



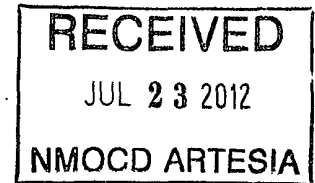
PHOENIX
TECHNOLOGY SERVICES

July 19, 2012

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

Dear District 2 - Artesia

Re: Chesapeake Operating Inc.
PLU Remuda Basin 32-23-30 State 1H
Eddy Co., NM
API #30-015-40341
Job No. 1210498



Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 606018). Other information required by your office is as follows:

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Eric Wolter	1H	226	12,897	06/16/12	07/06/12	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Amy Pope
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4364 9926

RECEIVEDJUL 23 2012
Phoenix Technology Services
SURVEY DATA CERTIFICATION
NMOCD ARTESIA

PHOENIX JOB NUMBER

1210498

OPERATOR

Chesapeake Energy

WELL NAME

PLU Remuda Basin 32 23 30 State 1H

COUNTY & STATE

Eddy New Mexico

API WELL NUMBER

300-154-0341

PROPOSED DIRECTION

359.61

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
ft	.00 ft	.0 ft	.0 ft	.00 ft	.00 ft	Surface

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
16-Jun-12	226 ft	0.4	28.8

SURVEY INSTRUMENT

TYPE

Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
6-Jul-12	12,897 ft	84.5	356.8

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
6-Jul-12	12,950 ft	84.5	356.8

PRINT YOUR NAME ABOVE

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.4
DECLINATION OR GRID	

7-7-2012

TODAY'S DATE

MWD SUPERVISOR 1

Will Harper

DIRECTIONAL DRILLER 1

Casey Hendrix

MWD SUPERVISOR 2

Paul Perhonis

DIRECTIONAL DRILLER 2

Dustin Barnett

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)



Chesapeake Operating Inc. is a subsidiary of Chesapeake Energy Corporation. All rights reserved. No part of this document may be reproduced without written permission from Chesapeake Operating Inc. or its parent company, Chesapeake Energy Corporation. This document is confidential and its disclosure to third parties is prohibited. If you are not an intended recipient, please do not disseminate, distribute, or copy this document. If you have received this document in error, please notify the sender immediately. Thank you for your cooperation.

Chesapeake Operating Inc.

Eddy County, New Mexico (NAD 1983)

PLU Remuda Basin 32 23 30 State 1H

Job # 1210498

Rig: Cactus 120

Survey: Phoenix MWD Surveys

Survey Report

08 July, 2012



Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210498
Project:	Eddy County, New Mexico (NAD 1983)	TVD Reference:	WELL @ 3264.00usft (Cactus 120)
Site:	PLU Remuda Basin 32 23 30 State 1H	MD Reference:	WELL @ 3264.00usft (Cactus 120)
Well:	Job # 1210498	North Reference:	Grid
Wellbore:	Rig: Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Cactus 120	Database:	GCR DB v5000

Project	Eddy County, New Mexico (NAD 1983)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	PLU Remuda Basin 32 23 30 State 1H		
-------------	------------------------------------	--	--

Site Position:		Northing:	456,541.00 usft	Latitude:	32° 15' 15.8304 N
From:	Map	Easting:	672,194.00 usft	Longitude:	103° 54' 36.1010 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.23 °

Well	Job # 1210498					
Well Position	+N-S	0.00 usft	Northing:	456,541.00 usf	Latitude:	32° 15' 15.8304 N
	+E-W	0.00 usft	Easting:	672,194.00 usf	Longitude:	103° 54' 36.1010 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	23.00 usf	Ground Level:	3,241.00 usft

Wellbore	Rig: Cactus 120				
-----------------	-----------------	--	--	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	05/31/12	7.63	60.13	48,502

Design	Rig: Cactus 120				
---------------	-----------------	--	--	--	--

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	359.61

Survey Program	Date	From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
	07/08/12	226.00	12,950.00	Phoenix MWD Surveys (Rig: Cactus 120)	MWD	MWD - Standard

Survey Report

Chesapeake

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210498
Project:	Eddy County, New Mexico (NAD 1983)	TVD Reference:	WELL @ 3264.00usft (Cactus 120)
Site:	PLU Remuda Basin 32 23 30 State 1H	MD Reference:	WELL @ 3264.00usft (Cactus 120)
Well:	Job # 1210498	North Reference:	Grid
Wellbore:	Rig: Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Cactus 120	Database:	GCR DB v5000

