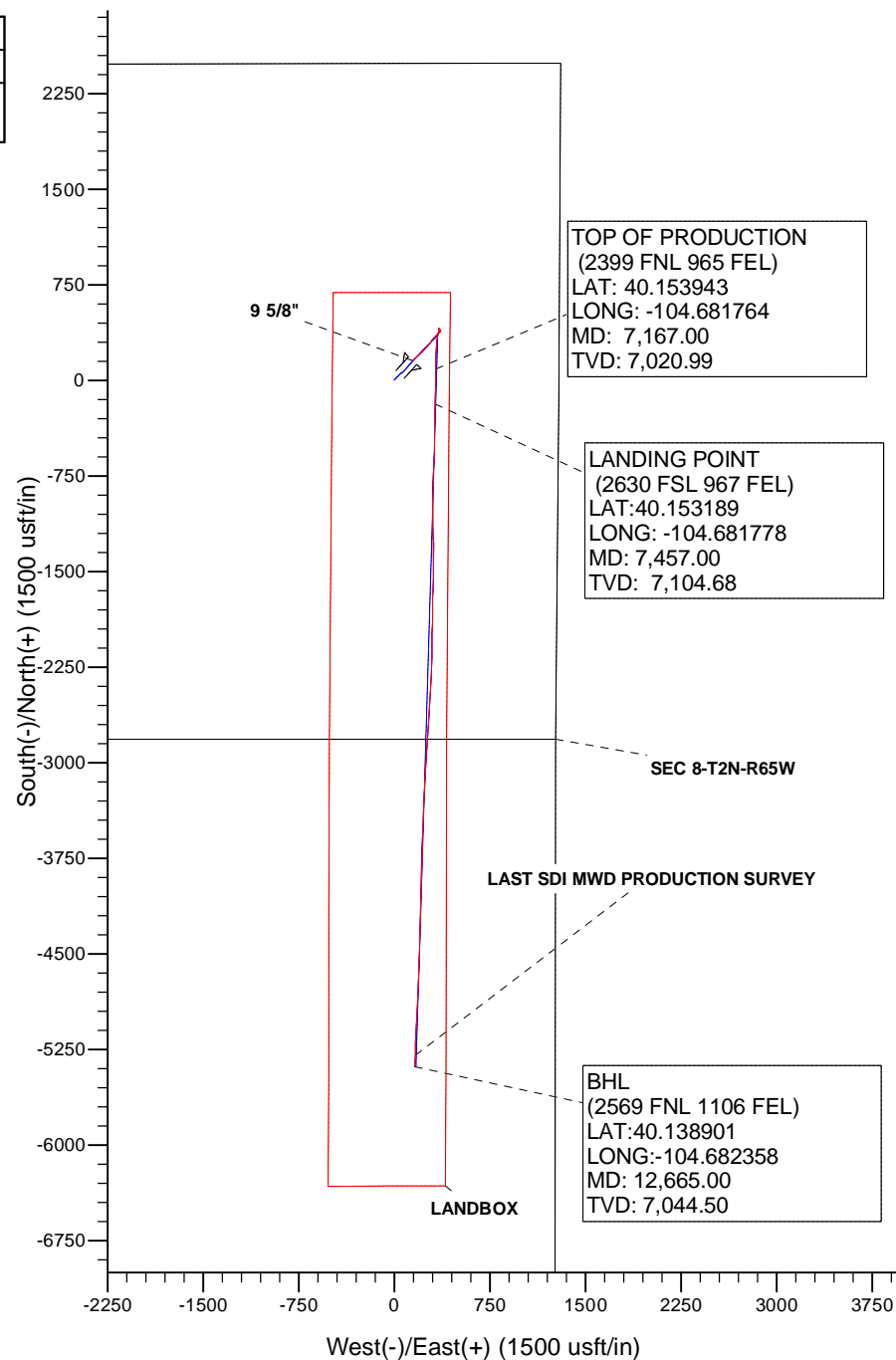
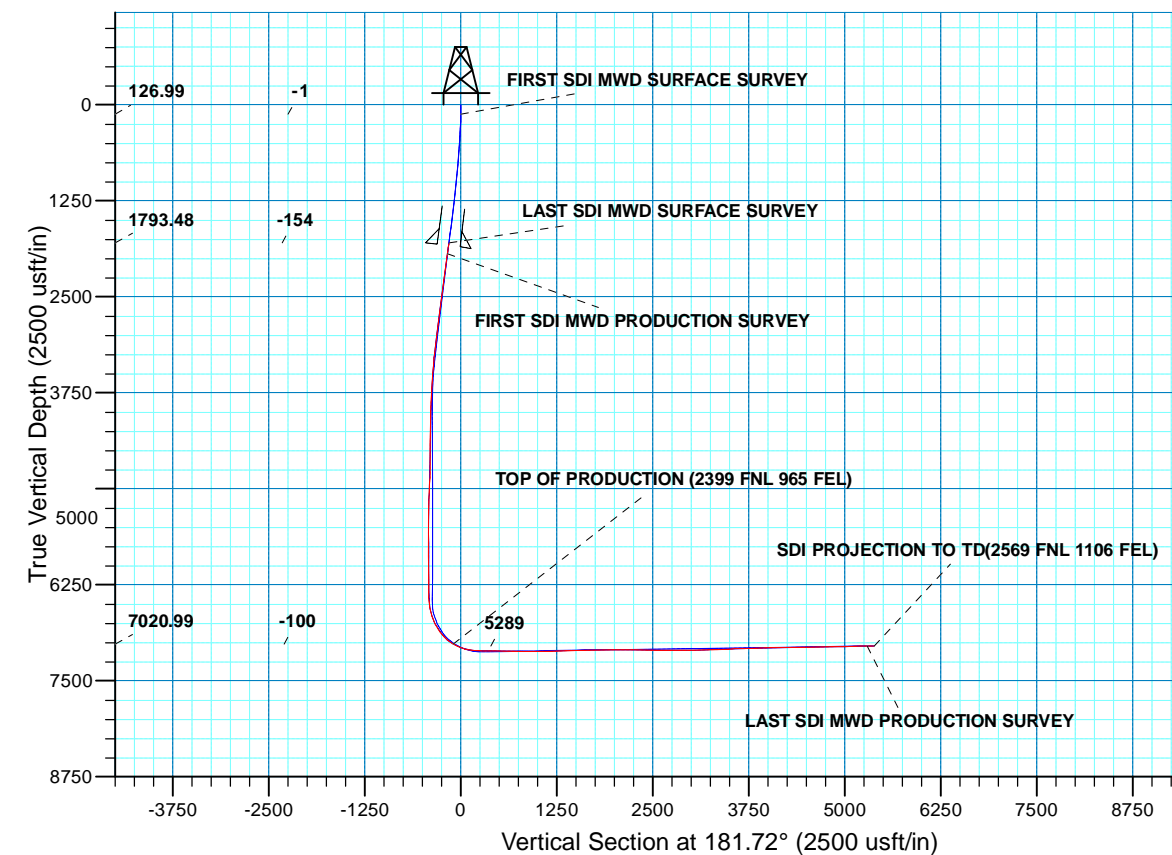




