

Survey Report Landscape

Company:	XTO Energy	Local Co-ordinate Reference:	Well Mis Amigos State 108H - Slot MAS 108H
Project:	Lea County, NM (NAD27) NMEZ US	TVD Reference:	3659+18 @ 3677.00usft (Prec525)
Site:	Mis Amigos State	MD Reference:	3659+18 @ 3677.00usft (Prec525)
Well:	Mis Amigos State 108H	North Reference:	Grid
Wellbore:	MAS 108H	Survey Calculation Method:	Minimum Curvature
Design:	MAS 108H (AsDrilled)	Database:	STRYKER_EDM

Project	Lea County, NM (NAD27) NMEZ US		
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 State		
Site Position:		Northing:	457,195.20 usft
From:	Map	Easting:	725,498.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	32.25484056
		Longitude:	-103.60388889
		Grid Convergence:	0.39 °

Well Mis Amigos State 108H - Slot MAS 108H						
Well Position	+N/-S	0.00 usft	Northing:	457,195.20 usft	Latitude:	32.25484056
	+E/-W	0.00 usft	Easting:	725,498.90 usft	Longitude:	-103.60388889
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,659.00 usft

Wellbore	MAS 108H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	01/07/19	6.80	60.07	47,791.05578118

Design MAS 108H (AsDrilled)				
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.61

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Wellbore: MAS 108H
Design: MAS 108H (AsDrilled)

Local Co-ordinate Reference: Well Mis Amigos State 108H - Slot MAS 108H
TVD Reference: 3659+18 @ 3677.00usft (Prec525)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STRYKER_EDM

Survey Program **Date** 02/07/19

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
167.00	11,760.00	Survey #1 (MAS 108H)	MWD	OWSG MWD - Standard
11,821.00	17,383.00	Survey #2 (MAS 108H)	MWD	OWSG MWD - Standard
17,433.00	17,433.00	Survey #3 (MAS 108H)	Projection	Projection

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	457,195.20	725,498.90
MAS 108H SHL - STATE1 OFFSET - SNAKEWEED OFFSET										
167.00	1.10	103.20	166.99	-0.37	1.56	1.60	103.20	0.66	457,194.83	725,500.46
258.00	1.50	85.20	257.97	-0.47	3.60	3.63	97.38	0.62	457,194.73	725,502.50
352.00	1.20	87.50	351.94	-0.32	5.81	5.82	93.15	0.32	457,194.88	725,504.71
413.00	1.20	98.60	412.93	-0.39	7.08	7.09	93.14	0.38	457,194.81	725,505.98
475.00	1.70	74.10	474.91	-0.23	8.60	8.61	91.55	1.27	457,194.97	725,507.50
536.00	1.40	66.70	535.89	0.31	10.16	10.16	88.25	0.59	457,195.51	725,509.06
600.00	1.10	70.40	599.87	0.83	11.45	11.48	85.88	0.49	457,196.03	725,510.35
651.00	1.50	66.50	650.86	1.26	12.53	12.59	84.28	0.80	457,196.46	725,511.43
713.00	1.50	67.10	712.84	1.89	14.02	14.15	82.30	0.03	457,197.09	725,512.92
838.00	1.10	94.00	837.80	2.45	16.72	16.90	81.67	0.58	457,197.65	725,515.62
927.00	1.30	89.80	926.78	2.39	18.59	18.74	82.67	0.25	457,197.59	725,517.49
1,017.00	1.30	85.00	1,016.76	2.48	20.62	20.77	83.13	0.12	457,197.68	725,519.52
1,107.00	1.30	81.10	1,106.74	2.73	22.65	22.81	83.12	0.10	457,197.93	725,521.55
1,205.00	1.20	86.20	1,204.72	2.97	24.77	24.95	83.16	0.15	457,198.17	725,523.67
1,346.00	0.80	37.60	1,345.70	3.85	26.85	27.12	81.84	0.64	457,199.05	725,525.75
1,435.00	0.60	58.00	1,434.69	4.59	27.62	28.00	80.57	0.36	457,199.79	725,526.52
1,525.00	0.80	36.60	1,524.68	5.34	28.39	28.89	79.34	0.36	457,200.54	725,527.29
1,614.00	0.80	41.08	1,613.67	6.31	29.17	29.85	77.80	0.07	457,201.51	725,528.07
1,704.00	1.10	33.87	1,703.66	7.50	30.07	30.99	75.99	0.36	457,202.70	725,528.97

