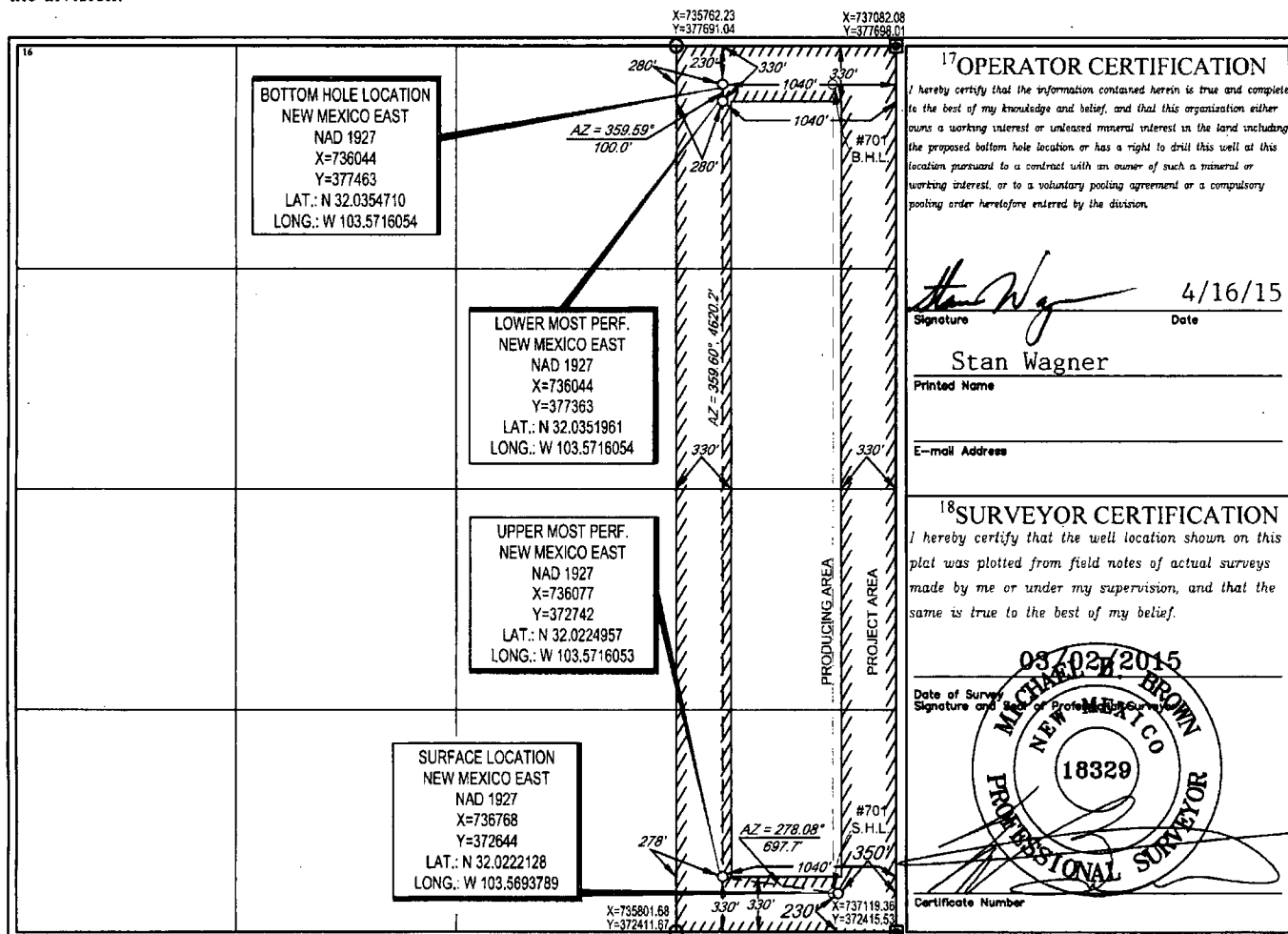
¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	21	26-S	33-E	-	230'	SOUTH	350'	EAST	LEA

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	21	26-S	33-E	-	230'	NORTH	1040'	EAST	LEA

¹¹ Dedicated Acres 160.00	¹² Joint or Infill	¹³ Consolidation Code	¹⁴ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



Revised Permit Information 4/15/15:

Well Name: Thor 21 No. 702H

Location:

