

30-025-23801 /

CHEVRON

Vacuum Grayburg San Andres
Lea County, NM (Grid North)
Central Vacuum Unit #132 /
IH - Job #321213-MPD-1267

HOBBS OCD

JUN 16 2014

RECEIVED

Design: IH - Job #321213-MPD-1267

SDI Survey Report

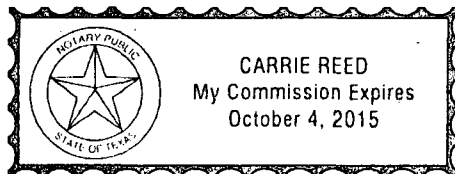
This survey is correct to the best of my knowledge and is supported by actual field data.

Richardson

Notarized this date 28th of February, 2014.

Carrie Reed

Notary Signature
County of Midland
State of Texas



AUG 29 2015

HOBBS OCD

JUN 16 2014

SDI

SDI Survey Report

Company:	CHEVRON	Local Co-ordinate Reference:	Well Central Vacuum Unit #132
Project:	Vacuum Grayburg San Andres	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Central Vacuum Unit #132	North Reference:	True
Wellbore:	IH - Job #321213-MPD-1267	Survey Calculation Method:	Minimum Curvature
Design:	IH - Job #321213-MPD-1267	Database:	EDM-Regulatory

Project	Vacuum Grayburg San Andres		
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:	656,116.35 usft
From:	Lat/Long	Easting:	755,139.93 usft
Position Uncertainty:	0.0 usft	Slot Radius:	0"
		Latitude:	32° 48' 3.600 N
		Longitude:	103° 30' 10.800 W
		Grid Convergence:	0.45 °

Well	Central Vacuum Unit #132 - Vertical w/Intercept		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 47' 56.400 N
		Longitude:	103° 29' 34.800 W
		Ground Level:	0.0 usft

Wellbore	IH - Job #321213-MPD-1267		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	12/14/2013	7.28
			Dip Angle
			(°)
			Field Strength
			(nT)
			48,746

Design	IH - Job #321213-MPD-1267		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	615.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			132.81

Survey Program	Date 3/12/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	615.0	Gyro (VH - Job #321213-KW-1256)	Keeper
635.0	2,850.0	gMWD (IH - Job #321213-MPD-1267)	MWD
			Description
			Keeper Gyro
			MWD

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	0.58	56.50	100.0	0.3	0.4	56.50	0.5
110.0	0.77	50.86	110.0	0.3	0.5	55.89	0.6
120.0	0.49	52.70	120.0	0.4	0.6	55.25	0.7
130.0	0.45	49.55	130.0	0.5	0.7	54.84	0.8
140.0	0.37	57.25	140.0	0.5	0.7	54.69	0.9
150.0	0.31	74.90	150.0	0.5	0.8	55.35	0.9
160.0	0.38	77.36	160.0	0.6	0.8	56.58	1.0
170.0	0.36	88.89	170.0	0.6	0.9	58.12	1.1
180.0	0.42	84.66	180.0	0.6	1.0	59.79	1.1
190.0	0.31	99.38	190.0	0.6	1.0	61.38	1.2

