



PHOENIX
TECHNOLOGY SERVICES

March 13, 2015

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

RD 3/24/15
Accepted for record
NHDCD

Dear District 2 - Artesia

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 19 2015

Attention: Regulatory Department

RECEIVED

Re: Nadel & Gussman Permian, L.L.C.
Macho Grande State #2H
Eddy County, NM
API #30-015-42659
Job No. 1512777

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Michael Johnson	2H	515	15,361	01/18/15	02/22/15	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Bobbi Jo Jorgensen

Bobbi Jo Jorgensen
Operations Administrator

Certified mail receipt number: 7014 2120 0004 3423 7231

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1512777

ENERGY COMPANY

Nadal and Gussman Permian LLC

WELL NAME

Macho Grande State #2H

COUNTY & STATE

Eddy County, NM

API WELL NUMBER

30-015-42659

PROPOSED DIRECTION

174.72

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
0.0 ft	.00 ft	0.00	0.00	.00 ft	.00 ft	Surface

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
18-Jan-15	515.00 ft	2.00	282.10

SURVEY INSTRUMENT
TYPE

Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
22-Feb-15	15,361.00 ft	90.90°	175.20°

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
22-Feb-15	15,427.00 ft	90.40°	174.10°

Michael Johnson

PRINT YOUR NAME ABOVE

Michael Johnson

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	
	7.41
DECLINATION OR GRID	GRID

22-Feb-15

TODAY'S DATE

MWD SUPERVISOR 1

Michael Johnson

DIRECTIONAL DRILLER 1

Scott Haley

MWD SUPERVISOR 2

Justin Hearne

DIRECTIONAL DRILLER 2

Jay Murphy

12329 Cutten Rd., Houston, Texas 777066

(713)337-0600 (Voice), (713)337-0599 (Fax)

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 19 2015

RECEIVED

Nadel and Gussman Permian, LLC

Eddy County, New Mexico (NAD27)

Macho Grande State

#2H

WB1 / Job #1512777

Survey: Phoenix MWD Surveys

Standard Survey Report

23 February, 2015



Survey Report



Company: Nadel and Gussman Permian, LLC
Project: Eddy County, New Mexico (NAD27)
Site: Macho Grande State
Well: #2H
Wellbore: WB1 / Job #1512777
Design: Surveys (Patriot 5)

Local Co-ordinate Reference: Well #2H
TVD Reference: KB @ 3037.50usft (Patriot 5)
MD Reference: KB @ 3037.50usft (Patriot 5)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Project: Eddy County, New Mexico (NAD27)
Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001
System Datum: Mean Sea Level

Site: Macho Grande State
Site Position: Northing: 461,340.90 usft Latitude: 32° 16' 4.45296 N
From: Map Easting: 602,976.00 usft Longitude: 104° 0' 0.63178 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.18 °

Well: #2H
Well Position: +N/-S 0.00 usft Northing: 461,340.90 usft Latitude: 32° 16' 4.45296 N
+E/-W 0.00 usft Easting: 602,976.00 usft Longitude: 104° 0' 0.63178 W
Position Uncertainty: 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 3,014.00 usft

Wellbore: WB1 / Job #1512777

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/17/2015	7.41	60.06	48,169

Design: Surveys (Patriot 5)
Audit Notes:
Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00
Vertical Section: Depth From (TVD) (usft) +N/-S (usft) +E/-W (usft) Direction (°)
 0.00 0.00 0.00 178.58

Survey Program Date 2/23/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
515.00	15,427.00	Phoenix MWD Surveys (WB1 / Job #1512)	PHX+MWD+IGRF	PHX+MWD+IGRF v3:standard declination

