

## WELL DETAILS: Yellowhammer 34N-17HZ

GL 5063' & KB 17' @ 5080.00ft (Xtreme 24) 5063.00  
 Northing 14549563.16 Easting 1630522.57 Latitude 40.0626890 Longitude -105.0353620

Design: OH (Yellowhammer 34N-17HZ/OH)

Created By: Seth Burstad Date: 1-02-2018

## PROJECT DETAILS: US Rockies Wattenberg Planning UTM83

Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Zone 13N (108 W to 102 W)

System Datum: Mean Sea Level  
 Local North: True

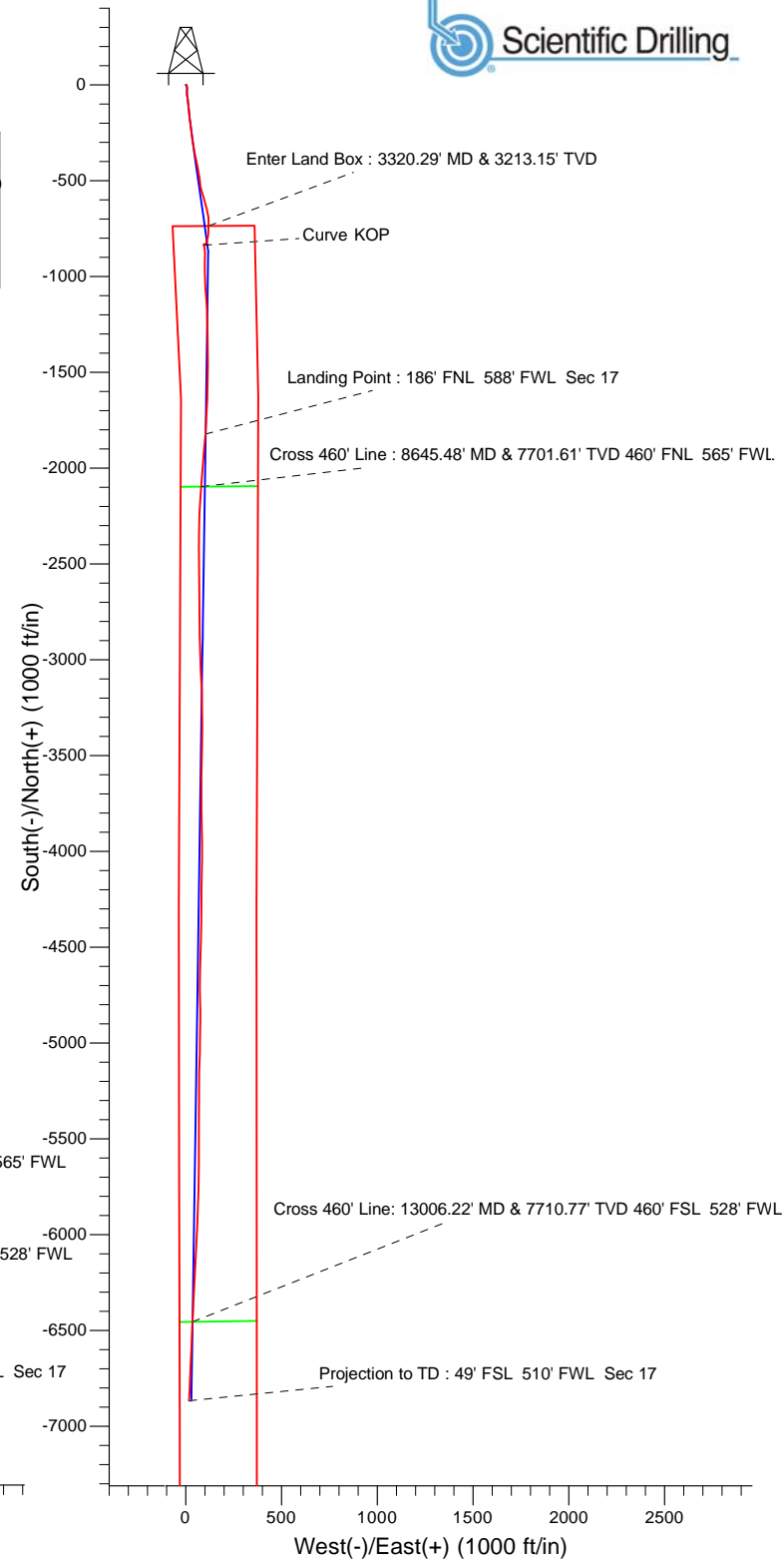
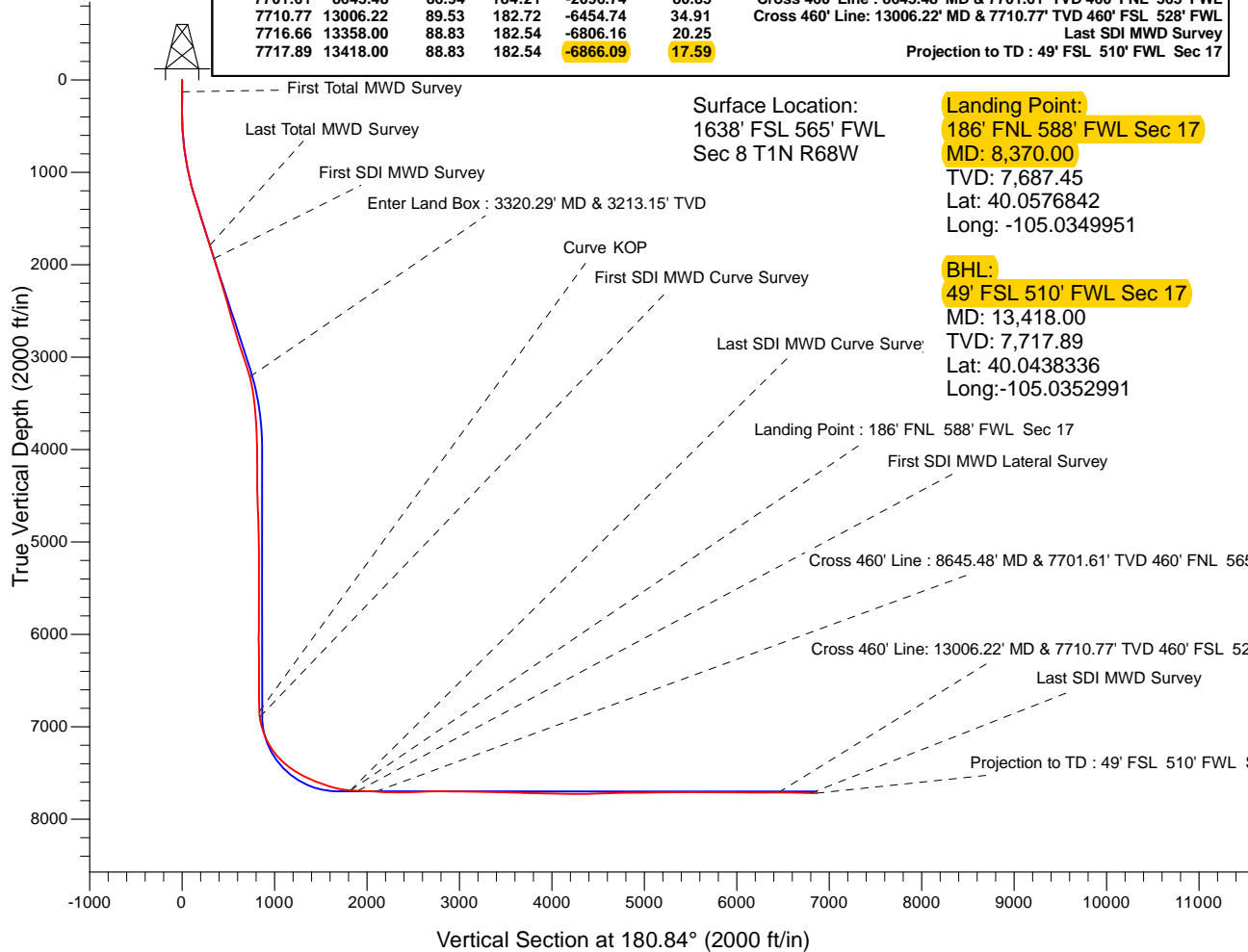
## ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W
128.00	128.00	0.66	117.88	-0.34	0.65
1790.64	1830.00	18.28	171.32	-301.57	37.00
1838.16	1880.00	17.95	170.23	-316.91	39.50
1933.46	1980.00	17.32	167.92	-346.66	45.23
3213.15	3320.29	14.94	180.49	-735.98	119.02
6836.78	6950.00	2.76	170.16	-836.60	95.83
6894.48	7008.00	8.41	173.40	-842.19	96.56
7687.45	8370.00	86.95	184.89	-1822.49	102.65
7687.45	8370.00	86.95	184.89	-1822.49	102.65
7691.93	8455.00	87.01	184.70	-1907.08	95.55
7701.61	8645.48	86.94	184.21	-2096.74	80.85
7710.77	13006.22	89.53	182.72	-6454.74	34.91
7716.66	13358.00	88.83	182.54	-6806.16	20.25
7717.89	13418.00	88.83	182.54	-6866.09	17.59

