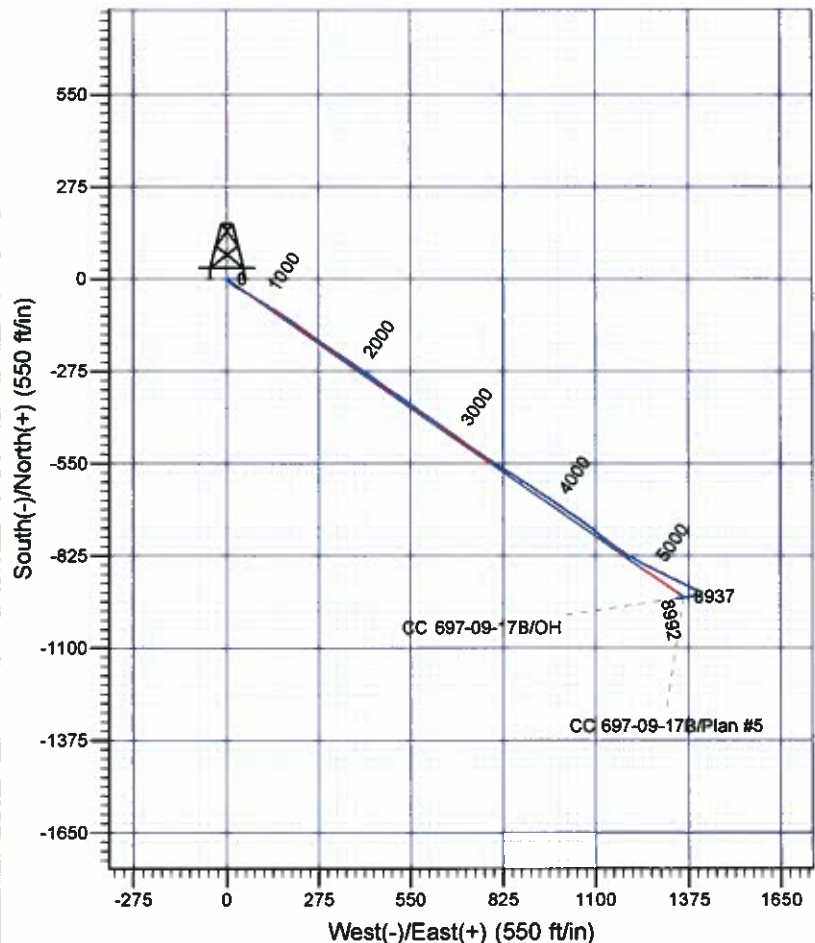
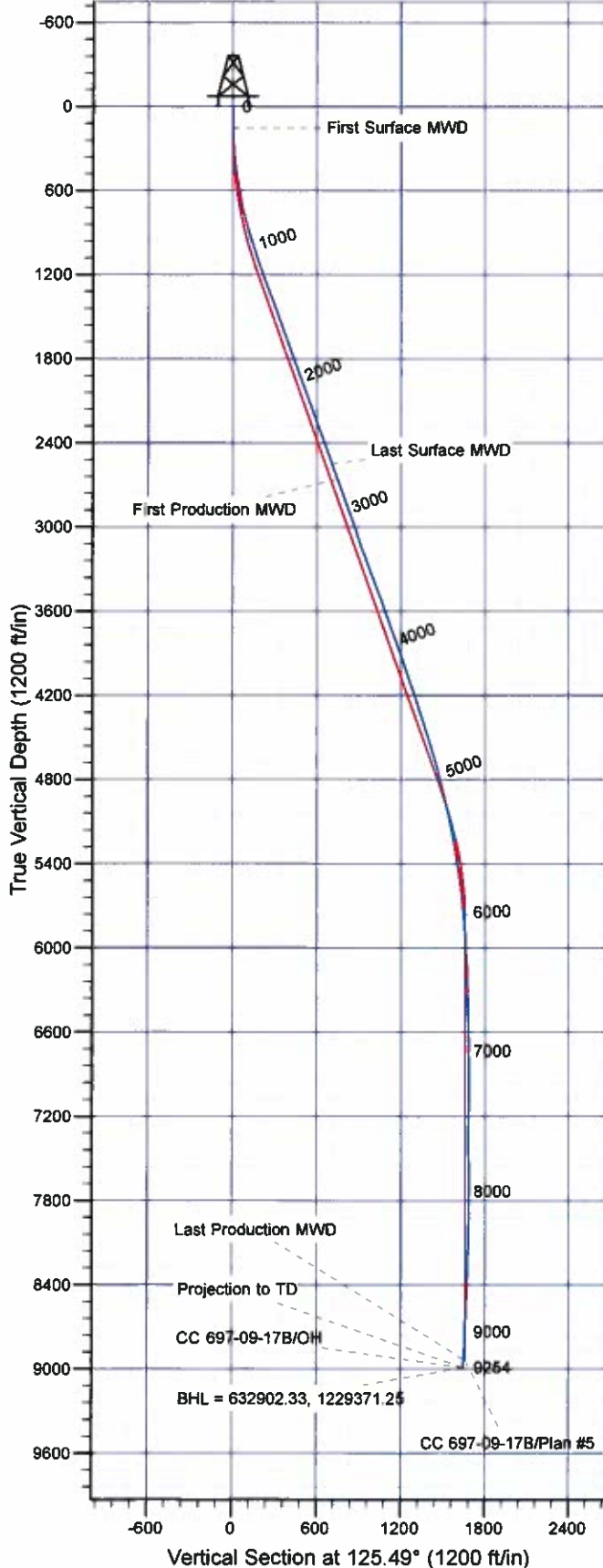




