



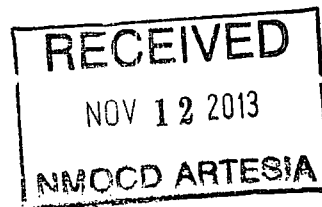
A GYRO TECHNOLOGIES INC. COMPANY

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

15-41272

July 2, 2013

COG Operating LLC (Concho)
One Concho Center
600 W. Illinois Avenue
Midland, TX 79701



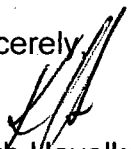
Attn: Kanicia Castillo

Re: **Tex Mack 11 Federal No 118H**

Please find enclosed a copy of the survey from 0' to 5,841' ran on the above referenced well.

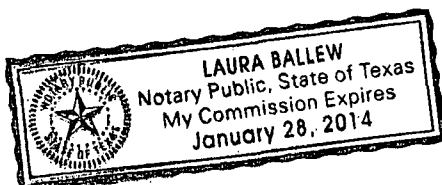
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

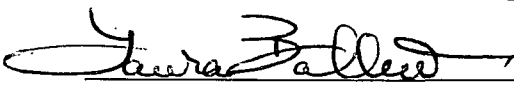
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 2nd day of July, A.D., 2013, by Keith Havelka.





Laura Balley
Notary Public, State of Texas



Company: COG Operating (Concho) LLC
Lease/Well: Tex Mack 11 Federal/No 118H
Location: S-11 T17S R31E
Rig Name: Silver Oak 3
State/County: New Mexico /Eddy
Latitude: 32.84, Longitude: -103.85
GRID North is 0.26 Degrees East of True North
VS-Azi: 0.00 Degrees



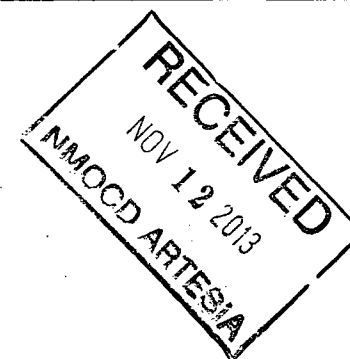
Depth Reference : RKB=17 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: final survey .ut
Minimum Curvature Method
Report Date/Time: 7/2/2013 / 12:45

Vaughn Energy Services
Fort Worth, Texas
817-741-3610

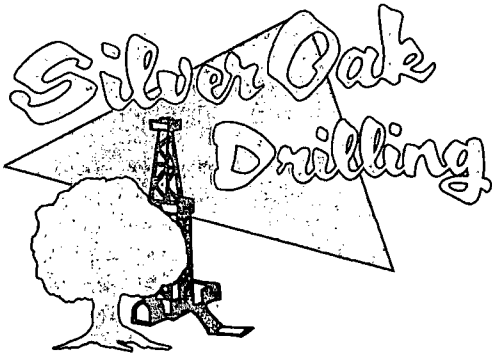
Surveyor: Tim Kaczor
Tex Mack 11 Federal No 118H / API 30-015-41272



