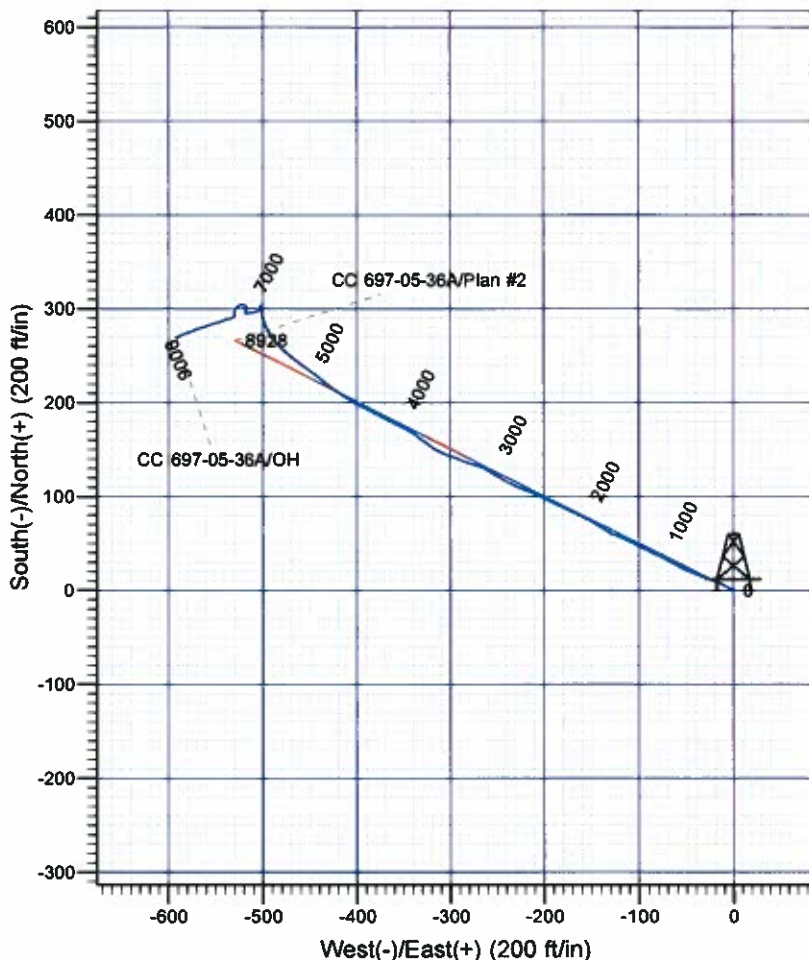
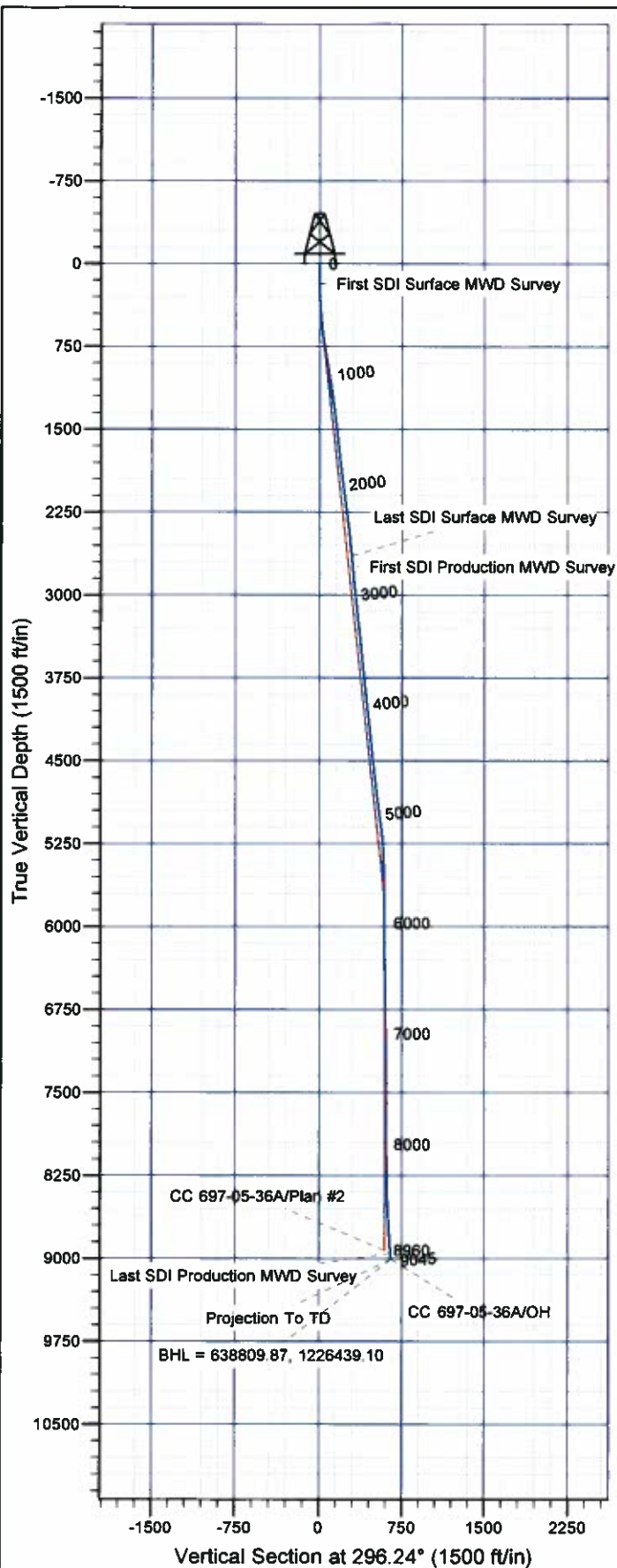




