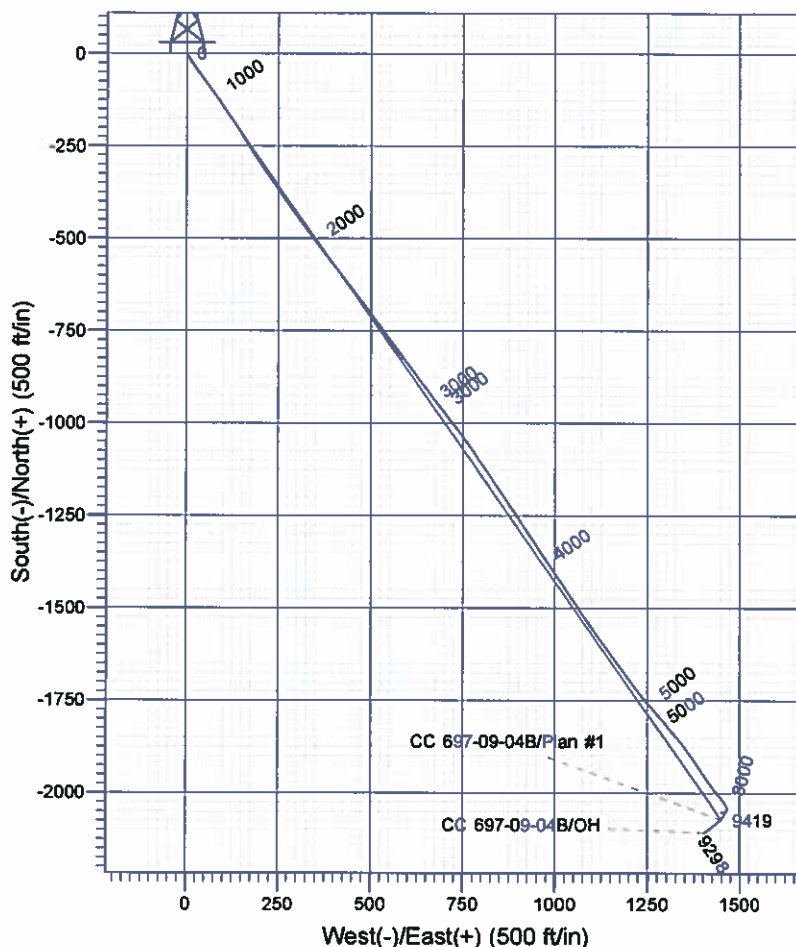
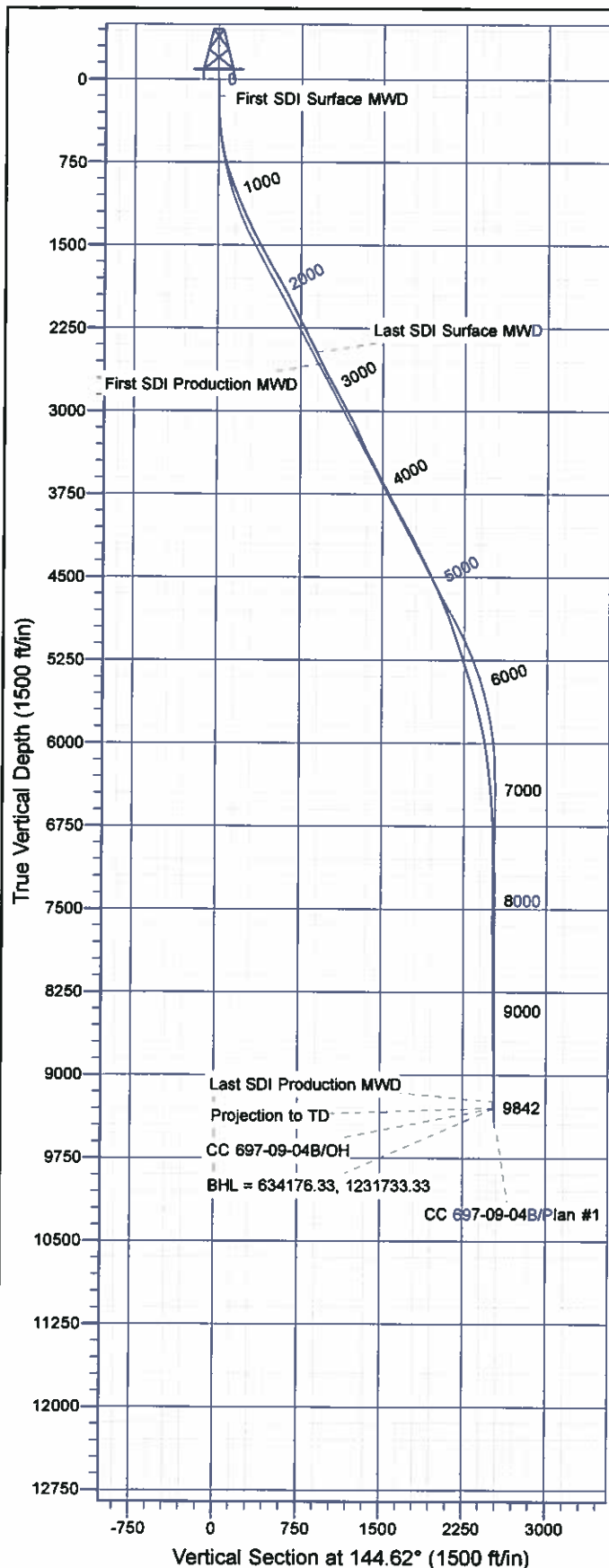




