

Results of Directional Survey

API number:	30-025-41278	DD
OGRID:	Operator:	APACHE CORP
	Property:	NORTHEAST DRINKARD UNIT # 727

surface	ULSTR:	O	15	T 21S	R 37E
				1240 FSL	1855 FEL

BH Loc	ULSTR:	O	15	T 21S	R 37E
6875 MD		6873.5	TVD	1246 FSL	1968 FEL

Top Perf/OH	ULSTR:	O	15	T 21S	R 37E
5539 MD		5537.7	TVD	1238 FSL	1945 FEL

Bot Perf/OH	ULSTR:	O	15	T 21S	R 37E
6598 MD		6596.5	TVD	1245 FSL	1965 FEL

	MD	N/S	E/W	VD
	5484	-2.15	-88.59	5482.75
TOP PERFS/OH	5539	-1.87	-89.75	5537.74
	5569	-1.71	-90.39	5567.73
	6593	5.41	-109.73	6591.52
BOT PERFS/OH	6598	5.42	-109.81	6596.52
	6678	5.53	-111.05	6676.50

NEXT TO LAST	6826	6.23	-112.69	6824.49
LAST READING	6875	6.49	-112.91	6873.49
TD	6875	6.49	-112.91	6873.49

Surface Location	1240 FS	1855 FE
Projected BHL	1246 FS	1968 FE
Location of		
Top Perfs/OH	1238 FS	1945 FE
Bottom Perfs/OH	1245 FS	1965 FE

SUMMARY of Subsurface Locations

Surface Location	O-15-21S-37E	1240 FS	1855 FE	Vert. Depth
Top Perfs/OH	O-15-21S-37E	1238 FS	1945 FE	5537.74
Bottom Perfs/OH	O-15-21S-37E	1245 FS	1965 FE	6596.52
Projected TD	O-15-21S-37E	1246 FS	1968 FE	6873.49

APR 14 2014

Apache Corporation
303 Veterans Airpark Lane, #3000
Midland, TX 79705

Northeast Drinkard Unit # 727 30-025-41278
Lea County, New Mexico

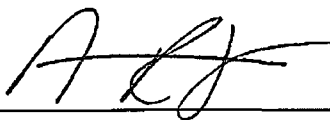
SURF 0-15-215-37E 1240' FSL + 1855' FEL
BHL 0-15-215-37E 1240' FSL + 1970' FEL

250	2.50	0.20	0.35	0.88	0.88
500	2.50	0.40	0.70	1.75	2.63
750	2.50	0.70	1.23	3.06	5.69
1000	2.50	0.30	0.53	1.31	7.00
1250	2.50	0.20	0.35	0.88	7.88
1293	0.43	0.10	0.18	0.08	7.95

HOBBS OCD

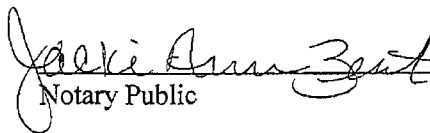
APR 09 2014

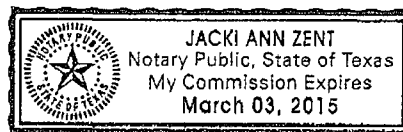
RECEIVED



Archie Brown - General Manager

The attached instrument was acknowledged before me on the 16th day of November, 2013 by
Archie Brown - General Manager, CapStar Drilling, Inc.


Notary Public



HOBBS OCD

APR 09 2014

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APACHE CORP

Eunice

Lea County, NM (True North)

Northeast Drinkard Unit #727

VH - Job #321013-KW-1113

30-025-41278 SURF 0-15-21S-37E 1240' FSL + 1855' FEL
BHL 0-15-21S-37E 1240' FSL + 1970' FEL

Survey: Gyro

SDI Survey Report

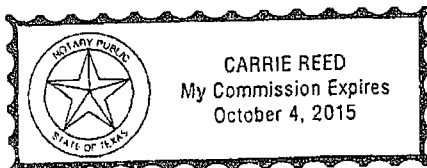
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 31st of October, 2013.

