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Mewbourne Oil Company .

Eddy County, New Mexico
Section 15 T18S-R30E Leo 15 DA Federal Com
Leo 15 DA Federal Com

Original Hole

Design: Original Hole

Standard Survey Report

23 July, 2014

NM OIL CONSERVATION
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Stryker Directional Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Leo 15 DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Project	Eddy County, 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	Section 15 T18S-R30E Leo 15 DA Federal Com		
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Site Position:		Northing:	638,089.06 usft	Latitude:	32° 45' 13.190 N
From:	Map	Easting:	612,725.81 usft	Longitude:	103° 57' 59.997 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.20 °

Well	Leo 15 DA Federal Com				
Well Position	+N/-S	0.0 usft	Northing:	638,089.06 usft	Latitude: 32° 45' 13.190 N
	+E/-W	0.0 usft	Easting:	612,725.81 usft	Longitude: 103° 57' 59.997 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	0.0 usft	Ground Level: 3,515.0 usft

Wellbore	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/9/2014	7.43	60.53	48,584

Design	Original Hole				
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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	90.00

Survey Program		Date	7/23/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,600.0	MS Gyro Survey (Original Hole)	SRG-GYRO-MS	surface readout gyro multishot	
7,684.0	12,649.0	Stryker MWD Survey (Original Hole)	MWD	MWD v3:standard declination	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.37	134.87	100.0	-0.2	0.2	0.2	0.37	0.37	0.00
200.0	0.82	201.44	200.0	-1.1	0.2	0.2	0.75	0.45	66.57
300.0	1.02	214.33	300.0	-2.5	-0.6	-0.6	0.29	0.20	12.89
400.0	1.08	202.37	400.0	-4.1	-1.4	-1.4	0.23	0.06	-11.96
500.0	1.32	216.04	499.9	-5.9	-2.5	-2.5	0.37	0.24	13.67
600.0	1.16	235.44	599.9	-7.4	-4.0	-4.0	0.45	-0.16	19.40
700.0	1.33	234.87	699.9	-8.7	-5.8	-5.8	0.17	0.17	-0.57
800.0	1.00	244.89	799.9	-9.7	-7.5	-7.5	0.39	-0.33	10.02
900.0	0.72	225.05	899.9	-10.5	-8.7	-8.7	0.40	-0.28	-19.84



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Site:	Section 15 T18S R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker EDM

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)
1,000.0	0.55	250.00	999.9	-11.1	-9.6	-9.6	0.32	-0.17	24.95
1,100.0	0.18	235.07	1,099.9	-11.4	-10.2	-10.2	0.38	-0.37	-14.93
1,200.0	0.17	330.48	1,199.9	-11.4	-10.4	-10.4	0.26	-0.01	95.41
1,300.0	0.50	66.40	1,299.9	-11.1	-10.1	-10.1	0.54	0.33	95.92
1,400.0	0.80	68.72	1,399.8	-10.6	-9.0	-9.0	0.30	0.30	2.32
1,500.0	0.44	30.66	1,499.8	-10.0	-8.2	-8.2	0.53	-0.36	-38.06
1,600.0	0.18	65.65	1,599.8	-9.6	-7.8	-7.8	0.31	-0.26	34.99
1,700.0	0.09	333.20	1,699.8	-9.5	-7.7	-7.7	0.20	-0.09	-92.45
1,800.0	0.32	39.86	1,799.8	-9.2	-7.6	-7.6	0.30	0.23	66.66
1,900.0	0.26	349.60	1,899.8	-8.8	-7.5	-7.5	0.25	-0.06	-50.26
2,000.0	0.09	105.50	1,999.8	-8.6	-7.4	-7.4	0.31	-0.17	115.90
2,100.0	0.30	335.08	2,099.8	-8.4	-7.5	-7.5	0.36	0.21	-130.42
2,200.0	0.14	29.88	2,199.8	-8.0	-7.5	-7.5	0.25	-0.16	54.80
2,300.0	0.26	287.52	2,299.8	-7.9	-7.7	-7.7	0.32	0.12	-102.36
2,400.0	0.38	313.20	2,399.8	-7.6	-8.1	-8.1	0.18	0.12	25.68
2,500.0	0.11	332.69	2,499.8	-7.2	-8.4	-8.4	0.28	-0.27	19.49
2,600.0	0.42	283.06	2,599.8	-7.1	-8.8	-8.8	0.36	0.31	-49.63
2,700.0	0.14	284.24	2,699.8	-7.0	-9.3	-9.3	0.28	-0.28	1.18
2,800.0	0.42	287.15	2,799.8	-6.8	-9.8	-9.8	0.28	0.28	2.91
2,900.0	0.43	304.49	2,899.8	-6.5	-10.4	-10.4	0.13	0.01	17.34
3,000.0	0.14	344.59	2,999.8	-6.2	-10.8	-10.8	0.34	-0.29	40.10
3,100.0	0.29	297.92	3,099.8	-5.9	-11.0	-11.0	0.22	0.15	-46.67
3,200.0	0.13	20.70	3,199.8	-5.7	-11.2	-11.2	0.30	-0.16	82.78
3,300.0	0.25	299.46	3,299.8	-5.5	-11.3	-11.3	0.26	0.12	-81.24
3,400.0	0.12	306.51	3,399.8	-5.3	-11.6	-11.6	0.13	-0.13	7.05
3,500.0	0.34	305.47	3,499.8	-5.1	-11.9	-11.9	0.22	0.22	-1.04
3,600.0	0.34	1.09	3,599.8	-4.6	-12.2	-12.2	0.32	0.00	55.62
3,700.0	0.38	325.38	3,699.8	-4.1	-12.4	-12.4	0.22	0.04	-35.71
3,800.0	0.39	328.93	3,799.8	-3.5	-12.7	-12.7	0.03	0.01	3.55
3,900.0	0.66	348.92	3,899.8	-2.6	-13.0	-13.0	0.32	0.27	19.99
4,000.0	0.49	349.14	3,999.8	-1.7	-13.2	-13.2	0.17	-0.17	0.22
4,100.0	0.92	334.99	4,099.8	-0.5	-13.6	-13.6	0.46	0.43	-14.15
4,200.0	1.03	349.61	4,199.8	1.1	-14.1	-14.1	0.27	0.11	14.62
4,300.0	0.99	340.24	4,299.8	2.8	-14.6	-14.6	0.17	-0.04	-9.37
4,400.0	1.18	340.68	4,399.8	4.6	-15.2	-15.2	0.19	0.19	0.44
4,500.0	0.98	348.89	4,499.7	6.4	-15.7	-15.7	0.25	-0.20	8.21
4,600.0	1.25	338.28	4,599.7	8.3	-16.3	-16.3	0.34	0.27	-10.61
4,700.0	1.14	290.38	4,699.7	9.6	-17.6	-17.6	0.98	-0.11	-47.90
4,800.0	1.07	289.43	4,799.7	10.3	-19.4	-19.4	0.07	-0.07	-0.95
4,900.0	1.22	308.27	4,899.7	11.2	-21.2	-21.2	0.40	0.15	18.84
5,000.0	1.21	338.35	4,999.6	12.9	-22.4	-22.4	0.63	-0.01	30.08
5,100.0	1.10	354.96	5,099.6	14.8	-22.9	-22.9	0.35	-0.11	16.61
5,200.0	1.19	344.08	5,199.6	16.8	-23.2	-23.2	0.23	0.09	-10.88