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad
Well: CC 697-09-04B
Wellbore: OH
Design: OH



Well Details: CC 697-09-04B

+N/-S	+E/-W	TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)	North	East	Latitude	Longitude	Slot
0.00	0.00	636324.28	1230393.34	39° 32' 55.635 N	108° 13' 46.378 W	O	

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-09-04B - Slot O, True North
Vertical (TVD) Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)
Section (VS) Reference: Slot - O(0.00N, 0.00E)
Measured Depth Reference: GL 8629' & RKB 30' @ 8659.00ft (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

11:32, April 05 2012
Created By: Janie Cooke

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-09-04B - Slot O**

OH

Design: OH

Standard Survey Report

05 April, 2012



Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-04B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-09-04B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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 697-04D Pad			
Site Position:		Northing:		635,530.62 usft	
From:	Map	Easting:		1,230,276.10 usft	
Position Uncertainty:		0.00 ft		Slot Radius:	
				13.200 in	
				Grid Convergence:	
				-1.72 °	
				Latitude:	
				39° 32' 47.760 N	
				Longitude:	
				108° 13' 47.570 W	

Well	CC 697-09-04B - Slot O					
Well Position	+N/-S	0.00 ft	Northing:	636,324.28 usft	Latitude:	39° 32' 55.635 N
	+E/-W	0.00 ft	Easting:	1,230,393.34 usft	Longitude:	108° 13' 46.378 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,629.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	03/24/2011	10.47	65.76	52,282

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	144.62	

Survey Program	Date	04/05/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
155.00	2,664.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,776.00	9,842.00	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)	Bulld 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	0.81	166.61	154.99	-1.07	0.25	1.02	0.52	0.52	0.00	
First SDI Surface MWD Survey										
247.00	2.14	151.48	246.96	-3.21	1.22	3.32	1.49	1.45	-16.45	
339.00	3.31	153.55	338.86	-7.10	3.23	7.65	1.28	1.27	2.25	
430.00	5.09	144.87	429.61	-12.75	6.72	14.29	2.07	1.96	-9.54	
522.00	8.09	145.93	520.99	-21.45	12.70	24.84	3.26	3.26	1.15	
614.00	10.55	145.75	611.77	-33.78	21.07	39.74	2.67	2.67	-0.20	
703.00	13.89	143.20	698.74	-49.07	32.05	58.57	3.80	3.75	-2.87	
792.00	18.62	143.47	784.60	-67.86	46.03	81.98	3.07	3.07	0.30	

