

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 21 2017

RECEIVED

Marathon Oil Permian, LLC

Eddy County, NM (NAD27)

Malaga Prospect

Southern Comfort B-36 State X 2H

OH

30-015-414328

Survey: SDISurvey #1

Standard Survey Report

21 September, 2017

Provide Signature Page for
Directional Survey



Scientific Drilling

www.scientificdrilling.com

Survey Report

Company:	Marathon Oil Permian, LLC	Well:	Southern Comfort 25-36 State X 2H
Project:	Eddy County, NM (NAD27)	KB=28' @ 2940.00usft (Patterson 244)	
Site:	Malaga Prospect	KB=28' @ 2940.00usft (Patterson 244)	
Well:	Southern Comfort 25-36 State X 2H	Grid	
Wellbore:	OH	Minimum Curvature	
Design:	OH	Midland District	

Project:	Eddy County, NM (NAD27)		
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		Using geodetic scale factor

Site:	Malaga Prospect		
Site Position:		Northing:	432,193.80 usft
From:	Map	Easting:	591,057.80 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 16.351 N
		Longitude:	104° 2' 20.372 W
		Grid Convergence:	0.16 °

Well:	Southern Comfort 25-36 State X 2H		
Well Position	+N-S	0.00 usft	Northing:
	+E-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 11' 15.486 N
		Longitude:	104° 2' 7.899 W
		Ground Level:	2,912.00 usft

Wellbore:	OH		
Mag/Dec:			
	HDGM	8/17/2017	7.20
			60.02
			48,093

Design:	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth from (ft)	0.00	180.00
		0.00	0.00
		0.00	0.00
		0.00	180.00

Survey Point:			
	64.70	406.40 Gyrodata Gyro (OH)	Gyrodata Gyro
	512.00	17,080.00 SDI Survey #1 (OH)	MWD+HDGM
			Gyrocompass Gyro
			OWSG MWD + HDGM

Survey Point:			
	406.40	2.38	281.58
	512.00	2.73	278.97
	602.00	2.97	283.11
	693.00	2.06	285.88
	784.00	0.60	286.18
	875.00	1.04	159.54
	967.00	0.78	139.50
	1,057.00	0.93	181.19
	1,149.00	0.91	164.42
	1,240.00	0.57	85.32
	406.08	2.94	406.08
	511.58	3.78	511.58
	601.47	4.64	601.47
	692.38	5.62	692.38
	783.35	6.20	783.35
	874.35	5.56	874.35
	966.34	4.30	966.34
	1,056.33	3.11	1,056.33
	1,148.31	1.66	1,148.31
	1,239.31	1.00	1,239.31
	-14.78	-2.94	0.00
	-19.42	-3.78	0.35
	-23.80	-4.64	0.35
	-27.67	-5.62	1.01
	-29.70	-6.20	1.60
	-29.87	-5.56	1.62
	-29.17	-4.30	0.44
	-28.79	-3.11	0.69
	-28.61	-1.66	0.29
	-27.97	-1.00	1.07
	0.00	0.00	0.00
	0.35	0.33	-2.47
	0.27	4.60	3.04
	-1.00	3.04	0.33
	-1.60	-139.16	-21.78
	0.48	-21.78	46.32
	-0.28	-18.23	-86.92
	0.17	-86.92	
	-0.02		
	-0.37		

Survey Report

Marathon Oil Permian, LLC
Eddy County, NM (NAD27)
Malaga Prospect
Southern Comfort 25-36 State X 2H
OH
OH

Well Southern Comfort 25-36 State X 2H
KB=28' @ 2940.00usft (Patterson 244)
KB=28' @ 2940.00usft (Patterson 244)
Grid
Minimum Curvature
Midland District

