



Chevron

Lea County, NM (NAD27 NME)

SD WE 14 Fed

P5 2H

OH / Job 60134

Survey: Phoenix MWD Surveys

Standard Survey Report

06 July, 2016



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services

Survey Report



Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: SD WE 14 Fed
Well: P5 2H
Wellbore: OH / Job 60134
Design: Surveys (Pace X30)

Local Co-ordinate Reference: Well P5 2H
TVD Reference: RKB @ 3190.00usft (Pace X30)
MD Reference: RKB @ 3190.00usft (Pace X30)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Project Lea County, NM (NAD27 NME)

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site SD WE 14 Fed

Site Position: Northing: 377,311.00 usft Latitude: 32° 2' 7.83756 N
From: Map Easting: 711,217.00 usft Longitude: 103° 39' 6.19467 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.36 °

Well P5 2H

Well Position +N/-S 0.00 usft Northing: 377,312.00 usft Latitude: 32° 2' 7.84434 N
 +E/-W 0.00 usft Easting: 711,267.00 usft Longitude: 103° 39' 5.61376 W
Position Uncertainty 0.00 usft Wellhead Elevation: 0.00 usft Ground Level: 3,157.00 usft

Wellbore OH / Job 60134

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/15/2016	6.95	59.75	48,027

Design Surveys (Pace X30)

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	3.36

Survey Program Date 7/6/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
186.00	658.00	Teledrift MWD Surveys (OH / Job 60134)	MWD	MWD - Standard
856.00	8,531.00	Phoenix MWD Surveys (OH / Job 60134)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

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)
658.00	0.60	350.00	657.97	5.61	-2.12	5.48	0.00	0.00	0.00
Tie In to Teledrift Surveys									
856.00	0.70	339.80	855.95	7.77	-2.72	7.59	0.08	0.05	-5.15
First Phoenix MWD Survey									
1,034.00	0.80	311.50	1,033.94	9.61	-4.02	9.36	0.21	0.06	-15.90
1,211.00	1.00	70.10	1,210.93	10.95	-3.50	10.73	0.88	0.11	67.01
1,389.00	3.80	97.80	1,388.76	10.68	3.81	10.89	1.66	1.57	15.56
1,567.00	7.70	80.90	1,565.84	11.77	21.44	13.01	2.37	2.19	-9.49
1,745.00	6.90	86.10	1,742.40	14.38	43.88	16.93	0.58	-0.45	2.92