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Site:	Lea County NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Central Vacuum Unit #132	North Reference:	True
Wellbore:	IH - Job #321213-MPD-1267	Survey Calculation Method:	Minimum Curvature
Design:	IH - Job #321213-MPD-1267	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
200.0	0.26	95.59	200.0	0.6	1.1	62.77	1.2	
210.0	0.18	109.04	210.0	0.5	1.1	63.86	1.2	
220.0	0.17	109.68	220.0	0.5	1.1	64.84	1.3	
230.0	0.18	105.59	230.0	0.5	1.2	65.77	1.3	
240.0	0.17	69.63	240.0	0.5	1.2	66.25	1.3	
250.0	0.14	47.90	250.0	0.5	1.2	66.12	1.3	
260.0	0.13	44.43	260.0	0.6	1.2	65.78	1.4	
270.0	0.24	36.23	270.0	0.6	1.3	65.19	1.4	
280.0	0.18	37.82	280.0	0.6	1.3	64.49	1.4	
290.0	0.15	28.31	290.0	0.6	1.3	63.91	1.4	
300.0	0.13	336.38	300.0	0.7	1.3	63.16	1.5	
310.0	0.18	333.78	310.0	0.7	1.3	62.10	1.5	
320.0	0.15	279.62	320.0	0.7	1.3	61.17	1.5	
330.0	0.11	296.89	330.0	0.7	1.3	60.53	1.4	
340.0	0.06	275.60	340.0	0.7	1.2	60.09	1.4	
350.0	0.08	216.04	350.0	0.7	1.2	60.08	1.4	
360.0	0.10	184.87	360.0	0.7	1.2	60.49	1.4	
370.0	0.14	157.31	370.0	0.7	1.2	61.28	1.4	
380.0	0.25	172.06	380.0	0.6	1.2	62.62	1.4	
390.0	0.28	163.42	390.0	0.6	1.2	64.47	1.4	
400.0	0.38	146.75	400.0	0.5	1.3	66.84	1.4	
410.0	0.41	136.47	410.0	0.5	1.3	69.55	1.4	
420.0	0.32	138.29	420.0	0.4	1.4	71.91	1.4	
430.0	0.15	143.87	430.0	0.4	1.4	73.43	1.4	
440.0	0.15	243.11	440.0	0.4	1.4	74.01	1.4	
450.0	0.47	280.23	450.0	0.4	1.3	73.37	1.4	
460.0	0.84	298.17	460.0	0.4	1.2	70.26	1.3	
470.0	1.04	299.66	470.0	0.5	1.1	64.34	1.2	
480.0	1.10	301.69	480.0	0.6	0.9	56.24	1.1	
490.0	1.16	307.48	490.0	0.7	0.8	46.16	1.0	
500.0	1.15	316.86	500.0	0.9	0.6	35.18	1.1	
510.0	0.98	323.82	510.0	1.0	0.5	25.92	1.1	
520.0	0.83	352.26	520.0	1.1	0.4	20.47	1.2	
530.0	0.70	30.21	530.0	1.3	0.4	19.46	1.3	
540.0	0.81	70.42	540.0	1.3	0.5	22.08	1.5	
550.0	1.06	101.05	550.0	1.3	0.7	27.49	1.5	
560.0	1.37	117.61	560.0	1.3	0.9	35.16	1.6	
570.0	1.57	125.46	570.0	1.1	1.1	44.36	1.6	
580.0	1.54	138.39	580.0	1.0	1.3	53.87	1.6	
590.0	1.07	167.69	590.0	0.8	1.4	61.64	1.6	
600.0	1.21	245.41	600.0	0.6	1.4	64.82	1.5	
610.0	1.68	256.54	610.0	0.6	1.1	63.40	1.2	
615.0	2.05	244.78	615.0	0.5	1.0	62.40	1.1	
635.0	0.35	153.37	635.0	0.3	0.7	66.05	0.7	

SDI

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Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Central Vacuum Unit #132	North Reference:	True
Wellbore:	IH: Job #321213-MPD-1267	Survey Calculation Method:	Minimum Curvature
Design:	IH: Job #321213-MPD-1267	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
667.0	0.97	235.46	667.0	0.1	0.5	83.67	0.5	
699.0	1.32	246.44	698.9	-0.2	-0.1	197.27	0.3	
731.0	1.85	246.09	730.9	-0.6	-0.9	235.75	1.1	
763.0	2.55	245.21	762.9	-1.1	-2.0	241.00	2.3	
794.0	2.82	244.60	793.9	-1.7	-3.3	242.51	3.7	
826.0	2.64	244.51	825.8	-2.4	-4.7	243.10	5.3	
858.0	2.20	242.31	857.8	-3.0	-5.9	243.18	6.6	
890.0	1.32	231.33	889.8	-3.5	-6.7	242.54	7.6	
921.0	0.79	207.86	920.8	-3.9	-7.1	241.19	8.1	
952.0	0.26	94.48	951.8	-4.1	-7.1	240.11	8.2	
984.0	0.26	87.80	983.8	-4.1	-7.0	239.58	8.1	
1,016.0	0.53	64.69	1,015.8	-4.0	-6.8	239.24	7.9	
1,048.0	0.88	58.36	1,047.8	-3.9	-6.5	239.16	7.5	
1,080.0	0.97	59.59	1,079.8	-3.6	-6.0	239.17	7.0	
1,111.0	0.79	56.95	1,110.8	-3.3	-5.6	239.23	6.5	
1,142.0	1.06	59.50	1,141.8	-3.1	-5.2	239.29	6.0	
1,174.0	0.97	68.38	1,173.8	-2.8	-4.7	238.83	5.5	
1,206.0	0.97	71.37	1,205.8	-2.6	-4.2	237.63	4.9	
1,237.0	1.14	55.90	1,236.8	-2.4	-3.7	236.93	4.4	
1,268.0	1.32	42.45	1,267.8	-1.9	-3.2	238.40	3.7	
1,300.0	2.11	48.25	1,299.7	-1.3	-2.5	242.62	2.8	
1,332.0	1.23	10.72	1,331.7	-0.6	-2.0	254.36	2.0	
1,363.0	0.97	334.16	1,362.7	0.0	-2.0	270.33	2.0	
1,394.0	1.06	339.78	1,393.7	0.5	-2.2	283.02	2.3	
1,425.0	0.78	328.27	1,424.7	1.0	-2.4	291.54	2.6	
1,456.0	0.53	341.54	1,455.7	1.3	-2.6	296.21	2.9	
1,488.0	0.79	143.09	1,487.7	1.2	-2.5	296.32	2.8	
1,519.0	2.29	155.04	1,518.7	0.5	-2.1	283.55	2.2	
1,551.0	3.17	158.55	1,550.7	-0.9	-1.5	239.86	1.8	
1,583.0	0.88	176.57	1,582.6	-2.0	-1.2	211.38	2.3	
1,615.0	0.53	291.01	1,614.6	-2.2	-1.3	211.50	2.5	
1,647.0	0.88	314.56	1,646.6	-1.9	-1.6	220.27	2.5	
1,679.0	1.14	311.92	1,678.6	-1.5	-2.0	232.98	2.6	
1,711.0	1.41	331.52	1,710.6	-1.0	-2.5	248.30	2.7	
1,743.0	1.50	340.58	1,742.6	-0.2	-2.8	265.07	2.8	
1,775.0	2.11	340.58	1,774.6	0.7	-3.1	282.77	3.2	
1,806.0	2.20	338.99	1,805.6	1.8	-3.5	297.03	4.0	
1,838.0	2.11	346.90	1,837.6	3.0	-3.9	307.19	4.9	
1,869.0	2.02	345.85	1,868.5	4.0	-4.2	314.20	5.8	
1,879.0	1.67	343.56	1,878.5	4.3	-4.2	315.75	6.1	
1,900.0	0.70	341.54	1,899.5	4.8	-4.4	317.51	6.5	
1,932.0	0.44	230.89	1,931.5	4.9	-4.5	317.14	6.6	
1,964.0	1.58	199.86	1,963.5	4.4	-4.8	312.57	6.5	
1,995.0	2.11	197.23	1,994.5	3.4	-5.1	304.03	6.1	
2,027.0	2.38	196.43	2,026.5	2.2	-5.4	292.29	5.9	

