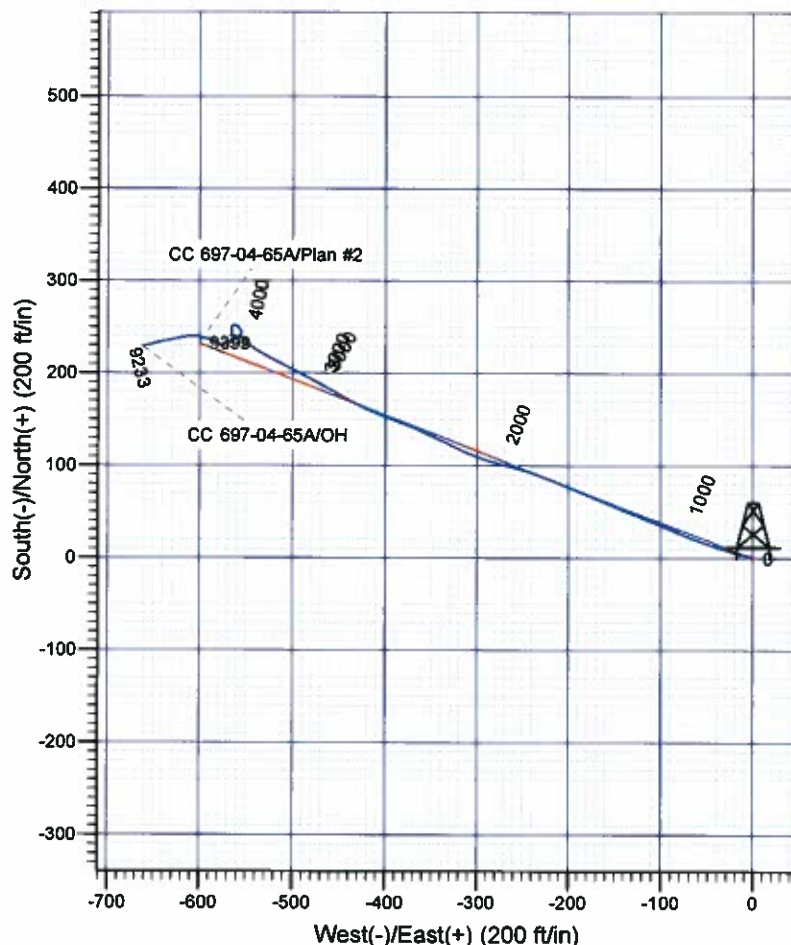
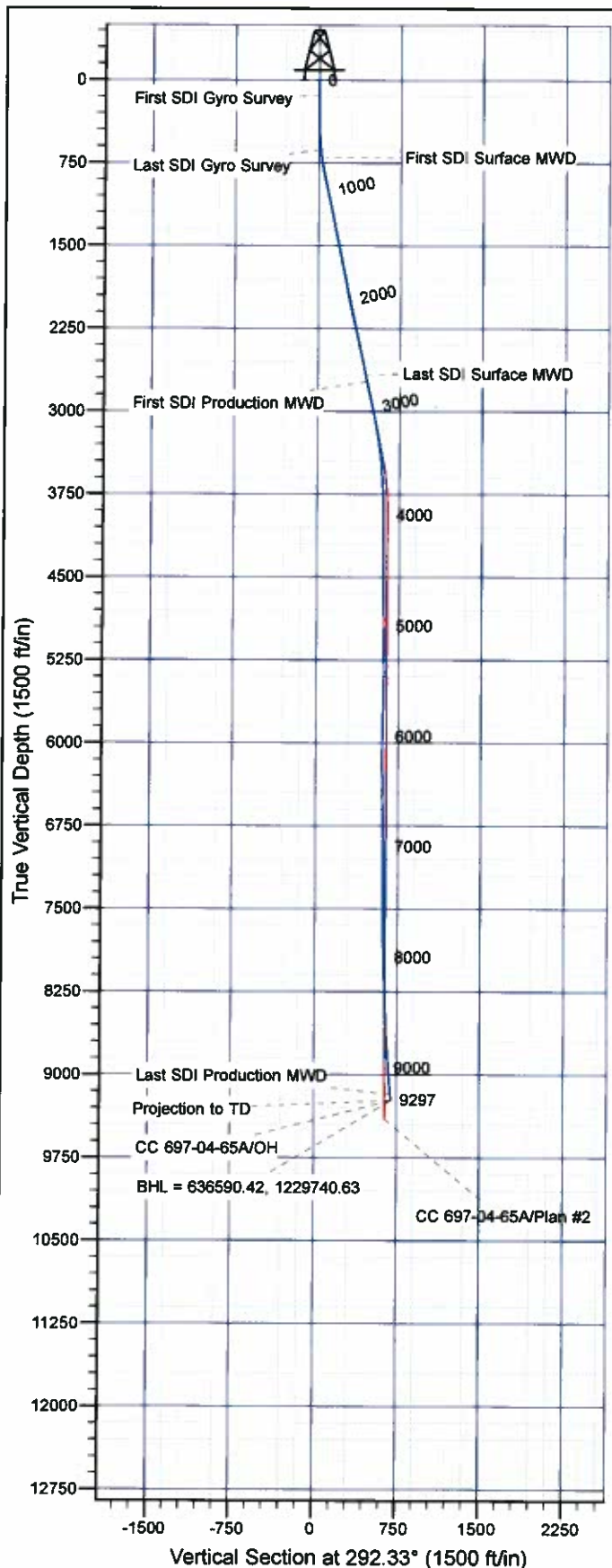




