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Mewbourne Oil Co

Eddy County, New Mexico

Sec 12, T25S, R28E

Malaga 13 DM Federal Com #1H (New SHL)

Wellbore #1

Design: Wellbore #1

DDC Survey Report

19 November, 2013



DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well: Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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: Sec 12, T25S, R28E					
Site Position:		Northing:	414,092.17 usft	Latitude:	32° 8' 17.261 N
From:	Map	Easting:	589,199.27 usft	Longitude:	104° 2' 42.563 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	Malaga 13 DM Federal Com #1H (New SHL)					
Well Position	+N/-S	0.0 usft	Northing:	414,092.17 usft	Latitude:	32° 8' 17.261 N
	+E/-W	0.0 usft	Easting:	589,199.27 usft	Longitude:	104° 2' 42.563 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	2,888.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/13/2013	7.56	59.98	48,325

Design:	Wellbore #1				
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	188.79	

Survey Program		Date	11/19/2013	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	7,690.0	Gyro (Wellbore #1)	Good_gyro	Good Gyro
7,745.0	13,305.0	MWD (Wellbore #1)	MWD default	MWD - Standard

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	0.14	219.67	100.0	-0.1	-0.1	0.1	0.14	0.14	0.00
200.0	0.77	274.87	200.0	-0.1	-0.8	0.3	0.70	0.63	55.20
300.0	1.21	283.83	300.0	0.2	-2.5	0.2	0.47	0.44	8.96
400.0	1.22	287.94	400.0	0.8	-4.6	-0.1	0.09	0.01	4.11
500.0	1.17	274.46	499.9	1.2	-6.6	-0.1	0.28	-0.05	-13.48
600.0	0.85	323.13	599.9	1.8	-8.1	-0.6	0.88	-0.32	48.67
700.0	0.96	355.84	699.9	3.3	-8.6	-1.9	0.52	0.11	32.71
800.0	1.22	352.70	799.9	5.2	-8.8	-3.8	0.27	0.26	-3.14

