

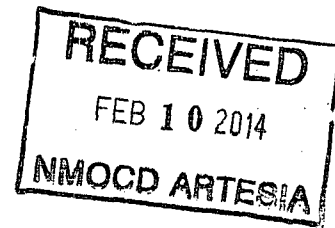
A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

30-015-40123

November 14, 2013

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701



Attn: Kanicia Castillo

RE: Clydesdale 1 Fee No. 003H

Please find enclosed a copy of the survey from 0.00' to 2151.00' ran on the above referenced well.

Sincerely,

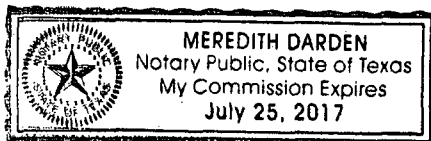

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 14th day of November, A.D., 2013, by Keith Havelka.



Meredith Darden
Notary Public, State of Texas



Company: COG Operating, LLC (Concho)

Lease/Well: Clydesdale 1 Fee/No. 003H



Rig Name: Silver Oak 3

State/County: New Mexico/Eddy

Latitude: 32.69, Longitude: -104.43

GRID North is 0.05 Degrees West of True North

VS-Azi: 0.00 Degrees



Depth Reference : RKB = 18ft

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: clydesdale1fee#3h.ut

Minimum Curvature Method

Report Date/Time: 11/14/2013 / 09:57

Vaughn Energy Services

Fort Worth, Texas

817-741-3610

Surveyor: Jay Carroll

Clydesdale 1 Fee No. 003H / API 30-015-40123

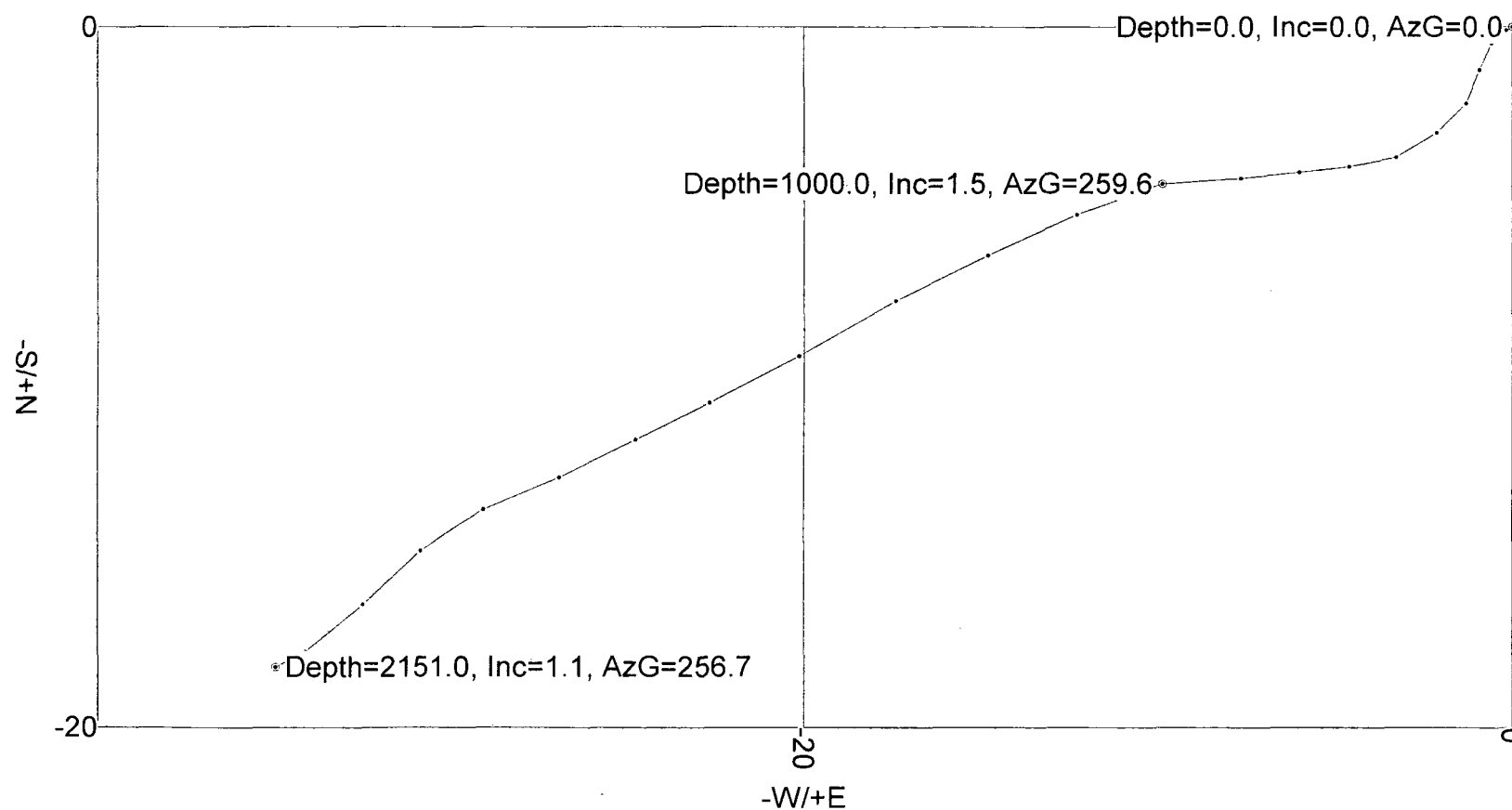


Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.22	242.90	100.00	-0.09	-0.17	-0.09	0.19	242.90	0.22
200.00	0.43	221.22	200.00	-0.46	-0.59	-0.46	0.75	232.22	0.24
300.00	0.56	191.37	299.99	-1.22	-0.94	-1.22	1.54	217.55	0.28
400.00	0.65	211.64	399.99	-2.18	-1.33	-2.18	2.55	211.42	0.23
500.00	0.74	237.15	499.98	-3.00	-2.16	-3.00	3.70	215.77	0.32
600.00	0.81	240.14	599.97	-3.70	-3.32	-3.70	4.97	221.85	0.08
700.00	0.82	276.88	699.96	-3.97	-4.64	-3.97	6.11	229.45	0.51
800.00	0.85	250.37	799.95	-4.13	-6.05	-4.13	7.32	235.64	0.38
