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EOG Resources - Midland

Lea County, NM (NAD 83 NME)

Red Raider 25 State Com

#502H

OH

Design: OH

Final PVA Report

29 July, 2019



Final PVA Report

Company:	EOG Resources - Midland		Local Co-ordinate Reference:	Well #502H
Project:	Lea County, NM (NAD 83 NME)		TVD Reference:	KB = 32' @ 3536.0usft
Site:	Red Raider 25 State Com		MD Reference:	KB = 32' @ 3536.0usft
Well:	#502H		North Reference:	Grid
Wellbore:	OH		Survey Calculation Method:	Minimum Curvature
Design:	OH		Database:	EDM 5000.14

Project				Lea County, NM (NAD 83 NME)	
Map System:	US State Plane 1983		System Datum:	Mean Sea Level	
Geo Datum:	North American Datum 1983				
Map Zone:	New Mexico Eastem Zone				

Site						Red Raider 25 State Com	
Site Position:			Northing:	430,886.00 usft	Latitude:	32° 10' 54.895 N	
From:	Map		Easting:	792,872.00 usft	Longitude:	103° 31' 13.091 W	
Position Uncertainty:	0.0 usft		Slot Radius:	13-3/16 "	Grid Convergence:	0.43 "	

Well								#502H	
Well Position	+N-S	0.0 usft	Northing:	430,855.00 usft	Latitude:	32° 10' 54.793 N			
	+E-W	0.0 usft	Easting:	792,773.00 usft	Longitude:	103° 31' 14.244 W			
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,504.0 usft			

Wellbore							OH	
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)			
	IGRF2015	1/30/2019	6.75	60.01	47,751.11318109			

Design						OH	
Audit Notes:							
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0		
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)			
	0.0	0.0	0.0	358.18			

Survey Program		Date		7/29/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description		
243.0	21,322.0	Leam MWD #1 (OH)	MWD	OWSG MWD - Standard		



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Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLog ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
243.0	0.40	117.10	243.0	-0.4	0.8	0.16	0.16	0.00	-0.8	0.0	
423.0	0.50	119.10	423.0	-1.1	2.0	0.06	0.06	1.11	-2.3	0.1	
605.0	0.70	104.60	605.0	-1.7	3.8	0.14	0.11	-7.97	-4.1	-0.7	
796.0	0.30	16.60	796.0	-1.5	5.0	0.39	-0.21	-46.07	0.0	-5.3	
983.0	0.40	22.90	983.0	-0.5	5.4	0.06	0.05	3.37	-1.7	-5.2	
1,173.0	0.40	68.30	1,173.0	0.4	6.3	0.16	0.00	23.89	-6.0	-2.0	
1,266.0	0.20	96.00	1,266.0	0.5	6.8	0.26	-0.22	29.78	-6.7	1.2	
1,345.0	0.10	289.70	1,345.0	0.5	6.8	0.38	-0.13	-210.51	6.3	-2.8	
1,533.0	2.30	240.50	1,532.9	-1.3	3.4	1.19	1.17	-26.17	2.3	2.8	
1,720.0	6.30	231.70	1,719.4	-9.5	-7.9	2.16	2.14	-4.71	-9.6	2.8	
1,907.0	5.70	232.30	1,905.3	-21.5	-23.3	0.32	-0.32	0.32	-17.3	3.8	
2,096.0	5.00	234.90	2,093.5	-32.0	-37.5	0.39	-0.37	1.38	-21.5	5.4	
2,283.0	4.50	237.00	2,279.9	-40.7	-50.3	0.28	-0.27	1.12	-23.7	6.3	
2,471.0	4.00	235.80	2,467.3	-48.4	-61.9	0.27	-0.27	-0.64	-24.7	5.8	
2,659.0	3.40	241.00	2,655.0	-54.8	-72.2	0.37	-0.32	2.77	-23.1	7.5	
2,846.0	5.00	246.80	2,843.4	-60.8	-84.7	0.87	0.85	3.07	-23.0	8.0	
3,037.0	4.00	243.70	3,031.9	-66.9	-98.2	0.54	-0.53	-1.64	-25.2	4.6	
3,225.0	3.20	241.70	3,219.5	-72.3	-108.7	0.43	-0.43	-1.06	-24.0	2.3	
3,413.0	5.40	246.30	3,406.9	-78.4	-121.4	1.18	1.17	2.45	-24.9	2.3	
3,602.0	4.60	245.80	3,595.2	-85.0	-138.4	0.42	-0.42	-0.26	-28.4	-0.1	
3,790.0	3.40	243.00	3,782.8	-90.7	-148.3	0.65	-0.64	-1.49	-28.4	-3.4	
3,979.0	6.20	232.60	3,971.1	-99.4	-161.4	1.55	1.48	-5.50	-29.9	-8.6	
4,166.0	5.10	233.30	4,157.2	-110.5	-176.1	0.59	-0.59	0.37	-35.4	-7.4	
4,354.0	3.60	235.40	4,344.6	-118.9	-187.6	0.80	-0.80	1.12	-36.8	-5.6	
4,542.0	4.40	217.50	4,532.2	-127.9	-196.9	0.78	0.43	-9.52	-33.7	-14.2	
4,730.0	4.50	215.00	4,719.6	-139.7	-205.5	0.12	0.05	-1.33	-35.4	-11.2	