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Survey Report



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Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
900.0	1.24	347.12	899.9	7.3	-9.1	-5.8	0.12	0.02	-5.58
1,000.0	1.83	341.62	999.8	9.8	-9.9	-8.2	0.61	0.59	-5.50
1,100.0	1.97	328.31	1,099.8	12.8	-11.3	-10.9	0.46	0.14	-13.31
1,200.0	1.68	304.30	1,199.7	15.1	-13.4	-12.9	0.81	-0.29	-24.01
1,300.0	1.52	270.80	1,299.7	16.0	-15.9	-13.3	0.93	-0.16	-33.50
1,400.0	1.68	256.71	1,399.7	15.6	-18.7	-12.6	0.42	0.16	-14.09
1,500.0	1.98	249.82	1,499.6	14.7	-21.7	-11.2	0.37	0.30	-6.89
1,600.0	2.08	245.74	1,599.5	13.4	-25.0	-9.4	0.18	0.10	-4.08
1,700.0	2.29	245.55	1,699.5	11.8	-28.5	-7.3	0.21	0.21	-0.19
1,800.0	2.00	235.53	1,799.4	10.0	-31.7	-5.0	0.47	-0.29	-10.02
1,900.0	1.47	216.27	1,899.4	7.9	-33.9	-2.7	0.78	-0.53	-19.26
2,000.0	1.11	183.77	1,999.3	5.9	-34.8	-0.6	0.80	-0.36	-32.50
2,100.0	1.01	164.23	2,099.3	4.1	-34.6	1.2	0.37	-0.10	-19.54
2,200.0	1.62	131.54	2,199.3	2.3	-33.3	2.8	0.94	0.61	-32.69
2,300.0	2.37	114.00	2,299.2	0.6	-30.3	4.1	0.96	0.75	-17.54
2,400.0	3.28	117.25	2,399.1	-1.6	-25.9	5.5	0.92	0.91	3.25
2,500.0	2.50	119.91	2,499.0	-4.0	-21.5	7.2	0.79	-0.78	2.66
2,600.0	1.53	125.38	2,598.9	-5.8	-18.5	8.6	0.99	-0.97	5.47
2,700.0	1.17	127.52	2,698.9	-7.2	-16.6	9.7	0.36	-0.36	2.14
2,800.0	1.07	119.86	2,798.9	-8.3	-15.0	10.5	0.18	-0.10	-7.66
2,900.0	1.12	120.18	2,898.8	-9.3	-13.3	11.2	0.05	0.05	0.32
3,000.0	0.89	124.31	2,998.8	-10.2	-11.8	11.9	0.24	-0.23	4.13
3,100.0	0.61	127.26	3,098.8	-11.0	-10.8	12.5	0.28	-0.28	2.95
3,200.0	0.61	121.71	3,198.8	-11.6	-9.9	12.9	0.06	0.00	-5.55
3,300.0	0.76	133.41	3,298.8	-12.3	-9.0	13.5	0.20	0.15	11.70
3,400.0	0.85	152.78	3,398.8	-13.4	-8.1	14.5	0.29	0.09	19.37
3,500.0	0.62	172.49	3,498.8	-14.6	-7.7	15.6	0.34	-0.23	19.71
3,600.0	0.54	174.86	3,598.8	-15.6	-7.6	16.6	0.08	-0.08	2.37
3,700.0	0.53	173.83	3,698.8	-16.5	-7.5	17.5	0.01	-0.01	-1.03
3,800.0	0.60	186.48	3,798.8	-17.5	-7.5	18.5	0.14	0.07	12.65
3,900.0	0.57	188.16	3,898.8	-18.5	-7.7	19.5	0.03	-0.03	1.68
4,000.0	0.54	201.98	3,998.8	-19.5	-7.9	20.5	0.14	-0.03	13.82
4,100.0	0.58	206.68	4,098.8	-20.4	-8.3	21.4	0.06	0.04	4.70
4,200.0	0.62	215.25	4,198.8	-21.3	-8.9	22.4	0.10	0.04	8.57
4,300.0	0.70	223.73	4,298.8	-22.1	-9.6	23.3	0.13	0.08	8.48
4,400.0	0.83	212.40	4,398.7	-23.2	-10.4	24.5	0.20	0.13	-11.33
4,500.0	0.95	209.01	4,498.7	-24.5	-11.2	25.9	0.13	0.12	-3.39
4,600.0	1.01	208.24	4,598.7	-26.0	-12.0	27.6	0.06	0.06	-0.77
4,700.0	1.02	204.41	4,698.7	-27.6	-12.8	29.2	0.07	0.01	-3.83
4,800.0	1.24	192.34	4,798.7	-29.5	-13.4	31.2	0.32	0.22	-12.07
4,900.0	1.43	191.76	4,898.7	-31.8	-13.9	33.5	0.19	0.19	-0.58
5,000.0	1.45	190.38	4,998.6	-34.2	-14.4	36.0	0.04	0.02	-1.38

DDC
Survey Report



Company:	Newbourne Oil Co.	Local Co-ordinate Reference:	Well: Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County - New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM-5000.1 Single User Db