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Site:	Section 15 T18S R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker EDM

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)
5,300.0	1.02	345.56	5,299.6	18.6	-23.7	-23.7	0.17	-0.17	1.48
5,400.0	0.85	317.46	5,399.6	20.0	-24.4	-24.4	0.48	-0.17	-28.10
5,500.0	1.24	319.59	5,499.5	21.4	-25.7	-25.7	0.39	0.39	2.13
5,600.0	1.07	311.67	5,599.5	22.9	-27.1	-27.1	0.23	-0.17	-7.92
5,700.0	0.99	286.92	5,699.5	23.7	-28.6	-28.6	0.45	-0.08	-24.75
5,800.0	1.06	294.86	5,799.5	24.4	-30.2	-30.2	0.16	0.07	7.94
5,900.0	0.92	290.33	5,899.5	25.0	-31.8	-31.8	0.16	-0.14	-4.53
6,000.0	0.90	309.53	5,999.5	25.8	-33.2	-33.2	0.30	-0.02	19.20
6,100.0	0.82	339.98	6,099.5	27.0	-34.0	-34.0	0.46	-0.08	30.45
6,200.0	0.75	341.53	6,199.5	28.3	-34.5	-34.5	0.07	-0.07	1.55
6,300.0	0.81	339.24	6,299.4	29.6	-35.0	-35.0	0.07	0.06	-2.29
6,400.0	0.87	330.65	6,399.4	30.9	-35.6	-35.6	0.14	0.06	-8.59
6,500.0	0.92	329.31	6,499.4	32.2	-36.4	-36.4	0.05	0.05	-1.34
6,600.0	1.06	300.76	6,599.4	33.4	-37.6	-37.6	0.51	0.14	-28.55
6,700.0	0.97	301.98	6,699.4	34.3	-39.1	-39.1	0.09	-0.09	1.22
6,800.0	0.30	290.00	6,799.4	34.9	-40.0	-40.0	0.68	-0.67	-11.98
6,900.0	0.15	197.80	6,899.4	34.8	-40.3	-40.3	0.34	-0.15	-92.20
7,000.0	0.28	127.60	6,999.4	34.6	-40.2	-40.2	0.27	0.13	-70.20
7,100.0	0.51	82.78	7,099.4	34.5	-39.5	-39.5	0.37	0.23	-44.82
7,200.0	0.53	76.25	7,199.4	34.6	-38.6	-38.6	0.06	0.02	-6.53
7,300.0	0.73	71.15	7,299.4	34.9	-37.6	-37.6	0.21	0.20	-5.10
7,400.0	0.60	54.29	7,399.4	35.5	-36.6	-36.6	0.23	-0.13	-16.86
7,500.0	0.77	11.28	7,499.4	36.4	-36.0	-36.0	0.53	0.17	-43.01
7,600.0	1.01	8.40	7,599.3	37.9	-35.7	-35.7	0.24	0.24	-2.88
7600' MD MS Gyro Survey									
7,684.0	0.30	47.10	7,683.3	38.8	-35.5	-35.5	0.95	-0.85	46.07
7,716.0	3.60	71.30	7,715.3	39.2	-34.5	-34.5	10.40	10.31	75.63
7,748.0	9.70	70.10	7,747.1	40.4	-31.0	-31.0	19.07	19.06	-3.75
7,780.0	15.60	69.60	7,778.3	42.9	-24.4	-24.4	18.44	18.44	-1.56
7,811.0	18.50	71.20	7,807.9	45.9	-15.8	-15.8	9.48	9.35	5.16
7,843.0	21.30	74.10	7,838.0	49.1	-5.4	-5.4	9.28	8.75	9.06
7,875.0	24.80	75.70	7,867.5	52.4	6.7	6.7	11.11	10.94	5.00
7,907.0	28.40	78.00	7,896.1	55.6	20.6	20.6	11.70	11.25	7.19
7,938.0	32.40	80.70	7,922.8	58.5	36.0	36.0	13.63	12.90	8.71
7,970.0	35.80	84.00	7,949.3	60.9	53.8	53.8	12.09	10.63	10.31
8,002.0	38.30	88.20	7,974.8	62.2	73.0	73.0	11.11	7.81	13.13
8,034.0	39.90	91.00	7,999.7	62.3	93.2	93.2	7.45	5.00	8.75
8,065.0	41.60	91.40	8,023.2	61.9	113.4	113.4	5.55	5.48	1.29
8,097.0	43.30	91.20	8,046.8	61.4	135.0	135.0	5.33	5.31	-0.63
8,129.0	45.50	90.80	8,069.6	61.0	157.4	157.4	6.93	6.88	-1.25
8,161.0	47.50	91.50	8,091.7	60.5	180.6	180.6	6.45	6.25	2.19
8,193.0	49.20	92.30	8,112.9	59.7	204.5	204.5	5.63	5.31	2.50
8,224.0	50.70	91.00	8,132.9	59.0	228.2	228.2	5.81	4.84	-4.19



Stryker Directional Survey Report



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Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