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad
Well: CC 697-04-65A
Wellbore: OH
Design: OH



Well Details: CC 697-04-65A

+N/-S	+E/-W	North	East	Latitude	Longitude	Slot
0.00	0.00	636341.89	1230395.62	39° 32' 55.810 N	108° 13' 48.356 W	L

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-04-65A - Slot L, True North
Vertical (TVD) Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)
Section (VS) Reference: Slot - L(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

14:38, March 29 2012
Created By: Janie Cooke

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-65A - Slot L**

OH

Design: OH

Standard Survey Report

29 March, 2012



Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-65A - Slot L
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 697-04-65A	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:	635,530.82 usft
From:	Map	Easting:	1,230,276.10 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	39° 32' 47.760 N
		Longitude:	108° 13' 47.570 W
		Grid Convergence:	-1.72 °

Well	CC 697-04-65A - Slot L		
Well Position	+N/-S	0.00 ft	Northing: 636,341.89 usft
	+E/-W	0.00 ft	Easting: 1,230,395.62 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	39° 32' 55.810 N
		Longitude:	108° 13' 46.356 W
		Ground Level:	8,629.00 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2005-10	03/23/2011	10.47
	IGRF2010	03/15/2012	10.37
			Dip Angle (°)
			65.76
			65.72
			Field Strength (nT)
			52,283
			52,151

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)
	0.00	0.00	0.00
			Direction (°)
			292.33

Survey Program	Date 03/29/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
140.00	629.00	Survey #1 - Gyro Survey (OH)	SDI Standard Keeper 103
703.00	2,709.00	Survey #2 - Surface MWD (OH)	MWD-SDI
2,776.00	9,297.00	Survey #3 - Production MWD (OH)	MWD-SDI
			Description
			SDI Standard Wireline Keeper ver 1.0.3
			MWD - Standard ISCWSA
			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
140.00	0.70	12.30	140.00	0.84	0.18	0.15	0.50	0.50	0.00
First SDI Gyro Survey									
171.00	0.70	23.55	170.99	1.19	0.30	0.18	0.44	0.00	36.29
283.00	0.09	202.59	282.99	1.64	0.49	0.17	0.86	-0.66	194.61
355.00	0.53	295.40	354.99	1.76	0.08	0.59	0.59	0.48	100.88
446.00	1.94	269.03	445.97	1.91	-1.84	2.43	1.63	1.55	-28.98

