

USA

NEW MEXICO

BLUEBERRY HILL FEE 24 35 19 PAD

BLUEBERRY HILL FEE 24 35 19 WXY 4H

BLUEBERRY HILL FEE 24 35 19 WXY 4H

Plan: PLAN A

Survey Report - Geographic

29 March, 2018

Marathon Oil

Survey Report - Geographic

Company:	USA	Local Co-ordinate Reference:	Well BLUEBERRY HILL FEE 24 35 19 WXY 4H
Project:	NEW MEXICO	TVD Reference:	WELL @ 3363.5usft (Original Well Elev)
Site:	BLUEBERRY HILL FEE 24 35 19 PAD	MD Reference:	WELL @ 3363.5usft (Original Well Elev)
Well:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	North Reference:	Grid
Wellbore:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	Survey Calculation Method:	Minimum Curvature
Design:	PLAN A	Database:	EDMPROD

Project	NEW MEXICO		
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	BLUEBERRY HILL FEE 24 35 19 PAD		
Site Position:		Northing:	439,008.94 usft
From:	Map	Easting:	788,062.81 usft
Position Uncertainty:	3.3 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 12' 12.682 N
		Longitude:	103° 24' 7.335 W
		Grid Convergence:	0.50 °

Well	BLUEBERRY HILL FEE 24 35 19 WXY 4H, WELL 3 OF 5		
Well Position	+N/-S	0.0 usft	Northing: 439,008.91 usft
	+E/-W	0.0 usft	Easting: 788,122.82 usft
Position Uncertainty	1.1 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 12' 12.676 N
		Longitude:	103° 24' 6.636 W
		Ground Level:	3,337.0 usft

Wellbore	BLUEBERRY HILL FEE 24 35 19 WXY 4H		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	3/29/2018	6.79
			Dip Angle (°) 60.06
			Field Strength (nT) 47,864

Design	PLAN A		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°) 359.39

Survey Tool Program	Date	3/29/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,623.1	PLAN A (BLUEBERRY HILL FEE 24 35 19	MWD	OWSG MWD - Standard

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
100.0	0.00	0.00	100.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
200.0	0.00	0.00	200.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
300.0	0.00	0.00	300.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
400.0	0.00	0.00	400.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
500.0	0.00	0.00	500.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
600.0	0.00	0.00	600.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
700.0	0.00	0.00	700.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
800.0	0.00	0.00	800.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
900.0	0.00	0.00	900.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W	

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Site:	BLUEBERRY HILL FEE 24 35 19 PAD	MD Reference:	WELL @ 3363.5usft (Original Well Elev)
Well:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	North Reference:	Grid
Wellbore:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	Survey Calculation Method:	Minimum Curvature
Design:	PLAN A	Database:	EDMPROD