Surface Location:  
 1638' FSL 565' FWL  
 Sec 8 T1N R68W

Landing Point:  
 186' FNL 588' FWL Sec 17  
 MD: 8,370.00  
 TVD: 7,687.45  
 Lat: 40.0576842  
 Long: -105.0349951

BHL:  
 49' FSL 510' FWL Sec 17  
 MD: 13,418.00  
 TVD: 7,717.89  
 Lat: 40.0438336  
 Long: -105.0352991





# **US ROCKIES REGION PLANNING**

**US Rockies Wattenberg Planning UTM83**

**Yellowhammer 12-8HZ Pad**

**Yellowhammer 34N-17HZ**

**OH**

**Design: OH**

## **Survey Report - Geographic**

**02 January, 2018**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 34N-17HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Site:</b>	Yellowhammer 12-8HZ Pad	<b>MD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Well:</b>	Yellowhammer 34N-17HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

<b>Project</b>	US Rockies Wattenberg Planning UTM83		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site	Yellowhammer 12-8HZ Pad, Site Center : Yellowhammer 4C-8HZ				
Site Position:		Northing:	14,549,548.23 usft	Latitude:	40.0626480
From:	Lat/Long	Easting:	1,630,522.56 usft	Longitude:	-105.0353620
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.02 °

Well	Yellowhammer 34N-17HZ, 1638' FSL 565' FWL Sec 8 T1N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,549,563.16 usft	Latitude:	40.0626890
	+E/-W	0.00 ft	Easting:	1,630,522.56 usft	Longitude:	-105.0353620
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,063.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2016	11/17/2017	8.46	66.55	52,134

