

NM STATE DRILLING PERMITTING

MIS AMIGOS STATE 407H

		Deepest TVD	10037	KOP		9459	End of Curve	10427	Measured depth		15558	
Casing Type	Fluid Type	Mud Weight	Hole Size	Casing Size	Casing Grade	Casing Weight	Top MD	Setting Depth	Lead Cement	Tail Cement	Total Sks Cement	TOC
Surface	FW/Native	8.5 - 10.0	17.5	13.375	J-55 LTC	54.5	0	1250	743	289	1032	0
Intermediate	Brine / OBM	9.0-10.3	12.25	9.625	J-55 LTC	40	0	5039	776	488	1264	1710
DV Tool								1710	394	17	411	0
Production	FW/Cut Brine / OBM	9.0-10.5	8-3/4" to EOC	5.5	P110 BTC	17	0	15558	1044	1136	2180	4539
	Cut Brine / OBM	9.3	8-1/2" to TD									

1st Stage

2nd Stage

Max Expected Surface Pressure
2646

BOP
Cameron 5M Double Ram BOP
Test Pressure 5000

Total Vertical Section 5131

Contingencies

1. XTO Requests option to use OBM in Intermediate hole section
2. Should losses be seen from 9-5/8" shoe to landing point, 4-string contingency may be utilized
3. XTO requests variance to have the option to batch drill this well. XTO will set Intermediate csg, ensure cement is circulated to surface and well is dead. With floats holding, and no flow on annulus, a TA cap will be installed as per GE recommendations. XTO will contact the state before skidding to the other well. Once all surface and Intermediate are completed on the pad, XTO will begin drilling the production hole of each well.
4. DV Tool may be set in intermediate fr/ 1300' - 5000'
5. OBM may be used in production hole
6. If cmt is not circulated to surface on 5.5" casing, it will be brought at least 500' into intermediate shoe
7. 8.5" lateral may be drilled if no issues in 8.75" hole



XTO Energy

Lea County, NM (NAD-27)

Mis Amigos

#407H

OH

Plan: PERMIT

HOBBS OCD

JUL 01 2019

RECEIVED

Standard Planning Report

27 June, 2019

Created By: Matthew May Date: 14:39, June 27 2019

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
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.
Santa 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-		² Pool Code		³ Pool Name	
⁴ Property Code		⁵ Property Name MIS AMIGOS			⁶ Well Number 407H
⁷ OGRID No. 005380		⁸ Operator Name XTO ENERGY, INC.			⁹ Elevation 3,657'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	31	23 S	33 E		387	SOUTH	797	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	31	23 S	33 E		50	NORTH	350	EAST	LEA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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.

¹⁶ CORNER COORDINATES TABLE NAD 83 NME A - Y= 458,889.9 N, X= 787,144.5 E B - Y= 458,883.2 N, X= 785,825.0 E C - Y= 459,530.2 N, X= 787,128.1 E D - Y= 459,523.7 N, X= 785,807.1 E E - Y= 482,171.8 N, X= 787,108.7 E F - Y= 482,165.5 N, X= 785,789.7 E CORNER COORDINATES TABLE NAD 27 NME A - Y= 458,831.2 N, X= 725,960.7 E B - Y= 458,824.5 N, X= 724,641.2 E C - Y= 459,471.4 N, X= 725,942.4 E D - Y= 459,464.9 N, X= 724,623.4 E E - Y= 462,113.0 N, X= 725,925.0 E F - Y= 462,106.7 N, X= 724,606.0 E GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 457,273.1 X= 786,344.8 LAT.= 32.255022°N LONG.= 103.605482°W FIRST TAKE POINT NAD 83 NME Y= 456,988.2 X= 786,793.8 LAT.= 32.254231°N LONG.= 103.604016°W LAST TAKE POINT NAD 83 NME Y= 482,070.1 X= 786,759.4 LAT.= 32.268200°N LONG.= 103.604016°W BOTTOM HOLE LOCATION NAD 83 NME Y= 462,120.1 X= 786,759.1 LAT.= 32.268337°N LONG.= 103.604016°W		SEC. 31 T23S R33E LOT 1 37.99 AC LOT 2 38.06 AC LOT 3 38.12 AC LOT 4 38.19 AC GRID AZ.=359°36'45" HORIZ. DIST.=5132.10' GRID AZ.=122°24'06" HORIZ. DIST.=531.79' B.H.L. E 350' 350' L.T.P. S.H.L. 387' 797' 350' F.T.P.		¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature _____ Date _____ Printed Name _____ E-mail Address _____ ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 05-21-2019 Date of Survey Signature and Seal of Professional Surveyor: _____ MARK DILLON HARP 23786 Certificate Number RR 2018112889
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Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well #407H
Company:	XTO Energy	TVD Reference:	Ref GL @ 3657.00usft
Project:	Lea County, NM (NAD-27)	MD Reference:	Ref GL @ 3657.00usft
Site:	Mis Amigos	North Reference:	Grid
Well:	#407H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Project	Lea County, NM (NAD-27)		
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	Mis Amigos		
Site Position:		Northing:	457,160.50 usft
From:	Map	Easting:	725,352.60 usft
Position Uncertainty:	0:00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.2547479
		Longitude:	-103.6043629
		Grid Convergence:	0.39 °