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,200.0	0.00	0.00	1,200.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,300.0	0.00	0.00	4,300.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,400.0	0.00	0.00	4,400.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,500.0	0.00	0.00	4,500.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,600.0	0.00	0.00	4,600.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,700.0	0.00	0.00	4,700.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,800.0	0.00	0.00	4,800.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
4,900.0	0.00	0.00	4,900.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
5,000.0	0.00	0.00	5,000.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
5,100.0	0.00	0.00	5,100.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
5,200.0	0.00	0.00	5,200.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
5,300.0	0.00	0.00	5,300.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
5,400.0	0.00	0.00	5,400.0	0.0	0.0	439,008.91	788,122.82	32° 12' 12.676 N	103° 24' 6.636 W
5,500.0	1.00	181.04	5,500.0	-0.9	0.0	439,008.04	788,122.80	32° 12' 12.668 N	103° 24' 6.637 W
5,600.0	2.00	181.04	5,600.0	-3.5	-0.1	439,005.42	788,122.75	32° 12' 12.642 N	103° 24' 6.637 W
5,700.0	3.00	181.04	5,699.9	-7.9	-0.1	439,001.06	788,122.68	32° 12' 12.599 N	103° 24' 6.639 W
5,800.0	4.00	181.04	5,799.7	-14.0	-0.3	438,994.96	788,122.56	32° 12' 12.538 N	103° 24' 6.641 W
5,900.0	5.00	181.04	5,899.4	-21.8	-0.4	438,987.11	788,122.42	32° 12' 12.461 N	103° 24' 6.643 W
6,000.0	5.00	181.04	5,999.0	-30.5	-0.6	438,978.40	788,122.26	32° 12' 12.374 N	103° 24' 6.646 W
6,100.0	5.00	181.04	6,098.6	-39.2	-0.7	438,969.68	788,122.11	32° 12' 12.288 N	103° 24' 6.649 W
6,200.0	5.00	181.04	6,198.2	-47.9	-0.9	438,960.97	788,121.95	32° 12' 12.202 N	103° 24' 6.651 W
6,300.0	5.00	181.04	6,297.8	-56.7	-1.0	438,952.25	788,121.79	32° 12' 12.116 N	103° 24' 6.654 W
6,400.0	5.00	181.04	6,397.5	-65.4	-1.2	438,943.54	788,121.63	32° 12' 12.030 N	103° 24' 6.657 W
6,460.0	5.00	181.04	6,457.3	-70.6	-1.3	438,938.31	788,121.54	32° 12' 11.978 N	103° 24' 6.658 W
6,500.0	4.20	181.04	6,497.1	-73.8	-1.3	438,935.10	788,121.48	32° 12' 11.946 N	103° 24' 6.659 W

Marathon Oil

Survey Report - Geographic

Company:	USA	Local Co-ordinate Reference:	Well BLUEBERRY HILL FEE 24 35 19 WXY 4H
Project:	NEW MEXICO	TVD Reference:	WELL @ 3363.5usft (Original Well Elev)
Site:	BLUEBERRY HILL FEE 24 35 19 PAD	MD Reference:	WELL @ 3363.5usft (Original Well Elev)
Well:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	North Reference:	Grid
Wellbore:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	Survey Calculation Method:	Minimum Curvature
Design:	PLAN A	Database:	EDMPROD

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,600.0	2.20	181.04	6,596.9	-79.4	-1.4	438,929.52	788,121.38	32° 12' 11.891 N	103° 24' 6.661 W
6,700.0	0.20	181.04	6,696.9	-81.5	-1.5	438,927.43	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
6,710.0	0.00	0.00	6,706.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
6,800.0	0.00	0.00	6,796.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
6,900.0	0.00	0.00	6,896.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,000.0	0.00	0.00	6,996.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,100.0	0.00	0.00	7,096.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,200.0	0.00	0.00	7,196.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,300.0	0.00	0.00	7,296.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,400.0	0.00	0.00	7,396.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,500.0	0.00	0.00	7,496.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,600.0	0.00	0.00	7,596.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,700.0	0.00	0.00	7,696.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,800.0	0.00	0.00	7,796.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