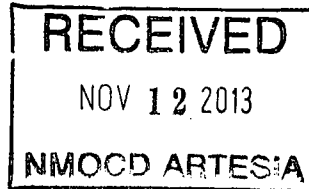
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.47	119.39	100.00	-0.20	0.36	-0.20	0.41	119.39	0.47
200.00	0.48	169.56	200.00	-0.82	0.79	-0.82	1.14	135.93	0.40
300.00	0.42	171.31	299.99	-1.60	0.92	-1.60	1.84	149.92	0.07
400.00	0.79	197.22	399.99	-2.62	0.77	-2.62	2.73	163.54	0.46
500.00	0.84	183.29	499.98	-4.01	0.53	-4.01	4.05	172.52	0.20
600.00	0.60	181.42	599.97	-5.27	0.47	-5.27	5.29	174.88	0.24
700.00	0.69	180.09	699.96	-6.39	0.46	-6.39	6.41	175.90	0.10
800.00	0.53	177.78	799.96	-7.46	0.48	-7.46	7.47	176.35	0.17
900.00	0.45	187.31	899.95	-8.30	0.44	-8.30	8.32	176.94	0.11
1000.00	0.45	172.54	999.95	-9.08	0.44	-9.08	9.09	177.20	0.11
1100.00	0.44	187.75	1099.95	-9.84	0.44	-9.84	9.85	177.42	0.12
1200.00	0.41	175.02	1199.94	-10.58	0.42	-10.58	10.59	177.71	0.10
1300.00	0.25	158.51	1299.94	-11.14	0.53	-11.14	11.15	177.26	0.19
1400.00	0.26	109.19	1399.94	-11.42	0.83	-11.42	11.45	175.85	0.21
1500.00	0.32	55.77	1499.94	-11.34	1.27	-11.34	11.41	173.59	0.27
1600.00	0.56	46.23	1599.94	-10.84	1.86	-10.84	11.00	170.27	0.25
1700.00	0.81	57.15	1699.93	-10.12	2.81	-10.12	10.50	164.48	0.28
1800.00	0.73	56.80	1799.92	-9.38	3.94	-9.38	10.18	157.25	0.09

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	0.64	55.07	1899.91	-8.72	4.92	-8.72	10.01	150.54	0.09
2000.00	0.37	32.59	1999.91	-8.13	5.56	-8.13	9.84	145.64	0.33
2100.00	0.35	29.44	2099.91	-7.59	5.88	-7.59	9.60	142.24	0.03
2200.00	0.10	25.38	2199.91	-7.25	6.06	-7.25	9.45	140.08	0.25
2300.00	0.12	357.43	2299.91	-7.07	6.10	-7.07	9.33	139.22	0.05
2400.00	0.15	300.83	2399.91	-6.90	5.98	-6.90	9.13	139.09	0.13
2500.00	0.15	262.87	2499.91	-6.85	5.74	-6.85	8.94	140.05	0.10
2600.00	0.26	304.36	2599.91	-6.74	5.42	-6.74	8.65	141.20	0.17
2700.00	0.46	305.24	2699.90	-6.38	4.91	-6.38	8.05	142.45	0.20
2800.00	0.45	309.54	2799.90	-5.90	4.28	-5.90	7.29	144.07	0.04
2900.00	0.71	310.35	2899.90	-5.26	3.51	-5.26	6.32	146.28	0.26
3000.00	0.57	314.31	2999.89	-4.51	2.68	-4.51	5.25	149.25	0.14
3100.00	0.90	309.75	3099.88	-3.66	1.72	-3.66	4.05	154.78	0.33
3200.00	0.75	315.35	3199.87	-2.70	0.66	-2.70	2.78	166.16	0.17
3300.00	0.74	312.26	3299.86	-1.80	-0.27	-1.80	1.82	188.62	0.04
3400.00	0.89	311.90	3399.85	-0.84	-1.33	-0.84	1.58	237.61	0.15
3500.00	0.86	310.86	3499.84	0.17	-2.48	0.17	2.48	273.88	0.03
3600.00	0.78	308.32	3599.83	1.08	-3.58	1.08	3.74	286.82	0.09
3700.00	0.66	306.76	3699.82	1.85	-4.57	1.85	4.93	291.99	0.13
3800.00	0.60	308.94	3799.82	2.52	-5.44	2.52	5.99	294.84	0.06
3900.00	0.80	305.42	3899.81	3.25	-6.41	3.25	7.19	296.87	0.21
4000.00	0.65	293.87	3999.80	3.89	-7.51	3.89	8.45	297.38	0.21
4100.00	0.68	305.18	4099.79	4.46	-8.51	4.46	9.61	297.65	0.13
4200.00	0.63	305.07	4199.79	5.12	-9.45	5.12	10.75	298.44	0.05
4300.00	0.42	306.96	4299.78	5.66	-10.19	5.66	11.66	299.03	0.21
4400.00	0.35	306.32	4399.78	6.06	-10.74	6.06	12.33	299.44	0.07
4500.00	0.52	310.46	4499.78	6.54	-11.33	6.54	13.08	299.98	0.17
4600.00	0.33	291.01	4599.78	6.93	-11.94	6.93	13.81	300.14	0.24
4700.00	0.22	250.37	4699.77	6.97	-12.38	6.97	14.21	299.37	0.21
4800.00	0.20	303.06	4799.77	7.00	-12.71	7.00	14.51	298.84	0.19
4900.00	0.23	346.72	4899.77	7.29	-12.90	7.29	14.82	299.48	0.16
5000.00	0.43	325.48	4999.77	7.80	-13.16	7.80	15.29	300.65	0.23
5100.00	0.42	319.25	5099.77	8.38	-13.61	8.38	15.98	301.63	0.05
5200.00	0.42	313.26	5199.77	8.91	-14.11	8.91	16.69	302.26	0.04
5300.00	0.35	306.04	5299.76	9.34	-14.63	9.34	17.36	302.56	0.08
5400.00	0.33	273.92	5399.76	9.54	-15.16	9.54	17.91	302.18	0.19
5500.00	0.27	295.49	5499.76	9.66	-15.66	9.66	18.40	301.68	0.12
5600.00	0.37	300.82	5599.76	9.93	-16.15	9.93	18.96	301.59	0.11
5700.00	0.34	301.82	5699.76	10.26	-16.69	10.26	19.59	301.58	0.03