900.00	1.09	274.44	899.94	-4.31	-7.69	-4.31	8.81	240.74	0.47
1000.00	1.46	259.55	999.91	-4.47	-9.89	-4.47	10.85	245.70	0.50
1100.00	1.53	241.17	1099.88	-5.34	-12.32	-5.34	13.42	246.55	0.48
1200.00	1.64	248.88	1199.84	-6.50	-14.82	-6.50	16.18	246.31	0.24
1300.00	1.68	237.95	1299.80	-7.80	-17.40	-7.80	19.07	245.86	0.32
1400.00	1.94	241.61	1399.75	-9.38	-20.14	-9.38	22.22	245.02	0.28
1500.00	1.34	242.64	1499.71	-10.73	-22.67	-10.73	25.08	244.68	0.60
1600.00	1.34	244.06	1599.68	-11.77	-24.75	-11.77	27.41	244.56	0.03
1700.00	1.42	243.24	1699.65	-12.84	-26.91	-12.84	29.82	244.49	0.09
1800.00	1.24	250.79	1799.63	-13.76	-29.04	-13.76	32.14	244.65	0.25

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.29	223.54	1899.60	-14.93	-30.84	-14.93	34.27	244.17	0.60
2000.00	1.29	230.44	1999.58	-16.47	-32.49	-16.47	36.43	243.12	0.16
2100.00	1.15	230.34	2099.55	-17.83	-34.13	-17.83	38.51	242.42	0.15
2151.00	1.10	256.67	2150.55	-18.27	-35.00	-18.27	39.48	242.44	1.01



Vaughn Energy Services
Fort Worth, Texas
817-741-3610
Surveyor: Jay Carroll
Clydesdale 1 Fee No. 003H / API 30-015-40123





PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

November 13, 2013

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Clydesdale 1 Fee #3H
1700' FNL & 150' FEL
Sec. 1, T19S, R25E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

Very truly yours,

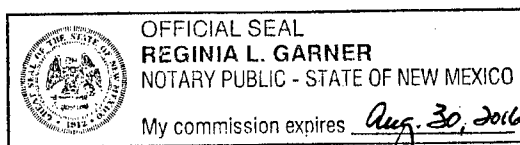
A handwritten signature in cursive script, appearing to read "Eddie LaRue".

Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 13th day of November, 2013.

A handwritten signature in cursive script, appearing to read "Regina L. Garner".