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Wellbore:	MAS 108H	Survey Calculation Method:	Minimum Curvature
Design:	MAS 108H (AsDrilled)	Database:	STRYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
1,794.00	1.00	26.40	1,793.65	8.92	30.90	32.16	73.89	0.19	457,204.12	725,529.80
1,883.00	0.80	52.10	1,882.64	10.00	31.73	33.27	72.51	0.50	457,205.20	725,530.63
1,973.00	1.00	31.80	1,972.62	11.05	32.64	34.46	71.30	0.41	457,206.25	725,531.54
2,062.00	1.20	96.70	2,061.61	11.60	33.98	35.90	71.15	1.34	457,206.80	725,532.88
2,152.00	0.90	101.30	2,151.60	11.35	35.61	37.37	72.31	0.35	457,206.55	725,534.51
2,242.00	0.70	97.40	2,241.59	11.15	36.85	38.49	73.17	0.23	457,206.35	725,535.75
2,331.00	0.70	110.70	2,330.58	10.88	37.89	39.42	73.98	0.18	457,206.08	725,536.79
2,421.00	0.80	113.70	2,420.57	10.44	38.98	40.36	75.01	0.12	457,205.64	725,537.88
2,510.00	1.00	111.40	2,509.56	9.90	40.27	41.47	76.19	0.23	457,205.10	725,539.17
2,600.00	1.20	99.00	2,599.55	9.47	41.94	42.99	77.28	0.34	457,204.67	725,540.84
2,690.00	0.90	111.70	2,689.53	9.06	43.52	44.46	78.24	0.42	457,204.26	725,542.42
2,779.00	0.90	111.40	2,778.52	8.55	44.82	45.63	79.20	0.01	457,203.75	725,543.72
2,869.00	1.00	108.40	2,868.51	8.04	46.23	46.92	80.13	0.12	457,203.24	725,545.13
2,958.00	0.90	89.60	2,957.50	7.80	47.66	48.30	80.70	0.37	457,203.00	725,546.56
3,048.00	1.30	118.10	3,047.48	7.33	49.27	49.81	81.54	0.74	457,202.53	725,548.17
3,138.00	1.60	122.80	3,137.45	6.16	51.23	51.60	83.14	0.36	457,201.36	725,550.13
3,227.00	1.80	124.80	3,226.41	4.69	53.42	53.63	84.98	0.23	457,199.89	725,552.32
3,317.00	1.70	129.60	3,316.37	3.04	55.61	55.69	86.88	0.20	457,198.24	725,554.51
3,406.00	1.50	128.10	3,405.33	1.47	57.54	57.56	88.53	0.23	457,196.67	725,556.44
3,496.00	1.60	115.10	3,495.30	0.21	59.61	59.61	89.79	0.41	457,195.41	725,558.51
3,585.00	1.50	114.10	3,584.27	-0.79	61.80	61.80	90.73	0.12	457,194.41	725,560.70
3,675.00	1.40	120.70	3,674.24	-1.83	63.82	63.84	91.64	0.22	457,193.37	725,562.72
3,765.00	1.80	111.70	3,764.20	-2.91	66.08	66.14	92.53	0.52	457,192.29	725,564.98
3,854.00	1.60	115.40	3,853.17	-3.96	68.50	68.61	93.31	0.26	457,191.24	725,567.40
3,944.00	1.90	126.50	3,943.12	-5.39	70.83	71.04	94.35	0.50	457,189.81	725,569.73
4,033.00	1.70	118.10	4,032.08	-6.89	73.18	73.51	95.38	0.37	457,188.31	725,572.08
4,123.00	1.90	124.30	4,122.04	-8.36	75.59	76.05	96.31	0.31	457,186.84	725,574.49

