

Results of Directional Survey

API number:	30-025-40861		
OGRID:		Operator:	CHEVRON U S A INC
		Property:	MCCLOY RANCH 2 24 32 STATE COM # 4H

surface	ULSTR:	P	02	T	24S	R	32E
				100	FSL	660	FEL

BH Loc	ULSTR:	A	02	T	24S	R	32E
14520	MD	9573.1	TVD	210	FNL	701	FEL
				5070	FSL		

Top Perf/OH	ULSTR:	P	02	T	24S	R	32E
9980	MD	9692.3	TVD	535	FSL	665	FEL

Bot Perf/OH	ULSTR:	A	02	T	24S	R	32E
14483	MD	9575.5	TVD	247	FNL	701	FEL
				5033	FSL		

	MD	N/S	E/W	VD
	9946	401.24	-4.22	9693.3
TOP PERFS/OH	9980	435.20	-5.16	9692.32
	9991	446.19	-5.47	9692.00
	14415	4865.17	-39.83	9580.61
BOT PERFS/OH	14483	4932.97	-40.77	9575.46
	14469	4919.01	-40.58	9576.52

NEXT TO LAST	14469	4919.01	-40.58	9576.52
LAST READING	14520	4969.89	-41.29	9573.14
TD	14520	4969.89	-41.29	9573.14

Surface Location	100	FS	660	FE
Projected BHL	5070	FS	701	FE
Location of				
Top Perfs/OH	535	FS	665	FE
Bottom Perfs/OH	5033	FS	701	FE

SUMMARY of Subsurface Locations

Surface Location	P-02-24S-32E	100	FS	660	FE	Vert. Depth
Top Perfs/OH	P-02-24S-32E	535	FS	665	FE	9692.32
Bottom Perfs/OH	A-02-24S-32E	5033	FS	701	FE	9575.46
Projected TD	A-02-24S-32E	5070	FS	701	FE	9573.14

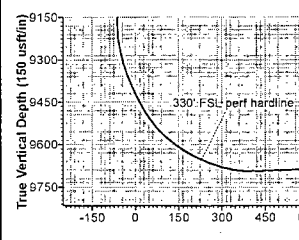
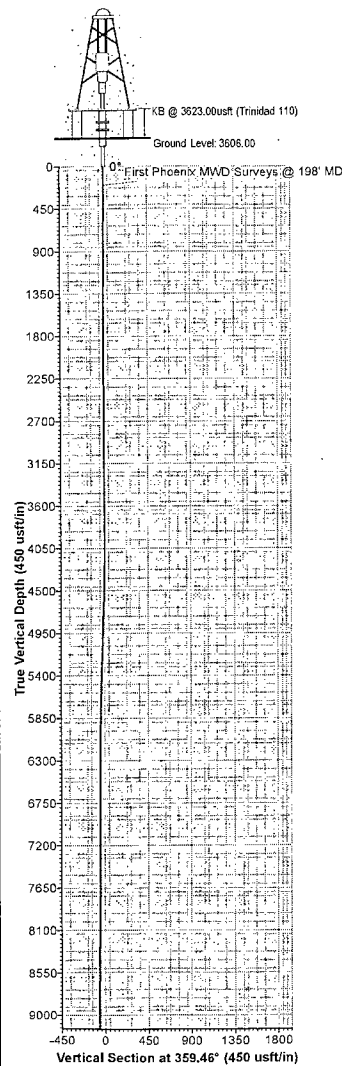
MAR 19 2014



Project: Lea County, NM (NAD27)
Site: McCloy Ranch 2-24-32 State Com
Well: #4H
Wellbore: Wellbore #1 / Job #1211240
Design: Plan #5 01-13-2013



Azimuths to Grid North
True North: -0.37°
Magnetic North: 7.06°
Magnetic Field
Strength: 48467.2snT
Dip Angle: 60.15°
Date: 12/14/2012
Model: IGRF2010_14