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Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (*/100usft)	BuId (*/100usft)	Turn (*/100usft)	High to Plan (usft)	Right to Plan (usft)	
4,918.0	4.90	201.80	4,907.0	-153.2	-212.7	0.61	0.21	-7.02	-38.4	-13.2	
5,108.0	4.00	192.20	5,094.4	-167.1	-217.1	0.62	-0.48	-5.11	-38.7	-11.2	
5,135.0	3.90	191.60	5,123.3	-169.0	-217.5	0.37	-0.34	-2.07	-39.1	-10.2	
5,298.0	3.30	195.90	5,286.0	-178.9	-219.9	0.40	-0.37	2.64	-41.4	0.5	
5,488.0	5.40	210.80	5,473.5	-191.8	-225.9	1.26	1.12	7.93	-42.1	18.2	
5,673.0	3.30	221.40	5,659.9	-203.4	-234.0	1.20	-1.12	5.67	-39.4	30.6	
5,862.0	2.40	337.70	5,848.8	-203.8	-239.1	2.57	-0.48	61.53	40.8	14.1	
6,051.0	2.40	345.80	6,037.6	-196.3	-241.5	0.18	0.00	4.29	33.1	4.8	
6,239.0	1.90	347.40	6,225.5	-189.4	-243.2	0.27	-0.27	0.85	28.2	4.0	
6,426.0	1.70	349.90	6,412.4	-183.7	-244.4	0.11	-0.11	1.34	20.5	3.0	
6,614.0	1.70	353.00	6,600.3	-178.1	-245.2	0.05	0.00	1.65	15.0	2.0	
6,803.0	1.50	352.50	6,789.3	-172.9	-245.8	0.11	-0.11	-0.26	9.7	2.1	
6,991.0	1.50	2.30	6,977.2	-168.0	-246.1	0.14	0.00	5.21	5.1	0.9	
7,179.0	0.70	141.90	7,165.2	-166.5	-245.3	1.11	-0.43	74.28	-2.6	-2.3	
7,367.0	0.70	128.50	7,353.2	-168.1	-243.7	0.09	0.00	-7.13	-4.2	-3.1	
7,555.0	0.60	147.90	7,541.1	-169.6	-242.2	0.13	-0.05	10.32	-7.1	-1.2	
7,743.0	0.80	144.40	7,729.1	-171.5	-240.9	0.11	0.11	-1.86	-9.3	-1.7	
7,767.8	0.69	149.16	7,773.9	-172.0	-240.6	0.28	-0.25	10.64	-10.0	-0.9	
Brushy Top(RR 25 St Com #502H)											
7,932.0	0.40	181.50	7,918.1	-173.3	-240.2	0.28	-0.20	22.42	-10.1	5.1	
8,119.0	0.40	243.50	8,105.1	-174.2	-240.8	0.22	0.00	33.16	-1.2	11.9	
8,307.0	0.60	230.00	8,293.1	-175.1	-242.1	0.12	0.11	-7.18	-5.6	11.1	
8,496.0	0.80	241.90	8,482.1	-176.4	-244.1	0.13	0.11	6.30	-5.5	12.3	
8,683.0	0.50	240.00	8,669.1	-177.4	-245.9	0.16	-0.16	-1.02	-8.0	12.0	
8,871.0	0.50	237.50	8,857.1	-178.3	-247.3	0.01	0.00	-1.33	-10.2	11.6	
9,058.0	0.40	215.20	9,044.1	-179.2	-248.4	0.11	-0.05	-11.93	-15.2	6.6	
9,246.0	0.30	322.30	9,232.1	-179.4	-249.1	0.30	-0.05	56.97	10.5	13.2	