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STRYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
4,212.00	1.80	119.00	4,210.99	-9.87	78.03	78.65	97.21	0.22	457,185.33	725,576.93
4,301.00	2.06	127.00	4,299.94	-11.51	80.53	81.35	98.13	0.42	457,183.69	725,579.43
4,391.00	2.50	139.00	4,389.87	-13.96	83.11	84.28	99.54	0.72	457,181.24	725,582.01
4,480.00	2.90	141.90	4,478.77	-17.20	85.78	87.48	101.34	0.47	457,178.00	725,584.68
4,570.00	2.29	148.04	4,568.68	-20.52	88.13	90.49	103.11	0.74	457,174.68	725,587.03
4,660.00	3.00	145.14	4,658.58	-23.98	90.43	93.55	104.85	0.80	457,171.22	725,589.33
4,750.00	2.90	152.80	4,748.46	-27.93	92.82	96.93	106.75	0.45	457,167.27	725,591.72
4,929.00	1.89	169.22	4,927.30	-34.86	95.44	101.61	110.07	0.68	457,160.34	725,594.34
5,018.00	1.36	173.00	5,016.27	-37.35	95.84	102.86	111.29	0.61	457,157.85	725,594.74
5,034.00	1.36	174.00	5,032.26	-37.73	95.89	103.04	111.48	0.15	457,157.47	725,594.79
5,143.00	1.67	188.10	5,141.23	-40.59	95.80	104.04	112.96	0.44	457,154.61	725,594.70
5,233.00	1.71	189.70	5,231.19	-43.21	95.39	104.72	114.37	0.07	457,151.99	725,594.29
5,322.00	1.58	194.36	5,320.15	-45.71	94.86	105.29	115.73	0.21	457,149.49	725,593.76
5,412.00	1.23	185.57	5,410.12	-47.87	94.46	105.89	116.88	0.46	457,147.33	725,593.36
5,502.00	1.01	160.00	5,500.11	-49.58	94.63	106.83	117.65	0.60	457,145.62	725,593.53
5,591.00	1.19	168.60	5,589.09	-51.22	95.08	108.00	118.31	0.27	457,143.98	725,593.98
5,681.00	0.79	177.05	5,679.08	-52.75	95.30	108.93	118.97	0.47	457,142.45	725,594.20
5,771.00	1.05	174.59	5,769.06	-54.20	95.41	109.73	119.60	0.29	457,141.00	725,594.31
5,860.00	0.62	176.78	5,858.06	-55.49	95.51	110.46	120.15	0.48	457,139.71	725,594.41
5,950.00	0.84	175.82	5,948.05	-56.63	95.59	111.11	120.64	0.24	457,138.57	725,594.49
6,040.00	0.62	217.89	6,038.04	-57.67	95.34	111.43	121.17	0.63	457,137.53	725,594.24
6,129.00	0.44	202.62	6,127.04	-58.37	94.91	111.42	121.59	0.26	457,136.83	725,593.81
6,219.00	0.48	218.02	6,217.03	-58.99	94.55	111.44	121.96	0.14	457,136.21	725,593.45
6,308.00	0.88	216.95	6,306.03	-59.83	93.91	111.34	122.50	0.45	457,135.37	725,592.81
6,398.00	0.62	228.46	6,396.02	-60.70	93.13	111.16	123.10	0.33	457,134.50	725,592.03
6,488.00	0.53	200.78	6,486.02	-61.41	92.61	111.13	123.55	0.32	457,133.79	725,591.51
6,577.00	0.84	236.90	6,575.01	-62.15	91.92	110.96	124.07	0.58	457,133.05	725,590.82