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-65A - Slot L
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 697-04-65A	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)
538.00	4.05	281.16	537.84	2.52	-6.58	7.04	2.38	2.29	13.18
629.00	6.77	284.06	628.42	4.44	-14.94	15.51	3.00	2.99	3.19
Last SDI gyro Survey									
703.00	7.83	286.53	701.82	6.93	-24.00	24.84	1.49	1.43	3.34
First SDI Surface MWD									
792.00	10.11	287.15	789.73	10.96	-37.28	38.65	2.56	2.56	0.70
882.00	12.40	290.31	877.99	16.65	-53.89	56.18	2.63	2.54	3.51
973.00	13.01	292.07	966.77	23.89	-72.55	76.19	0.79	0.67	1.93
1,067.00	12.13	293.48	1,058.51	31.80	-91.41	98.64	0.99	-0.94	1.50
1,162.00	11.08	292.25	1,151.57	39.23	-109.02	115.75	1.14	-1.11	-1.29
1,257.00	11.96	291.72	1,244.65	46.33	-126.61	134.72	0.93	0.93	-0.56
1,352.00	11.61	292.60	1,337.65	53.65	-144.58	154.12	0.41	-0.37	0.93
1,446.00	11.34	292.16	1,429.77	60.77	-161.87	172.82	0.30	-0.29	-0.47
1,541.00	12.57	292.95	1,522.71	68.32	-180.04	192.50	1.31	1.29	0.83
1,636.00	12.13	292.51	1,615.51	76.17	-198.78	212.82	0.47	-0.46	-0.46
1,730.00	10.90	291.54	1,707.62	83.22	-216.17	231.58	1.32	-1.31	-1.03
1,825.00	11.52	290.14	1,800.80	89.78	-233.44	250.04	0.71	0.65	-1.47
1,920.00	10.64	285.92	1,894.03	95.46	-250.78	268.24	1.26	-0.93	-4.44
2,015.00	11.61	283.54	1,987.25	100.10	-268.50	286.40	1.13	1.02	-2.51
2,109.00	12.75	286.71	2,079.13	105.30	-287.64	306.07	1.41	1.21	3.37
2,204.00	13.45	292.51	2,171.66	112.54	-307.88	327.55	1.57	0.74	6.11
2,299.00	13.45	296.20	2,264.06	121.65	-328.00	349.63	0.90	0.00	3.88
2,393.00	12.49	294.53	2,355.66	130.70	-347.06	370.69	1.10	-1.02	-1.78
2,488.00	12.49	293.92	2,448.41	139.13	-365.80	391.23	0.14	0.00	-0.64
2,583.00	11.70	290.31	2,541.30	146.63	-384.22	411.12	1.15	-0.83	-3.80
2,678.00	12.31	290.66	2,634.23	153.55	-402.73	430.87	0.65	0.64	0.37
2,709.00	11.87	292.60	2,664.54	155.94	-408.77	437.36	1.93	-1.42	6.26
Last SDI Surface MWD									
2,776.00	10.90	294.34	2,730.22	161.20	-420.90	450.58	1.54	-1.45	2.60
First SDI Production MWD									
2,870.00	12.57	299.27	2,822.25	169.87	-437.92	469.62	2.07	1.78	5.24
2,965.00	12.93	299.53	2,914.91	180.16	-456.19	490.43	0.38	0.38	0.27
3,060.00	12.22	298.21	3,007.63	190.15	-474.30	510.97	0.81	-0.75	-1.39
3,154.00	11.61	299.09	3,099.61	199.45	-491.33	530.26	0.68	-0.65	0.94
3,249.00	9.76	295.84	3,192.96	207.61	-506.93	547.80	2.05	-1.95	-3.42
3,344.00	7.47	299.79	3,286.88	214.19	-519.54	561.96	2.49	-2.41	4.16
3,438.00	7.39	298.39	3,380.09	220.10	-530.16	574.03	0.21	-0.09	-1.49
3,533.00	5.45	301.46	3,474.49	225.36	-539.38	584.56	2.07	-2.04	3.23
3,628.00	3.61	314.30	3,569.19	229.80	-545.37	591.79	2.20	-1.94	13.52
3,722.00	3.96	317.11	3,662.99	234.25	-549.70	597.48	0.42	0.37	2.99
3,817.00	2.11	323.79	3,757.85	238.06	-552.97	601.95	1.98	-1.95	7.03
3,912.00	0.62	230.01	3,852.83	239.14	-554.39	603.68	2.36	-1.57	-98.72
4,007.00	0.53	277.82	3,947.82	238.87	-555.22	604.34	0.50	-0.09	50.33
4,101.00	0.35	288.02	4,041.82	239.02	-555.93	605.05	0.21	-0.19	10.85