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)	
5,100.0	1.54	188.98	5,098.6	-36.8	-14.8	38.6	0.10	0.09	-1.40	
5,200.0	1.19	186.52	5,198.6	-39.2	-15.1	41.0	0.35	-0.35	-2.46	
5,300.0	1.25	186.93	5,298.5	-41.3	-15.4	43.1	0.06	0.06	0.41	
5,400.0	1.22	187.03	5,398.5	-43.4	-15.6	45.3	0.03	-0.03	0.10	
5,500.0	1.32	194.55	5,498.5	-45.6	-16.1	47.5	0.19	0.10	7.52	
5,600.0	1.36	187.74	5,598.5	-47.9	-16.5	49.8	0.16	0.04	-6.81	
5,700.0	1.38	190.55	5,698.4	-50.2	-16.9	52.2	0.07	0.02	2.81	
5,800.0	1.33	189.51	5,798.4	-52.6	-17.3	54.6	0.06	-0.05	-1.04	
5,900.0	0.94	174.15	5,898.4	-54.5	-17.4	56.5	0.49	-0.39	-15.36	
6,000.0	1.03	175.11	5,998.4	-56.2	-17.2	58.2	0.09	0.09	0.96	
6,100.0	0.90	174.64	6,098.4	-57.9	-17.1	59.8	0.13	-0.13	-0.47	
6,200.0	0.91	173.73	6,198.3	-59.5	-16.9	61.4	0.02	0.01	-0.91	
6,300.0	0.90	173.81	6,298.3	-61.1	-16.8	62.9	0.01	-0.01	0.08	
6,400.0	0.94	172.25	6,398.3	-62.6	-16.6	64.4	0.05	0.04	-1.56	
6,500.0	0.54	243.64	6,498.3	-63.7	-16.9	65.5	0.92	-0.40	71.39	
6,600.0	1.04	271.18	6,598.3	-63.9	-18.2	65.9	0.61	0.50	27.54	
6,700.0	2.87	279.94	6,698.2	-63.4	-21.6	66.0	1.85	1.83	8.76	
6,800.0	3.32	288.75	6,798.1	-62.0	-26.8	65.4	0.65	0.45	8.81	
6,900.0	2.05	294.72	6,898.0	-60.4	-31.2	64.4	1.30	-1.27	5.97	
7,000.0	2.12	305.41	6,997.9	-58.5	-34.3	63.1	0.39	0.07	10.69	
7,100.0	1.63	314.30	7,097.9	-56.5	-36.8	61.4	0.57	-0.49	8.89	
7,200.0	1.25	346.95	7,197.8	-54.4	-38.1	59.6	0.89	-0.38	32.65	
7,300.0	1.16	10.10	7,297.8	-52.4	-38.1	57.6	0.49	-0.09	23.15	
7,400.0	1.21	5.18	7,397.8	-50.3	-37.9	55.5	0.11	0.05	-4.92	
7,500.0	1.26	16.17	7,497.8	-48.2	-37.5	53.4	0.24	0.05	10.99	
7,600.0	0.58	57.32	7,597.8	-46.9	-36.7	51.9	0.91	-0.68	41.15	
Tie In @ 7690 MD / 7688 TVD										
7,690.0	0.96	65.87	7,687.7	-46.3	-35.7	51.2	0.44	0.42	9.50	
7,745.0	6.10	186.50	7,742.6	-49.0	-35.6	53.9	12.07	9.35	219.33	
7,777.0	11.10	190.60	7,774.3	-53.8	-36.3	58.7	15.73	15.63	12.81	
7,808.0	15.90	192.80	7,804.4	-60.8	-37.8	65.9	15.57	15.48	7.10	
7,840.0	20.80	194.90	7,834.8	-70.6	-40.3	75.9	15.45	15.31	6.56	
7,872.0	24.40	195.10	7,864.3	-82.5	-43.4	88.2	11.25	11.25	0.63	
7,904.0	27.00	197.10	7,893.1	-95.8	-47.3	101.9	8.56	8.13	6.25	
7,935.0	28.10	197.10	7,920.6	-109.5	-51.5	116.1	3.55	3.55	0.00	
7,967.0	30.00	198.60	7,948.6	-124.3	-56.3	131.5	6.36	5.94	4.69	
7,999.0	33.10	199.90	7,975.9	-140.1	-61.8	147.9	9.92	9.69	4.06	
8,031.0	36.40	202.30	8,002.2	-157.1	-68.4	165.7	11.16	10.31	7.50	
8,062.0	40.30	203.70	8,026.5	-174.8	-75.9	184.4	12.89	12.58	4.52	
8,094.0	43.80	205.50	8,050.2	-194.3	-84.8	205.0	11.57	10.94	5.63	
8,126.0	47.20	206.60	8,072.7	-214.8	-94.9	226.8	10.90	10.63	3.44	
8,158.0	51.10	207.40	8,093.6	-236.4	-105.9	249.8	12.33	12.19	2.50	
8,189.0	54.70	209.50	8,112.3	-258.1	-117.7	273.0	12.81	11.61	6.77	

