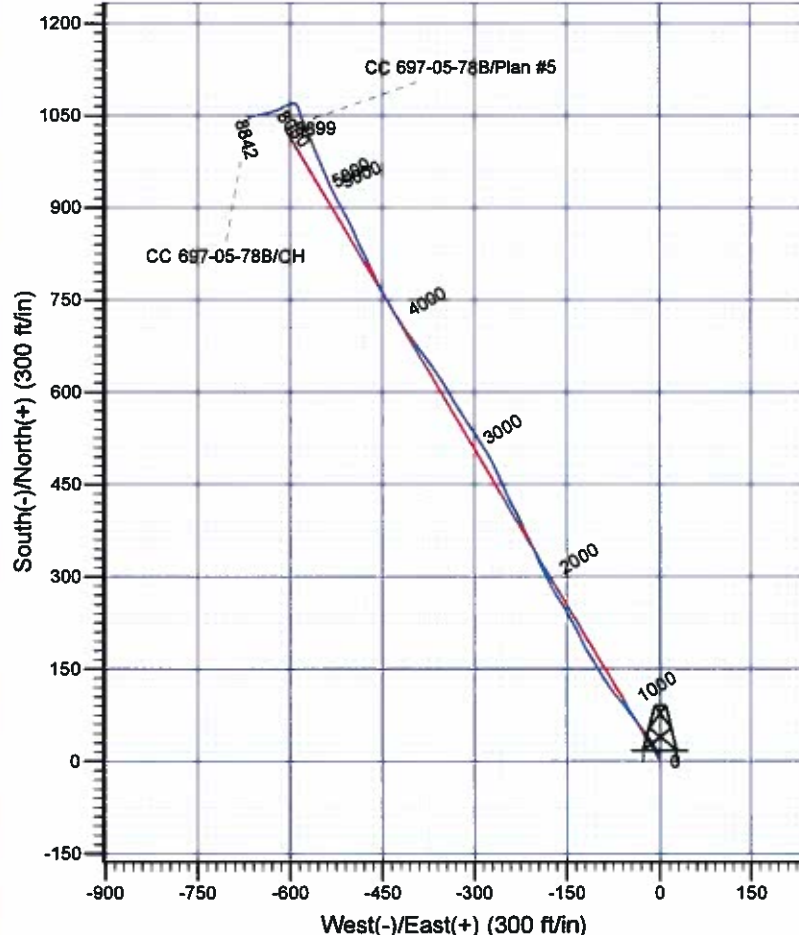
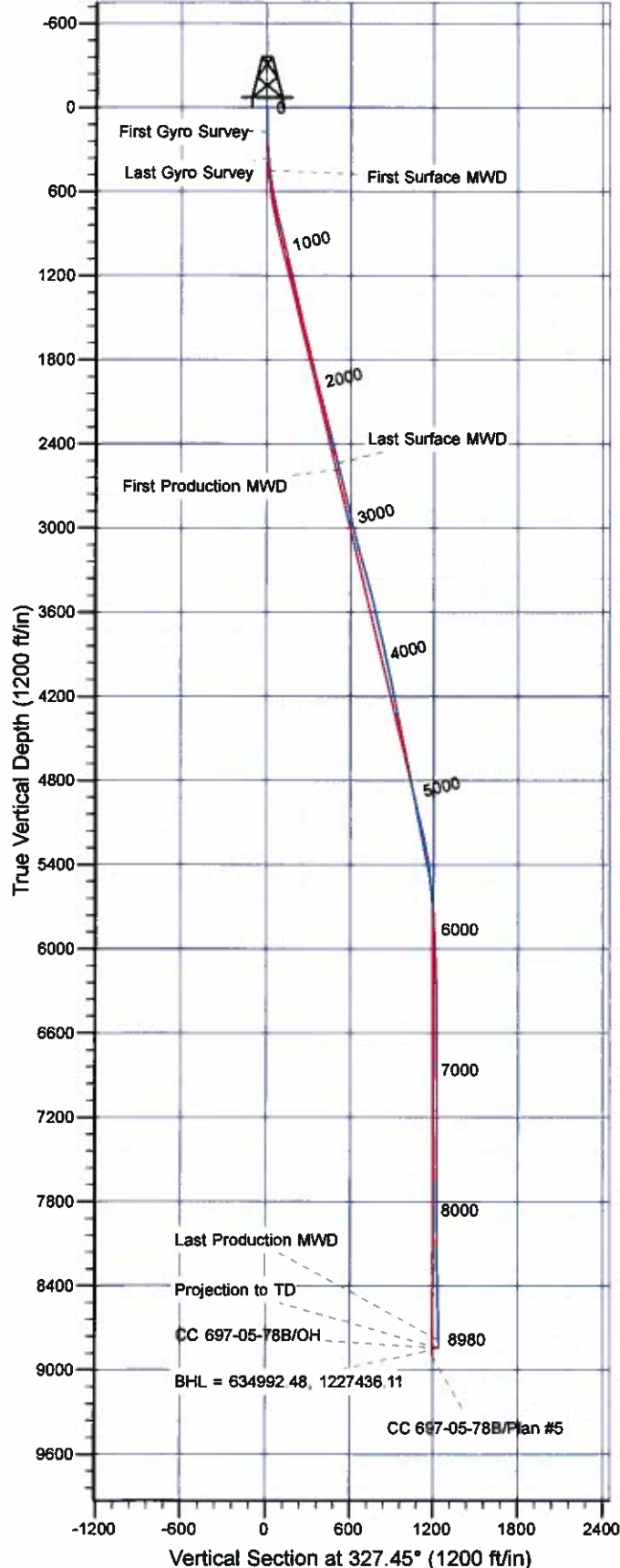