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 608-41 Pad
Well: CC 697-09-17B
Wellbore: OH
Design: OH



Well Details: CC 697-09-17B

+N/-S	+E/-W	North	East	Latitude	Longitude	Slot
0.00	0.00	633896.17	1228062.49	39° 32' 30.955 N	108° 14' 15.187 W	O

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-09-17B - Slot O, True North
Vertical (TVD) Reference: GL 8407' & RKB 30' @ 8437.00ft (H&P)
Section (VS) Reference: Slot - O(0.00N, 0.00E)
Measured Depth Reference: GL 8407' & RKB 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

16:16, April 20 2011
Created By: Janie Cooke

OXY USA RMAT

Garfield County, CO NAD27

Cascade Creek 608-41 Pad

CC 697-09-17B - Slot O

OH

Design: OH

Standard Survey Report

20 April, 2011

Scientific Drilling International, Inc.

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-17B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Well:	CC 697-09-17B	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 697-09-17B - Slot O,					
Well Position	+N/-S	0.00 ft	Northing:	633,896.17 usft	Latitude:	39° 32' 30.955 N
	+E/-W	0.00 ft	Easting:	1,228,062.49 usft	Longitude:	108° 14' 15.187 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,407.00 ft

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

Design	OH
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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	125.49

Survey Program		Date	4/20/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
155.00	2,667.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,781.00	9,254.00	Survey #2 - 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
	155.00	0.74	130.84	155.00	-0.65	0.76	1.00	0.48	0.48	0.00
First Surface MWD										
	247.00	2.41	142.47	246.96	-2.58	2.39	3.44	1.84	1.82	12.64
	339.00	4.96	138.60	338.76	-7.10	6.19	9.16	2.78	2.77	-4.21
	431.00	7.39	129.77	430.22	-13.86	13.37	18.94	2.83	2.64	-9.60
	522.00	9.76	123.53	520.20	-21.87	24.30	32.48	2.79	2.60	-6.86
	614.00	9.76	116.15	610.87	-29.61	37.80	47.97	1.36	0.00	-8.02
	706.00	11.26	120.19	701.33	-37.57	52.57	64.61	1.82	1.63	4.39
	800.00	14.51	121.68	792.95	-48.37	70.53	85.51	3.48	3.46	1.59

Scientific Drilling International, Inc.