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-04B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-09-04B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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)
883.00	19.79	142.32	871.03	-90.51	63.20	110.39	3.51	3.48	-1.26
973.00	21.19	144.52	955.34	-115.82	81.95	141.88	1.78	1.56	2.44
1,068.00	21.28	146.81	1,043.89	-144.22	101.36	176.28	0.88	0.09	2.41
1,162.00	22.42	145.31	1,131.13	-173.24	120.90	211.25	1.35	1.21	-1.60
1,257.00	23.30	146.98	1,218.67	-203.89	141.45	248.14	1.15	0.93	1.76
1,352.00	25.15	147.95	1,305.30	-236.76	162.40	287.06	1.99	1.95	1.02
1,446.00	28.49	147.69	1,389.18	-272.65	184.99	329.40	3.56	3.55	-0.28
1,541.00	28.14	146.19	1,472.82	-310.41	209.56	374.42	0.83	-0.37	-1.58
1,636.00	28.14	144.17	1,556.59	-347.19	235.14	419.22	1.00	0.00	-2.13
1,731.00	28.58	144.08	1,640.19	-383.75	261.59	464.34	0.47	0.46	-0.09
1,825.00	29.28	144.87	1,722.46	-420.76	288.01	509.82	0.85	0.74	0.84
1,920.00	29.63	144.70	1,805.18	-458.93	314.95	556.53	0.38	0.37	-0.18
2,015.00	28.49	144.17	1,888.22	-496.46	341.78	602.67	1.23	-1.20	-0.56
2,110.00	27.00	142.94	1,972.29	-532.04	368.04	646.89	1.68	-1.57	-1.29
2,204.00	25.32	141.44	2,056.66	-564.79	393.43	688.29	1.92	-1.79	-1.60
2,299.00	25.68	142.15	2,142.41	-596.93	418.73	729.14	0.50	0.38	0.75
2,394.00	27.87	143.20	2,227.22	-630.97	444.66	771.91	2.36	2.31	1.11
2,488.00	27.26	142.94	2,310.55	-665.74	470.80	815.39	0.66	-0.65	-0.28
2,583.00	26.47	143.91	2,395.29	-700.21	496.38	858.31	0.95	-0.83	1.02
2,664.00	26.47	143.29	2,467.80	-729.27	517.80	894.40	0.34	0.00	-0.77
Last SDI Surface MWD Survey									
2,776.00	25.85	143.37	2,568.33	-768.88	547.29	943.77	0.55	-0.55	0.07
First SDI Production MWD									
2,871.00	27.44	144.16	2,653.24	-803.25	572.47	986.37	1.71	1.67	0.83
2,965.00	29.19	143.63	2,735.99	-839.26	598.74	1,030.95	1.88	1.86	-0.56
3,060.00	29.02	143.19	2,818.99	-876.36	626.29	1,077.15	0.29	-0.18	-0.46
3,155.00	28.93	142.93	2,902.10	-913.15	653.95	1,123.15	0.16	-0.09	-0.27
3,249.00	29.11	142.49	2,984.30	-949.43	681.57	1,168.72	0.30	0.19	-0.47
3,344.00	27.96	141.79	3,067.76	-985.26	709.42	1,214.06	1.26	-1.21	-0.74
3,439.00	25.32	142.58	3,152.66	-1,018.90	735.54	1,256.61	2.80	-2.78	0.83
3,534.00	24.18	144.51	3,238.94	-1,050.87	759.18	1,296.37	1.47	-1.20	2.03
3,628.00	24.53	145.57	3,324.57	-1,082.64	781.39	1,335.13	0.60	0.37	1.13
3,723.00	26.82	145.65	3,410.19	-1,116.61	804.64	1,376.29	2.41	2.41	0.08
3,818.00	28.67	145.30	3,494.26	-1,153.04	829.71	1,420.51	1.95	1.95	-0.37
3,912.00	27.70	145.83	3,577.12	-1,189.66	854.82	1,464.90	1.07	-1.03	0.56
4,007.00	27.87	146.36	3,661.16	-1,226.41	879.52	1,509.17	0.32	0.18	0.56
4,102.00	28.31	146.44	3,744.97	-1,263.67	904.27	1,553.88	0.46	0.46	0.08
4,196.00	28.40	146.01	3,827.69	-1,300.78	929.09	1,598.50	0.24	0.10	-0.46
4,291.00	28.93	146.62	3,911.05	-1,338.70	954.36	1,644.05	0.64	0.56	0.64
4,386.00	29.11	146.53	3,994.12	-1,377.16	979.75	1,690.11	0.19	0.19	-0.09
4,481.00	29.02	145.83	4,077.16	-1,415.50	1,005.44	1,736.24	0.37	-0.09	-0.74
4,575.00	28.67	145.83	4,159.50	-1,453.02	1,030.91	1,781.58	0.37	-0.37	0.00
4,670.00	26.73	146.18	4,243.61	-1,489.63	1,055.60	1,825.73	2.05	-2.04	0.37