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)
8,256.0	52.20	89.60	8,152.8	58.9	253.3	253.3	5.80	4.69	-4.38
8,288.0	54.00	87.50	8,172.0	59.6	278.8	278.8	7.69	5.63	-6.56
8,320.0	57.40	85.90	8,190.1	61.1	305.2	305.2	11.40	10.63	-5.00
8,352.0	61.40	85.60	8,206.3	63.1	332.7	332.7	12.53	12.50	-0.94
8,383.0	64.90	88.00	8,220.3	64.7	360.3	360.3	13.23	11.29	7.74
8,415.0	68.00	91.20	8,233.1	64.9	389.6	389.6	13.34	9.69	10.00
8,447.0	70.10	95.20	8,244.6	63.2	419.4	419.4	13.39	6.56	12.50
8,479.0	71.70	99.30	8,255.0	59.4	449.4	449.4	13.10	5.00	12.81
8,511.0	73.30	103.20	8,264.7	53.4	479.4	479.4	12.65	5.00	12.19
8,543.0	76.40	106.00	8,273.0	45.6	509.2	509.2	12.85	9.69	8.75
8,574.0	80.20	108.00	8,279.3	36.8	538.3	538.3	13.79	12.26	6.45
8,606.0	84.10	110.50	8,283.7	26.3	568.2	568.2	14.44	12.19	7.81
8,638.0	86.30	114.90	8,286.4	14.0	597.6	597.6	15.33	6.88	13.75
8,666.0	87.00	116.90	8,288.0	1.8	622.7	622.7	7.56	2.50	7.14
8,751.0	90.40	115.60	8,289.9	-35.8	698.9	698.9	4.28	4.00	-1.53
8,782.0	91.10	114.40	8,289.5	-48.9	727.0	727.0	4.48	2.26	-3.87
8,814.0	91.10	113.20	8,288.9	-61.8	756.3	756.3	3.75	0.00	-3.75
8,846.0	90.70	112.10	8,288.4	-74.1	785.8	785.8	3.66	-1.25	-3.44
8,877.0	90.50	110.90	8,288.1	-85.5	814.7	814.7	3.92	-0.65	-3.87
8,909.0	90.70	109.10	8,287.8	-96.4	844.7	844.7	5.66	0.63	-5.63
8,941.0	90.30	106.80	8,287.5	-106.3	875.2	875.2	7.30	-1.25	-7.19
8,972.0	89.30	104.90	8,287.6	-114.8	905.0	905.0	6.93	-3.23	-6.13
9,004.0	88.60	102.40	8,288.2	-122.3	936.1	936.1	8.11	-2.19	-7.81
9,036.0	88.60	100.50	8,289.0	-128.7	967.4	967.4	5.94	0.00	-5.94
9,067.0	89.40	98.60	8,289.5	-133.8	998.0	998.0	6.65	2.58	-6.13
9,099.0	90.00	97.00	8,289.7	-138.1	1,029.7	1,029.7	5.34	1.88	-5.00
9,130.0	90.40	95.20	8,289.6	-141.4	1,060.5	1,060.5	5.95	1.29	-5.81
9,162.0	90.60	93.30	8,289.3	-143.8	1,092.4	1,092.4	5.97	0.63	-5.94
9,194.0	90.60	91.50	8,288.9	-145.1	1,124.4	1,124.4	5.62	0.00	-5.63
9,225.0	90.10	90.00	8,288.7	-145.5	1,155.4	1,155.4	5.10	-1.61	-4.84
9,257.0	90.00	89.30	8,288.7	-145.4	1,187.4	1,187.4	2.21	-0.31	-2.19
9,320.0	90.00	89.40	8,288.7	-144.6	1,250.4	1,250.4	0.16	0.00	0.16
9,384.0	90.00	89.40	8,288.7	-144.0	1,314.4	1,314.4	0.00	0.00	0.00
9,447.0	89.30	88.40	8,289.1	-142.8	1,377.4	1,377.4	1.94	-1.11	-1.59
9,510.0	89.10	87.70	8,290.0	-140.6	1,440.3	1,440.3	1.16	-0.32	-1.11
9,573.0	89.40	87.30	8,290.8	-137.9	1,503.3	1,503.3	0.79	0.48	-0.63
9,637.0	89.50	88.20	8,291.4	-135.4	1,567.2	1,567.2	1.41	0.16	1.41
9,700.0	89.30	88.40	8,292.1	-133.5	1,630.2	1,630.2	0.45	-0.32	0.32
9,763.0	89.60	87.90	8,292.7	-131.5	1,693.1	1,693.1	0.93	0.48	-0.79
9,827.0	88.90	88.00	8,293.5	-129.2	1,757.1	1,757.1	1.10	-1.09	0.16
9,890.0	88.80	87.90	8,294.8	-126.9	1,820.0	1,820.0	0.22	-0.16	-0.16
9,953.0	88.60	87.20	8,296.2	-124.2	1,883.0	1,883.0	1.16	-0.32	-1.11
10,016.0	88.40	88.00	8,297.9	-121.6	1,945.9	1,945.9	1.31	-0.32	1.27
10,048.0	88.30	88.40	8,298.8	-120.6	1,977.9	1,977.9	1.29	-0.31	1.25



Stryker Directional Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well: Leo 15 DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E/Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker EDM

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)
10,111.0	89.30	89.30	8,300.1	-119.3	2,040.8	2,040.8	2.14	1.59	1.43
10,174.0	90.10	89.30	8,300.4	-118.5	2,103.8	2,103.8	1.27	1.27	0.00
10,237.0	90.00	89.60	8,300.4	-117.9	2,166.8	2,166.8	0.50	-0.16	0.48
10,301.0	88.80	89.60	8,301.1	-117.5	2,230.8	2,230.8	1.88	-1.88	0.00
10,364.0	88.50	88.90	8,302.5	-116.7	2,293.8	2,293.8	1.21	-0.48	-1.11
10,427.0	88.90	88.40	8,304.0	-115.2	2,356.8	2,356.8	1.02	0.63	-0.79
10,490.0	88.60	89.10	8,305.3	-113.8	2,419.7	2,419.7	1.21	-0.48	1.11
10,554.0	89.60	90.50	8,306.3	-113.6	2,483.7	2,483.7	2.69	1.56	2.19
10,617.0	90.00	91.40	8,306.6	-114.6	2,546.7	2,546.7	1.56	0.63	1.43
10,674.0	90.10	91.00	8,306.5	-115.8	2,603.7	2,603.7	0.72	0.18	-0.70
10,737.0	89.50	90.80	8,306.7	-116.8	2,666.7	2,666.7	1.00	-0.95	-0.32
10,800.0	88.50	89.60	8,307.8	-117.0	2,729.7	2,729.7	2.48	-1.59	-1.90
10,863.0	88.10	89.30	8,309.7	-116.4	2,792.6	2,792.6	0.79	-0.63	-0.48
10,926.0	87.50	89.10	8,312.1	-115.5	2,855.6	2,855.6	1.00	-0.95	-0.32
10,990.0	89.80	89.30	8,313.6	-114.7	2,919.6	2,919.6	3.61	3.59	0.31
11,053.0	89.50	88.50	8,314.0	-113.4	2,982.5	2,982.5	1.36	-0.48	-1.27
11,117.0	89.10	87.00	8,314.8	-110.9	3,046.5	3,046.5	2.43	-0.63	-2.34
11,180.0	89.30	88.40	8,315.7	-108.4	3,109.4	3,109.4	2.24	0.32	2.22
11,244.0	89.30	89.10	8,316.5	-107.0	3,173.4	3,173.4	1.09	0.00	1.09
11,307.0	88.60	88.60	8,317.6	-105.7	3,236.4	3,236.4	1.37	-1.11	-0.79
11,370.0	89.00	89.40	8,318.9	-104.6	3,299.4	3,299.4	1.42	0.63	1.27
11,433.0	88.90	89.40	8,320.1	-104.0	3,362.4	3,362.4	0.16	-0.16	0.00
11,497.0	88.60	89.40	8,321.5	-103.3	3,426.3	3,426.3	0.47	-0.47	0.00
11,560.0	89.10	89.80	8,322.7	-102.9	3,489.3	3,489.3	1.02	0.79	0.63
11,623.0	89.10	90.00	8,323.7	-102.8	3,552.3	3,552.3	0.32	0.00	0.32
11,686.0	90.50	91.20	8,324.0	-103.4	3,615.3	3,615.3	2.93	2.22	1.90
11,750.0	93.40	91.20	8,321.8	-104.8	3,679.2	3,679.2	4.53	4.53	0.00
11,813.0	93.30	91.00	8,318.1	-106.0	3,742.1	3,742.1	0.35	-0.16	-0.32
11,876.0	92.00	89.60	8,315.2	-106.3	3,805.1	3,805.1	3.03	-2.06	-2.22
11,940.0	91.90	89.30	8,313.0	-105.7	3,869.0	3,869.0	0.49	-0.16	-0.47
12,003.0	91.40	88.60	8,311.2	-104.5	3,932.0	3,932.0	1.37	-0.79	-1.11
12,066.0	90.90	88.20	8,309.9	-102.8	3,994.9	3,994.9	1.02	-0.79	-0.63
12,129.0	91.20	88.00	8,308.8	-100.7	4,057.9	4,057.9	0.57	0.48	-0.32
12,193.0	91.50	87.90	8,307.3	-98.4	4,121.8	4,121.8	0.49	0.47	-0.16
12,256.0	89.70	87.90	8,306.6	-96.1	4,184.8	4,184.8	2.86	-2.86	0.00
12,319.0	87.80	88.00	8,308.0	-93.8	4,247.7	4,247.7	3.02	-3.02	0.16
12,382.0	88.70	87.50	8,309.9	-91.4	4,310.6	4,310.6	1.63	1.43	-0.79
12,445.0	90.30	88.90	8,310.5	-89.4	4,373.6	4,373.6	3.37	2.54	2.22
12,509.0	91.10	89.60	8,309.7	-88.5	4,437.6	4,437.6	1.66	1.25	1.09
12,572.0	92.70	90.00	8,307.6	-88.3	4,500.6	4,500.6	2.62	2.54	0.63
12,595.0	93.50	89.80	8,306.3	-88.3	4,523.5	4,523.5	3.58	3.48	-0.87
12,649.0	93.50	89.80	8,303.0	-88.1	4,577.4	4,577.4	0.00	0.00	0.00