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	-3,264.00	0.00	0.00	0.00	0.00	0.00	456,541.00	672,194.00	
226.00	0.40	28.80	-3,038.00	226.00	0.69	0.38	0.69	0.18	456,541.69	672,194.38	
First Phoenix MWD Surveys @ 226' MD											
441.00	0.40	20.00	-2,823.01	440.99	2.05	1.00	2.05	0.03	456,543.05	672,195.00	
725.00	0.40	38.50	-2,539.01	724.99	3.76	1.95	3.75	0.05	456,544.76	672,195.95	
916.00	0.20	65.20	-2,348.02	915.98	4.42	2.67	4.40	0.13	456,545.42	672,196.67	
1,106.00	0.00	125.90	-2,158.02	1,105.98	4.56	2.97	4.54	0.11	456,545.56	672,196.97	
1,297.00	0.30	82.40	-1,967.02	1,296.98	4.63	3.47	4.60	0.16	456,545.63	672,197.47	
1,488.00	0.40	152.80	-1,776.02	1,487.98	4.10	4.27	4.07	0.22	456,545.10	672,198.27	
1,679.00	0.30	102.70	-1,585.02	1,678.98	3.40	5.06	3.36	0.16	456,544.40	672,199.06	
1,870.00	0.50	48.90	-1,394.03	1,869.97	3.84	6.18	3.79	0.21	456,544.84	672,200.18	
2,061.00	0.50	32.30	-1,203.04	2,060.96	5.09	7.25	5.04	0.08	456,546.09	672,201.25	
2,251.00	0.90	33.90	-1,013.05	2,250.95	7.03	8.53	6.97	0.21	456,548.03	672,202.53	
2,440.00	0.70	48.90	-824.07	2,439.93	9.02	10.22	8.95	0.15	456,550.02	672,204.22	
2,630.00	0.90	33.60	-634.09	2,629.91	11.02	11.92	10.94	0.15	456,552.02	672,205.92	
2,821.00	0.90	1.50	-443.11	2,820.89	13.77	12.79	13.69	0.26	456,554.77	672,206.79	
3,012.00	0.90	81.10	-252.13	3,011.87	15.51	14.32	15.41	0.60	456,556.51	672,208.32	
3,202.00	1.30	132.70	-62.16	3,201.84	14.27	17.37	14.16	0.54	456,555.27	672,211.37	
3,393.00	1.40	149.90	128.79	3,392.79	10.79	20.14	10.65	0.22	456,551.79	672,214.14	
3,475.00	1.20	156.40	210.77	3,474.77	9.13	20.98	8.99	0.30	456,550.13	672,214.98	
3,644.00	0.70	147.50	379.75	3,643.75	6.64	22.25	6.49	0.31	456,547.64	672,216.25	
3,835.00	0.80	140.00	570.73	3,834.73	4.64	23.73	4.47	0.07	456,545.64	672,217.73	
4,027.00	0.70	150.00	762.71	4,026.71	2.59	25.18	2.42	0.09	456,543.59	672,219.18	
4,217.00	0.70	146.50	952.70	4,216.70	0.62	26.40	0.44	0.02	456,541.62	672,220.40	
4,408.00	0.70	141.90	1,143.68	4,407.68	-1.27	27.76	-1.46	0.03	456,539.73	672,221.76	
4,599.00	0.60	157.60	1,334.67	4,598.67	-3.11	28.86	-3.31	0.11	456,537.89	672,222.86	
4,791.00	0.70	151.30	1,526.66	4,790.66	-5.07	29.81	-5.27	0.06	456,535.93	672,223.81	

Survey Report



Company: Chesapeake Operating Inc.
Project: Eddy County, New Mexico (NAD 1983)
Site: PLU Remuda Basin 32 23 30 State 1H
Well: Job # 1210498
Wellbore: Rig: Cactus 120
Design: Rig: Cactus 120

Local Co-ordinate Reference: Well Job # 1210498
TVD Reference: WELL @ 3264.00usft (Cactus 120)
MD Reference: WELL @ 3264.00usft (Cactus 120)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB v5000