SL: 230' FSL & 350' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

BHL: 230' FNL & 1040' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
12.25"	0 – 1000'	9.625"	40#	J55	STC	1.125	1.25	1.60
8.75"	0-10,500'	7"	26#	HCP-110	LTC	1.125	1.25	1.60
6.125"	0'-17,202'	4.5"	13.5#	HCP-110	BTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Slurry Description
1000'	300	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
10,500' DV Tool w/ ECP @ 5,000'	250	10.8	3.68	Stage 1 Lead: Class C + 15.00 lbs/sk BA-90 + 4.00% MPA-5 + 3.00% SMS + 5.00% A-10 + 1.00% BA-10A + 0.80% ASA-301 + 2.90% R-21 + 8.00 lb/sk LCM-1 + 0.005 lb/sx Static Free
	200	15.6	1.19	Stage 1 Tail: Class H + 1.0% FL-52 + 0.6% CD-32 + 0.5% SMS + 1.0% Salt + 0.3% R-3
	325	12.7	2.22	Stage 2 Lead: Class 'C' + 2.0% SMS + 10.0% Slat + 0.55% R-21 + 0.25 pps Celloflake + 0.005 pps Static Free (TOC @ Surface)
	150	14.8	1.35	Stage 2 Tail: Class 'C' + 0.60% FL-62 + 0.7% CD-32 + 0.3% SMS + 2.0% Salt + 0.10% R-3 + 0.005 pps Static Free + 0.005 gps FP-6L
17,202'	600	14.2	1.35	50:50:2 Class H + 0.65% FL-52 + 0.70% CD-32 + 1.0% EC-1 + 0.40% SMS + 2.0% Salt + 0.05% R-3 + 0.005 pps Static Free + 0.005 gps FP-6L (TOC @ 11,000')

Mud Program:

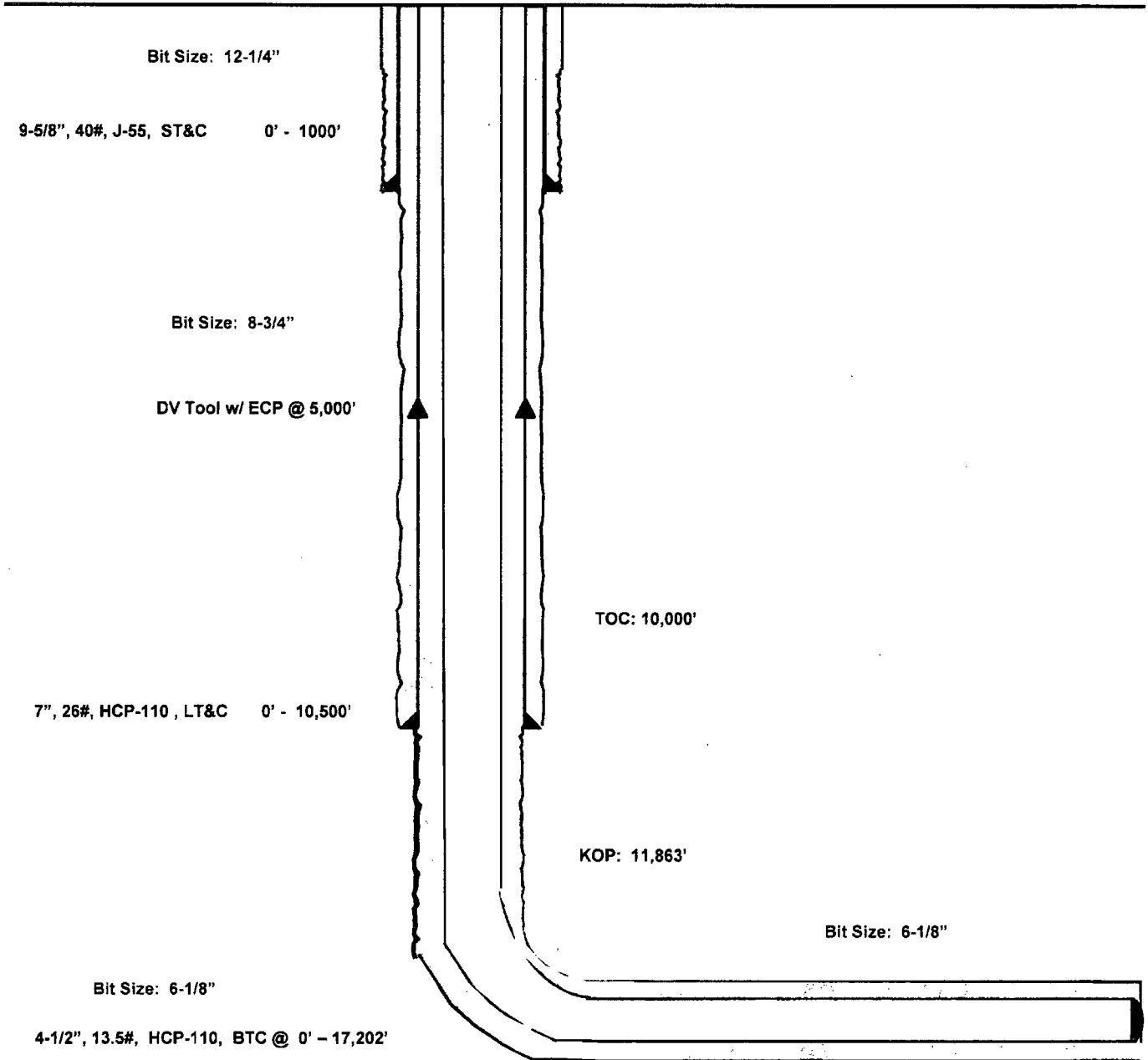
Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1000'	Fresh - Gel	8.6-8.8	28-34	N/c
1000' – 10,500'	Oil Base	8.7-9.4	58-68	N/c - 6
10,500' – 11,863'	Oil Base	8.7-9.4	58-68	N/c - 6
11,863' – 17,202' Lateral	Oil Base	9.0-9.5	58-68	N/c - 6