Project: WELD-NAD83-UTMFT13N
Site: 2N-65W-08 Sunflower 24-8HZ Pad
Well: SUNFLOWER 8N-17HZ
Wellbore: Plan A
Design: Plan A



WELL DETAILS: SUNFLOWER 8N-17HZ					
GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14582858.86	1729014.21	40.153695	-104.682926



Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 8N-17HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Site:	2N-65W-08 Sunflower 24-8HZ Pad	MD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Well:	SUNFLOWER 8N-17HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		2N-65W-08 Sunflower 24-8HZ Pad			
Site Position:		Northing:	14,582,858.79 usft	Latitude:	40.153696
From:	Lat/Long	Easting:	1,728,894.06 usft	Longitude:	-104.683356
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.20 °

Well		SUNFLOWER 8N-17HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,582,858.86 usft	Latitude:	40.153695
	+E/-W	0.00 usft	Easting:	1,729,014.21 usft	Longitude:	-104.682926
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,901.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/19/2015	8.40	66.68	52,520

Design	Plan A				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	181.72	

Survey Program	Date	11/4/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
13.00	1,808.00	SDI MWD SURFACE (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,953.00	12,665.00	Survey #2 SDI MWD PRODUCTION (Plan A)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13.00	0.00	0.00	13.00	0.00	0.00	0.00	0.00	0.00	0.00	
127.00	0.97	348.62	126.99	0.95	-0.19	-0.94	0.85	0.85	0.00	
FIRST SDI MWD SURFACE SURVEY										
217.00	1.73	19.33	216.97	2.97	0.11	-2.98	1.14	0.84	34.12	
307.00	2.69	35.99	306.90	5.97	1.80	-6.02	1.27	1.07	18.51	
430.00	4.00	45.05	429.69	11.33	6.53	-11.52	1.15	1.07	7.37	
520.00	5.34	45.45	519.39	16.49	11.74	-16.83	1.49	1.49	0.44	