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6,667.00	0.26	206.90	6,665.01	-62.70	91.28	110.74	124.48	0.70	457,132.50	725,590.18	
6,757.00	0.18	54.60	6,755.01	-62.80	91.30	110.81	124.52	0.48	457,132.40	725,590.20	
6,846.00	0.09	335.73	6,844.01	-62.65	91.38	110.80	124.43	0.21	457,132.55	725,590.28	
6,936.00	0.40	211.85	6,934.00	-62.85	91.19	110.75	124.58	0.51	457,132.35	725,590.09	
7,026.00	0.31	212.11	7,024.00	-63.33	90.89	110.78	124.87	0.10	457,131.87	725,589.79	
7,116.00	0.62	191.55	7,114.00	-64.01	90.67	110.99	125.22	0.39	457,131.19	725,589.57	
7,205.00	1.50	203.59	7,202.98	-65.55	90.11	111.43	126.04	1.01	457,129.65	725,589.01	
7,295.00	1.50	199.00	7,292.95	-67.74	89.25	112.05	127.20	0.13	457,127.46	725,588.15	
7,385.00	2.24	199.46	7,382.90	-70.52	88.28	112.99	128.62	0.82	457,124.68	725,587.18	
7,474.00	2.55	190.67	7,471.83	-74.10	87.33	114.54	130.31	0.54	457,121.10	725,586.23	
7,564.00	3.12	179.50	7,561.72	-78.52	86.99	117.18	132.07	0.88	457,116.68	725,585.89	
7,654.00	2.99	180.90	7,651.59	-83.31	86.97	120.44	133.77	0.17	457,111.89	725,585.87	
7,743.00	3.30	171.50	7,740.46	-88.17	87.31	124.09	135.28	0.67	457,107.03	725,586.21	
7,833.00	3.03	179.16	7,830.32	-93.11	87.73	127.93	136.70	0.56	457,102.09	725,586.63	
7,922.00	2.99	174.15	7,919.20	-97.77	88.00	131.54	138.01	0.30	457,097.43	725,586.90	
8,012.00	2.37	172.21	8,009.10	-101.95	88.49	135.00	139.04	0.70	457,093.25	725,587.39	
8,102.00	2.51	164.48	8,099.02	-105.69	89.27	138.35	139.81	0.40	457,089.51	725,588.17	
8,191.00	2.51	173.79	8,187.93	-109.51	90.00	141.75	140.58	0.46	457,085.69	725,588.90	
8,281.00	2.73	172.04	8,277.84	-113.59	90.51	145.24	141.45	0.26	457,081.61	725,589.41	
8,371.00	2.37	173.09	8,367.75	-117.56	91.03	148.69	142.25	0.40	457,077.64	725,589.93	
8,460.00	2.68	165.97	8,456.66	-121.40	91.76	152.18	142.92	0.49	457,073.80	725,590.66	
8,550.00	2.68	168.78	8,546.56	-125.51	92.68	156.02	143.56	0.15	457,069.69	725,591.58	
8,639.00	2.15	162.46	8,635.48	-129.14	93.59	159.49	144.07	0.67	457,066.06	725,592.49	
8,729.00	2.20	162.62	8,725.42	-132.40	94.61	162.73	144.45	0.06	457,062.80	725,593.51	
8,819.00	1.80	169.58	8,815.36	-135.44	95.38	165.66	144.84	0.52	457,059.76	725,594.28	
8,908.00	2.07	165.53	8,904.31	-138.37	96.04	168.43	145.24	0.34	457,056.83	725,594.94	
8,998.00	2.90	179.24	8,994.23	-142.22	96.48	171.86	145.85	1.13	457,052.98	725,595.38	

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9,087.00	2.64	174.76	9,083.12	-146.51	96.69	175.54	146.58	0.38	457,048.69	725,595.59
9,177.00	1.89	186.54	9,173.05	-150.05	96.71	178.52	147.20	0.98	457,045.15	725,595.61
9,267.00	1.98	194.45	9,263.00	-153.03	96.16	180.73	147.86	0.31	457,042.17	725,595.06
9,356.00	2.46	186.71	9,351.94	-156.42	95.55	183.29	148.58	0.63	457,038.78	725,594.45
9,446.00	2.55	191.81	9,441.85	-160.30	94.91	186.29	149.37	0.27	457,034.90	725,593.81
9,536.00	2.02	195.24	9,531.78	-163.79	94.09	188.89	150.12	0.61	457,031.41	725,592.99
9,625.00	1.27	197.70	9,620.74	-166.24	93.37	190.67	150.68	0.85	457,028.96	725,592.27
9,715.00	0.88	225.65	9,710.73	-167.67	92.58	191.53	151.10	0.71	457,027.53	725,591.48
9,805.00	0.88	256.59	9,800.72	-168.32	91.41	191.54	151.49	0.52	457,026.88	725,590.31
9,894.00	1.05	267.57	9,889.70	-168.51	89.93	191.00	151.91	0.28	457,026.69	725,588.83
9,984.00	0.70	272.46	9,979.69	-168.52	88.56	190.37	152.28	0.40	457,026.68	725,587.46
10,074.00	1.49	242.52	10,069.68	-169.04	86.97	190.10	152.77	1.06	457,026.16	725,585.87
10,163.00	1.49	235.05	10,158.65	-170.23	85.00	190.27	153.47	0.22	457,024.97	725,583.90
10,253.00	1.85	212.82	10,248.61	-172.12	83.25	191.20	154.19	0.82	457,023.08	725,582.15
10,338.00	2.20	203.15	10,333.55	-174.78	81.86	193.00	154.90	0.57	457,020.42	725,580.76
10,428.00	3.87	189.50	10,423.43	-179.36	80.68	196.67	155.78	2.01	457,015.84	725,579.58
10,517.00	5.14	186.19	10,512.15	-186.29	79.76	202.64	156.82	1.46	457,008.91	725,578.66
10,607.00	4.92	188.21	10,601.80	-194.12	78.77	209.49	157.91	0.31	457,001.08	725,577.67
10,697.00	4.79	189.00	10,691.48	-201.65	77.63	216.07	158.94	0.16	456,993.55	725,576.53
10,786.00	4.62	192.16	10,780.18	-208.82	76.30	222.32	159.93	0.35	456,986.38	725,575.20
10,876.00	5.67	190.05	10,869.82	-216.74	74.76	229.27	160.97	1.19	456,978.46	725,573.66
10,966.00	6.77	193.57	10,959.29	-226.28	72.74	237.68	162.18	1.29	456,968.92	725,571.64
11,056.00	6.29	188.56	11,048.70	-236.31	70.76	246.68	163.33	0.83	456,958.89	725,569.66
11,145.00	6.24	183.81	11,137.17	-245.96	69.71	255.64	164.18	0.58	456,949.24	725,568.61
11,235.00	5.80	181.35	11,226.68	-255.38	69.28	264.61	164.82	0.57	456,939.82	725,568.18
11,324.00	5.49	186.36	11,315.24	-264.11	68.70	272.90	165.42	0.65	456,931.09	725,567.60
11,414.00	4.97	191.20	11,404.87	-272.21	67.47	280.45	166.08	0.76	456,922.99	725,566.37