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Wellbore:	.OH	Survey Calculation Method:	Minimum Curvature
Design:	.OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)	
9,433.0	0.60	354.40	9,419.1	-178.0	-249.5	0.20	0.16	17.17	14.5	5.9	
9,621.0	1.00	35.20	9,607.0	-175.7	-248.6	0.36	0.21	21.70	12.5	-4.4	
9,809.0	1.20	38.40	9,785.0	-172.8	-246.4	0.11	0.11	1.70	8.6	-5.0	
9,998.0	1.10	44.00	9,984.0	-170.0	-243.9	0.08	-0.05	2.96	4.3	-5.6	
10,186.0	1.00	59.30	10,171.9	-167.8	-241.3	0.16	-0.05	8.14	-0.7	-6.0	
10,374.0	0.90	57.00	10,359.9	-166.2	-238.6	0.06	-0.05	-1.22	-3.6	-6.1	
10,467.0	1.10	37.10	10,452.9	-165.1	-237.5	0.43	0.22	-21.40	-2.9	-7.2	
10,580.0	2.00	319.10	10,565.9	-162.7	-238.1	1.83	0.80	-69.03	4.3	-5.4	
10,675.0	9.30	345.30	10,660.4	-154.0	-241.2	7.95	7.68	27.58	-2.1	-4.6	
10,768.0	16.70	337.90	10,750.9	-134.3	-248.1	8.14	7.98	-7.98	-3.2	1.9	
10,836.8	23.94	339.36	10,815.4	-112.1	-256.8	10.55	10.53	2.12	-3.8	10.7	
HL Crossing, MD:10836.8', TVD:10815.4', N/S:-112.1', E/W:-256.8', INC:23.94											
10,862.0	26.60	339.70	10,838.2	-102.0	-260.5	10.55	10.54	1.36	-4.1	14.5	
10,956.0	35.00	353.70	10,918.9	-55.3	-270.8	11.70	8.94	14.89	0.7	25.1	
11,049.0	48.30	357.10	10,988.3	6.1	-275.5	14.50	14.30	3.68	0.7	29.2	
FTP(RR 25 St Com #502H)											
11,142.0	61.30	4.80	11,041.8	81.9	-273.8	15.51	13.98	8.28	-4.9	27.2	
11,189.0	63.60	10.90	11,063.6	123.1	-268.1	12.50	4.89	12.98	-8.5	21.7	
11,236.0	63.30	8.80	11,084.6	164.5	-260.9	4.05	-0.64	-4.47	-10.5	14.2	
11,283.0	68.00	5.30	11,104.0	207.0	-255.7	12.08	10.00	-7.45	-10.3	8.2	
11,329.0	72.70	2.70	11,119.4	250.2	-252.7	11.52	10.22	-5.65	-9.8	4.7	
11,376.0	76.20	3.20	11,132.0	295.4	-250.4	7.52	7.45	1.06	-8.6	2.0	
11,423.0	79.80	2.20	11,141.8	341.3	-248.2	7.94	7.66	-2.13	-6.5	-0.6	
11,470.0	81.30	359.90	11,149.5	387.7	-247.4	5.79	3.19	-4.89	-2.5	-1.9	
11,517.0	82.30	359.70	11,156.2	434.2	-247.5	2.17	2.13	-0.43	4.1	-2.1	
11,564.0	89.30	359.70	11,159.7	481.0	-247.8	14.89	14.89	0.00	8.4	-2.2	
11,703.0	91.10	359.50	11,159.2	620.0	-248.7	1.30	1.29	-0.14	10.3	-2.3	