Notary Public

CLYDESDALE 1 FEE # 3 H

Date	Depth	Deviation	Direction
11/1/2013	116	0.40	0.00
11/1/2013	208	0.30	0.00
11/1/2013	300	0.60	0.00
11/1/2013	391	0.50	0.00
11/1/2013	480	0.30	0.00
11/1/2013	571	0.30	0.00
11/1/2013	661	0.40	0.00
11/1/2013	813	0.90	0.00
11/1/2013	1031	0.90	0.00
11/3/2013	1283	1.60	0.00
11/3/2013	1532	1.20	0.00
11/3/2013	1999	1.00	0.00
11/4/2013	2220	1.00	254.20
11/4/2013	2439	11.20	259.10
11/4/2013	2470	14.70	259.70
11/4/2013	2501	17.90	258.70
11/4/2013	2532	20.90	258.40
11/4/2013	2564	23.70	258.20
11/4/2013	2595	26.90	255.50
11/5/2013	2626	30.50	254.20
11/5/2013	2658	34.30	255.10
11/5/2013	2699	37.90	257.30
11/5/2013	2721	40.70	259.90
11/5/2013	2752	43.70	261.70
11/5/2013	2783	47.00	264.20
11/5/2013	2939	61.80	273.90
11/5/2013	2970	65.20	275.60
11/5/2013	3001	68.30	277.10
11/5/2013	3032	71.00	278.00
11/5/2013	3063	74.60	278.80
11/5/2013	3094	78.30	278.90
11/6/2013	3489	92.80	273.10
11/6/2013	3520	92.70	272.80
11/6/2013	3551	92.80	270.80
11/6/2013	3582	92.80	270.60
11/6/2013	3677	92.40	267.90
11/6/2013	3771	92.50	267.80
11/6/2013	3865	92.50	267.80
11/6/2013	3958	92.30	267.30
11/6/2013	4052	92.20	267.20
11/6/2013	4145	92.30	267.10
11/6/2013	4239	92.40	266.80
11/6/2013	4333	92.50	266.90

Date	Depth	Deviation	Direction
11/6/2013	4427	92.20	268.10
11/7/2013	4521	91.90	267.80
11/7/2013	4614	91.30	268.90
11/7/2013	4708	90.90	269.40
11/7/2013	4802	91.60	270.30
11/7/2013	4896	92.20	271.20
11/7/2013	4990	92.30	270.90
11/7/2013	5084	92.60	271.40
11/7/2013	5177	93.10	271.60
11/7/2013	5270	93.10	271.50
11/7/2013	5364	93.00	271.40
11/8/2013	5457	93.00	271.10
11/8/2013	5551	93.20	271.40
11/8/2013	5644	93.20	271.00
11/8/2013	5737	93.10	271.10
11/8/2013	5830	93.10	271.20
11/8/2013	5924	93.10	270.50
11/8/2013	6018	92.90	270.40
11/9/2013	6112	92.90	270.00
11/9/2013	6205	92.20	270.00
11/9/2013	6298	92.00	271.10
11/9/2013	6392	92.10	270.80
11/9/2013	6487	92.30	270.30
11/9/2013	6580	92.30	271.00
11/9/2013	6673	92.70	270.60
11/9/2013	6766	92.60	270.80
11/9/2013	6860	92.70	270.90
11/9/2013	6954	93.10	270.10
11/9/2013	7048	92.80	270.60
11/10/2013	7141	92.80	271.50
11/10/2013	7234	91.20	270.80
11/10/2013	7328	90.90	270.20



COG Operating LLC

Eddy County, New Mexico (NAD 27 NME)

Clydesdale 1 Fee

#3H

WB1/Job #1311463

Survey: Phoenix MWD Survey

Phoenix Final Survey Report

12 November, 2013





Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3435.00usft (Silver Oak 3)
Site:	Clydesdale 1 Fee	MD Reference:	KB @ 3435.00usft (Silver Oak 3)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1311463	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR:DB

Project	Eddy County, New Mexico (NAD 27 NME)		
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	Clydesdale 1 Fee		
Site Position:		Northing:	616,840.10 usft
From:	Map	Easting:	470,401.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 41' 44.71785 N
		Longitude:	104° 25' 46.36892 W
		Grid Convergence:	-0.05 °

Well	#3H		
Well Position	+N-S	0.00 usft	Northing:
	+E-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 41' 31.65752 N
		Longitude:	104° 25' 46.46725 W
		Ground Level:	3,417.00 usft

Wellbore	WB1/Job #1311463		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	10/15/13	7.73
			Dip Angle
			(°)
			60.41
			Field Strength
			(nT)
			48,569

Design	Surveys (Silver Oak 3)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/S	+E/W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			242.44

Survey Program	Date 11/10/13		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	2,151.00	Gyro Survey (WB1/Job #1311463)	NS-GYRO-MS
2,220.00	7,480.00	Phoenix MWD Survey (WB1/Job #131146)	MWD
			Description
			North sensing gyrocompassing m/s
			MWD - Standard

