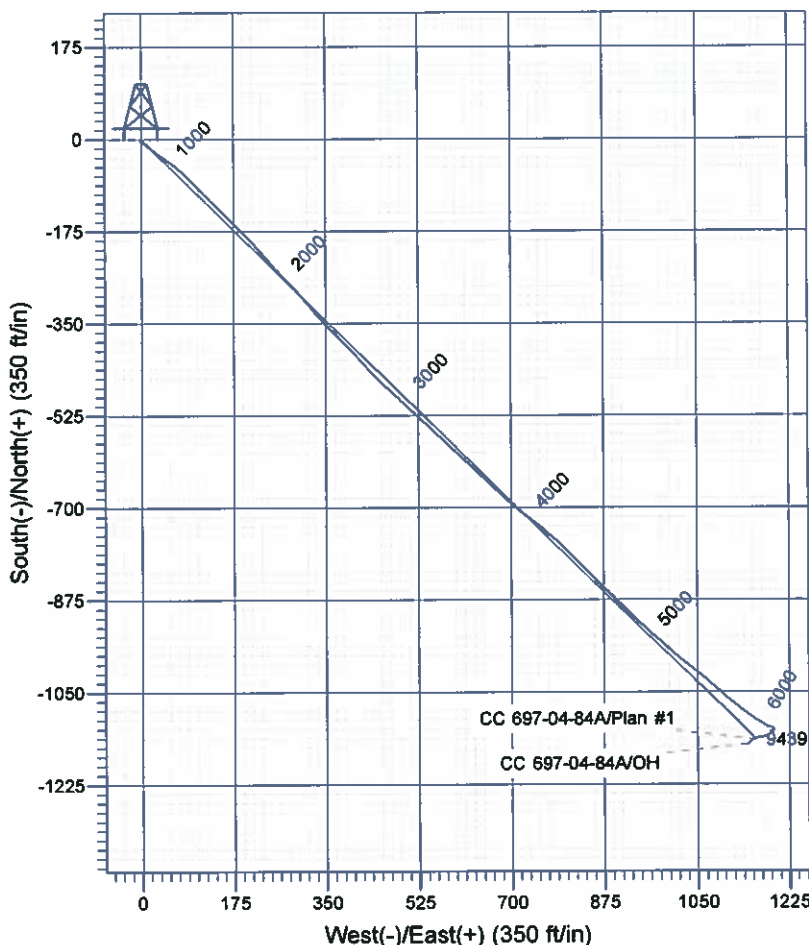
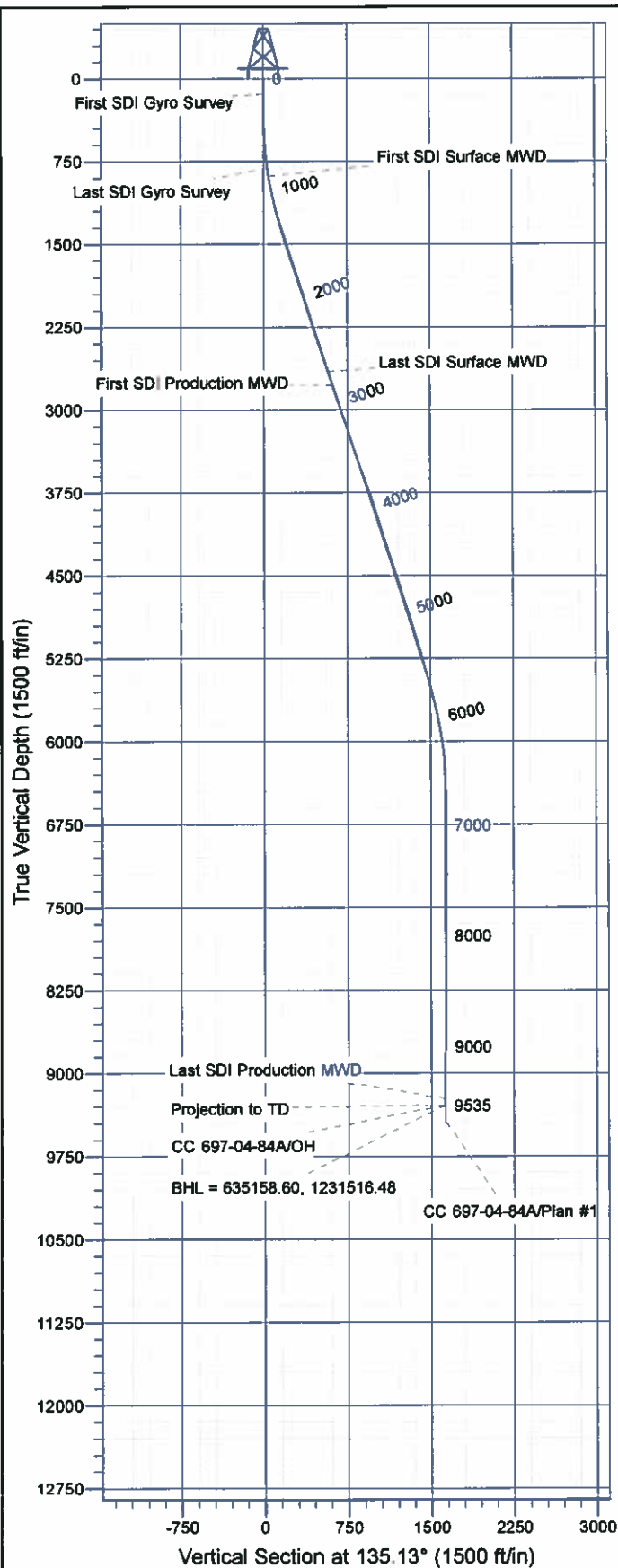




