

30-015-39345

Nadel & Gussman Permian, LLC

Eddy County, NM (NAD-83)

Sec 32, T23S, R29E

Macho Grande State #1H

Wellbore #1

Survey: MWD

DDC Survey Report

06 December, 2011

not signed or notarized



DDC Survey Report



Company:	Nadel & Gussman Permian, LLC	Local Co-ordinate Reference:	Well Macho Grande State #1H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	WELL @ 3043.0usft (Original Well Elev)
Site:	Sec 32, T23S, R29E	MD Reference:	WELL @ 3043.0usft (Original Well Elev)
Well:	Macho Grande State #1H	North Reference:	Grd
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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

Site:	Sec 32, T23S, R29E		
Site Position:		Northing:	461,271.88 usft
From:	Map	Easting:	644,532.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 16' 3.612 N
		Longitude:	103° 59' 58.060 W
		Grid Convergence:	0.18 °

Well:	Macho Grande State #1H		
Well Position	+N/-S	0.0 usft	Northing: 461,271.88 usft
	+E/-W	0.0 usft	Easting: 644,532.40 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 16' 3.612 N
		Longitude:	103° 59' 58.060 W
		Ground Level:	3,022.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/6/2011	7.75	60.15	48,567

Design					Wellbore #1						
Audit Notes:											
Version:		1.0		Phase:		ACTUAL		Tie On Depth:		0 0	
Vertical Section:		Depth From (TVD)			+N/-S		+E/-W		Direction		
		(usft)			(usft)		(usft)		(°)		
		0.0			0.0		0.0		179.87		

Survey Program	Date:	12/6/2011		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
2,756.0	12,350.0	MWD (Wellbore #1)		

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
Tie On									
2,756.0	3.61	109.61	2,754.2	0.0	0.0	0.0	0.00	0.00	0.00
2,835.0	3.20	107.10	2,833.1	-1.5	4.5	1.5	0.55	-0.52	-3.18
2,867.0	3.00	104.80	2,865.0	-2.0	6.1	2.0	0.74	-0.63	-7.19
2,899.0	2.40	86.80	2,897.0	-2.1	7.6	2.2	3.22	-1.88	-56.25
2,930.0	2.00	62.40	2,928.0	-1.8	8.7	1.9	3.25	-1.29	-78.71
2,962.0	1.80	45.10	2,959.9	-1.2	9.6	1.3	1.89	-0.63	-54.06
2,994.0	1.70	21.70	2,991.9	-0.4	10.1	0.5	2.24	-0.31	-73.13
3,026.0	2.00	3.80	3,023.9	0.6	10.3	-0.5	2.02	0.94	-55.94
3,058.0	2.20	355.00	3,055.9	1.7	10.3	-1.7	1.18	0.63	-27.50
3,090.0	2.60	342.80	3,087.9	3.0	10.0	-3.0	2.02	1.25	-38.13