Well	#407H		
Well Position	+N/-S	53.90 usft	Northing: 457,214.40 usft
	+E/-W	-191.60 usft	Easting: 725,161.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32.2548997
		Longitude:	-103.6049814
		Ground Level:	3,657.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	06/27/19	6.75
			Dip Angle (°) 60.06
			Field Strength (nT) 47,743

Design	PERMIT		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 359.61

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,375.41	7.51	154.01	2,374.33	-22.08	10.76	2.00	2.00	0.00	154.01	
9,459.37	7.51	154.01	9,397.56	-854.10	416.42	0.00	0.00	0.00	0.00	
10,427.05	90.00	359.61	10,037.00	-284.90	449.00	10.00	8.52	-15.96	-154.20	MA #407H: FTP
15,508.96	90.00	359.61	10,037.00	4,796.90	414.74	0.00	0.00	0.00	0.00	MA #407H: LTP
15,558.96	90.00	359.61	10,037.00	4,846.90	414.40	0.00	0.00	0.00	0.00	MA #407H: PBHL (°)



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Project: Lea County, NM (NAD-27)
Site: Mis Amigos
Well: #407H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #407H
TVD Reference: Ref GL @ 3657.00usft
MD Reference: Ref GL @ 3657.00usft
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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,207.00	0.00	0.00	1,207.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,707.00	0.00	0.00	1,707.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	2.00	154.01	2,099.98	-1.57	0.76	-1.57	2.00	2.00	0.00
2,200.00	4.00	154.01	2,199.84	-6.27	3.06	-6.29	2.00	2.00	0.00
2,300.00	6.00	154.01	2,299.45	-14.11	6.88	-14.15	2.00	2.00	0.00
2,375.41	7.51	154.01	2,374.33	-22.08	10.76	-22.15	2.00	2.00	0.00
2,400.00	7.51	154.01	2,398.72	-24.97	12.17	-25.05	0.00	0.00	0.00
2,500.00	7.51	154.01	2,497.86	-36.71	17.90	-36.83	0.00	0.00	0.00
2,600.00	7.51	154.01	2,597.00	-48.46	23.62	-48.62	0.00	0.00	0.00
2,700.00	7.51	154.01	2,696.14	-60.20	29.35	-60.40	0.00	0.00	0.00
2,800.00	7.51	154.01	2,795.29	-71.95	35.08	-72.18	0.00	0.00	0.00
2,900.00	7.51	154.01	2,894.43	-83.69	40.80	-83.97	0.00	0.00	0.00
3,000.00	7.51	154.01	2,993.57	-95.44	46.53	-95.75	0.00	0.00	0.00
3,100.00	7.51	154.01	3,092.71	-107.18	52.26	-107.54	0.00	0.00	0.00
3,200.00	7.51	154.01	3,191.86	-118.93	57.98	-119.32	0.00	0.00	0.00
3,300.00	7.51	154.01	3,291.00	-130.67	63.71	-131.10	0.00	0.00	0.00
3,400.00	7.51	154.01	3,390.14	-142.42	69.44	-142.89	0.00	0.00	0.00
3,500.00	7.51	154.01	3,489.28	-154.16	75.16	-154.67	0.00	0.00	0.00
3,600.00	7.51	154.01	3,588.43	-165.91	80.89	-166.45	0.00	0.00	0.00
3,700.00	7.51	154.01	3,687.57	-177.65	86.61	-178.24	0.00	0.00	0.00
3,800.00	7.51	154.01	3,786.71	-189.40	92.34	-190.02	0.00	0.00	0.00
3,900.00	7.51	154.01	3,885.86	-201.14	98.07	-201.81	0.00	0.00	0.00
4,000.00	7.51	154.01	3,985.00	-212.89	103.79	-213.59	0.00	0.00	0.00
4,100.00	7.51	154.01	4,084.14	-224.63	109.52	-225.37	0.00	0.00	0.00
4,200.00	7.51	154.01	4,183.28	-236.38	115.25	-237.16	0.00	0.00	0.00
4,300.00	7.51	154.01	4,282.43	-248.12	120.97	-248.94	0.00	0.00	0.00
4,400.00	7.51	154.01	4,381.57	-259.87	126.70	-260.73	0.00	0.00	0.00
4,500.00	7.51	154.01	4,480.71	-271.61	132.43	-272.51	0.00	0.00	0.00
4,576.95	7.51	154.01	4,557.00	-280.65	136.83	-281.58	0.00	0.00	0.00
Base Salt									



