

30-015-42769

NADEL & GUSSMAN LLC

Black River (NAD27)

Eddy County, NM (Grid North)

El Presidente State #3H

VH - Job #321214-KW-1386

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 19 2015

RECEIVED

Survey: Gyro

Regulatory Survey Report (Grid Nort

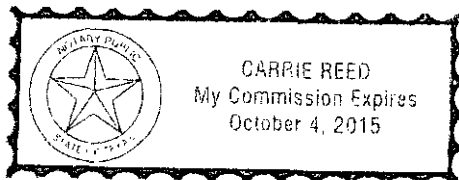
This survey is correct to the best of my knowledge and is supported by actual field data.

Janis Mathewson

Notarized this date 31st of December, 2014.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Regulatory Survey Report (Grid North)

Company:	NADEL & GUSSMAN LLC	Local Co-ordinate Reference:	Well El Presidente State #3H
Project:	Black River (NAD27)	TVD Reference:	Mean Sea Level (System)
Site:	Eddy County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	El Presidente State #3H	North Reference:	Grid
Wellbore:	VH - Job #321214-KW-1386	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321214-KW-1386	Database:	MID_Regulatory

Project:	Black River (NAD27)		
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: Eddy County, NM (Grid North)					
Site Position:		Northing:	451,106.36 usft	Latitude:	32° 14' 24.288 N
From:	Lat/Long	Easting:	555,703.40 usft	Longitude:	104° 9' 11.416 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.10 °

Well: El Presidente State #3H, Horizontal						
Well Position	+N/-S	0.0 usft	Northing:	451,106.36 usft	Latitude:	32° 14' 24.288 N
	+E/-W	0.0 usft	Easting:	555,703.40 usft	Longitude:	104° 9' 11.416 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	0.0 usft

Wellbore	VH - Job #321214-KW-1386				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	12/1/2014	7.60	60.00	48,190

Design:	VH - Job #321214-KW-1386				
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	139.95	

Survey Program		Date 12/16/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	9,244.0	Gyro (VH - Job #321214-KW-1386)	Keeper	Keeper Gyro

MD	Inc	Azi	TVD	N/S	E/W	Closure Azimuth	Closure Distance
(usft)	(°)	(Grid North Azim)	(usft)	(usft)	(usft)	(°)	(usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
100.0	0.69	101.35	100.0	-0.1	0.6	101.35	0.6
200.0	1.04	109.60	200.0	-0.5	2.0	104.89	2.1
300.0	1.08	99.17	300.0	-1.0	3.8	104.61	3.9
400.0	1.15	85.22	399.9	-1.1	5.8	100.47	5.8
500.0	0.44	105.64	499.9	-1.1	7.1	98.64	7.2
600.0	0.27	248.80	599.9	-1.3	7.3	99.92	7.4
700.0	0.65	247.47	699.9	-1.6	6.5	103.56	6.7
800.0	1.44	196.94	799.9	-3.0	5.6	117.97	6.4
900.0	1.31	196.24	899.9	-5.3	5.0	136.91	7.2
1,000.0	1.39	175.50	999.9	-7.6	4.7	148.12	8.9
1,100.0	1.42	162.82	1,099.8	-10.0	5.2	152.56	11.3

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Site:	Eddy County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	El Presidente State #3H	North Reference:	Grid
Wellbore:	VH - Job #321214-KW-1386	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321214-KW-1386	Database:	MID_Regulatory