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)	
4,982.00	0.60	158.00	1,717.65	4,981.65	-7.02	30.74	-7.23	0.07	456,533.98	672,224.74	
5,175.00	0.70	158.90	1,910.64	5,174.64	-9.06	31.55	-9.27	0.05	456,531.94	672,225.55	
5,368.00	0.70	155.10	2,103.62	5,367.62	-11.23	32.47	-11.45	0.02	456,529.77	672,226.47	
5,560.00	0.90	151.80	2,295.60	5,559.60	-13.62	33.67	-13.85	0.11	456,527.38	672,227.67	
5,751.00	0.70	152.60	2,486.58	5,750.58	-15.98	34.92	-16.22	0.10	456,525.02	672,228.92	
5,943.00	0.80	166.20	2,678.57	5,942.57	-18.32	35.78	-18.57	0.11	456,522.68	672,229.78	
6,134.00	0.60	185.70	2,869.55	6,133.55	-20.61	36.00	-20.86	0.16	456,520.39	672,230.00	
6,326.00	0.40	188.40	3,061.55	6,325.55	-22.28	35.80	-22.52	0.10	456,518.72	672,229.80	
6,518.00	0.60	183.10	3,253.54	6,517.54	-23.94	35.65	-24.18	0.11	456,517.06	672,229.65	
6,710.00	0.60	192.00	3,445.53	6,709.53	-25.93	35.38	-26.17	0.05	456,515.07	672,229.38	
6,902.00	0.70	184.90	3,637.52	6,901.52	-28.08	35.08	-28.32	0.07	456,512.92	672,229.08	
7,093.00	0.90	179.20	3,828.50	7,092.50	-30.74	35.00	-30.98	0.11	456,510.26	672,229.00	
7,285.00	0.90	196.50	4,020.47	7,284.47	-33.70	34.59	-33.93	0.14	456,507.30	672,228.59	
7,477.00	2.40	212.80	4,212.39	7,476.39	-38.52	31.98	-38.74	0.81	456,502.48	672,225.98	
7,660.00	2.00	202.60	4,395.25	7,659.25	-44.69	28.68	-44.89	0.31	456,496.31	672,222.68	
7,692.00	1.80	244.20	4,427.24	7,691.24	-45.43	28.01	-45.62	4.26	456,495.57	672,222.01	
7,724.00	4.40	308.10	4,459.20	7,723.20	-44.89	26.59	-45.07	12.35	456,496.11	672,220.59	
7,756.00	7.90	323.50	4,491.01	7,755.01	-42.36	24.32	-42.53	12.00	456,498.64	672,218.32	
7,788.00	11.30	329.60	4,522.56	7,786.56	-37.89	21.42	-38.03	11.08	456,503.11	672,215.42	
7,819.00	14.70	331.60	4,552.76	7,816.76	-31.81	18.02	-31.93	11.06	456,509.19	672,212.02	
7,851.00	18.10	333.20	4,583.45	7,847.45	-23.80	13.84	-23.89	10.72	456,517.20	672,207.84	
7,883.00	21.20	335.40	4,613.59	7,877.59	-14.09	9.19	-14.16	9.96	456,526.91	672,203.19	
7,914.00	25.00	334.80	4,642.09	7,906.09	-3.07	4.07	-3.09	12.28	456,537.93	672,198.07	
7,946.00	28.50	335.80	4,670.67	7,934.67	10.02	-1.94	10.03	11.03	456,551.02	672,192.06	
7,978.00	32.30	337.50	4,698.26	7,962.26	24.89	-8.35	24.94	12.17	456,565.89	672,185.65	
8,010.00	36.20	339.00	4,724.71	7,988.71	41.61	-15.01	41.72	12.47	456,582.61	672,178.99	
8,041.00	39.40	340.80	4,749.20	8,013.20	59.46	-21.53	59.60	10.92	456,600.46	672,172.47	

Survey Report

Chesapeake

Company: Chesapeake Operating Inc.
Project: Eddy County, New Mexico (NAD 1983)
Site: PLU Remuda Basin 32 23 30, State 1H
Well: Job # 1210498
Wellbore: Rig: Cactus 120
Design: Rig: Cactus 120

Local Co-ordinate Reference: Well Job # 1210498
TVD Reference: WELL @ 3264.00usft (Cactus 120)
MD Reference: WELL @ 3264.00usft (Cactus 120)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB.v5000