Survey Report Landscape

Company:	XTO Energy	Local Co-ordinate Reference:	Well Mis Amigos State 108H - Slot MAS 108H
Project:	Lea County, NM (NAD27) NMEZ US	TVD Reference:	3659+18 @ 3677.00usft (Prec525)
Site:	Mis Amigos State	MD Reference:	3659+18 @ 3677.00usft (Prec525)
Well:	Mis Amigos State 108H	North Reference:	Grid
Wellbore:	MAS 108H	Survey Calculation Method:	Minimum Curvature
Design:	MAS 108H (AsDrilled)	Database:	STRYKER_EDM

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)	
11,504.00	5.71	203.40	11,494.48	-280.15	64.93	287.57	166.95	1.50	456,915.05	725,563.83	
11,593.00	5.76	209.92	11,583.04	-288.08	60.95	294.46	168.05	0.73	456,907.12	725,559.85	
11,683.00	5.93	214.58	11,672.57	-295.82	56.05	301.09	169.27	0.56	456,899.38	725,554.95	
11,760.00	5.67	218.44	11,749.18	-302.08	51.43	306.42	170.34	0.61	456,893.12	725,550.33	
11,821.00	4.31	234.57	11,809.95	-305.77	47.69	309.46	171.13	3.18	456,889.43	725,546.59	
First Stryker Survey											
11,884.00	4.53	318.77	11,872.81	-305.27	44.12	308.44	171.78	9.41	456,889.93	725,543.02	
11,916.00	8.44	326.24	11,904.60	-302.36	41.98	305.26	172.10	12.47	456,892.84	725,540.88	
11,947.00	13.45	341.45	11,935.04	-297.05	39.57	299.67	172.41	18.52	456,898.15	725,538.47	
11,978.00	14.86	326.24	11,965.10	-290.32	36.21	292.57	172.89	12.79	456,904.88	725,535.11	
12,010.00	16.40	336.26	11,995.93	-282.78	32.11	284.59	173.52	9.70	456,912.42	725,531.01	
12,041.00	19.16	349.80	12,025.46	-273.76	29.45	275.34	173.86	15.98	456,921.44	725,528.35	
12,072.00	22.20	355.25	12,054.46	-262.91	28.06	264.40	173.91	11.60	456,932.29	725,526.96	
12,104.00	23.78	359.55	12,083.92	-250.43	27.51	251.94	173.73	7.20	456,944.77	725,526.41	
12,135.00	25.27	1.14	12,112.12	-237.57	27.59	239.16	173.38	5.26	456,957.63	725,526.49	
12,167.00	25.14	2.10	12,141.07	-223.95	27.98	225.69	172.88	1.34	456,971.25	725,526.88	
12,198.00	22.68	4.48	12,169.41	-211.40	28.68	213.34	172.27	8.52	456,983.80	725,527.58	
12,229.00	23.78	10.28	12,197.90	-199.29	30.27	201.58	171.36	8.18	456,995.91	725,529.17	
12,260.00	28.57	7.82	12,225.71	-185.79	32.39	188.60	170.11	15.84	457,009.41	725,531.29	
12,292.00	34.33	8.34	12,253.00	-169.27	34.74	172.80	168.40	18.02	457,025.93	725,533.64	
12,323.00	38.99	8.70	12,277.86	-150.97	37.49	155.56	166.05	15.05	457,044.23	725,536.39	
12,354.00	41.19	7.99	12,301.58	-131.22	40.38	137.29	162.89	7.25	457,063.98	725,539.28	
12,386.00	42.68	7.82	12,325.38	-110.04	43.32	118.26	158.51	4.67	457,085.16	725,542.22	
12,417.00	44.22	11.16	12,347.89	-89.02	46.85	100.59	152.25	8.92	457,106.18	725,545.75	
12,438.97	45.90	12.93	12,363.41	-73.81	50.09	89.21	145.84	9.54	457,121.39	725,548.99	
MAS 108H FTP_100FSL_350FEL											
12,449.00	46.68	13.70	12,370.34	-66.76	51.76	84.47	142.21	9.54	457,128.44	725,550.66	