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	180.84	

<b>Survey Program</b>	<b>Date</b>	1/2/2018			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
128.00	1,880.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,980.00	5,729.00	Survey #2 - Intermediate (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
5,898.00	13,418.00	Survey #3 - Curve / Lateral (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>	
0.00	0.00	0.00	0.00	0.00	0.00	14,549,563.16	1,630,522.56	40.0626890	-105.0353620	
128.00	0.66	117.88	128.00	-0.34	0.65	14,549,562.81	1,630,523.21	40.0626881	-105.0353596	
<b>First Total MWD Survey</b>										
160.00	0.62	69.89	160.00	-0.37	0.98	14,549,562.79	1,630,523.54	40.0626880	-105.0353585	
192.00	0.88	90.81	191.99	-0.32	1.39	14,549,562.84	1,630,523.95	40.0626882	-105.0353570	
223.00	0.57	92.30	222.99	-0.32	1.78	14,549,562.83	1,630,524.34	40.0626881	-105.0353556	
254.00	0.88	80.88	253.99	-0.29	2.17	14,549,562.86	1,630,524.73	40.0626882	-105.0353542	
286.00	0.70	86.15	285.98	-0.24	2.60	14,549,562.91	1,630,525.17	40.0626884	-105.0353527	
317.00	0.75	115.15	316.98	-0.31	2.98	14,549,562.84	1,630,525.54	40.0626882	-105.0353513	
349.00	1.45	123.42	348.98	-0.63	3.50	14,549,562.53	1,630,526.07	40.0626873	-105.0353494	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 34N-17HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Site:</b>	Yellowhammer 12-8HZ Pad	<b>MD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Well:</b>	Yellowhammer 34N-17HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey										
Measured			Vertical			Map				
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Map	Map			
(ft)	(°)	(°)	(ft)	(ft)	(ft)	Northing	Easting	Latitude	Longitude	
						(usft)	(usft)			
380.00	0.75	124.82	379.97	-0.96	4.00	14,549,562.20	1,630,526.56	40.0626864	-105.0353477	
412.00	0.53	126.32	411.97	-1.17	4.29	14,549,561.99	1,630,526.85	40.0626858	-105.0353466	
444.00	1.19	140.73	443.96	-1.51	4.62	14,549,561.64	1,630,527.18	40.0626849	-105.0353455	
475.00	1.41	153.39	474.96	-2.10	4.99	14,549,561.05	1,630,527.56	40.0626833	-105.0353441	
507.00	2.15	172.11	506.94	-3.05	5.25	14,549,560.11	1,630,527.81	40.0626807	-105.0353432	
538.00	3.21	172.37	537.91	-4.48	5.45	14,549,558.67	1,630,528.01	40.0626767	-105.0353425	
570.00	4.66	173.43	569.83	-6.66	5.72	14,549,556.49	1,630,528.28	40.0626707	-105.0353415	
602.00	5.63	172.81	601.70	-9.51	6.06	14,549,553.64	1,630,528.62	40.0626629	-105.0353403	
634.00	6.50	169.47	633.52	-12.85	6.59	14,549,550.30	1,630,529.15	40.0626537	-105.0353384	
666.00	6.59	173.34	665.31	-16.45	7.13	14,549,546.70	1,630,529.69	40.0626438	-105.0353365	
697.00	7.12	176.15	696.09	-20.14	7.47	14,549,543.02	1,630,530.02	40.0626337	-105.0353353	
729.00	6.99	182.22	727.85	-24.06	7.52	14,549,539.09	1,630,530.08	40.0626230	-105.0353351	
761.00	7.43	182.30	759.60	-28.08	7.37	14,549,535.08	1,630,529.92	40.0626119	-105.0353356	
793.00	7.73	183.62	791.32	-32.29	7.15	14,549,530.86	1,630,529.70	40.0626004	-105.0353364	
824.00	8.88	184.32	821.99	-36.76	6.84	14,549,526.40	1,630,529.38	40.0625881	-105.0353375	
856.00	9.36	180.81	853.59	-41.82	6.61	14,549,521.33	1,630,529.16	40.0625742	-105.0353383	
887.00	9.58	176.50	884.17	-46.92	6.73	14,549,516.24	1,630,529.28	40.0625602	-105.0353379	
920.00	10.02	173.95	916.68	-52.51	7.20	14,549,510.64	1,630,529.75	40.0625448	-105.0353362	
951.00	10.24	171.76	947.20	-57.92	7.88	14,549,505.23	1,630,530.42	40.0625300	-105.0353338	
983.00	11.29	170.17	978.64	-63.82	8.83	14,549,499.33	1,630,531.36	40.0625138	-105.0353304	
1,015.00	12.57	171.05	1,009.95	-70.35	9.90	14,549,492.80	1,630,532.44	40.0624958	-105.0353266	
1,047.00	12.83	171.23	1,041.16	-77.30	10.99	14,549,485.85	1,630,533.52	40.0624767	-105.0353227	
1,078.00	14.02	173.43	1,071.31	-84.43	11.94	14,549,478.72	1,630,534.47	40.0624572	-105.0353193	
1,110.00	14.50	173.16	1,102.33	-92.26	12.86	14,549,470.89	1,630,535.39	40.0624357	-105.0353160	
1,142.00	14.19	173.87	1,133.33	-100.14	13.76	14,549,463.01	1,630,536.28	40.0624140	-105.0353128	
1,173.00	14.50	173.87	1,163.36	-107.78	14.58	14,549,455.37	1,630,537.10	40.0623931	-105.0353099	
1,205.00	15.56	174.48	1,194.27	-116.03	15.42	14,549,447.12	1,630,537.94	40.0623704	-105.0353069	
1,237.00	16.22	175.80	1,225.05	-124.76	16.16	14,549,438.39	1,630,538.67	40.0623464	-105.0353042	
1,269.00	16.88	176.06	1,255.72	-133.85	16.81	14,549,429.30	1,630,539.32	40.0623214	-105.0353019	