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
515.00	2.00	282.10	514.90	1.88	-8.79	-2.10	0.39	0.39	0.00
First Phoenix Survey									
604.00	2.20	273.90	603.84	2.33	-12.01	-2.62	0.41	0.22	-9.21
696.00	1.40	277.80	695.79	2.60	-14.89	-2.97	0.88	-0.87	4.24
787.00	1.50	271.50	786.76	2.78	-17.18	-3.21	0.21	0.11	-6.92
876.00	1.50	269.50	875.73	2.80	-19.51	-3.28	0.06	0.00	-2.25
968.00	1.50	270.60	967.70	2.80	-21.92	-3.35	0.03	0.00	1.20
1,060.00	1.50	276.50	1,059.67	2.95	-24.32	-3.55	0.17	0.00	6.41
1,149.00	1.40	282.20	1,148.64	3.31	-26.54	-3.97	0.20	-0.11	6.40
1,241.00	1.30	284.90	1,240.61	3.82	-28.64	-4.53	0.13	-0.11	2.93

Survey Report



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Wellbore: WB1 / Job #1512777
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Database: Compass 5000 GCR

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)
1,332.00	0.50	289.60	1,331.60	4.22	-30.01	-4.96	0.88	-0.88	5.16
1,424.00	0.60	23.40	1,423.60	4.79	-30.20	-5.54	0.88	0.11	101.96
1,515.00	0.80	29.50	1,514.59	5.78	-29.70	-6.52	0.23	0.22	6.70
1,606.00	1.00	32.30	1,605.58	7.01	-28.96	-7.72	0.22	0.22	3.08
1,702.00	1.50	42.60	1,701.56	8.64	-27.66	-9.32	0.57	0.52	10.73
1,797.00	2.10	44.90	1,796.51	10.79	-25.59	-11.42	0.64	0.63	2.42
1,892.00	1.50	38.70	1,891.46	12.99	-23.59	-13.57	0.66	-0.63	-6.53
1,987.00	1.00	26.60	1,986.44	14.71	-22.44	-15.26	0.59	-0.53	-12.74
2,082.00	1.30	30.10	2,081.42	16.38	-21.53	-16.91	0.32	0.32	3.68
2,178.00	2.40	55.80	2,177.37	18.45	-19.32	-18.92	1.41	1.15	26.77
2,273.00	3.30	77.60	2,272.26	20.16	-15.00	-20.52	1.47	0.95	22.95
2,368.00	3.00	92.10	2,367.11	20.65	-9.85	-20.89	0.89	-0.32	15.26
2,463.00	3.50	102.30	2,461.96	19.94	-4.53	-20.05	0.80	0.53	10.74
2,558.00	3.00	104.30	2,556.81	18.71	0.71	-18.69	0.54	-0.53	2.11
2,654.00	2.80	108.00	2,652.68	17.37	5.38	-17.23	0.29	-0.21	3.85
