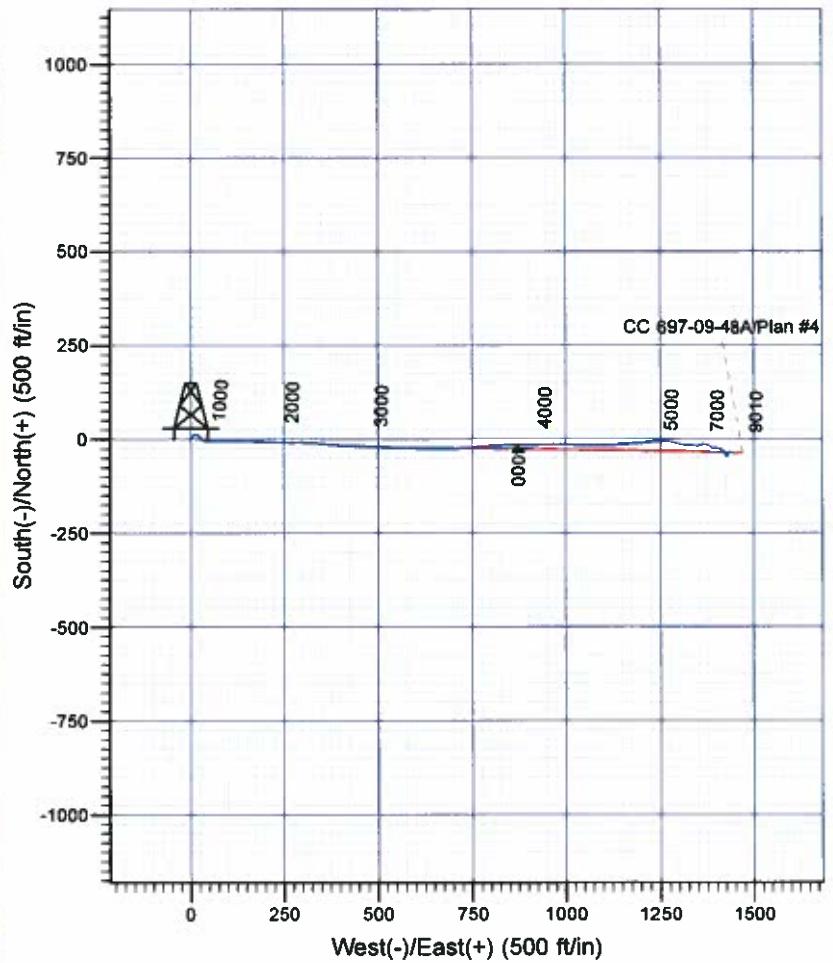