WELL DETAILS									
				Ground Level:	3606.00	Latitude	Longitude		
+N/S	+E/W	Northing	Easting						
0.00	0.00	451579.00	714844.00			32° 14' 22.5498 N	103° 38' 18.4946 W		

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSec
1	12610.00	90.20	358.80	9540.30	3063.36	4.43	0.00	0.00	3063.18
2	12670.88	92.00	358.49	9536.13	3124.21	2.99	3.00	-8.77	3124.05
3	12900.88	92.00	358.49	9531.11	3353.99	-3.07	0.00	0.00	3353.87
4	12950.91	90.50	358.48	9530.02	3403.99	-4.39	3.00	-179.70	3403.88
5	14559.55	90.50	358.48	9515.00	5012.00	-47.00	0.00	0.00	5012.22

DESIGN TARGET DETAILS									
Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape	
MR 2-24-32 #4H - PBHL v4 - plan hits target center	9616.00	5012.00	-47.00	455591.00	714797.00	32° 15' 12.1496 N	103° 38' 18.6642 W	Point	

SITE DETAILS: McCloy Ranch 2-24-32 State Com	
Site Centre Northing:	451536.00
Easting:	710905.00
Positional Uncertainty:	0.00
Convergence:	0.36
Local North:	Grid

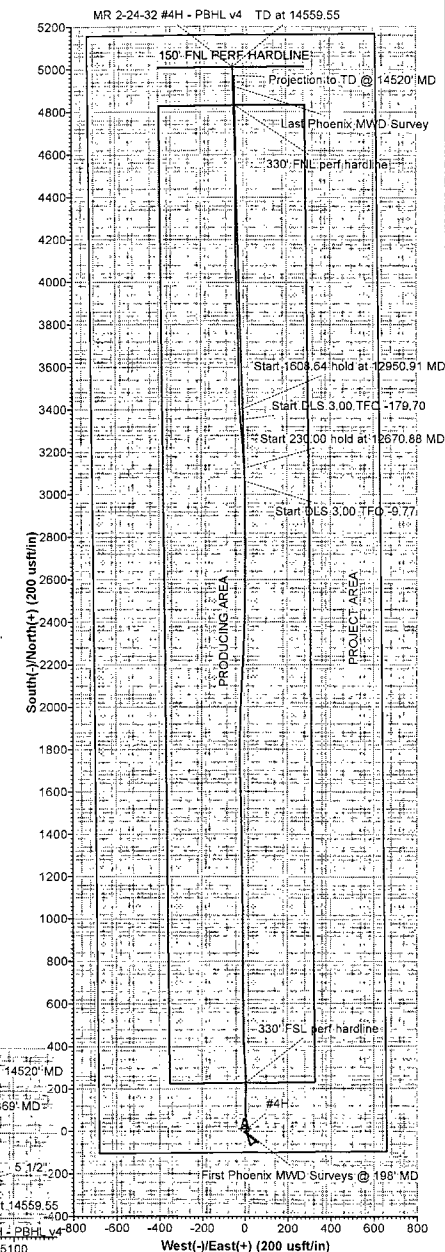
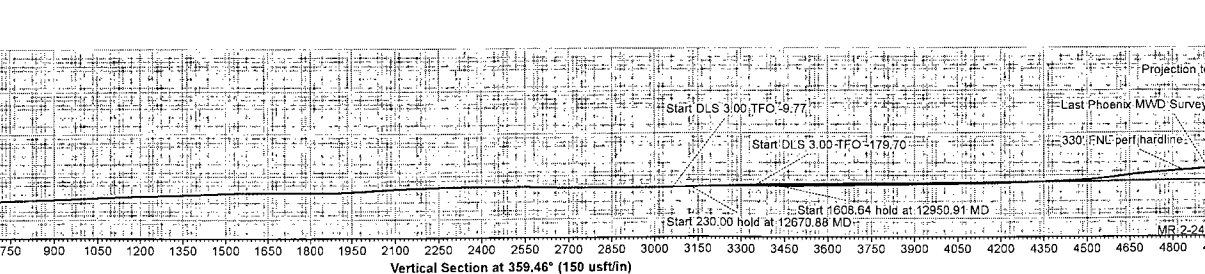
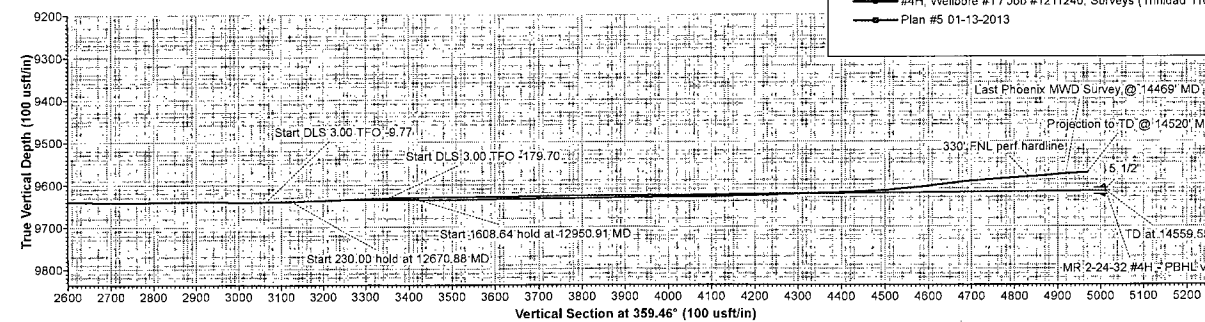
PROJECT DETAILS: Lea County, NM (NAD27)	
Geodetic System:	US State Plane 1927 (Exact solution)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	New Mexico East 3001
System Datum:	Mean Sea Level