7,900.0	0.00	0.00	7,896.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,000.0	0.00	0.00	7,996.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,100.0	0.00	0.00	8,096.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,200.0	0.00	0.00	8,196.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,300.0	0.00	0.00	8,296.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,400.0	0.00	0.00	8,396.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,500.0	0.00	0.00	8,496.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,600.0	0.00	0.00	8,596.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,700.0	0.00	0.00	8,696.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,800.0	0.00	0.00	8,796.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
8,900.0	0.00	0.00	8,896.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,000.0	0.00	0.00	8,996.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,100.0	0.00	0.00	9,096.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,200.0	0.00	0.00	9,196.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,300.0	0.00	0.00	9,296.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,400.0	0.00	0.00	9,396.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,500.0	0.00	0.00	9,496.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,600.0	0.00	0.00	9,596.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,700.0	0.00	0.00	9,696.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,800.0	0.00	0.00	9,796.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
9,900.0	0.00	0.00	9,896.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,000.0	0.00	0.00	9,996.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,100.0	0.00	0.00	10,096.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,200.0	0.00	0.00	10,196.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,300.0	0.00	0.00	10,296.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,400.0	0.00	0.00	10,396.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,500.0	0.00	0.00	10,496.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,600.0	0.00	0.00	10,596.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,700.0	0.00	0.00	10,696.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,800.0	0.00	0.00	10,796.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
10,900.0	0.00	0.00	10,896.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,000.0	0.00	0.00	10,996.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,100.0	0.00	0.00	11,096.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,200.0	0.00	0.00	11,196.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,300.0	0.00	0.00	11,296.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,400.0	0.00	0.00	11,396.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,500.0	0.00	0.00	11,496.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,600.0	0.00	0.00	11,596.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,700.0	0.00	0.00	11,696.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,800.0	0.00	0.00	11,796.9	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W
11,838.3	0.00	0.00	11,835.2	-81.5	-1.5	438,927.41	788,121.34	32° 12' 11.870 N	103° 24' 6.662 W