Scientific Drilling International, Inc.
Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-65A - Slot L
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 697-04-65A	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)
4,196.00	0.79	261.74	4,136.81	239.02	-556.85	605.90	0.53	0.46	-27.66
4,291.00	0.26	257.43	4,231.81	238.88	-557.71	606.64	0.56	-0.56	-4.54
4,385.00	0.62	271.14	4,325.81	238.84	-558.43	607.29	0.40	0.38	14.59
4,480.00	0.18	247.41	4,420.80	238.79	-559.08	607.88	0.49	-0.46	-24.98
4,575.00	0.53	325.55	4,515.80	239.10	-559.46	608.35	0.55	0.37	82.25
4,669.00	0.70	280.55	4,609.80	239.56	-560.27	609.28	0.53	0.18	-47.87
4,764.00	1.23	284.41	4,704.78	239.92	-561.83	610.86	0.56	0.56	4.06
4,859.00	1.58	281.07	4,799.76	240.43	-564.10	613.15	0.38	0.37	-3.52
4,953.00	0.44	244.77	4,893.74	240.52	-565.70	614.67	1.33	-1.21	-38.62
5,048.00	0.09	9.05	4,988.74	240.44	-566.02	614.93	0.52	-0.37	130.82
5,143.00	0.35	15.56	5,083.74	240.79	-565.93	614.98	0.27	0.27	6.85
5,238.00	1.76	8.79	5,178.72	242.51	-565.63	615.36	1.49	1.48	-7.13
5,333.00	1.67	3.43	5,273.68	245.34	-565.32	616.15	0.19	-0.09	-5.64
5,427.00	1.58	1.58	5,367.64	248.00	-565.21	617.05	0.11	-0.10	-1.97
5,522.00	1.67	357.63	5,462.60	250.69	-565.23	618.09	0.15	0.09	-4.16
5,616.00	1.67	91.76	5,556.58	252.02	-563.92	617.38	2.60	0.00	100.14
5,711.00	1.76	96.06	5,651.53	251.82	-561.08	614.68	0.17	0.09	4.53
5,806.00	2.11	139.22	5,746.48	250.34	-558.49	611.72	1.54	0.37	45.43
5,900.00	2.64	152.58	5,840.40	247.11	-556.36	608.53	0.81	0.56	14.21
5,995.00	1.41	172.70	5,935.34	244.01	-555.20	606.28	1.48	-1.29	21.18
6,089.00	0.70	229.13	6,029.33	242.49	-555.49	605.97	1.25	-0.76	60.03
6,184.00	0.79	212.43	6,124.32	241.55	-556.28	606.34	0.25	0.09	-17.58
6,279.00	1.14	224.47	6,219.31	240.33	-557.30	606.81	0.42	0.37	12.67
6,373.00	1.23	226.93	6,313.29	238.97	-558.69	607.59	0.11	0.10	2.62
6,468.00	1.23	229.83	6,408.27	237.62	-560.21	608.48	0.07	0.00	3.05
6,562.00	1.14	240.64	6,502.25	236.51	-561.80	609.53	0.26	-0.10	11.50
6,657.00	1.49	240.12	6,597.22	235.43	-563.69	610.87	0.37	0.37	-0.55
6,751.00	2.02	242.23	6,691.18	234.05	-566.22	612.68	0.57	0.56	2.24
6,846.00	1.32	312.10	6,786.14	234.00	-568.51	614.79	2.10	-0.74	73.55
6,940.00	1.67	331.00	6,880.11	235.93	-569.98	616.87	0.64	0.37	20.11
7,035.00	1.23	317.11	6,975.08	237.88	-571.34	618.88	0.59	-0.46	-14.62
7,129.00	1.49	297.86	7,069.06	239.19	-573.11	621.01	0.56	0.28	-20.48
7,224.00	0.44	124.19	7,164.05	239.57	-573.90	621.89	2.03	-1.11	-182.81
7,318.00	1.41	138.16	7,258.03	238.50	-572.83	620.49	1.05	1.03	14.86
7,413.00	1.41	134.65	7,353.00	236.81	-571.22	618.36	0.09	0.00	-3.69
7,507.00	1.32	143.79	7,446.98	235.12	-569.76	616.36	0.25	-0.10	9.72
7,602.00	1.85	230.98	7,541.95	233.27	-570.30	616.17	2.34	0.56	91.78
7,696.00	2.64	244.16	7,635.88	231.38	-573.43	618.34	1.00	0.84	14.02
7,791.00	1.67	274.31	7,730.82	230.53	-576.78	621.11	1.54	-1.02	31.74
7,885.00	1.41	311.57	7,824.78	231.40	-579.01	623.51	1.08	-0.28	39.64
7,980.00	1.49	302.25	7,919.75	232.83	-580.93	625.83	0.26	0.08	-9.81
8,075.00	1.58	300.85	8,014.72	234.16	-583.10	628.34	0.10	0.09	-1.47
8,170.00	1.76	284.78	8,109.68	235.21	-585.63	631.08	0.53	0.19	-16.94
8,264.00	2.02	290.13	8,203.63	236.14	-588.59	634.17	0.33	0.28	5.71