SDI

SDI Survey Report

Company:	CHEVRON	Local Co-ordinate Reference:	Well Central Vacuum Unit #132
Project:	Vacuum Grayburg San Andres	TVD Reference:	Mean Sea Level (System)
Site:	Lea County NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Central Vacuum Unit #132	North Reference:	True
Wellbore:	IH- Job #321213-MPD:1267	Survey Calculation Method:	Minimum Curvature
Design:	IH- Job #321213-MPD:1267	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
2,059.0	2.46	206.19	2,058.4	1.0	-5.9	279.35	6.0	
2,091.0	2.46	204.96	2,090.4	-0.3	-6.5	267.70	6.5	
2,122.0	1.67	201.01	2,121.4	-1.3	-7.0	259.53	7.1	
2,154.0	0.88	127.53	2,153.4	-1.9	-6.9	254.90	7.2	
2,186.0	1.58	107.58	2,185.4	-2.2	-6.3	251.18	6.7	
2,217.0	1.85	100.55	2,216.4	-2.4	-5.4	246.35	5.9	
2,248.0	2.11	105.82	2,247.4	-2.6	-4.4	239.11	5.1	
2,279.0	2.02	116.45	2,278.3	-3.0	-3.3	227.91	4.5	
2,311.0	1.85	120.06	2,310.3	-3.5	-2.4	214.13	4.3	
2,343.0	1.67	121.90	2,342.3	-4.0	-1.6	201.01	4.3	
2,375.0	1.76	129.73	2,374.3	-4.6	-0.8	189.59	4.7	
2,406.0	1.76	131.13	2,405.3	-5.2	-0.1	180.58	5.2	
2,437.0	1.85	127.79	2,436.3	-5.8	0.7	173.14	5.9	
2,469.0	1.67	122.78	2,468.2	-6.4	1.5	166.80	6.6	
2,501.0	1.58	124.19	2,500.2	-6.9	2.3	161.88	7.3	
2,533.0	1.67	126.56	2,532.2	-7.4	3.0	158.02	8.0	
2,565.0	1.67	127.70	2,564.2	-8.0	3.7	154.91	8.8	
2,597.0	1.76	138.16	2,596.2	-8.6	4.4	152.82	9.7	
2,628.0	2.11	139.13	2,627.2	-9.4	5.1	151.46	10.7	
2,660.0	2.73	132.98	2,659.1	-10.4	6.1	149.71	12.0	
2,692.0	3.70	121.73	2,691.1	-11.5	7.5	146.76	13.7	
2,722.0	4.31	117.95	2,721.0	-12.5	9.3	143.26	15.6	
2,754.0	4.49	118.83	2,752.9	-13.7	11.5	139.95	17.8	
2,786.0	5.81	120.06	2,784.8	-15.1	14.0	137.15	20.6	
2,813.0	7.04	121.11	2,811.6	-16.6	16.6	135.06	23.5	
Last MWD Survey								
2,850.0	7.04	121.11	2,848.3	-19.0	20.5	132.81	27.9	
Projection to Bit								