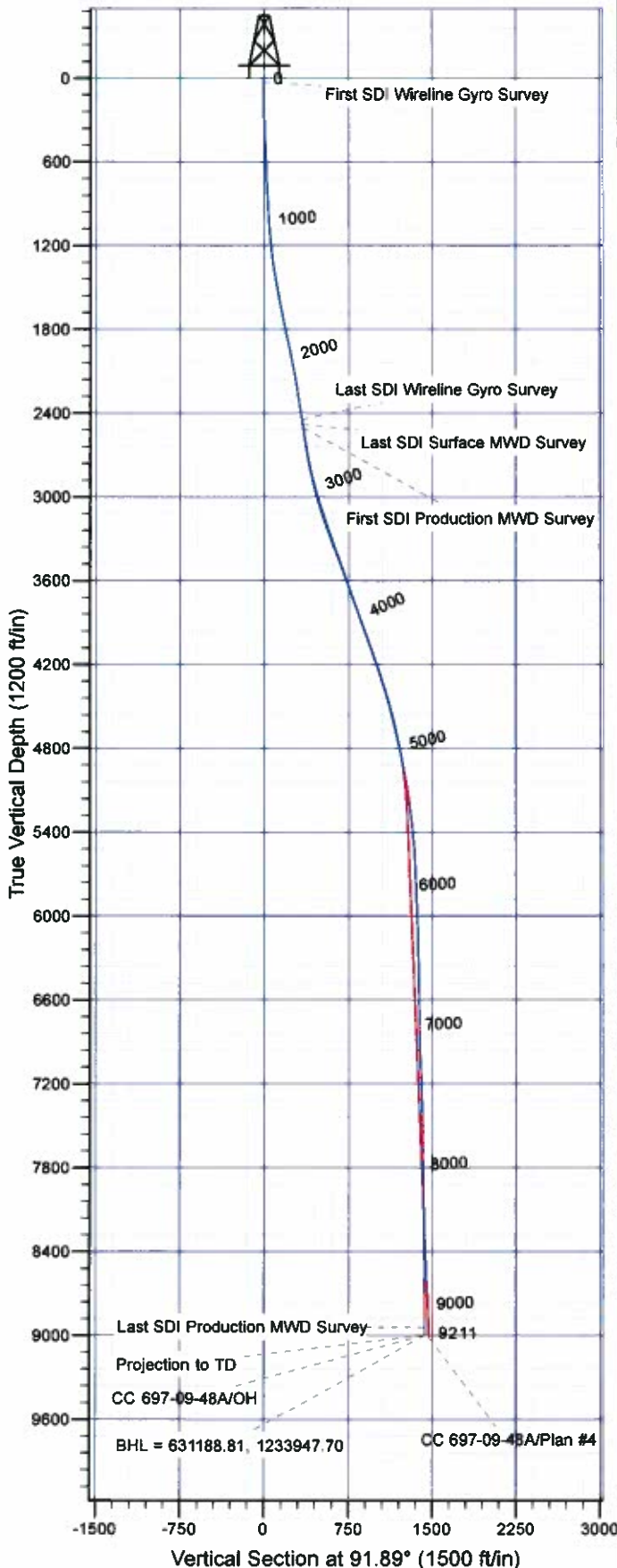




