

PATRIOT DRILLING, LLC

AUG 28 2014

OPERATOR: Nadel & Gussman Permian
WELL/LEASE: Sun McKay Fed # 3H
COUNTY: Lea Co., New Mexico
Sec. 10, T 19S, R 32E

**STATE OF NEW MEXICO
DEVIATION REPORT**

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
437	3/4	5,166	2
620	1	5,355	3 1/2
811	3/4	5,482	3 1/4
1,061	3/4	5,671	3 1/2
1,311	1	5,766	2 1/4
1,573	3/4	5,960	3
1,827	1	6,152	2 1/2
2,050	1	6,242	4
2,300	1	6,435	4
2,810	3 3/4	6,626	2 3/4
2,969	2 3/4	6,721	1/2
3,124	2	6,911	3/4
3,550	1 1/4	7,290	1/4
4,025	1	7,736	1
4,500	1/4	8,212	3/4
4,976	3	8,602	1 1/4
5,039	2 1/2	8,800	1 1/2
		8,864	3 1/2

HOBBSOCD

MAR 16 2015

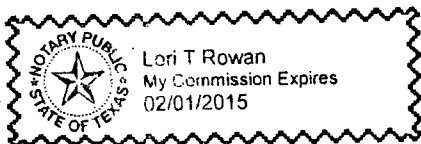
RECEIVED

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 14th day of August, 2014 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2015



Lori T. Rowan
Notary Public for Ector Co., Texas

MAR 26 2015

NADEL & GUSSMAN LLC

Lusk

Lea County, NM (Grid North)

Sun McKay Federal #3H

VH - Job #320714-KW-951

HOBBS OCD

MAR 16 2015

RECEIVED

Survey: Gyro

SDI Survey Report

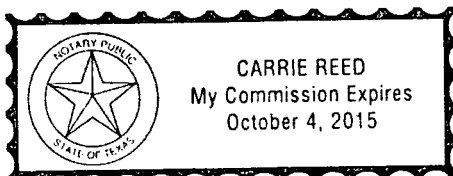
This survey is correct to the best of my knowledge and is supported by actual field data.

Richardson

Notarized this date 4th of August, 2014.

Carrie Reed

Notary Signature
County of Midland
State of Texas



AM

SDI

SDI Survey Report

Company:	NADEL & GUSSMAN LLC	Local Co-ordinate Reference:	Well Sun McKay Federal #3H
Project:	Lusk	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Sun McKay Federal #3H	North Reference:	Grid
Wellbore:	VH - Job #320714-KW-951	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320714-KW-951	Database:	EDM-Regulatory

Project	Lusk		
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	Lea County, NM (Grid North)				
Site Position:		Northing:	612,040.73 usft	Latitude:	32° 40' 52.580 N
From:	Lat/Long	Easting:	677,556.15 usft	Longitude:	103° 45' 22.530 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.31 °

Well	Sun McKay Federal #3H, Horizontal					
Well Position	+N-S	0.0 usft	Northing:	612,040.73 usft	Latitude:	32° 40' 52.580 N
	+E-W	0.0 usft	Easting:	677,556.15 usft	Longitude:	103° 45' 22.530 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	0.0 usft	

Wellbore		VH - Job #320714-KW-951			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/28/2014	7.32	60.50	48,585

Design:	VH - Job #320714-KW-951				
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	71.65	

Survey Program		Date 8/5/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	8,530.0	Gyro (VH - Job #320714-KW-951)	Keeper	Keeper Gyro