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11,797.0	91.80	359.90	11,158.8	714.0	-249.2	0.86	0.74	0.43	9.6	-2.5	
11,892.0	92.90	358.30	11,152.9	808.9	-250.7	2.04	1.16	-1.68	7.3	-1.8	
11,986.0	92.40	357.60	11,148.6	902.7	-254.1	0.91	-0.53	-0.74	4.6	0.9	
12,080.0	92.20	356.40	11,144.8	996.5	-259.0	1.29	-0.21	-1.28	2.5	5.1	
12,174.0	93.60	359.30	11,140.0	1,090.3	-262.5	3.42	1.49	3.09	-0.6	7.9	
12,267.0	94.10	358.30	11,133.8	1,183.1	-264.5	1.20	0.54	-1.08	-5.2	9.1	
12,360.0	93.10	0.20	11,128.0	1,275.9	-265.7	2.31	-1.08	2.04	-9.5	9.6	
12,455.0	93.80	0.20	11,122.2	1,370.7	-265.4	0.74	0.74	0.00	-13.5	8.8	
12,549.0	91.20	2.30	11,118.1	1,464.6	-263.3	3.55	-2.77	2.23	-16.0	5.8	
12,643.0	91.20	2.20	11,116.2	1,558.5	-259.6	0.11	0.00	-0.11	-16.3	1.4	
12,737.0	90.40	2.20	11,114.9	1,652.4	-256.0	0.85	-0.85	0.00	-16.0	-3.0	
12,832.0	91.00	2.50	11,113.7	1,747.3	-252.1	0.71	0.63	0.32	-15.5	-7.6	
12,926.0	89.90	2.00	11,113.0	1,841.3	-248.4	1.29	-1.17	-0.53	-14.6	-12.0	
13,021.0	88.00	1.60	11,113.9	1,936.2	-245.4	1.04	-0.95	-0.42	-12.0	-15.7	
13,114.0	88.50	2.20	11,115.9	2,029.1	-242.4	0.84	-0.54	0.65	-8.4	-19.5	
13,207.0	89.60	0.80	11,117.4	2,122.1	-239.9	1.91	1.18	-1.51	-5.2	-22.7	
13,301.0	88.60	0.20	11,118.9	2,216.1	-239.1	1.24	-1.06	-0.64	-2.1	-24.2	
13,396.0	91.70	358.80	11,118.7	2,311.1	-239.9	3.58	3.26	-1.47	-0.7	-24.1	
13,490.0	91.70	358.80	11,115.9	2,405.0	-241.9	0.00	0.00	0.00	-1.9	-22.9	
13,584.0	91.00	359.20	11,113.7	2,499.0	-243.5	0.86	-0.74	0.43	-2.4	-21.9	
13,678.0	90.70	359.20	11,112.3	2,592.9	-244.8	0.32	-0.32	0.00	-2.2	-21.4	
13,772.0	91.40	358.30	11,110.5	2,686.9	-246.9	1.21	0.74	-0.96	-2.3	-20.0	
13,864.0	91.40	359.00	11,108.3	2,778.8	-249.1	0.76	0.00	0.76	-2.9	-18.6	
13,959.0	91.50	359.00	11,105.9	2,873.8	-250.7	0.11	0.11	0.00	-3.6	-17.6	
14,054.0	91.40	359.30	11,103.5	2,968.8	-252.1	0.33	-0.11	0.32	-4.4	-17.0	
14,148.0	90.70	359.70	11,101.8	3,062.7	-253.0	0.86	-0.74	0.43	-4.5	-16.9	
14,243.0	90.20	359.30	11,101.0	3,157.7	-253.8	0.67	-0.53	-0.42	-3.6	-16.8	