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 8N-17HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Site:	2N-65W-08 Sunflower 24-8HZ Pad	MD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Well:	SUNFLOWER 8N-17HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
610.00	5.81	46.31	608.96	22.57	18.02	-23.10	0.53	0.52	0.96
700.00	6.79	46.59	698.42	29.38	25.18	-30.12	1.09	1.09	0.31
790.00	6.90	47.45	787.78	36.69	33.02	-37.66	0.17	0.12	0.96
880.00	7.50	46.38	877.07	44.40	41.26	-45.61	0.68	0.67	-1.19
970.00	7.49	46.48	966.30	52.49	49.76	-53.96	0.02	-0.01	0.11
1,060.00	8.52	45.61	1,055.42	61.19	58.78	-62.93	1.15	1.14	-0.97
1,150.00	8.46	45.18	1,144.43	70.52	68.24	-72.54	0.10	-0.07	-0.48
1,240.00	9.04	46.34	1,233.39	80.07	78.05	-82.38	0.67	0.64	1.29
1,330.00	9.56	43.32	1,322.20	90.39	88.30	-93.00	0.79	0.58	-3.36
1,421.00	9.71	42.29	1,411.92	101.56	98.64	-104.48	0.25	0.16	-1.13
1,511.00	9.76	41.82	1,500.62	112.86	108.84	-116.08	0.10	0.06	-0.52
1,601.00	9.70	41.85	1,589.33	124.19	118.98	-127.71	0.07	-0.07	0.03
1,691.00	9.56	42.05	1,678.06	135.39	129.05	-139.20	0.16	-0.16	0.22
1,781.00	9.34	41.84	1,766.84	146.38	138.92	-150.49	0.25	-0.24	-0.23
1,808.00	9.23	40.81	1,793.48	149.65	141.80	-153.84	0.74	-0.41	-3.81
LAST SDI MWD SURFACE SURVEY									
1,850.00	10.04	43.17	1,834.89	154.87	146.51	-159.20	2.14	1.93	5.61
9 5/8"									
1,953.00	12.08	47.60	1,935.98	168.69	160.61	-173.44	2.14	1.98	4.30
FIRST SDI MWD PRODUCTION SURVEY									
2,048.00	11.47	42.82	2,028.98	182.32	174.37	-187.47	1.21	-0.64	-5.03
2,236.00	10.28	49.25	2,213.61	206.99	199.79	-212.89	0.90	-0.63	3.42
2,331.00	10.33	44.57	2,307.08	218.59	212.19	-224.86	0.88	0.05	-4.93
2,426.00	9.80	41.60	2,400.62	230.70	223.53	-237.31	0.78	-0.56	-3.13
2,521.00	9.86	45.96	2,494.22	242.40	234.75	-249.34	0.79	0.06	4.59
2,616.00	10.52	45.93	2,587.72	254.09	246.83	-261.38	0.69	0.69	-0.03
2,712.00	9.73	41.96	2,682.23	266.22	258.55	-273.86	1.10	-0.82	-4.14
2,806.00	9.33	37.79	2,774.93	278.14	268.53	-286.08	0.85	-0.43	-4.44
2,902.00	8.86	36.17	2,869.73	290.26	277.66	-298.47	0.56	-0.49	-1.69
2,996.00	8.71	34.18	2,962.62	301.99	285.93	-310.44	0.36	-0.16	-2.12
3,092.00	8.44	31.22	3,057.55	314.03	293.66	-322.71	0.54	-0.28	-3.08
3,187.00	8.21	42.50	3,151.55	325.00	301.86	-333.91	1.73	-0.24	11.87
3,282.00	8.07	40.24	3,245.60	335.09	310.75	-344.26	0.37	-0.15	-2.38
3,377.00	7.07	50.46	3,339.77	343.90	319.57	-353.34	1.76	-1.05	10.76
3,472.00	6.20	51.46	3,434.14	350.82	328.09	-360.51	0.92	-0.92	1.05
3,567.00	5.28	49.97	3,528.66	356.83	335.45	-366.73	0.98	-0.97	-1.57
3,662.00	4.82	48.47	3,623.29	362.28	341.78	-372.38	0.50	-0.48	-1.58
3,757.00	4.24	42.99	3,717.99	367.50	347.17	-377.75	0.76	-0.61	-5.77
3,853.00	3.52	36.97	3,813.77	372.45	351.36	-382.83	0.86	-0.75	-6.27
3,947.00	2.75	33.53	3,907.63	376.64	354.34	-387.10	0.84	-0.82	-3.66
4,043.00	2.35	35.37	4,003.54	380.16	356.75	-390.70	0.43	-0.42	1.92
4,138.00	1.80	81.37	4,098.48	381.97	359.35	-392.59	1.79	-0.58	48.42