2,749.00	2.40	112.70	2,747.59	15.88	9.42	-15.64	0.48	-0.42	4.95
2,844.00	2.70	110.90	2,842.49	14.32	13.34	-13.98	0.33	0.32	-1.89
2,939.00	1.90	112.20	2,937.42	12.92	16.89	-12.50	0.84	-0.84	1.37
3,034.00	1.00	110.30	3,032.38	12.04	19.13	-11.56	0.95	-0.95	-2.00
3,129.00	0.50	9.90	3,127.38	12.16	19.98	-11.66	1.26	-0.53	-105.68
3,225.00	0.60	6.10	3,223.37	13.07	20.10	-12.57	0.11	0.10	-3.96
3,320.00	0.70	4.90	3,318.37	14.15	20.20	-13.64	0.11	0.11	-1.26
3,415.00	0.80	3.10	3,413.36	15.39	20.29	-14.88	0.11	0.11	-1.89
3,510.00	0.80	358.30	3,508.35	16.71	20.31	-16.20	0.07	0.00	-5.05
3,605.00	0.90	342.50	3,603.34	18.09	20.06	-17.58	0.27	0.11	-16.63
3,700.00	1.10	345.20	3,698.33	19.68	19.60	-19.19	0.22	0.21	2.84
3,796.00	1.20	351.90	3,794.31	21.57	19.23	-21.08	0.17	0.10	6.98
3,890.00	1.40	346.60	3,888.28	23.66	18.82	-23.18	0.25	0.21	-5.64
3,984.00	1.70	349.80	3,982.25	26.15	18.31	-25.68	0.33	0.32	3.40
4,079.00	1.80	352.70	4,077.20	29.01	17.87	-28.56	0.14	0.11	3.05
4,174.00	1.80	353.40	4,172.16	31.97	17.51	-31.53	0.02	0.00	0.74
4,269.00	1.80	356.50	4,267.11	34.95	17.25	-34.51	0.10	0.00	3.26
4,365.00	1.90	356.20	4,363.06	38.04	17.05	-37.60	0.10	0.10	-0.31
4,460.00	2.20	355.90	4,458.00	41.43	16.81	-41.00	0.32	0.32	-0.32
4,553.00	2.50	351.20	4,550.92	45.21	16.38	-44.79	0.38	0.32	-5.05
4,649.00	2.80	352.60	4,646.82	49.61	15.75	-49.20	0.32	0.31	1.46
4,744.00	2.90	358.10	4,741.70	54.31	15.38	-53.91	0.31	0.11	5.79
4,839.00	2.50	1.20	4,836.59	58.78	15.34	-58.39	0.45	-0.42	3.26
4,933.00	2.00	2.50	4,930.52	62.47	15.45	-62.07	0.53	-0.53	1.38
5,123.00	2.20	358.30	5,120.39	69.43	15.49	-69.03	0.13	0.11	-2.21
5,218.00	2.20	355.10	5,215.32	73.07	15.28	-72.67	0.13	0.00	-3.37
5,313.00	2.60	357.70	5,310.24	77.04	15.04	-76.64	0.44	0.42	2.74
5,408.00	2.90	354.90	5,405.13	81.59	14.74	-81.20	0.35	0.32	-2.95