12649 MD Projected to Bit PBHL Leo 15 Fed Com #1H



Stryker Directional Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Leo 15 DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker EDM

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)
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Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,600.0	7,599.3	37.9	-35.7	7600' MD MS Gyro Survey
12,649.0	8,303.0	-88.1	4,577.4	12649' MD Projected to Bit



Mewbourne Oil Company .

Eddy County, New Mexico

Section 15 T18S-R30E Leo 15 DA Federal Com

Leo 15 DA Federal Com

Original Hole

Design: Original Hole

Survey Report - Geographic

23 July, 2014





Stryker Directional Survey Report - Geographic



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Leo 15 DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Project	Eddy County, 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	Section 15 T18S-R30E Leo 15 DA Federal Com		
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Site Position:		Northing:	638,089.06 usft	Latitude:	32° 45' 13.190 N
From:	Map	Easting:	612,725.81 usft	Longitude:	103° 57' 59.997 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.20 °

Well	Leo 15 DA Federal Com				
Well Position	+N/-S	0.0 usft	Northing:	638,089.06 usft	Latitude: 32° 45' 13.190 N
	+E/-W	0.0 usft	Easting:	612,725.81 usft	Longitude: 103° 57' 59.997 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	0.0 usft	Ground Level: 3,515.0 usft

Wellbore	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/9/2014	7.43	60.53	48,584

Design	Original Hole				
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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	90.00

Survey Program		Date	7/23/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,600.0	MS Gyro Survey (Original Hole)	SRG-GYRO-MS	surface readout gyro multishot	
7,684.0	12,649.0	Stryker MWD Survey (Original Hole)	MWD	MWD v3:standard declination	

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	638,089.06	612,725.81	32° 45' 13.190 N	103° 57' 59.997 W
100.0	0.37	134.87	100.0	-0.2	0.2	638,088.83	612,726.04	32° 45' 13.188 N	103° 57' 59.994 W
200.0	0.82	201.44	200.0	-1.1	0.2	638,087.93	612,726.00	32° 45' 13.179 N	103° 57' 59.994 W
300.0	1.02	214.33	300.0	-2.5	-0.6	638,086.53	612,725.24	32° 45' 13.165 N	103° 58' 0.003 W
400.0	1.08	202.37	400.0	-4.1	-1.4	638,084.93	612,724.38	32° 45' 13.150 N	103° 58' 0.013 W
500.0	1.32	216.04	499.9	-5.9	-2.5	638,083.12	612,723.34	32° 45' 13.132 N	103° 58' 0.026 W
600.0	1.16	235.44	599.9	-7.4	-4.0	638,081.62	612,721.83	32° 45' 13.117 N	103° 58' 0.043 W
700.0	1.33	234.87	699.9	-8.7	-5.8	638,080.38	612,720.05	32° 45' 13.105 N	103° 58' 0.064 W
800.0	1.00	244.89	799.9	-9.7	-7.5	638,079.34	612,718.31	32° 45' 13.094 N	103° 58' 0.085 W
900.0	0.72	225.05	899.9	-10.5	-8.7	638,078.52	612,717.08	32° 45' 13.086 N	103° 58' 0.099 W
1,000.0	0.55	250.00	999.9	-11.1	-9.6	638,077.92	612,716.18	32° 45' 13.080 N	103° 58' 0.110 W