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 8N-17HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Site:	2N-65W-08 Sunflower 24-8HZ Pad	MD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Well:	SUNFLOWER 8N-17HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,233.00	1.68	66.37	4,193.44	382.75	362.11	-393.45	0.49	-0.13	-15.79	
4,328.00	1.13	6.81	4,288.41	384.24	363.49	-394.98	1.55	-0.58	-62.69	
4,423.00	0.90	320.83	4,383.40	385.75	363.13	-396.48	0.86	-0.24	-48.40	
4,518.00	0.78	338.31	4,478.39	386.93	362.42	-397.63	0.30	-0.13	18.40	
4,613.00	0.97	6.53	4,573.38	388.33	362.27	-399.03	0.49	0.20	29.71	
4,708.00	1.00	0.48	4,668.36	389.96	362.37	-400.66	0.11	0.03	-6.37	
4,803.00	1.36	9.80	4,763.34	391.90	362.57	-402.60	0.43	0.38	9.81	
4,899.00	2.55	306.27	4,859.30	394.28	361.04	-404.94	2.39	1.24	-66.18	
4,992.00	2.90	301.22	4,952.19	396.73	357.36	-407.28	0.46	0.38	-5.43	
5,088.00	2.74	314.12	5,048.07	399.58	353.64	-410.02	0.68	-0.17	13.44	
5,182.00	3.04	323.20	5,141.96	403.14	350.53	-413.48	0.58	0.32	9.66	
5,277.00	1.78	294.05	5,236.87	405.76	347.68	-416.02	1.81	-1.33	-30.68	
5,371.00	0.59	274.56	5,330.85	406.40	345.86	-416.59	1.32	-1.27	-20.73	
5,467.00	0.71	347.55	5,426.85	407.02	345.24	-417.20	0.81	0.13	76.03	
5,561.00	0.50	6.23	5,520.84	407.99	345.16	-418.17	0.30	-0.22	19.87	
5,656.00	0.34	90.30	5,615.84	408.40	345.49	-418.59	0.61	-0.17	88.49	
5,751.00	0.63	140.76	5,710.84	408.00	346.10	-418.20	0.52	0.31	53.12	
5,846.00	0.28	168.69	5,805.83	407.37	346.47	-417.58	0.43	-0.37	29.40	
5,941.00	0.98	72.62	5,900.83	407.38	347.30	-417.62	1.10	0.74	-101.13	
6,035.00	1.01	47.43	5,994.82	408.18	348.67	-418.46	0.46	0.03	-26.80	
6,131.00	1.14	141.03	6,090.80	408.01	349.90	-418.33	1.64	0.14	97.50	
6,225.00	1.01	150.95	6,184.79	406.56	350.89	-416.91	0.24	-0.14	10.55	
6,320.00	0.71	131.86	6,279.78	405.43	351.73	-415.81	0.43	-0.32	-20.09	
6,415.00	0.61	160.41	6,374.77	404.57	352.34	-414.96	0.36	-0.11	30.05	
6,510.00	3.54	187.12	6,469.70	401.18	352.15	-411.57	3.17	3.08	28.12	
6,604.00	11.68	192.91	6,562.79	389.00	349.66	-399.32	8.69	8.66	6.16	
6,699.00	18.52	193.71	6,654.46	364.94	343.92	-375.10	7.20	7.20	0.84	
6,795.00	26.16	188.36	6,743.20	329.14	337.22	-339.11	8.23	7.96	-5.57	
6,890.00	31.84	185.04	6,826.26	283.42	331.97	-293.25	6.21	5.98	-3.49	
6,984.00	39.75	183.53	6,902.44	228.63	327.94	-238.37	8.47	8.41	-1.61	
7,079.00	50.09	180.91	6,969.63	161.70	325.48	-171.40	11.06	10.88	-2.76	
7,167.00	58.42	180.42	7,020.99	90.34	324.67	-100.05	9.47	9.46	-0.56	
TOP OF PRODUCTION (2399 FNL 965 FEL)										
7,174.00	59.08	180.38	7,024.62	84.36	324.63	-94.07	9.47	9.46	-0.50	
7,269.00	69.53	181.74	7,065.76	-1.11	323.01	-8.59	11.08	11.00	1.43	
7,362.00	78.47	179.70	7,091.37	-90.40	321.92	80.70	9.84	9.61	-2.19	
7,457.00	85.41	181.72	7,104.68	-184.39	320.74	174.68	7.60	7.31	2.13	
LANDING POINT (2630 FSL 967 FEL)										
7,552.00	88.76	181.49	7,109.51	-279.22	318.08	269.55	3.53	3.53	-0.24	
7,647.00	89.80	180.94	7,110.71	-374.19	316.07	364.53	1.24	1.09	-0.58	
7,742.00	90.37	180.72	7,110.56	-469.18	314.69	459.52	0.64	0.60	-0.23	
7,836.00	90.20	181.99	7,110.10	-563.15	312.47	553.52	1.36	-0.18	1.35	