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 606-41 Pad
Well: CC 697-05-78B
Wellbore: OH
Design: OH



Well Details: CC 697-05-78B

TVD Reference: GL 8407' & RBK 30' @ 8437.00ft (H&P)		GL 8407' & RBK 30' @ 8437.00ft (H&P)		GL 8407' & RBK 30' @ 8437.00ft (H&P)		GL 8407' & RBK 30' @ 8437.00ft (H&P)		GL 8407' & RBK 30' @ 8437.00ft (H&P)	
+N/-S	+E/-W	North	East	Lat	Long	Lat	Long	Lat	Long
0.00	0.00	633926.12	1228072.43	39° 32' 31.253 N	108° 14' 15.072 W				

Slot C

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-05-78B - Slot C, True North
Vertical (TVD) Reference: GL 8407' & RBK 30' @ 8437.00ft (H&P)
Section (VS) Reference: Slot - C(0.00N, 0.00E)
Measured Depth Reference: GL 8407' & RBK 30' @ 8437.00ft (H&P)
Calculation Method: Minimum Curvature

PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Colorado Central 502

System Datum: Mean Sea Level

Plan: OH

14:31, April 14 2011
Created By: Janie Cooke

OXY USA RMAT

Garfield County, CO NAD27

Cascade Creek 608-41 Pad

CC 697-05-78B - Slot C

OH

Design: OH

Standard Survey Report

14 April, 2011

Scientific Drilling International, Inc.

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-78B - Slot C
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Well:	CC 697-05-78B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-R5000-JanieCooke-Local

Project	Garfield County, CO NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site	Cascade Creek 608-41 Pad, Section 8 T6S R97W				
Site Position:		Northing:	633,966.95 usft	Latitude:	39° 32' 31.685 N
From:	Map	Easting:	1,228,168.67 usft	Longitude:	108° 14' 13.859 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.73 °

Well	CC 697-05-78B - Slot C,					
Well Position	+N/-S	0.00 ft	Northing:	633,926.12 usft	Latitude:	39° 32' 31.253 N
	+E/-W	0.00 ft	Easting:	1,228,072.43 usft	Longitude:	108° 14' 15.072 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,407.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/15/2008	10.80	65.80	52,494

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	327.45	

Survey Program	Date	4/14/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
175.00	359.00	Survey #1 - Gyro MWD (OH)	Gyro		
451.00	2,597.00	Survey #2 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,644.00	8,980.00	Survey #3 - Production MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
175.00	1.41	1.67	174.98	2.15	0.06	1.78	0.81	0.81	0.00	
First Gyro Survey										
267.00	2.64	346.99	266.92	5.35	-0.38	4.71	1.44	1.34	-15.96	
359.00	5.10	331.26	358.71	11.00	-2.82	10.79	2.89	2.67	-17.10	
Last Gyro Survey										
451.00	8.01	330.91	450.10	20.19	-7.91	21.27	3.16	3.16	-0.38	
First Surface MWD										

Scientific Drilling International, Inc.