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Site:	Mis Amigos	North Reference:	Grid
Well:	#407H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	7.51	154.01	4,579.85	-283.36	138.15	-284.29	0.00	0.00	0.00
4,700.00	7.51	154.01	4,679.00	-295.10	143.88	-296.08	0.00	0.00	0.00
4,800.00	7.51	154.01	4,778.14	-306.85	149.60	-307.86	0.00	0.00	0.00
4,900.00	7.51	154.01	4,877.28	-318.59	155.33	-319.64	0.00	0.00	0.00
5,000.00	7.51	154.01	4,976.42	-330.34	161.06	-331.43	0.00	0.00	0.00
5,081.27	7.51	154.01	5,057.00	-339.89	165.71	-341.01	0.00	0.00	0.00
Delaware									
5,100.00	7.51	154.01	5,075.57	-342.08	166.78	-343.21	0.00	0.00	0.00
5,200.00	7.51	154.01	5,174.71	-353.83	172.51	-355.00	0.00	0.00	0.00
5,300.00	7.51	154.01	5,273.85	-365.57	178.24	-366.78	0.00	0.00	0.00
5,400.00	7.51	154.01	5,372.99	-377.32	183.96	-378.56	0.00	0.00	0.00
5,500.00	7.51	154.01	5,472.14	-389.07	189.69	-390.35	0.00	0.00	0.00
5,600.00	7.51	154.01	5,571.28	-400.81	195.41	-402.13	0.00	0.00	0.00
5,700.00	7.51	154.01	5,670.42	-412.56	201.14	-413.91	0.00	0.00	0.00
5,800.00	7.51	154.01	5,769.57	-424.30	206.87	-425.70	0.00	0.00	0.00
5,900.00	7.51	154.01	5,868.71	-436.05	212.59	-437.48	0.00	0.00	0.00
6,000.00	7.51	154.01	5,967.85	-447.79	218.32	-449.27	0.00	0.00	0.00
6,100.00	7.51	154.01	6,066.99	-459.54	224.05	-461.05	0.00	0.00	0.00
6,200.00	7.51	154.01	6,166.14	-471.28	229.77	-472.83	0.00	0.00	0.00
6,300.00	7.51	154.01	6,265.28	-483.03	235.50	-484.62	0.00	0.00	0.00
6,400.00	7.51	154.01	6,364.42	-494.77	241.23	-496.40	0.00	0.00	0.00
6,500.00	7.51	154.01	6,463.56	-506.52	246.95	-508.19	0.00	0.00	0.00
6,600.00	7.51	154.01	6,562.71	-518.26	252.68	-519.97	0.00	0.00	0.00
6,700.00	7.51	154.01	6,661.85	-530.01	258.40	-531.75	0.00	0.00	0.00
6,800.00	7.51	154.01	6,760.99	-541.75	264.13	-543.54	0.00	0.00	0.00
6,900.00	7.51	154.01	6,860.13	-553.50	269.86	-555.32	0.00	0.00	0.00
7,000.00	7.51	154.01	6,959.28	-565.24	275.58	-567.10	0.00	0.00	0.00
7,100.00	7.51	154.01	7,058.42	-576.99	281.31	-578.89	0.00	0.00	0.00
7,200.00	7.51	154.01	7,157.56	-588.73	287.04	-590.67	0.00	0.00	0.00
7,300.00	7.51	154.01	7,256.70	-600.48	292.76	-602.46	0.00	0.00	0.00
7,400.00	7.51	154.01	7,355.85	-612.22	298.49	-614.24	0.00	0.00	0.00
7,500.00	7.51	154.01	7,454.99	-623.97	304.22	-626.02	0.00	0.00	0.00
7,600.00	7.51	154.01	7,554.13	-635.71	309.94	-637.81	0.00	0.00	0.00
7,700.00	7.51	154.01	7,653.28	-647.46	315.67	-649.59	0.00	0.00	0.00
7,800.00	7.51	154.01	7,752.42	-659.20	321.39	-661.38	0.00	0.00	0.00
7,900.00	7.51	154.01	7,851.56	-670.95	327.12	-673.16	0.00	0.00	0.00
8,000.00	7.51	154.01	7,950.70	-682.69	332.85	-684.94	0.00	0.00	0.00
8,100.00	7.51	154.01	8,049.85	-694.44	338.57	-696.73	0.00	0.00	0.00
8,200.00	7.51	154.01	8,148.99	-706.18	344.30	-708.51	0.00	0.00	0.00
8,300.00	7.51	154.01	8,248.13	-717.93	350.03	-720.29	0.00	0.00	0.00
8,400.00	7.51	154.01	8,347.27	-729.67	355.75	-732.08	0.00	0.00	0.00
8,500.00	7.51	154.01	8,446.42	-741.42	361.48	-743.86	0.00	0.00	0.00
8,600.00	7.51	154.01	8,545.56	-753.16	367.20	-755.65	0.00	0.00	0.00
8,700.00	7.51	154.01	8,644.70	-764.91	372.93	-767.43	0.00	0.00	0.00
8,800.00	7.51	154.01	8,743.84	-776.65	378.66	-779.21	0.00	0.00	0.00
8,900.00	7.51	154.01	8,842.99	-788.40	384.38	-791.00	0.00	0.00	0.00
9,000.00	7.51	154.01	8,942.13	-800.14	390.11	-802.78	0.00	0.00	0.00
9,015.00	7.51	154.01	8,957.00	-801.91	390.97	-804.55	0.00	0.00	0.00
Bone Spring									
9,100.00	7.51	154.01	9,041.27	-811.89	395.84	-814.57	0.00	0.00	0.00
9,146.12	7.51	154.01	9,087.00	-817.31	398.48	-820.00	0.00	0.00	0.00
Avalon									
9,200.00	7.51	154.01	9,140.41	-823.63	401.56	-826.35	0.00	0.00	0.00