Survey Report Landscape

Company:	XTO Energy	Local Co-ordinate Reference:	Well Mis Amigos State 108H - Slot MAS 108H
Project:	Lea County, NM (NAD27) NMEZ US	TVD Reference:	3659+18 @ 3677.00usft (Prec525)
Site:	Mis Amigos State	MD Reference:	3659+18 @ 3677.00usft (Prec525)
Well:	Mis Amigos State 108H	North Reference:	Grid
Wellbore:	MAS 108H	Survey Calculation Method:	Minimum Curvature
Design:	MAS 108H (AsDrilled)	Database:	STRYKER_EDM

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
12,480.00	49.32	13.09	12,391.08	-44.35	57.10	72.30	127.84	8.64	457,150.85	725,556.00
12,512.00	52.09	11.42	12,411.35	-20.15	62.35	65.52	107.91	9.55	457,175.05	725,561.25
12,543.00	56.97	8.70	12,429.33	4.70	66.74	66.90	85.97	17.29	457,199.90	725,565.64
12,574.00	60.09	7.20	12,445.51	30.88	70.39	76.86	66.31	10.88	457,226.08	725,569.29
12,606.00	62.90	6.67	12,460.78	58.80	73.78	94.34	51.45	8.90	457,254.00	725,572.68
12,637.00	66.59	6.59	12,474.01	86.64	77.02	115.92	41.63	11.91	457,281.84	725,575.92
12,669.00	72.00	8.08	12,485.32	116.32	80.84	141.65	34.80	17.46	457,311.52	725,579.74
12,700.00	75.25	8.61	12,494.06	145.74	85.16	168.80	30.30	10.61	457,340.94	725,584.06
12,731.00	77.27	8.61	12,501.42	175.51	89.67	197.09	27.06	6.52	457,370.71	725,588.57
12,763.00	79.16	8.70	12,507.95	206.48	94.38	227.03	24.57	5.91	457,401.68	725,593.28
12,794.00	81.49	8.52	12,513.16	236.69	98.96	256.54	22.69	7.54	457,431.89	725,597.86
12,825.00	82.51	5.53	12,517.48	267.15	102.71	286.22	21.03	10.10	457,462.35	725,601.61
12,872.00	80.84	0.87	12,524.29	313.57	105.31	330.78	18.56	10.43	457,508.77	725,604.21
12,927.00	81.49	358.24	12,532.74	367.91	104.89	382.57	15.91	4.87	457,563.11	725,603.79
12,966.00	85.23	356.92	12,537.24	406.61	103.25	419.51	14.25	10.16	457,601.81	725,602.15
13,029.00	93.80	353.31	12,537.78	469.31	97.89	479.41	11.78	14.76	457,664.51	725,596.79
13,060.00	95.12	353.23	12,535.37	500.00	94.27	508.81	10.68	4.27	457,695.20	725,593.17
13,092.00	94.37	354.63	12,532.72	531.71	90.89	539.42	9.70	4.95	457,726.91	725,589.79
13,123.00	93.85	356.21	12,530.50	562.53	88.43	569.44	8.93	5.35	457,757.73	725,587.33
13,155.00	93.58	356.57	12,528.42	594.40	86.42	600.65	8.27	1.40	457,789.60	725,585.32
13,249.00	92.53	356.74	12,523.42	688.11	80.94	692.85	6.71	1.13	457,883.31	725,579.84
13,343.00	92.66	357.01	12,519.16	781.87	75.82	785.54	5.54	0.32	457,977.07	725,574.72
13,399.00	92.44	356.92	12,516.67	837.74	72.86	840.90	4.97	0.42	458,032.94	725,571.76
13,420.00	92.66	356.92	12,515.73	858.69	71.73	861.68	4.78	1.05	458,053.89	725,570.63
13,514.00	92.22	358.06	12,511.73	952.51	67.62	954.91	4.06	1.30	458,147.71	725,566.52
13,609.00	90.42	357.62	12,509.54	1,047.41	64.04	1,049.37	3.50	1.95	458,242.61	725,562.94
13,703.00	89.67	358.85	12,509.47	1,141.36	61.14	1,143.00	3.07	1.53	458,336.56	725,560.04