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14,337.0	91.40	358.60	11,099.7	3,251.7	-255.5	1.48	1.28	-0.74	-3.2	-15.8	
14,431.0	91.40	358.30	11,097.4	3,345.8	-258.0	0.32	0.00	-0.32	-3.9	-14.0	
14,525.0	91.80	358.60	11,094.8	3,439.6	-260.6	0.53	0.43	0.32	-4.9	-12.1	
14,619.0	91.40	358.60	11,092.2	3,533.5	-262.9	0.43	-0.43	0.00	-5.9	-10.6	
14,713.0	91.80	358.10	11,089.7	3,627.4	-265.6	0.57	0.21	-0.53	-6.7	-8.6	
14,808.0	92.10	358.60	11,086.6	3,722.3	-268.3	0.74	0.53	0.53	-8.1	-6.6	
14,902.0	92.30	358.80	11,083.0	3,816.2	-270.5	0.30	0.21	0.21	-10.1	-5.2	
14,996.0	90.70	359.50	11,080.6	3,910.2	-271.8	1.86	-1.70	0.74	-10.9	-4.5	
15,078.9	90.70	359.33	11,079.6	3,993.1	-272.7	0.21	0.00	-0.21	-10.4	-4.3	
TOT#1(RR 25 St Com #502H)											
15,091.0	90.70	359.30	11,079.4	4,005.2	-272.8	0.21	0.00	-0.21	-10.4	-4.2	
15,185.0	90.80	359.90	11,078.2	4,099.2	-273.5	0.65	0.11	0.64	-10.9	-4.3	
15,279.0	90.60	0.00	11,077.0	4,193.2	-273.8	0.24	-0.21	0.11	-11.3	-4.9	
15,372.0	91.60	358.30	11,075.2	4,286.1	-275.0	2.12	1.08	-1.83	-12.4	-4.3	
15,466.0	91.40	358.30	11,072.8	4,380.1	-277.7	0.21	-0.21	0.00	-14.2	-2.2	
15,561.0	92.60	359.30	11,069.5	4,475.0	-279.7	1.64	1.28	1.05	-16.8	-1.0	
15,655.0	93.10	359.20	11,064.8	4,568.9	-281.0	0.54	0.53	-0.11	-20.8	-0.4	
15,749.0	92.50	359.50	11,060.2	4,662.7	-282.0	0.71	-0.64	0.32	-24.7	-0.1	
15,844.0	90.20	359.00	11,058.0	4,757.7	-283.3	2.48	-2.42	-0.53	-26.2	0.4	
15,938.0	90.00	359.50	11,057.8	4,851.7	-284.5	0.57	-0.21	0.53	-25.7	0.9	
16,032.0	89.90	0.20	11,057.9	4,945.7	-284.7	0.75	-0.11	0.74	-24.9	0.4	
16,126.0	90.00	0.90	11,058.0	5,039.7	-283.8	0.75	0.11	0.74	-24.1	-1.2	
16,219.0	90.50	359.20	11,057.6	5,132.7	-283.8	1.91	0.54	-1.83	-23.8	-2.0	
16,313.0	90.00	358.60	11,057.1	5,226.7	-285.6	0.83	-0.53	-0.64	-23.5	-0.9	
16,407.0	91.90	358.60	11,055.6	5,320.6	-287.9	2.02	2.02	0.00	-24.4	0.7	
16,502.0	92.00	359.00	11,052.4	5,415.5	-289.9	0.43	0.11	0.42	-26.9	1.9	
16,595.0	91.40	359.30	11,049.6	5,508.5	-291.2	0.72	-0.65	0.32	-29.0	2.6	