Carrie Reed

Notary Signature
County of Midland
State of Texas



SDI
SDI Survey Report

Company: APACHE CORP	Local Co-ordinate Reference: Well Northeast Drinkard Unit #727
Project: Eunice	TVD Reference: WELL @ 0.0usft (Original Well Elev)
Site: Lea County, NM (True North)	MD Reference: WELL @ 0.0usft (Original Well Elev)
Well: Northeast Drinkard Unit #727	North Reference: True
Wellbore: VH - Job #321013-KW-1113	Survey Calculation Method: Minimum Curvature
Design: VH - Job #321013-KW-1113	Database: EDM-Regulatory

Project: Eunice		
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 (True North)					
Site Position:		Northing:	538,656.96 usft	Latitude:	32° 28' 31.080 N
From: Lat/Long		Easting:	865,479.17 usft	Longitude:	103° 8' 53.628 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.64 °

Well: Northeast Drinkard Unit #727, Vertical					
Well Position	+N/-S	0.0 usft	Northing:	538,656.96 usft	Latitude:
	+E/-W	0.0 usft	Easting:	865,479.17 usft	Longitude:
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:
					0.0 usft

Wellbore: VH - Job #321013-KW-1113					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	10/24/2013	7.11	60.43	48,602

Design: VH - Job #321013-KW-1113					
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	292.52	

Survey Program					
		Date: 10/30/2013			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	1,205.0	Gyro (VH - Job #321013-KW-1113)	Keeper	Keeper Gyro	

Survey								
MD	Inc	Azi (azimuth)	TVD	N/S	E/W	Closure Azimuth	Closure Distance	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°)	(usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0	
100.0	0.38	343.24	100.0	0.3	-0.1	343.24	0.3	
200.0	0.52	288.87	200.0	0.8	-0.6	321.56	1.0	
300.0	0.31	300.71	300.0	1.1	-1.3	309.75	1.7	
400.0	0.25	314.90	400.0	1.4	-1.7	309.14	2.2	
500.0	0.30	303.03	500.0	1.7	-2.0	309.01	2.6	
600.0	0.38	289.42	600.0	1.9	-2.6	306.53	3.2	
700.0	0.43	282.19	700.0	2.1	-3.3	302.80	3.9	
800.0	0.41	287.91	800.0	2.3	-4.0	299.99	4.6	
900.0	0.31	271.98	900.0	2.4	-4.6	297.75	5.2	
1,000.0	0.12	260.88	1,000.0	2.4	-4.9	295.87	5.5	
1,100.0	0.15	154.48	1,100.0	2.3	-5.0	294.39	5.5	

SDI
SDI Survey Report

Company: APACHE CORP
Project: Eunice
Site: Lea County, NM (True North)
Well: Northeast Drinkard Unit #727
Wellbore: VH - Job #321013-KW-1113
Design: VH - Job #321013-KW-1113

Local Co-ordinate Reference: Well Northeast Drinkard Unit #727
TVD Reference: WELL @ 0.0usft (Original Well Elev)
MD Reference: WELL @ 0.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200.0	0.14	248.92	1,200.0	2.1	-5.1	292.60	5.5	
1,205.0	0.10	250.72	1,205.0	2.1	-5.1	292.52	5.5	