1,331.00	0.55	101.82	1,330.30	0.94	-27.09	-0.94	0.18	-0.02	18.13
1,421.00	0.67	59.38	1,420.30	1.12	-26.21	-1.12	0.51	0.13	-47.16
1,512.00	0.65	77.83	1,511.29	1.50	-25.25	-1.50	0.23	-0.02	20.27
1,606.00	0.03	66.38	1,605.29	1.63	-24.71	-1.63	0.66	-0.66	-12.18
1,701.00	0.47	166.23	1,700.29	1.26	-24.59	-1.26	0.50	0.46	105.11
1,796.00	0.60	171.87	1,795.29	0.39	-24.43	-0.39	0.15	0.14	5.94
1,891.00	0.73	114.23	1,890.28	-0.35	-23.80	0.35	0.69	0.14	-60.67
1,985.00	2.17	121.70	1,984.25	-1.53	-21.74	1.53	1.54	1.53	7.95
2,080.00	3.07	121.07	2,079.15	-3.79	-18.04	3.79	0.95	0.95	-0.66
2,174.00	3.30	124.03	2,173.00	-6.61	-13.64	6.61	0.30	0.24	3.15
2,268.00	3.29	113.57	2,266.85	-9.20	-8.92	9.20	0.64	-0.01	-11.13
2,363.00	2.98	113.57	2,361.71	-11.28	-4.16	11.28	0.33	-0.33	0.00
2,457.00	3.88	121.34	2,455.54	-13.91	0.80	13.91	1.08	0.96	8.27
2,551.00	2.22	119.98	2,549.40	-16.47	5.09	16.47	1.77	-1.77	-1.45
2,606.00	0.57	91.40	2,604.38	-17.01	6.29	17.01	3.17	-3.00	-51.96
2,745.00	0.68	22.01	2,743.38	-16.26	7.29	16.26	0.52	0.08	-49.92
2,841.00	0.51	63.24	2,839.37	-15.54	7.88	15.54	0.47	-0.18	42.95
2,936.00	0.88	47.07	2,934.37	-14.85	8.79	14.85	0.44	0.39	-17.02
3,031.00	0.78	30.91	3,029.36	-13.80	9.66	13.80	0.27	-0.11	-17.01
3,125.00	1.15	41.38	3,123.34	-12.55	10.61	12.55	0.43	0.39	11.14
3,220.00	1.18	50.94	3,218.32	-11.21	12.00	11.21	0.21	0.03	10.06
3,315.00	1.33	47.70	3,313.30	-9.86	13.58	9.86	0.17	0.16	-3.41
3,409.00	1.26	44.36	3,407.28	-8.38	15.11	8.38	0.11	-0.07	-3.55
3,504.00	1.13	26.02	3,502.26	-6.79	16.25	6.79	0.42	-0.14	-19.31
3,599.00	0.81	32.60	3,597.24	-5.39	17.02	5.39	0.36	-0.34	6.93
3,693.00	0.71	38.84	3,691.23	-4.37	17.74	4.37	0.14	-0.11	6.64
3,787.00	0.70	20.79	3,785.23	-3.38	18.31	3.38	0.24	-0.01	-19.20
3,882.00	0.83	30.36	3,880.22	-2.25	18.87	2.25	0.19	0.14	10.07
3,976.00	0.52	23.49	3,974.21	-1.27	19.38	1.27	0.34	-0.33	-7.31
4,070.00	0.47	6.46	4,068.21	-0.49	19.59	0.49	0.16	-0.05	-18.12
4,164.00	0.60	357.88	4,162.20	0.38	19.62	-0.38	0.16	0.14	-9.13
4,258.00	0.48	19.71	4,256.20	1.24	19.73	-1.24	0.25	-0.13	23.22
4,353.00	0.34	2.15	4,351.20	1.90	19.88	-1.90	0.20	-0.15	-18.48
4,447.00	0.26	340.99	4,445.20	2.38	19.82	-2.38	0.14	-0.09	-22.51
4,541.00	0.47	4.88	4,539.19	2.97	19.78	-2.97	0.27	0.22	25.41
4,635.00	0.65	341.74	4,633.19	3.86	19.65	-3.86	0.30	0.19	-24.62
4,730.00	0.64	1.48	4,728.18	4.90	19.49	-4.90	0.23	-0.01	20.78
4,824.00	0.48	344.63	4,822.18	5.80	19.40	-5.80	0.24	-0.17	-17.93
4,919.00	0.15	358.16	4,917.18	6.31	19.29	-6.31	0.35	-0.35	14.24
5,013.00	0.29	266.31	5,011.18	6.42	19.05	-6.42	0.35	0.15	-97.71
5,107.00	0.17	229.36	5,105.18	6.31	18.71	-6.31	0.20	-0.13	-39.31
5,201.00	0.61	239.90	5,199.17	5.97	18.17	-5.97	0.47	0.47	11.21
5,296.00	0.52	264.92	5,294.17	5.68	17.30	-5.68	0.27	-0.09	26.34