Survey Report



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5,504.00	2.90	352.80	5,501.01	86.41	14.22	-86.04	0.11	0.00	-2.19
5,599.00	3.30	355.70	5,595.87	91.53	13.71	-91.16	0.45	0.42	3.05
5,693.00	3.30	355.90	5,689.71	96.92	13.32	-96.56	0.01	0.00	0.21
5,788.00	3.30	355.30	5,784.56	102.37	12.90	-102.02	0.04	0.00	-0.63
5,882.00	3.10	359.10	5,878.41	107.61	12.63	-107.27	0.31	-0.21	4.04
5,978.00	3.00	359.20	5,974.27	112.72	12.56	-112.37	0.10	-0.10	0.10
6,073.00	3.20	358.00	6,069.13	117.86	12.43	-117.51	0.22	0.21	-1.26
6,168.00	3.40	359.10	6,163.98	123.32	12.29	-122.98	0.22	0.21	1.16
6,263.00	3.70	3.30	6,258.79	129.20	12.43	-128.85	0.42	0.32	4.42
6,358.00	3.80	4.60	6,353.59	135.40	12.86	-135.04	0.14	0.11	1.37
6,453.00	3.80	2.60	6,448.38	141.68	13.25	-141.31	0.14	0.00	-2.11
6,536.00	3.70	4.10	6,531.20	147.10	13.57	-146.72	0.17	-0.12	1.81
6,630.00	3.40	3.50	6,625.02	152.91	13.95	-152.51	0.32	-0.32	-0.64
6,723.00	2.50	1.30	6,717.90	157.69	14.17	-157.29	0.98	-0.97	-2.37
6,816.00	2.40	352.60	6,810.82	161.64	13.96	-161.25	0.41	-0.11	-9.35
6,910.00	2.00	349.90	6,904.75	165.21	13.42	-164.83	0.44	-0.43	-2.87
7,004.00	2.20	351.20	6,998.68	168.61	12.86	-168.24	0.22	0.21	1.38
7,099.00	2.20	350.80	7,093.61	172.21	12.29	-171.85	0.02	0.00	-0.42
7,194.00	0.80	299.60	7,188.58	174.34	11.42	-174.00	1.90	-1.47	-53.89
7,289.00	2.40	200.80	7,283.55	172.81	10.14	-172.50	2.78	1.68	-104.00
7,384.00	3.00	211.40	7,378.45	168.83	8.14	-168.57	0.82	0.63	11.16
7,480.00	3.00	215.50	7,474.31	164.64	5.37	-164.45	0.22	0.00	4.27
7,575.00	3.00	206.80	7,569.19	160.39	2.80	-160.27	0.48	0.00	-9.16
7,670.00	2.80	195.60	7,664.06	155.94	1.06	-155.87	0.63	-0.21	-11.79
7,766.00	2.70	191.60	7,759.95	151.47	-0.03	-151.42	0.23	-0.10	-4.17
7,861.00	2.40	197.20	7,854.86	147.37	-1.07	-147.36	0.41	-0.32	5.89
7,956.00	2.20	193.40	7,949.78	143.70	-2.08	-143.71	0.26	-0.21	-4.00
8,051.00	1.90	191.80	8,044.72	140.38	-2.82	-140.41	0.32	-0.32	-1.68
8,146.00	1.30	177.00	8,139.69	137.77	-3.09	-137.80	0.76	-0.63	-15.58
8,241.00	1.00	180.90	8,234.67	135.86	-3.04	-135.90	0.33	-0.32	4.11
8,337.00	1.30	179.70	8,330.65	133.94	-3.05	-133.97	0.31	0.31	-1.25
8,432.00	1.90	186.80	8,425.61	131.29	-3.23	-131.33	0.66	0.63	7.47
8,527.00	1.90	173.80	8,520.56	128.16	-3.25	-128.21	0.45	0.00	-13.68
8,622.00	2.30	148.70	8,615.50	124.97	-2.09	-124.98	1.04	0.42	-26.42
8,717.00	2.50	144.70	8,710.41	121.65	0.10	-121.61	0.27	0.21	-4.21
8,812.00	1.70	135.20	8,805.35	118.96	2.29	-118.87	0.92	-0.84	-10.00
8,908.00	0.50	101.20	8,901.33	117.87	3.71	-117.74	1.37	-1.25	-35.42
9,003.00	1.60	12.90	8,996.32	119.08	4.41	-118.93	1.75	1.16	-92.95
9,098.00	3.00	11.30	9,091.24	122.81	5.19	-122.64	1.48	1.47	-1.68
9,193.00	3.10	15.90	9,186.10	127.72	6.38	-127.52	0.28	0.11	4.84
9,288.00	3.30	17.40	9,280.95	132.80	7.90	-132.56	0.23	0.21	1.58
9,382.00	3.10	9.90	9,374.81	137.88	9.15	-137.61	0.49	-0.21	-7.98
9,477.00	3.50	2.80	9,469.65	143.31	9.73	-143.03	0.60	0.42	-7.47