1,301.00	17.36	176.68	1,286.30	-143.25	17.40	14,549,419.90	1,630,539.91	40.0622956	-105.0352998	
1,332.00	17.62	176.50	1,315.87	-152.56	17.96	14,549,410.60	1,630,540.46	40.0622701	-105.0352978	
1,364.00	17.93	172.90	1,346.34	-162.28	18.86	14,549,400.87	1,630,541.36	40.0622434	-105.0352946	
1,396.00	18.37	171.84	1,376.75	-172.16	20.18	14,549,390.99	1,630,542.68	40.0622163	-105.0352898	
1,427.00	18.59	171.40	1,406.15	-181.88	21.62	14,549,381.27	1,630,544.11	40.0621896	-105.0352847	
1,459.00	17.36	171.67	1,436.59	-191.65	23.07	14,549,371.50	1,630,545.56	40.0621627	-105.0352795	
1,491.00	16.48	171.67	1,467.20	-200.86	24.42	14,549,362.29	1,630,546.90	40.0621374	-105.0352747	
1,522.00	16.96	171.93	1,496.89	-209.69	25.69	14,549,353.46	1,630,548.17	40.0621132	-105.0352701	
1,554.00	17.49	173.87	1,527.46	-219.09	26.86	14,549,344.06	1,630,549.34	40.0620874	-105.0352660	
1,586.00	17.67	174.66	1,557.96	-228.71	27.83	14,549,334.44	1,630,550.30	40.0620610	-105.0352625	
1,617.00	17.40	173.51	1,587.52	-238.00	28.79	14,549,325.15	1,630,551.26	40.0620355	-105.0352591	
1,649.00	17.23	172.81	1,618.07	-247.45	29.92	14,549,315.69	1,630,552.39	40.0620095	-105.0352550	
1,681.00	16.70	173.60	1,648.68	-256.72	31.03	14,549,306.42	1,630,553.49	40.0619840	-105.0352511	
1,713.00	17.05	172.81	1,679.30	-265.95	32.13	14,549,297.20	1,630,554.58	40.0619587	-105.0352472	
1,744.00	17.80	171.76	1,708.88	-275.15	33.38	14,549,288.00	1,630,555.83	40.0619334	-105.0352427	
1,776.00	18.02	172.90	1,739.33	-284.90	34.69	14,549,278.25	1,630,557.14	40.0619067	-105.0352380	
1,808.00	18.19	171.93	1,769.75	-294.75	36.00	14,549,268.39	1,630,558.45	40.0618796	-105.0352333	
1,830.00	18.28	171.32	1,790.64	-301.57	37.00	14,549,261.58	1,630,559.45	40.0618609	-105.0352297	
Last Total MWD Survey										
1,880.00	17.95	170.23	1,838.16	-316.91	39.50	14,549,246.23	1,630,561.93	40.0618187	-105.0352208	
Projection to Surface TD										
1,980.00	17.32	167.92	1,933.46	-346.66	45.23	14,549,216.48	1,630,567.65	40.0617371	-105.0352003	
First SDI MWD Survey										
2,065.00	17.57	169.87	2,014.55	-371.66	50.13	14,549,191.48	1,630,572.55	40.0616684	-105.0351828	
2,150.00	16.89	168.73	2,095.74	-396.40	54.80	14,549,166.74	1,630,577.21	40.0616005	-105.0351661	
2,237.00	16.97	167.01	2,178.97	-421.16	60.12	14,549,141.97	1,630,582.52	40.0615324	-105.0351471	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 34N-17HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Site:</b>	Yellowhammer 12-8HZ Pad	<b>MD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Well:</b>	Yellowhammer 34N-17HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
2,322.00	18.70	168.50	2,259.88	-446.61	65.63	14,549,116.53	1,630,588.02	40.0614626	-105.0351274	
2,408.00	16.21	170.75	2,341.92	-471.97	70.31	14,549,091.16	1,630,592.68	40.0613929	-105.0351107	
2,493.00	16.24	172.50	2,423.53	-495.46	73.77	14,549,067.67	1,630,596.13	40.0613284	-105.0350983	
2,578.00	14.77	176.40	2,505.44	-518.06	76.00	14,549,045.07	1,630,598.36	40.0612664	-105.0350904	
2,663.00	15.19	166.60	2,587.56	-539.71	79.26	14,549,023.42	1,630,601.61	40.0612069	-105.0350787	
2,748.00	17.50	163.07	2,669.12	-562.77	85.56	14,549,000.35	1,630,607.90	40.0611436	-105.0350562	
2,833.00	18.06	162.75	2,750.06	-587.58	93.19	14,548,975.54	1,630,615.52	40.0610754	-105.0350289	
2,919.00	17.81	164.44	2,831.88	-612.98	100.67	14,548,950.13	1,630,622.99	40.0610057	-105.0350022	
3,004.00	18.39	165.26	2,912.68	-638.47	107.57	14,548,924.64	1,630,629.88	40.0609357	-105.0349775	
3,089.00	18.65	168.11	2,993.28	-664.74	113.78	14,548,898.37	1,630,636.08	40.0608635	-105.0349553	
3,174.00	19.04	174.05	3,073.73	-691.83	118.02	14,548,871.28	1,630,640.31	40.0607891	-105.0349402	
3,260.00	17.85	181.01	3,155.32	-718.97	119.24	14,548,844.14	1,630,641.52	40.0607146	-105.0349358	
3,320.29	14.94	180.49	3,213.15	-735.98	119.02	14,548,827.13	1,630,641.29	40.0606679	-105.0349366	
Enter Land Box : 3320.29' MD & 3213.15' TVD										
3,344.00	13.79	180.22	3,236.12	-741.86	118.98	14,548,821.25	1,630,641.25	40.0606518	-105.0349367	
3,429.00	10.56	182.78	3,319.20	-759.78	118.56	14,548,803.34	1,630,640.82	40.0606026	-105.0349382	
3,516.00	7.64	184.42	3,405.09	-773.51	117.73	14,548,789.60	1,630,639.99	40.0605649	-105.0349412	
3,601.00	6.79	181.19	3,489.42	-784.16	117.19	14,548,778.95	1,630,639.44	40.0605356	-105.0349431	
3,686.00	5.33	190.13	3,573.95	-793.08	116.39	14,548,770.04	1,630,638.64	40.0605111	-105.0349460	