Stryker Directional Survey Report - Geographic



Company:	Mewbourne Oil Company	Local Co-ordinate/Reference:	Well/Leo 15/DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E Leo 15/DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15/DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,100.0	0.18	235.07	1,099.9	-11.4	-10.2	638,077.66	612,715.60	32° 45' 13.078 N	103° 58' 0.117 W
1,200.0	0.17	330.48	1,199.9	-11.4	-10.4	638,077.70	612,715.40	32° 45' 13.078 N	103° 58' 0.119 W
1,300.0	0.50	66.40	1,299.9	-11.1	-10.1	638,078.00	612,715.73	32° 45' 13.081 N	103° 58' 0.115 W
1,400.0	0.80	68.72	1,399.8	-10.6	-9.0	638,078.43	612,716.78	32° 45' 13.086 N	103° 58' 0.103 W
1,500.0	0.44	30.66	1,499.8	-10.0	-8.2	638,079.02	612,717.62	32° 45' 13.091 N	103° 58' 0.093 W
1,600.0	0.18	65.65	1,599.8	-9.6	-7.8	638,079.41	612,717.96	32° 45' 13.095 N	103° 58' 0.089 W
1,700.0	0.09	333.20	1,699.8	-9.5	-7.7	638,079.55	612,718.07	32° 45' 13.097 N	103° 58' 0.088 W
1,800.0	0.32	39.86	1,799.8	-9.2	-7.6	638,079.83	612,718.21	32° 45' 13.099 N	103° 58' 0.086 W
1,900.0	0.26	349.60	1,899.8	-8.8	-7.5	638,080.27	612,718.35	32° 45' 13.104 N	103° 58' 0.084 W
2,000.0	0.09	105.50	1,999.8	-8.6	-7.4	638,080.47	612,718.39	32° 45' 13.106 N	103° 58' 0.084 W
2,100.0	0.30	335.08	2,099.8	-8.4	-7.5	638,080.69	612,718.35	32° 45' 13.108 N	103° 58' 0.084 W
2,200.0	0.14	29.88	2,199.8	-8.0	-7.5	638,081.03	612,718.30	32° 45' 13.111 N	103° 58' 0.085 W
2,300.0	0.26	287.52	2,299.8	-7.9	-7.7	638,081.20	612,718.15	32° 45' 13.113 N	103° 58' 0.087 W
2,400.0	0.38	313.20	2,399.8	-7.6	-8.1	638,081.50	612,717.69	32° 45' 13.116 N	103° 58' 0.092 W
2,500.0	0.11	332.69	2,499.8	-7.2	-8.4	638,081.81	612,717.40	32° 45' 13.119 N	103° 58' 0.095 W
2,600.0	0.42	283.06	2,599.8	-7.1	-8.8	638,081.98	612,717.00	32° 45' 13.121 N	103° 58' 0.100 W
2,700.0	0.14	284.24	2,699.8	-7.0	-9.3	638,082.09	612,716.53	32° 45' 13.122 N	103° 58' 0.106 W
2,800.0	0.42	287.15	2,799.8	-6.8	-9.8	638,082.23	612,716.06	32° 45' 13.123 N	103° 58' 0.111 W
2,900.0	0.43	304.49	2,899.8	-6.5	-10.4	638,082.55	612,715.40	32° 45' 13.126 N	103° 58' 0.119 W
3,000.0	0.14	344.59	2,999.8	-6.2	-10.8	638,082.88	612,715.06	32° 45' 13.130 N	103° 58' 0.123 W
3,100.0	0.29	297.92	3,099.8	-5.9	-11.0	638,083.12	612,714.80	32° 45' 13.132 N	103° 58' 0.126 W
3,200.0	0.13	20.70	3,199.8	-5.7	-11.2	638,083.34	612,714.62	32° 45' 13.134 N	103° 58' 0.128 W
3,300.0	0.25	299.46	3,299.8	-5.5	-11.3	638,083.56	612,714.47	32° 45' 13.136 N	103° 58' 0.130 W
3,400.0	0.12	306.51	3,399.8	-5.3	-11.6	638,083.73	612,714.19	32° 45' 13.138 N	103° 58' 0.133 W
3,500.0	0.34	305.47	3,499.8	-5.1	-11.9	638,083.96	612,713.87	32° 45' 13.140 N	103° 58' 0.137 W
3,600.0	0.34	1.09	3,599.8	-4.6	-12.2	638,084.43	612,713.63	32° 45' 13.145 N	103° 58' 0.139 W
3,700.0	0.38	325.38	3,699.8	-4.1	-12.4	638,085.00	612,713.45	32° 45' 13.151 N	103° 58' 0.141 W
3,800.0	0.39	328.93	3,799.8	-3.5	-12.7	638,085.56	612,713.08	32° 45' 13.156 N	103° 58' 0.146 W
3,900.0	0.66	348.92	3,899.8	-2.6	-13.0	638,086.42	612,712.80	32° 45' 13.165 N	103° 58' 0.149 W
4,000.0	0.49	349.14	3,999.8	-1.7	-13.2	638,087.40	612,712.61	32° 45' 13.175 N	103° 58' 0.151 W
4,100.0	0.92	334.99	4,099.8	-0.5	-13.6	638,088.55	612,712.19	32° 45' 13.186 N	103° 58' 0.156 W
4,200.0	1.03	349.61	4,199.8	1.1	-14.1	638,090.16	612,711.68	32° 45' 13.202 N	103° 58' 0.162 W
4,300.0	0.99	340.24	4,299.8	2.8	-14.6	638,091.86	612,711.23	32° 45' 13.219 N	103° 58' 0.167 W
4,400.0	1.18	340.68	4,399.8	4.6	-15.2	638,093.65	612,710.60	32° 45' 13.236 N	103° 58' 0.175 W
4,500.0	0.98	348.89	4,499.7	6.4	-15.7	638,095.46	612,710.09	32° 45' 13.254 N	103° 58' 0.180 W
4,600.0	1.25	338.28	4,599.7	8.3	-16.3	638,097.31	612,709.52	32° 45' 13.273 N	103° 58' 0.187 W
4,700.0	1.14	290.38	4,699.7	9.6	-17.6	638,098.67	612,708.19	32° 45' 13.286 N	103° 58' 0.203 W
4,800.0	1.07	289.43	4,799.7	10.3	-19.4	638,099.33	612,706.37	32° 45' 13.293 N	103° 58' 0.224 W
4,900.0	1.22	308.27	4,899.7	11.2	-21.2	638,100.30	612,704.66	32° 45' 13.302 N	103° 58' 0.244 W
5,000.0	1.21	338.35	4,999.6	12.9	-22.4	638,101.94	612,703.43	32° 45' 13.319 N	103° 58' 0.258 W
5,100.0	1.10	354.96	5,099.6	14.8	-22.9	638,103.87	612,702.96	32° 45' 13.338 N	103° 58' 0.264 W
5,200.0	1.19	344.08	5,199.6	16.8	-23.2	638,105.83	612,702.59	32° 45' 13.357 N	103° 58' 0.268 W
5,300.0	1.02	345.56	5,299.6	18.6	-23.7	638,107.69	612,702.08	32° 45' 13.376 N	103° 58' 0.274 W
5,400.0	0.85	317.46	5,399.6	20.0	-24.4	638,109.10	612,701.36	32° 45' 13.390 N	103° 58' 0.282 W
5,500.0	1.24	319.59	5,499.5	21.4	-25.7	638,110.47	612,700.16	32° 45' 13.403 N	103° 58' 0.296 W
5,600.0	1.07	311.67	5,599.5	22.9	-27.1	638,111.91	612,698.76	32° 45' 13.418 N	103° 58' 0.312 W
5,700.0	0.99	286.92	5,699.5	23.7	-28.6	638,112.78	612,697.23	32° 45' 13.426 N	103° 58' 0.330 W
5,800.0	1.06	294.86	5,799.5	24.4	-30.2	638,113.42	612,695.57	32° 45' 13.433 N	103° 58' 0.350 W
5,900.0	0.92	290.33	5,899.5	25.0	-31.8	638,114.09	612,693.98	32° 45' 13.439 N	103° 58' 0.368 W
6,000.0	0.90	309.53	5,999.5	25.8	-33.2	638,114.87	612,692.62	32° 45' 13.447 N	103° 58' 0.384 W
6,100.0	0.82	339.98	6,099.5	27.0	-34.0	638,116.04	612,691.77	32° 45' 13.459 N	103° 58' 0.394 W
6,200.0	0.75	341.53	6,199.5	28.3	-34.5	638,117.34	612,691.31	32° 45' 13.471 N	103° 58' 0.399 W
6,300.0	0.81	339.24	6,299.4	29.6	-35.0	638,118.62	612,690.86	32° 45' 13.484 N	103° 58' 0.405 W
6,400.0	0.87	330.65	6,399.4	30.9	-35.6	638,119.94	612,690.23	32° 45' 13.497 N	103° 58' 0.412 W
6,500.0	0.92	329.31	6,499.4	32.2	-36.4	638,121.29	612,689.45	32° 45' 13.511 N	103° 58' 0.421 W