Planning Report

Database: EDM 5000.1.13 Single User Db
Company: XTO Energy
Project: Lea County, NM (NAD-27)
Site: Mis Amigos
Well: #407H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #407H
TVD Reference: Ref GL @ 3657.00usft
MD Reference: Ref GL @ 3657.00usft
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)	Buird Rate (°/100usft)	Turn Rate (°/100usft)
9,300.00	7.51	154.01	9,239.56	-835.38	407.29	-838.13	0.00	0.00	0.00
9,400.00	7.51	154.01	9,338.70	-847.13	413.02	-849.92	0.00	0.00	0.00
9,459.37	7.51	154.01	9,397.56	-854.10	416.42	-856.91	0.00	0.00	0.00
9,500.00	4.23	129.33	9,437.98	-857.44	418.74	-860.27	10.00	-8.06	-60.75
9,550.00	3.99	54.43	9,487.88	-857.60	421.58	-860.45	10.00	-0.50	-149.79
9,600.00	7.99	23.56	9,537.61	-853.40	424.39	-856.27	10.00	8.00	-61.74
9,650.00	12.71	14.24	9,586.79	-844.88	427.13	-847.76	10.00	9.45	-18.65
9,700.00	17.59	9.96	9,635.03	-832.09	429.79	-835.00	10.00	9.75	-8.55
9,750.00	22.52	7.51	9,681.99	-815.15	432.35	-818.07	10.00	9.86	-4.91
9,800.00	27.47	5.90	9,727.29	-794.17	434.79	-797.11	10.00	9.91	-3.21
9,850.00	32.44	4.75	9,770.60	-769.31	437.09	-772.27	10.00	9.93	-2.29
9,900.00	37.42	3.88	9,811.58	-740.78	439.23	-743.75	10.00	9.95	-1.74
9,950.00	42.40	3.19	9,849.92	-708.77	441.20	-711.76	10.00	9.96	-1.39
10,000.00	47.38	2.62	9,885.33	-673.54	442.98	-676.54	10.00	9.97	-1.14
10,050.00	52.37	2.13	9,917.55	-635.35	444.56	-638.36	10.00	9.97	-0.97
10,100.00	57.35	1.70	9,946.32	-594.50	445.92	-597.52	10.00	9.98	-0.85
10,150.00	62.34	1.32	9,971.42	-551.29	447.06	-554.32	10.00	9.98	-0.76
10,200.00	67.33	0.98	9,992.67	-506.06	447.97	-509.10	10.00	9.98	-0.69
10,250.00	72.33	0.65	10,009.91	-459.15	448.63	-462.19	10.00	9.98	-0.65
10,300.00	77.32	0.35	10,023.00	-410.91	449.05	-413.96	10.00	9.98	-0.61
10,350.00	82.31	0.05	10,031.84	-361.71	449.22	-364.76	10.00	9.98	-0.59
10,400.00	87.30	359.77	10,036.36	-311.93	449.15	-314.98	10.00	9.98	-0.57
10,427.05	90.00	359.61	10,037.00	-284.90	449.00	-287.95	10.00	9.98	-0.57
LP									
10,500.00	90.00	359.61	10,037.00	-211.95	448.51	-214.99	0.00	0.00	0.00