Scientific Drilling

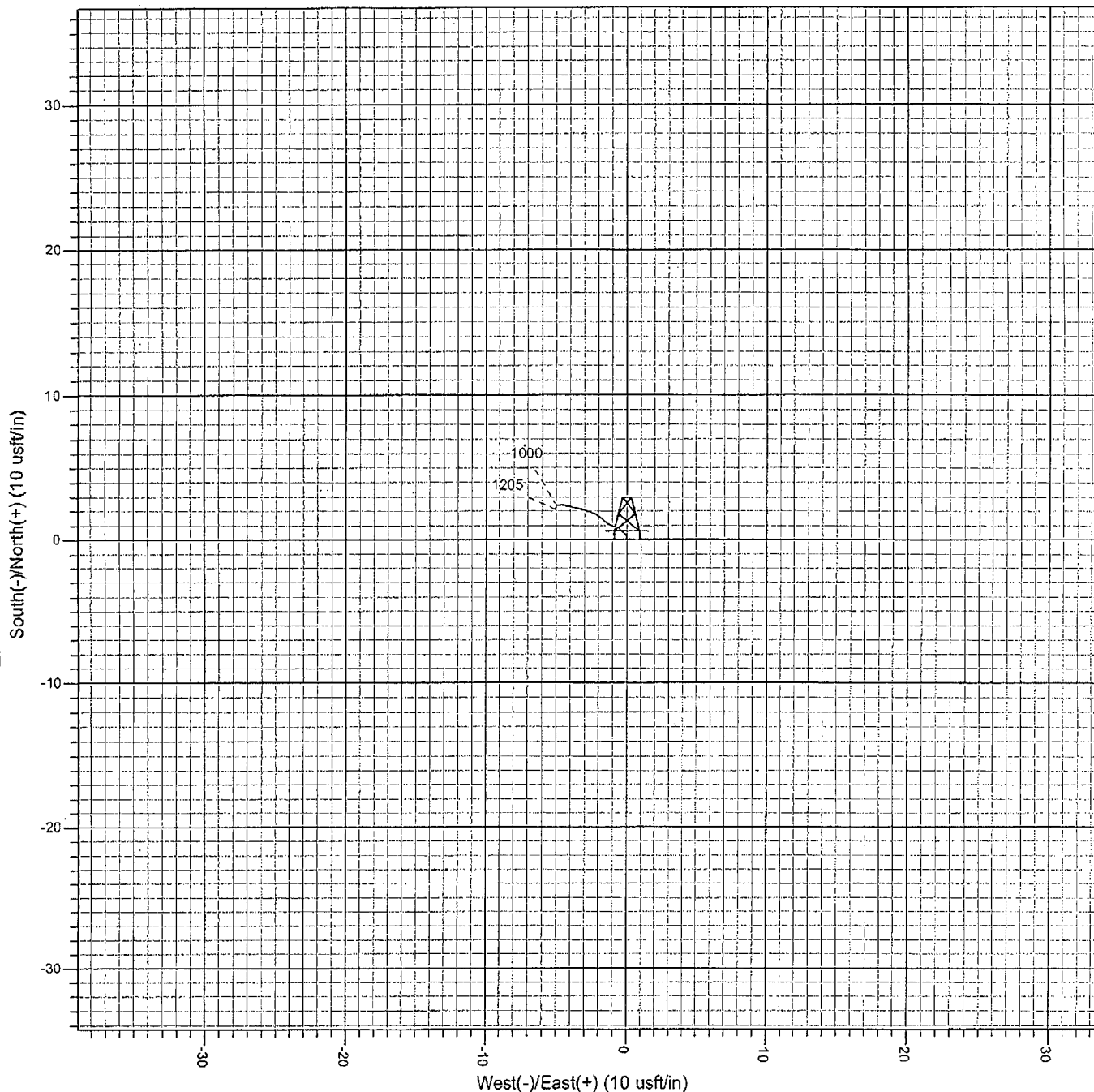
Project: Eunice
Lea County, NM (True North)
Well: Northeast Drinkard Unit #727
Wellbore: VH - Job #321013-KW-1113
Design: VH - Job #321013-KW-1113

WELL DETAILS: Northeast Drinkard Unit #727

WELL @ 0.0usft (Original Well Elev)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	538656.96	865479.17	32° 28' 31.080 N	103° 8' 53.628 W	



PROJECT DETAILS: Eunice	SITE DETAILS: Lea County, NM (True North)
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 28' 31.080 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 103° 8' 53.628 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.0
Zone: New Mexico East 3001	Convergence: 0.64
System Datum: Mean Sea Level	Local North: True

HOBBES OGD

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Apache Corporation

Lea County, NM (NAD83 NME)

NEDU

#727D

WB1/Job #1311427

Survey: Phoenix MWD Survey

Phoenix Final Survey Report

29 October, 2013

Phoenix Technology Services

Phoenix Final Survey Report

Company: Apache Corporation	Local Co-ordinate Reference: Well #727D
Project: Lea County, NM (NAD83 NME)	TVD Reference: KB @ 3426.00usft (Capstar 120)
Site: NEDU	MD Reference: KB @ 3426.00usft (Capstar 120)
Well: #727D	North Reference: Grid
Wellbore: WB1/Job #1311427	Survey Calculation Method: Minimum Curvature
Design: Surveys (Capstar 120)	Database: GCR DB

Project: Lea County, NM (NAD83 NME)

Map System: US State Plane 1983	System Datum: Mean Sea Level
Geo Datum: North American Datum 1983	
Map Zone: New Mexico Eastern Zone	