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 609-33 Pad
Well: CC 697-09-48A
Wellbore: OH
Design: OH



Well Details: CC 697-09-48A

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	631264.28	1232505.91	39° 32' 6.273 N	108° 13' 17.486 W	T

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-09-48A - Slot T, True North
Vertical (TVD) Reference: GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
Section (VS) Reference: Slot - T(0.00N, 0.00E)
Measured Depth Reference: GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
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

14:56, August 16 2011
Created By: Janie Cooke

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 609-33 Pad
CC 697-09-48A - Slot T**

OH

Design: OH

Standard Survey Report

16 August, 2011





Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-48A - Slot T
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Whl Mtn 272)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Whl Mtn 272)
Well:	CC 697-09-48A	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 609-33 Pad, Sec 9 T6S R97W				
Site Position:		Northing:	631,314.66 usft	Latitude:	39° 32' 6.734 N
From:	Map	Easting:	1,232,383.54 usft	Longitude:	108° 13' 19.067 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.72 °

Well	CC 697-09-48A - Slot T				
Well Position	+N-S	0.00 ft	Northing:	631,264.28 usft	Latitude: 39° 32' 6.273 N
	+E-W	0.00 ft	Easting:	1,232,505.91 usft	Longitude: 108° 13' 17.486 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level: 8,381.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2009/12/31	10.62	65.78	52,397

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	91.89	

Survey Program	Date	2011/08/16			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
30.00	2,476.00	Survey #2 - Wireline Gyro (OH)	Standard Keeper 103	Standard Wireline Keeper ver 1.0.3	
2,476.00	2,514.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,539.00	9,211.00	Survey #3 - 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	
30.00	0.51	243.39	30.00	-0.06	-0.12	-0.12	1.70	1.70	0.00	
First SDI Wireline Gyro Survey										
55.00	0.53	253.63	55.00	-0.14	-0.33	-0.32	0.38	0.08	40.96	
80.00	0.50	265.58	80.00	-0.18	-0.55	-0.54	0.45	-0.12	47.80	
105.00	0.60	249.62	105.00	-0.24	-0.78	-0.77	0.73	0.40	-63.84	
130.00	0.57	260.73	130.00	-0.30	-1.03	-1.02	0.47	-0.12	44.44	
155.00	0.37	278.68	154.99	-0.31	-1.23	-1.22	0.98	-0.80	71.80	
180.00	0.32	322.88	179.99	-0.24	-1.35	-1.34	1.05	-0.20	176.80	