Survey								
MD (usft)	Inc (°)	Azi. (grid_north_azim.)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200.0	1.98	154.93	1,199.8	-12.7	6.3	153.74	14.2	
1,300.0	2.08	158.31	1,299.7	-16.0	7.7	154.32	17.7	
1,400.0	2.41	149.75	1,399.6	-19.5	9.4	154.21	21.7	
1,500.0	3.56	117.33	1,499.5	-22.7	13.2	149.79	26.3	
1,600.0	4.80	114.39	1,599.2	-25.9	19.8	142.58	32.6	
1,700.0	4.87	115.12	1,698.9	-29.4	27.5	136.97	40.2	
1,800.0	4.45	109.74	1,798.6	-32.5	35.0	132.94	47.8	
1,900.0	4.53	109.39	1,898.3	-35.2	42.3	129.71	55.0	
2,000.0	4.41	107.98	1,998.0	-37.7	49.7	127.14	62.4	
2,100.0	4.29	110.62	2,097.7	-40.2	56.9	125.22	69.6	
2,200.0	3.91	113.59	2,197.4	-42.8	63.5	124.01	76.6	
2,300.0	3.46	116.64	2,297.2	-45.6	69.3	123.31	82.9	
2,400.0	1.23	109.57	2,397.1	-47.3	73.0	122.91	87.0	
2,500.0	0.52	102.13	2,497.1	-47.7	74.5	122.65	88.5	
2,600.0	0.24	63.02	2,597.1	-47.7	75.1	122.43	89.0	
2,700.0	0.11	51.83	2,697.1	-47.6	75.4	122.26	89.1	
2,800.0	0.18	171.59	2,797.1	-47.7	75.5	122.27	89.3	
2,900.0	0.40	288.99	2,897.1	-47.7	75.2	122.40	89.0	
3,000.0	0.19	108.59	2,997.1	-47.6	75.0	122.43	88.8	
3,100.0	0.10	350.12	3,097.1	-47.6	75.1	122.36	88.9	
3,200.0	0.36	237.14	3,197.1	-47.7	74.9	122.50	88.8	
3,300.0	0.39	141.35	3,297.1	-48.1	74.8	122.76	89.0	
3,400.0	0.29	329.27	3,397.1	-48.2	74.9	122.76	89.0	
3,500.0	0.12	302.10	3,497.1	-47.9	74.7	122.68	88.7	
3,600.0	0.06	295.03	3,597.1	-47.8	74.5	122.69	88.6	
3,700.0	0.02	295.36	3,697.1	-47.8	74.5	122.70	88.5	
3,800.0	0.02	304.14	3,797.1	-47.8	74.4	122.70	88.5	
3,900.0	0.06	242.35	3,897.1	-47.8	74.4	122.73	88.4	
4,000.0	0.12	217.23	3,997.1	-47.9	74.3	122.82	88.4	
4,100.0	0.04	294.21	4,097.1	-48.0	74.2	122.89	88.3	
4,200.0	0.08	276.24	4,197.1	-48.0	74.1	122.92	88.2	
4,300.0	0.06	281.53	4,297.1	-47.9	74.0	122.95	88.1	
4,400.0	0.07	301.85	4,397.1	-47.9	73.8	122.96	88.0	
4,500.0	0.07	232.75	4,497.1	-47.9	73.7	123.00	87.9	
4,600.0	0.11	3.57	4,597.1	-47.8	73.7	122.98	87.9	
4,700.0	0.06	169.62	4,697.1	-47.8	73.7	122.96	87.9	
4,800.0	0.03	262.14	4,797.1	-47.8	73.7	122.99	87.9	
4,900.0	0.05	5.30	4,897.1	-47.8	73.7	122.98	87.8	
5,000.0	0.07	303.22	4,997.1	-47.7	73.6	122.95	87.8	
5,100.0	0.06	278.40	5,097.1	-47.7	73.5	122.97	87.6	
5,200.0	0.14	283.85	5,197.1	-47.7	73.4	123.01	87.5	
5,300.0	0.03	317.49	5,297.1	-47.6	73.2	123.03	87.3	
5,400.0	0.06	276.51	5,397.1	-47.6	73.2	123.04	87.3	
5,500.0	0.11	353.62	5,497.1	-47.5	73.1	123.01	87.2	

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Site:	Eddy County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	El Presidente State #3H	North Reference:	Grid
Wellbore:	VH - Job #321214-KW-1386	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321214-KW-1386	Database:	MID_Regulatory