DDC
Survey Report



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Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Gnd
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
8,221.0	57.70	209.90	8,130.1	-281.2	-130.8	297.9	9.43	9.38	1.25
Crossed Lease Line @ 8243 MD / 8142 TVD									
8,243.4	59.38	210.04	8,141.8	-297.7	-140.4	315.7	7.52	7.50	0.63
8,253.0	60.10	210.10	8,146.6	-304.9	-144.5	323.4	7.52	7.50	0.61
8,285.0	63.10	209.40	8,161.8	-329.3	-158.5	349.7	9.57	9.38	-2.19
8,316.0	65.90	209.90	8,175.2	-353.7	-172.3	375.8	9.15	9.03	1.61
8,348.0	68.20	208.30	8,187.6	-379.4	-186.7	403.5	8.54	7.19	-5.00
8,380.0	69.50	208.70	8,199.2	-405.6	-200.9	431.6	4.23	4.06	1.25
8,412.0	71.10	207.30	8,210.0	-432.2	-215.0	460.0	6.48	5.00	-4.38
8,443.0	72.20	207.40	8,219.7	-458.4	-228.6	487.9	3.56	3.55	0.32
8,475.0	73.30	206.00	8,229.2	-485.7	-242.3	517.0	5.41	3.44	-4.38
8,507.0	74.90	205.70	8,238.0	-513.4	-255.7	546.4	5.08	5.00	-0.94
8,539.0	76.80	204.40	8,245.8	-541.5	-268.8	576.2	7.13	5.94	-4.06
8,570.0	78.90	201.30	8,252.3	-569.4	-280.6	605.6	11.89	6.77	-10.00
8,602.0	81.20	200.80	8,257.9	-598.8	-291.9	636.4	7.35	7.19	-1.56
Crossed Hard Line @ 8630 MD / 8262 TVD									
8,630.4	83.15	199.47	8,261.7	-625.2	-301.6	664.0	8.30	6.87	-4.69
8,634.0	83.40	199.30	8,262.2	-628.6	-302.8	667.5	8.30	6.88	-4.67
8,666.0	84.80	197.20	8,265.5	-658.8	-312.8	698.9	7.86	4.38	-6.56
8,697.0	85.60	194.30	8,268.0	-688.5	-321.1	729.5	9.67	2.58	-9.35
8,729.0	86.40	191.60	8,270.3	-719.7	-328.3	761.4	8.78	2.50	-8.44
8,760.0	86.40	189.30	8,272.2	-750.1	-333.9	792.3	7.40	0.00	-7.42
8,792.0	86.10	188.40	8,274.3	-781.6	-338.8	824.2	2.96	-0.94	-2.81
8,824.0	88.20	185.30	8,275.9	-813.4	-342.6	856.2	11.69	6.56	-9.69
8,856.0	89.40	184.60	8,276.6	-845.2	-345.4	888.1	4.34	3.75	-2.19
8,888.0	89.90	184.90	8,276.8	-877.1	-348.0	920.0	1.82	1.56	0.94
8,919.0	90.10	186.00	8,276.8	-908.0	-351.0	950.9	3.61	0.65	3.55
8,951.0	90.80	186.20	8,276.5	-939.8	-354.4	982.9	2.28	2.19	0.63
8,983.0	91.50	185.80	8,275.9	-971.6	-357.7	1,014.9	2.52	2.19	-1.25
9,006.0	91.30	186.70	8,275.3	-994.5	-360.2	1,037.8	4.01	-0.87	3.91
9,070.0	88.70	188.10	8,275.3	-1,057.9	-368.5	1,101.8	4.61	-4.06	2.19
9,134.0	87.10	188.60	8,277.7	-1,121.2	-377.8	1,165.8	2.62	-2.50	0.78
9,197.0	87.00	188.60	8,280.9	-1,183.4	-387.2	1,228.7	0.16	-0.16	0.00
9,260.0	87.80	187.40	8,283.8	-1,245.7	-395.9	1,291.6	2.29	1.27	-1.90
9,324.0	88.40	186.70	8,285.9	-1,309.2	-403.8	1,355.5	1.44	0.94	-1.09
9,387.0	88.50	186.30	8,287.6	-1,371.8	-410.9	1,418.5	0.65	0.16	-0.63
9,451.0	88.60	186.00	8,289.2	-1,435.4	-417.8	1,482.4	0.49	0.16	-0.47
9,514.0	89.00	185.30	8,290.5	-1,498.1	-424.0	1,545.3	1.28	0.63	-1.11
9,578.0	88.60	186.20	8,291.9	-1,561.7	-430.4	1,609.2	1.54	-0.63	1.41
9,641.0	88.00	187.40	8,293.7	-1,624.3	-437.8	1,672.1	2.13	-0.95	1.90
9,705.0	88.40	187.70	8,295.7	-1,687.7	-446.2	1,736.1	0.78	0.63	0.47
9,768.0	88.40	187.00	8,297.5	-1,750.1	-454.3	1,799.0	1.11	0.00	-1.11
9,832.0	88.70	186.70	8,299.1	-1,813.7	-461.9	1,863.0	0.66	0.47	-0.47