Survey Report Landscape

Company: XTO Energy
Project: Lea County, NM (NAD27) NMEZ US
Site: Mis Amigos State
Well: Mis Amigos State 108H
Wellbore: MAS 108H
Design: MAS 108H (AsDrilled)

Local Co-ordinate Reference: Well Mis Amigos State 108H - Slot MAS 108H
TVD Reference: 3659+18 @ 3677.00usft (Prec525)
MD Reference: 3659+18 @ 3677.00usft (Prec525)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STRYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
13,797.00	90.46	359.47	12,509.36	1,235.35	59.76	1,236.80	2.77	1.07	458,430.55	725,558.66
13,891.00	91.12	359.64	12,508.07	1,329.34	59.03	1,330.65	2.54	0.73	458,524.54	725,557.93
13,985.00	91.47	359.91	12,505.94	1,423.32	58.67	1,424.52	2.36	0.47	458,618.52	725,557.57
14,079.00	91.12	0.43	12,503.82	1,517.29	58.94	1,518.44	2.22	0.67	458,712.49	725,557.84
14,173.00	91.38	0.96	12,501.77	1,611.26	60.08	1,612.38	2.14	0.63	458,806.46	725,558.98
14,268.00	91.69	1.75	12,499.22	1,706.20	62.33	1,707.34	2.09	0.89	458,901.40	725,561.23
14,362.00	91.03	0.61	12,496.99	1,800.15	64.26	1,801.30	2.04	1.40	458,995.35	725,563.16
14,457.00	90.37	2.37	12,495.83	1,895.11	66.74	1,896.28	2.02	1.98	459,090.31	725,565.64
14,552.00	85.63	1.22	12,499.15	1,989.97	69.71	1,991.19	2.01	5.13	459,185.17	725,568.61
14,645.00	86.64	1.05	12,505.41	2,082.74	71.55	2,083.97	1.97	1.10	459,277.94	725,570.45
14,739.00	88.04	0.87	12,509.78	2,176.63	73.12	2,177.85	1.92	1.50	459,371.83	725,572.02
14,851.00	88.44	1.84	12,513.22	2,288.54	75.77	2,289.79	1.90	0.94	459,483.74	725,574.67
14,945.00	92.44	1.22	12,512.49	2,382.48	78.28	2,383.77	1.88	4.31	459,577.68	725,577.18
15,039.00	91.43	1.49	12,509.32	2,476.40	80.50	2,477.71	1.86	1.11	459,671.60	725,579.40
15,134.00	91.96	2.19	12,506.51	2,571.31	83.55	2,572.67	1.86	0.92	459,766.51	725,582.45
15,228.00	91.78	2.37	12,503.44	2,665.19	87.29	2,666.62	1.88	0.27	459,860.39	725,586.19
15,322.00	92.04	0.43	12,500.31	2,759.10	89.58	2,760.56	1.86	2.08	459,954.30	725,588.48
15,416.00	91.60	359.47	12,497.32	2,853.05	89.50	2,854.46	1.80	1.12	460,048.25	725,588.40
15,510.00	91.21	358.68	12,495.02	2,947.01	87.98	2,948.33	1.71	0.94	460,142.21	725,586.88
15,604.00	89.85	357.97	12,494.15	3,040.97	85.23	3,042.16	1.61	1.63	460,236.17	725,584.13
15,698.00	91.82	358.76	12,492.78	3,134.91	82.55	3,136.00	1.51	2.26	460,330.11	725,581.45
15,792.00	88.84	356.48	12,492.24	3,228.81	78.65	3,229.77	1.40	3.99	460,424.01	725,577.55
15,886.00	88.53	355.95	12,494.40	3,322.58	72.45	3,323.37	1.25	0.65	460,517.78	725,571.35
15,980.00	89.93	356.83	12,495.66	3,416.38	66.53	3,417.03	1.12	1.76	460,611.58	725,565.43
16,075.00	92.04	357.45	12,494.03	3,511.25	61.79	3,511.79	1.01	2.31	460,706.45	725,560.69
16,169.00	89.27	356.39	12,492.95	3,605.09	56.74	3,605.54	0.90	3.16	460,800.29	725,555.64
16,264.00	90.02	356.21	12,493.54	3,699.89	50.61	3,700.24	0.78	0.81	460,895.09	725,549.51