Scientific Drilling

Company: OXY USA RMAT
 Project: Garfield County, CO NAD27
 Site: Cascade Creek 697-05C Pad
 Well: CC 697-05-36A
 Wellbore: OH
 Design: OH



Well Details: CC 697-05-36A

TVD Reference: GL 8423' & RKB 30' @ 8453.00ft (H&P 353) Level: 8423.00
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.00 0.00 638522.90 1227022.44 39° 33' 16.353 N 108° 14' 30.239 W I

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-05-36A - Slot I, True North
 Vertical (TVD) Reference: GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
 Section (VS) Reference: Slot - I(0.00N, 0.00E)
 Measured Depth Reference: GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
 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

9:09, December 16 2011
 Created By: Rex Hall

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-05C Pad
CC 697-05-36A - Slot I**

OH

Design: OH

Standard Survey Report

16 December, 2011

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-36A - Slot I
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-36A	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 697-05C Pad, Sec. 5 T6S R97W				
Site Position:		Northing:	637,463.43 usft	Latitude:	39° 33' 5.626 N
From:	Map	Easting:	1,226,150.07 usft	Longitude:	108° 14' 40.963 W
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.73 °

Well	CC 697-05-36A - Slot I					
Well Position	+N/-S	0.00 ft	Northing:	638,522.90 usft	Latitude:	39° 33' 16.353 N
	+E/-W	0.00 ft	Easting:	1,227,022.44 usft	Longitude:	108° 14' 30.239 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,423.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	12/16/10	10.51	65.77	52,312