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA R/MAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad
Well: CC 697-04-84A
Wellbore: OH
Design: OH



Well Details: CC 697-04-84A

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	636341.60	1230407.72	39° 32' 55.811 N	108° 13' 46.202 W	I

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-04-84A - Slot I, True North
Vertical (TVD) Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)
Section (VS) Reference: Slot - I(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

14:06, April 23 2012
Created By: Janie Cooke

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-84A - Slot I**

OH

Design: OH

Standard Survey Report

23 April, 2012



Scientific Drilling International, Inc.
Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-84A - Slot I
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 697-04-84A	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	Latitude:	39° 32' 47.760 N
From:	Map	Easting:	1,230,276.10 usft	Longitude:	108° 13' 47.570 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.72 °

Well	CC 697-04-84A - Slot I					
Well Position	+N/-S	0.00 ft	Northing:	636,341.60 usft	Latitude:	39° 32' 55.811 N
	+E/-W	0.00 ft	Easting:	1,230,407.72 usft	Longitude:	108° 13' 46.202 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	135.13	

Survey Program	Date	04/23/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
139.00	809.00	Survey #1 - Gyro Survey (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
883.00	2,735.00	Survey #2 - Surface MWD (OH)	MWD-SDI	MWD - Standard SCWSA	
2,869.00	9,535.00	Survey #3 - Production MWD (OH)	MWD-SDI	MWD - Standard SCWSA	

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
139.00	0.26	256.99	139.00	-0.07	-0.31	-0.17	0.19	0.19	0.00
First SDI Gyro Survey									
170.00	0.62	236.07	170.00	-0.18	-0.51	-0.24	1.25	1.16	-67.48
259.00	0.62	212.52	258.99	-0.86	-1.17	-0.22	0.28	0.00	-28.46
348.00	1.06	219.99	347.98	-1.89	-1.96	-0.04	0.51	0.49	8.39
447.00	1.41	134.21	446.97	-3.44	-1.68	1.26	1.72	0.35	-86.65
539.00	3.70	127.53	538.87	-6.04	1.49	5.33	2.51	2.49	-7.26
630.00	4.84	119.44	629.62	-9.72	7.16	11.94	1.41	1.25	-8.89