Survey Report

Company	Marathon Oil Permian, LLC	Well Southern Comfort 25-36 State X 2H
Project	Eddy County, NM (NAD27)	KB=28' @ 2940.00usft (Patterson 244)
Site	Malaga Prospect	KB=28' @ 2940.00usft (Patterson 244)
Well	Southern Comfort 25-36 State X 2H	Grid
Wellbore	OH	Minimum Curvature
Design	OH	Midland District

5,390.00	0.85	242.22	5,388.16	5.32	16.26	-5.32	0.45	0.35	-24.15
5,484.00	0.64	221.82	5,482.16	4.60	15.29	-4.60	0.36	-0.22	-21.70
5,578.00	0.89	228.13	5,576.15	3.72	14.40	-3.72	0.28	0.27	6.71
5,673.00	0.91	218.98	5,671.13	2.64	13.38	-2.64	0.15	0.02	-9.63
5,767.00	1.31	219.68	5,765.12	1.24	12.22	-1.24	0.43	0.43	0.74
5,861.00	1.27	228.13	5,859.09	-0.29	10.76	0.29	0.21	-0.04	8.99
5,955.00	1.38	120.36	5,953.08	-1.55	10.96	1.55	2.28	0.12	-114.65
6,049.00	1.56	123.03	6,047.05	-2.82	13.01	2.82	0.20	0.19	2.84
6,143.00	2.87	99.25	6,140.98	-3.90	16.40	3.90	1.67	1.39	-25.30
6,238.00	2.84	103.43	6,235.86	-4.83	21.04	4.83	0.22	-0.03	4.40
6,333.00	3.87	83.75	6,330.70	-5.03	26.52	5.03	1.61	1.08	-20.72
6,427.00	4.78	62.55	6,424.44	-2.88	33.15	2.88	1.94	0.97	-22.55
6,521.00	7.74	58.26	6,517.87	2.26	42.01	-2.26	3.19	3.15	-4.56
6,615.00	8.91	67.73	6,610.88	8.35	54.13	-8.35	1.91	1.24	10.07
6,709.00	9.22	77.06	6,703.71	12.80	68.20	-12.80	1.60	0.33	9.93
6,803.00	10.35	68.05	6,796.35	17.64	83.38	-17.64	2.02	1.20	-9.59
6,898.00	10.13	67.85	6,889.83	23.98	99.03	-23.98	0.23	-0.23	-0.21
6,992.00	9.14	67.21	6,982.51	29.99	113.57	-29.99	1.06	-1.05	-0.68
7,086.00	10.70	83.39	7,075.12	33.88	129.13	-33.88	3.38	1.66	17.21
7,181.00	10.13	86.12	7,168.55	35.47	146.22	-35.47	0.79	-0.60	2.87
7,275.00	12.02	87.40	7,260.80	36.47	164.25	-36.47	2.03	2.01	1.36
7,369.00	17.57	87.21	7,351.64	37.60	188.22	-37.60	5.90	5.90	-0.20
7,463.00	18.31	86.64	7,441.07	39.16	217.13	-39.16	0.81	0.79	-0.61
7,558.00	16.91	83.13	7,531.62	41.69	245.74	-41.69	1.85	-1.47	-3.69
7,652.00	14.97	79.72	7,622.00	45.49	271.27	-45.49	2.29	-2.06	-3.63
7,746.00	16.14	78.72	7,712.56	50.21	296.03	-50.21	1.28	1.24	-1.06
7,841.00	19.64	81.47	7,802.95	55.17	324.77	-55.17	3.79	3.68	2.89
7,935.00	19.14	87.47	7,891.63	58.19	355.79	-58.19	2.18	-0.53	6.38
8,030.00	18.59	81.18	7,981.54	61.20	386.32	-61.20	2.22	-0.58	-6.62
8,124.00	15.63	73.66	8,071.38	67.06	413.29	-67.06	3.93	-3.15	-8.00
8,218.00	18.51	73.93	8,161.23	74.75	439.78	-74.75	3.06	3.06	0.29
8,312.00	17.68	73.94	8,250.58	82.83	467.84	-82.83	0.88	-0.88	0.01
8,407.00	15.72	72.42	8,341.57	90.71	493.97	-90.71	2.11	-2.06	-1.60
8,502.00	16.81	75.80	8,432.77	97.97	519.56	-97.97	1.52	1.15	3.56
8,596.00	18.12	79.07	8,522.43	104.08	547.09	-104.08	1.74	1.39	3.48
8,689.00	16.23	87.06	8,611.29	107.49	574.27	-107.49	3.25	-2.03	8.59
8,784.00	14.39	88.38	8,702.92	108.50	599.33	-108.50	1.97	-1.94	1.39
8,877.00	15.16	101.07	8,792.87	106.49	622.83	-106.49	3.57	0.83	13.65
8,971.00	17.15	110.75	8,883.17	99.22	647.86	-99.22	3.56	2.12	10.30
9,065.00	14.75	109.59	8,973.54	90.30	672.09	-90.30	2.58	-2.55	-1.23
9,082.00	13.54	109.57	8,990.03	88.90	676.01	-88.90	7.12	-7.12	-0.12
9,155.00	14.55	115.14	9,060.85	82.15	692.36	-82.15	2.31	1.38	7.63
9,186.00	16.10	118.25	9,090.74	78.46	699.67	-78.46	5.66	5.00	10.03