CASING DETAILS			
TVD	MD	Name	Size
9616.02	14557.38	5 1/2"	5-1/2
4775.00		8 5/8"	8-5/8
1300.00		13 3/8"	13-3/8

FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipAngle	DipDir
1159.00		Rustler	-0.50	359.46

LEGEND

- #4H, Wellbore #1 / Job #1211240, Surveys (Trinidad 110) V0
- Plan #5 01-13-2013





HOBBS OCD

FEB 10 2014

RECEIVED

Chesapeake Operating Inc.

Lea County, NM (NAD27)

McCloy Ranch 2-24-32 State Com #4H

Wellbore #1 / Job #1211240

Survey: Phoenix MWD Surveys

Phoenix Final Survey Report

25 January, 2013





Phoenix Technology Services

Phoenix Final Survey Report



Company: Chesapeake Operating Inc.
Project: Lea County, NM (NAD27)
Site: McCloy Ranch 2-24-32 State Com
Well: #4H
Wellbore: Wellbore #1 / Job #1211240
Design: Surveys (Trinidad 110)

Local Co-ordinate Reference: Well #4H
TVD Reference: KB @ 3623.00usft (Trinidad 110)
MD Reference: KB @ 3623.00usft (Trinidad 110)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB

Project Lea County, NM (NAD27)

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 McCloy Ranch 2-24-32 State Com

Site Position:	Northing:	451,536.00 usft	Latitude:	32° 14' 22.3930 N
From: Map	Easting:	710,605.00 usft	Longitude:	103° 39' 7.8509 W
Position Uncertainty: 0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.36 °

Well #4H

Well Position	+N/-S	0.00 usft	Northing:	451,579.00 usft	Latitude:	32° 14' 22.5498 N
	+E/-W	0.00 usft	Easting:	714,844.00 usft	Longitude:	103° 38' 18.4946 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	17.00 usft	Ground Level:	3,606.00 usft