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-48A - Slot T
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Whit Mtn 272)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Whit Mtn 272)
Well:	CC 697-09-48A	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)
205.00	0.69	0.82	204.99	-0.04	-1.39	-1.39	1.92	1.48	151.76
230.00	1.38	12.22	229.99	0.41	-1.32	-1.34	2.87	2.76	45.60
255.00	1.93	24.76	254.98	1.08	-1.08	-1.12	2.62	2.20	50.16
280.00	2.36	20.30	279.96	1.95	-0.73	-0.79	1.84	1.72	-17.84
305.00	2.74	29.03	304.94	2.95	-0.26	-0.36	2.17	1.52	34.92
330.00	3.33	33.16	329.90	4.09	0.43	0.29	2.52	2.36	16.52
355.00	3.49	40.60	354.86	5.27	1.32	1.14	1.88	0.64	29.76
380.00	3.73	46.99	379.81	6.40	2.41	2.20	1.87	0.96	25.56
405.00	3.88	53.79	404.75	7.46	3.68	3.44	1.90	0.60	27.20
430.00	4.48	57.86	429.69	8.48	5.19	4.91	2.68	2.40	16.28
455.00	4.94	62.13	454.60	9.50	6.97	6.66	2.31	1.84	17.08
480.00	5.13	66.57	479.50	10.45	8.95	8.60	1.73	0.76	17.76
505.00	4.96	71.24	504.41	11.24	11.00	10.62	1.78	-0.68	18.68
530.00	4.50	74.53	529.32	11.85	12.97	12.57	2.14	-1.84	13.16
555.00	4.11	77.43	554.25	12.30	14.79	14.37	1.79	-1.56	11.60
580.00	3.49	84.78	579.20	12.57	16.42	16.00	3.15	-2.48	29.40
605.00	2.87	101.45	604.16	12.51	17.79	17.37	4.43	-2.48	66.68
630.00	2.28	116.10	629.13	12.17	18.85	18.44	3.52	-2.36	58.60
655.00	2.19	141.26	654.12	11.58	19.60	19.20	3.91	-0.36	100.64
680.00	2.59	151.23	679.09	10.71	20.17	19.80	2.30	1.60	39.88
705.00	3.23	148.50	704.06	9.62	20.81	20.48	2.62	2.56	-10.92
730.00	4.23	148.66	729.01	8.23	21.65	21.37	4.00	4.00	0.64
755.00	5.00	143.12	753.93	6.57	22.79	22.56	3.56	3.08	-22.16
780.00	5.09	140.35	778.83	4.84	24.15	23.98	1.04	0.36	-11.08
805.00	5.33	137.56	803.73	3.13	25.64	25.52	1.40	0.96	-11.16
830.00	5.45	133.39	828.62	1.46	27.29	27.22	1.64	0.48	-16.68
855.00	5.29	128.17	853.51	-0.07	29.06	29.04	2.06	-0.64	-20.88
880.00	4.79	126.59	878.41	-1.40	30.80	30.83	2.08	-2.00	-6.32
905.00	4.15	123.57	903.33	-2.52	32.39	32.46	2.73	-2.56	-12.08
930.00	3.94	115.45	928.27	-3.39	33.92	34.01	2.44	-0.84	-32.48
955.00	4.24	104.16	953.21	-3.99	35.59	35.70	3.43	1.20	-45.16
980.00	4.49	99.03	978.14	-4.37	37.45	37.58	1.85	1.00	-20.52
1,005.00	4.68	94.88	1,003.06	-4.61	39.44	39.57	1.58	0.76	-17.40
1,030.00	5.10	92.34	1,027.97	-4.73	41.56	41.70	1.86	1.68	-9.36
1,055.00	5.45	92.28	1,052.86	-4.83	43.86	44.00	1.40	1.40	-0.24
1,080.00	5.69	92.07	1,077.74	-4.92	46.29	46.42	0.96	0.96	-0.84
1,105.00	5.75	92.28	1,102.62	-5.01	48.78	48.91	0.25	0.24	0.84
1,130.00	6.20	89.52	1,127.48	-5.05	51.38	51.52	2.14	1.80	-11.04
1,155.00	6.47	89.66	1,152.33	-5.03	54.14	54.27	1.08	1.08	0.56
1,180.00	6.71	90.86	1,177.16	-5.05	57.00	57.14	1.11	0.96	4.80
1,205.00	7.28	89.17	1,201.98	-5.04	60.05	60.18	2.42	2.28	-6.76
1,230.00	7.75	89.67	1,226.76	-5.01	63.32	63.45	1.90	1.88	2.00
1,255.00	8.08	88.54	1,251.52	-4.96	66.76	66.89	1.46	1.32	-4.52