MD (usft)	Inc (°)	Azi (grid-north-azim)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600.0	0.08	145.61	5,597.1	-47.4	73.1	122.97	87.2
5,700.0	0.19	11.69	5,697.1	-47.3	73.2	122.89	87.2
5,800.0	0.15	259.13	5,797.1	-47.2	73.1	122.85	87.0
5,900.0	0.04	305.50	5,897.1	-47.2	72.9	122.91	86.9
6,000.0	0.15	294.89	5,997.1	-47.1	72.8	122.92	86.7
6,100.0	0.71	257.12	6,097.1	-47.2	72.1	123.23	86.2
6,200.0	1.27	197.60	6,197.1	-48.4	71.1	124.23	86.0
6,300.0	0.36	183.13	6,297.1	-49.8	70.8	125.12	86.5
6,400.0	0.38	171.24	6,397.1	-50.4	70.8	125.45	86.9
6,500.0	1.47	149.87	6,497.0	-51.9	71.5	125.95	88.3
6,600.0	0.92	147.09	6,597.0	-53.6	72.6	126.46	90.3
6,700.0	0.69	124.29	6,697.0	-54.6	73.5	126.62	91.6
6,800.0	0.22	85.17	6,797.0	-55.0	74.2	126.53	92.4
6,900.0	0.36	183.16	6,897.0	-55.3	74.4	126.61	92.7
7,000.0	0.25	106.52	6,997.0	-55.6	74.6	126.73	93.1
7,100.0	0.34	31.46	7,097.0	-55.5	74.9	126.50	93.2
7,200.0	0.21	167.34	7,197.0	-55.4	75.1	126.39	93.3
7,300.0	0.59	161.33	7,297.0	-56.0	75.3	126.65	93.9
7,400.0	0.72	131.11	7,397.0	-56.9	76.0	126.85	95.0
7,500.0	0.10	197.58	7,497.0	-57.4	76.4	126.93	95.6
7,600.0	0.16	202.90	7,597.0	-57.7	76.3	127.06	95.7
7,700.0	0.06	161.73	7,697.0	-57.8	76.3	127.16	95.7
7,800.0	0.19	174.96	7,797.0	-58.0	76.3	127.25	95.9
7,900.0	0.25	187.80	7,897.0	-58.4	76.3	127.44	96.1
8,000.0	0.58	176.38	7,997.0	-59.2	76.3	127.77	96.6
8,100.0	0.46	132.10	8,097.0	-59.9	76.7	128.02	97.3
8,200.0	0.16	289.28	8,197.0	-60.1	76.8	128.06	97.6
8,300.0	0.56	186.00	8,297.0	-60.6	76.6	128.33	97.7
8,400.0	1.66	198.78	8,397.0	-62.4	76.1	129.36	98.5
8,500.0	1.90	199.87	8,496.9	-65.4	75.1	131.04	99.6
8,600.0	1.77	206.12	8,596.9	-68.3	73.8	132.77	100.6
8,700.0	1.40	213.31	8,696.8	-70.7	72.5	134.29	101.3
8,800.0	1.12	214.06	8,796.8	-72.6	71.3	135.51	101.7
8,900.0	1.18	208.78	8,896.8	-74.3	70.2	136.60	102.2
9,000.0	1.07	200.55	8,996.7	-76.0	69.4	137.61	103.0
9,100.0	1.19	196.23	9,096.7	-77.9	68.8	138.56	103.9
9,200.0	1.42	187.16	9,196.7	-80.1	68.4	139.54	105.3
9,244.0	1.43	176.67	9,240.7	-81.2	68.3	139.94	106.1