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-04B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-09-04B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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)
4,765.00	26.20	145.57	4,328.65	-1,524.68	1,079.35	1,868.06	0.63	-0.56	-0.64
4,859.00	25.59	145.39	4,413.21	-1,558.50	1,102.61	1,909.10	0.65	-0.65	-0.19
4,954.00	25.24	143.72	4,499.02	-1,591.72	1,126.25	1,949.87	0.84	-0.37	-1.76
5,049.00	25.06	144.16	4,585.01	-1,624.35	1,150.02	1,990.24	0.27	-0.19	0.46
5,143.00	23.48	143.90	4,670.70	-1,655.83	1,172.71	2,028.87	1.68	-1.68	-0.28
5,238.00	21.46	143.81	4,758.49	-1,684.95	1,194.12	2,065.18	2.13	-2.13	-0.09
5,333.00	21.54	141.87	4,846.88	-1,712.69	1,215.15	2,099.97	0.75	0.08	-2.04
5,427.00	19.43	141.79	4,934.93	-1,738.55	1,235.48	2,132.83	2.24	-2.24	-0.09
5,522.00	18.55	139.76	5,024.76	-1,762.50	1,255.01	2,163.67	1.16	-0.93	-2.14
5,617.00	18.29	139.15	5,114.89	-1,785.31	1,274.53	2,193.57	0.34	-0.27	-0.64
5,712.00	17.94	140.12	5,205.18	-1,807.82	1,293.66	2,222.99	0.49	-0.37	1.02
5,807.00	18.55	140.73	5,295.40	-1,830.74	1,312.60	2,252.65	0.67	0.64	0.64
5,901.00	18.47	140.20	5,384.54	-1,853.76	1,331.60	2,282.42	0.20	-0.09	-0.56
5,996.00	18.65	142.98	5,475.11	-1,876.19	1,349.43	2,311.03	2.11	-1.92	2.93
6,090.00	18.00	144.95	5,565.32	-1,897.55	1,364.98	2,337.44	0.91	-0.69	2.10
6,185.00	14.51	144.86	5,656.97	-1,918.00	1,379.35	2,362.44	1.57	-1.57	-0.09
6,280.00	13.28	147.41	5,749.19	-1,936.92	1,392.07	2,385.24	1.45	-1.29	2.68
6,374.00	12.22	146.36	5,840.87	-1,954.30	1,403.40	2,405.97	1.15	-1.13	-1.12
6,469.00	10.82	144.16	5,933.96	-1,969.90	1,414.19	2,424.93	1.54	-1.47	-2.32
6,563.00	9.15	144.51	6,026.53	-1,983.14	1,423.70	2,441.23	1.78	-1.78	0.37
6,658.00	7.74	139.41	6,120.50	-1,994.15	1,432.25	2,455.16	1.68	-1.48	-5.37
6,753.00	7.03	139.41	6,214.71	-2,003.42	1,440.19	2,467.32	0.75	-0.75	0.00
6,847.00	6.51	139.41	6,308.06	-2,011.84	1,447.40	2,478.35	0.55	-0.55	0.00
6,942.00	5.63	143.46	6,402.52	-2,019.67	1,453.68	2,488.37	1.03	-0.93	4.26
7,036.00	5.10	147.41	6,496.11	-2,026.90	1,458.68	2,497.16	0.69	-0.56	4.20
7,131.00	3.96	152.95	6,590.81	-2,033.38	1,462.44	2,504.62	1.28	-1.20	5.83
7,225.00	2.81	156.02	6,684.65	-2,038.37	1,464.85	2,510.09	1.24	-1.22	3.27
7,320.00	2.02	169.82	6,779.56	-2,042.15	1,466.10	2,513.89	1.03	-0.83	14.53
7,414.00	1.58	186.70	6,873.52	-2,045.07	1,466.24	2,516.35	0.73	-0.47	17.96
7,509.00	1.41	208.06	6,968.49	-2,047.40	1,465.54	2,517.85	0.61	-0.18	22.48
7,603.00	1.14	219.83	7,062.46	-2,049.14	1,464.39	2,518.60	0.40	-0.29	12.52
7,698.00	1.32	249.72	7,157.44	-2,050.24	1,462.76	2,518.56	0.69	0.19	31.46
7,792.00	2.02	253.32	7,251.40	-2,051.09	1,460.16	2,517.74	0.75	0.74	3.83
7,887.00	1.93	250.24	7,346.34	-2,052.11	1,457.05	2,516.78	0.15	-0.09	-3.24
7,981.00	1.85	272.04	7,440.29	-2,052.60	1,454.04	2,515.43	0.76	-0.09	23.19
8,076.00	1.14	285.93	7,535.26	-2,052.28	1,451.60	2,513.76	0.83	-0.75	14.62
8,170.00	0.26	31.48	7,629.26	-2,051.84	1,450.81	2,512.95	1.31	-0.94	112.29
8,265.00	1.23	89.05	7,724.25	-2,051.64	1,451.95	2,513.44	1.17	1.02	60.60
8,359.00	1.49	87.73	7,818.22	-2,051.58	1,454.18	2,514.68	0.28	0.28	-1.40
8,454.00	1.32	98.98	7,913.19	-2,051.70	1,456.49	2,516.12	0.34	-0.18	11.84
8,549.00	1.23	105.05	8,008.17	-2,052.13	1,458.56	2,517.67	0.17	-0.09	6.39
8,643.00	1.06	127.11	8,102.15	-2,052.92	1,460.22	2,519.27	0.50	-0.18	23.47
8,738.00	0.62	188.54	8,197.14	-2,053.98	1,460.85	2,520.48	0.99	-0.46	64.66
8,833.00	0.97	206.03	8,292.13	-2,055.19	1,460.42	2,521.24	0.44	0.37	18.41