10,600.00	90.00	359.61	10,037.00	-111.95	447.83	-114.99	0.00	0.00	0.00
10,700.00	90.00	359.61	10,037.00	-11.95	447.16	-14.99	0.00	0.00	0.00
10,800.00	90.00	359.61	10,037.00	88.05	446.49	85.01	0.00	0.00	0.00
10,900.00	90.00	359.61	10,037.00	188.04	445.81	185.01	0.00	0.00	0.00
11,000.00	90.00	359.61	10,037.00	288.04	445.14	285.01	0.00	0.00	0.00
11,100.00	90.00	359.61	10,037.00	388.04	444.46	385.01	0.00	0.00	0.00
11,200.00	90.00	359.61	10,037.00	488.04	443.79	485.01	0.00	0.00	0.00
11,300.00	90.00	359.61	10,037.00	588.03	443.11	585.01	0.00	0.00	0.00
11,400.00	90.00	359.61	10,037.00	688.03	442.44	685.01	0.00	0.00	0.00
11,500.00	90.00	359.61	10,037.00	788.03	441.77	785.01	0.00	0.00	0.00
11,600.00	90.00	359.61	10,037.00	888.03	441.09	885.01	0.00	0.00	0.00
11,700.00	90.00	359.61	10,037.00	988.03	440.42	985.01	0.00	0.00	0.00
11,800.00	90.00	359.61	10,037.00	1,088.02	439.74	1,085.01	0.00	0.00	0.00
11,900.00	90.00	359.61	10,037.00	1,188.02	439.07	1,185.01	0.00	0.00	0.00
12,000.00	90.00	359.61	10,037.00	1,288.02	438.39	1,285.01	0.00	0.00	0.00
12,100.00	90.00	359.61	10,037.00	1,388.02	437.72	1,385.01	0.00	0.00	0.00
12,200.00	90.00	359.61	10,037.00	1,488.01	437.05	1,485.01	0.00	0.00	0.00
12,300.00	90.00	359.61	10,037.00	1,588.01	436.37	1,585.01	0.00	0.00	0.00
12,400.00	90.00	359.61	10,037.00	1,688.01	435.70	1,685.01	0.00	0.00	0.00
12,500.00	90.00	359.61	10,037.00	1,788.01	435.02	1,785.01	0.00	0.00	0.00
12,600.00	90.00	359.61	10,037.00	1,888.01	434.35	1,885.01	0.00	0.00	0.00
12,700.00	90.00	359.61	10,037.00	1,988.00	433.68	1,985.01	0.00	0.00	0.00
12,800.00	90.00	359.61	10,037.00	2,088.00	433.00	2,085.01	0.00	0.00	0.00
12,900.00	90.00	359.61	10,037.00	2,188.00	432.33	2,185.01	0.00	0.00	0.00
13,000.00	90.00	359.61	10,037.00	2,288.00	431.65	2,285.01	0.00	0.00	0.00
13,100.00	90.00	359.61	10,037.00	2,387.99	430.98	2,385.01	0.00	0.00	0.00
13,200.00	90.00	359.61	10,037.00	2,487.99	430.30	2,485.01	0.00	0.00	0.00
13,300.00	90.00	359.61	10,037.00	2,587.99	429.63	2,585.01	0.00	0.00	0.00
13,400.00	90.00	359.61	10,037.00	2,687.99	428.96	2,685.01	0.00	0.00	0.00