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)
8,073.00	41.70	343.40	4,773.52	8,037.52	79.25	-27.91	79.44	8.92	456,620.25	672,166.09
8,105.00	43.30	345.10	4,797.11	8,061.11	100.06	-33.77	100.29	6.15	456,641.06	672,160.23
8,137.00	46.20	346.60	4,819.83	8,083.83	121.90	-39.27	122.17	9.64	456,662.90	672,154.73
8,168.00	49.80	347.60	4,840.57	8,104.57	144.35	-44.41	144.65	11.86	456,685.35	672,149.59
8,200.00	54.10	348.90	4,860.29	8,124.29	169.02	-49.53	169.35	13.81	456,710.02	672,144.47
8,232.00	58.40	350.30	4,878.07	8,142.07	195.19	-54.32	195.55	13.92	456,736.19	672,139.68
8,264.00	62.50	351.80	4,893.85	8,157.85	222.68	-58.65	223.07	13.45	456,763.68	672,135.35
8,296.00	67.20	353.30	4,907.44	8,171.44	251.39	-62.39	251.81	15.29	456,792.39	672,131.61
8,328.00	71.80	354.00	4,918.65	8,182.65	281.17	-65.70	281.61	14.52	456,822.17	672,128.30
8,360.00	77.30	355.00	4,927.17	8,191.17	311.86	-68.66	312.32	17.45	456,852.86	672,125.34
8,392.00	83.50	355.40	4,932.50	8,196.50	343.29	-71.29	343.77	19.41	456,884.29	672,122.71
8,455.00	92.40	358.80	4,934.75	8,198.75	406.10	-74.47	406.59	15.12	456,947.10	672,119.53
8,550.00	92.80	359.90	4,930.44	8,194.44	500.99	-75.55	501.49	1.23	457,041.99	672,118.45
8,646.00	89.80	0.90	4,928.27	8,192.27	596.95	-74.88	597.45	3.29	457,137.95	672,119.12
8,742.00	89.20	359.90	4,929.10	8,193.10	692.94	-74.21	693.43	1.21	457,233.94	672,119.79
8,837.00	89.70	2.00	4,930.02	8,194.02	787.92	-72.63	788.40	2.27	457,328.92	672,121.37
8,933.00	88.50	1.40	4,931.52	8,195.52	883.86	-69.78	884.32	1.40	457,424.86	672,124.22
9,028.00	92.00	2.10	4,931.11	8,195.11	978.80	-66.88	979.24	3.76	457,519.80	672,127.12
9,123.00	92.40	1.20	4,927.46	8,191.46	1,073.69	-64.15	1,074.10	1.04	457,614.69	672,129.85
9,219.00	89.80	2.40	4,925.62	8,189.62	1,169.62	-61.13	1,170.01	2.98	457,710.62	672,132.87
9,314.00	89.80	2.70	4,925.95	8,189.95	1,264.52	-56.91	1,264.88	0.32	457,805.52	672,137.09
9,409.00	88.80	2.60	4,927.11	8,191.11	1,359.41	-52.52	1,359.74	1.06	457,900.41	672,141.48
9,505.00	90.80	2.30	4,927.45	8,191.45	1,455.32	-48.41	1,455.62	2.11	457,996.32	672,145.59
9,601.00	89.80	2.00	4,926.94	8,190.94	1,551.25	-44.81	1,551.52	1.09	458,092.25	672,149.19
9,696.00	90.60	2.40	4,926.61	8,190.61	1,646.18	-41.16	1,646.42	0.94	458,187.18	672,152.84
9,792.00	91.30	2.50	4,925.02	8,189.02	1,742.08	-37.06	1,742.29	0.74	458,283.08	672,156.94
9,886.00	90.90	3.00	4,923.22	8,187.22	1,835.95	-32.55	1,836.13	0.68	458,376.95	672,161.45

Survey Report



Company: Chesapeake Operating Inc.
Project: Eddy County, New Mexico (NAD 1983)
Site: PLU Remuda Basin 32 23 30 State 1H
Well: Job # 1210498
Wellbore: Rig: Cactus 120
Design: Rig: Cactus 120

Local Co-ordinate Reference: Well Job # 1210498
TVD Reference: WELL @ 3264.00usft (Cactus 120)
MD Reference: WELL @ 3264.00usft (Cactus 120)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB v5000