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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)
1,923.00	6.60	83.00	1,919.16	16.36	64.70	20.12	0.27	-0.17	-1.74
2,100.00	6.70	81.60	2,094.97	19.10	85.01	24.06	0.11	0.06	-0.79
2,277.00	7.00	80.90	2,270.71	22.32	105.87	28.49	0.18	0.17	-0.40
2,454.00	7.30	81.20	2,446.33	25.74	127.64	33.18	0.17	0.17	0.17
2,632.00	7.40	80.20	2,622.87	29.43	150.11	38.18	0.09	0.06	-0.56
2,809.00	7.60	76.70	2,798.36	34.06	172.73	44.13	0.28	0.11	-1.98
2,986.00	7.60	76.40	2,973.80	39.50	195.50	50.90	0.02	0.00	-0.17
3,164.00	8.00	75.20	3,150.15	45.43	218.91	58.19	0.24	0.22	-0.67
3,342.00	7.80	80.90	3,326.47	50.51	242.82	64.66	0.45	-0.11	3.20
3,520.00	6.20	92.80	3,503.14	51.95	264.35	67.36	1.21	-0.90	6.69
3,698.00	6.30	90.70	3,680.09	51.36	283.71	67.91	0.14	0.06	-1.18
3,875.00	6.20	91.60	3,856.04	50.98	302.98	68.66	0.08	-0.06	0.51
4,053.00	4.00	98.50	4,033.32	49.79	318.73	68.40	1.28	-1.24	3.88
4,230.00	0.60	239.50	4,210.19	48.41	324.04	67.33	2.53	-1.92	79.66
4,408.00	0.70	256.10	4,388.18	47.67	322.18	66.48	0.12	0.06	9.33
4,482.00	0.80	248.60	4,462.17	47.37	321.26	66.13	0.19	0.14	-10.14
4,599.00	0.70	255.10	4,579.16	46.89	319.81	65.57	0.11	-0.09	5.56
4,777.00	1.00	255.10	4,757.14	46.21	317.26	64.74	0.17	0.17	0.00
4,954.00	0.70	246.40	4,934.12	45.38	314.77	63.77	0.18	-0.17	-4.92
5,131.00	1.00	224.00	5,111.10	43.84	312.71	62.10	0.25	0.17	-12.66
5,309.00	0.90	240.80	5,289.08	42.04	310.41	60.17	0.17	-0.06	9.44
5,486.00	0.40	317.30	5,466.07	41.82	308.78	59.85	0.51	-0.28	43.22
5,664.00	0.40	296.70	5,644.07	42.55	307.80	60.53	0.08	0.00	-11.57
5,841.00	0.70	299.00	5,821.06	43.35	306.30	61.24	0.17	0.17	1.30
6,019.00	1.00	55.50	5,999.05	44.76	306.63	62.67	0.82	0.17	65.45
6,196.00	1.10	35.70	6,176.02	47.02	308.90	65.05	0.21	0.06	-11.19
6,373.00	1.00	48.00	6,352.99	49.43	311.04	67.58	0.14	-0.06	6.95
6,551.00	0.90	34.90	6,530.96	51.62	312.99	69.88	0.13	-0.06	-7.36
6,728.00	0.70	54.70	6,707.95	53.38	314.67	71.74	0.19	-0.11	11.19
6,905.00	0.20	78.10	6,884.94	54.07	315.85	72.50	0.30	-0.28	13.22
7,082.00	0.20	217.40	7,061.94	53.89	315.97	72.32	0.21	0.00	78.70
7,260.00	0.30	265.70	7,239.94	53.60	315.31	72.00	0.13	0.06	27.13
7,438.00	0.60	211.60	7,417.94	52.78	314.36	71.12	0.27	0.17	-30.39
7,615.00	0.60	210.20	7,594.93	51.19	313.41	69.48	0.01	0.00	-0.79
7,792.00	1.00	211.40	7,771.91	49.07	312.14	67.29	0.23	0.23	0.68
7,969.00	0.20	34.70	7,948.90	48.00	311.51	66.19	0.68	-0.45	-99.83
8,147.00	0.30	115.00	8,126.90	48.06	312.11	66.28	0.19	0.06	45.11
8,325.00	0.70	164.90	8,304.89	46.81	312.81	65.08	0.31	0.22	28.03
8,474.00	0.70	195.20	8,453.88	45.06	312.81	63.32	0.25	0.00	20.34
Final Phoenix MWD Survey									
8,531.00	0.70	195.20	8,510.88	44.38	312.63	62.64	0.00	0.00	0.00
Projection to TD									



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Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
658.00	657.97	5.61	-2.12	Tie In to Teledrift Surveys
856.00	855.95	7.77	-2.72	First Phoenix MWD Survey
8,474.00	8,453.88	45.06	312.81	Final Phoenix MWD Survey
8,531.00	8,510.88	44.38	312.63	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

HOBBS OCD

Phoenix Technology Services SURVEY DATA CERTIFICATION

 DEC 05 2016
RECEIVED


PHOENIX JOB NUMBER

60134

OPERATOR

Chevron

WELL NAME SD WE 14 Fed P5 2H

COUNTY & STATE

Lea County, New Mexico

API WELL NUMBER

30-025-42801

PROPOSED DIRECTION

3.36

TIE-IN DATA

MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
658.00 ft	657.97 ft	0.6°	350.0°	5.61 N	2.12 W	Teledrift

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
1-Jul-16	856 ft	0.7°	339.8°

SURVEY INSTRUMENT

TYPE

Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
5-Jul-16	8,474 ft	.7	195.2

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
5-Jul-16	8,531 ft	.7	195.2

Robert Brewer

PRINT YOUR NAME ABOVE

Robert Brewer

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED

5.59

DECLINATION OR GRID

GRID

07/11/16

TODAY'S DATE

MWD SUPERVISOR 1

Robert Brewer

DIRECTIONAL DRILLER 1

Casey Tubbe

MWD SUPERVISOR 2

Lance Mosby

DIRECTIONAL DRILLER 2

Monte Gordon

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