Final PVA Report

Company:	EOG Resources - Midland	Local Co-ordinate Reference:	Well #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB = 32' @ 3538.0usft
Site:	Red Raider 25 State Com	MD Reference:	KB = 32' @ 3538.0usft
Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey											
MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	EW (usft)	DLog ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)	
16,689.0	90.20	359.70	11,048.3	5,602.5	-292.1	1.35	-1.28	0.43	-29.6	2.7	
16,782.0	90.70	359.20	11,047.6	5,695.5	-292.9	0.76	0.54	-0.54	-29.7	2.9	
16,876.0	90.50	359.20	11,046.6	5,789.4	-294.3	0.21	-0.21	0.00	-29.9	3.5	
16,970.0	89.60	359.30	11,046.2	5,883.4	-295.5	0.65	-0.64	0.11	-29.6	4.0	
17,064.0	91.20	0.20	11,045.3	5,977.4	-295.9	1.68	1.38	0.96	-29.8	3.6	
17,079.9	91.08	0.27	11,045.0	5,993.3	-295.8	0.86	-0.74	0.43	-30.0	3.5	
TGT#2(RR 25 St Com #502H)											
17,158.0	90.50	0.60	11,043.9	6,071.4	-295.2	0.86	-0.74	0.43	-30.3	2.3	
17,252.0	92.20	359.30	11,041.7	6,165.4	-295.3	2.28	1.81	-1.38	-31.6	1.6	
17,346.0	92.80	359.70	11,037.6	6,259.3	-296.1	0.77	0.64	0.43	-34.7	1.7	
17,440.0	92.80	358.60	11,033.0	6,353.2	-297.5	1.17	0.00	-1.17	-38.4	2.4	
17,534.0	93.00	359.30	11,028.3	6,447.0	-299.3	0.77	0.21	0.74	-42.2	3.4	
17,628.0	90.90	359.90	11,025.1	6,541.0	-299.9	2.32	-2.23	0.64	-44.4	3.3	
17,723.0	91.50	0.60	11,023.1	6,635.9	-299.5	0.97	0.63	0.74	-45.5	2.2	
17,817.0	90.10	359.90	11,021.8	6,729.9	-299.1	1.67	-1.49	-0.74	-45.9	1.0	
17,911.0	88.80	0.10	11,022.7	6,823.9	-299.1	1.40	-1.38	0.21	-44.0	0.3	
18,005.0	88.90	0.80	11,024.6	6,917.9	-298.4	0.75	0.11	0.74	-41.2	-1.1	
18,099.0	90.60	359.70	11,025.0	7,011.9	-297.9	2.15	1.81	-1.17	-39.8	-2.3	
18,193.0	90.80	359.30	11,023.8	7,105.9	-298.8	0.48	0.21	-0.43	-40.0	-2.2	
18,287.0	90.20	359.30	11,023.0	7,199.9	-299.9	0.64	-0.64	0.00	-39.9	-1.7	
18,381.0	91.80	359.30	11,021.4	7,293.9	-301.1	1.70	1.70	0.00	-40.6	-1.3	
18,476.0	91.50	358.60	11,018.6	7,388.8	-302.8	0.80	-0.32	-0.74	-42.4	-0.3	
18,570.0	90.70	358.30	11,016.8	7,482.7	-305.3	0.91	-0.85	-0.32	-43.3	1.5	
18,664.0	92.30	359.20	11,014.4	7,576.7	-307.4	1.95	1.70	0.96	-44.8	2.8	
18,758.0	92.90	359.30	11,010.1	7,670.6	-308.6	0.65	0.64	0.11	-48.1	3.3	
18,853.0	93.00	359.20	11,005.2	7,765.4	-309.9	0.15	0.11	-0.11	-52.1	3.9	
18,947.0	91.30	359.70	11,001.7	7,859.4	-310.8	1.89	-1.81	0.53	-54.7	4.0	