DDC
Survey Report



Company:	Newbourne Oil Co.	Local Co-ordinate Reference:	Well: Malaga.13 DM Federal Com #1H (New SHL)
Project:	Eddy County New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga.13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
9,896.0	89.10	186.50	8,300.4	-1,877.2	-469.3	1,926.9	0.70	0.63	-0.31
9,960.0	89.50	186.50	8,301.1	-1,940.8	-476.5	1,990.8	0.63	0.63	0.00
10,023.0	90.00	186.20	8,301.4	-2,003.4	-483.5	2,053.8	0.93	0.79	-0.48
10,087.0	90.30	186.00	8,301.2	-2,067.1	-490.3	2,117.7	0.56	0.47	-0.31
10,151.0	90.60	186.00	8,300.7	-2,130.7	-497.0	2,181.6	0.47	0.47	0.00
10,215.0	90.40	187.20	8,300.2	-2,194.3	-504.3	2,245.6	1.90	-0.31	1.88
10,278.0	89.70	188.40	8,300.1	-2,256.7	-512.9	2,308.6	2.21	-1.11	1.90
10,342.0	89.80	188.60	8,300.4	-2,320.0	-522.3	2,372.6	0.35	0.16	0.31
10,405.0	90.30	188.80	8,300.4	-2,382.3	-531.9	2,435.6	0.85	0.79	0.32
10,469.0	88.70	188.30	8,300.9	-2,445.6	-541.4	2,499.6	2.62	-2.50	-0.78
10,532.0	87.60	187.60	8,302.9	-2,507.9	-550.1	2,562.5	2.07	-1.75	-1.11
10,596.0	88.30	185.60	8,305.2	-2,571.4	-557.5	2,626.4	3.31	1.09	-3.13
10,660.0	90.30	183.40	8,306.0	-2,635.2	-562.5	2,690.2	4.65	3.13	-3.44
10,724.0	91.40	182.60	8,305.1	-2,699.1	-565.8	2,753.9	2.13	1.72	-1.25
10,788.0	91.70	182.50	8,303.3	-2,763.1	-568.7	2,817.5	0.49	0.47	-0.16
10,852.0	90.70	183.90	8,302.0	-2,826.9	-572.2	2,881.2	2.69	-1.56	2.19
10,916.0	89.20	185.50	8,302.1	-2,890.7	-577.5	2,945.0	3.43	-2.34	2.50
10,980.0	89.60	185.30	8,302.7	-2,954.4	-583.5	3,008.9	0.70	0.63	-0.31
11,043.0	90.20	184.80	8,302.8	-3,017.2	-589.0	3,071.8	1.24	0.95	-0.79
11,107.0	90.60	185.10	8,302.4	-3,080.9	-594.6	3,135.6	0.78	0.63	0.47
11,171.0	90.30	186.30	8,301.9	-3,144.6	-600.9	3,199.5	1.93	-0.47	1.88
11,234.0	89.70	187.00	8,301.9	-3,207.2	-608.2	3,262.5	1.46	-0.95	1.11
11,298.0	90.00	186.90	8,302.1	-3,270.7	-616.0	3,326.4	0.49	0.47	-0.16
11,362.0	90.80	186.50	8,301.6	-3,334.3	-623.4	3,390.4	1.40	1.25	-0.63
11,425.0	90.00	187.60	8,301.2	-3,396.8	-631.2	3,453.4	2.16	-1.27	1.75
11,489.0	90.30	187.00	8,301.0	-3,460.3	-639.3	3,517.3	1.05	0.47	-0.94
11,552.0	90.10	188.60	8,300.8	-3,522.7	-647.8	3,580.3	2.56	-0.32	2.54
11,615.0	90.30	189.30	8,300.6	-3,584.9	-657.6	3,643.3	1.16	0.32	1.11
11,679.0	88.80	189.50	8,301.1	-3,648.1	-668.1	3,707.3	2.36	-2.34	0.31
11,742.0	87.10	188.30	8,303.3	-3,710.3	-677.8	3,770.3	3.30	-2.70	-1.90
11,806.0	87.50	185.30	8,306.3	-3,773.7	-685.4	3,834.2	4.72	0.63	-4.69
11,869.0	89.30	184.20	8,308.1	-3,836.5	-690.6	3,897.0	3.35	2.86	-1.75
11,933.0	90.10	183.90	8,308.4	-3,900.3	-695.1	3,960.8	1.33	1.25	-0.47
11,996.0	90.50	183.40	8,308.1	-3,963.2	-699.2	4,023.5	1.02	0.63	-0.79
12,060.0	90.60	183.00	8,307.5	-4,027.1	-702.7	4,087.2	0.64	0.16	-0.63
12,123.0	91.70	183.80	8,306.2	-4,090.0	-706.5	4,149.9	2.16	1.75	1.27
12,187.0	92.10	184.20	8,304.1	-4,153.8	-710.9	4,213.6	0.88	0.63	0.63
12,250.0	92.70	185.10	8,301.5	-4,216.5	-716.0	4,276.4	1.72	0.95	1.43
12,314.0	91.70	186.00	8,299.0	-4,280.2	-722.2	4,340.3	2.10	-1.56	1.41
12,377.0	88.60	186.70	8,298.8	-4,342.8	-729.2	4,403.2	5.04	-4.92	1.11
12,441.0	88.10	186.20	8,300.7	-4,406.4	-736.4	4,467.1	1.10	-0.78	-0.78
12,504.0	89.00	186.20	8,302.3	-4,469.0	-743.2	4,530.0	1.43	1.43	0.00