Wellbore Wellbore #1 / Job #1211240

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	12/14/12	7.43	60.15	48,467

Design Surveys (Trinidad 110)

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	359.46

Survey Program Date 01/25/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
198.00	14,520.00	Phoenix MWD Surveys (Wellbore #1 / Job	MWD	MWD - Standard



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Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	3,623.00	0.00	0.00	0.00	0.00	0.00	451,579.00	714,844.00
198.00	0.70	77.00	3,425.00	198.00	0.27	1.18	0.26	0.35	451,579.27	714,845.18
First Phoenix MWD Surveys @ 198' MD										
387.00	0.90	108.00	3,236.02	386.98	0.07	3.72	0.04	0.25	451,579.07	714,847.72
577.00	0.70	115.30	3,046.04	576.96	-0.88	6.18	-0.94	0.12	451,578.12	714,850.18
767.00	0.50	170.40	2,856.05	766.95	-2.20	7.37	-2.27	0.31	451,576.80	714,851.37
957.00	0.40	236.60	2,666.05	956.95	-3.38	6.96	-3.45	0.26	451,575.62	714,850.96
1,147.00	0.50	246.70	2,476.06	1,146.94	-4.07	5.64	-4.13	0.07	451,574.93	714,849.64
1,199.00	0.50	268.30	2,424.06	1,198.94	-4.17	5.21	-4.22	0.36	451,574.83	714,849.21
1,374.00	0.40	279.20	2,249.07	1,373.93	-4.09	3.84	-4.13	0.07	451,574.91	714,847.84
1,564.00	0.30	288.00	2,059.07	1,563.93	-3.83	2.71	-3.86	0.06	451,575.17	714,846.71
1,754.00	0.50	288.30	1,869.08	1,753.92	-3.42	1.45	-3.43	0.11	451,575.58	714,845.45
1,944.00	0.40	259.60	1,679.08	1,943.92	-3.28	0.01	-3.28	0.13	451,575.72	714,844.01
2,134.00	0.30	228.80	1,489.09	2,133.91	-3.73	-1.01	-3.72	0.11	451,575.27	714,842.99
2,324.00	0.10	275.20	1,299.09	2,323.91	-4.04	-1.55	-4.03	0.13	451,574.96	714,842.45
2,515.00	0.20	80.60	1,108.09	2,514.91	-3.97	-1.39	-3.96	0.16	451,575.03	714,842.61
2,705.00	0.10	20.90	918.09	2,704.91	-3.76	-1.00	-3.75	0.09	451,575.24	714,843.00
2,895.00	0.20	85.70	728.09	2,894.91	-3.58	-0.62	-3.58	0.10	451,575.42	714,843.38
3,085.00	0.20	343.40	538.09	3,084.91	-3.24	-0.38	-3.24	0.16	451,575.76	714,843.62
3,275.00	0.10	289.90	348.09	3,274.91	-2.86	-0.63	-2.86	0.09	451,576.14	714,843.37
3,465.00	0.40	320.90	158.09	3,464.91	-2.29	-1.20	-2.28	0.17	451,576.71	714,842.80
3,655.00	0.10	338.20	-31.91	3,654.91	-1.63	-1.68	-1.61	0.16	451,577.37	714,842.32
3,845.00	0.40	288.50	-221.90	3,844.90	-1.26	-2.37	-1.24	0.18	451,577.74	714,841.63
4,036.00	0.30	291.40	-412.90	4,035.90	-0.87	-3.47	-0.83	0.05	451,578.13	714,840.53
4,226.00	0.80	116.40	-602.90	4,225.90	-1.27	-2.75	-1.25	0.58	451,577.73	714,841.25
4,416.00	1.50	117.20	-792.86	4,415.86	-3.00	0.65	-3.01	0.37	451,576.00	714,844.65
4,606.00	3.60	127.50	-982.66	4,605.66	-7.77	7.60	-7.84	1.13	451,571.23	714,851.60