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-78B - Slot C
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Well:	CC 697-05-78B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-R5000-JanieCooke-Local

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
523.00	8.35	327.17	521.37	28.96	-13.18	31.51	0.88	0.47	-5.19
615.00	9.78	325.15	612.22	40.98	-21.26	45.98	1.57	1.53	-2.20
707.00	11.81	324.97	702.62	54.96	-31.03	63.02	2.01	2.01	-0.20
801.00	13.45	322.51	794.38	71.38	-43.11	83.36	2.04	1.96	-2.62
895.00	14.68	320.93	885.56	89.30	-57.28	106.09	1.37	1.31	-1.68
990.00	13.01	321.90	977.79	107.06	-71.46	128.70	1.77	-1.76	1.02
1,084.00	13.01	326.21	1,069.38	124.18	-83.88	149.81	1.03	0.00	4.59
1,179.00	12.93	329.63	1,161.96	142.24	-95.20	171.12	0.81	-0.08	3.60
1,274.00	12.31	327.52	1,254.67	159.95	-106.01	191.87	0.81	-0.65	-2.22
1,368.00	13.19	331.39	1,346.35	177.82	-116.52	212.59	1.30	0.94	4.12
1,463.00	13.19	333.76	1,438.84	197.06	-126.51	234.17	0.57	0.00	2.49
1,557.00	13.98	333.50	1,530.21	216.84	-136.32	256.12	0.84	0.84	-0.28
1,652.00	14.07	331.13	1,622.38	237.22	-147.01	279.06	0.61	0.09	-2.49
1,746.00	12.49	327.88	1,713.87	255.84	-157.93	300.63	1.86	-1.68	-3.46
1,841.00	13.28	328.67	1,806.47	273.86	-169.07	321.81	0.85	0.83	0.83
1,935.00	14.42	333.50	1,897.74	293.56	-179.91	344.24	1.73	1.21	5.14
2,030.00	14.07	334.91	1,989.82	314.60	-190.08	367.46	0.52	-0.37	1.48
2,125.00	14.77	335.96	2,081.83	336.12	-199.91	390.88	0.79	0.74	1.11
2,219.00	14.51	335.08	2,172.78	357.74	-209.75	414.40	0.36	-0.28	-0.94
2,313.00	14.42	333.50	2,263.80	378.90	-219.94	437.71	0.43	-0.10	-1.68
2,408.00	15.04	332.80	2,355.67	400.45	-230.85	461.75	0.68	0.65	-0.74
2,502.00	14.51	334.20	2,446.57	421.90	-241.55	485.59	0.68	-0.56	1.49
2,597.00	13.72	335.26	2,538.70	442.84	-251.44	508.57	0.87	-0.83	1.12
Last Surface MWD									
2,644.00	13.37	335.35	2,584.39	452.84	-256.04	519.47	0.75	-0.74	0.19
First Production MWD									
2,692.00	13.28	338.33	2,631.10	463.01	-260.39	530.38	1.44	-0.19	6.21
2,787.00	14.51	332.36	2,723.32	483.70	-269.95	552.96	1.99	1.29	-6.28
2,881.00	13.10	329.11	2,814.60	503.27	-280.88	575.34	1.71	-1.50	-3.46
2,976.00	13.54	326.56	2,907.05	521.79	-292.53	597.22	0.77	0.46	-2.68
3,070.00	14.16	325.59	2,998.32	540.46	-305.09	619.71	0.70	0.66	-1.03
3,165.00	13.98	326.91	3,090.47	559.66	-317.93	642.80	0.39	-0.19	1.39
3,259.00	15.39	329.81	3,181.39	579.95	-330.40	666.62	1.69	1.50	3.09
3,354.00	16.53	329.19	3,272.73	602.46	-343.66	692.73	1.21	1.20	-0.65
3,448.00	15.65	326.12	3,363.05	624.47	-357.58	718.77	1.30	-0.94	-3.27
3,543.00	15.12	324.18	3,454.65	645.16	-371.97	743.95	0.78	-0.56	-2.04
3,637.00	13.81	323.48	3,545.66	664.11	-385.82	767.38	1.41	-1.39	-0.74
3,732.00	13.19	322.51	3,638.04	681.83	-399.17	789.49	0.69	-0.65	-1.02
3,826.00	13.37	326.64	3,729.53	699.41	-411.67	811.04	1.03	0.19	4.39
3,921.00	13.10	327.00	3,822.00	717.62	-423.58	832.79	0.30	-0.28	0.38
4,015.00	12.66	327.61	3,913.64	735.25	-434.90	853.75	0.49	-0.47	0.65
4,110.00	12.66	332.71	4,006.33	753.29	-445.25	874.52	1.18	0.00	5.37
4,205.00	12.13	333.50	4,099.12	771.48	-454.47	894.81	0.59	-0.56	0.83
4,299.00	11.70	333.50	4,191.09	788.84	-463.13	914.11	0.46	-0.46	0.00