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
	100.0	0.20	227.68	100.0	-0.1	-0.1	227.68	0.2
	200.0	0.12	281.69	200.0	-0.2	-0.4	239.34	0.4
	300.0	0.22	145.65	300.0	-0.4	-0.4	225.31	0.5
	400.0	0.05	53.73	400.0	-0.5	-0.2	203.60	0.5
	500.0	0.06	8.49	500.0	-0.4	-0.2	202.52	0.4
	600.0	0.10	12.33	600.0	-0.3	-0.1	207.83	0.3
	700.0	0.11	15.83	700.0	-0.1	-0.1	226.74	0.1
	800.0	0.19	17.09	800.0	0.2	0.0	352.01	0.2
	900.0	0.18	336.42	900.0	0.5	0.0	355.48	0.5
	1,000.0	0.17	292.93	1,000.0	0.7	-0.2	340.43	0.7
	1,100.0	0.20	3.25	1,100.0	0.9	-0.4	337.95	1.0

SDI
SDI Survey Report

Company:	NADEL & GUSSMAN LLC	Local Co-ordinate Reference:	Well Sun McKay Federal #3H
Project:	Lusk	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Sun McKay Federal #3H	North Reference:	Grid
Wellbore:	VH - Job #320714-KW-951	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320714-KW-951	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200.0	0.07	322.41	1,200.0	1.1	-0.4	340.77	1.2	
1,300.0	0.11	77.94	1,300.0	1.2	-0.3	344.31	1.2	
1,400.0	0.44	127.84	1,400.0	1.0	0.1	3.75	1.0	
1,500.0	0.50	139.37	1,500.0	0.4	0.7	58.15	0.8	
1,600.0	0.39	160.61	1,600.0	-0.2	1.0	103.29	1.1	
1,700.0	0.50	126.34	1,700.0	-0.8	1.5	118.67	1.7	
1,800.0	0.21	138.40	1,800.0	-1.2	2.0	121.63	2.3	
1,900.0	0.31	86.97	1,900.0	-1.3	2.4	119.51	2.7	
2,000.0	0.37	88.69	2,000.0	-1.3	3.0	114.02	3.3	
2,100.0	0.29	97.43	2,100.0	-1.3	3.5	110.84	3.8	
2,200.0	0.57	70.61	2,200.0	-1.2	4.3	105.93	4.4	
2,300.0	0.35	91.96	2,300.0	-1.1	5.0	101.90	5.1	
2,400.0	1.35	61.61	2,400.0	-0.5	6.4	94.59	6.4	
2,500.0	1.95	61.89	2,499.9	0.8	8.9	84.56	9.0	
2,600.0	2.60	61.59	2,599.8	2.7	12.4	77.60	12.7	
2,700.0	3.23	66.92	2,699.7	4.9	17.0	73.88	17.7	
2,800.0	2.89	66.23	2,799.6	7.0	21.9	72.19	23.0	
2,900.0	2.43	64.92	2,899.5	8.9	26.1	71.09	27.6	
3,000.0	2.06	61.32	2,999.4	10.7	29.6	70.12	31.5	
3,100.0	1.66	63.29	3,099.3	12.2	32.5	69.38	34.7	
3,200.0	1.23	55.32	3,199.3	13.5	34.7	68.75	37.2	
3,300.0	1.29	64.43	3,299.3	14.6	36.6	68.26	39.4	
3,400.0	1.25	54.28	3,399.2	15.7	38.5	67.79	41.6	
3,500.0	1.06	62.64	3,499.2	16.8	40.2	67.35	43.5	
3,600.0	1.05	55.68	3,599.2	17.7	41.8	67.02	45.4	
3,700.0	0.94	67.27	3,699.2	18.5	43.3	66.80	47.1	
3,800.0	0.82	55.99	3,799.2	19.3	44.6	66.65	48.6	
3,900.0	0.97	52.87	3,899.2	20.2	45.9	66.27	50.1	
4,000.0	0.76	58.09	3,999.2	21.0	47.1	65.95	51.6	
4,100.0	0.77	62.79	4,099.2	21.7	48.3	65.81	52.9	
4,200.0	0.59	46.13	4,199.1	22.4	49.3	65.59	54.1	
4,300.0	0.50	63.45	4,299.1	22.9	50.0	65.39	55.0	
4,400.0	0.57	61.42	4,399.1	23.3	50.8	65.34	55.9	
4,500.0	0.71	45.34	4,499.1	24.0	51.7	65.10	57.0	
4,600.0	0.66	31.23	4,599.1	24.9	52.5	64.57	58.1	
4,700.0	0.48	43.65	4,699.1	25.7	53.0	64.12	59.0	
4,800.0	0.57	60.81	4,799.1	26.3	53.8	63.95	59.8	
4,900.0	0.37	45.91	4,899.1	26.7	54.4	63.83	60.7	
5,000.0	0.41	57.14	4,999.1	27.2	55.0	63.70	61.3	
5,100.0	0.84	21.90	5,099.1	28.0	55.5	63.21	62.2	
5,200.0	0.85	23.55	5,199.1	29.4	56.1	62.35	63.3	
5,300.0	0.89	20.81	5,299.1	30.8	56.7	61.48	64.5	
5,400.0	0.81	7.63	5,399.1	32.2	57.1	60.53	65.5	
5,500.0	0.90	32.35	5,499.1	33.6	57.6	59.73	66.7	