Survey Report

Company:	Marathon Oil Permian, LLC	Well:	Southern Comfort 25-36 State X 2H
Project:	Eddy County, NM (NAD27)	KB=28' @ 2940.00usft (Patterson 244)	
Site:	Malaga Prospect	KB=28' @ 2940.00usft (Patterson 244)	
Well:	Southern Comfort 25-36 State X 2H	Grid	
Well:	OH	Minimum Curvature	
Driller:	OH	Midland District	

Survey									
9,249.00	13.36	130.47	9,151.68	69.59	712.91	-69.59	6.55	-4.35	19.40
9,294.00	15.56	130.40	9,195.25	62.31	721.46	-62.31	4.89	4.89	-0.16
9,343.00	18.74	133.63	9,242.07	52.61	732.17	-52.61	6.77	6.49	6.59
9,388.00	23.70	136.50	9,284.01	41.06	743.64	-41.06	11.26	11.02	6.38
9,437.00	29.48	137.01	9,327.81	25.08	758.65	-25.08	11.81	11.80	1.04
9,482.00	34.10	138.37	9,366.05	7.54	774.59	-7.54	10.39	10.27	3.02
9,532.00	38.99	140.14	9,406.20	-15.02	793.99	15.02	10.00	9.78	3.54
9,577.00	42.28	144.50	9,440.36	-38.22	811.86	38.22	9.65	7.31	9.69
9,626.00	44.73	148.54	9,475.90	-66.36	830.44	66.36	7.56	5.00	8.24
9,671.00	46.84	155.48	9,507.30	-94.82	845.53	94.82	12.00	4.69	15.42
9,720.00	50.12	157.49	9,539.78	-128.46	860.15	128.46	7.36	6.69	4.10
9,765.00	52.30	164.60	9,567.99	-161.60	871.49	161.60	13.23	4.84	15.80
9,815.00	53.29	172.81	9,598.25	-200.60	879.26	200.60	13.22	1.98	16.42
9,822.17	53.43	173.73	9,602.54	-206.32	879.94	206.32	10.45	1.92	12.80
PP [State X 2H]									
9,860.00	54.27	178.51	9,624.86	-236.78	882.00	236.78	10.45	2.23	12.64
9,885.00	56.80	180.95	9,639.01	-257.38	882.09	257.38	12.93	10.12	9.76
9,964.00	60.45	180.59	9,680.13	-324.81	881.19	324.81	4.64	4.62	-0.46
10,058.00	61.42	176.80	9,725.81	-406.93	883.07	406.93	3.67	1.03	-4.03
10,139.00	67.22	173.21	9,760.90	-479.60	889.48	479.60	8.20	7.16	-4.43
10,153.00	68.05	173.46	9,766.23	-492.46	890.98	492.46	6.15	5.93	1.79
10,199.00	72.71	172.85	9,781.67	-535.47	896.15	535.47	10.21	10.13	-1.33
10,216.00	75.78	172.91	9,786.29	-551.70	898.17	551.70	18.06	18.06	0.35
10,248.00	81.04	172.53	9,792.71	-582.79	902.15	582.79	16.48	16.44	-1.19
10,279.00	85.44	174.90	9,796.36	-613.38	905.51	613.38	16.10	14.19	7.65
10,311.00	90.34	177.97	9,797.54	-645.28	907.50	645.28	18.06	15.31	9.59
10,342.00	91.81	178.95	9,796.96	-676.26	908.33	676.26	5.70	4.74	3.16
10,436.00	91.67	176.62	9,794.10	-770.14	911.96	770.14	2.48	-0.15	-2.48
10,531.00	95.01	177.58	9,788.57	-864.84	916.76	864.84	3.66	3.52	1.01
10,625.00	94.39	178.66	9,780.87	-958.47	919.83	958.47	1.32	-0.66	1.15
10,719.00	94.04	181.57	9,773.96	-1,052.21	919.65	1,052.21	3.11	-0.37	3.10
10,813.00	94.13	183.82	9,767.26	-1,145.86	915.24	1,145.86	2.39	0.10	2.39
10,907.00	92.02	181.29	9,762.22	-1,239.62	911.06	1,239.62	3.50	-2.24	-2.69
11,002.00	89.06	181.06	9,761.32	-1,334.59	909.11	1,334.59	3.13	-3.12	-0.24
11,096.00	93.60	182.22	9,759.14	-1,428.50	906.42	1,428.50	4.98	4.83	1.23
11,191.00	90.30	180.87	9,755.91	-1,523.39	903.86	1,523.39	3.75	-3.47	-1.42
11,286.00	89.63	180.25	9,755.97	-1,618.38	902.93	1,618.38	0.96	-0.71	-0.65
11,380.00	89.23	180.89	9,756.90	-1,712.37	902.00	1,712.37	0.80	-0.43	0.68
11,474.00	89.09	180.21	9,758.28	-1,806.36	901.10	1,806.36	0.74	-0.15	-0.72
11,569.00	88.99	180.38	9,759.87	-1,901.35	900.61	1,901.35	0.21	-0.11	0.18
11,664.00	89.97	180.57	9,760.73	-1,996.34	899.82	1,996.34	1.05	1.03	0.20
11,758.00	88.76	180.90	9,761.77	-2,090.32	898.61	2,090.32	1.33	-1.29	0.35
11,853.00	90.37	179.80	9,762.50	-2,185.31	898.03	2,185.31	2.05	1.69	-1.16
11,948.00	89.93	179.68	9,762.25	-2,280.31	898.46	2,280.31	0.48	-0.46	-0.13