3,771.00	3.91	199.50	3,658.67	-799.69	114.73	14,548,763.42	1,630,636.97	40.0604929	-105.0349519	
3,856.00	3.56	198.67	3,743.49	-804.93	112.92	14,548,758.19	1,630,635.16	40.0604786	-105.0349584	
3,942.00	3.21	197.78	3,829.34	-809.75	111.33	14,548,753.37	1,630,633.57	40.0604653	-105.0349641	
4,027.00	1.38	190.44	3,914.27	-813.02	110.41	14,548,750.09	1,630,632.65	40.0604563	-105.0349674	
4,112.00	0.71	217.90	3,999.25	-814.44	109.91	14,548,748.67	1,630,632.15	40.0604524	-105.0349692	
4,199.00	0.62	73.32	4,086.25	-814.73	110.03	14,548,748.38	1,630,632.27	40.0604516	-105.0349687	
4,284.00	0.65	57.92	4,171.24	-814.35	110.87	14,548,748.77	1,630,633.11	40.0604527	-105.0349657	
4,369.00	0.56	41.16	4,256.24	-813.78	111.56	14,548,749.34	1,630,633.80	40.0604543	-105.0349633	
4,454.00	0.57	228.48	4,341.24	-813.74	111.51	14,548,749.37	1,630,633.75	40.0604544	-105.0349634	
4,539.00	1.89	218.37	4,426.22	-815.12	110.33	14,548,747.99	1,630,632.57	40.0604506	-105.0349677	
4,623.00	2.52	194.18	4,510.16	-818.00	109.01	14,548,745.12	1,630,631.25	40.0604427	-105.0349724	
4,709.00	2.30	198.09	4,596.08	-821.47	108.02	14,548,741.64	1,630,630.25	40.0604331	-105.0349759	
4,794.00	2.08	207.88	4,681.02	-824.46	106.76	14,548,738.66	1,630,629.00	40.0604249	-105.0349804	
4,879.00	1.94	208.08	4,765.97	-827.09	105.37	14,548,736.03	1,630,627.60	40.0604177	-105.0349854	
4,963.00	1.69	218.22	4,849.92	-829.32	103.93	14,548,733.80	1,630,626.16	40.0604116	-105.0349905	
5,049.00	1.40	221.69	4,935.89	-831.10	102.45	14,548,732.02	1,630,624.68	40.0604067	-105.0349958	
5,133.00	1.42	223.65	5,019.87	-832.62	101.05	14,548,730.50	1,630,623.28	40.0604025	-105.0350008	
5,218.00	0.47	226.26	5,104.85	-833.62	100.07	14,548,729.50	1,630,622.30	40.0603998	-105.0350043	
5,303.00	0.51	84.46	5,189.85	-833.83	100.19	14,548,729.29	1,630,622.42	40.0603992	-105.0350039	
5,388.00	0.17	120.07	5,274.85	-833.85	100.68	14,548,729.27	1,630,622.91	40.0603991	-105.0350022	
5,473.00	0.15	293.08	5,359.85	-833.87	100.68	14,548,729.25	1,630,622.92	40.0603991	-105.0350021	
5,558.00	0.47	292.02	5,444.85	-833.70	100.26	14,548,729.42	1,630,622.49	40.0603996	-105.0350037	
5,643.00	0.57	285.83	5,529.85	-833.45	99.53	14,548,729.67	1,630,621.76	40.0604002	-105.0350063	
5,729.00	0.62	296.58	5,615.84	-833.13	98.70	14,548,729.99	1,630,620.93	40.0604011	-105.0350092	
5,898.00	0.69	294.95	5,784.83	-832.29	96.96	14,548,730.83	1,630,619.19	40.0604034	-105.0350154	
5,984.00	0.60	304.21	5,870.83	-831.82	96.12	14,548,731.30	1,630,618.35	40.0604047	-105.0350185	
6,069.00	0.47	278.00	5,955.82	-831.52	95.41	14,548,731.60	1,630,617.64	40.0604055	-105.0350210	
6,154.00	0.45	271.93	6,040.82	-831.46	94.73	14,548,731.66	1,630,616.96	40.0604057	-105.0350234	
6,240.00	0.39	193.35	6,126.82	-831.73	94.32	14,548,731.39	1,630,616.55	40.0604050	-105.0350249	
6,325.00	0.81	121.71	6,211.81	-832.33	94.77	14,548,730.79	1,630,617.00	40.0604033	-105.0350233	
6,410.00	0.28	149.08	6,296.81	-832.82	95.38	14,548,730.30	1,630,617.62	40.0604020	-105.0350211	
6,497.00	0.64	136.09	6,383.81	-833.36	95.83	14,548,729.76	1,630,618.06	40.0604005	-105.0350195	
6,583.00	0.85	187.96	6,469.80	-834.33	96.07	14,548,728.79	1,630,618.31	40.0603978	-105.0350186	
6,668.00	0.63	192.98	6,554.79	-835.41	95.88	14,548,727.71	1,630,618.11	40.0603949	-105.0350193	
6,753.00	0.31	241.76	6,639.79	-835.98	95.57	14,548,727.14	1,630,617.81	40.0603933	-105.0350204	
6,838.00	0.17	26.44	6,724.79	-835.97	95.43	14,548,727.15	1,630,617.66	40.0603933	-105.0350209	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 34N-17HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Site:</b>	Yellowhammer 12-8HZ Pad	<b>MD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Well:</b>	Yellowhammer 34N-17HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,923.00	0.26	111.95	6,809.79	-835.93	95.66	14,548,727.19	1,630,617.89	40.0603934	-105.0350201
6,950.00	2.76	170.16	6,836.78	-836.60	95.83	14,548,726.52	1,630,618.06	40.0603916	-105.0350195
<b>Curve KOP</b>									
7,008.00	8.41	173.40	6,894.48	-842.19	96.56	14,548,720.93	1,630,618.79	40.0603762	-105.0350169
<b>First SDI MWD Curve Survey</b>									
7,093.00	14.47	171.43	6,977.75	-858.88	98.86	14,548,704.24	1,630,621.08	40.0603304	-105.0350087
7,178.00	19.89	180.69	7,058.94	-883.86	100.27	14,548,679.25	1,630,622.48	40.0602618	-105.0350036
7,263.00	25.38	180.38	7,137.37	-916.56	99.97	14,548,646.56	1,630,622.17	40.0601720	-105.0350047