SDI

SDI Survey Report

Company:	NADEL & GUSSMAN LLC	Local Co-ordinate Reference:	Well Sun McKay Federal #3H
Project:	Lusk	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Sun McKay Federal #3H	North Reference:	Grid
Wellbore:	VH - Job #320714-KW-951	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320714-KW-951	Database:	EDM-Regulatory

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600.0	0.76	55.61	5,599.0	34.6	58.5	59.39	68.0
5,700.0	0.73	76.29	5,699.0	35.2	59.7	59.50	69.3
5,800.0	0.76	71.80	5,799.0	35.5	60.9	59.77	70.5
5,900.0	0.95	94.64	5,899.0	35.7	62.4	60.26	71.9
6,000.0	1.03	93.53	5,999.0	35.5	64.1	61.01	73.3
6,100.0	1.19	95.68	6,099.0	35.4	66.1	61.83	74.9
6,200.0	1.15	94.65	6,199.0	35.2	68.1	62.67	76.7
6,300.0	0.80	77.01	6,299.0	35.3	69.8	63.18	78.2
6,400.0	0.26	304.63	6,398.9	35.6	70.3	63.16	78.8
6,500.0	0.25	149.05	6,498.9	35.5	70.2	63.17	78.7
6,600.0	0.16	245.82	6,598.9	35.3	70.2	63.33	78.5
6,700.0	0.16	227.21	6,698.9	35.1	69.9	63.35	78.3
6,800.0	0.13	245.26	6,798.9	35.0	69.7	63.38	78.0
6,900.0	0.05	273.25	6,898.9	34.9	69.6	63.36	77.9
7,000.0	0.21	293.63	6,998.9	35.0	69.4	63.24	77.7
7,100.0	0.22	313.41	7,098.9	35.2	69.1	63.00	77.5
7,200.0	0.17	315.40	7,198.9	35.4	68.8	62.76	77.4
7,300.0	0.33	311.02	7,298.9	35.7	68.5	62.46	77.3
7,400.0	0.17	298.00	7,398.9	36.0	68.2	62.17	77.1
7,500.0	0.25	244.40	7,498.9	36.0	67.8	62.07	76.8
7,600.0	1.08	230.93	7,598.9	35.3	66.9	62.20	75.6
7,700.0	1.29	194.38	7,698.9	33.6	65.9	62.99	74.0
7,800.0	1.40	166.86	7,798.9	31.3	65.9	64.59	73.0
7,900.0	1.56	158.24	7,898.9	28.9	66.7	66.60	72.7
8,000.0	1.57	163.79	7,998.8	26.3	67.6	68.75	72.5
8,100.0	0.79	155.88	8,098.8	24.3	68.2	70.37	72.4
8,200.0	0.15	125.13	8,198.8	23.6	68.6	71.00	72.6
8,300.0	0.13	288.88	8,298.8	23.6	68.6	71.03	72.6
8,400.0	0.28	134.03	8,398.8	23.5	68.7	71.15	72.6
8,500.0	0.89	88.98	8,498.8	23.3	69.6	71.50	73.4
8,530.0	0.98	100.89	8,528.8	23.3	70.1	71.65	73.9