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Site:	Sec 32, T23S, R29E	MD Reference:	WELL @ 3043 0usft (Original Well Elev)
Well:	Macho Grande State #1H	North Reference:	Grnd
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)
3,121.0	3.10	337.00	3,118.8	4.5	9.5	-4.5	1.86	1.61	-18.71
3,153.0	3.40	334.70	3,150.8	6.1	8.8	-6.1	1.02	0.94	-7.19
3,185.0	3.30	334.40	3,182.7	7.8	7.9	-7.8	0.32	-0.31	-0.94
3,248.0	3.60	334.90	3,245.6	11.2	6.3	-11.2	0.48	0.48	0.79
3,312.0	3.60	333.50	3,309.5	14.9	4.6	-14.9	0.14	0.00	-2.19
3,375.0	3.90	342.90	3,372.3	18.7	3.1	-18.7	1.08	0.48	14.92
3,439.0	4.00	346.00	3,436.2	22.9	1.9	-22.9	0.37	0.16	4.84
3,501.0	3.90	343.40	3,498.0	27.0	0.8	-27.0	0.33	-0.16	-4.19
3,565.0	3.90	340.90	3,561.9	31.2	-0.6	-31.2	0.27	0.00	-3.91
3,629.0	3.90	341.70	3,625.7	35.3	-2.0	-35.3	0.09	0.00	1.25
3,691.0	4.00	341.60	3,687.6	39.4	-3.3	-39.4	0.16	0.16	-0.16
3,754.0	4.10	341.70	3,750.4	43.6	-4.7	-43.6	0.16	0.16	0.16
3,818.0	3.90	341.70	3,814.3	47.8	-6.1	-47.8	0.31	-0.31	0.00
3,881.0	4.30	341.10	3,877.1	52.1	-7.6	-52.1	0.64	0.63	-0.95
3,944.0	4.60	340.10	3,939.9	56.7	-9.2	-56.7	0.49	0.48	-1.59
4,008.0	4.60	340.50	4,003.7	61.5	-10.9	-61.6	0.05	0.00	0.63
4,071.0	4.60	340.50	4,066.5	66.3	-12.6	-66.3	0.00	0.00	0.00
4,135.0	4.60	340.10	4,130.3	71.1	-14.3	-71.2	0.05	0.00	-0.63
4,198.0	4.70	340.60	4,193.1	75.9	-16.0	-76.0	0.17	0.16	0.79
4,262.0	4.50	341.00	4,256.9	80.8	-17.7	-80.8	0.32	-0.31	0.63
4,325.0	4.50	339.60	4,319.7	85.4	-19.4	-85.5	0.17	0.00	-2.22
4,388.0	4.50	339.60	4,382.5	90.1	-21.1	-90.1	0.00	0.00	0.00
4,452.0	4.30	340.60	4,446.3	94.7	-22.8	-94.7	0.33	-0.31	1.56
4,516.0	4.10	338.30	4,510.2	99.1	-24.4	-99.1	0.41	-0.31	-3.59
4,579.0	4.40	347.40	4,573.0	103.5	-25.8	-103.6	1.17	0.48	14.44
4,643.0	4.70	350.30	4,636.8	108.5	-26.8	-108.6	0.59	0.47	4.53
4,706.0	4.60	351.00	4,699.6	113.6	-27.6	-113.6	0.18	-0.16	1.11
4,770.0	4.70	351.10	4,763.4	118.7	-28.4	-118.7	0.16	0.16	0.16
4,834.0	4.80	351.80	4,827.1	123.9	-29.2	-124.0	0.18	0.16	1.09
4,898.0	5.00	346.10	4,890.9	129.3	-30.3	-129.3	0.82	0.31	-8.91
4,961.0	5.10	343.70	4,953.7	134.6	-31.7	-134.7	0.37	0.16	-3.81
5,025.0	5.10	341.70	5,017.4	140.1	-33.4	-140.1	0.28	0.00	-3.13
5,088.0	4.80	338.00	5,080.2	145.2	-35.3	-145.2	0.70	-0.48	-5.87
5,151.0	4.70	337.40	5,143.0	150.0	-37.2	-150.1	0.18	-0.16	-0.95
5,215.0	4.60	335.80	5,206.7	154.8	-39.3	-154.8	0.26	-0.16	-2.50
5,278.0	4.60	339.90	5,269.5	159.4	-41.2	-159.5	0.52	0.00	6.51
5,342.0	4.40	341.30	5,333.3	164.2	-42.9	-164.3	0.36	-0.31	2.19
5,405.0	4.30	340.80	5,396.2	168.7	-44.4	-168.8	0.17	-0.16	-0.79
5,469.0	4.10	339.20	5,460.0	173.1	-46.0	-173.2	0.36	-0.31	-2.50
5,532.0	3.90	337.00	5,522.8	177.2	-47.7	-177.3	0.40	-0.32	-3.49
5,595.0	4.00	343.60	5,585.7	181.2	-49.1	-181.4	0.74	0.16	10.48
5,658.0	4.00	345.70	5,648.5	185.5	-50.3	-185.6	0.23	0.00	3.33
5,721.0	4.30	344.20	5,711.4	189.9	-51.5	-190.0	0.51	0.48	-2.38