DDC
Survey Report



Company:	Mewbourne Oil Co	Local Co-ordinate Reference:	Well: Malaga 13 DM Federal Com #1H (New SHL)
Project:	Eddy County New Mexico	TVD Reference:	WELL @ 2908.0usft (Patterson)
Site:	Sec 12, T25S, R28E	MD Reference:	WELL @ 2908.0usft (Patterson)
Well:	Malaga 13 DM Federal Com #1H (New SHL)	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)	
12,568.0	89.50	186.30	8,303.1	-4,532.6	-750.1	4,594.0	0.80	0.78	0.16	
12,631.0	90.10	186.50	8,303.3	-4,595.2	-757.2	4,656.9	1.00	0.95	0.32	
12,694.0	89.00	186.00	8,303.8	-4,657.8	-764.0	4,719.9	1.92	-1.75	-0.79	
12,758.0	89.30	186.00	8,304.8	-4,721.4	-770.7	4,783.8	0.47	0.47	0.00	
12,821.0	89.30	184.20	8,305.5	-4,784.2	-776.3	4,846.6	2.86	0.00	-2.86	
12,885.0	90.20	184.10	8,305.8	-4,848.0	-780.9	4,910.4	1.41	1.41	-0.16	
12,948.0	91.00	184.10	8,305.2	-4,910.9	-785.4	4,973.2	1.27	1.27	0.00	
13,011.0	89.30	183.90	8,305.0	-4,973.7	-789.8	5,036.0	2.72	-2.70	-0.32	
13,075.0	89.00	183.70	8,305.9	-5,037.6	-794.1	5,099.7	0.56	-0.47	-0.31	
13,139.0	89.90	184.20	8,306.6	-5,101.4	-798.5	5,163.5	1.61	1.41	0.78	
13,202.0	90.60	183.70	8,306.3	-5,164.2	-802.8	5,226.3	1.37	1.11	-0.79	
13,254.0	91.10	183.50	8,305.5	-5,216.1	-806.1	5,278.1	1.04	0.96	-0.38	
TD @ 13305' MD / 8305' TVD										
13,305.0	91.10	183.50	8,304.5	-5,267.0	-809.2	5,328.8	0.00	0.00	0.00	