Survey Report



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9,572.00	3.40	350.50	9,564.48	148.99	9.41	-148.71	0.78	-0.11	-12.95
9,667.00	3.20	350.70	9,659.32	154.38	8.52	-154.12	0.21	-0.21	0.21
9,762.00	3.00	351.20	9,754.18	159.45	7.71	-159.21	0.21	-0.21	0.53
9,857.00	2.70	354.20	9,849.07	164.14	7.10	-163.91	0.35	-0.32	3.16
9,951.00	2.50	354.40	9,942.97	168.38	6.68	-168.16	0.21	-0.21	0.21
10,046.00	2.00	349.00	10,037.90	172.07	6.16	-171.86	0.57	-0.53	-5.68
10,172.00	1.00	208.80	10,163.87	173.26	5.21	-173.08	2.25	-0.79	-111.27
10,204.00	3.80	201.80	10,195.84	172.03	4.68	-171.87	8.78	8.75	-21.88
10,236.00	6.40	196.60	10,227.71	169.34	3.78	-169.20	8.24	8.13	-16.25
10,267.00	8.90	188.90	10,258.43	165.31	2.91	-165.19	8.70	8.06	-24.84
10,299.00	11.20	184.50	10,289.94	159.77	2.29	-159.66	7.57	7.19	-13.75
10,331.00	13.50	183.80	10,321.20	152.94	1.79	-152.85	7.20	7.19	-2.19
10,362.00	15.60	182.80	10,351.20	145.17	1.35	-145.09	6.82	6.77	-3.23
10,394.00	16.50	179.70	10,381.96	136.33	1.16	-136.26	3.88	2.81	-9.69
10,426.00	17.80	176.50	10,412.53	126.90	1.49	-126.83	5.02	4.06	-10.00
10,458.00	20.30	176.10	10,442.78	116.48	2.16	-116.39	7.82	7.81	-1.25
10,489.00	22.10	180.10	10,471.68	105.28	2.52	-105.19	7.45	5.81	12.90
10,521.00	24.60	182.60	10,501.06	92.61	2.21	-92.52	8.40	7.81	7.81
10,553.00	25.00	185.70	10,530.11	79.22	1.23	-79.17	4.25	1.25	9.69
10,584.00	27.00	186.70	10,557.97	65.71	-0.24	-65.70	6.60	6.45	3.23
10,616.00	29.20	186.30	10,586.20	50.74	-1.94	-50.77	6.90	6.88	-1.25
10,647.00	32.80	185.60	10,612.76	34.86	-3.59	-34.94	11.67	11.61	-2.26
10,678.00	35.70	184.30	10,638.39	17.48	-5.09	-17.60	9.65	9.35	-4.19
10,710.00	37.00	183.70	10,664.16	-1.44	-6.41	1.28	4.21	4.06	-1.88
10,742.00	38.20	184.50	10,689.51	-20.91	-7.81	20.71	4.05	3.75	2.50
10,773.00	41.00	185.40	10,713.40	-40.60	-9.52	40.35	9.22	9.03	2.90
10,805.00	43.70	184.30	10,737.04	-62.07	-11.34	61.77	8.75	8.44	-3.44
10,836.00	46.20	183.10	10,758.98	-83.93	-12.75	83.58	8.52	8.06	-3.87
10,868.00	47.90	181.40	10,780.79	-107.33	-13.66	106.96	6.58	5.31	-5.31
10,900.00	50.60	178.80	10,801.67	-131.56	-13.69	131.18	10.44	8.44	-8.13
10,932.00	54.30	179.20	10,821.17	-156.93	-13.25	156.55	11.60	11.56	1.25
10,963.00	57.00	180.10	10,838.66	-182.52	-13.10	182.14	9.03	8.71	2.90
10,995.00	60.70	180.10	10,855.21	-209.90	-13.15	209.51	11.56	11.56	0.00
11,027.00	63.50	180.50	10,870.19	-238.18	-13.29	237.77	8.82	8.75	1.25
11,059.00	66.40	181.40	10,883.73	-267.16	-13.78	266.73	9.41	9.06	2.81
11,090.00	68.80	181.10	10,895.55	-295.81	-14.40	295.36	7.79	7.74	-0.97
11,122.00	71.40	181.10	10,906.44	-325.89	-14.98	325.42	8.13	8.13	0.00
11,154.00	72.70	181.40	10,916.30	-356.33	-15.64	355.83	4.16	4.06	0.94
11,185.00	73.80	181.00	10,925.23	-386.00	-16.27	385.48	3.76	3.55	-1.29
11,217.00	75.70	180.50	10,933.65	-416.87	-16.67	416.33	6.13	5.94	-1.56
11,249.00	77.00	180.60	10,941.20	-447.97	-16.97	447.41	4.07	4.06	0.31
11,280.00	78.20	179.90	10,947.86	-478.24	-17.10	477.67	4.46	3.87	-2.26
11,312.00	80.40	179.50	10,953.80	-509.68	-16.93	509.11	6.98	6.88	-1.25
11,344.00	83.50	180.00	10,958.28	-541.36	-16.80	540.78	9.81	9.69	1.56

Survey Report



Company: Nadel and Gussman Permian, LLC
Project: Eddy County, New Mexico (NAD27)
Site: Macho Grande State
Well: #2H
Wellbore: WB1 / Job #1512777
Design: Surveys (Patriot 5)