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
5800.00	0.37	303.25	5799.76	10.59	-17.21	10.59	20.21	301.61	0.03
5841.00	0.31	326.50	5840.76	10.76	-17.39	10.76	20.44	301.75	0.36



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



July 16, 2013

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

RE: Tex Mack 11 Federal #118H
785' FSL & 290' FWL
Sec. 11, T17S, R31E
Eddy County, New Mexico

Dear Sir,

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

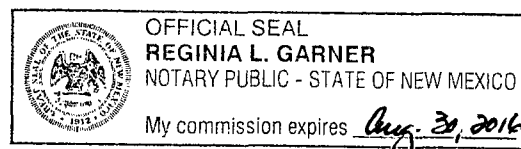
Very truly yours,

A handwritten signature in cursive script, appearing to read "Chris Graham".

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 16th day of July, 2013.

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

Tex Mack 11 Federal #118H

Date	Depth	Dev/Incl	Dir/Azm
6/19/2013	275	0.10	
6/19/2013	412	0.70	
6/19/2013	621	0.80	
6/21/2013	867	0.90	
6/21/2013	1110	0.30	
6/21/2013	1380	0.40	
6/22/2013	1629	0.50	
6/22/2013	1865	0.50	
6/23/2013	2179	0.50	
6/24/2013	2429	0.40	
6/24/2013	2678	0.60	
6/24/2013	2928	0.70	
6/25/2013	3396	0.50	
6/25/2013	3677	0.80	
6/26/2013	4584	0.20	
6/26/2013	4834	0.50	
6/26/2013	5084	0.30	
6/27/2013	5336	0.60	
6/27/2013	5586	0.40	
6/28/2013	5980	6.50	92.90
6/28/2013	6011	10.20	94.40
6/28/2013	6043	13.90	93.70
6/28/2013	6075	17.60	92.90
6/29/2013	6106	20.90	92.20
6/29/2013	6137	24.10	92.90
6/29/2013	6168	27.10	94.40
6/29/2013	6199	29.70	96.00
6/29/2013	6230	32.60	97.30
6/29/2013	6262	35.80	98.70
6/29/2013	6293	38.60	99.70
6/29/2013	6324	41.10	100.20
6/29/2013	6355	43.50	101.00
6/29/2013	6386	46.50	101.30
6/29/2013	6418	49.60	101.40
6/29/2013	6449	52.20	101.70
6/29/2013	6480	55.30	101.70
6/29/2013	6511	58.20	101.50
6/29/2013	6542	61.20	101.20
6/29/2013	6573	64.40	100.50
6/30/2013	6604	67.60	100.00
6/30/2013	6635	70.70	99.50
6/30/2013	6666	73.40	99.50
6/30/2013	6729	80.20	100.10