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-17B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Well:	CC 697-09-17B	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)
894.00	17.41	120.54	883.32	-61.70	92.66	111.27	3.10	3.09	-1.21
989.00	17.15	122.56	974.03	-76.46	116.71	139.42	0.69	-0.27	2.13
1,083.00	18.55	121.86	1,063.50	-91.82	141.09	168.19	1.51	1.49	-0.74
1,178.00	19.52	123.09	1,153.31	-108.46	167.23	199.12	1.10	1.02	1.29
1,272.00	19.70	124.58	1,241.85	-126.02	193.43	230.66	0.57	0.19	1.59
1,367.00	21.46	126.17	1,330.79	-145.37	220.64	264.05	1.94	1.85	1.67
1,462.00	20.22	125.99	1,419.57	-165.27	247.95	297.84	1.31	-1.31	-0.19
1,556.00	20.05	124.85	1,507.83	-184.03	274.32	330.20	0.45	-0.18	-1.21
1,651.00	19.96	123.71	1,597.10	-202.33	301.17	362.69	0.42	-0.09	-1.20
1,745.00	18.99	122.30	1,685.72	-219.41	327.45	394.00	1.15	-1.03	-1.50
1,840.00	19.79	122.74	1,775.33	-236.37	354.04	425.49	0.86	0.84	0.46
1,934.00	19.96	124.41	1,863.73	-254.04	380.66	457.43	0.63	0.18	1.78
2,029.00	20.05	127.13	1,953.00	-273.03	407.03	489.92	0.98	0.09	2.86
2,124.00	20.75	126.43	2,042.04	-292.86	433.55	523.03	0.78	0.74	-0.74
2,218.00	20.22	125.73	2,130.10	-312.23	460.13	555.92	0.62	-0.56	-0.74
2,312.00	19.87	123.35	2,218.40	-330.50	486.67	588.13	0.94	-0.37	-2.53
2,407.00	19.87	121.77	2,307.75	-347.88	513.88	620.37	0.57	0.00	-1.66
2,501.00	19.87	125.64	2,396.16	-365.60	540.44	652.29	1.40	0.00	4.12
2,596.00	20.05	125.99	2,485.45	-384.57	566.74	684.72	0.23	0.19	0.37
2,667.00	20.40	126.78	2,552.07	-399.14	586.50	709.26	0.63	0.49	1.11
Last Surface MWD									
2,781.00	20.03	125.77	2,659.05	-422.44	618.25	748.65	0.45	-0.32	-0.89
First Production MWD									
2,876.00	19.35	124.34	2,748.50	-440.83	644.45	780.65	0.88	-0.72	-1.51
2,971.00	19.08	124.91	2,838.20	-458.60	670.18	811.91	0.35	-0.28	0.60
3,065.00	20.40	126.69	2,926.68	-477.18	695.91	843.66	1.54	1.40	1.89
3,160.00	18.11	125.29	3,016.36	-495.60	721.25	874.98	2.46	-2.41	-1.47
3,254.00	18.03	124.58	3,105.72	-512.30	745.15	904.14	0.25	-0.09	-0.76
3,349.00	21.28	125.30	3,195.18	-530.61	771.33	936.08	3.43	3.42	0.76
3,443.00	20.31	122.12	3,283.05	-549.14	799.07	969.43	1.58	-1.03	-3.38
3,538.00	20.66	121.95	3,372.05	-566.78	827.25	1,002.61	0.37	0.37	-0.18
3,632.00	21.10	123.18	3,459.87	-584.81	855.49	1,036.07	0.66	0.47	1.31
3,727.00	18.99	122.21	3,549.11	-602.41	882.88	1,068.59	2.25	-2.22	-1.02
3,821.00	19.52	123.18	3,637.86	-619.16	908.96	1,099.55	0.66	0.56	1.03
3,916.00	19.61	123.62	3,727.37	-636.67	935.52	1,131.35	0.18	0.09	0.46
4,010.00	19.96	125.02	3,815.82	-654.61	961.80	1,163.16	0.63	0.37	1.49
4,105.00	18.55	124.85	3,905.51	-672.55	987.48	1,194.48	1.49	-1.48	-0.18
4,199.00	18.99	125.64	3,994.51	-690.01	1,012.18	1,224.73	0.54	0.47	0.84
4,294.00	19.35	124.23	4,084.24	-707.87	1,037.75	1,255.92	0.62	0.38	-1.48
4,389.00	18.03	123.71	4,174.23	-724.88	1,063.00	1,286.35	1.40	-1.39	-0.55
4,483.00	17.59	130.91	4,263.73	-742.26	1,085.83	1,315.03	2.39	-0.47	7.66
4,578.00	18.64	127.57	4,354.03	-760.92	1,108.72	1,344.50	1.55	1.11	-3.52
4,672.00	16.44	127.48	4,443.65	-778.17	1,131.18	1,372.81	2.34	-2.34	-0.10