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-48A - Slot T
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
Well:	CC 697-09-48A	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)
1,280.00	8.46	88.42	1,276.26	-4.86	70.35	70.48	1.52	1.52	-0.48
1,305.00	8.81	88.31	1,300.98	-4.75	74.11	74.22	1.40	1.40	-0.44
1,330.00	9.45	88.15	1,325.66	-4.63	78.07	78.18	2.56	2.56	-0.64
1,355.00	10.10	88.53	1,350.30	-4.51	82.31	82.42	2.61	2.60	1.52
1,380.00	10.64	89.30	1,374.89	-4.42	86.81	86.91	2.23	2.16	3.08
1,405.00	11.17	89.05	1,399.44	-4.36	91.54	91.64	2.13	2.12	-1.00
1,430.00	11.73	89.17	1,423.94	-4.28	96.50	96.59	2.24	2.24	0.48
1,455.00	12.25	90.16	1,448.40	-4.25	101.70	101.78	2.24	2.08	3.96
1,480.00	12.73	90.82	1,472.81	-4.30	107.10	107.19	2.00	1.92	2.64
1,505.00	12.91	90.96	1,497.18	-4.38	112.65	112.73	0.73	0.72	0.56
1,530.00	13.22	91.78	1,521.54	-4.52	118.30	118.39	1.44	1.24	3.28
1,555.00	13.36	92.14	1,545.87	-4.72	124.04	124.13	0.65	0.56	1.44
1,580.00	13.29	92.54	1,570.19	-4.95	129.80	129.89	0.46	-0.28	1.60
1,605.00	13.34	92.62	1,594.52	-5.21	135.55	135.65	0.21	0.20	0.32
1,630.00	13.16	93.05	1,618.86	-5.49	141.28	141.38	0.82	-0.72	1.72
1,655.00	13.22	91.80	1,643.20	-5.73	146.97	147.08	1.17	0.24	-5.00
1,680.00	13.47	89.97	1,667.52	-5.82	152.74	152.85	1.96	1.00	-7.32
1,705.00	13.86	90.30	1,691.81	-5.84	158.65	158.76	1.59	1.56	1.32
1,730.00	13.96	91.17	1,716.08	-5.91	164.66	164.76	0.93	0.40	3.48
1,755.00	13.61	91.96	1,740.36	-6.08	170.61	170.72	1.59	-1.40	3.16
1,780.00	13.76	93.72	1,764.65	-6.37	176.52	176.63	1.77	0.60	7.04
1,805.00	14.00	93.92	1,788.92	-6.77	182.50	182.63	0.98	0.96	0.80
1,830.00	14.18	92.07	1,813.17	-7.09	188.58	188.71	1.94	0.72	-7.40
1,855.00	14.50	90.82	1,837.39	-7.24	194.77	194.90	1.78	1.28	-5.00
1,880.00	14.64	90.95	1,861.59	-7.34	201.06	201.19	0.58	0.56	0.52
1,905.00	14.70	90.98	1,885.77	-7.45	207.39	207.52	0.24	0.24	0.12
1,930.00	15.07	91.97	1,909.93	-7.61	213.81	213.94	1.80	1.48	3.96
1,955.00	15.45	93.41	1,934.05	-7.92	220.38	220.52	2.15	1.52	5.76
1,980.00	15.29	94.37	1,958.16	-8.37	226.99	227.14	1.20	-0.64	3.84
2,005.00	14.66	92.46	1,982.31	-8.76	233.44	233.60	3.20	-2.52	-7.64
2,030.00	14.22	91.49	2,006.52	-8.97	239.67	239.84	2.01	-1.76	-3.88
2,055.00	13.70	89.92	2,030.78	-9.05	245.70	245.86	2.57	-2.08	-6.28
2,080.00	13.17	90.00	2,055.10	-9.04	251.51	251.67	2.12	-2.12	0.32
2,105.00	12.92	89.86	2,079.45	-9.04	257.15	257.31	1.01	-1.00	-0.56
2,130.00	12.63	89.78	2,103.83	-9.02	262.68	262.83	1.16	-1.16	-0.32
2,155.00	12.26	89.38	2,128.24	-8.98	268.07	268.22	1.52	-1.48	-1.60
2,180.00	12.24	88.28	2,152.67	-8.87	273.37	273.51	0.94	-0.08	-4.40
2,205.00	12.34	88.92	2,177.10	-8.74	278.69	278.83	0.68	0.40	2.56
2,230.00	12.53	89.61	2,201.51	-8.67	284.07	284.20	0.96	0.76	2.76
2,255.00	12.46	90.27	2,225.92	-8.67	289.48	289.61	0.64	-0.28	2.64
2,280.00	11.92	91.85	2,250.36	-8.76	294.76	294.89	2.54	-2.16	6.32
2,305.00	11.18	90.96	2,274.85	-8.89	299.76	299.89	3.04	-2.96	-3.56
2,330.00	10.63	89.55	2,299.40	-8.91	304.49	304.62	2.44	-2.20	-5.64
2,355.00	10.59	90.92	2,323.97	-8.93	309.09	309.22	1.02	-0.16	5.48