Stryker Directional Survey Report - Geographic



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Leo 15 DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

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	1.06	300.76	6,599.4	33.4	-37.6	638,122.46	612,688.25	32° 45' 13.522 N	103° 58' 0.435 W
6,700.0	0.97	301.98	6,699.4	34.3	-39.1	638,123.38	612,686.73	32° 45' 13.531 N	103° 58' 0.453 W
6,800.0	0.30	290.00	6,799.4	34.9	-40.0	638,123.92	612,685.77	32° 45' 13.537 N	103° 58' 0.464 W
6,900.0	0.15	197.80	6,899.4	34.8	-40.3	638,123.88	612,685.48	32° 45' 13.536 N	103° 58' 0.467 W
7,000.0	0.28	127.60	6,999.4	34.6	-40.2	638,123.61	612,685.64	32° 45' 13.534 N	103° 58' 0.466 W
7,100.0	0.51	82.78	7,099.4	34.5	-39.5	638,123.51	612,686.27	32° 45' 13.533 N	103° 58' 0.458 W
7,200.0	0.53	76.25	7,199.4	34.6	-38.6	638,123.68	612,687.16	32° 45' 13.534 N	103° 58' 0.448 W
7,300.0	0.73	71.15	7,299.4	34.9	-37.6	638,124.00	612,688.22	32° 45' 13.537 N	103° 58' 0.435 W
7,400.0	0.60	54.29	7,399.4	35.5	-36.6	638,124.51	612,689.24	32° 45' 13.542 N	103° 58' 0.423 W
7,500.0	0.77	11.28	7,499.4	36.4	-36.0	638,125.47	612,689.80	32° 45' 13.552 N	103° 58' 0.417 W
7,600.0	1.01	8.40	7,599.3	37.9	-35.7	638,127.00	612,690.06	32° 45' 13.567 N	103° 58' 0.414 W
7600' MD MS Gyro Survey									
7,684.0	0.30	47.10	7,683.3	38.8	-35.5	638,127.88	612,690.33	32° 45' 13.576 N	103° 58' 0.410 W
7,716.0	3.60	71.30	7,715.3	39.2	-34.5	638,128.26	612,691.34	32° 45' 13.580 N	103° 58' 0.399 W
7,748.0	9.70	70.10	7,747.1	40.4	-31.0	638,129.50	612,694.83	32° 45' 13.592 N	103° 58' 0.358 W
7,780.0	15.60	69.60	7,778.3	42.9	-24.4	638,131.92	612,701.41	32° 45' 13.615 N	103° 58' 0.281 W
7,811.0	18.50	71.20	7,807.9	45.9	-15.8	638,134.96	612,709.97	32° 45' 13.645 N	103° 58' 0.180 W
7,843.0	21.30	74.10	7,838.0	49.1	-5.4	638,138.19	612,720.37	32° 45' 13.677 N	103° 58' 0.058 W
7,875.0	24.80	75.70	7,867.5	52.4	6.7	638,141.44	612,732.47	32° 45' 13.709 N	103° 57' 59.917 W
7,907.0	28.40	78.00	7,896.1	55.6	20.6	638,144.68	612,746.42	32° 45' 13.740 N	103° 57' 59.753 W
7,938.0	32.40	80.70	7,922.8	58.5	36.0	638,147.56	612,761.83	32° 45' 13.768 N	103° 57' 59.572 W
7,970.0	35.80	84.00	7,949.3	60.9	53.8	638,149.92	612,779.61	32° 45' 13.791 N	103° 57' 59.364 W
8,002.0	38.30	88.20	7,974.8	62.2	73.0	638,151.21	612,798.83	32° 45' 13.803 N	103° 57' 59.139 W
8,034.0	39.90	91.00	7,999.7	62.3	93.2	638,151.35	612,819.01	32° 45' 13.804 N	103° 57' 58.903 W
8,065.0	41.60	91.40	8,023.2	61.9	113.4	638,150.92	612,839.24	32° 45' 13.799 N	103° 57' 58.666 W
8,097.0	43.30	91.20	8,046.8	61.4	135.0	638,150.43	612,860.83	32° 45' 13.793 N	103° 57' 58.413 W
8,129.0	45.50	90.80	8,069.6	61.0	157.4	638,150.04	612,883.22	32° 45' 13.789 N	103° 57' 58.151 W
8,161.0	47.50	91.50	8,091.7	60.5	180.6	638,149.58	612,906.42	32° 45' 13.783 N	103° 57' 57.879 W
8,193.0	49.20	92.30	8,112.9	59.7	204.5	638,148.78	612,930.32	32° 45' 13.774 N	103° 57' 57.599 W
8,224.0	50.70	91.00	8,132.9	59.0	228.2	638,148.10	612,954.04	32° 45' 13.767 N	103° 57' 57.322 W
8,256.0	52.20	89.60	8,152.8	58.9	253.3	638,147.97	612,979.06	32° 45' 13.765 N	103° 57' 57.029 W
8,288.0	54.00	87.50	8,172.0	59.6	278.8	638,148.63	613,004.64	32° 45' 13.770 N	103° 57' 56.729 W
8,320.0	57.40	85.90	8,190.1	61.1	305.2	638,150.15	613,031.02	32° 45' 13.785 N	103° 57' 56.420 W
8,352.0	61.40	85.60	8,206.3	63.1	332.7	638,152.20	613,058.49	32° 45' 13.804 N	103° 57' 56.098 W
8,383.0	64.90	88.00	8,220.3	64.7	360.3	638,153.73	613,086.09	32° 45' 13.818 N	103° 57' 55.775 W
8,415.0	68.00	91.20	8,233.1	64.9	389.6	638,153.93	613,115.42	32° 45' 13.819 N	103° 57' 55.432 W
8,447.0	70.10	95.20	8,244.6	63.2	419.4	638,152.25	613,145.25	32° 45' 13.801 N	103° 57' 55.083 W
8,479.0	71.70	99.30	8,255.0	59.4	449.4	638,148.43	613,175.24	32° 45' 13.763 N	103° 57' 54.732 W
8,511.0	73.30	103.20	8,264.7	53.4	479.4	638,142.47	613,205.16	32° 45' 13.703 N	103° 57' 54.381 W
8,543.0	76.40	106.00	8,273.0	45.6	509.2	638,134.68	613,235.04	32° 45' 13.624 N	103° 57' 54.032 W
8,574.0	80.20	108.00	8,279.3	36.8	538.3	638,125.81	613,264.06	32° 45' 13.536 N	103° 57' 53.692 W
8,606.0	84.10	110.50	8,283.7	26.3	568.2	638,115.36	613,293.98	32° 45' 13.431 N	103° 57' 53.342 W
8,638.0	86.30	114.90	8,286.4	14.0	597.6	638,103.05	613,323.39	32° 45' 13.308 N	103° 57' 52.999 W
8,666.0	87.00	116.90	8,288.0	1.8	622.7	638,090.84	613,348.53	32° 45' 13.187 N	103° 57' 52.705 W
8,751.0	90.40	115.60	8,289.9	-35.8	698.9	638,053.27	613,424.73	32° 45' 12.812 N	103° 57' 51.814 W
8,782.0	91.10	114.40	8,289.5	-48.9	727.0	638,040.17	613,452.83	32° 45' 12.682 N	103° 57' 51.485 W
8,814.0	91.10	113.20	8,288.9	-61.8	756.3	638,027.26	613,482.10	32° 45' 12.553 N	103° 57' 51.143 W
8,846.0	90.70	112.10	8,288.4	-74.1	785.8	638,014.93	613,511.63	32° 45' 12.430 N	103° 57' 50.798 W
8,877.0	90.50	110.90	8,288.1	-85.5	814.7	638,003.57	613,540.47	32° 45' 12.317 N	103° 57' 50.461 W
8,909.0	90.70	109.10	8,287.8	-96.4	844.7	637,992.63	613,570.54	32° 45' 12.207 N	103° 57' 50.109 W
8,941.0	90.30	106.80	8,287.5	-106.3	875.2	637,982.77	613,600.97	32° 45' 12.109 N	103° 57' 49.753 W
8,972.0	89.30	104.90	8,287.6	-114.8	905.0	637,974.30	613,630.79	32° 45' 12.024 N	103° 57' 49.404 W
9,004.0	88.60	102.40	8,288.2	-122.3	936.1	637,966.75	613,661.88	32° 45' 11.948 N	103° 57' 49.040 W
9,036.0	88.60	100.50	8,289.0	-128.7	967.4	637,960.40	613,693.23	32° 45' 11.884 N	103° 57' 48.674 W
9,067.0	89.40	98.60	8,289.5	-133.8	998.0	637,955.26	613,723.80	32° 45' 11.832 N	103° 57' 48.316 W