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Site: Sec 32, T23S, R29E
Well: Macho Grande State #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Macho Grande State #1H
TVD Reference: WELL @ 3043.0usft (Original Well Elev)
MD Reference: WELL @ 3043.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
5,784.0	4.40	344.50	5,774.2	194.5	-52.8	-194.6	0.16	0.16	0.48
5,848.0	4.60	345.10	5,838.0	199.3	-54.1	-199.5	0.32	0.31	0.94
5,911.0	4.70	344.60	5,900.8	204.3	-55.4	-204.4	0.17	0.16	-0.79
5,975.0	4.50	344.50	5,964.6	209.2	-56.8	-209.3	0.31	-0.31	-0.16
6,039.0	4.80	343.80	6,028.4	214.2	-58.2	-214.3	0.48	0.47	-1.09
6,102.0	4.90	343.20	6,091.1	219.3	-59.7	-219.4	0.18	0.16	-0.95
6,166.0	4.40	343.00	6,154.9	224.3	-61.2	-224.4	0.78	-0.78	-0.31
6,229.0	4.80	342.20	6,217.7	229.1	-62.7	-229.2	0.64	0.63	-1.27
6,292.0	4.80	343.00	6,280.5	234.1	-64.3	-234.3	0.11	0.00	1.27
6,356.0	5.40	342.00	6,344.3	239.5	-66.0	-239.7	0.95	0.94	-1.56
6,419.0	5.40	342.00	6,407.0	245.2	-67.8	-245.3	0.00	0.00	0.00
6,482.0	5.20	342.60	6,469.7	250.7	-69.6	-250.9	0.33	-0.32	0.95
6,546.0	4.90	340.60	6,533.5	256.1	-71.4	-256.2	0.54	-0.47	-3.13
6,609.0	4.70	338.60	6,596.2	261.0	-73.2	-261.2	0.41	-0.32	-3.17
6,673.0	4.20	336.00	6,660.0	265.6	-75.1	-265.8	0.84	-0.78	-4.06
6,737.0	4.00	336.30	6,723.9	269.8	-77.0	-270.0	0.31	-0.31	0.47
6,800.0	3.60	333.30	6,786.7	273.6	-78.8	-273.7	0.71	-0.63	-4.76
6,864.0	3.30	331.10	6,850.6	277.0	-80.6	-277.2	0.51	-0.47	-3.44
6,928.0	2.60	326.80	6,914.5	279.8	-82.2	-280.0	1.15	-1.09	-6.72
6,991.0	2.10	318.70	6,977.5	281.9	-83.8	-282.1	0.95	-0.79	-12.86
7,054.0	1.60	314.10	7,040.5	283.3	-85.2	-283.5	0.83	-0.79	-7.30
7,117.0	1.20	321.80	7,103.4	284.5	-86.2	-284.7	0.70	-0.63	12.22
7,147.0	1.40	327.60	7,133.4	285.0	-86.6	-285.2	0.80	0.67	19.33
7,179.0	1.50	195.90	7,165.4	285.0	-86.9	-285.2	8.27	0.31	-411.56
7,210.0	5.90	179.00	7,196.4	283.0	-87.0	-283.2	14.47	14.19	-54.52
7,242.0	11.30	176.20	7,228.0	278.2	-86.8	-278.4	16.92	16.88	-8.75
7,274.0	16.40	176.60	7,259.0	270.5	-86.3	-270.7	15.94	15.94	1.25
7,306.0	19.50	178.50	7,289.5	260.7	-85.9	-260.9	9.86	9.69	5.94
7,337.0	22.00	178.50	7,318.5	249.7	-85.6	-249.9	8.06	8.06	0.00
7,369.0	24.50	178.80	7,347.9	237.1	-85.3	-237.3	7.82	7.81	0.94
7,401.0	26.50	178.00	7,376.7	223.3	-84.9	-223.5	6.34	6.25	-2.50
7,433.0	26.70	177.10	7,405.4	209.0	-84.3	-209.2	1.41	0.63	-2.81
7,464.0	26.30	176.30	7,433.1	195.2	-83.5	-195.4	1.73	-1.29	-2.58
7,496.0	26.40	176.70	7,461.8	181.0	-82.6	-181.2	0.64	0.31	1.25
7,528.0	29.70	176.40	7,490.0	166.0	-81.7	-166.2	10.32	10.31	-0.94
7,560.0	34.50	178.30	7,517.1	149.0	-81.0	-149.2	15.33	15.00	5.94
7,592.0	39.20	180.10	7,542.7	129.8	-80.7	-130.0	15.07	14.69	5.63
7,624.0	43.10	181.70	7,566.8	108.8	-81.1	-109.0	12.62	12.19	5.00
7,656.0	45.70	181.20	7,589.7	86.4	-81.6	-86.6	8.20	8.13	-1.56
7,688.0	47.50	181.10	7,611.7	63.2	-82.1	-63.4	5.63	5.63	-0.31
7,719.0	50.50	181.40	7,632.0	39.8	-82.6	-40.0	9.70	9.68	0.97
7,751.0	55.70	181.20	7,651.2	14.2	-83.2	-14.4	16.26	16.25	-0.63