Scientific Drilling International, Inc.
Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-78B - Slot C
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Well:	CC 697-05-78B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-R5000-JanieCooke-Local

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,394.00	11.17	334.47	4,284.21	805.77	-471.40	932.83	0.59	-0.56	1.02
4,488.00	11.70	334.12	4,376.34	822.56	-479.48	951.33	0.57	0.56	-0.37
4,583.00	11.26	334.12	4,469.44	839.57	-487.73	970.11	0.46	-0.46	0.00
4,677.00	12.31	336.84	4,561.46	857.04	-495.68	989.11	1.26	1.12	2.89
4,772.00	11.52	334.20	4,654.41	874.89	-503.79	1,008.52	1.01	-0.83	-2.78
4,866.00	10.82	329.37	4,746.63	890.94	-512.37	1,026.66	1.24	-0.74	-5.14
4,961.00	11.61	333.59	4,839.82	907.17	-521.17	1,045.08	1.20	0.83	4.44
5,055.00	10.90	332.80	4,932.01	923.55	-529.44	1,063.33	0.77	-0.76	-0.84
5,150.00	11.43	336.22	5,025.21	940.15	-537.34	1,081.58	0.89	0.56	3.60
5,244.00	11.52	338.07	5,117.33	957.38	-544.60	1,100.01	0.40	0.10	1.97
5,339.00	11.17	337.37	5,210.48	974.67	-551.68	1,118.40	0.40	-0.37	-0.74
5,433.00	11.08	336.58	5,302.71	991.37	-558.78	1,136.28	0.19	-0.10	-0.84
5,528.00	11.52	336.66	5,395.87	1,008.45	-566.16	1,154.66	0.46	0.46	0.08
5,622.00	9.76	335.61	5,488.25	1,024.33	-573.17	1,171.81	1.88	-1.87	-1.12
5,717.00	7.83	340.18	5,582.13	1,037.75	-578.69	1,186.10	2.16	-2.03	4.81
5,811.00	5.72	339.56	5,675.47	1,048.17	-582.50	1,196.93	2.25	-2.24	-0.66
5,906.00	2.20	349.94	5,770.23	1,054.40	-584.47	1,203.24	3.77	-3.71	10.93
6,001.00	2.11	341.59	5,865.16	1,057.85	-585.34	1,206.62	0.34	-0.09	-8.79
6,095.00	2.20	344.40	5,959.09	1,061.23	-586.38	1,210.03	0.15	0.10	2.99
6,190.00	2.37	332.36	6,054.02	1,064.73	-587.78	1,213.73	0.53	0.18	-12.67
6,284.00	1.23	322.51	6,147.97	1,067.25	-589.29	1,216.67	1.25	-1.21	-10.48
6,379.00	1.58	299.05	6,242.94	1,068.70	-591.06	1,218.84	0.70	0.37	-24.69
6,473.00	0.62	287.53	6,336.92	1,069.48	-592.68	1,220.37	1.04	-1.02	-12.26
6,568.00	0.88	262.13	6,431.92	1,069.53	-593.89	1,221.06	0.44	0.27	-26.74
6,662.00	1.32	260.46	6,525.90	1,069.26	-595.67	1,221.79	0.47	0.47	-1.78
6,757.00	0.35	256.86	6,620.89	1,069.01	-597.03	1,222.31	1.02	-1.02	-3.79
6,851.00	0.44	223.55	6,714.89	1,068.68	-597.56	1,222.32	0.26	0.10	-35.44
6,946.00	0.62	258.18	6,809.88	1,068.31	-598.32	1,222.42	0.38	0.19	36.45
7,040.00	0.97	273.21	6,903.87	1,068.25	-599.61	1,223.06	0.43	0.37	15.99
7,135.00	1.76	265.74	6,998.84	1,068.19	-601.87	1,224.22	0.85	0.83	-7.86
7,229.00	0.26	247.98	7,092.83	1,068.00	-603.50	1,224.95	1.61	-1.60	-18.89
7,324.00	0.53	96.02	7,187.83	1,067.88	-603.27	1,224.71	0.81	0.28	-159.96
7,418.00	0.26	142.60	7,281.82	1,067.66	-602.70	1,224.23	0.42	-0.29	49.55
7,513.00	0.53	216.17	7,376.82	1,067.13	-602.83	1,223.85	0.55	0.28	77.44
7,607.00	0.88	257.47	7,470.82	1,066.63	-603.79	1,223.94	0.63	0.37	43.94
7,702.00	1.23	264.33	7,565.80	1,066.37	-605.52	1,224.65	0.39	0.37	7.22
7,796.00	1.41	242.27	7,659.78	1,065.73	-607.55	1,225.21	0.57	0.19	-23.47
7,891.00	1.23	250.36	7,754.75	1,064.84	-609.54	1,225.53	0.27	-0.19	8.52
7,985.00	1.06	231.81	7,848.73	1,063.97	-611.18	1,225.67	0.43	-0.18	-19.73
8,080.00	0.97	233.30	7,943.72	1,062.94	-612.51	1,225.53	0.10	-0.09	1.57
8,174.00	1.85	230.58	8,037.69	1,061.50	-614.32	1,225.29	0.94	0.94	-2.89
8,268.00	2.64	250.71	8,131.62	1,059.83	-617.54	1,225.61	1.18	0.84	21.41
8,363.00	3.34	250.44	8,226.49	1,058.18	-622.21	1,226.73	0.74	0.74	-0.28