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-04B - Slot O
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-09-04B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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)
8,914.28	1.41	214.35	8,373.39	-2,056.64	1,459.55	2,521.91	0.58	0.55	10.23
CC 697-09-04B Target									
8,928.00	1.49	215.26	8,387.11	-2,056.92	1,459.35	2,522.03	0.58	0.56	6.64
9,022.00	2.20	208.76	8,481.06	-2,059.50	1,457.78	2,523.22	0.79	0.76	-6.91
9,117.00	2.90	216.32	8,575.97	-2,063.04	1,455.48	2,524.77	0.82	0.74	7.96
9,212.00	3.52	215.97	8,670.82	-2,067.33	1,452.34	2,526.46	0.65	0.65	-0.37
9,307.00	4.57	225.19	8,765.58	-2,072.36	1,447.94	2,528.01	1.30	1.11	9.71
9,401.00	5.28	227.74	8,859.23	-2,077.91	1,442.09	2,529.15	0.79	0.76	2.71
9,496.00	5.98	231.52	8,953.77	-2,083.93	1,434.98	2,529.94	0.83	0.74	3.98
9,591.00	6.07	233.10	9,048.25	-2,090.02	1,427.09	2,530.34	0.20	0.09	1.66
9,686.00	6.51	233.46	9,142.68	-2,096.24	1,418.74	2,530.58	0.47	0.46	0.38
9,786.00	6.77	235.30	9,242.01	-2,102.98	1,409.34	2,530.63	0.34	0.26	1.84
Last SDI Production MWD									
9,842.00	6.77	235.30	9,297.62	-2,106.73	1,403.92	2,530.55	0.00	0.00	0.00
Projection to TD - BHL = 634176.33, 1231733.33									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
155.00	154.99	-1.07	0.25	First SDI Surface MWD Survey
2,684.00	2,467.80	-729.27	517.80	Last SDI Surface MWD Survey
2,776.00	2,568.33	-768.88	547.29	First SDI Production MWD
9,786.00	9,242.01	-2,102.98	1,409.34	Last SDI Production MWD
9,842.00	9,297.62	-2,106.73	1,403.92	Projection to TD
9,842.00	9,297.62	-2,106.73	1,403.92	BHL = 634176.33, 1231733.33

Checked By: _____ Approved By: _____ Date: _____