Survey Report

Company	Marathon Oil Permian, LLC	Well	Southern Comfort 25-36 State X 2H
County	Eddy County, NM (NAD27)	KB=28' @ 2940.00usft (Patterson 244)	
Site	Malaga Prospect	KB=28' @ 2940.00usft (Patterson 244)	
Well	Southern Comfort 25-36 State X 2H	Grid	
OH	OH	Minimum Curvature	
OH	OH	Midland District	

Station	Station	Station	Station	Station	Station	Station	Station	Station	Station
12,041.00	89.26	179.87	9,762.90	-2,373.31	898.83	2,373.31	0.75	-0.72	0.20
12,135.00	89.73	180.31	9,763.73	-2,467.30	898.68	2,467.30	0.68	0.50	0.47
12,230.00	92.55	181.20	9,761.84	-2,562.27	897.43	2,562.27	3.11	2.97	0.94
12,324.00	91.24	180.36	9,758.73	-2,656.20	896.15	2,656.20	1.66	-1.39	-0.89
12,419.00	90.60	180.20	9,757.21	-2,751.19	895.69	2,751.19	0.69	-0.67	-0.17
12,513.00	89.30	181.67	9,757.29	-2,845.17	894.15	2,845.17	2.09	-1.38	1.56
12,607.00	91.20	181.88	9,756.88	-2,939.12	891.24	2,939.12	2.03	2.02	0.22
12,701.00	90.13	182.17	9,755.79	-3,033.05	887.92	3,033.05	1.18	-1.14	0.31
12,796.00	90.34	180.04	9,755.40	-3,128.03	886.09	3,128.03	2.25	0.22	-2.24
12,891.00	89.77	179.09	9,755.31	-3,223.03	886.81	3,223.03	1.17	-0.60	-1.00
12,986.00	90.00	179.01	9,755.50	-3,318.01	888.39	3,318.01	0.26	0.24	-0.08
13,081.00	90.50	178.73	9,755.09	-3,412.99	890.26	3,412.99	0.60	0.53	-0.29
13,176.00	88.18	178.93	9,756.18	-3,507.96	892.20	3,507.96	2.45	-2.44	0.21
13,270.00	91.18	179.64	9,756.70	-3,601.94	893.37	3,601.94	3.28	3.19	0.76
13,365.00	90.81	180.48	9,755.06	-3,696.92	893.27	3,696.92	0.97	-0.39	0.88
13,459.00	90.17	180.77	9,754.25	-3,790.92	892.25	3,790.92	0.75	-0.68	0.31
13,554.00	89.56	180.50	9,754.48	-3,885.91	891.19	3,885.91	0.70	-0.64	-0.28
13,649.00	90.77	181.25	9,754.20	-3,980.89	889.74	3,980.89	1.50	1.27	0.79
13,743.00	91.35	183.37	9,752.46	-4,074.80	885.96	4,074.80	2.34	0.62	2.26
13,838.00	90.74	183.54	9,750.73	-4,169.61	880.23	4,169.61	0.67	-0.64	0.18
13,932.00	89.40	182.89	9,750.62	-4,263.46	874.96	4,263.46	1.58	-1.43	-0.69