7,348.00	29.92	180.16	7,212.64	-956.00	99.79	14,548,607.12	1,630,621.98	40.0600637	-105.0350053
7,433.00	37.34	177.89	7,283.37	-1,003.03	100.68	14,548,560.09	1,630,622.85	40.0599346	-105.0350021
7,518.00	44.37	176.68	7,347.62	-1,058.53	103.36	14,548,504.59	1,630,625.50	40.0597822	-105.0349926
7,603.00	50.60	175.56	7,405.03	-1,121.00	107.62	14,548,442.12	1,630,629.74	40.0596106	-105.0349773
7,689.00	56.13	177.56	7,456.34	-1,189.86	111.72	14,548,373.26	1,630,633.81	40.0594215	-105.0349627
7,774.00	59.48	178.83	7,501.62	-1,261.74	113.97	14,548,301.37	1,630,636.03	40.0592241	-105.0349547
7,859.00	63.66	179.68	7,542.08	-1,336.47	114.93	14,548,226.65	1,630,636.96	40.0590189	-105.0349512
7,945.00	66.12	180.52	7,578.57	-1,414.33	114.79	14,548,148.78	1,630,636.79	40.0588051	-105.0349517
8,029.00	68.79	179.59	7,610.77	-1,491.90	114.72	14,548,071.21	1,630,636.69	40.0585920	-105.0349520
8,115.00	73.07	180.64	7,638.87	-1,573.16	114.55	14,547,989.95	1,630,636.49	40.0583689	-105.0349526
8,200.00	76.10	181.77	7,661.46	-1,655.08	112.82	14,547,908.04	1,630,634.73	40.0581439	-105.0349588
8,285.00	80.86	183.60	7,678.43	-1,738.24	108.91	14,547,824.87	1,630,630.78	40.0579155	-105.0349728
8,370.00	86.95	184.89	7,687.45	-1,822.49	102.65	14,547,740.63	1,630,624.49	40.0576842	-105.0349951
<b>Last SDI MWD Curve Survey - Landing Point : 186' FNL 588' FWL Sec 17</b>									
8,455.00	87.01	184.70	7,691.93	-1,907.08	95.55	14,547,656.05	1,630,617.36	40.0574519	-105.0350205
<b>First SDI MWD Lateral Survey</b>									
8,541.00	87.12	184.42	7,696.33	-1,992.69	88.73	14,547,570.44	1,630,610.50	40.0572168	-105.0350449
8,626.00	87.12	184.28	7,700.60	-2,077.34	82.29	14,547,485.79	1,630,604.03	40.0569843	-105.0350679
8,645.48	86.94	184.21	7,701.61	-2,096.74	80.85	14,547,466.39	1,630,602.58	40.0569311	-105.0350730
<b>Cross 460' Line : 8645.48' MD &amp; 7701.61' TVD 460' FNL 565' FWL</b>									
8,711.00	86.32	183.96	7,705.47	-2,161.98	76.19	14,547,401.15	1,630,597.89	40.0567519	-105.0350897
8,797.00	88.69	182.00	7,709.21	-2,247.77	71.73	14,547,315.36	1,630,593.40	40.0565163	-105.0351056
8,882.00	89.53	181.05	7,710.53	-2,332.73	69.46	14,547,230.41	1,630,591.10	40.0562830	-105.0351137
8,967.00	91.91	179.86	7,709.46	-2,417.71	68.79	14,547,145.42	1,630,590.39	40.0560496	-105.0351161
9,052.00	92.48	179.31	7,706.21	-2,502.65	69.40	14,547,060.49	1,630,590.97	40.0558164	-105.0351139
9,138.00	92.28	178.64	7,702.64	-2,588.56	70.94	14,546,974.58	1,630,592.48	40.0555804	-105.0351085
9,222.00	92.04	180.27	7,699.47	-2,672.49	71.74	14,546,890.64	1,630,593.24	40.0553499	-105.0351056
9,308.00	89.97	179.85	7,697.96	-2,758.47	71.65	14,546,804.66	1,630,593.12	40.0551138	-105.0351059
9,394.00	89.36	178.70	7,698.46	-2,844.46	72.74	14,546,718.67	1,630,594.17	40.0548777	-105.0351020
9,478.00	89.03	178.38	7,699.64	-2,928.43	74.88	14,546,634.71	1,630,596.28	40.0546471	-105.0350944
9,562.00	88.90	177.82	7,701.16	-3,012.37	77.66	14,546,550.76	1,630,599.03	40.0544166	-105.0350844
9,649.00	88.73	177.19	7,702.96	-3,099.27	81.45	14,546,463.87	1,630,602.78	40.0541780	-105.0350709
9,734.00	88.53	179.32	7,704.25	-3,184.21	84.04	14,546,378.92	1,630,605.33	40.0539447	-105.0350617
9,821.00	89.06	178.70	7,705.32	-3,271.19	85.54	14,546,291.94	1,630,606.80	40.0537058	-105.0350563
9,905.00	89.03	179.98	7,706.72	-3,355.17	86.51	14,546,207.96	1,630,607.74	40.0534752	-105.0350528
9,991.00	88.69	181.32	7,708.43	-3,441.15	85.53	14,546,121.98	1,630,606.73	40.0532391	-105.0350563
10,076.00	88.63	181.25	7,710.42	-3,526.10	83.63	14,546,037.03	1,630,604.79	40.0530058	-105.0350631
10,160.00	87.58	180.28	7,713.20	-3,610.05	82.50	14,545,953.08	1,630,603.63	40.0527753	-105.0350671
10,247.00	89.20	180.24	7,715.64	-3,697.01	82.11	14,545,866.12	1,630,603.20	40.0525365	-105.0350686
10,332.00	88.09	179.25	7,717.65	-3,781.98	82.49	14,545,781.15	1,630,603.55	40.0523031	-105.0350672
10,417.00	88.56	178.84	7,720.14	-3,866.93	83.90	14,545,696.20	1,630,604.93	40.0520698	-105.0350621
10,501.00	88.69	178.83	7,722.15	-3,950.89	85.61	14,545,612.24	1,630,606.61	40.0518392	-105.0350560
10,586.00	88.96	181.25	7,723.90	-4,035.87	85.55	14,545,527.26	1,630,606.51	40.0516059	-105.0350563
10,671.00	89.53	181.04	7,725.02	-4,120.84	83.85	14,545,442.29	1,630,604.78	40.0513725	-105.0350623
10,756.00	89.30	180.60	7,725.88	-4,205.83	82.64	14,545,357.30	1,630,603.53	40.0511391	-105.0350667
10,840.00	89.63	179.92	7,726.67	-4,289.82	82.26	14,545,273.31	1,630,603.12	40.0509085	-105.0350680