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-48A - Slot T
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
Well:	CC 697-09-48A	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)
2,380.00	10.23	90.42	2,348.56	-8.98	313.61	313.74	1.48	-1.44	-2.00
2,405.00	10.12	93.50	2,373.17	-9.13	318.02	318.15	2.22	-0.44	12.32
2,430.00	10.55	95.72	2,397.76	-9.50	322.49	322.63	2.34	1.72	8.88
2,455.00	10.06	95.45	2,422.36	-9.93	326.94	327.09	1.97	-1.96	-1.08
2,476.00	9.73	95.59	2,443.05	-10.28	330.54	330.70	1.58	-1.57	0.67
Last SDI Wireline Gyro Survey									
2,514.00	10.90	95.69	2,480.43	-10.95	337.31	337.48	3.08	3.08	0.26
Last SDI Surface MWD Survey									
2,539.00	10.90	95.69	2,504.98	-11.42	342.01	342.20	0.00	0.00	0.00
First SDI Production MWD Survey									
2,672.00	10.99	96.94	2,635.56	-14.19	367.11	367.38	0.19	0.07	0.94
2,767.00	13.28	95.62	2,728.43	-16.36	386.96	387.29	2.43	2.41	-1.39
2,861.00	14.95	92.63	2,819.59	-17.97	409.82	410.19	1.94	1.78	-3.18
2,956.00	16.44	92.01	2,911.05	-19.01	435.49	435.88	1.58	1.57	-0.65
3,051.00	18.82	89.99	3,001.58	-19.47	464.26	464.65	2.59	2.51	-2.13
3,145.00	20.93	94.21	3,089.98	-20.70	496.17	496.58	2.71	2.24	4.49
3,240.00	24.09	92.45	3,177.73	-22.78	532.47	532.93	3.40	3.33	-1.85
3,334.00	23.65	91.40	3,263.69	-24.06	570.49	570.97	0.65	-0.47	-1.12
3,429.00	26.03	91.31	3,349.90	-25.00	610.38	610.87	2.51	2.51	-0.09
3,524.00	24.53	92.10	3,435.80	-26.20	650.93	651.44	1.62	-1.58	0.83
3,619.00	24.45	88.85	3,522.26	-26.53	690.30	690.80	1.42	-0.08	-3.42
3,713.00	25.15	85.07	3,607.59	-24.42	729.65	730.06	1.84	0.74	-4.02
3,808.00	23.74	84.19	3,694.07	-20.75	768.79	769.05	1.53	-1.48	-0.93
3,903.00	25.06	87.97	3,780.59	-18.10	807.92	808.08	2.15	1.39	3.98
3,998.00	23.48	86.92	3,867.19	-16.37	846.93	847.01	1.72	-1.66	-1.11
4,092.00	24.80	90.43	3,952.98	-15.51	885.35	885.38	2.07	1.40	3.73
4,187.00	24.09	89.29	4,039.46	-15.42	924.66	924.66	0.90	-0.75	-1.20
4,282.00	22.95	89.73	4,126.57	-15.10	962.57	962.54	1.21	-1.20	0.46
4,376.00	23.83	91.05	4,212.84	-15.36	999.88	999.84	1.09	0.94	1.40
4,471.00	22.34	90.61	4,300.23	-15.90	1,037.12	1,037.08	1.58	-1.57	-0.46
4,565.00	21.28	89.73	4,387.50	-16.01	1,072.05	1,071.99	1.18	-1.13	-0.94
4,660.00	19.26	89.20	4,476.62	-15.71	1,104.96	1,104.87	2.14	-2.13	-0.56
4,755.00	17.94	89.03	4,566.65	-15.25	1,135.25	1,135.14	1.39	-1.39	-0.18
4,849.00	16.71	85.33	4,656.39	-13.90	1,163.20	1,163.02	1.76	-1.31	-3.94
4,944.00	16.09	86.39	4,747.52	-11.96	1,189.95	1,189.70	0.72	-0.65	1.12
5,039.00	14.25	81.64	4,839.21	-9.43	1,214.66	1,214.31	2.34	-1.94	-5.00
5,134.00	14.60	83.40	4,931.22	-6.35	1,238.12	1,237.66	0.59	0.37	1.85
5,228.00	13.63	93.33	5,022.39	-5.64	1,260.95	1,260.45	2.77	-1.03	10.56
5,323.00	11.08	106.96	5,115.20	-8.95	1,280.86	1,280.46	4.06	-2.68	14.35
5,417.00	9.85	104.67	5,207.64	-13.62	1,297.28	1,297.02	1.38	-1.31	-2.44
5,512.00	7.65	92.45	5,301.54	-15.95	1,311.46	1,311.28	3.02	-2.32	-12.86
5,607.00	7.30	93.24	5,395.73	-16.56	1,323.81	1,323.63	0.38	-0.37	0.83
5,702.00	6.16	94.04	5,490.07	-17.26	1,334.92	1,334.76	1.20	-1.20	0.84



