

WELL DETAILS: Yellowhammer 30N-8HZ

GL 5063' & KB 17' @ 5080.00ft (Xtreme 24) 5063.00  
 Northing Easting Latitude Longitude  
 14549638.18 1630523.16 40.0628950 -105.0353600

Design: OH (Yellowhammer 30N-8HZ/OH)

Created By: Seth Burstad Date: 12-15-2017

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

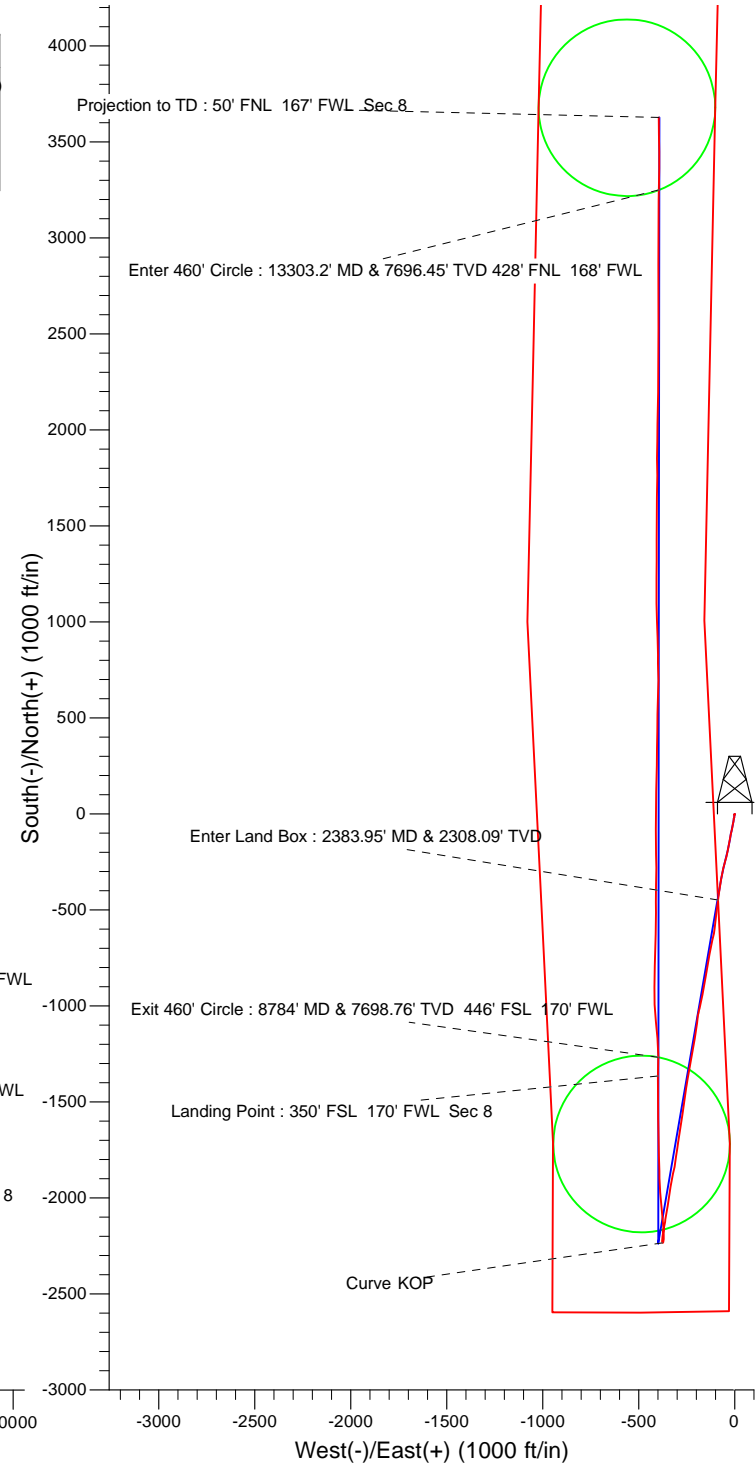
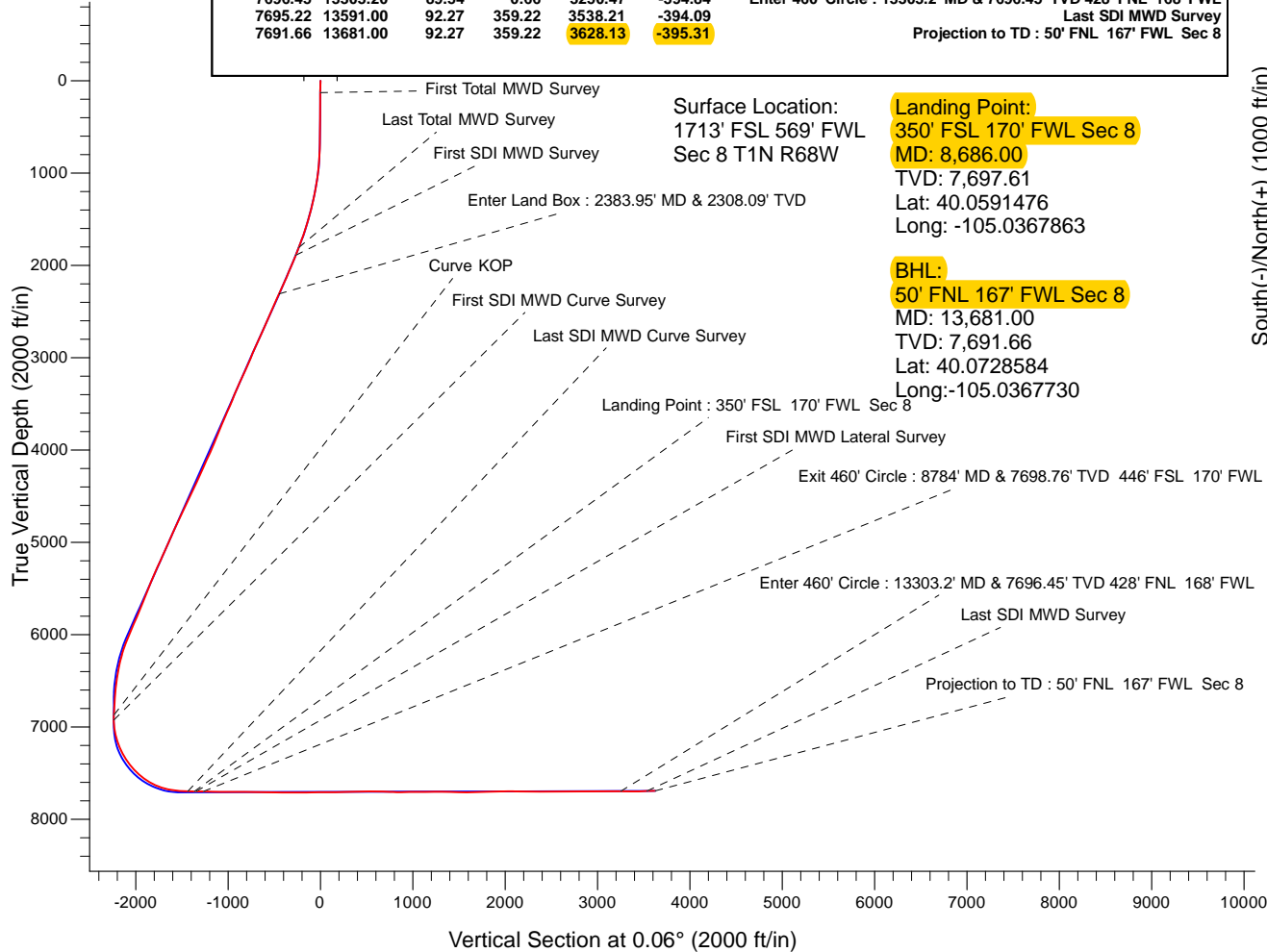
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
128.00	128.00	0.57	223.61	-0.46	-0.44	First Total MWD Survey
1806.51	1837.00	22.15	194.26	-233.18	-46.44	Last Total MWD Survey
1890.44	1928.00	23.32	195.08	-267.20	-55.35	First SDI MWD Survey
2308.09	2383.95	24.72	188.36	-447.02	-87.00	Enter Land Box : 2383.95' MD & 2308.09' TVD
6868.44	7317.00	1.77	137.37	-2233.44	-376.90	Curve KOP
6924.41	7373.00	1.92	128.38	-2234.66	-375.58	First SDI MWD Curve Survey
7696.95	8616.00	89.33	0.07	-1434.61	-399.30	Last SDI MWD Curve Survey
7697.61	8686.00	89.59	0.24	-1364.62	-399.11	Landing Point : 350' FSL 170' FWL Sec 8
7697.73	8705.00	89.66	0.28	-1345.62	-399.03	First SDI MWD Lateral Survey
7698.76	8784.00	88.85	359.93	-1266.63	-398.88	Exit 460' Circle : 8784' MD & 7698.76' TVD 446' FSL 170' FWL
7696.45	13303.20	89.54	0.66	3250.47	-394.84	Enter 460' Circle : 13303.2' MD & 7696.45' TVD 428' FNL 168' FWL
7695.22	13591.00	92.27	359.22	3538.21	-394.09	Last SDI MWD Survey
7691.66	13681.00	92.27	359.22	3628.13	-395.31	Projection to TD : 50' FNL 167' FWL Sec 8