Stryker Directional Survey Report - Geographic



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well: Leo 15 DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,099.0	90.00	97.00	8,289.7	-138.1	1,029.7	637,950.92	613,755.50	32° 45' 11.788 N	103° 57' 47.945 W
9,130.0	90.40	95.20	8,289.6	-141.4	1,060.5	637,947.62	613,786.32	32° 45' 11.754 N	103° 57' 47.584 W
9,162.0	90.60	93.30	8,289.3	-143.8	1,092.4	637,945.25	613,818.23	32° 45' 11.730 N	103° 57' 47.211 W
9,194.0	90.60	91.50	8,288.9	-145.1	1,124.4	637,943.91	613,850.20	32° 45' 11.715 N	103° 57' 46.836 W
9,225.0	90.10	90.00	8,288.7	-145.5	1,155.4	637,943.51	613,881.20	32° 45' 11.710 N	103° 57' 46.473 W
9,257.0	90.00	89.30	8,288.7	-145.4	1,187.4	637,943.70	613,913.20	32° 45' 11.711 N	103° 57' 46.099 W
9,320.0	90.00	89.40	8,288.7	-144.6	1,250.4	637,944.42	613,976.19	32° 45' 11.716 N	103° 57' 45.361 W
9,384.0	90.00	89.40	8,288.7	-144.0	1,314.4	637,945.09	614,040.19	32° 45' 11.720 N	103° 57' 44.612 W
9,447.0	89.30	88.40	8,289.1	-142.8	1,377.4	637,946.30	614,103.18	32° 45' 11.730 N	103° 57' 43.874 W
9,510.0	89.10	87.70	8,290.0	-140.6	1,440.3	637,948.44	614,166.13	32° 45' 11.749 N	103° 57' 43.137 W
9,573.0	89.40	87.30	8,290.8	-137.9	1,503.3	637,951.19	614,229.07	32° 45' 11.774 N	103° 57' 42.400 W
9,637.0	89.50	88.20	8,291.4	-135.4	1,567.2	637,953.70	614,293.01	32° 45' 11.797 N	103° 57' 41.651 W
9,700.0	89.30	88.40	8,292.1	-133.5	1,630.2	637,955.57	614,355.98	32° 45' 11.813 N	103° 57' 40.913 W
9,763.0	89.60	87.90	8,292.7	-131.5	1,693.1	637,957.60	614,418.95	32° 45' 11.831 N	103° 57' 40.176 W
9,827.0	88.90	88.00	8,293.5	-129.2	1,757.1	637,959.89	614,482.90	32° 45' 11.852 N	103° 57' 39.427 W
9,890.0	88.80	87.90	8,294.8	-126.9	1,820.0	637,962.15	614,545.85	32° 45' 11.872 N	103° 57' 38.690 W
9,953.0	88.60	87.20	8,296.2	-124.2	1,883.0	637,964.84	614,608.77	32° 45' 11.896 N	103° 57' 37.953 W
10,016.0	88.40	88.00	8,297.9	-121.6	1,945.9	637,967.48	614,671.70	32° 45' 11.920 N	103° 57' 37.216 W
10,048.0	88.30	88.40	8,298.8	-120.6	1,977.9	637,968.48	614,703.67	32° 45' 11.929 N	103° 57' 36.842 W
10,111.0	89.30	89.30	8,300.1	-119.3	2,040.8	637,969.74	614,766.64	32° 45' 11.939 N	103° 57' 36.104 W
10,174.0	90.10	89.30	8,300.4	-118.5	2,103.8	637,970.51	614,829.63	32° 45' 11.945 N	103° 57' 35.366 W
10,237.0	90.00	89.60	8,300.4	-117.9	2,166.8	637,971.12	614,892.63	32° 45' 11.948 N	103° 57' 34.629 W
10,301.0	88.80	89.60	8,301.1	-117.5	2,230.8	637,971.57	614,956.62	32° 45' 11.951 N	103° 57' 33.879 W
10,364.0	88.50	88.90	8,302.5	-116.7	2,293.8	637,972.39	615,019.60	32° 45' 11.957 N	103° 57' 33.142 W
10,427.0	88.90	88.40	8,304.0	-115.2	2,356.8	637,973.87	615,082.57	32° 45' 11.969 N	103° 57' 32.405 W
10,490.0	88.60	89.10	8,305.3	-113.8	2,419.7	637,975.25	615,145.54	32° 45' 11.980 N	103° 57' 31.667 W
10,554.0	89.60	90.50	8,306.3	-113.6	2,483.7	637,975.47	615,209.52	32° 45' 11.980 N	103° 57' 30.918 W
10,617.0	90.00	91.40	8,306.6	-114.6	2,546.7	637,974.43	615,272.51	32° 45' 11.968 N	103° 57' 30.180 W
10,674.0	90.10	91.00	8,306.5	-115.8	2,603.7	637,973.23	615,329.50	32° 45' 11.954 N	103° 57' 29.513 W
10,737.0	89.50	90.80	8,306.7	-116.8	2,666.7	637,972.24	615,392.49	32° 45' 11.942 N	103° 57' 28.775 W
10,800.0	88.50	89.60	8,307.8	-117.0	2,729.7	637,972.02	615,455.48	32° 45' 11.938 N	103° 57' 28.038 W
10,863.0	88.10	89.30	8,309.7	-116.4	2,792.6	637,972.63	615,518.45	32° 45' 11.941 N	103° 57' 27.301 W
10,926.0	87.50	89.10	8,312.1	-115.5	2,855.6	637,973.51	615,581.40	32° 45' 11.948 N	103° 57' 26.563 W
10,990.0	89.80	89.30	8,313.6	-114.7	2,919.6	637,974.40	615,645.37	32° 45' 11.955 N	103° 57' 25.814 W
11,053.0	89.50	88.50	8,314.0	-113.4	2,982.5	637,975.61	615,708.36	32° 45' 11.964 N	103° 57' 25.077 W
11,117.0	89.10	87.00	8,314.8	-110.9	3,046.5	637,978.12	615,772.30	32° 45' 11.987 N	103° 57' 24.328 W
11,180.0	89.30	88.40	8,315.7	-108.4	3,109.4	637,980.65	615,835.24	32° 45' 12.010 N	103° 57' 23.591 W
11,244.0	89.30	89.10	8,316.5	-107.0	3,173.4	637,982.05	615,899.22	32° 45' 12.021 N	103° 57' 22.842 W
11,307.0	88.60	88.60	8,317.6	-105.7	3,236.4	637,983.31	615,962.20	32° 45' 12.032 N	103° 57' 22.104 W
11,370.0	89.00	89.40	8,318.9	-104.6	3,299.4	637,984.41	616,025.17	32° 45' 12.040 N	103° 57' 21.367 W
11,433.0	88.90	89.40	8,320.1	-104.0	3,362.4	637,985.07	616,088.16	32° 45' 12.045 N	103° 57' 20.629 W
11,497.0	88.60	89.40	8,321.5	-103.3	3,426.3	637,985.74	616,152.14	32° 45' 12.049 N	103° 57' 19.880 W
11,560.0	89.10	89.80	8,322.7	-102.9	3,489.3	637,986.18	616,215.13	32° 45' 12.051 N	103° 57' 19.142 W
11,623.0	89.10	90.00	8,323.7	-102.8	3,552.3	637,986.29	616,278.12	32° 45' 12.050 N	103° 57' 18.405 W
11,686.0	90.50	91.20	8,324.0	-103.4	3,615.3	637,985.63	616,341.11	32° 45' 12.041 N	103° 57' 17.667 W
11,750.0	93.40	91.20	8,321.8	-104.8	3,679.2	637,984.29	616,405.05	32° 45' 12.026 N	103° 57' 16.918 W
11,813.0	93.30	91.00	8,318.1	-106.0	3,742.1	637,983.08	616,467.93	32° 45' 12.011 N	103° 57' 16.182 W
11,876.0	92.00	89.60	8,315.2	-106.3	3,805.1	637,982.75	616,530.86	32° 45' 12.006 N	103° 57' 15.445 W
11,940.0	91.90	89.30	8,313.0	-105.7	3,869.0	637,983.37	616,594.82	32° 45' 12.010 N	103° 57' 14.696 W
12,003.0	91.40	88.60	8,311.2	-104.5	3,932.0	637,984.52	616,657.79	32° 45' 12.019 N	103° 57' 13.959 W
12,066.0	90.90	88.20	8,309.9	-102.8	3,994.9	637,986.28	616,720.75	32° 45' 12.034 N	103° 57' 13.222 W
12,129.0	91.20	88.00	8,308.8	-100.7	4,057.9	637,988.37	616,783.70	32° 45' 12.053 N	103° 57' 12.484 W
12,193.0	91.50	87.90	8,307.3	-98.4	4,121.8	637,990.66	616,847.64	32° 45' 12.073 N	103° 57' 11.736 W
12,256.0	89.70	87.90	8,306.6	-96.1	4,184.8	637,992.96	616,910.60	32° 45' 12.094 N	103° 57' 10.998 W
12,319.0	87.80	88.00	8,308.0	-93.8	4,247.7	637,995.22	616,973.54	32° 45' 12.114 N	103° 57' 10.261 W