Scientific Drilling

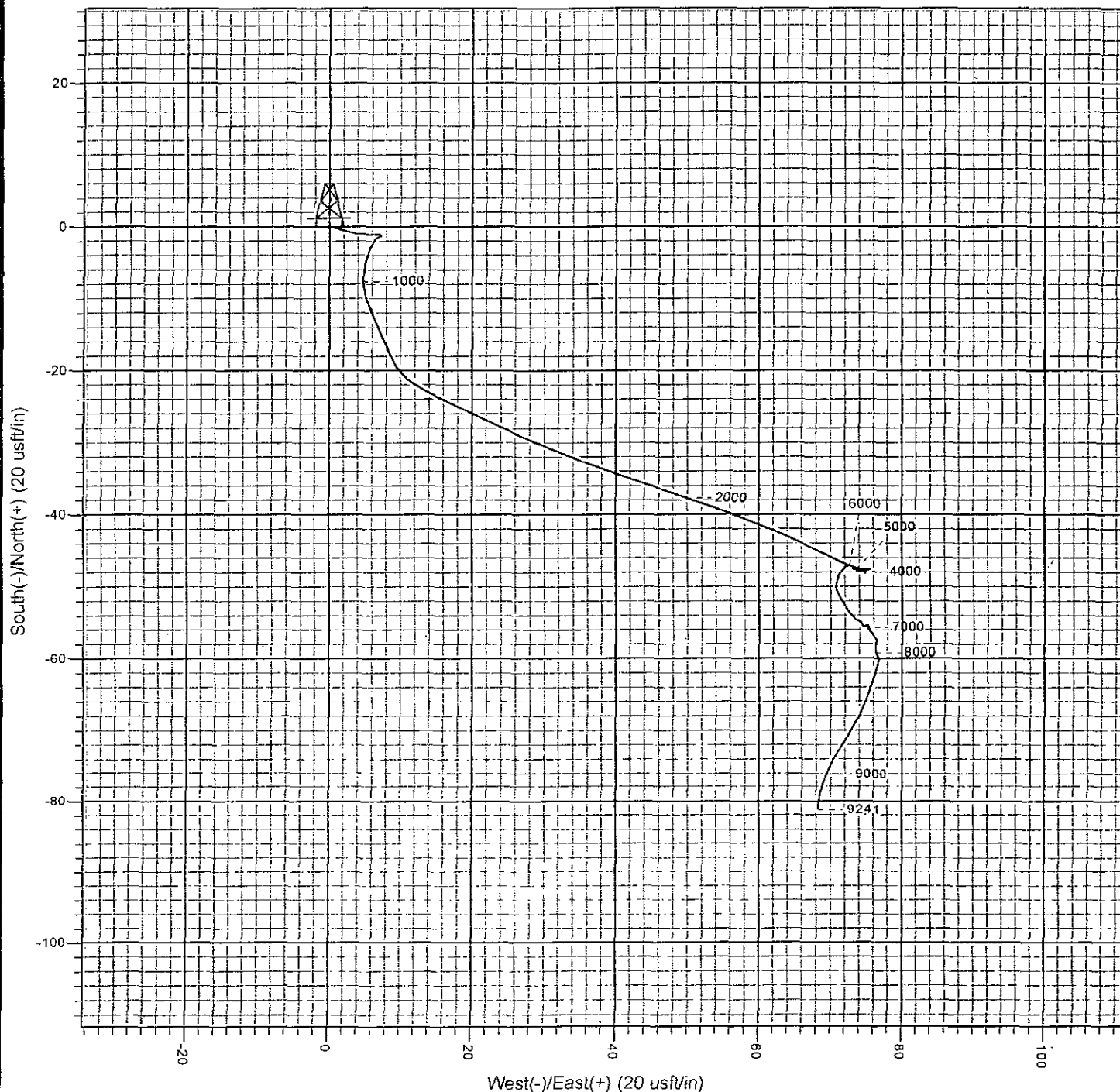
Project: Black River (NAD27)
Eddy County, NM (Grid North)
Well: El Presidente State #3H
Wellbore: VH - Job #321214-KW-1386
Design: VH - Job #321214-KW-1386

WELL DETAILS: El Presidente State #3H

Mean Sea Level (System)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	451106.36	555703.40	32° 14' 24.288 N	104° 9' 11.416 W	



PROJECT DETAILS: Black River (NAD27)	SITE DETAILS: Eddy County, NM (Grid North)
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 14' 24.288 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 104° 9' 11.416 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.0
Zone: New Mexico East 3001	Convergence: 0.10
System Datum: Mean Sea Level	Local North: Grid