



**PHOENIX**  
TECHNOLOGY SERVICES

30-025-41927

September 25, 2014

Oil Conservation Division  
State of New Mexico  
1625 N. French Drive  
District 1 - Hobbs  
Hobbs, New Mexico 88240

HOBBS OCD  
SEP 29 2014  
RECEIVED

Attention: Regulatory Department

Re: Nadel & Gussman Permian, L.L.C. ✓  
Sun McKay Federal 3H ✓  
Lea County, NM  
API #30-025-41927 ✓  
Job No. 1411270

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	
Jeff Thomas	3H	8,610	13,831	07/29/14	08/09/14	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,

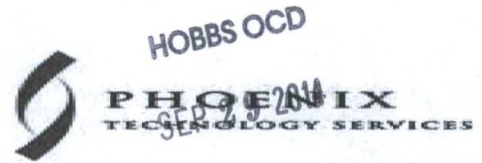
*Dana Robinson*

Dana Robinson  
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4365 2414

JAN 13 2016

PHOENIX TECHNOLOGY SERVICES  
SURVEY DATA CERTIFICATION



HOBBS OCD

RECEIVED

PHOENIX JOB NUMBER 1411270

OPERATOR Nadel and Gussman Permian

WELL NAME Sun McKay Federal 3H

COUNTY & STATE

Lea County, NM

API WELL NUMBER 30-025-41927

PROPOSED DIRECTION 179.6

TIE-IN DATA

MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
8,530 ft	8,528.78 ft	0.98	100.89	23.25	70.13	MS Survey

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
29-Jul-23	8,610 ft	1.1	96.9

SURVEY INSTRUMENT TYPE
PHOENIX MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
9-Aug-14	13,831 ft	89.7	173.5

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

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
9-Aug-14	13,885 ft	89.7	173.5

Jeff Thomas

PRINT YOUR NAME ABOVE

*Jeff Thomas*

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.01
DECLINATION OR GRID	Grid

8/10/2014

TODAY'S DATE

MWD SUPERVISOR 1 Jeff Thomas

DIRECTIONAL DRILLER 1

George Woodgate

MWD SUPERVISOR 2 Shawn Ramnarine

DIRECTIONAL DRILLER 2

Zach Johnson



HOBBS OCD  
SEP 29 2014  
RECEIVED

# **Nadel and Gussman Permian, LLC**

Lea County, New Mexico (NAD 83)

Sun McKay Federal

3H

Wellbore #1 Job #1411270

Survey: Phoenix MWD Surveys

## **Standard Survey Report**

10 August, 2014



# Phoenix Technology Services

## Survey Report

<b>Company:</b>	Nadel and Gussman Permian, LLC	<b>Local Co-ordinate Reference:</b>	Well 3H
<b>Project:</b>	Lea County, New Mexico (NAD 83)	<b>TVD Reference:</b>	WELL @ 3690.50usft (Patriot 5)
<b>Site:</b>	Sun McKay Federal	<b>MD Reference:</b>	WELL @ 3690.50usft (Patriot 5)
<b>Well:</b>	3H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1 Job #1411270	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys (Patriot 5)	<b>Database:</b>	Compass 5000 GCR DB

<b>Project</b>	Lea County, New Mexico (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Sun McKay Federal				
<b>Site Position:</b>		<b>Northing:</b>	612,060.76 usft	<b>Latitude:</b>	32° 40' 52.57958 N
<b>From:</b>	Map	<b>Easting:</b>	718,890.08 usft	<b>Longitude:</b>	103° 45' 22.52651 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.31 °

<b>Well</b>	3H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	612,060.76 usft	<b>Latitude:</b>	32° 40' 52.57958 N
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	718,890.08 usft	<b>Longitude:</b>	103° 45' 22.52651 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	3,667.00 usft

<b>Wellbore</b>	Wellbore #1 Job #1411270				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010_14	07/14/14	7.33	60.50	48,561

<b>Design</b>	Surveys (Patriot 5)				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	179.60	

<b>Survey Program</b>	Date 08/10/14			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
100.00	8,530.00	Scientific Gyro Survey (Wellbore #1 Job #	PHX+MWD+IGRF	PHX+MWD+IGRF v3:standard declination
8,610.00	13,885.00	Phoenix MWD Surveys (Wellbore #1 Job #	PHX+MWD+IGRF	PHX+MWD+IGRF 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)	
8,530.00	0.98	100.89	8,528.78	23.25	70.13	-22.76	0.00	0.00	0.00	
<b>Tie-in to Scientific Gyro</b>										
8,610.00	1.10	96.90	8,608.77	23.03	71.56	-22.53	0.18	0.15	-4.99	
<b>First Phoenix MWD Survey</b>										
8,705.00	1.30	104.40	8,703.75	22.66	73.51	-22.14	0.27	0.21	7.89	
8,800.00	1.30	109.00	8,798.73	22.04	75.58	-21.51	0.11	0.00	4.84	
8,832.00	1.40	68.50	8,830.72	22.06	76.28	-21.53	2.93	0.31	-126.56	
8,864.00	3.30	11.21	8,862.69	23.11	76.83	-22.57	8.76	5.94	-179.03	
8,895.00	5.20	26.80	8,893.61	25.24	77.63	-24.70	7.12	6.13	50.29	