Date	Depth	Dev/Incl	Dir/Azm
6/30/2013	6760	84.00	100.00
7/1/2013	6812	89.00	100.10
7/1/2013	6998	89.90	98.80
7/1/2013	7093	92.20	93.90
7/1/2013	7186	92.10	93.50
7/1/2013	7280	92.60	93.30
7/1/2013	7374	91.80	94.50
7/2/2013	7469	92.00	94.20
7/2/2013	7562	90.10	94.90
7/2/2013	7655	90.00	95.20
7/3/2013	7749	90.00	95.30
7/3/2013	7843	89.50	95.20
7/3/2013	7937	89.30	95.20
7/3/2013	8030	90.70	95.00
7/5/2013	8217	91.00	94.40
7/5/2013	8311	90.90	93.90
7/5/2013	8404	91.20	93.30
7/5/2013	8498	91.60	92.50
7/7/2013	8780	91.70	93.20
7/7/2013	8965	90.90	93.30
7/8/2013	9246	90.90	94.70
7/8/2013	9340	91.90	93.90
7/8/2013	9433	90.40	94.10
7/9/2013	9527	90.60	94.40
7/9/2013	9621	89.30	93.70
7/9/2013	9715	88.60	93.40
7/9/2013	9809	90.10	94.00
7/9/2013	9902	90.00	92.90
7/10/2013	9996	91.20	93.00
7/10/2013	10090	91.50	93.70
7/10/2013	10183	91.30	93.40
7/11/2013	10276	91.70	95.40
7/11/2013	10370	91.50	95.50
7/11/2013	10464	91.50	95.90
7/11/2013	10558	91.00	95.90
7/11/2013	10651	89.90	95.80
7/11/2013	10754	90.10	95.20
7/11/2013	10847	89.80	95.00



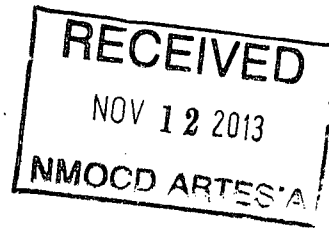
COG Operating LLC

Eddy County, New Mexico (NAD 27 NME)

Tex Mack 11 Federal

#118H

OH/Job #1310722



Survey: Phoenix MWD Survey

Phoenix Final Survey Report

12 July, 2013





Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #118H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3941.00usft (Silver Oak 3)
Site:	Tex. Mack 11 Federal	MD Reference:	KB @ 3941.00usft (Silver Oak 3)
Well:	#118H	North Reference:	Grid
Wellbore:	OH/Job #1310722	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:	Tex. Mack 11 Federal		
Site Position:	From:	Map	
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
Northings:	671,073.20 usft	Latitudes:	32° 50' 38.119164 N
Eastings:	649,227.70 usft	Longitudes:	103° 50' 50.801882 W
Grid Convergence:	0.26 °		

Well	#118H					
Well Position	+N/-S	0.00 usft	Northings:	671,073.20 usft	Latitude:	32° 50' 38.119164 N
	+E/-W	0.00 usft	Eastings:	649,227.70 usft	Longitude:	103° 50' 50.801882 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,923.00 usft

Wellbore:	OH/Job #1310722				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	06/12/13	7.52	60.66	48,756

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	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	94.95	

Survey Program	Date 07/12/13				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
200.00	5,841.00	VES Gyro (OH/Job #1310722)	VES-ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro	
5,917.00	10,921.00	Phoenix MWD Survey (OH/Job #1310722)	MWD	MWD - Standard	

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
	5,841.00	0.31	326.50	5,840.76	10.76	-18.03	-18.89	0.00
Tie-on to VES Gyro	5,917.00	0.70	40.70	5,916.75	11.29	-17.64	-18.75	0.90
First Phoenix MWD Survey	5,949.00	3.10	85.70	5,948.74	11.50	-16.85	-17.78	8.29
	5,980.00	6.50	92.90	5,979.62	11.48	-14.26	-15.20	11.12
	6,011.00	10.20	94.40	6,010.29	11.18	-9.77	-10.70	11.96
	6,043.00	13.90	93.70	6,041.58	10.71	-3.11	-4.02	11.57
	6,075.00	17.60	92.90	6,072.37	10.22	5.56	4.66	11.58
	6,106.00	20.90	92.20	6,101.63	9.77	15.77	14.87	10.67
	6,137.00	24.10	92.90	6,130.27	9.24	27.62	26.72	10.36