Scientific Drilling International, Inc.
Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-84A - Slot I
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 697-04-84A	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)
720.00	8.86	130.61	719.15	-15.08	14.55	20.95	2.57	2.24	12.41
809.00	8.53	127.27	807.34	-22.54	23.84	32.79	1.94	1.88	-3.75
Last SDI Gyro Survey									
883.00	8.88	125.07	880.49	-29.14	32.88	43.85	0.65	0.47	-2.97
First SDI Surface MWD									
973.00	11.61	125.33	969.05	-38.37	45.96	59.62	3.03	3.03	0.29
1,067.00	12.31	127.44	1,061.01	-49.94	61.63	78.87	0.88	0.74	2.24
1,162.00	12.49	132.71	1,153.79	-63.06	77.22	99.17	1.21	0.19	5.55
1,257.00	14.16	136.32	1,246.23	-78.43	92.79	121.05	1.96	1.76	3.80
1,352.00	16.44	135.70	1,337.86	-96.46	110.21	146.12	2.41	2.40	-0.65
1,446.00	17.94	135.35	1,427.66	-116.28	129.67	173.89	1.60	1.60	-0.37
1,541.00	18.29	134.47	1,517.95	-137.13	150.60	203.43	0.47	0.37	-0.93
1,636.00	18.29	133.24	1,608.15	-157.79	172.09	233.24	0.41	0.00	-1.29
1,730.00	18.03	135.70	1,697.47	-178.30	193.00	262.53	0.86	-0.28	2.62
1,825.00	18.73	137.99	1,787.62	-200.16	213.47	292.46	1.06	0.74	2.41
1,920.00	18.03	139.13	1,877.78	-222.61	233.30	322.36	0.83	-0.74	1.20
2,015.00	17.41	138.95	1,968.27	-244.45	252.28	351.21	0.66	-0.65	-0.19
2,109.00	16.97	134.82	2,058.07	-264.72	271.22	378.96	1.38	-0.47	-4.39
2,204.00	17.50	136.41	2,148.81	-284.84	290.91	407.10	0.75	0.58	1.67
2,299.00	19.61	141.15	2,238.87	-307.61	310.76	437.24	2.73	2.22	4.99
2,393.00	18.03	138.43	2,327.84	-330.78	330.31	467.45	1.92	-1.68	-2.89
2,488.00	18.91	135.53	2,417.95	-352.76	350.85	497.53	1.34	0.93	-3.05
2,583.00	18.29	135.61	2,507.99	-374.40	372.08	527.83	0.65	-0.65	0.08
2,678.00	17.15	135.26	2,598.48	-395.00	392.35	556.74	1.21	-1.20	-0.37
2,735.00	18.99	137.99	2,652.67	-407.86	404.47	574.41	3.55	3.23	4.79
Last SDI Surface MWD									
2,869.00	18.03	138.34	2,779.73	-439.56	432.85	616.89	0.72	-0.72	0.28
First SDI Production MWD									
2,964.00	17.23	132.89	2,870.28	-460.12	452.93	645.63	1.93	-0.84	-5.74
3,059.00	19.79	134.21	2,960.36	-480.91	474.77	675.78	2.73	2.69	1.39
3,154.00	18.20	132.54	3,050.18	-502.16	497.23	706.68	1.77	-1.67	-1.76
3,248.00	18.73	133.07	3,139.34	-522.39	519.07	736.43	0.59	0.56	0.56
3,343.00	18.91	133.68	3,229.26	-543.44	541.35	767.06	0.28	0.19	0.64
3,438.00	15.56	132.10	3,319.98	-562.61	561.94	795.18	3.56	-3.53	-1.66
3,532.00	18.73	134.21	3,409.80	-581.60	582.12	822.87	3.44	3.37	2.24
3,627.00	21.63	132.98	3,498.96	-604.17	605.86	855.62	3.08	3.05	-1.29
3,722.00	20.31	133.07	3,587.66	-627.37	630.72	889.59	1.39	-1.39	0.09
3,816.00	19.17	133.42	3,676.14	-649.12	653.85	921.33	1.22	-1.21	0.37
3,911.00	17.41	133.33	3,766.33	-669.59	675.52	951.12	1.85	-1.85	-0.09
4,006.00	18.47	131.40	3,856.71	-689.30	697.14	980.35	1.28	1.12	-2.03
4,100.00	19.08	127.97	3,945.71	-708.60	720.42	1,010.45	1.34	0.65	-3.65
4,195.00	17.67	128.58	4,035.87	-727.14	743.94	1,040.18	1.50	-1.48	0.64
4,290.00	16.53	129.20	4,126.67	-744.68	765.68	1,067.95	1.22	-1.20	0.65
4,385.00	18.99	133.15	4,217.14	-763.79	787.44	1,096.84	2.88	2.59	4.16