14,027.00	90.80	181.27	9,750.45	-4,358.39	871.51	4,358.39	2.25	1.47	-1.71
14,122.00	90.81	182.82	9,749.11	-4,453.32	868.12	4,453.32	1.63	0.01	1.63
14,216.00	89.70	181.47	9,748.70	-4,547.25	864.60	4,547.25	1.86	-1.18	-1.44
14,311.00	90.07	179.77	9,748.89	-4,642.24	863.58	4,642.24	1.83	0.39	-1.79
14,405.00	90.90	179.29	9,748.09	-4,736.23	864.35	4,736.23	1.02	0.88	-0.51
14,500.00	87.48	180.46	9,749.43	-4,831.20	864.55	4,831.20	3.80	-3.60	1.23
14,593.00	87.25	180.02	9,753.71	-4,924.10	864.17	4,924.10	0.53	-0.25	-0.47
14,687.00	89.90	179.30	9,756.05	-5,018.06	864.72	5,018.06	2.92	2.82	-0.77
14,781.00	90.91	179.20	9,755.38	-5,112.05	865.95	5,112.05	1.08	1.07	-0.11
14,917.00	90.91	179.20	9,753.22	-5,248.02	867.85	5,248.02	0.00	0.00	0.00
14,970.00	90.84	179.98	9,752.41	-5,301.01	868.23	5,301.01	1.48	-0.13	1.47
15,065.00	90.87	179.89	9,751.00	-5,396.00	868.34	5,396.00	0.10	0.03	-0.09
15,159.00	90.70	179.44	9,749.71	-5,489.99	868.89	5,489.99	0.51	-0.18	-0.48
15,254.00	88.15	178.48	9,750.66	-5,584.96	870.61	5,584.96	2.87	-2.68	-1.01
15,348.00	89.16	177.86	9,752.87	-5,678.89	873.61	5,678.89	1.26	1.07	-0.66
15,443.00	89.23	178.52	9,754.20	-5,773.83	876.61	5,773.83	0.70	0.07	0.69
15,537.00	89.06	177.46	9,755.60	-5,867.76	879.91	5,867.76	1.14	-0.18	-1.13
15,632.00	89.40	179.08	9,756.88	-5,962.71	882.78	5,962.71	1.74	0.36	1.71
15,726.00	90.34	179.40	9,757.09	-6,056.70	884.03	6,056.70	1.06	1.00	0.34
15,821.00	90.44	179.15	9,756.45	-6,151.69	885.23	6,151.69	0.28	0.11	-0.26
15,915.00	90.54	179.12	9,755.64	-6,245.67	886.65	6,245.67	0.11	0.11	-0.03
16,010.00	91.07	179.52	9,754.31	-6,340.66	887.77	6,340.66	0.70	0.56	0.42

Survey Report

Company:	Marathon Oil Permian, LLC	Well:	Southern Comfort 25-36 State X 2H
Project:	Eddy County, NM (NAD27)	KB=28' @ 2940.00usft (Patterson 244)	
Site:	Malaga Prospect	KB=28' @ 2940.00usft (Patterson 244)	
Well:	Southern Comfort 25-36 State X 2H	Grid	
Location:	OH	Minimum Curvature	
Depth:	OH	Midland District	