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		296.24

Survey Program	Date	12/16/11			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
183.00	2,666.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,763.00	9,045.00	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	
183.00	0.50	283.00	183.00	0.18	-0.78	0.78	0.27	0.27	0.00	
First SDI Surface MWD Survey										
243.00	1.05	309.29	242.99	0.59	-1.46	1.57	1.07	0.92	43.82	
334.00	1.70	292.80	333.97	1.64	-3.35	3.73	0.83	0.71	-18.12	
424.00	3.67	299.76	423.86	3.59	-7.08	7.94	2.21	2.19	7.73	
514.00	5.19	299.23	513.59	7.00	-13.13	14.88	1.69	1.69	-0.59	
603.00	6.86	286.40	602.10	10.47	-21.75	24.13	2.40	1.88	-14.42	
694.00	9.06	292.55	692.22	14.75	-33.58	36.64	2.59	2.42	6.76	
784.00	10.11	292.20	780.96	20.45	-47.44	51.59	1.17	1.17	-0.39	

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-36A - Slot I
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-36A	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)	
874.00	9.50	299.49	869.65	27.10	-61.22	66.89	1.54	-0.68	8.10	
965.00	9.15	298.53	959.45	34.25	-74.11	81.61	0.42	-0.38	-1.05	
1,059.00	8.62	293.87	1,052.32	40.67	-87.12	96.12	0.95	-0.56	-4.96	
1,154.00	8.44	299.05	1,146.27	46.93	-99.72	110.20	0.83	-0.19	5.45	
1,248.00	7.83	295.98	1,239.33	53.09	-111.51	123.49	0.80	-0.65	-3.27	
1,343.00	7.21	289.56	1,333.51	57.92	-122.94	135.88	1.10	-0.65	-6.76	
1,437.00	7.39	303.98	1,426.76	63.27	-133.52	147.73	1.95	0.19	15.34	
1,532.00	5.98	303.10	1,521.11	69.39	-142.73	158.70	1.49	-1.48	-0.93	
1,626.00	5.89	297.91	1,614.60	74.32	-151.09	168.38	0.58	-0.10	-5.52	
1,721.00	6.16	295.80	1,709.08	78.82	-159.99	178.35	0.37	0.28	-2.22	
1,815.00	6.33	295.89	1,802.52	83.28	-169.19	188.58	0.18	0.18	0.10	
1,910.00	7.12	294.57	1,896.87	88.02	-179.26	199.70	0.85	0.83	-1.39	
2,005.00	7.83	296.68	1,991.06	93.37	-190.40	212.06	0.80	0.75	2.22	
2,099.00	7.47	296.95	2,084.22	99.01	-201.56	224.57	0.38	-0.38	0.29	
2,194.00	7.30	292.38	2,178.44	104.11	-212.65	236.77	0.64	-0.18	-4.81	
2,288.00	7.65	292.99	2,271.64	108.83	-223.93	248.97	0.38	0.37	0.65	
2,382.00	6.77	294.22	2,364.89	113.55	-234.74	260.76	0.95	-0.94	1.31	
2,477.00	6.60	299.93	2,459.25	118.57	-244.58	271.80	0.72	-0.18	6.01	
2,571.00	5.54	302.48	2,552.72	123.70	-253.09	281.70	1.16	-1.13	2.71	
2,666.00	5.19	302.13	2,647.30	128.45	-260.60	290.53	0.37	-0.37	-0.37	
Last SDI Surface MWD Survey										
2,763.00	4.74	286.49	2,743.94	131.92	-268.16	298.85	1.47	-0.46	-16.12	
First SDI Production MWD Survey										
2,857.00	5.45	286.57	2,837.57	134.29	-276.16	307.08	0.76	0.76	0.09	
2,952.00	6.16	291.23	2,932.08	137.43	-285.24	316.60	0.90	0.75	4.91	
3,046.00	6.42	292.11	3,025.52	141.23	-294.81	326.87	0.29	0.28	0.94	
3,141.00	5.80	287.80	3,119.98	144.70	-304.30	336.91	0.81	-0.65	-4.54	
3,235.00	6.33	299.58	3,213.46	148.71	-313.33	346.79	1.44	0.56	12.53	
3,330.00	6.86	306.35	3,307.83	154.65	-322.45	357.60	0.99	0.56	7.13	
3,425.00	6.24	305.91	3,402.21	161.05	-331.20	368.27	0.65	-0.65	-0.46	
3,519.00	5.54	306.17	3,495.71	166.72	-339.00	377.78	0.75	-0.74	0.28	
3,614.00	6.24	296.59	3,590.21	171.74	-347.32	387.46	1.27	0.74	-10.08	
3,708.00	5.98	296.50	3,683.68	176.21	-356.27	397.46	0.28	-0.28	-0.10	
3,803.00	5.19	295.36	3,778.23	180.26	-364.58	406.71	0.84	-0.83	-1.20	
3,897.00	5.80	299.49	3,871.79	184.42	-372.56	415.70	0.77	0.65	4.39	
3,992.00	6.77	296.86	3,966.22	189.31	-381.73	426.09	1.06	1.02	-2.77	
4,086.00	6.42	294.66	4,059.60	194.01	-391.45	436.89	0.46	-0.37	-2.34	
4,181.00	6.33	299.23	4,154.01	198.78	-400.85	447.43	0.54	-0.09	4.81	
4,275.00	6.16	303.71	4,247.46	204.11	-409.57	457.60	0.55	-0.18	4.77	
4,370.00	5.72	304.50	4,341.94	209.62	-417.71	467.34	0.47	-0.46	0.83	
4,464.00	5.80	302.92	4,435.47	214.85	-425.56	476.70	0.19	0.09	-1.68	
4,559.00	6.68	311.18	4,529.91	221.10	-433.74	486.80	1.32	0.93	8.69	
4,653.00	6.16	308.46	4,623.32	227.84	-441.81	497.01	0.64	-0.55	-2.89	