Thor 21 #702H

**230' FSL
350' FEL
Section 21
T-26-S, R-33-E**

**Lea County, New Mexico
Proposed Wellbore
Revised 4/15/15
API: 30-025-42480**

**KB: 3,277'
GL: 3,252'**



Lateral: 17,202' MD, 12,378' TVD

**BH Location: 230' FNL & 1040' FEL
Section 21
T-26-S, R-33-E**



Lea County, NM (NAD 27 NME)

Thor 21 #702H

H&P 260

Plan #3

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: #702H

Ground Level: 3252.0
KB = 25 @ 3277.00ft (H&P 260)
Northing 372644.00 Easting 734788.00 Latitude 32° 1' 19.962 N Longitude 103° 34' 9.762 W



Azimuths to Grid North
True North: -0.41°
Magnetic North: 8.78°
Magnetic Field
Strength: 48039.1 nT
Dip Angle: 59.90°
Date: 4/27/2015
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 8.78°
To convert a Magnetic Direction to a True Direction, Add 7.17° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

SECTION DETAILS

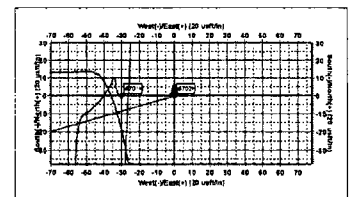
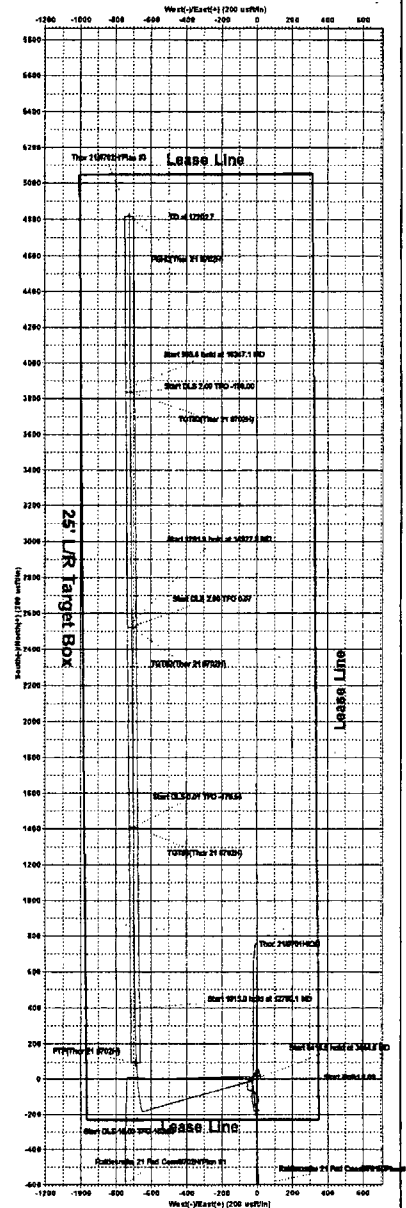
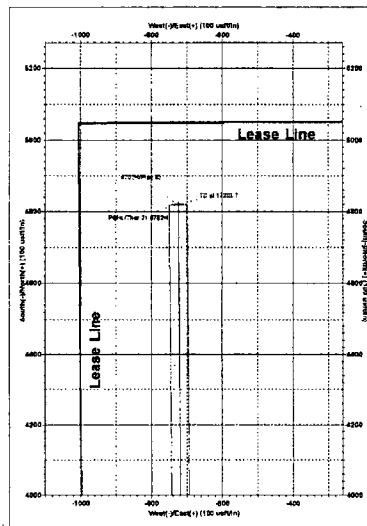
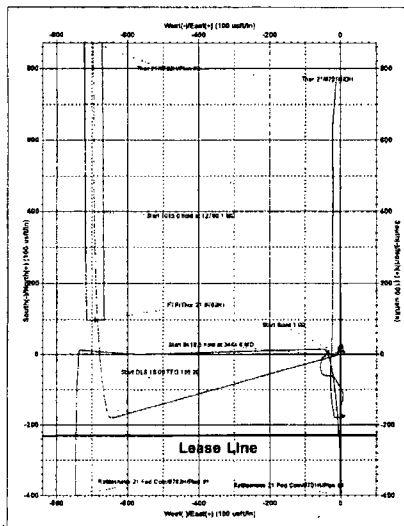
Sec	MD	Inc	Asi	TVD	+N-S	+E-W	Deg	TFace	VFace	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0		
3	3444.6	4.45	254.32	3444.2	-4.7	-16.8	1.00	254.32	-2.1		
4	11953.1	4.45	254.32	11957.3	-181.1	-644.9	0.00	0.00	-82.3		
5	12750.1	80.53	359.60	12420.3	398.7	-493.1	10.00	105.20	486.2		
6	13785.1	80.53	359.60	12411.0	1411.8	-790.2	0.00	0.00	1800.9		TGT#1(Thor 21 #702H)
7	14905.3	90.40	359.60	12402.0	2622.8	-787.9	0.01	-179.54	2000.0		TGT#2(Thor 21 #702H)
8	14927.6	90.53	359.60	12401.8	2544.3	-798.1	2.00	0.07	2621.2		TGT#3(Thor 21 #702H)
9	16219.7	90.83	359.60	12382.7	3863.4	-717.3	0.00	0.00	3900.0		TGT#4(Thor 21 #702H)
10	16247.1	90.28	359.60	12382.7	3863.4	-717.3	2.00	-180.90	1927.1		PBHL(Thor 21 #702H)
11	17202.7	90.35	359.60	12378.0	4819.0	-724.0	0.00	0.00	4873.1		PBHL(Thor 21 #702H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
TGT#1(Thor 21 #702H)	12411.0	-790.2	-770.2	374068.80	734067.82
TGT#2(Thor 21 #702H)	12402.0	2622.8	-787.9	376166.80	735060.05
TGT#3(Thor 21 #702H)	12382.0	3836.0	-717.1	374488.00	734850.87
PBHL(Thor 21 #702H)	12378.0	4819.0	-724.0	377483.00	735044.00
FT#(Thor 21 #702H)	12422.0	58.0	-491.0	372742.00	734977.00





EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Thor 21

#702H

OH

Plan: Plan #3

Standard Planning Report

15 April, 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: #702H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well #702H
TVD Reference: KB = 25 @ 3277.0usft (H&P 260)
MD Reference: KB = 25 @ 3277.0usft (H&P 260)
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	#702H				
Well Position	+N/-S	0.0 usft	Northing:	372,644.00 usft	Latitude: 32° 1' 19.962 N
	+E/-W	30.0 usft	Easting:	736,768.00 usft	Longitude: 103° 34' 9.762 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	0.0 usft	Ground Level: 3,252.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/27/2015	7.17	59.90	48,039

Design	Plan #3			
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	351.46

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	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,444.6	4.45	254.32	3,444.2	-4.7	-16.6	1.00	1.00	0.00	254.32	
11,863.1	4.45	254.32	11,837.3	-181.1	-644.9	0.00	0.00	0.00	0.00	
12,780.1	90.53	359.60	12,420.3	396.7	-693.1	10.00	9.39	11.48	105.20	
13,795.1	90.53	359.60	12,411.0	1,411.6	-700.2	0.00	0.00	0.00	0.00	TGT#1(Thor 21 #702I
14,906.3	90.40	359.60	12,402.0	2,522.8	-707.9	0.01	-0.01	0.00	-179.54	TGT#2(Thor 21 #702I
14,927.8	90.83	359.60	12,401.8	2,544.3	-708.1	2.00	2.00	0.00	0.07	
16,219.7	90.83	359.60	12,383.0	3,836.0	-717.1	0.00	0.00	0.00	0.00	TGT#3(Thor 21 #702I
16,247.1	90.28	359.60	12,382.7	3,863.4	-717.3	2.00	-2.00	0.00	-180.00	
17,202.7	90.28	359.60	12,378.0	4,819.0	-724.0	0.00	0.00	0.00	0.00	PBHL(Thor 21 #702H



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: #702H
 Wellbore: OH
 Design: Plan #3