Scientific Drilling International, Inc.

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-78B - Slot C
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RBK 30' @ 8437.00ft (H&P)
Well:	CC 697-05-78B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM-R5000-JanieCooke-Local

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,457.00	3.25	249.65	8,320.33	1,056.33	-627.29	1,227.91	0.11	-0.10	-0.84
8,551.00	3.78	255.45	8,414.15	1,054.63	-632.79	1,229.43	0.68	0.56	6.17
8,646.00	5.01	260.46	8,508.87	1,053.15	-639.91	1,232.02	1.36	1.29	5.27
8,740.00	5.01	258.97	8,602.51	1,051.69	-647.99	1,235.13	0.14	0.00	-1.59
8,835.00	5.01	257.56	8,697.15	1,050.00	-656.11	1,238.08	0.13	0.00	-1.48
8,923.00	4.92	253.43	8,784.82	1,048.10	-663.48	1,240.44	0.42	-0.10	-4.69
Last Production MWD									
8,980.00	4.92	253.43	8,841.61	1,046.70	-668.16	1,241.78	0.00	0.00	0.00
Projection to TD - BHL = 634992.48, 1227436.11									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
175.00	174.98	2.15	0.06	First Gyro Survey
359.00	358.71	11.00	-2.82	Last Gyro Survey
451.00	450.10	20.19	-7.91	First Surface MWD
2,597.00	2,538.70	442.84	-251.44	Last Surface MWD
2,644.00	2,584.39	452.84	-258.04	First Production MWD
8,923.00	8,784.82	1,048.10	-663.48	Last Production MWD
8,980.00	8,841.61	1,046.70	-668.16	Projection to TD
8,980.00	8,841.61	1,046.70	-668.16	BHL = 634992.48, 1227436.11

Checked By: _____ Approved By: _____ Date: _____