

CHEVRON

Vacuum Grayburg San Andres
Lea County, NM
Central Vacuum Unit #274
VH - Job #32K09121104

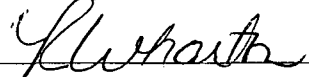
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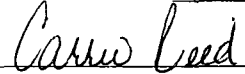
Survey: Gyro

SDI Standard Survey Report

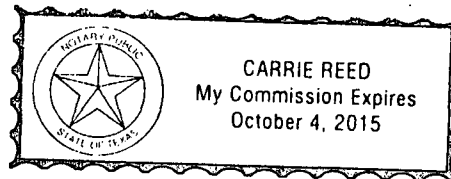
This survey is correct to the best of my knowledge and is supported by actual field data.



Notarized this date 8th of October, 2012.



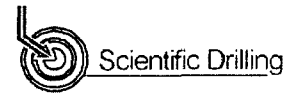
Notary Signature
County of Midland
State of Texas



Scientific Drilling

OCT 16 2013

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	CHEVRON	Local Co-ordinate Reference:	Well Central Vacuum Unit #274
Project:	Vacuum Grayburg San Andres	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Central Vacuum Unit #274	North Reference:	True
Wellbore:	VH - Job #32K09121104	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K09121104	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		
Site Position:		Northing:	656,116.37 usft
From:	Lat/Long	Easting:	755,139.93 usft
Position Uncertainty:	0.00 usft	Slot Radius:	0"
		Latitude:	32° 48' 3.600 N
		Longitude:	103° 30' 10.800 W
		Grid Convergence:	0.45 °

Well	Central Vacuum Unit #274, Vertical		
Well Position	+N/-S	0.00 usft	Northing: 653,210.65 usft
	+E/-W	0.00 usft	Easting: 755,777.40 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 47' 34.800 N
		Longitude:	103° 30' 3.600 W
		Ground Level:	0.00 usft

Wellbore	VH - Job #32K09121104				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/04/12	7.45	60.69	48,870

Design	VH - Job #32K09121104				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	217.71	

Survey Program	Date	09/30/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
101.67	3,181.83	Gyro (VH - Job #32K09121104)	Keeper	Keeper Gyro	

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
101.67	0.30	78.25	101.67	0.05	0.26	78.25	0.27	
193.21	0.31	27.69	193.21	0.32	0.61	62.16	0.69	
284.75	0.33	13.49	284.75	0.80	0.79	44.60	1.12	
376.29	0.30	23.04	376.29	1.27	0.94	36.47	1.59	
467.83	0.33	128.81	467.82	1.33	1.24	43.02	1.82	
559.37	0.55	153.07	559.36	0.77	1.65	64.84	1.82	
650.91	0.66	207.25	650.90	-0.09	1.60	93.12	1.61	
742.45	0.83	217.97	742.43	-1.08	0.95	138.51	1.44	
833.99	0.67	219.54	833.96	-2.01	0.21	174.18	2.02	
925.53	0.59	246.68	925.50	-2.61	-0.57	192.27	2.67	
1,015.80	0.56	221.03	1,015.76	-3.13	-1.28	202.31	3.38	

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Site:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Central Vacuum Unit #274	North Reference:	True
Wellbore:	VH - Job #32K09121104	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K09121104	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,106.07	0.98	173.91	1,106.02	-4.23	-1.49	199.43	4.49	
1,196.34	0.88	166.58	1,196.28	-5.67	-1.25	192.42	5.81	
1,286.61	0.51	171.56	1,286.55	-6.74	-1.03	188.68	6.82	
1,376.88	0.24	214.80	1,376.81	-7.30	-1.08	188.41	7.38	
1,467.15	0.33	243.05	1,467.08	-7.57	-1.42	190.61	7.70	
1,557.42	0.50	238.28	1,557.35	-7.89	-1.98	194.11	8.14	
1,647.69	0.77	225.48	1,647.62	-8.53	-2.75	197.89	8.96	
1,737.96	0.99	226.68	1,737.87	-9.49	-3.75	201.58	10.20	
1,826.85	0.92	217.35	1,826.75	-10.58	-4.74	204.15	11.60	
1,917.19	1.08	217.41	1,917.08	-11.83	-5.70	205.72	13.14	
2,007.53	1.28	216.05	2,007.40	-13.33	-6.81	207.08	14.97	
2,097.87	1.47	215.02	2,097.71	-15.09	-8.07	208.14	17.11	
2,188.21	1.57	216.64	2,188.02	-17.03	-9.47	209.08	19.49	
2,278.55	1.55	216.22	2,278.33	-19.01	-10.93	209.91	21.93	
2,368.89	1.77	210.31	2,368.63	-21.20	-12.36	210.24	24.54	
2,459.23	2.03	212.92	2,458.92	-23.75	-13.93	210.40	27.54	
2,549.57	1.90	217.02	2,549.21	-26.29	-15.71	210.86	30.62	
2,639.91	1.97	217.25	2,639.50	-28.72	-17.55	211.42	33.66	
2,730.25	1.65	222.91	2,729.79	-30.91	-19.37	212.08	36.48	
2,820.59	1.35	228.97	2,820.10	-32.56	-21.06	212.90	38.78	
2,910.93	1.35	238.31	2,910.41	-33.82	-22.77	213.95	40.77	
3,001.27	1.03	254.03	3,000.74	-34.60	-24.46	215.25	42.37	
3,091.61	0.73	269.94	3,091.06	-34.82	-25.81	216.55	43.35	
3,181.83	0.54	310.38	3,181.28	-34.55	-26.71	217.71	43.67	