Local Co-ordinate Reference: Well #702H
 TVD Reference: KB = 25 @ 3277.0usft (H&P 260)
 MD Reference: KB = 25 @ 3277.0usft (H&P 260)
 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	1.00	254.32	3,100.0	-0.2	-0.8	-0.1	1.00	1.00	0.00
3,200.0	2.00	254.32	3,200.0	-0.9	-3.4	-0.4	1.00	1.00	0.00
3,300.0	3.00	254.32	3,299.9	-2.1	-7.6	-1.0	1.00	1.00	0.00
3,400.0	4.00	254.32	3,399.7	-3.8	-13.4	-1.7	1.00	1.00	0.00
3,444.6	4.45	254.32	3,444.2	-4.7	-16.6	-2.1	1.00	1.00	0.00
3,500.0	4.45	254.32	3,499.4	-5.8	-20.7	-2.7	0.00	0.00	0.00
3,600.0	4.45	254.32	3,599.1	-7.9	-28.2	-3.6	0.00	0.00	0.00
3,700.0	4.45	254.32	3,698.8	-10.0	-35.7	-4.6	0.00	0.00	0.00
3,800.0	4.45	254.32	3,798.5	-12.1	-43.1	-5.6	0.00	0.00	0.00
3,900.0	4.45	254.32	3,898.2	-14.2	-50.6	-6.5	0.00	0.00	0.00
4,000.0	4.45	254.32	3,997.9	-16.3	-58.1	-7.5	0.00	0.00	0.00
4,100.0	4.45	254.32	4,097.6	-18.4	-65.5	-8.5	0.00	0.00	0.00
4,200.0	4.45	254.32	4,197.3	-20.5	-73.0	-9.4	0.00	0.00	0.00
4,300.0	4.45	254.32	4,297.0	-22.6	-80.4	-10.4	0.00	0.00	0.00
4,400.0	4.45	254.32	4,396.7	-24.7	-87.9	-11.3	0.00	0.00	0.00
4,500.0	4.45	254.32	4,496.4	-26.8	-95.4	-12.3	0.00	0.00	0.00
4,600.0	4.45	254.32	4,596.1	-28.9	-102.8	-13.3	0.00	0.00	0.00
4,700.0	4.45	254.32	4,695.8	-31.0	-110.3	-14.2	0.00	0.00	0.00
4,800.0	4.45	254.32	4,795.5	-33.1	-117.8	-15.2	0.00	0.00	0.00
4,900.0	4.45	254.32	4,895.2	-35.2	-125.2	-16.2	0.00	0.00	0.00
5,000.0	4.45	254.32	4,994.9	-37.3	-132.7	-17.1	0.00	0.00	0.00
5,100.0	4.45	254.32	5,094.6	-39.4	-140.2	-18.1	0.00	0.00	0.00
5,200.0	4.45	254.32	5,194.3	-41.4	-147.6	-19.1	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: #702H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well #702H
TVD Reference: KB = 25 @ 3277.0usft (H&P 260)
MD Reference: KB = 25 @ 3277.0usft (H&P 260)
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	4.45	254.32	5,294.0	-43.5	-155.1	-20.0	0.00	0.00	0.00
5,400.0	4.45	254.32	5,393.7	-45.6	-162.5	-21.0	0.00	0.00	0.00
5,500.0	4.45	254.32	5,493.4	-47.7	-170.0	-21.9	0.00	0.00	0.00
5,600.0	4.45	254.32	5,593.1	-49.8	-177.5	-22.9	0.00	0.00	0.00
5,700.0	4.45	254.32	5,692.8	-51.9	-184.9	-23.9	0.00	0.00	0.00
5,800.0	4.45	254.32	5,792.5	-54.0	-192.4	-24.8	0.00	0.00	0.00
5,900.0	4.45	254.32	5,892.2	-56.1	-199.9	-25.8	0.00	0.00	0.00
6,000.0	4.45	254.32	5,991.9	-58.2	-207.3	-26.8	0.00	0.00	0.00
6,100.0	4.45	254.32	6,091.6	-60.3	-214.8	-27.7	0.00	0.00	0.00
6,200.0	4.45	254.32	6,191.3	-62.4	-222.3	-28.7	0.00	0.00	0.00
6,300.0	4.45	254.32	6,291.0	-64.5	-229.7	-29.7	0.00	0.00	0.00
6,400.0	4.45	254.32	6,390.7	-66.6	-237.2	-30.6	0.00	0.00	0.00
6,500.0	4.45	254.32	6,490.4	-68.7	-244.6	-31.6	0.00	0.00	0.00