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-84A - Slot I
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 697-04-84A	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)
4,479.00	18.29	134.74	4,306.21	-784.64	809.07	1,126.88	0.92	-0.74	1.69
4,574.00	17.15	135.44	4,396.70	-805.11	829.49	1,155.79	1.22	-1.20	0.74
4,669.00	18.91	135.61	4,487.03	-826.09	850.09	1,185.19	1.85	1.85	0.18
4,763.00	17.85	135.00	4,576.23	-847.16	870.93	1,214.83	1.15	-1.13	-0.65
4,858.00	16.97	136.14	4,666.88	-867.46	890.83	1,243.26	0.99	-0.93	1.20
4,953.00	19.26	133.15	4,757.17	-888.17	911.87	1,272.78	2.60	2.41	-3.15
5,047.00	18.55	134.03	4,846.10	-909.17	933.93	1,303.22	0.81	-0.76	0.94
5,142.00	16.53	135.53	4,936.67	-929.32	954.27	1,331.85	2.18	-2.13	1.58
5,237.00	18.47	131.92	5,027.28	-949.02	974.93	1,360.39	2.34	2.04	-3.80
5,332.00	17.06	131.83	5,117.74	-968.36	996.52	1,389.33	1.48	-1.48	-0.09
5,426.00	15.30	130.25	5,208.02	-985.58	1,016.26	1,415.46	1.93	-1.87	-1.68
5,521.00	16.71	128.06	5,299.33	-1,002.09	1,036.58	1,441.50	1.61	1.48	-2.31
5,616.00	15.74	129.11	5,390.55	-1,018.64	1,057.33	1,467.87	1.07	-1.02	1.11
5,710.00	14.60	130.69	5,481.27	-1,034.41	1,076.21	1,492.36	1.29	-1.21	1.68
5,805.00	13.81	131.57	5,573.37	-1,049.74	1,093.77	1,515.61	0.86	-0.83	0.93
5,899.00	12.93	132.63	5,664.82	-1,064.31	1,109.90	1,537.32	0.97	-0.94	1.13
5,994.00	12.22	127.00	5,757.54	-1,077.56	1,125.75	1,557.89	1.49	-0.75	-5.93
6,089.00	11.52	125.51	5,850.51	-1,089.12	1,141.50	1,577.20	0.80	-0.74	-1.57
6,183.00	10.55	124.54	5,942.77	-1,099.45	1,156.23	1,594.91	1.05	-1.03	-1.03
6,278.00	7.91	118.12	6,036.54	-1,107.46	1,169.17	1,609.71	2.98	-2.78	-6.76
6,372.00	5.80	124.98	6,129.86	-1,113.23	1,178.76	1,620.57	2.40	-2.24	7.30
6,467.00	4.57	101.95	6,224.48	-1,116.77	1,186.40	1,628.47	2.52	-1.29	-24.24
6,561.00	2.81	105.64	6,318.28	-1,118.17	1,192.28	1,633.61	1.89	-1.87	3.93
6,656.00	0.88	157.06	6,413.23	-1,119.47	1,194.81	1,636.31	2.49	-2.03	54.13
6,751.00	0.97	182.37	6,508.22	-1,120.94	1,195.06	1,637.53	0.44	0.09	26.64
6,845.00	1.14	199.69	6,602.20	-1,122.62	1,194.71	1,638.48	0.38	0.18	18.43
6,939.00	0.79	200.57	6,696.19	-1,124.11	1,194.17	1,639.15	0.37	-0.37	0.94
7,034.00	1.14	219.64	6,791.18	-1,125.45	1,193.34	1,639.51	0.50	0.37	20.07
7,128.00	1.23	239.24	6,885.16	-1,126.68	1,191.87	1,639.35	0.44	0.10	20.85
7,223.00	0.62	67.32	6,980.15	-1,127.01	1,191.47	1,639.30	1.94	-0.64	-180.97
7,317.00	0.88	69.96	7,074.14	-1,126.56	1,192.62	1,639.79	0.28	0.28	2.81
7,412.00	0.53	69.26	7,169.14	-1,126.16	1,193.71	1,640.28	0.37	-0.37	-0.74
7,506.00	0.26	11.69	7,263.14	-1,125.79	1,194.16	1,640.34	0.48	-0.29	-61.24
7,601.00	0.79	293.55	7,358.13	-1,125.32	1,193.61	1,639.61	0.82	0.56	-82.25
7,695.00	1.06	286.35	7,452.12	-1,124.82	1,192.18	1,638.25	0.31	0.29	-7.66
7,790.00	1.32	276.24	7,547.10	-1,124.45	1,190.25	1,636.63	0.35	0.27	-10.64
7,885.00	0.44	156.53	7,642.09	-1,124.67	1,189.31	1,636.11	1.67	-0.93	-126.01
7,979.00	0.88	125.33	7,736.08	-1,125.42	1,190.04	1,637.16	0.59	0.47	-33.19
8,074.00	0.79	175.78	7,831.08	-1,126.49	1,190.68	1,638.38	0.75	-0.09	53.11
8,169.00	1.06	200.04	7,926.06	-1,127.97	1,190.43	1,639.25	0.49	0.28	25.54
8,264.00	0.97	223.94	8,021.05	-1,129.37	1,189.57	1,639.64	0.45	-0.09	25.16
8,358.00	1.14	234.75	8,115.03	-1,130.49	1,188.25	1,639.50	0.28	0.18	11.50
8,453.00	2.02	246.00	8,210.00	-1,131.71	1,185.95	1,638.74	0.98	0.93	11.84