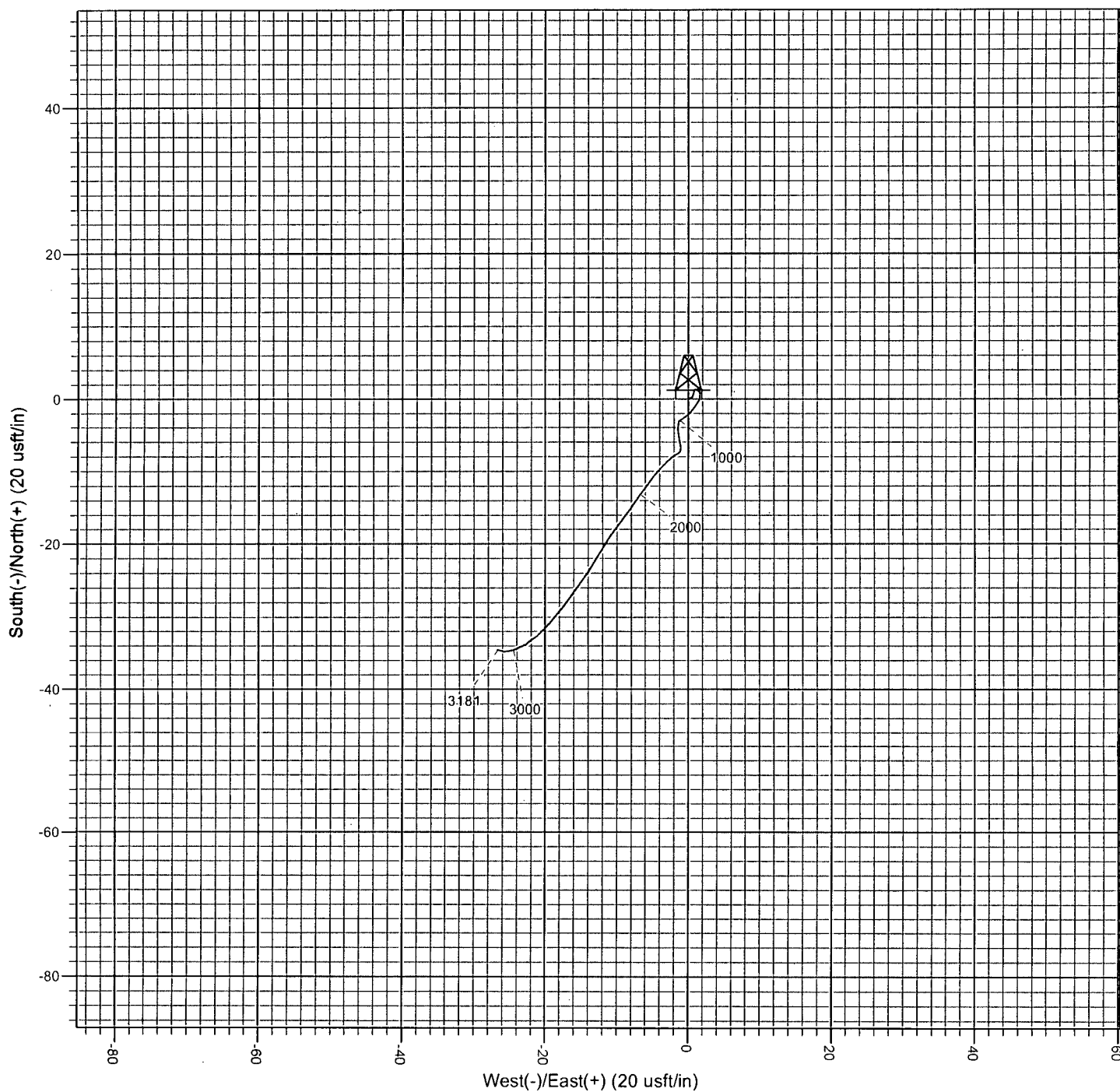


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Project: Vacuum Grayburg San Andres
Lea County, NM
Well: Central Vacuum Unit #274
Wellbore: VH - Job #32K09121104
Design: VH - Job #32K09121104

WELL DETAILS: Central Vacuum Unit #274
WELL @ 0.00usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	653210.65	755777.40	32° 47' 34.800 N	103° 30' 3.600 W	



PROJECT DETAILS: Vacuum Grayburg San Andres	SITE DETAILS: Lea County, NM
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: 0.00
Zone: New Mexico East 3001	Convergence: 0.45
System Datum: Mean Sea Level	Local North: True