Final PVA Report

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Site:	Red Raider 25 State Com	MD Reference:	KB = 32' @ 3536.0usft
Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

Survey										
MD (usft)	Inc (°)	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	High to Plan (usft)	Right to Plan (usft)
19,041.0	91.50	359.50	10,999.4	7,953.3	-311.4	0.30	0.21	-0.21	-56.0	4.0
19,080.4	91.50	359.29	10,998.4	7,992.8	-311.8	0.54	0.00	-0.54	-56.6	4.1
TGT#3(RR 25 St Com #502H)										
19,134.0	91.50	359.00	10,997.0	8,046.3	-312.6	0.54	0.00	-0.54	-57.2	4.5
19,229.0	91.60	359.00	10,994.4	8,141.3	-314.3	0.11	0.11	0.00	-58.1	5.4
19,323.0	91.30	358.60	10,992.0	8,235.2	-316.3	0.53	-0.32	-0.43	-58.7	6.7
19,417.0	90.80	358.80	10,990.3	8,329.2	-318.4	0.57	-0.53	0.21	-58.8	8.1
19,511.0	90.90	359.20	10,988.9	8,423.1	-320.0	0.44	0.11	0.43	-58.5	9.0
19,605.0	90.90	359.30	10,987.4	8,517.1	-321.3	0.11	0.00	0.11	-58.3	9.5
19,699.0	90.60	359.30	10,986.2	8,611.1	-322.4	0.32	-0.32	0.00	-57.8	9.9
19,793.0	90.80	359.20	10,985.0	8,705.1	-323.6	0.24	0.21	-0.11	-57.3	10.4
19,888.0	90.80	359.00	10,983.7	8,800.1	-325.1	0.21	0.00	-0.21	-56.9	11.2
19,982.0	91.00	359.00	10,982.2	8,894.0	-326.8	0.21	0.21	0.00	-56.7	12.1
20,076.0	91.30	359.20	10,980.4	8,988.0	-328.3	0.38	0.32	0.21	-56.9	12.8
20,170.0	91.30	359.00	10,978.2	9,082.0	-329.7	0.21	0.00	-0.21	-57.4	13.6
20,265.0	91.20	1.50	10,976.1	9,176.9	-329.3	2.63	-0.11	2.63	-57.8	12.4
20,359.0	91.30	1.30	10,974.1	9,270.9	-327.0	0.24	0.11	-0.21	-58.1	9.4
20,454.0	91.40	0.90	10,971.9	9,365.8	-325.2	0.43	0.11	-0.42	-58.7	6.8
20,547.0	91.80	0.60	10,969.3	9,458.8	-324.0	0.54	0.43	-0.32	-59.6	4.9
20,640.0	92.60	0.60	10,965.7	9,551.7	-323.0	0.86	0.86	0.00	-61.5	3.2
20,734.0	90.30	1.60	10,963.3	9,645.7	-321.2	2.67	-2.45	1.06	-62.2	0.7
20,827.0	90.60	1.60	10,962.6	9,738.6	-318.6	0.32	0.32	0.00	-61.3	-2.6
20,921.0	90.50	2.00	10,961.7	9,832.6	-315.6	0.44	-0.11	0.43	-60.5	-6.3
21,015.0	90.30	2.00	10,961.0	9,926.5	-312.4	0.21	-0.21	0.00	-59.4	-10.3
21,109.0	90.30	2.00	10,960.5	10,020.5	-309.1	0.00	0.00	0.00	-58.3	-14.3
21,203.0	90.40	2.20	10,960.0	10,114.4	-305.6	0.24	0.11	0.21	-57.1	-18.5



Final PVA Report

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Site:	Red Raider 25 State Com	MD Reference:	KB = 32' @ 3536.0usft
Well:	#502H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14