Local Co-ordinate Reference: Well #2H
TVD Reference: KB @ 3037.50usft (Patriot 5)
MD Reference: KB @ 3037.50usft (Patriot 5)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
11,393.00	87.50	179.60	10,962.12	-590.20	-16.63	589.61	8.20	8.16	-0.82
11,487.00	88.80	178.80	10,965.16	-684.14	-15.31	683.55	1.62	1.38	-0.85
11,582.00	88.90	179.00	10,967.06	-779.10	-13.49	778.53	0.24	0.11	0.21
11,677.00	89.30	179.60	10,968.56	-874.09	-12.33	873.51	0.76	0.42	0.63
11,772.00	89.00	178.70	10,969.97	-969.06	-10.92	968.50	1.00	-0.32	-0.95
11,866.00	91.10	177.80	10,969.88	-1,063.01	-8.05	1,062.49	2.43	2.23	-0.96
11,961.00	89.60	175.60	10,969.30	-1,157.85	-2.58	1,157.43	2.80	-1.58	-2.32
12,056.00	89.40	175.10	10,970.13	-1,252.53	5.12	1,252.27	0.57	-0.21	-0.53
12,150.00	89.60	176.10	10,970.95	-1,346.25	12.33	1,346.14	1.08	0.21	1.06
12,220.00	89.70	177.10	10,971.38	-1,416.12	16.48	1,416.10	1.44	0.14	1.43
12,316.00	91.50	179.30	10,970.37	-1,512.06	19.50	1,512.08	2.96	1.88	2.29
12,411.00	89.80	178.00	10,969.30	-1,607.02	21.73	1,607.07	2.25	-1.79	-1.37
12,506.00	90.50	177.90	10,969.05	-1,701.96	25.13	1,702.06	0.74	0.74	-0.11
12,601.00	89.60	177.80	10,968.97	-1,796.89	28.70	1,797.05	0.95	-0.95	-0.11
12,696.00	89.50	177.60	10,969.71	-1,891.81	32.51	1,892.04	0.24	-0.11	-0.21
12,791.00	89.80	177.00	10,970.29	-1,986.70	36.98	1,987.01	0.71	0.32	-0.63
12,887.00	91.10	177.20	10,969.54	-2,082.58	41.84	2,082.97	1.37	1.35	0.21
12,982.00	90.80	179.00	10,967.96	-2,177.51	44.99	2,177.95	1.92	-0.32	1.89
13,077.00	90.20	178.40	10,967.13	-2,272.48	47.15	2,272.95	0.89	-0.63	-0.63
13,172.00	89.50	178.60	10,967.38	-2,367.44	49.63	2,367.95	0.77	-0.74	0.21
13,267.00	89.10	180.00	10,968.54	-2,462.43	50.79	2,462.93	1.53	-0.42	1.47
13,362.00	91.90	179.90	10,967.71	-2,557.41	50.88	2,557.89	2.95	2.95	-0.11
13,461.00	89.50	179.50	10,966.50	-2,656.40	51.39	2,656.86	2.46	-2.42	-0.40
13,556.00	91.30	179.90	10,965.84	-2,751.39	51.89	2,751.83	1.94	1.89	0.42
13,651.00	90.90	179.90	10,964.02	-2,846.37	52.06	2,846.79	0.42	-0.42	0.00
13,746.00	90.80	178.70	10,962.61	-2,941.35	53.22	2,941.77	1.27	-0.11	-1.26
13,841.00	90.20	178.50	10,961.78	-3,036.32	55.54	3,036.76	0.67	-0.63	-0.21
13,936.00	89.60	178.30	10,961.95	-3,131.28	58.19	3,131.76	0.67	-0.63	-0.21
14,031.00	89.10	178.10	10,963.02	-3,226.23	61.17	3,226.76	0.57	-0.53	-0.21
14,126.00	87.90	177.70	10,965.51	-3,321.13	64.65	3,321.71	1.33	-1.26	-0.42
14,221.00	88.30	177.80	10,968.66	-3,416.01	68.38	3,416.65	0.43	0.42	0.11
14,316.00	88.10	177.60	10,971.64	-3,510.88	72.19	3,511.59	0.30	-0.21	-0.21
14,411.00	89.20	178.10	10,973.88	-3,605.79	75.76	3,606.56	1.27	1.16	0.53
14,506.00	90.10	178.60	10,974.46	-3,700.75	78.49	3,701.55	1.08	0.95	0.53
14,602.00	90.80	179.40	10,973.71	-3,796.73	80.17	3,797.55	1.11	0.73	0.83
14,697.00	90.00	177.00	10,973.04	-3,891.67	83.15	3,892.53	2.66	-0.84	-2.53
14,792.00	90.10	176.40	10,972.96	-3,986.51	88.62	3,987.48	0.64	0.11	-0.63
14,887.00	89.60	176.00	10,973.21	-4,081.30	94.91	4,082.40	0.67	-0.53	-0.42
14,983.00	89.10	176.80	10,974.30	-4,177.11	100.94	4,178.32	0.98	-0.52	0.83
15,078.00	89.00	175.60	10,975.87	-4,271.88	107.24	4,273.23	1.27	-0.11	-1.26
15,172.00	91.40	176.60	10,975.55	-4,365.66	113.63	4,367.13	2.77	2.55	1.06
15,266.00	91.70	176.80	10,973.00	-4,459.46	119.04	4,461.05	0.38	0.32	0.21
15,361.00	90.90	175.20	10,970.85	-4,554.21	125.66	4,555.92	1.88	-0.84	-1.68