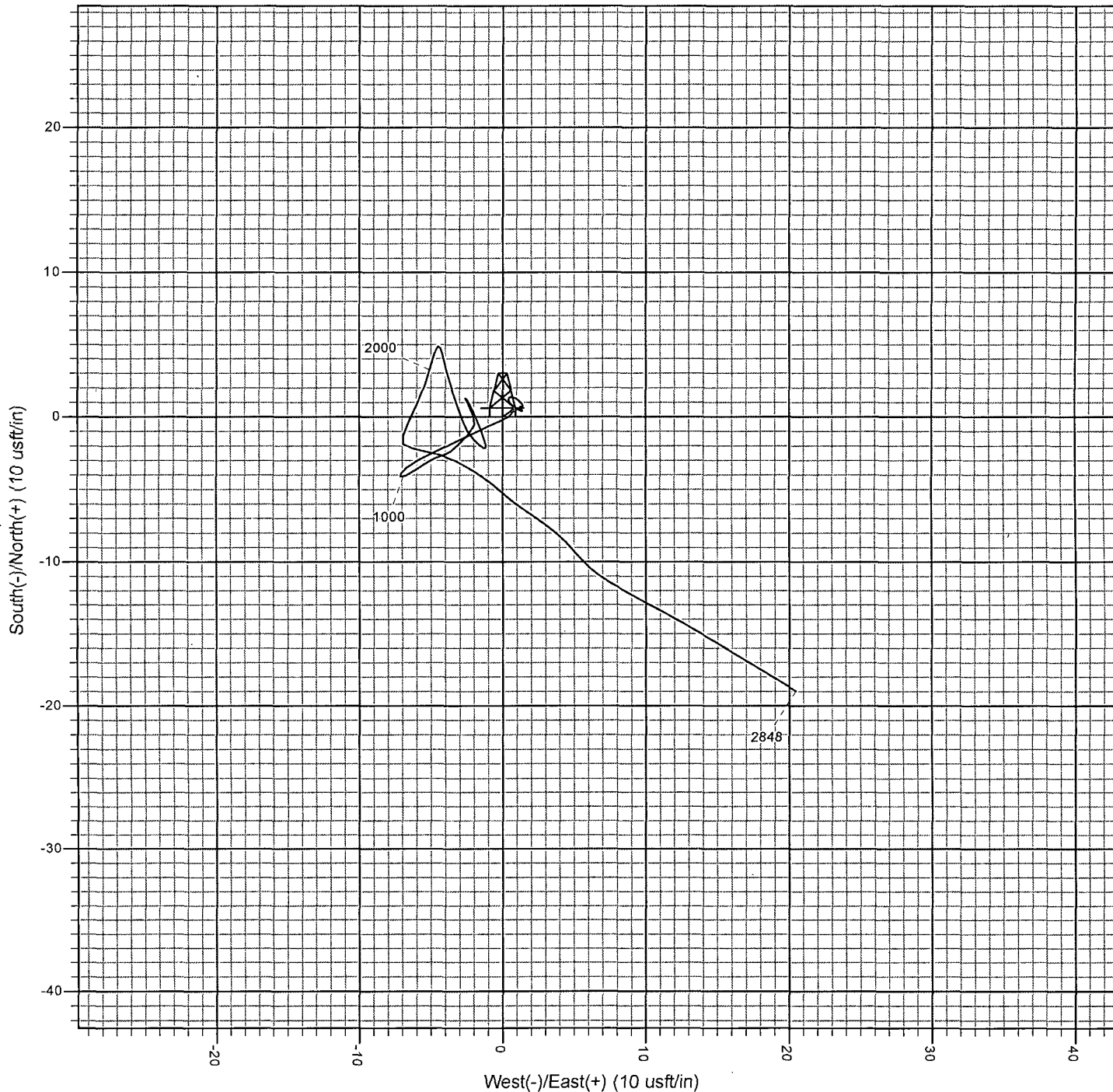
Project: Vacuum Grayburg San Andres
Lea County, NM (Grid North)
Well: Central Vacuum Unit #132
Wellbore: IH - Job #321213-MPD-1267
Design: IH - Job #321213-MPD-1267

WELL DETAILS: Central Vacuum Unit #132

Mean Sea Level (System)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	655413.00	758218.54	32° 47' 56.400 N	103° 29' 34.800 W	



PROJECT DETAILS: Vacuum Grayburg San Andres	SITE DETAILS: Lea County, NM (Grid North)
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 48' 3.600 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 103° 30' 10.800 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.0
Zone: New Mexico East 3001	Convergence: 0.45
System Datum: Mean Sea Level	Local North: True