Scientific Drilling

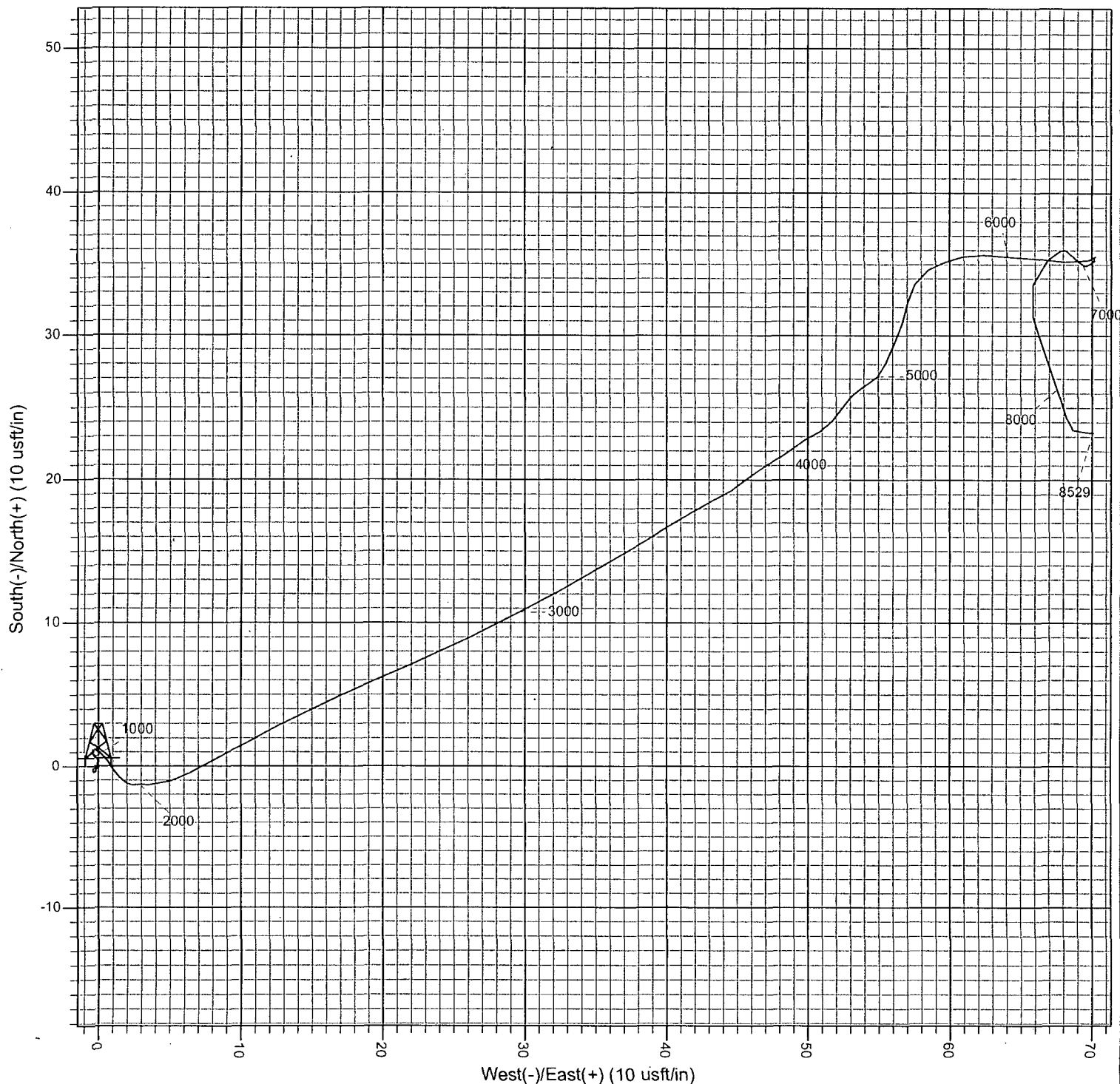
Project: Lusk
Lea County, NM (Grid North)
Well: Sun McKay Federal #3H
Wellbore: VH - Job #320714-KW-951
Design: VH - Job #320714-KW-951