Survey	MD	Inc	Azi (azimuth)	TVD	N/S	E/W	V. Sec	DLeg
	(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)
	2,151.00	1.10	256.67	2,150.55	-18.27	-35.00	39.48	0.00
Tie-on to Gyro								
	2,220.00	1.00	254.20	2,219.53	-18.58	-36.22	40.71	0.16
First Phoenix MWD Survey								
	2,283.00	3.60	255.40	2,282.48	-19.23	-38.67	43.18	4.13
	2,314.00	3.80	258.90	2,313.41	-19.67	-40.62	45.11	0.97
	2,345.00	4.20	259.00	2,344.34	-20.09	-42.74	47.18	1.29
	2,376.00	6.10	257.70	2,375.21	-20.66	-45.46	49.86	6.14
	2,407.00	8.40	257.40	2,405.96	-21.50	-49.28	53.64	7.42
	2,439.00	11.20	259.10	2,437.49	-22.60	-54.62	58.87	8.80
	2,470.00	14.70	259.70	2,467.70	-23.87	-61.45	65.52	11.30



Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3435'00usft (Silver Oak 3)
Site:	Clydesdale 1 Fee	MD Reference:	KB @ 3435'00usft (Silver Oak 3)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1311463	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR-DB

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (%/100usft)
2,501.00	17.90	258.70	2,497.45	-25.51	-69.99	73.85	10.36
2,532.00	20.90	258.40	2,526.68	-27.55	-80.08	83.74	9.68
2,564.00	23.70	258.20	2,556.29	-30.02	-91.97	95.42	8.75
2,595.00	26.90	255.50	2,584.31	-33.05	-104.86	108.25	10.97
2,626.00	30.50	254.20	2,611.50	-36.95	-119.22	122.79	11.79
2,658.00	34.30	255.10	2,638.51	-41.48	-135.76	139.54	11.97
2,689.00	37.90	257.30	2,663.56	-45.82	-153.49	157.27	12.34
2,721.00	40.70	259.90	2,688.32	-49.81	-173.36	176.73	10.15
2,752.00	43.70	261.70	2,711.28	-53.13	-193.91	196.49	10.43
2,783.00	47.00	264.20	2,733.07	-55.82	-215.79	217.13	12.09
2,814.00	50.30	266.40	2,753.55	-57.72	-238.98	238.56	11.90
2,845.00	53.40	269.00	2,772.70	-58.68	-263.33	260.60	11.98
2,876.00	56.40	271.70	2,790.52	-58.52	-288.69	283.00	12.02
2,908.00	59.20	273.00	2,807.57	-57.40	-315.74	306.47	9.40
2,939.00	61.80	273.90	2,822.84	-55.78	-342.67	329.59	8.76
2,970.00	65.20	275.60	2,836.67	-53.47	-370.31	353.03	12.02
3,001.00	68.30	277.10	2,848.90	-50.32	-398.61	376.66	10.94
3,032.00	71.00	278.00	2,859.68	-46.50	-427.42	400.43	9.13
3,063.00	74.60	278.80	2,868.85	-42.17	-456.72	424.39	11.87
3,094.00	78.30	278.90	2,876.11	-37.54	-486.49	448.64	11.94
3,125.00	81.50	278.70	2,881.55	-32.87	-516.64	473.22	10.34
3,156.00	84.70	279.30	2,885.27	-28.05	-547.04	497.93	10.50
3,188.00	88.40	279.50	2,887.20	-22.84	-578.54	523.45	11.58
3,207.00	90.40	279.40	2,887.39	-19.72	-597.28	538.62	10.54
3,238.00	92.90	280.10	2,886.50	-14.47	-627.82	563.26	8.37
3,270.00	93.30	277.90	2,884.77	-9.47	-659.38	588.93	6.98
3,301.00	93.40	278.00	2,882.96	-5.19	-690.03	614.12	0.46
3,395.00	93.20	275.30	2,877.55	5.67	-783.23	691.71	2.88
3,489.00	92.80	273.10	2,872.63	12.55	-876.85	771.52	2.38
3,582.00	92.80	270.60	2,868.08	15.55	-969.68	852.43	2.68
3,677.00	92.40	267.90	2,863.77	14.30	-1,064.56	937.12	2.87
3,771.00	92.50	267.80	2,859.75	10.78	-1,158.41	1,021.95	0.15
3,865.00	92.50	267.80	2,855.65	7.18	-1,252.25	1,106.81	0.00
3,958.00	92.30	267.30	2,851.76	3.20	-1,345.09	1,190.94	0.58
4,052.00	92.20	267.20	2,848.07	-1.30	-1,438.91	1,276.20	0.15
4,145.00	92.30	267.10	2,844.42	-5.92	-1,531.72	1,360.61	0.15
4,239.00	92.40	266.80	2,840.56	-10.92	-1,625.51	1,446.07	0.34
4,333.00	92.50	266.90	2,836.55	-16.08	-1,719.28	1,531.59	0.15
4,427.00	92.20	268.10	2,832.69	-20.18	-1,813.11	1,616.66	1.31
4,521.00	91.90	267.80	2,829.33	-23.54	-1,906.99	1,701.44	0.45
4,614.00	91.30	268.90	2,826.73	-26.21	-1,999.91	1,785.06	1.35
4,708.00	90.90	269.40	2,824.93	-27.61	-2,093.88	1,869.01	0.68
4,802.00	91.60	270.30	2,822.88	-27.85	-2,187.86	1,952.43	1.21
4,896.00	92.20	271.20	2,819.76	-26.63	-2,281.80	2,035.14	1.15



Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3435.00usft (Silver Oak 3)
Site:	Clydesdale, 1 Fee	MD Reference:	KB @ 3435.00usft (Silver Oak 3)
Well:	#3H	North Reference:	Grid
Wellbore Design:	WB1/Job #1311463 Surveys(Silver Oak 3)	Survey Calculation Method:	Minimum Curvature
		Database:	GCR-DB

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,990.00	92.30	270.90	2,816.07	-24.90	-2,375.71	2,117.60	0.34
5,084.00	92.60	271.40	2,812.05	-23.02	-2,469.60	2,199.96	0.62
5,177.00	93.10	271.60	2,807.43	-20.59	-2,562.46	2,281.15	0.58
5,270.00	93.10	271.50	2,802.40	-18.08	-2,655.29	2,362.28	0.11
5,364.00	93.00	271.40	2,797.40	-15.70	-2,749.12	2,444.37	0.15
5,457.00	93.00	271.10	2,792.53	-13.67	-2,841.97	2,525.75	0.32
5,551.00	93.20	271.40	2,787.45	-11.63	-2,935.81	2,607.99	0.38
5,644.00	93.20	271.00	2,782.25	-9.68	-3,028.65	2,689.39	0.43
5,737.00	93.10	271.10	2,777.14	-7.98	-3,121.49	2,770.91	0.15
5,830.00	93.10	271.20	2,772.11	-6.12	-3,214.34	2,852.35	0.11
5,924.00	93.10	270.50	2,767.03	-4.72	-3,308.19	2,934.91	0.74
6,018.00	92.90	270.40	2,762.11	-3.99	-3,402.06	3,017.78	0.24
6,111.00	92.90	270.00	2,757.41	-3.66	-3,494.94	3,099.97	0.43
6,205.00	92.20	270.00	2,753.22	-3.66	-3,588.84	3,183.22	0.74
6,298.00	92.00	271.10	2,749.82	-2.77	-3,681.78	3,265.19	1.20
6,392.00	92.10	270.80	2,746.45	-1.21	-3,775.70	3,347.73	0.34
6,487.00	92.30	270.30	2,742.81	-0.30	-3,870.63	3,431.46	0.57
6,580.00	92.30	271.00	2,739.07	0.75	-3,963.55	3,513.35	0.75
6,673.00	92.70	270.60	2,735.02	2.05	-4,056.45	3,595.11	0.61
6,766.00	92.60	270.80	2,730.72	3.18	-4,149.34	3,676.93	0.24
6,860.00	92.70	270.90	2,726.37	4.58	-4,243.23	3,759.52	0.15
6,954.00	93.20	270.10	2,721.53	5.40	-4,337.10	3,842.36	1.00
7,048.00	92.80	270.60	2,716.62	5.97	-4,430.97	3,925.31	0.68
7,141.00	92.80	271.50	2,712.07	7.67	-4,523.84	4,006.85	0.97
7,234.00	91.20	270.80	2,708.83	9.54	-4,616.76	4,088.36	1.88
7,328.00	90.90	270.20	2,707.10	10.36	-4,710.74	4,171.30	0.71
7,410.00	91.50	270.40	2,705.39	10.79	-4,792.73	4,243.77	0.77
Last Phoenix MWD Survey							
7,480.00	91.50	270.40	2,703.55	11.27	-4,862.70	4,305.58	0.00
Projection to TD							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,151.00	2,150.55	-18.27	-35.00	Tie-on to Gyro
2,220.00	2,219.53	-18.58	-36.22	First Phoenix MWD Survey
7,410.00	2,705.39	10.79	-4,792.73	Last Phoenix MWD Survey
7,480.00	2,703.55	11.27	-4,862.70	Projection to TD

Checked By: _____ Approved By: _____ Date: _____