Crossed Hard Line @ 7770' MD

DDC Survey Report



Company: Nadel & Gussman Permian, LLC
Project: Eddy County, NM (NAD-83)
Site: Sec 32, T23S, R29E
Well: Macho Grande State #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Macho Grande State #1H
TVD Reference: WELL @ 3043.0usft (Original Well Elev)
MD Reference: WELL @ 3043.0usft (Original Well Elev)
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
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)
7,770.0	58.89	181.07	7,661.5	-1.8	-83.5	1.6	16.78	16.77	-0.66
7,782.0	60.90	181.00	7,667.5	-12.2	-83.7	12.0	16.78	16.77	-0.62
7,814.0	66.10	180.90	7,681.8	-40.8	-84.2	40.6	16.25	16.25	-0.31
7,846.0	70.40	181.40	7,693.6	-70.5	-84.8	70.3	13.52	13.44	1.56
7,877.0	74.30	181.90	7,703.0	-100.0	-85.6	99.8	12.67	12.58	1.61
7,909.0	78.00	181.30	7,710.7	-131.1	-86.5	130.9	11.70	11.56	-1.88
7,941.0	82.00	179.60	7,716.2	-162.6	-86.7	162.4	13.55	12.50	-5.31
8,027.0	88.40	178.40	7,723.4	-248.2	-85.2	248.0	7.57	7.44	-1.40
8,058.0	89.50	178.80	7,724.0	-279.2	-84.5	279.0	3.78	3.55	1.29
8,090.0	91.30	178.70	7,723.8	-311.2	-83.8	311.0	5.63	5.63	-0.31
8,122.0	92.60	178.50	7,722.7	-343.2	-83.0	343.0	4.11	4.06	-0.63
8,153.0	93.10	178.80	7,721.1	-374.1	-82.3	373.9	1.88	1.61	0.97
8,185.0	92.10	178.90	7,719.7	-406.1	-81.6	405.9	3.14	-3.13	0.31
8,216.0	90.30	178.70	7,719.0	-437.1	-81.0	436.9	5.84	-5.81	-0.65
8,248.0	89.20	178.30	7,719.2	-469.0	-80.1	468.9	3.66	-3.44	-1.25
8,280.0	88.90	178.20	7,719.7	-501.0	-79.2	500.8	0.99	-0.94	-0.31
8,312.0	87.80	177.40	7,720.6	-533.0	-77.9	532.8	4.25	-3.44	-2.50
8,343.0	87.50	177.10	7,721.9	-563.9	-76.4	563.7	1.37	-0.97	-0.97
8,375.0	87.70	177.40	7,723.2	-595.9	-74.9	595.7	1.13	0.63	0.94
8,407.0	88.20	176.80	7,724.4	-627.8	-73.3	627.6	2.44	1.56	-1.88
8,438.0	87.50	177.00	7,725.5	-658.7	-71.6	658.6	2.35	-2.26	0.65
8,470.0	86.50	176.90	7,727.2	-690.6	-69.9	690.5	3.14	-3.13	-0.31
8,502.0	86.30	176.90	7,729.2	-722.5	-68.2	722.4	0.63	-0.63	0.00
8,534.0	87.20	177.20	7,731.0	-754.4	-66.5	754.3	2.96	2.81	0.94
8,565.0	88.30	177.40	7,732.3	-785.4	-65.1	785.2	3.61	3.55	0.65
8,597.0	88.40	176.90	7,733.2	-817.3	-63.5	817.2	1.59	0.31	-1.56
8,628.0	88.50	178.10	7,734.0	-848.3	-62.1	848.1	3.88	0.32	3.87
8,660.0	88.50	179.80	7,734.9	-880.3	-61.6	880.1	5.31	0.00	5.31
8,691.0	86.90	180.70	7,736.1	-911.2	-61.7	911.1	5.92	-5.16	2.90
8,723.0	86.60	180.40	7,737.9	-943.2	-62.0	943.0	1.32	-0.94	-0.94
8,754.0	86.50	180.30	7,739.8	-974.1	-62.2	974.0	0.46	-0.32	-0.32
8,786.0	86.60	180.00	7,741.7	-1,006.1	-62.3	1,005.9	0.99	0.31	-0.94
8,817.0	86.50	180.20	7,743.6	-1,037.0	-62.3	1,036.9	0.72	-0.32	0.65
8,849.0	85.30	180.70	7,745.9	-1,068.9	-62.6	1,068.8	4.06	-3.75	1.56
8,880.0	84.80	180.50	7,748.5	-1,099.8	-62.9	1,099.7	1.74	-1.61	-0.65
8,912.0	84.80	181.00	7,751.4	-1,131.7	-63.3	1,131.5	1.56	0.00	1.56
8,943.0	84.60	181.10	7,754.3	-1,162.5	-63.9	1,162.4	0.72	-0.65	0.32
8,975.0	84.20	180.60	7,757.4	-1,194.4	-64.3	1,194.2	2.00	-1.25	-1.56
9,007.0	84.00	180.60	7,760.7	-1,226.2	-64.7	1,226.1	0.63	-0.63	0.00
9,039.0	84.70	179.70	7,763.9	-1,258.1	-64.8	1,257.9	3.55	2.19	-2.81
9,070.0	85.40	179.00	7,766.5	-1,288.9	-64.4	1,288.8	3.19	2.26	-2.26
9,102.0	86.50	179.40	7,768.8	-1,320.9	-64.0	1,320.7	3.66	3.44	1.25
9,133.0	87.70	180.20	7,770.4	-1,351.8	-63.9	1,351.7	4.65	3.87	2.58
9,165.0	88.10	180.40	7,771.5	-1,383.8	-64.0	1,383.6	1.40	1.25	0.63