WELL DETAILS: Sun McKay Federal #3H

Mean Sea Level (System)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	612040.73	677556.15	32° 40' 52.580 N	103° 45' 22.530 W	



PROJECT DETAILS: Lusk	SITE DETAILS: Lea County, NM (Grid North)
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 40' 52.580 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 103° 45' 22.530 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.0
Zone: New Mexico East 3001	Convergence: 0.31
System Datum: Mean Sea Level	Local North: Grid



PHOENIX
TECHNOLOGY SERVICES

SEP 29 2014

September 25, 2014

Nadel & Gussman Permian, L.L.C.
Attention: Regulatory Department
601 N. Marienfield, Suite 508
Midland, TX 79701

HOBBSOCD

MAR 16 2015

RECEIVED

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

Dear Regulatory Department;

Phoenix Technology Services, Inc. has filed the Survey Data Certification, Surveys, and Lease Plat for the above referenced well with the State of New Mexico Oil Conservation Division – District 1 via certified mail. A copy of the filing is attached for your records.

Name 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

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Best Regards,

Dana Robinson

Dana Robinson
Operations Administrator

PHOENIX TECHNOLOGY SERVICES SURVEY DATA CERTIFICATION



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



Phoenix Technology Services

Survey Report

Company: Nadel and Gussman Permian, LLC
Project: Lea County, New Mexico (NAD 83)
Site: Sun McKay Federal
Well: 3H
Wellbore: Wellbore #1 Job #1411270
Design: Surveys (Patriot 5)

Local Co-ordinate Reference: Well 3H
TVD Reference: WELL @ 3690.50usft (Patriot 5)
MD Reference: WELL @ 3690.50usft (Patriot 5)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR DB

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

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

Well	3H			
Well Position	+N/-S	0.00 usft	Northing:	612,060.76 usft
	+E/-W	0.00 usft	Easting:	718,890.08 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 3,667.00 usft

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

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	179.60	

Survey Program	Date 08/10/14				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
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	

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)
	8,530.00	0.98	100.89	8,528.78	23.25	70.13	-22.76	0.00	0.00	0.00
Tie-in to Scientific Gyro										
	8,610.00	1.10	96.90	8,608.77	23.03	71.56	-22.53	0.18	0.15	-4.99
First Phoenix MWD Survey										
	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

Company: Nadel and Gussman Permian, LLC
 Project: Lea County, New Mexico (NAD 83)
 Site: Sun McKay Federal
 Well: 3H
 Wellbore: Wellbore #1 Job #1411270
 Design: Surveys (Patriot 5)

Local Co-ordinate Reference: Well 3H
 TVD Reference: WELL @ 3690.50usft (Patriot 5)
 MD Reference: WELL @ 3690.50usft (Patriot 5)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: 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	104.65	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	2.66	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

Company: Nadel and Gussman Permian, LLC
Project: Lea County, New Mexico (NAD 83)
Site: Sun/McKay Federal
Well: 3H
Wellbore: Wellbore #1 Job #1411270
Design: Surveys (Patriot 5)

Local Co-ordinate Reference: Well 3H
TVD Reference: WELL @ 3690.50usft (Patriot 5)
MD Reference: WELL @ 3690.50usft (Patriot 5)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: 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)
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
Final Phoenix MWD Survey									
13,885.00	89.70	173.50	9,508.07	-4,614.29	95.52	4,614.85	0.00	0.00	0.00
Projection to TD									

Survey Annotations

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: _____