6,600.0	4.45	254.32	6,590.1	-70.8	-252.1	-32.5	0.00	0.00	0.00
6,700.0	4.45	254.32	6,689.8	-72.9	-259.6	-33.5	0.00	0.00	0.00
6,800.0	4.45	254.32	6,789.5	-75.0	-267.0	-34.5	0.00	0.00	0.00
6,900.0	4.45	254.32	6,889.2	-77.1	-274.5	-35.4	0.00	0.00	0.00
7,000.0	4.45	254.32	6,988.9	-79.2	-282.0	-36.4	0.00	0.00	0.00
7,100.0	4.45	254.32	7,088.6	-81.3	-289.4	-37.4	0.00	0.00	0.00
7,200.0	4.45	254.32	7,188.3	-83.4	-296.9	-38.3	0.00	0.00	0.00
7,300.0	4.45	254.32	7,288.0	-85.5	-304.4	-39.3	0.00	0.00	0.00
7,400.0	4.45	254.32	7,387.7	-87.6	-311.8	-40.3	0.00	0.00	0.00
7,500.0	4.45	254.32	7,487.3	-89.6	-319.3	-41.2	0.00	0.00	0.00
7,600.0	4.45	254.32	7,587.0	-91.7	-326.7	-42.2	0.00	0.00	0.00
7,700.0	4.45	254.32	7,686.7	-93.8	-334.2	-43.1	0.00	0.00	0.00
7,800.0	4.45	254.32	7,786.4	-95.9	-341.7	-44.1	0.00	0.00	0.00
7,900.0	4.45	254.32	7,886.1	-98.0	-349.1	-45.1	0.00	0.00	0.00
8,000.0	4.45	254.32	7,985.8	-100.1	-356.6	-46.0	0.00	0.00	0.00
8,100.0	4.45	254.32	8,085.5	-102.2	-364.1	-47.0	0.00	0.00	0.00
8,200.0	4.45	254.32	8,185.2	-104.3	-371.5	-48.0	0.00	0.00	0.00
8,300.0	4.45	254.32	8,284.9	-106.4	-379.0	-48.9	0.00	0.00	0.00
8,400.0	4.45	254.32	8,384.6	-108.5	-386.5	-49.9	0.00	0.00	0.00
8,500.0	4.45	254.32	8,484.3	-110.6	-393.9	-50.9	0.00	0.00	0.00
8,600.0	4.45	254.32	8,584.0	-112.7	-401.4	-51.8	0.00	0.00	0.00
8,700.0	4.45	254.32	8,683.7	-114.8	-408.8	-52.8	0.00	0.00	0.00
8,800.0	4.45	254.32	8,783.4	-116.9	-416.3	-53.7	0.00	0.00	0.00
8,900.0	4.45	254.32	8,883.1	-119.0	-423.8	-54.7	0.00	0.00	0.00
9,000.0	4.45	254.32	8,982.8	-121.1	-431.2	-55.7	0.00	0.00	0.00
9,100.0	4.45	254.32	9,082.5	-123.2	-438.7	-56.6	0.00	0.00	0.00
9,200.0	4.45	254.32	9,182.2	-125.3	-446.2	-57.6	0.00	0.00	0.00
9,300.0	4.45	254.32	9,281.9	-127.4	-453.6	-58.6	0.00	0.00	0.00
9,400.0	4.45	254.32	9,381.6	-129.5	-461.1	-59.5	0.00	0.00	0.00
9,500.0	4.45	254.32	9,481.3	-131.6	-468.6	-60.5	0.00	0.00	0.00
9,600.0	4.45	254.32	9,581.0	-133.7	-476.0	-61.5	0.00	0.00	0.00
9,700.0	4.45	254.32	9,680.7	-135.8	-483.5	-62.4	0.00	0.00	0.00
9,800.0	4.45	254.32	9,780.4	-137.8	-490.9	-63.4	0.00	0.00	0.00
9,900.0	4.45	254.32	9,880.1	-139.9	-498.4	-64.3	0.00	0.00	0.00
10,000.0	4.45	254.32	9,979.8	-142.0	-505.9	-65.3	0.00	0.00	0.00
10,100.0	4.45	254.32	10,079.5	-144.1	-513.3	-66.3	0.00	0.00	0.00
10,200.0	4.45	254.32	10,179.2	-146.2	-520.8	-67.2	0.00	0.00	0.00
10,300.0	4.45	254.32	10,278.9	-148.3	-528.3	-68.2	0.00	0.00	0.00
10,400.0	4.45	254.32	10,378.6	-150.4	-535.7	-69.2	0.00	0.00	0.00
10,500.0	4.45	254.32	10,478.3	-152.5	-543.2	-70.1	0.00	0.00	0.00
10,600.0	4.45	254.32	10,578.0	-154.6	-550.7	-71.1	0.00	0.00	0.00