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-48A - Slot T
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 5' @ 8386.00ft (Wht Mtn 272)
Well:	CC 697-09-48A	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)
5,796.00	3.96	103.26	5,583.70	-18.36	1,343.11	1,342.98	2.49	-2.34	9.81
5,891.00	3.25	75.49	5,678.52	-18.44	1,348.91	1,348.78	1.96	-0.75	-29.23
5,986.00	2.99	72.24	5,773.38	-17.01	1,353.88	1,353.70	0.33	-0.27	-3.42
6,081.00	2.73	68.46	5,868.26	-15.42	1,358.34	1,358.11	0.34	-0.27	-3.98
6,175.00	2.99	90.52	5,962.15	-14.62	1,362.87	1,362.61	1.20	0.28	23.47
6,270.00	2.64	95.44	6,057.03	-14.85	1,367.53	1,367.27	0.45	-0.37	5.18
6,365.00	2.29	98.96	6,151.94	-15.36	1,371.58	1,371.34	0.40	-0.37	3.71
6,460.00	1.76	103.53	6,246.88	-15.99	1,374.88	1,374.65	0.58	-0.56	4.81
6,554.00	1.41	117.06	6,340.85	-16.86	1,377.31	1,377.11	0.54	-0.37	14.39
6,649.00	1.23	133.32	6,435.82	-18.09	1,379.09	1,378.94	0.44	-0.19	17.12
6,744.00	1.23	116.89	6,530.80	-19.25	1,380.74	1,380.63	0.37	0.00	-17.29
6,838.00	1.32	124.62	6,624.78	-20.32	1,382.53	1,382.45	0.21	0.10	8.22
6,933.00	1.14	148.53	6,719.76	-21.75	1,383.93	1,383.89	0.57	-0.19	25.17
7,027.00	1.06	145.72	6,813.74	-23.26	1,384.91	1,384.92	0.10	-0.09	-2.99
7,122.00	2.64	92.01	6,908.69	-24.07	1,387.59	1,387.63	2.30	1.66	-56.54
7,217.00	3.69	94.83	7,003.55	-24.40	1,392.82	1,392.87	1.12	1.11	2.97
7,311.00	3.17	98.87	7,097.38	-25.06	1,398.40	1,398.47	0.61	-0.55	4.30
7,406.00	2.73	102.65	7,192.25	-25.96	1,403.20	1,403.30	0.51	-0.46	3.98
7,500.00	2.37	102.39	7,286.16	-26.86	1,407.29	1,407.41	0.38	-0.38	-0.28
7,595.00	2.02	111.09	7,381.09	-27.89	1,410.77	1,410.92	0.51	-0.37	9.16
7,689.00	1.85	119.61	7,475.04	-29.23	1,413.63	1,413.83	0.35	-0.18	9.06
7,784.00	1.67	122.25	7,569.99	-30.73	1,416.14	1,416.38	0.21	-0.19	2.78
7,879.00	1.06	132.97	7,664.96	-32.07	1,417.95	1,418.24	0.69	-0.64	11.28
7,973.00	1.06	169.01	7,758.95	-33.51	1,418.75	1,419.09	0.70	0.00	38.34
8,068.00	1.93	144.40	7,853.92	-35.68	1,419.85	1,420.26	1.12	0.92	-25.91
8,163.00	2.11	130.42	7,948.86	-38.11	1,422.11	1,422.60	0.55	0.19	-14.72
8,257.00	1.76	146.68	8,042.80	-40.44	1,424.22	1,424.78	0.69	-0.37	17.30
8,352.00	1.76	170.68	8,137.76	-43.10	1,425.26	1,425.91	0.77	0.00	25.26
8,446.00	1.23	156.17	8,231.73	-45.45	1,425.90	1,426.63	0.69	-0.56	-15.44
8,541.00	0.53	100.72	8,326.72	-46.46	1,426.75	1,427.50	1.08	-0.74	-58.37
8,636.00	1.49	35.76	8,421.70	-45.54	1,427.90	1,428.63	1.42	1.01	-68.38
8,730.00	1.49	26.54	8,515.67	-43.45	1,429.16	1,429.82	0.25	0.00	-9.81
8,825.00	1.41	31.81	8,610.64	-41.36	1,430.33	1,430.91	0.16	-0.08	5.55
8,920.00	1.32	27.41	8,705.62	-39.39	1,431.45	1,431.97	0.15	-0.09	-4.63
9,014.00	1.14	16.52	8,799.59	-37.53	1,432.21	1,432.67	0.31	-0.19	-11.59
9,109.00	0.79	3.60	8,894.58	-35.97	1,432.52	1,432.93	0.43	-0.37	-13.60
9,155.00	0.62	18.36	8,940.58	-35.42	1,432.62	1,433.01	0.54	-0.37	32.09
Last SDI Production MWD Survey									
9,211.00	0.62	18.36	8,996.57	-34.85	1,432.81	1,433.18	0.00	0.00	0.00
Projection to TD - BHL = 631188.81, 1233947.70									



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Well:	CC 697-09-48A	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
30.00	30.00	-0.06	-0.12	First SDI Wireline Gyro Survey
2,476.00	2,443.05	-10.28	330.54	Last SDI Wireline Gyro Survey
2,514.00	2,480.43	-10.95	337.31	Last SDI Surface MWD Survey
2,539.00	2,504.98	-11.42	342.01	First SDI Production MWD Survey
9,155.00	8,940.58	-35.42	1,432.62	Last SDI Production MWD Survey
9,211.00	8,996.57	-34.85	1,432.81	Projection to TD
9,211.00	8,996.57	-34.85	1,432.81	BHL = 631188.81, 1233947.70

Checked By: _____ Approved By: _____ Date: _____