Marathon Oil

Survey Report - Geographic

Company:	USA	Local Co-ordinate Reference:	Well BLUEBERRY HILL FEE 24 35 19 WXY 4H
Project:	NEW MEXICO	TVD Reference:	WELL @ 3363.5usft (Original Well Elev)
Site:	BLUEBERRY HILL FEE 24 35 19 PAD	MD Reference:	WELL @ 3363.5usft (Original Well Elev)
Well:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	North Reference:	Grid
Wellbore:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	Survey Calculation Method:	Minimum Curvature
Design:	PLAN A	Database:	EDMPROD

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,900.0	6.17	359.39	11,896.8	-78.2	-1.5	438,930.73	788,121.30	32° 12' 11.903 N	103° 24' 6.662 W
12,000.0	16.17	359.39	11,994.8	-58.8	-1.7	438,950.07	788,121.10	32° 12' 12.094 N	103° 24' 6.662 W
12,100.0	26.17	359.39	12,087.9	-22.8	-2.1	438,986.13	788,120.71	32° 12' 12.451 N	103° 24' 6.663 W
12,200.0	36.17	359.39	12,173.4	28.9	-2.7	439,037.82	788,120.16	32° 12' 12.963 N	103° 24' 6.664 W
12,300.0	46.17	359.39	12,248.6	94.6	-3.4	439,103.56	788,119.46	32° 12' 13.613 N	103° 24' 6.666 W
12,400.0	56.17	359.39	12,311.2	172.4	-4.2	439,181.35	788,118.63	32° 12' 14.383 N	103° 24' 6.668 W
12,500.0	66.17	359.39	12,359.3	259.9	-5.1	439,268.84	788,117.70	32° 12' 15.249 N	103° 24' 6.670 W
12,600.0	76.17	359.39	12,391.6	354.5	-6.1	439,363.36	788,116.70	32° 12' 16.184 N	103° 24' 6.672 W
12,700.0	86.17	359.39	12,406.9	453.1	-7.2	439,462.04	788,115.65	32° 12' 17.161 N	103° 24' 6.674 W
12,778.3	94.00	359.39	12,406.8	531.4	-8.0	439,540.30	788,114.81	32° 12' 17.935 N	103° 24' 6.676 W
12,800.0	94.00	359.39	12,405.3	553.0	-8.2	439,561.92	788,114.58	32° 12' 18.149 N	103° 24' 6.676 W
12,900.0	94.00	359.39	12,398.3	652.8	-9.3	439,661.67	788,113.52	32° 12' 19.136 N	103° 24' 6.679 W
13,000.0	94.00	359.39	12,391.3	752.5	-10.4	439,761.43	788,112.46	32° 12' 20.123 N	103° 24' 6.681 W
13,100.0	94.00	359.39	12,384.4	852.3	-11.4	439,861.18	788,111.40	32° 12' 21.111 N	103° 24' 6.683 W
13,200.0	94.00	359.39	12,377.4	952.0	-12.5	439,960.93	788,110.33	32° 12' 22.098 N	103° 24' 6.686 W
13,300.0	94.00	359.39	12,370.4	1,051.8	-13.5	440,060.68	788,109.27	32° 12' 23.085 N	103° 24' 6.688 W
13,400.0	94.00	359.39	12,363.4	1,151.5	-14.6	440,160.43	788,108.21	32° 12' 24.072 N	103° 24' 6.690 W
13,500.0	94.00	359.39	12,356.5	1,251.3	-15.7	440,260.18	788,107.15	32° 12' 25.059 N	103° 24' 6.692 W
13,600.0	94.00	359.39	12,349.5	1,351.0	-16.7	440,359.93	788,106.09	32° 12' 26.046 N	103° 24' 6.695 W
13,700.0	94.00	359.39	12,342.5	1,450.8	-17.8	440,459.68	788,105.02	32° 12' 27.033 N	103° 24' 6.697 W
13,800.0	94.00	359.39	12,335.5	1,550.5	-18.9	440,559.43	788,103.96	32° 12' 28.020 N	103° 24' 6.699 W
13,900.0	94.00	359.39	12,328.6	1,650.3	-19.9	440,659.18	788,102.90	32° 12' 29.008 N	103° 24' 6.702 W
14,000.0	94.00	359.39	12,321.6	1,750.0	-21.0	440,758.93	788,101.84	32° 12' 29.995 N	103° 24' 6.704 W
14,100.0	94.00	359.39	12,314.6	1,849.8	-22.0	440,858.68	788,100.78	32° 12' 30.982 N	103° 24' 6.706 W
14,200.0	94.00	359.39	12,307.6	1,949.5	-23.1	440,958.43	788,099.71	32° 12' 31.969 N	103° 24' 6.709 W