Scientific Drilling International, Inc.
Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-17B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Well:	CC 697-09-17B	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)
4,767.00	17.06	127.04	4,534.62	-794.75	1,152.97	1,400.17	0.67	0.65	-0.46
4,861.00	17.06	123.79	4,624.48	-810.72	1,175.44	1,427.74	1.01	0.00	-3.46
4,956.00	15.39	121.33	4,715.70	-825.03	1,197.79	1,454.24	1.90	-1.76	-2.59
5,050.00	14.16	118.61	4,806.59	-837.02	1,218.54	1,478.10	1.50	-1.31	-2.89
5,145.00	13.45	117.64	4,898.84	-847.71	1,236.53	1,500.58	0.79	-0.75	-1.02
5,239.00	12.75	117.46	4,990.40	-857.56	1,257.42	1,521.68	0.75	-0.74	-0.19
5,334.00	12.22	117.38	5,083.15	-867.02	1,275.65	1,542.02	0.56	-0.56	-0.08
5,428.00	12.05	118.61	5,175.05	-876.30	1,293.10	1,561.61	0.33	-0.18	1.31
5,523.00	10.46	115.36	5,268.22	-884.74	1,309.60	1,579.94	1.80	-1.67	-3.42
5,617.00	8.62	117.03	5,360.92	-891.60	1,323.58	1,595.31	1.98	-1.96	1.78
5,712.00	8.35	117.29	5,454.88	-897.99	1,336.05	1,609.18	0.29	-0.28	0.27
5,806.00	7.47	116.50	5,547.98	-903.85	1,347.59	1,621.97	0.94	-0.94	-0.84
5,901.00	5.63	114.63	5,642.36	-908.55	1,357.35	1,632.65	1.95	-1.94	-1.97
5,995.00	5.01	114.74	5,735.95	-912.19	1,365.27	1,641.21	0.66	-0.66	0.12
6,090.00	4.40	116.50	5,830.63	-915.55	1,372.30	1,648.88	0.66	-0.64	1.85
6,184.00	3.96	113.95	5,924.38	-918.48	1,378.49	1,655.63	0.51	-0.47	-2.71
6,279.00	3.61	116.32	6,019.18	-921.13	1,384.17	1,661.79	0.40	-0.37	2.49
6,374.00	3.34	120.98	6,114.00	-923.88	1,389.22	1,667.50	0.41	-0.28	4.91
6,468.00	2.11	122.30	6,207.89	-926.22	1,393.04	1,671.96	1.31	-1.31	1.40
6,562.00	1.49	131.26	6,301.85	-927.95	1,395.42	1,674.91	0.72	-0.66	9.53
6,657.00	1.32	139.96	6,396.82	-929.60	1,397.05	1,677.19	0.29	-0.18	9.16
6,752.00	0.79	156.66	6,491.80	-931.04	1,398.01	1,678.81	0.64	-0.56	17.58
6,846.00	1.32	171.43	6,585.79	-932.71	1,398.43	1,680.12	0.63	0.56	15.71
6,941.00	0.53	168.00	6,680.77	-934.22	1,398.68	1,681.21	0.83	-0.83	-3.61
7,035.00	0.62	158.51	6,774.77	-935.12	1,398.96	1,681.95	0.14	0.10	-10.10
7,130.00	0.35	175.91	6,869.76	-935.88	1,399.17	1,682.57	0.32	-0.28	18.32
7,224.00	0.53	217.04	6,963.76	-936.52	1,398.93	1,682.74	0.37	0.19	43.76
7,319.00	0.70	210.72	7,058.76	-937.37	1,398.37	1,682.78	0.19	0.18	-8.65
7,413.00	0.79	229.88	7,152.75	-938.28	1,397.58	1,682.66	0.28	0.10	20.38
7,508.00	0.70	254.49	7,247.74	-938.85	1,396.52	1,682.14	0.35	-0.09	25.91
7,602.00	1.06	278.92	7,341.73	-938.87	1,395.11	1,681.00	0.55	0.38	25.99
7,697.00	0.62	139.61	7,436.72	-939.13	1,394.57	1,680.71	1.67	-0.46	-146.64
7,791.00	0.97	132.32	7,530.72	-940.05	1,395.49	1,681.99	0.39	0.37	-7.76
7,886.00	0.44	141.11	7,625.71	-940.88	1,396.31	1,683.14	0.57	-0.56	9.25
7,980.00	0.70	202.28	7,719.70	-941.69	1,396.32	1,683.62	0.66	0.28	65.07
8,075.00	1.06	221.79	7,814.69	-942.88	1,395.52	1,683.66	0.49	0.38	20.54
8,169.00	1.32	236.23	7,908.67	-944.10	1,394.02	1,683.14	0.45	0.28	17.49
8,263.00	1.58	260.11	8,002.64	-944.89	1,391.82	1,681.81	0.65	0.28	23.28
8,358.00	2.46	261.17	8,097.58	-945.43	1,388.51	1,679.43	0.93	0.93	1.12
8,452.00	3.08	251.67	8,191.47	-946.53	1,384.12	1,676.50	0.82	0.66	-10.11
8,547.00	3.25	255.80	8,286.33	-948.00	1,379.09	1,673.25	0.30	0.18	4.35
8,641.00	3.17	260.64	8,380.18	-949.07	1,373.94	1,669.68	0.30	-0.09	5.15
8,735.00	3.08	260.99	8,474.04	-949.89	1,368.88	1,666.04	0.10	-0.10	0.37
8,830.00	2.90	262.66	8,568.91	-950.60	1,363.98	1,662.46	0.21	-0.19	1.76