Site: NEDU

Site Position:	Northing: 549,246.17 usft	Latitude: 32° 30' 15.55234 N
From: Map	Easting: 907,874.81 usft	Longitude: 103° 8' 39.81023 W
Position Uncertainty: 0.00 usft	Slot Radius: 13-3/16"	Grid Convergence: 0.64 °

Well: #727D

Well Position	Northing: 538,593.78 usft	Latitude: 32° 28' 30.28401 N
+N/-S 0.00 usft	Easting: 906,773.41 usft	Longitude: 103° 8' 54.05115 W
+E/-W 0.00 usft	Wellhead Elevation: usft	Ground Level: 3,415.00 usft
Position Uncertainty 0.00 usft		

Wellbore: WB1/Job #1311427

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	10/21/13	7.11	60.43	48,577

Design: Surveys (Capstar 120)

Audit Notes:

Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.00
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	271.47

Survey Program: Date 10/29/13

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
1,390.00	6,875.00	Phoenix MWD Survey (WB1/Job #131142)	MWD	MWD - Standard

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,254.00	0.15	67.50	1,253.98	3.61	3.79	-3.70	0.00
Tie-on to Gyro							
1,390.00	0.20	118.50	1,389.98	3.56	4.16	-4.07	0.12
First Phoenix MWD Survey							
1,475.00	0.10	168.30	1,474.98	3.42	4.31	-4.22	0.18
1,561.00	1.10	249.10	1,560.97	3.05	3.55	-3.47	1.27
1,646.00	1.20	248.20	1,645.96	2.43	1.96	-1.90	0.12
1,731.00	1.20	277.30	1,730.94	2.21	0.25	-0.20	0.71
1,817.00	0.80	275.90	1,816.93	2.39	-1.24	1.30	0.47
1,902.00	1.70	283.90	1,901.90	2.75	-3.05	3.12	1.08
1,987.00	2.30	261.30	1,986.85	2.80	-5.96	6.03	1.15
2,073.00	2.20	259.20	2,072.79	2.23	-9.29	9.34	0.15

Phoenix Technology Services

Phoenix Final Survey Report

Company: Apache Corporation
 Project: Lea County, NM (NAD83 NME)
 Site: NEDU
 Well: #727D
 Wellbore: WB1/Job #1311427
 Design: Surveys (Capstar 120)

Local Co-ordinate Reference: Well #727D
 TVD Reference: KB @ 3426.00usft (Capstar 120)
 MD Reference: KB @ 3426.00usft (Capstar 120)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: GCR DB