14,300.0	94.00	359.39	12,300.7	2,049.3	-24.2	441,058.19	788,098.65	32° 12' 32.956 N	103° 24' 6.711 W
14,400.0	94.00	359.39	12,293.7	2,149.0	-25.2	441,157.94	788,097.59	32° 12' 33.943 N	103° 24' 6.713 W
14,500.0	94.00	359.39	12,286.7	2,248.8	-26.3	441,257.69	788,096.53	32° 12' 34.930 N	103° 24' 6.715 W
14,600.0	94.00	359.39	12,279.7	2,348.5	-27.4	441,357.44	788,095.47	32° 12' 35.918 N	103° 24' 6.718 W
14,700.0	94.00	359.39	12,272.8	2,448.3	-28.4	441,457.19	788,094.40	32° 12' 36.905 N	103° 24' 6.720 W
14,800.0	94.00	359.39	12,265.8	2,548.0	-29.5	441,556.94	788,093.34	32° 12' 37.892 N	103° 24' 6.722 W
14,900.0	94.00	359.39	12,258.8	2,647.8	-30.5	441,656.69	788,092.28	32° 12' 38.879 N	103° 24' 6.725 W
15,000.0	94.00	359.39	12,251.8	2,747.5	-31.6	441,756.44	788,091.22	32° 12' 39.866 N	103° 24' 6.727 W
15,100.0	94.00	359.39	12,244.8	2,847.3	-32.7	441,856.19	788,090.16	32° 12' 40.853 N	103° 24' 6.729 W
15,200.0	94.00	359.39	12,237.9	2,947.0	-33.7	441,955.94	788,089.09	32° 12' 41.840 N	103° 24' 6.732 W
15,300.0	94.00	359.39	12,230.9	3,046.8	-34.8	442,055.69	788,088.03	32° 12' 42.827 N	103° 24' 6.734 W
15,400.0	94.00	359.39	12,223.9	3,146.5	-35.8	442,155.44	788,086.97	32° 12' 43.815 N	103° 24' 6.736 W
15,500.0	94.00	359.39	12,216.9	3,246.3	-36.9	442,255.19	788,085.91	32° 12' 44.802 N	103° 24' 6.738 W
15,600.0	94.00	359.39	12,210.0	3,346.0	-38.0	442,354.94	788,084.84	32° 12' 45.789 N	103° 24' 6.741 W
15,700.0	94.00	359.39	12,203.0	3,445.8	-39.0	442,454.70	788,083.78	32° 12' 46.776 N	103° 24' 6.743 W
15,800.0	94.00	359.39	12,196.0	3,545.5	-40.1	442,554.45	788,082.72	32° 12' 47.763 N	103° 24' 6.745 W
15,900.0	94.00	359.39	12,189.0	3,645.3	-41.2	442,654.20	788,081.66	32° 12' 48.750 N	103° 24' 6.748 W
16,000.0	94.00	359.39	12,182.1	3,745.0	-42.2	442,753.95	788,080.60	32° 12' 49.737 N	103° 24' 6.750 W
16,100.0	94.00	359.39	12,175.1	3,844.8	-43.3	442,853.70	788,079.53	32° 12' 50.725 N	103° 24' 6.752 W
16,200.0	94.00	359.39	12,168.1	3,944.5	-44.3	442,953.45	788,078.47	32° 12' 51.712 N	103° 24' 6.755 W
16,300.0	94.00	359.39	12,161.1	4,044.3	-45.4	443,053.20	788,077.41	32° 12' 52.699 N	103° 24' 6.757 W
16,400.0	94.00	359.39	12,154.2	4,144.0	-46.5	443,152.95	788,076.35	32° 12' 53.686 N	103° 24' 6.759 W
16,500.0	94.00	359.39	12,147.2	4,243.8	-47.5	443,252.70	788,075.29	32° 12' 54.673 N	103° 24' 6.761 W
16,600.0	94.00	359.39	12,140.2	4,343.5	-48.6	443,352.45	788,074.22	32° 12' 55.660 N	103° 24' 6.764 W
16,700.0	94.00	359.39	12,133.2	4,443.3	-49.7	443,452.20	788,073.16	32° 12' 56.647 N	103° 24' 6.766 W
16,800.0	94.00	359.39	12,126.3	4,543.0	-50.7	443,551.95	788,072.10	32° 12' 57.634 N	103° 24' 6.768 W
16,900.0	94.00	359.39	12,119.3	4,642.8	-51.8	443,651.70	788,071.04	32° 12' 58.622 N	103° 24' 6.771 W
17,000.0	94.00	359.39	12,112.3	4,742.5	-52.8	443,751.46	788,069.98	32° 12' 59.609 N	103° 24' 6.773 W
17,100.0	94.00	359.39	12,105.3	4,842.3	-53.9	443,851.21	788,068.91	32° 13' 0.596 N	103° 24' 6.775 W
17,200.0	94.00	359.39	12,098.4	4,942.0	-55.0	443,950.96	788,067.85	32° 13' 1.583 N	103° 24' 6.778 W