DDC Survey Report



Company: Nadel & Gussman Permian, LLC
Project: Eddy County, NM (NAD-83)
Site: Sec 32, T23S, R29E
Well: Macho Grande State #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Macho Grande State #1H
TVD Reference: WELL @ 3043.0usft (Original Well Elev)
MD Reference: WELL @ 3043.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
9,196.0	88.30	180.30	7,772.5	-1,414.8	-64.2	1,414.6	0.72	0.65	-0.32
9,228.0	88.50	180.10	7,773.4	-1,446.8	-64.3	1,446.6	0.88	0.63	-0.63
9,259.0	87.70	179.20	7,774.4	-1,477.7	-64.1	1,477.6	3.88	-2.58	-2.90
9,291.0	87.30	179.10	7,775.8	-1,509.7	-63.7	1,509.6	1.29	-1.25	-0.31
9,322.0	88.80	179.30	7,776.9	-1,540.7	-63.2	1,540.5	4.88	4.84	0.65
9,354.0	90.20	179.30	7,777.2	-1,572.7	-62.8	1,572.5	4.38	4.38	0.00
9,386.0	90.20	178.90	7,777.0	-1,604.7	-62.3	1,604.5	1.25	0.00	-1.25
9,417.0	90.00	178.30	7,777.0	-1,635.7	-61.6	1,635.5	2.04	-0.65	-1.94
9,449.0	89.90	178.50	7,777.0	-1,667.7	-60.7	1,667.5	0.70	-0.31	0.63
9,481.0	91.30	178.60	7,776.7	-1,699.6	-59.9	1,699.5	4.39	4.38	0.31
9,512.0	91.10	178.50	7,776.0	-1,730.6	-59.1	1,730.5	0.72	-0.65	-0.32
9,543.0	91.20	178.50	7,775.4	-1,761.6	-58.3	1,761.5	0.32	0.32	0.00
9,575.0	91.80	178.70	7,774.6	-1,793.6	-57.5	1,793.5	1.98	1.88	0.63
9,607.0	91.90	178.60	7,773.5	-1,825.6	-56.7	1,825.4	0.44	0.31	-0.31
9,638.0	90.60	178.50	7,772.9	-1,856.5	-56.0	1,856.4	4.21	-4.19	-0.32
9,670.0	90.50	179.00	7,772.6	-1,888.5	-55.3	1,888.4	1.59	-0.31	1.56
9,701.0	90.70	179.40	7,772.2	-1,919.5	-54.8	1,919.4	1.44	0.65	1.29
9,733.0	90.90	179.90	7,771.8	-1,951.5	-54.6	1,951.4	1.68	0.63	1.56
9,764.0	90.00	179.40	7,771.5	-1,982.5	-54.4	1,982.4	3.32	-2.90	-1.61
9,796.0	88.50	177.80	7,772.0	-2,014.5	-53.7	2,014.4	6.85	-4.69	-5.00
9,828.0	88.60	177.90	7,772.8	-2,046.5	-52.5	2,046.4	0.44	0.31	0.31
9,859.0	88.80	178.60	7,773.5	-2,077.5	-51.5	2,077.3	2.35	0.65	2.26
9,891.0	89.10	178.80	7,774.1	-2,109.4	-50.8	2,109.3	1.13	0.94	0.63
9,922.0	89.00	178.50	7,774.6	-2,140.4	-50.1	2,140.3	1.02	-0.32	-0.97
9,954.0	89.10	177.90	7,775.1	-2,172.4	-49.1	2,172.3	1.90	0.31	-1.88
9,985.0	88.90	176.80	7,775.6	-2,203.4	-47.6	2,203.3	3.61	-0.65	-3.55
10,017.0	88.00	176.80	7,776.5	-2,235.3	-45.8	2,235.2	2.81	-2.81	0.00
10,048.0	88.50	176.70	7,777.5	-2,266.2	-44.1	2,266.1	1.64	1.61	-0.32
10,080.0	89.50	176.70	7,778.0	-2,298.2	-42.2	2,298.1	3.13	3.13	0.00
10,112.0	90.20	176.90	7,778.1	-2,330.1	-40.5	2,330.0	2.28	2.19	0.63
10,143.0	90.80	176.80	7,777.8	-2,361.1	-38.8	2,361.0	1.96	1.94	-0.32
10,175.0	90.90	176.90	7,777.4	-2,393.0	-37.0	2,392.9	0.44	0.31	0.31
10,206.0	90.70	176.50	7,776.9	-2,424.0	-35.2	2,423.9	1.44	-0.65	-1.29
10,238.0	90.50	176.40	7,776.6	-2,455.9	-33.2	2,455.8	0.70	-0.63	-0.31
10,269.0	90.50	177.50	7,776.3	-2,486.9	-31.6	2,486.8	3.55	0.00	3.55
10,301.0	90.60	177.90	7,776.0	-2,518.8	-30.3	2,518.8	1.29	0.31	1.25
10,332.0	89.60	178.30	7,776.0	-2,549.8	-29.3	2,549.8	3.47	-3.23	1.29
10,364.0	89.70	178.30	7,776.2	-2,581.8	-28.3	2,581.7	0.31	0.31	0.00
10,396.0	90.30	177.80	7,776.2	-2,613.8	-27.2	2,613.7	2.44	1.88	-1.56
10,427.0	89.80	177.60	7,776.1	-2,644.8	-26.0	2,644.7	1.74	-1.61	-0.65
10,458.0	89.10	178.40	7,776.4	-2,675.8	-24.9	2,675.7	3.43	-2.26	2.58
10,490.0	88.70	179.00	7,777.0	-2,707.7	-24.2	2,707.7	2.25	-1.25	1.88
10,522.0	89.00	179.40	7,777.7	-2,739.7	-23.7	2,739.7	1.56	0.94	1.25