Survey Report



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Project: Eddy County, New Mexico (NAD27)
Site: Macho Grande State
Well: #2H
Wellbore: WB1 / Job #1512777
Design: Surveys (Patriot 5)

Local Co-ordinate Reference: Well #2H
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

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)
Final Phoenix Survey									
15,427.00	90.40	174.10	10,970.10	-4,619.91	131.82	4,621.76	1.83	-0.76	-1.67
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
515.00	514.90	1.88	-8.79	First Phoenix Survey
15,361.00	10,970.85	-4,554.21	125.66	Final Phoenix Survey
15,427.00	10,970.10	-4,619.91	131.82	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
871 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name Cedar Canyon / Bone Spring
Property Code	Property Name MACHO GRANDE STATE	Well Number 2H
OGRID No. 155615	Operator Name NADEL & GUSSMAN PERMIAN, LLC	Elevation 3014

Surface Location									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	32	23-S	29-E		200	NORTH	700	EAST	EDDY

Bottom Hole Location If Different From Surface									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	32	23-S	29-E		330	SOUTH	330	EAST	EDDY
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=461340.9 N X=602976.0 E LAT.=32.267904° N LONG.=104.000176° W CORNER COORDINATES TABLE <table> <tr> <td>A - Y=</td> <td>461539.7 N,</td> <td>X=</td> <td>602349.7 E</td> </tr> <tr> <td>B - Y=</td> <td>461542.2 N,</td> <td>X=</td> <td>603671.6 E</td> </tr> <tr> <td>C - Y=</td> <td>456251.7 N,</td> <td>X=</td> <td>603786.2 E</td> </tr> <tr> <td>D - Y=</td> <td>456261.2 N,</td> <td>X=</td> <td>602461.4 E</td> </tr> </table> BOTTOM HOLE LOCATION Y=456584.1 N X=603449.1 E	A - Y=	461539.7 N,	X=	602349.7 E	B - Y=	461542.2 N,	X=	603671.6 E	C - Y=	456251.7 N,	X=	603786.2 E	D - Y=	456261.2 N,	X=	602461.4 E	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <u>Sarah Presley</u> 9.15.2014 Signature Date <u>Sarah Presley</u> Printed Name <u>spresley@naguss.com</u> E-mail Address SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. JULY 26, 2014 Date of Survey Signature & Seal of Professional Surveyor: Certificate Number: <u>12641</u> <u>Ronald J. Eidson</u> 3239 LSL REV. 8/6/14 JWSC W.O. 14.11.0730
	A - Y=	461539.7 N,	X=	602349.7 E													
	B - Y=	461542.2 N,	X=	603671.6 E													
	C - Y=	456251.7 N,	X=	603786.2 E													
D - Y=	456261.2 N,	X=	602461.4 E														