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 34N-17HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Site:</b>	Yellowhammer 12-8HZ Pad	<b>MD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Well:</b>	Yellowhammer 34N-17HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,927.00	91.14	181.34	7,726.08	-4,376.81	81.30	14,545,186.32	1,630,602.12	40.0506696	-105.0350715	
11,012.00	92.08	181.61	7,723.70	-4,461.75	79.11	14,545,101.39	1,630,599.90	40.0504364	-105.0350793	
11,098.00	92.34	181.05	7,720.38	-4,547.66	77.12	14,545,015.47	1,630,597.87	40.0502004	-105.0350864	
11,183.00	91.44	182.08	7,717.58	-4,632.58	74.80	14,544,930.55	1,630,595.52	40.0499672	-105.0350947	
11,268.00	90.77	179.60	7,715.94	-4,717.55	73.55	14,544,845.59	1,630,594.24	40.0497339	-105.0350991	
11,353.00	90.17	177.81	7,715.24	-4,802.52	75.47	14,544,760.62	1,630,596.13	40.0495005	-105.0350923	
11,438.00	90.57	180.90	7,714.69	-4,887.50	76.43	14,544,675.63	1,630,597.05	40.0492672	-105.0350889	
11,523.00	90.57	181.19	7,713.84	-4,972.49	74.88	14,544,590.65	1,630,595.47	40.0490338	-105.0350944	
11,608.00	91.01	181.31	7,712.67	-5,057.46	73.03	14,544,505.68	1,630,593.58	40.0488004	-105.0351010	
11,693.00	91.41	181.53	7,710.88	-5,142.41	70.92	14,544,420.73	1,630,591.44	40.0485671	-105.0351086	
11,780.00	90.37	180.63	7,709.53	-5,229.38	69.28	14,544,333.76	1,630,589.77	40.0483283	-105.0351144	
11,866.00	91.14	179.68	7,708.39	-5,315.37	69.05	14,544,247.77	1,630,589.50	40.0480922	-105.0351152	
11,951.00	90.60	180.62	7,707.10	-5,400.36	68.83	14,544,162.78	1,630,589.24	40.0478588	-105.0351160	
12,035.00	90.30	180.33	7,706.44	-5,484.36	68.13	14,544,078.78	1,630,588.51	40.0476281	-105.0351185	
12,120.00	89.77	179.64	7,706.39	-5,569.36	68.15	14,543,993.79	1,630,588.50	40.0473947	-105.0351185	
12,205.00	89.43	181.07	7,706.98	-5,654.35	67.62	14,543,908.79	1,630,587.94	40.0471613	-105.0351203	
12,290.00	88.96	181.11	7,708.18	-5,739.33	66.01	14,543,823.82	1,630,586.29	40.0469279	-105.0351261	
12,375.00	89.26	181.40	7,709.50	-5,824.30	64.15	14,543,738.85	1,630,584.40	40.0466946	-105.0351328	
12,460.00	88.69	181.10	7,711.02	-5,909.26	62.29	14,543,653.88	1,630,582.51	40.0464612	-105.0351394	
12,546.00	89.36	182.64	7,712.48	-5,995.20	59.49	14,543,567.95	1,630,579.67	40.0462252	-105.0351494	
12,632.00	91.04	183.39	7,712.18	-6,081.08	54.96	14,543,482.07	1,630,575.11	40.0459894	-105.0351656	
12,718.00	90.80	183.27	7,710.80	-6,166.92	49.97	14,543,396.23	1,630,570.08	40.0457537	-105.0351834	
12,803.00	90.03	183.02	7,710.19	-6,251.79	45.31	14,543,311.36	1,630,565.38	40.0455206	-105.0352001	
12,888.00	89.87	182.85	7,710.26	-6,336.68	40.95	14,543,226.48	1,630,561.00	40.0452875	-105.0352156	
12,973.00	89.73	183.05	7,710.56	-6,421.56	36.58	14,543,141.59	1,630,556.59	40.0450544	-105.0352313	
13,006.22	89.53	182.72	7,710.77	-6,454.74	34.91	14,543,108.41	1,630,554.91	40.0449633	-105.0352373	
Cross 460' Line: 13006.22' MD & 7710.77' TVD 460' FSL 528' FWL										
13,060.00	89.20	182.19	7,711.37	-6,508.47	32.60	14,543,054.69	1,630,552.58	40.0448157	-105.0352455	
13,145.00	89.10	182.46	7,712.63	-6,593.39	29.15	14,542,969.77	1,630,549.10	40.0445825	-105.0352578	
13,232.00	88.86	182.30	7,714.18	-6,680.30	25.54	14,542,882.86	1,630,545.45	40.0443438	-105.0352707	
13,317.00	88.89	182.44	7,715.85	-6,765.21	22.03	14,542,797.95	1,630,541.90	40.0441107	-105.0352833	
13,358.00	88.83	182.54	7,716.66	-6,806.16	20.25	14,542,757.00	1,630,540.11	40.0439982	-105.0352896	
Last SDI MWD Survey										
13,418.00	88.83	182.54	7,717.89	-6,866.09	17.59	14,542,697.07	1,630,537.42	40.0438336	-105.0352991	
Projection to TD : 49' FSL 510' FWL Sec 17										