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Project:	Lea County, NM (NAD-27)	MD Reference:	Ref GL @ 3657.00usft
Site:	Mis Amigos	North Reference:	Grid
Well:	#407H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

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)
13,500.00	90.00	359.61	10,037.00	2,787.98	428.28	2,785.01	0.00	0.00	0.00
13,600.00	90.00	359.61	10,037.00	2,887.98	427.61	2,885.01	0.00	0.00	0.00
13,700.00	90.00	359.61	10,037.00	2,987.98	426.93	2,985.01	0.00	0.00	0.00
13,800.00	90.00	359.61	10,037.00	3,087.98	426.26	3,085.01	0.00	0.00	0.00
13,900.00	90.00	359.61	10,037.00	3,187.98	425.58	3,185.01	0.00	0.00	0.00
14,000.00	90.00	359.61	10,037.00	3,287.97	424.91	3,285.01	0.00	0.00	0.00
14,100.00	90.00	359.61	10,037.00	3,387.97	424.24	3,385.01	0.00	0.00	0.00
14,200.00	90.00	359.61	10,037.00	3,487.97	423.56	3,485.01	0.00	0.00	0.00
14,300.00	90.00	359.61	10,037.00	3,587.97	422.89	3,585.01	0.00	0.00	0.00
14,400.00	90.00	359.61	10,037.00	3,687.96	422.21	3,685.01	0.00	0.00	0.00
14,500.00	90.00	359.61	10,037.00	3,787.96	421.54	3,785.01	0.00	0.00	0.00
14,600.00	90.00	359.61	10,037.00	3,887.96	420.87	3,885.01	0.00	0.00	0.00
14,700.00	90.00	359.61	10,037.00	3,987.96	420.19	3,985.01	0.00	0.00	0.00
14,800.00	90.00	359.61	10,037.00	4,087.96	419.52	4,085.01	0.00	0.00	0.00
14,900.00	90.00	359.61	10,037.00	4,187.95	418.84	4,185.01	0.00	0.00	0.00
15,000.00	90.00	359.61	10,037.00	4,287.95	418.17	4,285.01	0.00	0.00	0.00
15,100.00	90.00	359.61	10,037.00	4,387.95	417.49	4,385.01	0.00	0.00	0.00
15,200.00	90.00	359.61	10,037.00	4,487.95	416.82	4,485.01	0.00	0.00	0.00
15,300.00	90.00	359.61	10,037.00	4,587.94	416.15	4,585.01	0.00	0.00	0.00
15,400.00	90.00	359.61	10,037.00	4,687.94	415.47	4,685.01	0.00	0.00	0.00
15,508.96	90.00	359.61	10,037.00	4,796.90	414.74	4,793.97	0.00	0.00	0.00
15,558.96	90.00	359.61	10,037.00	4,846.90	414.40	4,843.97	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
MA #407H: SHL (387' - hit/miss target - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	457,214.40	725,161.00	32.2548997	-103.6049814
MA #407H: FTP - plan hits target center - Point	0.00	0.00	10,037.00	-284.90	449.00	456,929.50	725,610.00	32.2541082	-103.6035354
MA #407H: LTP - plan misses target center by 0.04usft at 15508.96usft MD (10037.00 TVD, 4796.90 N, 414.74 E) - Point	0.00	0.00	10,037.00	4,796.90	414.70	462,011.30	725,575.70	32.2680774	-103.6035345
MA #407H: PBHL (50' - plan hits target center - Point	0.00	0.00	10,037.00	4,846.90	414.40	462,061.30	725,575.40	32.2682149	-103.6035344



Planning Report

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Project: Lea County, NM (NAD-27)
Site: Mis Amigos
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Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #407H
TVD Reference: Ref GL @ 3657.00usft
MD Reference: Ref GL @ 3657.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,207.00	1,207.00	Rustler			
1,707.00	1,707.00	Top Salt			
4,576.95	4,557.00	Base Salt			
5,081.27	5,057.00	Delaware			
9,015.00	8,957.00	Bone Spring			
9,146.12	9,087.00	Avalon			
10,427.05	10,037.00	LP			