Phoenix Technology Services
Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #118H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3941.00usft (Silver Oak 3)
Site:	Tex-Mack 11 Federal	MD Reference:	KB @ 3941.00usft (Silver Oak 3)
Well:	#118H	North Reference:	Grid
Wellbore:	OH/Job #1310722	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR-DB

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
6,168.00	27.10	94.40	6,158.22	8.37	40.98	40.11	9.90
6,199.00	29.70	96.00	6,185.49	7.03	55.66	54.85	8.74
6,230.00	32.60	97.30	6,212.02	5.16	71.59	70.87	9.60
6,262.00	35.80	98.70	6,238.48	2.65	89.39	88.83	10.30
6,293.00	38.60	99.70	6,263.17	-0.35	107.89	107.52	9.24
6,324.00	41.10	100.20	6,286.97	-3.78	127.46	127.31	8.13
6,355.00	43.50	101.00	6,309.90	-7.62	147.96	148.07	7.93
6,386.00	46.50	101.30	6,331.82	-11.86	169.46	169.86	9.70
6,418.00	49.60	101.40	6,353.20	-16.55	192.80	193.50	9.69
6,449.00	52.20	101.70	6,372.75	-21.37	216.36	217.40	8.42
6,480.00	55.30	101.70	6,391.08	-26.43	240.84	242.22	10.00
6,511.00	58.20	101.50	6,408.08	-31.65	266.23	267.97	9.37
6,542.00	61.20	101.20	6,423.72	-36.91	292.47	294.57	9.71
6,573.00	64.40	100.50	6,437.88	-42.10	319.55	321.99	10.52
6,604.00	67.60	100.00	6,450.49	-47.14	347.41	350.18	10.43
6,636.00	70.70	99.50	6,461.88	-52.20	376.88	379.98	9.80
6,667.00	73.40	99.50	6,471.43	-57.07	405.97	409.38	8.71
6,698.00	76.90	99.70	6,479.38	-62.06	435.51	439.24	11.31
6,729.00	80.20	100.10	6,485.53	-67.29	465.43	469.50	10.72
6,765.00	84.00	100.00	6,490.48	-73.51	500.54	505.01	10.56
6,781.00	85.90	99.90	6,491.89	-76.26	516.23	520.89	11.89
6,812.00	89.00	100.10	6,493.26	-81.64	546.73	551.73	10.02
6,843.00	90.50	99.80	6,493.40	-86.99	577.26	582.62	4.93
6,874.00	90.60	99.50	6,493.10	-92.19	607.82	613.51	1.02
6,905.00	90.30	99.60	6,492.86	-97.33	638.39	644.41	1.02
6,998.00	89.90	98.80	6,492.70	-112.20	730.19	737.15	0.96
7,093.00	92.20	93.90	6,490.95	-122.71	824.56	832.07	5.70
7,186.00	92.10	93.50	6,487.47	-128.70	917.30	924.98	0.44
7,280.00	92.60	93.30	6,483.61	-134.27	1,011.06	1,018.87	0.57
7,374.00	91.80	94.50	6,480.00	-140.66	1,104.77	1,112.78	1.53
7,469.00	92.00	94.20	6,476.85	-147.86	1,199.44	1,207.73	0.38
7,562.00	90.10	94.90	6,475.15	-155.24	1,292.13	1,300.70	2.18
7,655.00	90.00	95.20	6,475.07	-163.43	1,384.77	1,393.70	0.34
7,749.00	90.00	95.30	6,475.07	-172.03	1,478.37	1,487.70	0.11
7,843.00	89.50	95.20	6,475.48	-180.63	1,571.98	1,581.70	0.54
7,937.00	89.30	95.20	6,476.46	-189.15	1,665.58	1,675.69	0.21
8,030.00	90.70	95.00	6,476.46	-197.41	1,758.21	1,768.69	1.52
8,123.00	90.70	94.30	6,475.33	-204.95	1,850.90	1,861.68	0.75
8,217.00	91.00	94.40	6,473.93	-212.08	1,944.62	1,955.67	0.34
8,311.00	90.90	93.90	6,472.37	-218.88	2,038.36	2,049.64	0.54
8,404.00	91.20	93.20	6,470.67	-224.64	2,131.16	2,142.60	0.82
8,498.00	91.60	92.50	6,468.37	-229.31	2,225.02	2,236.51	0.86
8,592.00	92.70	92.60	6,464.85	-233.49	2,318.86	2,330.36	1.18
8,686.00	91.60	93.10	6,461.32	-238.16	2,412.67	2,424.23	1.29