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4,707.00	3.80	130.90	-1,083.45	4,706.45	-11.89	12.64	-12.01	0.29	451,567.11	714,856.64
4,768.00	2.70	131.20	-1,144.35	4,767.35	-14.16	15.25	-14.30	1.80	451,564.84	714,859.25
4,958.00	2.20	132.50	-1,334.18	4,957.18	-19.57	21.31	-19.77	0.26	451,559.43	714,865.31
5,148.00	2.40	131.90	-1,524.02	5,147.02	-24.69	26.96	-24.95	0.11	451,554.31	714,870.96
5,338.00	2.20	128.80	-1,713.87	5,336.87	-29.64	32.76	-29.94	0.12	451,549.36	714,876.76
5,529.00	2.20	126.90	-1,904.73	5,527.73	-34.13	38.55	-34.50	0.04	451,544.87	714,882.55
5,719.00	2.10	128.40	-2,094.59	5,717.59	-38.49	44.19	-38.90	0.06	451,540.51	714,888.19
5,909.00	1.90	131.40	-2,284.48	5,907.48	-42.73	49.28	-43.19	0.12	451,536.27	714,893.28
6,100.00	1.80	130.90	-2,475.38	6,098.38	-46.79	53.93	-47.30	0.05	451,532.21	714,897.93
6,290.00	0.40	86.50	-2,665.34	6,288.34	-48.70	56.85	-49.24	0.81	451,530.30	714,900.85
6,471.00	0.50	90.60	-2,846.34	6,469.34	-48.67	58.27	-49.22	0.06	451,530.33	714,902.27
6,652.00	0.70	110.10	-3,027.33	6,650.33	-49.06	60.09	-49.62	0.16	451,529.94	714,904.09
6,833.00	0.80	119.60	-3,208.31	6,831.31	-50.06	62.23	-50.65	0.09	451,528.94	714,906.23
7,014.00	1.30	289.90	-3,389.30	7,012.30	-49.99	61.40	-50.57	1.16	451,529.01	714,905.40
7,195.00	1.20	285.20	-3,570.26	7,193.26	-48.79	57.64	-49.33	0.08	451,530.21	714,901.64
7,376.00	1.50	277.40	-3,751.21	7,374.21	-47.99	53.46	-48.49	0.19	451,531.01	714,897.46
7,556.00	1.80	250.50	-3,931.13	7,554.13	-48.63	48.46	-49.09	0.46	451,530.37	714,892.46
7,737.00	1.50	247.30	-4,112.06	7,735.06	-50.50	43.59	-50.90	0.17	451,528.50	714,887.59
7,917.00	1.00	238.70	-4,292.01	7,915.01	-52.22	40.08	-52.60	0.30	451,526.78	714,884.08
8,098.00	1.40	230.00	-4,472.97	8,095.97	-54.46	37.04	-54.81	0.24	451,524.54	714,881.04
8,279.00	1.20	226.90	-4,653.93	8,276.93	-57.18	33.96	-57.50	0.12	451,521.82	714,877.96
8,459.00	1.10	218.60	-4,833.89	8,456.89	-59.82	31.50	-60.11	0.11	451,519.18	714,875.50
8,639.00	0.50	226.50	-5,013.87	8,636.87	-61.71	29.86	-61.99	0.34	451,517.29	714,873.86
8,820.00	0.60	201.10	-5,194.87	8,817.87	-63.14	28.94	-63.41	0.14	451,515.86	714,872.94
9,000.00	0.60	256.80	-5,374.86	8,997.86	-64.23	27.68	-64.49	0.31	451,514.77	714,871.68
9,132.00	1.20	300.60	-5,506.84	9,129.84	-63.68	25.82	-63.92	0.66	451,515.32	714,869.82
9,178.00	1.40	330.30	-5,552.83	9,175.83	-62.95	25.13	-63.18	1.51	451,516.05	714,869.13