# Phoenix Technology Services

## Survey Report

<b>Company:</b> Nadel and Gussman Permian, LLC	<b>Local Co-ordinate Reference:</b> Well 3H
<b>Project:</b> Lea County, New Mexico (NAD 83)	<b>TVD Reference:</b> WELL @ 3690.50usft (Patriot 5)
<b>Site:</b> Sun McKay Federal	<b>MD Reference:</b> WELL @ 3690.50usft (Patriot 5)
<b>Well:</b> 3H	<b>North Reference:</b> Grid
<b>Wellbore:</b> Wellbore #1 Job #1411270	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Surveys (Patriot 5)	<b>Database:</b> Compass 5000 GCR 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)
8,927.00	6.50	45.30	8,925.44	27.81	79.57	-27.25	7.11	4.06	57.81
8,959.00	5.90	83.70	8,957.27	29.26	82.50	-28.69	12.84	-1.88	120.00
8,991.00	4.00	120.90	8,989.16	28.87	85.09	-28.27	11.35	-5.94	116.25
9,022.00	3.60	202.90	9,020.11	27.42	85.64	-26.82	16.11	-1.29	264.52
9,054.00	7.40	203.90	9,051.95	24.61	84.41	-24.02	11.88	11.88	3.13
9,086.00	10.90	193.50	9,083.54	19.78	82.87	-19.20	12.05	10.94	-32.50
9,118.00	16.10	181.10	9,114.66	12.39	82.08	-11.82	18.51	16.25	-38.75
9,149.00	21.90	176.60	9,143.96	2.32	82.34	-1.74	19.28	18.71	-14.52
9,181.00	27.80	175.20	9,172.98	-11.09	83.32	11.67	18.53	18.44	-4.38
9,213.00	33.20	174.10	9,200.54	-27.25	84.85	27.84	16.96	16.88	-3.44
9,244.00	36.70	173.60	9,225.95	-44.91	86.75	45.51	11.33	11.29	-1.61
9,276.00	39.00	173.80	9,251.21	-64.42	88.91	65.04	7.20	7.19	0.63
9,308.00	42.50	174.10	9,275.45	-85.19	91.10	85.82	10.95	10.94	0.94
9,339.00	47.30	175.90	9,297.40	-106.98	93.00	107.63	16.02	15.48	5.81
9,371.00	52.10	177.80	9,318.10	-131.34	94.32	132.00	15.67	15.00	5.94
9,403.00	57.50	178.60	9,336.54	-157.47	95.14	158.13	17.00	16.88	2.50
9,435.00	61.40	179.40	9,352.80	-185.02	95.61	185.68	12.38	12.19	2.50
9,466.00	64.20	180.20	9,366.97	-212.58	95.71	213.25	9.32	9.03	2.58
9,498.00	67.70	180.90	9,380.01	-241.80	95.43	242.46	11.12	10.94	2.19
9,530.00	71.00	180.50	9,391.29	-271.74	95.06	272.40	10.38	10.31	-1.25
9,561.00	75.80	179.50	9,400.14	-301.44	95.06	302.09	15.79	15.48	-3.23
9,608.00	80.70	178.20	9,409.71	-347.43	95.99	348.09	10.77	10.43	-2.77
9,703.00	89.40	177.10	9,417.90	-441.90	99.88	442.59	9.23	9.16	-1.16
9,798.00	89.90	176.90	9,418.48	-536.77	104.85	537.49	0.57	0.53	-0.21
9,893.00	86.80	177.80	9,421.22	-631.62	109.24	632.36	3.40	-3.26	0.95
9,989.00	88.30	177.50	9,425.32	-727.44	113.17	728.22	1.59	1.56	-0.31
10,084.00	88.80	176.60	9,427.73	-822.29	118.06	823.09	1.08	0.53	-0.95
10,179.00	89.00	176.10	9,429.55	-917.08	124.10	917.92	0.57	0.21	-0.53
10,274.00	89.30	178.80	9,430.96	-1,011.96	128.33	1,012.83	2.86	0.32	2.84
10,369.00	88.80	181.10	9,432.53	-1,106.94	128.41	1,107.81	2.48	-0.53	2.42
10,464.00	89.20	180.90	9,434.19	-1,201.91	126.76	1,202.77	0.47	0.42	-0.21
10,559.00	89.90	180.00	9,434.94	-1,296.91	126.01	1,297.75	1.20	0.74	-0.95
10,654.00	90.50	179.50	9,434.61	-1,391.90	126.42	1,392.75	0.82	0.63	-0.53
10,749.00	91.30	179.40	9,433.11	-1,486.89	127.34	1,487.74	0.85	0.84	-0.11
10,844.00	89.30	181.00	9,432.62	-1,581.88	127.00	1,582.73	2.70	-2.11	1.68
10,939.00	89.60	180.90	9,433.53	-1,676.86	125.43	1,677.69	0.33	0.32	-0.11
11,034.00	89.80	182.30	9,434.03	-1,771.82	122.78	1,772.63	1.49	0.21	1.47
11,129.00	88.30	183.40	9,435.60	-1,866.68	118.05	1,867.46	1.96	-1.58	1.16
11,224.00	87.10	183.70	9,439.41	-1,961.42	112.18	1,962.16	1.30	-1.26	0.32
11,319.00	86.70	183.50	9,444.55	-2,056.10	106.22	2,056.79	0.47	-0.42	-0.21
11,414.00	86.80	183.00	9,449.94	-2,150.79	100.84	2,151.44	0.54	0.11	-0.53
11,509.00	86.80	182.10	9,455.24	-2,245.55	96.62	2,246.17	0.95	0.00	-0.95
11,604.00	88.30	182.80	9,459.30	-2,340.37	92.57	2,340.96	1.74	1.58	0.74