Marathon Oil

Survey Report - Geographic

Company:	USA	Local Co-ordinate Reference:	Well BLUEBERRY HILL FEE 24 35 19 WXY 4H
Project:	NEW MEXICO	TVD Reference:	WELL @ 3363.5usft (Original Well Elev)
Site:	BLUEBERRY HILL FEE 24 35 19 PAD	MD Reference:	WELL @ 3363.5usft (Original Well Elev)
Well:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	North Reference:	Grid
Wellbore:	BLUEBERRY HILL FEE 24 35 19 WXY 4H	Survey Calculation Method:	Minimum Curvature
Design:	PLAN A	Database:	EDMPROD

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
17,300.0	94.00	359.39	12,091.4	5,041.8	-56.0	444,050.71	788,066.79	32° 13' 2.570 N	103° 24' 6.780 W
17,400.0	94.00	359.39	12,084.4	5,141.5	-57.1	444,150.46	788,065.73	32° 13' 3.557 N	103° 24' 6.782 W
17,500.0	94.00	359.39	12,077.4	5,241.3	-58.2	444,250.21	788,064.67	32° 13' 4.544 N	103° 24' 6.784 W
17,600.0	94.00	359.39	12,070.5	5,341.0	-59.2	444,349.96	788,063.60	32° 13' 5.532 N	103° 24' 6.787 W
17,700.0	94.00	359.39	12,063.5	5,440.8	-60.3	444,449.71	788,062.54	32° 13' 6.519 N	103° 24' 6.789 W
17,800.0	94.00	359.39	12,056.5	5,540.6	-61.3	444,549.46	788,061.48	32° 13' 7.506 N	103° 24' 6.791 W
17,900.0	94.00	359.39	12,049.5	5,640.3	-62.4	444,649.21	788,060.42	32° 13' 8.493 N	103° 24' 6.794 W
18,000.0	94.00	359.39	12,042.6	5,740.1	-63.5	444,748.96	788,059.36	32° 13' 9.480 N	103° 24' 6.796 W
18,100.0	94.00	359.39	12,035.6	5,839.8	-64.5	444,848.71	788,058.29	32° 13' 10.467 N	103° 24' 6.798 W
18,200.0	94.00	359.39	12,028.6	5,939.6	-65.6	444,948.46	788,057.23	32° 13' 11.454 N	103° 24' 6.801 W
18,300.0	94.00	359.39	12,021.6	6,039.3	-66.6	445,048.22	788,056.17	32° 13' 12.441 N	103° 24' 6.803 W
18,400.0	94.00	359.39	12,014.7	6,139.1	-67.7	445,147.97	788,055.11	32° 13' 13.429 N	103° 24' 6.805 W
18,500.0	94.00	359.39	12,007.7	6,238.8	-68.8	445,247.72	788,054.05	32° 13' 14.416 N	103° 24' 6.807 W
18,600.0	94.00	359.39	12,000.7	6,338.6	-69.8	445,347.47	788,052.98	32° 13' 15.403 N	103° 24' 6.810 W
18,700.0	94.00	359.39	11,993.7	6,438.3	-70.9	445,447.22	788,051.92	32° 13' 16.390 N	103° 24' 6.812 W
18,800.0	94.00	359.39	11,986.8	6,538.1	-72.0	445,546.97	788,050.86	32° 13' 17.377 N	103° 24' 6.814 W
18,900.0	94.00	359.39	11,979.8	6,637.8	-73.0	445,646.72	788,049.80	32° 13' 18.364 N	103° 24' 6.817 W
19,000.0	94.00	359.39	11,972.8	6,737.6	-74.1	445,746.47	788,048.74	32° 13' 19.351 N	103° 24' 6.819 W
19,100.0	94.00	359.39	11,965.8	6,837.3	-75.1	445,846.22	788,047.67	32° 13' 20.339 N	103° 24' 6.821 W
19,200.0	94.00	359.39	11,958.8	6,937.1	-76.2	445,945.97	788,046.61	32° 13' 21.326 N	103° 24' 6.823 W
19,300.0	94.00	359.39	11,951.9	7,036.8	-77.3	446,045.72	788,045.55	32° 13' 22.313 N	103° 24' 6.826 W
19,400.0	94.00	359.39	11,944.9	7,136.6	-78.3	446,145.47	788,044.49	32° 13' 23.300 N	103° 24' 6.828 W
19,500.0	94.00	359.39	11,937.9	7,236.3	-79.4	446,245.22	788,043.43	32° 13' 24.287 N	103° 24' 6.830 W
19,600.0	94.00	359.39	11,930.9	7,336.1	-80.5	446,344.97	788,042.36	32° 13' 25.274 N	103° 24' 6.833 W
19,623.1	94.00	359.39	11,929.3	7,359.1	-80.7	446,367.97	788,042.12	32° 13' 25.502 N	103° 24' 6.833 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,100.0	1,100.0	13 3/8"	13-3/8	17-1/2
5,400.0	5,400.0	9 5/8"	9-5/8	12-1/4
12,800.0	12,405.3	7"	7	8-3/4
19,623.1	11,929.3	4 1/2"	4-1/2	6-1/8

Checked By: _____ Approved By: _____ Date: _____