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10,700.0	4.45	254.32	10,677.7	-156.7	-558.1	-72.0	0.00	0.00	0.00
10,800.0	4.45	254.32	10,777.4	-158.8	-565.6	-73.0	0.00	0.00	0.00
10,900.0	4.45	254.32	10,877.1	-160.9	-573.0	-74.0	0.00	0.00	0.00
11,000.0	4.45	254.32	10,976.8	-163.0	-580.5	-74.9	0.00	0.00	0.00
11,100.0	4.45	254.32	11,076.5	-165.1	-588.0	-75.9	0.00	0.00	0.00
11,200.0	4.45	254.32	11,176.2	-167.2	-595.4	-76.9	0.00	0.00	0.00
11,300.0	4.45	254.32	11,275.9	-169.3	-602.9	-77.8	0.00	0.00	0.00
11,400.0	4.45	254.32	11,375.6	-171.4	-610.4	-78.8	0.00	0.00	0.00
11,500.0	4.45	254.32	11,475.3	-173.5	-617.8	-79.8	0.00	0.00	0.00
11,600.0	4.45	254.32	11,575.0	-175.6	-625.3	-80.7	0.00	0.00	0.00
11,700.0	4.45	254.32	11,674.7	-177.7	-632.8	-81.7	0.00	0.00	0.00
11,800.0	4.45	254.32	11,774.4	-179.8	-640.2	-82.6	0.00	0.00	0.00
11,863.1	4.45	254.32	11,837.3	-181.1	-644.9	-83.3	0.00	0.00	0.00
11,900.0	4.98	300.04	11,874.1	-180.7	-647.7	-82.4	10.00	1.43	123.94
11,950.0	8.65	330.02	11,923.8	-176.3	-651.5	-77.6	10.00	7.36	59.96
12,000.0	13.22	340.94	11,972.8	-167.7	-655.2	-68.4	10.00	9.14	21.84
12,050.0	18.02	346.23	12,021.0	-154.7	-658.9	-55.1	10.00	9.60	10.57
12,100.0	22.91	349.33	12,067.8	-137.6	-662.6	-37.7	10.00	9.76	6.21
12,150.0	27.83	351.39	12,113.0	-116.5	-666.1	-16.3	10.00	9.84	4.11
12,200.0	32.77	352.87	12,156.1	-91.5	-669.5	8.9	10.00	9.89	2.96
12,250.0	37.73	354.00	12,197.0	-62.9	-672.8	37.8	10.00	9.92	2.26
12,300.0	42.70	354.90	12,235.1	-30.8	-675.9	70.0	10.00	9.93	1.80
12,350.0	47.67	355.64	12,270.4	4.6	-678.8	105.4	10.00	9.94	1.49
12,400.0	52.64	356.28	12,302.4	42.9	-681.5	143.6	10.00	9.95	1.27
12,450.0	57.62	356.83	12,331.0	83.8	-684.0	184.5	10.00	9.96	1.11
12,500.0	62.60	357.33	12,355.9	127.1	-686.2	227.6	10.00	9.96	1.00
12,501.7	62.77	357.35	12,356.6	128.6	-686.3	229.1	10.00	9.96	0.95
FTP(Thor 21 #702H)									
12,550.0	67.59	357.79	12,376.9	172.4	-688.1	272.7	10.00	9.97	0.91
12,600.0	72.57	358.21	12,393.9	219.3	-689.8	319.4	10.00	9.97	0.85
12,650.0	77.56	358.61	12,406.8	267.6	-691.1	367.3	10.00	9.97	0.80
12,700.0	82.54	359.00	12,415.5	316.8	-692.1	416.1	10.00	9.97	0.77
12,750.0	87.53	359.38	12,419.8	366.6	-692.8	465.5	10.00	9.97	0.75
12,780.1	90.53	359.60	12,420.3	396.7	-693.1	495.2	10.00	9.97	0.75
12,800.0	90.53	359.60	12,420.1	416.6	-693.2	515.0	0.00	0.00	0.00
12,900.0	90.53	359.60	12,419.2	516.6	-693.9	614.0	0.00	0.00	0.00
13,000.0	90.53	359.60	12,418.3	616.6	-694.6	713.0	0.00	0.00	0.00
13,100.0	90.53	359.60	12,417.4	716.6	-695.3	811.9	0.00	0.00	0.00
13,200.0	90.53	359.60	12,416.5	816.6	-696.0	910.9	0.00	0.00	0.00
13,300.0	90.53	359.60	12,415.5	916.6	-696.7	1,009.9	0.00	0.00	0.00
13,400.0	90.53	359.60	12,414.6	1,016.6	-697.4	1,108.9	0.00	0.00	0.00
13,500.0	90.53	359.60	12,413.7	1,116.6	-698.1	1,207.9	0.00	0.00	0.00
13,600.0	90.53	359.60	12,412.8	1,216.6	-698.8	1,306.9	0.00	0.00	0.00
13,700.0	90.53	359.60	12,411.9	1,316.6	-699.5	1,405.9	0.00	0.00	0.00
13,795.1	90.53	359.60	12,411.0	1,411.6	-700.2	1,500.0	0.00	0.00	0.00
TGT#1(Thor 21 #702H)									
13,800.0	90.52	359.60	12,411.0	1,416.5	-700.2	1,504.9	0.01	-0.01	0.00
13,900.0	90.51	359.60	12,410.0	1,516.5	-700.9	1,603.8	0.01	-0.01	0.00
14,000.0	90.50	359.60	12,409.2	1,616.5	-701.6	1,702.8	0.01	-0.01	0.00
14,100.0	90.49	359.60	12,408.3	1,716.5	-702.3	1,801.8	0.01	-0.01	0.00
14,200.0	90.48	359.60	12,407.4	1,816.5	-703.0	1,900.8	0.01	-0.01	0.00
14,300.0	90.47	359.60	12,406.6	1,916.5	-703.7	1,999.8	0.01	-0.01	0.00
14,400.0	90.46	359.60	12,405.8	2,016.5	-704.4	2,098.8	0.01	-0.01	0.00
14,500.0	90.45	359.60	12,405.0	2,116.5	-705.1	2,197.8	0.01	-0.01	0.00