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)
9,982.00	88.90	2.90	4,923.38	8,187.38	1,931.82	-27.61	1,931.96	2.09	458,472.82	672,166.39
10,078.00	88.00	2.00	4,925.98	8,189.98	2,027.69	-23.51	2,027.81	1.33	458,568.69	672,170.49
10,174.00	90.00	1.30	4,927.66	8,191.66	2,123.63	-20.75	2,123.73	2.21	458,664.63	672,173.25
10,269.00	91.70	1.50	4,926.25	8,190.25	2,218.59	-18.43	2,218.67	1.80	458,759.59	672,175.57
10,364.00	91.20	1.80	4,923.84	8,187.84	2,313.52	-15.69	2,313.57	0.61	458,854.52	672,178.31
10,460.00	91.90	2.70	4,921.25	8,185.25	2,409.41	-11.92	2,409.44	1.19	458,950.41	672,182.08
10,555.00	90.80	1.70	4,919.01	8,183.01	2,504.31	-8.28	2,504.31	1.56	459,045.31	672,185.72
10,651.00	89.40	2.00	4,918.84	8,182.84	2,600.26	-5.18	2,600.23	1.49	459,141.26	672,188.82
10,746.00	88.70	1.00	4,920.41	8,184.41	2,695.21	-2.69	2,695.17	1.28	459,236.21	672,191.31
10,842.00	87.90	0.80	4,923.26	8,187.26	2,791.16	-1.18	2,791.10	0.86	459,332.16	672,192.82
10,937.00	90.00	0.00	4,925.00	8,189.00	2,886.13	-0.52	2,886.07	2.37	459,427.13	672,193.48
11,033.00	89.70	359.20	4,925.26	8,189.26	2,982.13	-1.19	2,982.07	0.89	459,523.13	672,192.81
11,128.00	89.20	358.90	4,926.17	8,190.17	3,077.11	-2.77	3,077.06	0.61	459,618.11	672,191.23
11,224.00	88.40	358.30	4,928.18	8,192.18	3,173.06	-5.11	3,173.02	1.04	459,714.06	672,188.89
11,320.00	90.10	357.90	4,929.43	8,193.43	3,268.99	-8.29	3,268.98	1.82	459,809.99	672,185.71
11,415.00	89.80	357.40	4,929.52	8,193.52	3,363.91	-12.19	3,363.92	0.61	459,904.91	672,181.81
11,511.00	89.60	357.10	4,930.02	8,194.02	3,459.80	-16.80	3,459.84	0.38	460,000.80	672,177.20
11,606.00	88.60	357.10	4,931.51	8,195.51	3,554.67	-21.60	3,554.73	1.05	460,095.67	672,172.40
11,702.00	89.80	357.20	4,932.85	8,196.85	3,650.54	-26.37	3,650.63	1.25	460,191.54	672,167.63
11,798.00	92.70	358.30	4,930.76	8,194.76	3,746.43	-30.14	3,746.55	3.23	460,287.43	672,163.86
11,893.00	93.50	359.00	4,925.62	8,189.62	3,841.26	-32.38	3,841.39	1.12	460,382.26	672,161.62
11,988.00	93.50	357.30	4,919.82	8,183.82	3,936.03	-35.44	3,936.18	1.79	460,477.03	672,158.56
12,084.00	94.60	356.50	4,913.04	8,177.04	4,031.65	-40.62	4,031.83	1.42	460,572.65	672,153.38
12,179.00	92.80	357.40	4,906.91	8,170.91	4,126.31	-45.66	4,126.53	2.12	460,667.31	672,148.34
12,275.00	90.10	359.10	4,904.48	8,168.48	4,222.23	-48.59	4,222.46	3.32	460,763.23	672,145.41
12,370.00	89.20	359.80	4,905.06	8,169.06	4,317.22	-49.50	4,317.45	1.20	460,858.22	672,144.50
12,466.00	88.10	359.30	4,907.32	8,171.32	4,413.19	-50.25	4,413.43	1.26	460,954.19	672,143.75

Survey Report

Company: Chesapeake Operating Inc.
Project: Eddy County, New Mexico (NAD 1983)
Site: PLU Remuda Basin 32 23-30 State 1H
Well: Job # 1210498
Wellbore: Rig: Cactus 120
Design: Rig: Cactus 120

Local Co-ordinate Reference: Well Job # 1210498
TVD Reference: WELL @ 3264.00usft (Cactus 120)
MD Reference: WELL @ 3264.00usft (Cactus 120)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB v5000

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)
12,561.00	88.00	358.50	4,910.56	8,174.56	4,508.11	-52.08	4,508.36	0.85	461,049.11	672,141.92
12,657.00	86.50	357.60	4,915.16	8,179.16	4,603.94	-55.34	4,604.21	1.82	461,144.94	672,138.66
12,752.00	86.10	357.10	4,921.29	8,185.29	4,698.64	-59.72	4,698.94	0.67	461,239.64	672,134.28
12,858.00	85.10	356.70	4,929.42	8,193.42	4,804.17	-65.44	4,804.51	1.02	461,345.17	672,128.56
12,897.00	84.50	356.80	4,932.96	8,196.96	4,842.95	-67.64	4,843.30	1.56	461,383.95	672,126.36
12,950.00	84.50	356.80	4,938.04	8,202.04	4,895.63	-70.58	4,895.99	0.00	461,436.63	672,123.42

Projection to TD, 12950'

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
226.00	226.00	0.69	0.38	First Phoenix MWD Surveys @ 226' MD
12,950.00	8,202.04	4,895.63	-70.58	Projection to TD, 12950'