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-36A - Slot I
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-36A	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)	
4,748.00	6.51	305.56	4,717.74	234.14	-450.18	507.31	0.50	0.37	-3.05	
4,843.00	7.21	306.61	4,812.06	240.83	-459.35	518.49	0.75	0.74	1.11	
4,937.00	8.09	306.08	4,905.22	248.24	-469.43	530.81	0.94	0.94	-0.56	
5,032.00	8.53	314.26	4,999.23	257.09	-479.88	544.09	1.33	0.46	8.61	
5,126.00	8.53	323.49	5,092.19	267.56	-489.02	556.92	1.45	0.00	9.82	
5,221.00	7.30	334.65	5,186.29	278.68	-495.79	567.92	2.07	-1.29	11.75	
5,315.00	5.28	344.40	5,279.72	288.24	-499.51	575.48	2.42	-2.15	10.37	
5,410.00	3.78	349.59	5,374.42	295.54	-501.26	580.27	1.64	-1.58	5.46	
5,504.00	2.37	353.54	5,468.28	300.51	-502.03	583.17	1.52	-1.50	4.20	
5,599.00	0.70	4.27	5,563.25	303.04	-502.21	584.44	1.78	-1.76	11.29	
5,693.00	0.35	155.88	5,657.25	303.36	-502.05	584.44	1.09	-0.37	161.29	
5,788.00	0.62	201.85	5,752.24	302.61	-502.13	584.17	0.48	0.28	48.39	
5,882.00	1.06	205.36	5,846.23	301.36	-502.69	584.12	0.47	0.47	3.73	
5,977.00	1.58	217.49	5,941.21	299.52	-503.86	584.36	0.62	0.55	12.77	
6,071.00	1.49	232.43	6,035.17	297.75	-505.62	585.16	0.44	-0.10	15.89	
6,166.00	1.14	254.49	6,130.15	296.74	-507.51	586.41	0.64	-0.37	23.22	
6,260.00	0.79	261.00	6,224.14	296.39	-509.05	587.63	0.39	-0.37	6.93	
6,355.00	1.41	262.67	6,319.12	296.14	-510.85	589.14	0.65	0.65	1.76	
6,449.00	1.85	259.15	6,413.08	295.71	-513.49	591.32	0.48	0.47	-3.74	
6,544.00	1.93	261.08	6,508.03	295.17	-516.58	593.85	0.11	0.08	2.03	
6,638.00	0.88	346.95	6,602.01	295.63	-518.31	595.60	2.19	-1.12	91.35	
6,732.00	1.67	22.72	6,695.98	297.60	-517.94	596.14	1.15	0.84	38.05	
6,827.00	1.32	5.59	6,790.95	299.96	-517.30	596.61	0.59	-0.37	-18.03	
6,922.00	1.23	337.72	6,885.93	301.99	-517.58	597.76	0.65	-0.09	-29.34	
7,016.00	1.32	305.73	6,979.91	303.56	-518.84	599.58	0.75	0.10	-34.03	
7,111.00	1.76	275.94	7,074.87	304.35	-521.18	602.03	0.95	0.46	-31.36	
7,205.00	1.76	252.38	7,168.83	304.06	-523.99	604.43	0.76	0.00	-25.06	
7,300.00	1.58	226.02	7,263.79	302.71	-526.32	605.92	0.82	-0.19	-27.75	