Scientific Drilling International, Inc.

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-17B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Site:	Cascade Creek 608-41 Pad	MD Reference:	GL 8407' & RKB 30' @ 8437.00ft (H&P)
Well:	CC 697-09-17B	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)
8,924.00	3.17	266.97	8,662.78	-951.04	1,359.03	1,658.68	0.38	0.29	4.59
9,019.00	3.52	263.01	8,757.62	-951.53	1,353.51	1,654.47	0.44	0.37	-4.17
9,114.00	3.69	262.57	8,852.43	-952.28	1,347.58	1,650.08	0.18	0.18	-0.46
9,195.00	4.04	258.97	8,933.25	-953.17	1,342.20	1,646.21	0.53	0.43	-4.44
Last Production MWD									
9,254.00	4.04	258.97	8,992.10	-953.96	1,338.12	1,643.35	0.00	0.00	0.00
Projection to TD - BHL = 632902.33, 1229371.25									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
155.00	155.00	-0.65	0.76	First Surface MWD
2,667.00	2,552.07	-399.14	586.50	Last Surface MWD
2,781.00	2,659.05	-422.44	618.25	First Production MWD
9,195.00	8,933.25	-953.17	1,342.20	Last Production MWD
9,254.00	8,992.10	-953.96	1,338.12	Projection to TD
9,254.00	8,992.10	-953.96	1,338.12	BHL = 632902.33, 1229371.25

Checked By: _____ Approved By: _____ Date: _____