DDC Survey Report



Company: Nadel & Gussman Permian, LLC
Project: Eddy County, NM (NAD-83)
Site: Sec 32, T23S, R29E
Well: Macho Grande State #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Macho Grande State #1H
TVD Reference: WELL @ 3043.0usft (Original Well Elev)
MD Reference: WELL @ 3043.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
10,553.0	88.70	179.30	7,778.3	-2,770.7	-23.4	2,770.7	1.02	-0.97	-0.32
10,585.0	90.10	179.60	7,778.6	-2,802.7	-23.1	2,802.7	4.47	4.38	0.94
10,616.0	91.30	179.30	7,778.3	-2,833.7	-22.8	2,833.7	3.99	3.87	-0.97
10,648.0	91.90	179.80	7,777.4	-2,865.7	-22.5	2,865.6	2.44	1.88	1.56
10,680.0	90.50	179.80	7,776.7	-2,897.7	-22.4	2,897.6	4.38	-4.38	0.00
10,711.0	89.50	179.80	7,776.7	-2,928.7	-22.3	2,928.6	3.23	-3.23	0.00
10,742.0	88.80	180.30	7,777.2	-2,959.7	-22.3	2,959.6	2.77	-2.26	1.61
10,774.0	88.70	180.20	7,777.9	-2,991.7	-22.5	2,991.6	0.44	-0.31	-0.31
10,806.0	89.30	180.20	7,778.4	-3,023.7	-22.6	3,023.6	1.88	1.88	0.00
10,837.0	90.50	179.20	7,778.5	-3,054.7	-22.4	3,054.6	5.04	3.87	-3.23
10,869.0	90.20	178.90	7,778.3	-3,086.7	-21.9	3,086.6	1.33	-0.94	-0.94
10,900.0	90.70	178.60	7,778.0	-3,117.7	-21.2	3,117.6	1.88	1.61	-0.97
10,932.0	90.50	178.20	7,777.7	-3,149.6	-20.3	3,149.6	1.40	-0.63	-1.25
10,964.0	91.20	177.40	7,777.2	-3,181.6	-19.1	3,181.6	3.32	2.19	-2.50
10,995.0	90.80	177.70	7,776.7	-3,212.6	-17.8	3,212.5	1.61	-1.29	0.97
11,026.0	90.40	177.40	7,776.4	-3,243.6	-16.4	3,243.5	1.61	-1.29	-0.97
11,058.0	89.60	177.10	7,776.4	-3,275.5	-14.9	3,275.5	2.67	-2.50	-0.94
11,090.0	90.70	177.10	7,776.3	-3,307.5	-13.3	3,307.4	3.44	3.44	0.00
11,121.0	91.80	176.90	7,775.6	-3,338.4	-11.7	3,338.4	3.61	3.55	-0.65
11,152.0	91.80	177.00	7,774.6	-3,369.4	-10.0	3,369.3	0.32	0.00	0.32
11,184.0	92.40	177.50	7,773.4	-3,401.3	-8.5	3,401.3	2.44	1.88	1.56
11,216.0	92.80	177.40	7,772.0	-3,433.2	-7.1	3,433.2	1.29	1.25	-0.31
11,247.0	91.50	178.00	7,770.8	-3,464.2	-5.8	3,464.2	4.62	-4.19	1.94
11,278.0	90.80	179.30	7,770.2	-3,495.2	-5.1	3,495.2	4.76	-2.26	4.19
11,310.0	90.70	179.80	7,769.8	-3,527.2	-4.8	3,527.2	1.59	-0.31	1.56
11,341.0	90.70	179.40	7,769.4	-3,558.2	-4.6	3,558.1	1.29	0.00	-1.29
11,373.0	90.40	179.30	7,769.1	-3,590.2	-4.3	3,590.1	0.99	-0.94	-0.31
11,404.0	90.40	179.20	7,768.9	-3,621.2	-3.8	3,621.1	0.32	0.00	-0.32
11,436.0	90.60	179.30	7,768.6	-3,653.2	-3.4	3,653.1	0.70	0.63	0.31