7,394.00	1.76	215.21	7,357.75	300.63	-528.09	606.59	0.39	0.19	-11.50	
7,489.00	1.23	212.22	7,452.72	298.58	-529.47	606.92	0.56	-0.56	-3.15	
7,583.00	0.62	164.67	7,546.71	297.23	-529.88	606.69	0.99	-0.65	-50.59	
7,678.00	0.70	163.70	7,641.70	296.18	-529.58	605.95	0.09	0.08	-1.02	
7,772.00	1.32	189.37	7,735.69	294.56	-529.59	605.25	0.80	0.66	27.31	
7,867.00	1.49	201.67	7,830.66	292.33	-530.23	604.84	0.36	0.18	12.95	
7,961.00	1.23	241.48	7,924.63	290.72	-531.56	605.32	1.02	-0.28	42.35	
8,056.00	2.02	256.87	8,019.59	289.85	-534.09	607.20	0.94	0.83	16.20	
8,150.00	2.37	254.49	8,113.53	288.95	-537.58	609.93	0.38	0.37	-2.53	
8,245.00	1.06	237.58	8,208.48	287.96	-540.21	611.86	1.46	-1.38	-17.80	
8,339.00	0.88	250.36	8,302.47	287.25	-541.63	612.81	0.30	-0.19	13.60	
8,434.00	1.49	254.32	8,397.45	286.67	-543.50	614.24	0.65	0.64	4.17	
8,528.00	2.90	253.26	8,491.38	285.65	-546.96	616.89	1.50	1.50	-1.13	
8,623.00	4.13	251.68	8,586.20	283.89	-552.50	621.08	1.30	1.29	-1.66	
8,717.00	4.84	251.77	8,679.91	281.58	-559.48	626.33	0.76	0.76	0.10	
8,812.00	5.45	251.50	8,774.52	278.90	-567.57	632.39	0.64	0.64	-0.28	

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-36A - Slot I
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-36A	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)
8,906.00	6.16	248.60	8,868.04	275.64	-576.50	638.96	0.82	0.76	-3.09
8,990.00	7.12	246.67	8,951.48	271.93	-585.48	645.37	1.17	1.14	-2.30
Last SDI Production MWD Survey									
9,045.00	7.12	246.67	9,006.05	269.23	-591.73	649.79	0.00	0.00	0.00
Projection To TD - BHL = 638809.87, 1226439.10									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
183.00	183.00	0.18	-0.78	First SDI Surface MWD Survey
2,666.00	2,647.30	128.45	-260.60	Last SDI Surface MWD Survey
2,763.00	2,743.94	131.92	-268.16	First SDI Production MWD Survey
8,990.00	8,951.48	271.93	-585.48	Last SDI Production MWD Survey
9,045.00	9,006.05	269.23	-591.73	Projection To TD
9,045.00	9,006.05	269.23	-591.73	BHL = 638809.87, 1226439.10

Checked By: _____	Approved By: _____	Date: _____
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