Survey Report Landscape

Company:	XTO Energy	Local Co-ordinate Reference:	Well Mis Amigos State 108H - Slot MAS 108H
Project:	Lea County, NM (NAD27) NMEZ US	TVD Reference:	3659+18 @ 3677.00usft (Prec525)
Site:	Mis Amigos State	MD Reference:	3659+18 @ 3677.00usft (Prec525)
Well:	Mis Amigos State 108H	North Reference:	Grid
Wellbore:	MAS 108H	Survey Calculation Method:	Minimum Curvature
Design:	MAS 108H (AsDrilled)	Database:	STRYKER_EDM

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100ft)	Northing (usft)	Easting (usft)
16,357.00	90.02	357.45	12,493.51	3,792.75	45.47	3,793.02	0.69	1.33	460,987.95	725,544.37
16,451.00	89.27	357.09	12,494.09	3,886.64	40.99	3,886.86	0.60	0.89	461,081.84	725,539.89
16,546.00	90.07	358.06	12,494.64	3,981.55	36.97	3,981.72	0.53	1.32	461,176.75	725,535.87
16,639.00	88.13	359.99	12,496.10	4,074.52	35.39	4,074.67	0.50	2.94	461,269.72	725,534.29
16,733.00	88.31	0.61	12,499.02	4,168.47	35.88	4,168.62	0.49	0.69	461,363.67	725,534.78
16,827.00	90.37	2.63	12,500.10	4,262.42	38.54	4,262.59	0.52	3.07	461,457.62	725,537.44
16,921.00	91.21	0.96	12,498.80	4,356.36	41.48	4,356.55	0.55	1.99	461,551.56	725,540.38
17,016.00	91.65	359.64	12,496.43	4,451.32	41.98	4,451.52	0.54	1.46	461,646.52	725,540.88
17,109.00	93.93	0.26	12,491.91	4,544.21	41.90	4,544.40	0.53	2.54	461,739.41	725,540.80
17,203.00	93.14	2.72	12,486.11	4,637.99	44.34	4,638.20	0.55	2.74	461,833.19	725,543.24
17,297.00	92.04	3.77	12,481.86	4,731.74	49.65	4,732.00	0.60	1.62	461,926.94	725,548.55
17,383.00	90.29	3.07	12,480.11	4,817.56	54.78	4,817.88	0.65	2.19	462,012.76	725,553.68
17,384.00	90.29	3.07	12,480.11	4,818.56	54.83	4,818.87	0.65	0.00	462,013.76	725,553.73
Wellpath Crosses LTP - MAS 108H LTP_100FNL_350FEL										
17,433.00	90.29	3.07	12,479.86	4,867.49	57.46	4,867.83	0.68	0.00	462,062.69	725,556.36
TD @ 51FNL,363FEL - MAS 108H PBHL_50FNL_350FEL										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,821.00	11,809.95	-305.77	47.69	First Stryker Survey
17,384.00	12,480.11	4,818.56	54.83	Wellpath Crosses LTP
17,433.00	12,479.86	4,867.49	57.46	TD @ 51FNL,363FEL

Checked By: _____ Approved By: _____ Date: _____