MD (usft)	Inc (")	Azi (grid_north_azim)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg ("/100usft)	Build ("/100usft)	Turn ("/100usft)	High to Plan (usft)	Right to Plan (usft)
21,264.0	90.60	2.50	10,959.4	10,175.3	-303.1	0.59	0.33	0.49	-56.6	-21.4
Final MWD Survey (MD=21264.0')										
21,320.1	90.60	2.50	10,958.8	10,231.4	-300.7	0.00	0.00	0.00	-56.2	-24.3
PBHL(RR 25 St Com #502H)										
21,322.0	90.60	2.50	10,958.8	10,233.3	-300.6	0.00	0.00	0.00	-56.2	-24.4
Final Projection to Bit (MD=21322.0')										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,836.8	10,815.4	-112.1	-256.8	HL Crossing, MD:10836.8', TVD:10815.4', N/S:-112.1', E/W:-256.8', INC:23.94
21,264.0	10,959.4	10,175.3	-303.1	Final MWD Survey (MD=21264.0')
21,322.0	10,958.8	10,233.3	-300.6	Final Projection to Bit (MD=21322.0')

Checked By: _____	Approved By: _____	Date: _____
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I certify this survey to be true and correct to the best of my belief and knowledge.

Kay Maddox 01/06/2020
Signed Date



Lea County, NM (NAD 83 NME)
Red Raider 25 State Com #502H
Plan #1

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: #502H

KB = 32' @ 3536.0usft
Northing 430855.00 Easting 782773.00
Latitude 32° 10' 54.763 N Longitude 109° 31' 14.244 W

To convert a Magnetic Direction to a Grid Direction, Add 0.32°
To convert a Magnetic Direction to a True Direction, Add 0.75° East
To convert a True Direction to a Grid Direction, Subtract 0.43°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dlog	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0	
3	1800.2	4.00	236.38	1800.0	-3.9	-5.8	2.00	236.38	-3.7	
4	5815.0	4.00	236.38	5805.0	-159.1	-239.2	0.00	0.00	-151.5	
5	8015.1	0.00	0.00	8005.0	-163.0	-245.0	2.00	180.00	-155.1	
6	10589.8	0.00	0.00	10579.5	-163.0	-245.0	0.00	0.00	-155.1	
7	11499.8	91.00	359.58	11152.4	416.9	-249.5	10.00	359.58	427.8	TGT#1(RR 25 St Com #502H)
8	15073.5	91.00	359.58	11090.0	3993.2	-277.0	0.00	0.00	4000.0	TGT#2(RR 25 St Com #502H)
9	15102.3	90.43	359.58	11089.6	4021.9	-277.2	2.00	180.00	4028.7	TGT#3(RR 25 St Com #502H)
10	17074.1	90.43	359.58	11075.0	5993.7	-292.4	0.00	0.00	6000.0	
11	17081.5	90.57	359.58	11074.9	6001.1	-292.4	2.00	0.00	6007.3	
12	19074.9	90.57	359.58	11055.0	7994.3	-307.8	0.00	0.00	8000.0	
13	19097.5	91.03	359.58	11054.7	8018.9	-307.9	2.00	0.00	8022.7	
14	21314.0	91.03	359.58	11015.0	10233.0	-325.0	0.00	0.00	10238.2	PBHL(RR 25 St Com #502H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/S	+E/W	Northing	Easting
Brushy Top(RR 25 St Com #502H)	7774.0	-163.0	-245.0	430852.00	782578.00
PBHL(RR 25 St Com #502H)	11016.0	10233.0	-325.0	441088.00	782448.00
TGT#1(RR 25 St Com #502H)	11083.0	7994.3	-307.8	430843.30	782465.20
TGT#2(RR 25 St Com #502H)	11076.0	5993.7	-292.4	430848.70	782480.82
TGT#3(RR 25 St Com #502H)	11080.0	5993.2	-277.0	430848.00	782496.02
FTPR(RR 25 St Com #502H)	11168.0	-113.0	-345.0	430742.00	782529.00