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 34N-17HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Site:</b>	Yellowhammer 12-8HZ Pad	<b>MD Reference:</b>	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
<b>Well:</b>	Yellowhammer 34N-17HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
128.00	128.00	-0.34	0.65	First Total MWD Survey
1,830.00	1,790.64	-301.57	37.00	Last Total MWD Survey
1,880.00	1,838.16	-316.91	39.50	Projection to Surface TD
1,980.00	1,933.46	-346.66	45.23	First SDI MWD Survey
3,320.29	3,213.15	-735.98	119.02	Enter Land Box : 3320.29' MD & 3213.15' TVD
6,950.00	6,836.78	-836.60	95.83	Curve KOP
7,008.00	6,894.48	-842.19	96.56	First SDI MWD Curve Survey
8,370.00	7,687.45	-1,822.49	102.65	Last SDI MWD Curve Survey
8,370.00	7,687.45	-1,822.49	102.65	Landing Point : 186' FNL 588' FWL Sec 17
8,455.00	7,691.93	-1,907.08	95.55	First SDI MWD Lateral Survey
8,645.48	7,701.61	-2,096.74	80.85	Cross 460' Line : 8645.48' MD & 7701.61' TVD 460' FNL 565' FWL
13,006.22	7,710.77	-6,454.74	34.91	Cross 460' Line: 13006.22' MD & 7710.77' TVD 460' FSL 528' FWL
13,358.00	7,716.66	-6,806.16	20.25	Last SDI MWD Survey
13,418.00	7,717.89	-6,866.09	17.59	Projection to TD : 49' FSL 510' FWL Sec 17

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------