16,104.00	91.31	181.34	9,752.36	-6,434.63	887.07	6,434.63	1.95	0.26	1.94
16,199.00	91.31	181.24	9,750.19	-6,529.58	884.93	6,529.58	0.11	0.00	-0.11
16,294.00	91.45	181.34	9,747.90	-6,624.53	882.79	6,624.53	0.18	0.15	0.11
16,388.00	89.73	181.41	9,746.93	-6,718.49	880.54	6,718.49	1.83	-1.83	0.07
16,482.00	89.43	180.32	9,747.62	-6,812.48	879.12	6,812.48	1.20	-0.32	-1.16
16,577.00	88.69	180.64	9,749.18	-6,907.46	878.32	6,907.46	0.85	-0.78	0.34
16,672.00	88.55	181.05	9,751.47	-7,002.42	876.92	7,002.42	0.46	-0.15	0.43
16,766.00	88.28	179.99	9,754.07	-7,096.38	876.07	7,096.38	1.16	-0.29	-1.13
16,860.00	87.69	180.31	9,757.37	-7,190.32	875.82	7,190.32	0.71	-0.63	0.34
16,956.00	86.87	180.46	9,761.93	-7,286.21	875.18	7,286.21	0.87	-0.85	0.16
17,025.00	86.95	181.55	9,765.65	-7,355.10	873.97	7,355.10	1.58	0.12	1.58
FINAL MWD Survey (17025.00' MD)									
17,080.00	86.95	181.55	9,768.57	-7,410.00	872.48	7,410.00	0.00	0.00	0.00
FINAL Proj. to Bit (17080.00' MD)- BHL (State x 2)									

17,025.00	9,765.65	-7,355.10	873.97	FINAL MWD Survey (17025.00' MD)
17,080.00	9,768.57	-7,410.00	872.48	FINAL Proj. to Bit (17080.00' MD)

Checked By: _____ Approved By: _____ Date: _____



EDDY COUNTY, NM (NAD27)
MALAGA PROSPECT
SOUTHERN COMFORT 25-36 STATE X 2H
OH
FINAL AS-DRILLED
PATTERSON 244

A. G. Elev.: 2912.00
DEPTH REF.: AB-28' @ 2912.00 USFT (PATTERSON 244)

WELL DETAILS:

+N/S 0.00 +E/W 0.00 Northing 432109.30 Easting 592129.95 32° 11' 15.488 N 104° 2' 7.899 W
Ground Level: 2912.00

SECTION DETAILS

MD	INC	AZ	TVD	+N/S	+E/W	TFAC	VSECT	TARGET
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
619.98	0.00	0.00	619.98	0.00	0.00	0.00	0.00	
619.98	15.00	80.00	619.98	0.00	0.00	0.00	0.00	
927.83	15.00	80.00	927.83	0.00	0.00	0.00	0.00	
1026.34	30.00	180.38	9755.00	-471.03	904.99	0.00	-132.13	
17175.93	90.00	180.38	9755.00	-471.03	904.99	0.00	447.19	
								SHL [State x 2H]

DESIGN TARGET DETAILS

Name: Nothing
PP [State x 2H]: 432109.30
Easting: 592129.95
Northing: 432109.30
TVD: -7412.37
+N/S: -92.37
+E/W: 904.99

SITE DETAILS: Malaga Prospect
Site Centre Northing: 432109.30
Easting: 591057.80

Positional Uncertainty: 0.00
Convergence: 0.16
Local North: Grid

PROJECT DETAILS: Eddy County, NM (NAD27)
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

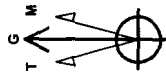
FORMATION TOP DETAILS

MDPath	Formation
588.00	Salado
1204.00	Castile
2552.00	Salt Base
2665.00	Lamar
2719.00	Bell Canyon
3564.00	Brushy Canyon
4842.00	Bone Spring
6441.68	Bone Spring
7352.00	1st Bone Spring Sand
8041.00	2nd Bone Spring Sand
9247.00	3rd Bone Spring Sand
9613.00	Wolfcamp X
9640.00	Wolfcamp X
9629.55	Wolfcamp X
9710.00	Wolfcamp Y

Miss State: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well Southern Comfort 25-36 State X 2H, Grid North
Latitude: 32° 11' 15.488 N
Longitude: 104° 2' 7.899 W
Grid East: 592129.95
Grid North: 432109.30
Scale Factor: 1.000