Stryker Directional Survey Report - Geographic



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Leo 15 DA Federal Com
Project:	Eddy County, New Mexico	TVD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Site:	Section 15 T18S-R30E Leo 15 DA Federal Com	MD Reference:	GL 3515+20 @ 3535.0usft (Patterson #45)
Well:	Leo 15 DA Federal Com	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker EDM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
12,382.0	88.70	87.50	8,309.9	-91.4	4,310.6	637,997.69	617,036.46	32° 45' 12.136 N	103° 57' 9.524 W
12,445.0	90.30	88.90	8,310.5	-89.4	4,373.6	637,999.67	617,099.42	32° 45' 12.153 N	103° 57' 8.787 W
12,509.0	91.10	89.60	8,309.7	-88.5	4,437.6	638,000.51	617,163.41	32° 45' 12.159 N	103° 57' 8.038 W
12,572.0	92.70	90.00	8,307.6	-88.3	4,500.6	638,000.73	617,226.37	32° 45' 12.159 N	103° 57' 7.300 W
12,595.0	93.50	89.80	8,306.3	-88.3	4,523.5	638,000.77	617,249.34	32° 45' 12.159 N	103° 57' 7.031 W
12,649.0	93.50	89.80	8,303.0	-88.1	4,577.4	638,000.95	617,303.24	32° 45' 12.159 N	103° 57' 6.400 W

12649' MD Projected to Bit - PBHL Leo 15 Fed Com #1H

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,600.0	7,599.3	37.9	-35.7	7600' MD MS Gyro Survey
12,649.0	8,303.0	-88.1	4,577.4	12649' MD Projected to Bit



COMPANY: Mewbourne Oil Company
WELL: Leo 15 DA Federal Com
COUNTY: Eddy County, New Mexico
DATUM: NAD 1927 (NADCON CONUS)
RIG: Patterson #45

GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 7.23°



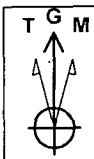
OFFICE: 936.582.7296

GEODEIC ZONE: New Mexico East 3001
GL 3515+20 @ 3535.0usft (Patterson #45)

+N/-S	+E/-W	North	East	Latitude	Longitude	Spot
0.0	0.0	638089.05	612725.81	32° 45' 13.190 N	103° 57' 59.997 W	

PLAN SECTIONS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	8352.0	61.40	85.60	8208.3	63.1	332.7	0.00	0.00	331.7	
2	8357.0	61.40	85.60	8208.7	63.5	337.1	0.00	0.00	336.0	
3	8674.9	89.40	116.52	8289.9	0.5	630.9	12.80	52.00	630.8	
4	9222.0	89.42	89.16	8285.7	-119.9	1159.2	5.00	-90.09	1160.9	
5	12643.5	89.42	89.16	8330.0	-70.0	4580.2	0.00	0.00	4580.7	PBHL Leo 15 Fed Com #1H



Azimuths to Grid North
True North: -0.20°
Magnetic North: 7.23°

Magnetic Field
Strength: 48584.1snT
Dip Angle: 60.53°
Date: 7/9/2014
Model: IGRF2010