11,467.0	90.90	179.70	7,768.2	-3,684.2	-3.2	3,684.1	1.61	0.97	1.29
11,499.0	91.40	179.80	7,767.6	-3,716.1	-3.0	3,716.1	1.59	1.56	0.31
11,531.0	91.20	180.10	7,766.8	-3,748.1	-3.0	3,748.1	1.13	-0.63	0.94
11,562.0	90.10	179.30	7,766.5	-3,779.1	-2.8	3,779.1	4.39	-3.55	-2.58
11,594.0	89.10	179.00	7,766.7	-3,811.1	-2.4	3,811.1	3.26	-3.13	-0.94
11,625.0	89.10	178.80	7,767.2	-3,842.1	-1.8	3,842.1	0.65	0.00	-0.65
11,657.0	90.50	179.40	7,767.3	-3,874.1	-1.3	3,874.1	4.76	4.38	1.88
11,688.0	90.90	179.70	7,766.9	-3,905.1	-1.0	3,905.1	1.61	1.29	0.97
11,720.0	90.20	179.20	7,766.6	-3,937.1	-0.7	3,937.1	2.69	-2.19	-1.56
11,751.0	90.40	179.00	7,766.5	-3,968.1	-0.2	3,968.1	0.91	0.65	-0.65
11,783.0	90.20	178.60	7,766.3	-4,000.1	0.5	4,000.1	1.40	-0.63	-1.25
11,815.0	90.20	178.60	7,766.2	-4,032.1	1.2	4,032.1	0.00	0.00	0.00
11,846.0	89.40	178.10	7,766.3	-4,063.1	2.1	4,063.1	3.04	-2.58	-1.61
11,878.0	89.20	179.20	7,766.7	-4,095.1	2.9	4,095.1	3.49	-0.63	3.44

DDC Survey Report



Company:	Nadel & Gussman Permian, LLC	Local Co-ordinate Reference:	Well Macho Grande State #1H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	WELL @ 3043.0usft (Original Well Elev)
Site:	Sec 32, T23S, R29E	MD Reference:	WELL @ 3043.0usft (Original Well Elev)
Well:	Macho Grande State #1H	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)
11,909.0	89.90	179.80	7,766.9	-4,126.1	3.1	4,126.1	2.97	2.26	1.94
11,941.0	89.90	179.50	7,767.0	-4,158.1	3.3	4,158.1	0.94	0.00	-0.94
11,973.0	90.20	179.50	7,766.9	-4,190.1	3.6	4,190.1	0.94	0.94	0.00
12,004.0	90.60	179.40	7,766.7	-4,221.1	3.9	4,221.1	1.33	1.29	-0.32
12,036.0	89.80	179.10	7,766.6	-4,253.1	4.3	4,253.1	2.67	-2.50	-0.94
12,068.0	89.60	179.00	7,766.8	-4,285.0	4.9	4,285.0	0.70	-0.63	-0.31
12,099.0	90.50	178.80	7,766.8	-4,316.0	5.5	4,316.0	2.97	2.90	-0.65
12,131.0	90.80	179.50	7,766.4	-4,348.0	5.9	4,348.0	2.38	0.94	2.19
12,162.0	90.40	179.10	7,766.1	-4,379.0	6.3	4,379.0	1.82	-1.29	-1.29
12,193.0	89.90	178.90	7,766.0	-4,410.0	6.9	4,410.0	1.74	-1.61	-0.65
12,224.0	89.40	178.60	7,766.2	-4,441.0	7.5	4,441.0	1.88	-1.61	-0.97
12,256.0	89.50	178.80	7,766.5	-4,473.0	8.3	4,473.0	0.70	0.31	0.63
12,287.0	89.50	178.60	7,766.8	-4,504.0	9.0	4,504.0	0.65	0.00	-0.65
TD @ 12350' MD									
12,350.0	89.50	178.60	7,767.3	-4,567.0	10.5	4,567.0	0.00	0.00	0.00