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9,223.00	6.50	345.90	-5,597.71	9,220.71	-60.00	24.24	-60.23	11.48	451,519.00	714,868.24
9,269.00	11.70	346.20	-5,643.11	9,266.11	-52.94	22.49	-53.15	11.30	451,526.06	714,866.49
9,314.00	16.70	342.50	-5,686.73	9,309.73	-42.34	19.45	-42.52	11.29	451,536.66	714,863.45
9,359.00	20.70	342.90	-5,729.34	9,352.34	-28.56	15.17	-28.71	8.89	451,550.44	714,859.17
9,404.00	23.60	349.10	-5,771.02	9,394.02	-12.11	11.13	-12.22	8.27	451,566.89	714,855.13
9,449.00	26.30	353.30	-5,811.82	9,434.82	6.64	8.26	6.56	7.17	451,585.64	714,852.26
9,494.00	30.50	359.10	-5,851.41	9,474.41	27.97	6.91	27.91	11.16	451,606.97	714,850.91
9,539.00	36.10	358.70	-5,889.00	9,512.00	52.66	6.43	52.60	12.45	451,631.66	714,850.43
9,585.00	42.70	356.80	-5,924.53	9,547.53	81.82	5.25	81.77	14.58	451,660.82	714,849.25
9,630.00	48.70	358.10	-5,955.94	9,578.94	113.98	3.84	113.94	13.49	451,692.98	714,847.84
9,675.00	54.90	2.00	-5,983.77	9,606.77	149.31	3.92	149.27	15.36	451,728.31	714,847.92
9,720.00	60.10	2.60	-6,007.94	9,630.94	187.22	5.45	187.16	11.61	451,766.22	714,849.45
9,765.00	65.00	0.60	-6,028.68	9,651.68	227.12	6.55	227.05	11.58	451,806.12	714,850.55
9,768.17	65.31	0.28	-6,030.01	9,653.01	230.00	6.57	229.93	13.30	451,809.00	714,850.57
330' FSL perf hardline										
9,810.00	69.40	356.20	-6,046.12	9,669.12	268.57	5.37	268.51	13.30	451,847.57	714,849.37
9,856.00	76.00	355.50	-6,059.79	9,682.79	312.35	2.19	312.31	14.42	451,891.35	714,846.19
9,901.00	83.00	355.50	-6,067.98	9,690.98	356.43	-1.28	356.43	15.56	451,935.43	714,842.72
9,946.00	91.10	357.00	-6,070.30	9,693.30	401.24	-4.22	401.26	18.30	451,980.24	714,839.78
9,991.00	92.20	359.80	-6,069.00	9,692.00	446.19	-5.47	446.23	6.68	452,025.19	714,838.53
10,082.00	91.70	359.50	-6,065.91	9,688.91	537.14	-6.03	537.17	0.64	452,116.14	714,837.97
10,172.00	91.70	359.60	-6,063.24	9,686.24	627.10	-6.74	627.13	0.11	452,206.10	714,837.26
10,263.00	90.90	358.90	-6,061.17	9,684.17	718.06	-7.93	718.11	1.17	452,297.06	714,836.07
10,353.00	92.20	0.10	-6,058.74	9,681.74	808.02	-8.71	808.07	1.97	452,387.02	714,835.29
10,443.00	92.20	359.80	-6,055.28	9,678.28	897.96	-8.79	898.00	0.33	452,476.96	714,835.21
10,534.00	92.20	359.90	-6,051.79	9,674.79	988.89	-9.03	988.93	0.11	452,567.89	714,834.97
10,624.00	92.10	359.70	-6,048.41	9,671.41	1,078.83	-9.34	1,078.87	0.25	452,657.83	714,834.66



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Project: Lea County, NM (NAD27)
Site: McCloy Ranch 2-24-32 State Com
Well: #4H
Wellbore: Wellbore #1 / Job #1211240
Design: Surveys (Trinidad 110)