Phoenix Technology Services

Phoenix Final Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #118H
Project:	Eddy County, New Mexico (NAD 27 NME)	TVD Reference:	KB @ 3941.00usft (Silver Oak 3)
Site:	Tex Mack 11 Federal	MD Reference:	KB @ 3941.00usft (Silver Oak 3)
Well:	#118H	North Reference:	Grid
Wellbore:	QH/Job #1310722	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR DB

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
8,780.00	91.70	93.20	6,458.61	-243.33	2,506.49	2,518.14	0.15
8,873.00	91.90	93.80	6,455.69	-249.00	2,599.27	2,611.06	0.68
8,965.00	90.90	93.30	6,453.44	-254.70	2,691.07	2,703.01	1.22
9,058.00	89.50	93.90	6,453.12	-260.53	2,783.88	2,795.98	1.64
9,152.00	90.40	94.60	6,453.20	-267.50	2,877.62	2,889.97	1.21
9,246.00	90.90	94.70	6,452.13	-275.12	2,971.31	2,983.96	0.54
9,340.00	91.90	93.90	6,449.84	-282.17	3,065.01	3,077.93	1.36
9,433.00	90.40	94.10	6,447.97	-288.65	3,157.76	3,170.89	1.63
9,527.00	90.60	94.40	6,447.15	-295.62	3,251.50	3,264.88	0.38
9,621.00	89.30	93.70	6,447.23	-302.26	3,345.26	3,358.87	1.57
9,715.00	88.60	93.40	6,448.96	-308.08	3,439.07	3,452.82	0.81
9,809.00	90.10	94.00	6,450.02	-314.14	3,532.86	3,546.79	1.72
9,902.00	90.00	92.90	6,449.94	-319.74	3,625.69	3,639.76	1.19
9,996.00	91.20	93.00	6,448.96	-324.58	3,719.56	3,733.69	1.28
10,088.00	91.50	93.70	6,446.79	-329.95	3,811.38	3,825.63	0.83
10,181.00	91.30	93.40	6,444.52	-335.71	3,904.17	3,918.58	0.39
10,276.00	91.70	95.40	6,442.03	-342.99	3,998.85	4,013.53	2.15
10,370.00	91.50	95.50	6,439.40	-351.92	4,092.39	4,107.49	0.24
10,464.00	91.50	95.90	6,436.94	-361.25	4,185.89	4,201.45	0.43
10,558.00	91.00	95.90	6,434.89	-370.91	4,279.37	4,295.42	0.53
10,651.00	89.90	95.80	6,434.16	-380.39	4,371.89	4,388.40	1.19
10,746.00	90.10	95.20	6,434.16	-389.49	4,466.45	4,483.40	0.67
10,839.00	89.80	95.00	6,434.24	-397.76	4,559.08	4,576.40	0.39
Last Phoenix MWD Survey							
10,921.00	89.80	95.00	6,434.53	-404.91	4,640.77	4,658.40	0.00
Projection to TD							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,841.00	5,840.76	10.76	-18.03	Tie-on to VES Gyro
5,917.00	5,916.75	11.29	-17.84	First Phoenix MWD Survey
10,839.00	6,434.24	-397.76	4,559.08	Last Phoenix MWD Survey
10,921.00	6,434.53	-404.91	4,640.77	Projection to TD

Checked By: _____ Approved By: _____ Date: _____