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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)
14,600.0	90.44	359.60	12,404.2	2,216.5	-705.8	2,296.8	0.01	-0.01	0.00
14,700.0	90.43	359.60	12,403.5	2,316.5	-706.5	2,395.8	0.01	-0.01	0.00
14,800.0	90.41	359.60	12,402.8	2,416.5	-707.2	2,494.7	0.01	-0.01	0.00
14,906.3	90.40	359.60	12,402.0	2,522.8	-707.9	2,600.0	0.01	-0.01	0.00
TGT#2(Thor 21 #702H)									
14,927.8	90.83	359.60	12,401.8	2,544.3	-708.1	2,621.2	2.00	2.00	0.00
15,000.0	90.83	359.60	12,400.7	2,616.5	-708.6	2,692.7	0.00	0.00	0.00
15,100.0	90.83	359.60	12,399.3	2,716.5	-709.3	2,791.7	0.00	0.00	0.00
15,200.0	90.83	359.60	12,397.8	2,816.4	-710.0	2,890.7	0.00	0.00	0.00
15,300.0	90.83	359.60	12,396.4	2,916.4	-710.7	2,989.7	0.00	0.00	0.00
15,400.0	90.83	359.60	12,394.9	3,016.4	-711.4	3,088.6	0.00	0.00	0.00
15,500.0	90.83	359.60	12,393.5	3,116.4	-712.1	3,187.6	0.00	0.00	0.00
15,600.0	90.83	359.60	12,392.0	3,216.4	-712.8	3,286.6	0.00	0.00	0.00
15,700.0	90.83	359.60	12,390.5	3,316.4	-713.5	3,385.6	0.00	0.00	0.00
15,800.0	90.83	359.60	12,389.1	3,416.4	-714.2	3,484.6	0.00	0.00	0.00
15,900.0	90.83	359.60	12,387.6	3,516.4	-714.9	3,583.5	0.00	0.00	0.00
16,000.0	90.83	359.60	12,386.2	3,616.3	-715.6	3,682.5	0.00	0.00	0.00
16,100.0	90.83	359.60	12,384.7	3,716.3	-716.3	3,781.5	0.00	0.00	0.00
16,200.0	90.83	359.60	12,383.3	3,816.3	-717.0	3,880.5	0.00	0.00	0.00
16,219.7	90.83	359.60	12,383.0	3,836.0	-717.1	3,900.0	0.00	0.00	0.00
TGT#3(Thor 21 #702H)									
16,247.1	90.28	359.60	12,382.7	3,863.4	-717.3	3,927.1	2.00	-2.00	0.00
16,300.0	90.28	359.60	12,382.5	3,916.3	-717.7	3,979.5	0.00	0.00	0.00
16,400.0	90.28	359.60	12,382.0	4,016.3	-718.4	4,078.5	0.00	0.00	0.00
16,500.0	90.28	359.60	12,381.5	4,116.3	-719.1	4,177.5	0.00	0.00	0.00
16,600.0	90.28	359.60	12,381.0	4,216.3	-719.8	4,276.4	0.00	0.00	0.00
16,700.0	90.28	359.60	12,380.5	4,316.3	-720.5	4,375.4	0.00	0.00	0.00
16,800.0	90.28	359.60	12,380.0	4,416.3	-721.2	4,474.4	0.00	0.00	0.00
16,900.0	90.28	359.60	12,379.5	4,516.3	-721.9	4,573.4	0.00	0.00	0.00
17,000.0	90.28	359.60	12,379.0	4,616.3	-722.6	4,672.4	0.00	0.00	0.00
17,100.0	90.28	359.60	12,378.5	4,716.3	-723.3	4,771.4	0.00	0.00	0.00
17,202.7	90.28	359.60	12,378.0	4,819.0	-724.0	4,873.1	0.00	0.00	0.00
PBHL(Thor 21 #702H)									



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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
PBHL(Thor 21 #702H) - plan hits target center - Rectangle (sides W50.0 H0.0 D4,721.7)	90.00	359.60	12,378.0	4,819.0	-724.0	377,463.00	736,044.00	32° 2' 7.700 N	103° 34' 17.776 W
TGT#3(Thor 21 #702H) - plan hits target center - Point	0.00	0.00	12,383.0	3,836.0	-717.1	376,480.00	736,050.87	32° 1' 57.972 N	103° 34' 17.777 W
TGT#2(Thor 21 #702H) - plan hits target center - Point	0.00	0.00	12,402.0	2,522.8	-707.9	375,166.80	736,060.05	32° 1' 44.976 N	103° 34' 17.778 W
TGT#1(Thor 21 #702H) - plan hits target center - Point	0.00	0.00	12,411.0	1,411.6	-700.2	374,055.60	736,067.81	32° 1' 33.980 N	103° 34' 17.779 W
FTP(Thor 21 #702H) - plan misses target center by 72.3usft at 12501.7usft MD (12356.6 TVD, 128.6 N, -886.3 E) - Point	0.00	0.00	12,422.0	98.0	-691.0	372,742.00	736,077.00	32° 1' 20.980 N	103° 34' 17.780 W