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 8N-17HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Site:	2N-65W-08 Sunflower 24-8HZ Pad	MD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Well:	SUNFLOWER 8N-17HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,931.00	88.09	181.84	7,111.51	-658.08	309.30	648.50	2.23	-2.22	-0.16	
8,026.00	88.29	181.63	7,114.52	-752.99	306.42	743.45	0.31	0.21	-0.22	
8,121.00	90.67	181.87	7,115.38	-847.94	303.52	838.44	2.52	2.51	0.25	
8,216.00	89.70	180.04	7,115.07	-942.92	301.94	933.43	2.18	-1.02	-1.93	
8,312.00	90.80	179.59	7,114.65	-1,038.91	302.25	1,029.37	1.24	1.15	-0.47	
8,407.00	92.29	178.71	7,112.09	-1,133.86	303.66	1,124.24	1.82	1.57	-0.93	
8,502.00	89.83	178.00	7,110.33	-1,228.80	306.38	1,219.05	2.70	-2.59	-0.75	
8,597.00	92.05	180.06	7,108.77	-1,323.76	307.99	1,313.92	3.19	2.34	2.17	
8,691.00	90.87	179.66	7,106.38	-1,417.73	308.22	1,407.84	1.33	-1.26	-0.43	
8,786.00	91.41	181.57	7,104.49	-1,512.70	307.20	1,502.80	2.09	0.57	2.01	
8,881.00	91.84	181.53	7,101.80	-1,607.63	304.63	1,597.76	0.45	0.45	-0.04	
8,976.00	90.37	181.64	7,099.96	-1,702.57	302.01	1,692.74	1.55	-1.55	0.12	
9,071.00	91.31	180.73	7,098.57	-1,797.54	300.04	1,787.72	1.38	0.99	-0.96	
9,167.00	90.74	180.97	7,096.85	-1,893.51	298.62	1,883.70	0.64	-0.59	0.25	
9,262.00	90.47	181.01	7,095.85	-1,988.49	296.98	1,978.68	0.29	-0.28	0.04	
9,356.00	89.36	180.55	7,095.99	-2,082.48	295.70	2,072.67	1.28	-1.18	-0.49	
9,451.00	90.03	181.09	7,096.50	-2,177.47	294.34	2,167.66	0.91	0.71	0.57	
9,546.00	88.99	182.59	7,097.31	-2,272.42	291.29	2,262.65	1.92	-1.09	1.58	
9,640.00	88.52	183.55	7,099.35	-2,366.26	286.25	2,356.60	1.14	-0.50	1.02	
9,735.00	89.46	182.98	7,101.02	-2,461.09	280.84	2,451.55	1.16	0.99	-0.60	
9,830.00	90.13	181.79	7,101.36	-2,556.00	276.89	2,546.54	1.44	0.71	-1.25	
9,925.00	88.93	183.51	7,102.14	-2,650.89	272.50	2,641.52	2.21	-1.26	1.81	
10,020.00	89.26	184.57	7,103.64	-2,745.64	265.81	2,736.43	1.17	0.35	1.12	
10,115.00	90.34	183.88	7,103.98	-2,840.38	258.81	2,831.33	1.35	1.14	-0.73	
10,209.00	90.87	183.54	7,102.98	-2,934.18	252.73	2,925.27	0.67	0.56	-0.36	
10,304.00	91.38	183.10	7,101.12	-3,029.00	247.23	3,020.21	0.71	0.54	-0.46	
10,399.00	92.15	183.51	7,098.19	-3,123.80	241.75	3,115.13	0.92	0.81	0.43	
10,494.00	91.68	183.20	7,095.02	-3,218.58	236.19	3,210.04	0.59	-0.49	-0.33	
10,587.00	91.81	182.22	7,092.19	-3,311.43	231.80	3,302.98	1.06	0.14	-1.05	
10,681.00	92.25	182.06	7,088.86	-3,405.31	228.29	3,396.92	0.50	0.47	-0.17	
10,776.00	91.21	182.07	7,085.99	-3,500.20	224.87	3,491.87	1.09	-1.09	0.01	
10,871.00	92.48	182.15	7,082.93	-3,595.08	221.37	3,586.82	1.34	1.34	0.08	
10,966.00	92.28	181.98	7,078.98	-3,689.94	217.95	3,681.74	0.28	-0.21	-0.18	
11,061.00	91.07	181.77	7,076.21	-3,784.85	214.85	3,776.69	1.29	-1.27	-0.22	
11,153.00	92.21	181.44	7,073.57	-3,876.77	212.27	3,868.65	1.29	1.24	-0.36	
11,247.00	89.70	181.50	7,072.01	-3,970.72	209.86	3,962.63	2.67	-2.67	0.06	
11,338.00	90.54	181.14	7,071.82	-4,061.70	207.76	4,053.63	1.00	0.92	-0.40	
11,433.00	91.81	180.66	7,069.87	-4,156.66	206.27	4,148.60	1.43	1.34	-0.51	
11,527.00	91.24	180.57	7,067.37	-4,250.62	205.26	4,242.55	0.61	-0.61	-0.10	
11,622.00	90.74	181.48	7,065.73	-4,345.59	203.56	4,337.52	1.09	-0.53	0.96	
11,717.00	92.01	181.90	7,063.45	-4,440.52	200.76	4,432.49	1.41	1.34	0.44	
11,812.00	90.27	182.72	7,061.56	-4,535.42	196.94	4,527.47	2.02	-1.83	0.86	