# Phoenix Technology Services

## Survey Report

<b>Company:</b>	Nadel and Gussman Permian, LLC	<b>Local Co-ordinate Reference:</b>	Well 3H
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<b>Design:</b>	Surveys (Patriot 5)	<b>Database:</b>	Compass 5000 GCR 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)
11,699.00	88.80	183.40	9,461.71	-2,435.20	87.43	2,435.75	0.82	0.53	0.63
11,794.00	90.10	185.20	9,462.62	-2,529.92	80.31	2,530.42	2.34	1.37	1.89
11,889.00	89.70	184.60	9,462.78	-2,624.58	72.19	2,625.02	0.76	-0.42	-0.63
11,984.00	89.50	184.50	9,463.45	-2,719.27	64.66	2,719.66	0.24	-0.21	-0.11
12,079.00	89.40	184.30	9,464.36	-2,813.99	57.37	2,814.32	0.24	-0.11	-0.21
12,175.00	89.40	184.80	9,465.36	-2,909.68	49.75	2,909.96	0.52	0.00	0.52
12,270.00	89.30	184.50	9,466.44	-3,004.36	42.05	3,004.58	0.33	-0.11	-0.32
12,365.00	88.10	183.50	9,468.60	-3,099.10	35.43	3,099.28	1.64	-1.26	-1.05
12,460.00	87.70	183.60	9,472.08	-3,193.86	29.55	3,193.99	0.43	-0.42	0.11
12,556.00	87.40	183.10	9,476.18	-3,289.61	23.94	3,289.69	0.61	-0.31	-0.52
12,651.00	87.70	182.30	9,480.24	-3,384.41	19.47	3,384.47	0.90	0.32	-0.84
12,746.00	87.40	181.40	9,484.30	-3,479.28	16.41	3,479.31	1.00	-0.32	-0.95
12,841.00	87.00	179.80	9,488.94	-3,574.15	15.42	3,574.17	1.73	-0.42	-1.68
12,936.00	87.90	178.10	9,493.17	-3,669.04	17.16	3,669.07	2.02	0.95	-1.79
13,032.00	88.50	177.10	9,496.19	-3,764.91	21.17	3,764.96	1.21	0.63	-1.04
13,127.00	87.70	177.30	9,499.34	-3,859.74	25.81	3,859.83	0.87	-0.84	0.21
13,222.00	87.80	176.20	9,503.07	-3,954.51	31.19	3,954.63	1.16	0.11	-1.16
13,317.00	89.60	175.20	9,505.22	-4,049.22	38.31	4,049.38	2.17	1.89	-1.05
13,412.00	89.50	175.00	9,505.97	-4,143.86	46.43	4,144.09	0.24	-0.11	-0.21
13,508.00	89.70	174.30	9,506.64	-4,239.44	55.38	4,239.73	0.76	0.21	-0.73
13,603.00	89.80	174.40	9,507.05	-4,333.98	64.73	4,334.33	0.15	0.11	0.11
13,698.00	90.00	173.60	9,507.22	-4,428.46	74.66	4,428.87	0.87	0.21	-0.84
13,793.00	89.60	173.70	9,507.55	-4,522.88	85.17	4,523.36	0.43	-0.42	0.11
13,831.00	89.70	173.50	9,507.78	-4,560.64	89.41	4,561.15	0.59	0.26	-0.53
<b>Final Phoenix MWD Survey</b>									
13,885.00	89.70	173.50	9,508.07	-4,614.29	95.52	4,614.85	0.00	0.00	0.00
<b>Projection to TD</b>									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,530.00	8,528.78	23.25	70.13	Tie-in to Scientific Gyro
8,610.00	8,608.77	23.03	71.56	First Phoenix MWD Survey
13,831.00	9,507.78	-4,560.64	89.41	Final Phoenix MWD Survey
13,885.00	9,508.07	-4,614.29	95.52	Projection to TD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_