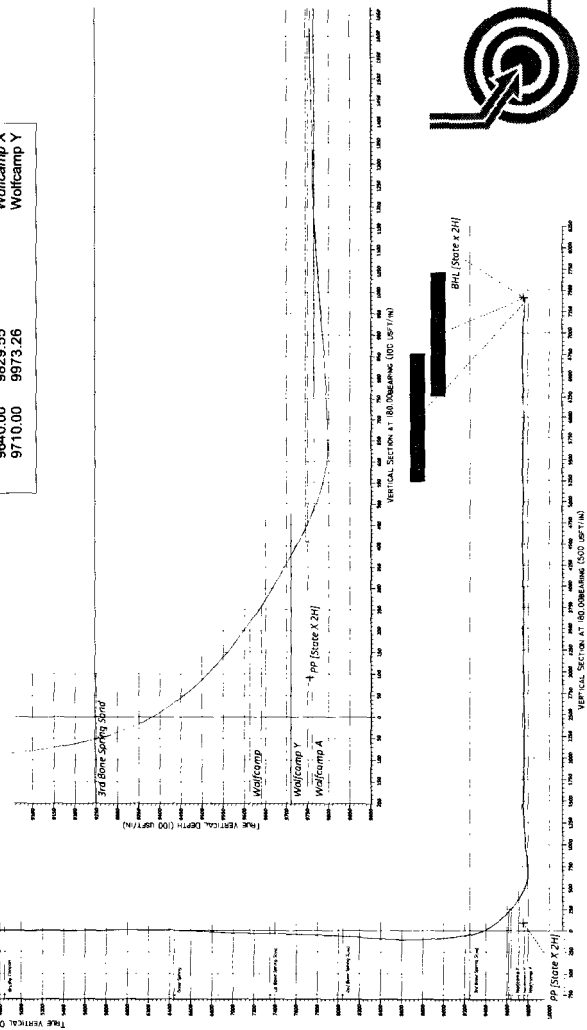
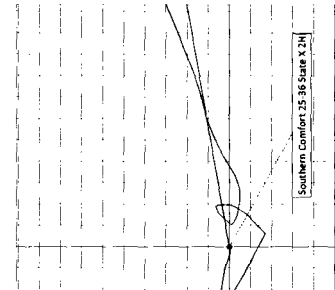
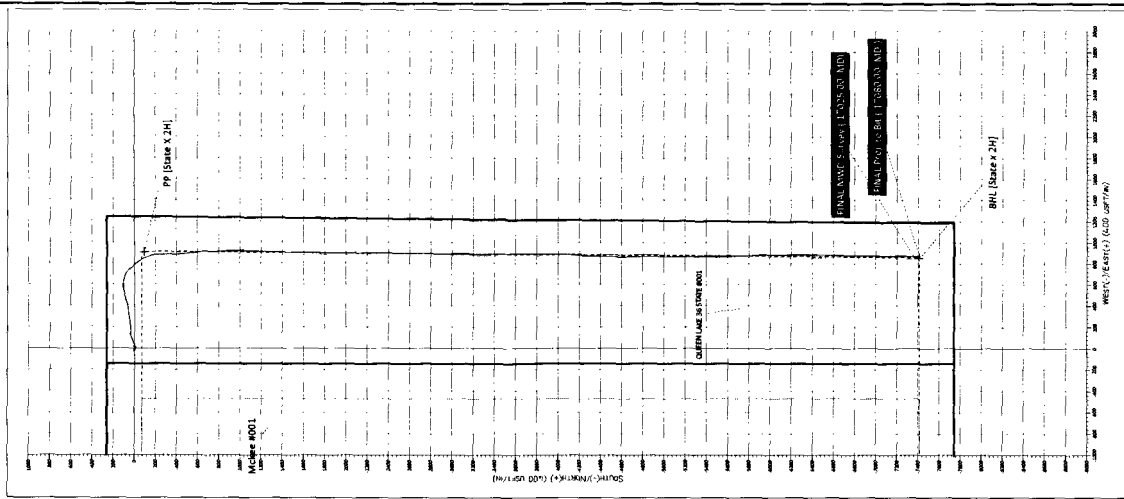
COORDINATES
No listing data is available

Geographic Model: NAD83
Datum: NAD 1983
Magnetic Declination: 7.20°
Declination Date: 2017
Magnetic Field Strength: 42000
To convert Magnetic North to Grid Add 7.20°
To convert True North to Grid Subtract 0.16°



To convert Magnetic North to Grid, Add 7.04°
To convert True North to Grid, Subtract 0.16°

Azimuths to Grid North
True North: -0.16°
Magnetic North: 7.04°
Magnetic Field
Strength: 48995.3nT
Dip Angle: 60.02°
Date: 8/17/2017
Model: HDGM



Scientific Drilling