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,158.00	2.10	258.70	2,157.73	1.62	-12.42	12.45	0.12
2,243.00	1.90	256.00	2,242.68	0.97	-15.31	15.33	0.26
2,329.00	1.50	253.00	2,328.64	0.30	-17.77	17.77	0.48
2,414.00	2.40	279.00	2,413.59	0.25	-20.59	20.59	1.46
2,499.00	2.30	282.70	2,498.52	0.90	-24.01	24.03	0.21
2,584.00	2.10	278.10	2,583.46	1.50	-27.22	27.25	0.31
2,670.00	1.70	278.50	2,669.41	1.91	-30.04	30.08	0.47
2,755.00	1.60	269.50	2,754.37	2.09	-32.48	32.52	0.33
2,841.00	1.60	260.70	2,840.34	1.88	-34.86	34.90	0.29
2,926.00	1.30	262.60	2,925.31	1.57	-36.99	37.02	0.36
3,011.00	1.20	269.60	3,010.29	1.43	-38.83	38.86	0.21
3,097.00	1.00	263.30	3,096.28	1.34	-40.48	40.50	0.27
3,182.00	1.00	259.30	3,181.26	1.12	-41.95	41.96	0.08
3,267.00	0.70	250.00	3,266.25	0.80	-43.16	43.17	0.39
3,353.00	0.70	298.30	3,352.25	0.87	-44.12	44.13	0.67
3,437.00	0.90	254.60	3,436.24	0.94	-45.21	45.22	0.74
3,522.00	1.00	246.40	3,521.23	0.46	-46.53	46.53	0.20
3,608.00	1.20	279.90	3,607.21	0.32	-48.10	48.10	0.77
3,694.00	0.90	264.30	3,693.20	0.41	-49.66	49.66	0.48
3,778.00	0.80	278.10	3,777.19	0.42	-50.90	50.89	0.27
3,863.00	0.90	269.40	3,862.18	0.50	-52.16	52.15	0.19
3,948.00	0.80	263.90	3,947.17	0.43	-53.41	53.41	0.15
4,033.00	1.50	280.70	4,032.15	0.57	-55.10	55.09	0.91
4,119.00	1.40	268.70	4,118.13	0.76	-57.25	57.25	0.37
4,204.00	1.50	266.60	4,203.10	0.67	-59.40	59.40	0.13
4,290.00	1.20	259.20	4,289.08	0.43	-61.41	61.40	0.40
4,375.00	1.40	260.80	4,374.05	0.10	-63.31	63.29	0.24
4,461.00	1.30	264.40	4,460.03	-0.16	-65.32	65.29	0.15
4,546.00	1.40	260.20	4,545.01	-0.43	-67.30	67.27	0.17
4,632.00	1.30	255.60	4,630.98	-0.85	-69.28	69.24	0.17
4,717.00	1.40	250.90	4,715.96	-1.43	-71.20	71.13	0.18
4,803.00	1.20	256.70	4,801.94	-1.98	-73.06	72.99	0.28
4,888.00	1.30	248.50	4,886.92	-2.54	-74.83	74.74	0.24
4,973.00	1.10	252.80	4,971.90	-3.14	-76.50	76.40	0.26
5,058.00	1.10	255.70	5,056.88	-3.58	-78.07	77.96	0.07
5,144.00	1.50	274.90	5,142.86	-3.69	-80.00	79.87	0.68
5,228.00	1.40	275.20	5,226.83	-3.50	-82.11	82.00	0.12
5,314.00	1.60	281.80	5,312.80	-3.16	-84.33	84.23	0.31
5,399.00	1.50	284.70	5,397.77	-2.64	-86.57	86.48	0.15
5,484.00	1.30	282.00	5,482.75	-2.15	-88.59	88.51	0.25
5,569.00	1.20	285.70	5,567.73	-1.71	-90.39	90.32	0.15
5,655.00	1.20	286.10	5,653.71	-1.22	-92.12	92.06	0.01
5,740.00	1.20	289.60	5,738.69	-0.67	-93.82	93.77	0.09
5,826.00	1.20	292.60	5,824.67	-0.02	-95.50	95.46	0.07
5,911.00	1.30	289.00	5,909.65	0.63	-97.23	97.21	0.15

Phoenix Technology Services

Phoenix Final Survey Report

Company: Apache Corporation
 Project: Lea County, NM (NAD83 NME)
 Site: NEDU
 Well: #727D
 Wellbore: WB1/Job #1311427
 Design: Surveys (Capstar 120)

Local Co-ordinate Reference: Well #727D
 TVD Reference: KB @ 3426.00usft (Capstar 120)
 MD Reference: KB @ 3426.00usft (Capstar 120)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: GCR DB

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,996.00	1.50	283.80	5,994.62	1.21	-99.22	99.22	0.28
6,081.00	1.20	290.40	6,079.60	1.79	-101.14	101.15	0.40
6,167.00	1.20	293.30	6,165.58	2.46	-102.81	102.84	0.07
6,251.00	1.00	301.20	6,249.57	3.18	-104.24	104.29	0.30
6,337.00	1.00	300.50	6,335.55	3.95	-105.53	105.60	0.01
6,422.00	1.00	290.30	6,420.54	4.59	-106.87	106.95	0.21
6,508.00	1.00	287.60	6,506.53	5.07	-108.29	108.38	0.05
6,593.00	1.00	278.60	6,591.52	5.41	-109.73	109.83	0.18
6,678.00	0.80	271.20	6,676.50	5.53	-111.05	111.16	0.27
6,763.00	0.80	299.80	6,761.50	5.84	-112.16	112.27	0.46
6,826.00	0.40	319.30	6,824.49	6.23	-112.69	112.81	0.70
Last Phoenix MWD Survey							
6,875.00	0.40	319.30	6,873.49	6.49	-112.91	113.04	0.00
Projection to TD							

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,254.00	1,253.98	3.61	3.79	Tie-on to Gyro
1,390.00	1,389.98	3.56	4.16	First Phoenix MWD Survey
6,826.00	6,824.49	6.23	-112.69	Last Phoenix MWD Survey
6,875.00	6,873.49	6.49	-112.91	Projection to TD

Checked By: _____ Approved By: _____ Date: _____