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-65A - Slot L
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 697-04-65A	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)
8,359.00	2.37	282.39	8,298.56	237.14	-592.08	637.78	0.48	0.37	-8.15
8,413.69	2.52	285.67	8,353.20	237.71	-594.34	640.09	0.38	0.28	6.00
CC 697-04-65A Target									
8,454.00	2.64	287.84	8,393.47	238.23	-596.08	641.89	0.38	0.29	5.38
8,549.00	2.37	282.13	8,488.38	239.32	-600.08	646.01	0.39	-0.28	-8.01
8,738.00	3.43	267.98	8,677.13	239.94	-809.55	655.00	0.67	0.56	-7.49
8,833.00	4.57	261.56	8,771.90	239.28	-616.14	660.84	1.29	1.20	-6.76
8,928.00	5.10	255.76	8,866.56	237.69	-623.97	667.49	0.76	0.56	-6.11
9,022.00	5.54	259.72	8,960.16	235.85	-632.49	674.67	0.61	0.47	4.21
9,117.00	6.24	257.25	9,054.66	233.89	-642.03	682.75	0.78	0.74	-2.60
9,212.00	6.77	255.06	9,149.05	231.31	-652.48	691.43	0.82	0.56	-2.31
9,241.00	6.77	255.15	9,177.84	230.43	-655.78	694.16	0.04	0.00	0.31
Last SDI Production MWD									
9,297.00	6.77	255.15	9,233.45	228.74	-662.16	699.42	0.00	0.00	0.00
Projection to TD - BHL = 636590.42, 1229740.63									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
140.00	140.00	0.84	0.18	First SDI Gyro Survey
629.00	628.42	4.44	-14.94	Last SDI gyro Survey
703.00	701.82	6.93	-24.00	First SDI Surface MWD
2,709.00	2,664.54	155.94	-408.77	Last SDI Surface MWD
2,776.00	2,730.22	161.20	-420.90	First SDI Production MWD
9,241.00	9,177.84	230.43	-655.78	Last SDI Production MWD
9,297.00	9,233.45	228.74	-662.16	Projection to TD
9,297.00	9,233.45	228.74	-662.16	BHL = 636590.42, 1229740.63

Checked By: _____ Approved By: _____ Date: _____