Local Co-ordinate Reference: Well #4H
TVD Reference: KB @ 3623.00usft (Trinidad 110)
MD Reference: KB @ 3623.00usft (Trinidad 110)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,714.00	91.60	359.10	-6,045.51	9,668.51	1,168.77	-10.29	1,168.82	0.87	452,747.77	714,833.71
10,804.00	90.50	358.50	-6,043.86	9,666.86	1,258.74	-12.17	1,258.80	1.39	452,837.74	714,831.83
10,895.00	92.70	0.00	-6,041.32	9,664.32	1,349.69	-13.36	1,349.75	2.93	452,928.69	714,830.64
10,985.00	92.10	359.30	-6,037.55	9,660.55	1,439.60	-13.91	1,439.67	1.02	453,018.60	714,830.09
11,075.00	91.60	358.80	-6,034.64	9,657.64	1,529.54	-15.40	1,529.62	0.79	453,108.54	714,828.60
11,165.00	90.10	357.50	-6,033.31	9,656.31	1,619.48	-18.31	1,619.58	2.21	453,198.48	714,825.69
11,256.00	91.40	0.80	-6,032.12	9,655.12	1,710.45	-19.66	1,710.56	3.90	453,289.45	714,824.34
11,346.00	89.30	359.60	-6,031.57	9,654.57	1,800.44	-19.34	1,800.54	2.69	453,379.44	714,824.66
11,436.00	89.50	0.40	-6,032.51	9,655.51	1,890.44	-19.34	1,890.53	0.92	453,469.44	714,824.66
11,527.00	95.00	2.20	-6,028.94	9,651.94	1,981.30	-17.28	1,981.38	6.36	453,560.30	714,826.72
11,617.00	93.10	2.90	-6,022.58	9,645.58	2,070.99	-13.29	2,071.02	2.25	453,649.99	714,830.71
11,707.00	92.00	3.50	-6,018.58	9,641.58	2,160.75	-8.27	2,160.74	1.39	453,739.75	714,835.73
11,797.00	91.50	2.70	-6,015.83	9,638.83	2,250.58	-3.41	2,250.51	1.05	453,829.58	714,840.59
11,888.00	90.30	1.80	-6,014.40	9,637.40	2,341.50	0.17	2,341.39	1.65	453,920.50	714,844.17
11,978.00	90.40	1.60	-6,013.85	9,636.85	2,431.45	2.84	2,431.32	0.25	454,010.45	714,846.84
12,069.00	89.10	0.60	-6,014.25	9,637.25	2,522.43	4.58	2,522.28	1.80	454,101.43	714,848.58
12,159.00	88.10	0.60	-6,016.44	9,639.44	2,612.40	5.53	2,612.23	1.11	454,191.40	714,849.53
12,249.00	89.80	0.30	-6,018.09	9,641.09	2,702.38	6.23	2,702.20	1.92	454,281.38	714,850.23
12,340.00	90.80	359.60	-6,017.62	9,640.62	2,793.38	6.15	2,793.19	1.34	454,372.38	714,850.15
12,430.00	90.30	359.60	-6,016.75	9,639.75	2,883.37	5.52	2,883.19	0.56	454,462.37	714,849.52
12,520.00	89.40	0.10	-6,016.99	9,639.99	2,973.37	5.29	2,973.19	1.14	454,552.37	714,849.29
12,610.00	90.20	358.80	-6,017.30	9,640.30	3,063.36	4.43	3,063.18	1.70	454,642.36	714,848.43
12,700.00	92.10	356.10	-6,015.50	9,638.50	3,153.24	0.42	3,153.10	3.67	454,732.24	714,844.42
12,790.00	91.10	355.70	-6,012.98	9,635.98	3,242.97	-6.01	3,242.89	1.20	454,821.97	714,837.99
12,881.00	89.80	355.30	-6,012.27	9,635.27	3,333.69	-13.15	3,333.67	1.49	454,912.69	714,830.85
12,971.00	89.50	357.70	-6,012.82	9,635.82	3,423.51	-18.64	3,423.54	2.69	455,002.51	714,825.36
13,061.00	90.90	358.90	-6,012.50	9,635.50	3,513.47	-21.31	3,513.51	2.05	455,092.47	714,822.69