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well SUNFLOWER 8N-17HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Site:	2N-65W-08 Sunflower 24-8HZ Pad	MD Reference:	GL 4901' & KB 20' @ 4921.00usft (PRECISION 461)
Well:	SUNFLOWER 8N-17HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Plan A	Database:	Denver Sales

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,907.00	88.63	183.25	7,062.47	-4,630.28	191.99	4,622.44	1.81	-1.73	0.56	
12,003.00	89.80	182.98	7,063.78	-4,726.13	186.77	4,718.40	1.25	1.22	-0.28	
12,098.00	92.21	182.29	7,062.12	-4,821.01	182.41	4,813.36	2.64	2.54	-0.73	
12,193.00	92.45	182.32	7,058.26	-4,915.85	178.59	4,908.28	0.25	0.25	0.03	
12,288.00	90.67	182.40	7,055.67	-5,010.73	174.68	5,003.23	1.88	-1.87	0.08	
12,479.00	92.18	182.36	7,050.92	-5,201.50	166.75	5,194.16	0.79	0.79	-0.02	
12,574.00	91.91	182.49	7,047.53	-5,296.36	162.73	5,289.09	0.32	-0.28	0.14	
LAST SDI MWD PRODUCTION SURVEY										
12,665.00	91.91	182.49	7,044.50	-5,387.22	158.78	5,380.03	0.00	0.00	0.00	
SDI PROJECTION TO TD(2569 FNL 1106 FEL)										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
1,850.00	1,834.89	9 5/8"		9.625	13.500

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
127.00	126.99	0.95	-0.19	FIRST SDI MWD SURFACE SURVEY	
1,808.00	1,793.48	149.65	141.80	LAST SDI MWD SURFACE SURVEY	
1,953.00	1,935.98	168.69	160.61	FIRST SDI MWD PRODUCTION SURVEY	
7,167.00	7,020.99	90.34	324.67	TOP OF PRODUCTION (2399 FNL 965 FEL)	
7,457.00	7,104.68	-184.39	320.74	LANDING POINT (2630 FSL 967 FEL)	
12,574.00	7,047.53	-5,296.36	162.73	LAST SDI MWD PRODUCTION SURVEY	
12,665.00	7,044.50	-5,387.22	158.78	SDI PROJECTION TO TD(2569 FNL 1106 FEL)	

Checked By: _____ Approved By: _____ Date: _____