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,756.0	2,754.2	0.0	0.0	Tie On
7,770.0	7,661.5	-1.8	-83.5	Crossed Hard Line @ 7770' MD
12,350.0	7,767.3	-4,567.0	10.5	TD @ 12350' MD

Checked By: _____ Approved By: _____ Date: _____



Gyroscopic Survey Report
for
NADEL GUSSMAN PERMIAN, L.L.C

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	MACHO GRANDE ST. #1-H
Rig Name	PATTERSON 74
Survey Date	11/3/2011
Latitude	32.27 deg
North Reference	Grid North
Grid Correction	-0.18 deg
Depth Reference	RKB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 179.07Azim (deg)
Definitive Survey	FINAL GYRO SURVEY
Operator	FRANK RENTERIA

Comments

22 FOOT KB



Survey Report

Well Name: MACHO GRANDE ST. #1-H

Survey: FINAL GYRO SURVEY

Survey Date: 11/3/2011

MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
0.0	0.00	0 00	0 00	0 00	0 00	0 00	Invalid	0 00	0.00
100.0	0 36	14 22	100 00	-0 30	0.30	0 08	0 36	0 31	14 22
200.0	0 34	45 30	200 00	-0 81	0.82	0 36	0 19	0.89	24 04
300.0	0 83	184.83	299.99	-0 29	0.30	0 51	1 11	0 59	59 64
400.0	0.90	188 70	399.98	1.21	-1.20	0 33	0 09	1 25	164.49
500.0	0 91	192 77	499 97	2.75	-2 75	0.04	0.06	2 75	179 19
600.0	0 93	182 05	599 96	4.33	-4 34	-0 17	0.17	4 34	182 19
700.0	1.13	185 86	699 94	6.12	-6 13	-0 30	0.21	6.13	182.76
800.0	1.15	187 44	799.92	8.09	-8 10	-0 53	0.04	8 12	183 71
900.0	1.17	181.08	899.90	10 10	-10 11	-0 67	0.13	10.14	183.82
1100.0	1.09	186.44	1099.86	14 03	-14 04	-0 93	0 07	14.07	183 77
1200.0	1 18	187 41	1199.84	15 99	-16 01	-1 17	0 10	16.05	184 16
1300.0	1.14	183.01	1299.82	18 00	-18.03	-1 35	0 10	18.08	184 29
1400.0	1 20	167.80	1399.80	20 02	-20 04	-1.18	0.32	20.08	183 37
1500.0	1 39	154 70	1499.78	22 16	-22.17	-0 44	0 35	22 17	181 14
1600.0	1 62	142 31	1599 74	24 40	-24 39	0 95	0 40	24.41	177.78
1700.0	1.73	138.05	1699 70	26 68	-26.63	2 82	0 16	26 78	173.95
1800.0	1.81	137 06	1799 65	28 99	-28 91	4.91	0 08	29.33	170.37
1900.0	2.25	128.38	1899.59	31 41	-31.29	7 52	0 53	32 18	166.48
2000.0	2 64	125 12	1999.50	34 01	-33 83	10 95	0 42	35 56	162.07
2100.0	2 91	119 77	2099.38	36 66	-36.42	15.04	0.37	39 40	157 57
2200.0	3 53	116 19	2199.22	39 36	-39.04	20 00	0 65	43 86	152 87
2300.0	3.89	114.54	2299.01	42.22	-41.81	25 85	0 38	49 15	148 27
2400.0	4.02	111.37	2398.77	45.01	-44.49	32 20	0 25	54.92	144.10
2500.0	4 03	112.44	2498.53	47 73	-47.11	38 72	0 08	60 98	140.59
2600.0	3 98	108.86	2598 28	50 30	-49 58	45 25	0 26	67.12	137.61
2700.0	3.58	110.57	2698.07	52.62	-51 79	51 46	0.42	73.01	135.19
2756.1	3 61	109.61	2754 09	53.89	-53 00	54 76	0 12	76.21	134.06