Scientific Drilling International, Inc.
Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-84A - Slot 1
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 697-04-84A	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)
8,548.00	2.20	238.18	8,304.93	-1,133.35	1,182.87	1,637.73	0.36	0.19	-8.23
8,642.00	2.37	262.53	8,398.86	-1,134.56	1,179.41	1,636.15	1.04	0.18	25.90
8,737.00	2.20	252.33	8,493.78	-1,135.37	1,175.73	1,634.12	0.46	-0.18	-10.74
8,832.00	2.55	257.69	8,588.70	-1,136.37	1,171.93	1,632.15	0.44	0.37	5.64
8,927.00	2.20	272.90	8,683.62	-1,136.73	1,168.04	1,629.66	0.76	-0.37	16.01
9,021.00	2.37	262.35	8,777.55	-1,136.90	1,164.31	1,627.15	0.48	0.18	-11.22
9,116.00	2.81	250.93	8,872.45	-1,137.92	1,160.17	1,624.95	0.71	0.46	-12.02
9,211.00	2.81	237.74	8,967.34	-1,139.92	1,155.99	1,623.43	0.68	0.00	-13.88
9,305.00	2.73	230.10	9,061.23	-1,142.59	1,152.33	1,622.73	0.40	-0.09	-8.13
9,400.00	2.64	226.49	9,156.12	-1,145.55	1,149.01	1,622.48	0.20	-0.09	-3.80
9,478.00	2.73	238.62	9,234.04	-1,147.75	1,146.12	1,622.01	0.74	0.12	15.55
Last SDI Production MWD									
9,535.00	2.73	238.62	9,290.97	-1,149.16	1,143.80	1,621.38	0.00	0.00	0.00
Projection to TD - BHL = 635158.60, 1231516.48 - CC 697-04-84A Target									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
139.00	139.00	-0.07	-0.31	First SDI Gyro Survey
809.00	807.34	-22.54	23.84	Last SDI Gyro Survey
883.00	880.49	-29.14	32.88	First SDI Surface MWD
2,735.00	2,652.67	-407.86	404.47	Last SDI Surface MWD
2,869.00	2,779.73	-439.56	432.85	First SDI Production MWD
9,478.00	9,234.04	-1,147.75	1,146.12	Last SDI Production MWD
9,535.00	9,290.97	-1,149.16	1,143.80	Projection to TD
9,535.00	9,290.97	-1,149.16	1,143.80	BHL = 635158.60, 1231516.48

Checked By: _____ Approved By: _____ Date: _____