Phoenix Technology Services

Phoenix Final Survey Report



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Project: Lea County, NM (NAD27)
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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
13,151.00	90.70	359.10	-6,011.25	9,634.25	3,603.45	-22.88	3,603.50	0.31	455,182.45	714,821.12
13,241.00	90.60	359.00	-6,010.23	9,633.23	3,693.43	-24.37	3,693.49	0.16	455,272.43	714,819.63
13,331.00	90.40	358.40	-6,009.44	9,632.44	3,783.40	-26.42	3,783.48	0.70	455,362.40	714,817.58
13,422.00	91.00	358.50	-6,008.33	9,631.33	3,874.36	-28.88	3,874.46	0.67	455,453.36	714,815.12
13,512.00	90.80	358.40	-6,006.92	9,629.92	3,964.32	-31.31	3,964.44	0.25	455,543.32	714,812.69
13,602.00	90.00	358.70	-6,006.29	9,629.29	4,054.28	-33.59	4,054.42	0.95	455,633.28	714,810.41
13,693.00	91.10	359.10	-6,005.41	9,628.41	4,145.26	-35.34	4,145.41	1.29	455,724.26	714,808.66
13,783.00	91.80	359.50	-6,003.14	9,626.14	4,235.23	-36.44	4,235.38	0.90	455,814.23	714,807.56
13,873.00	92.90	0.30	-5,999.45	9,622.45	4,325.15	-36.59	4,325.30	1.51	455,904.15	714,807.41
13,964.00	91.60	359.80	-5,995.87	9,618.87	4,416.08	-36.51	4,416.22	1.53	455,995.08	714,807.49
14,054.00	93.40	0.20	-5,991.95	9,614.95	4,505.99	-36.51	4,506.13	2.05	456,084.99	714,807.49
14,144.00	98.50	0.50	-5,982.62	9,605.62	4,595.47	-35.97	4,595.60	5.68	456,174.47	714,808.03
14,234.00	96.00	359.40	-5,971.26	9,594.26	4,684.74	-36.05	4,684.87	3.03	456,263.74	714,807.95
14,325.00	93.20	358.30	-5,963.97	9,586.97	4,775.42	-37.87	4,775.56	3.30	456,354.42	714,806.13
14,381.52	94.27	358.86	-5,960.29	9,583.29	4,831.80	-39.27	4,831.96	2.14	456,410.80	714,804.73
330' FNL perf hardline										
14,415.00	94.90	359.20	-5,957.61	9,580.61	4,865.17	-39.83	4,865.33	2.14	456,444.17	714,804.17
14,469.00	93.80	359.20	-5,953.52	9,576.52	4,919.01	-40.58	4,919.17	2.04	456,498.01	714,803.42
Last Phoenix MWD Survey @ 14469' MD										
14,520.00	93.80	359.20	-5,950.14	9,573.14	4,969.89	-41.29	4,970.06	0.00	456,548.89	714,802.71
Projection to TD @ 14520' MD										



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Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
198.00	198.00	0.27	1.18	First Phoenix MWD Surveys @ 198' MD
9,768.17	9,653.01	230.00	6.57	330' FSL perf hardline
14,381.52	9,583.29	4,831.80	-39.27	330' FNL perf hardline
14,469.00	9,576.52	4,919.01	-40.58	Last Phoenix MWD Survey @ 14469' MD
14,520.00	9,573.14	4,969.89	-41.29	Projection to TD @ 14520' MD

Checked By: _____ Approved By: _____ Date: _____