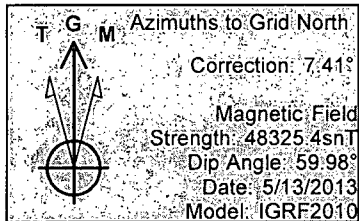
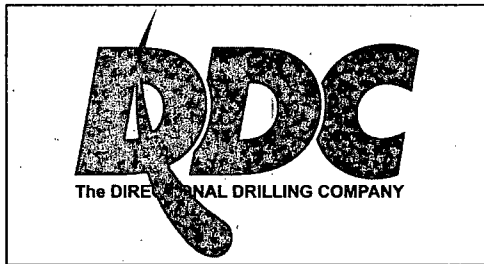
Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,690.0	7,687.7	-46.3	-35.7	Tie In @ 7690' MD / 7688' TVD	
8,243.4	8,141.8	-297.7	-140.4	Crossed Lease Line @ 8243' MD / 8142' TVD	
8,630.4	8,261.7	-625.2	-301.6	Crossed Hard Line @ 8630' MD / 8262' TVD	
13,305.0	8,304.5	-5,267.0	-809.2	TD @ 13305' MD / 8305' TVD	

Checked By: _____	Approved By: _____	Date: _____
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Company Name: Mewbourne Oil Co
 Malaga 13 DM Federal Com #1H (New SHL)
 Eddy County, New Mexico
 Rig: Patterson #46
 Created By: James Dawson
 Date: 11/19/2013

Malaga 13 DM Federal Com #1H (New SHL)
 Eddy County, New Mexico
 Q120835 & WT-13811
 Design #6 (Tie-In)

Mewbourne Oil Company



PROJECT DETAILS: Eddy County, New Mexico

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

WELL DETAILS: Malaga 13 DM Federal Com #1H (New SHL)

Ground Level: 2888.0
 +N/-S +E/-W Northing Easting Latitude Longitude
 0.0 0.0 414092.17 589199.27 32° 8' 17.261 N 104° 2' 42.563 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP Malaga 13 DM Federal Com #1H Design #5	8278.0	-229.6	-217.0	415562.67	588982.27	32° 8' 12.028 N	104° 2' 45.104 W
- plan misses target center by 51.8uoft at 8590.8uoft MD (8278.0 TVD, -407.1 N, -253.6 E)							
PBHL Malaga 13 DM Federal Com #1H Design #6	8278.0	-221.7	-215.0	408820.47	588384.27	32° 7' 25.111 N	104° 2' 52.205 W
- plan hits target center							

ANNOTATIONS

MD	Inc	Adj	TVD	+N/-S	+E/-W	V Sect	Departure	Annotation
7690.0	0.86	65.87	7687.7	-46.3	-35.7	51.2	158.7	Tie In @ 7690' MD / 7688' TVD
8243.4	59.38	210.04	8141.8	-297.7	-140.4	315.7	443.3	Crossed Lease Line @ 8243' MD / 8142' TVD
8530.4	83.15	189.47	8251.7	-425.2	-291.6	564.0	808.9	Crossed Hard Line @ 8530' MD / 8252' TVD
13305.0	91.10	183.60	8304.5	-6267.0	-895.2	5328.8	6461.9	TD @ 13305' MD / 8305' TVD