Surface Location:  
 1713' FSL 569' FWL  
 Sec 8 T1N R68W

Landing Point:  
 350' FSL 170' FWL Sec 8  
 MD: 8,686.00  
 TVD: 7,697.61  
 Lat: 40.0591476  
 Long: -105.0367863

BHL:  
 50' FNL 167' FWL Sec 8  
 MD: 13,681.00  
 TVD: 7,691.66  
 Lat: 40.0728584  
 Long: -105.0367730





# **US ROCKIES REGION PLANNING**

**US Rockies Wattenberg Planning UTM83**

**Yellowhammer 12-8HZ Pad**

**Yellowhammer 30N-8HZ**

**OH**

**Design: OH**

## **Survey Report - Geographic**

**15 December, 2017**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 30N-8HZ
<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 30N-8HZ	<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 30N-8HZ, 1713' FSL 569' FWL Sec 8 T1N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,549,638.17 usft	Latitude:	40.0628950
	+E/-W	0.00 ft	Easting:	1,630,523.15 usft	Longitude:	-105.0353600
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		0.06

<b>Survey Program</b>	<b>Date</b>	12/15/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
128.00	1,837.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,928.00	13,681.00	Survey #2 - Production (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	14,549,638.17	1,630,523.15	40.0628950	-105.0353600
128.00	0.57	223.61	128.00	-0.46	-0.44	14,549,637.71	1,630,522.71	40.0628938	-105.0353615
<b>First Total MWD Survey</b>									
160.00	0.88	202.52	160.00	-0.80	-0.64	14,549,637.37	1,630,522.51	40.0628928	-105.0353623
192.00	0.48	190.48	191.99	-1.16	-0.76	14,549,637.01	1,630,522.39	40.0628918	-105.0353627
223.00	0.70	151.28	222.99	-1.46	-0.69	14,549,636.72	1,630,522.46	40.0628910	-105.0353625
254.00	0.79	153.91	253.99	-1.81	-0.51	14,549,636.36	1,630,522.64	40.0628901	-105.0353618
285.00	0.66	157.08	284.99	-2.17	-0.35	14,549,636.00	1,630,522.81	40.0628891	-105.0353612
317.00	0.79	137.30	316.98	-2.50	-0.12	14,549,635.67	1,630,523.03	40.0628882	-105.0353604
348.00	0.70	114.19	347.98	-2.74	0.19	14,549,635.43	1,630,523.35	40.0628875	-105.0353593
380.00	0.40	98.28	379.98	-2.83	0.48	14,549,635.34	1,630,523.63	40.0628873	-105.0353582

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 30N-8HZ
<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 30N-8HZ	<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	
412.00	0.48	304.38	411.98	-2.77	0.48	14,549,635.40	1,630,523.63	40.0628874	-105.0353582	
443.00	0.83	302.80	442.98	-2.58	0.19	14,549,635.59	1,630,523.34	40.0628880	-105.0353593	
475.00	1.19	317.74	474.97	-2.21	-0.23	14,549,635.96	1,630,522.92	40.0628890	-105.0353608	
507.00	1.05	301.48	506.97	-1.81	-0.71	14,549,636.36	1,630,522.45	40.0628901	-105.0353625	
539.00	1.05	268.70	538.96	-1.66	-1.25	14,549,636.51	1,630,521.90	40.0628905	-105.0353644	
571.00	1.14	252.88	570.96	-1.76	-1.85	14,549,636.41	1,630,521.31	40.0628902	-105.0353666	
602.00	1.14	206.47	601.95	-2.13	-2.28	14,549,636.04	1,630,520.87	40.0628892	-105.0353681	
634.00	1.85	194.87	633.94	-2.91	-2.55	14,549,635.26	1,630,520.60	40.0628870	-105.0353691	
666.00	2.20	177.47	665.92	-4.03	-2.66	14,549,634.15	1,630,520.49	40.0628840	-105.0353695	
698.00	2.46	175.98	697.89	-5.32	-2.58	14,549,632.85	1,630,520.57	40.0628804	-105.0353692	
729.00	3.03	178.00	728.86	-6.81	-2.51	14,549,631.36	1,630,520.64	40.0628763	-105.0353689	
761.00	3.21	178.26	760.81	-8.55	-2.45	14,549,629.62	1,630,520.70	40.0628716	-105.0353687	
793.00	2.77	178.08	792.77	-10.22	-2.40	14,549,627.96	1,630,520.75	40.0628670	-105.0353685	
825.00	2.46	183.09	824.73	-11.67	-2.41	14,549,626.50	1,630,520.74	40.0628630	-105.0353686	
856.00	2.81	181.34	855.70	-13.10	-2.46	14,549,625.07	1,630,520.69	40.0628591	-105.0353688	
888.00	3.56	187.40	887.65	-14.87	-2.61	14,549,623.30	1,630,520.54	40.0628542	-105.0353693	
920.00	4.13	192.67	919.58	-16.98	-2.99	14,549,621.19	1,630,520.16	40.0628484	-105.0353707	
952.00	5.41	192.24	951.47	-19.58	-3.56	14,549,618.60	1,630,519.58	40.0628413	-105.0353727	
983.00	6.64	191.27	982.29	-22.76	-4.22	14,549,615.41	1,630,518.92	40.0628325	-105.0353751	
1,015.00	7.91	190.39	1,014.04	-26.74	-4.98	14,549,611.43	1,630,518.16	40.0628216	-105.0353778	
1,047.00	8.70	189.07	1,045.70	-31.30	-5.76	14,549,606.87	1,630,517.38	40.0628091	-105.0353806	
1,078.00	9.23	188.90	1,076.32	-36.07	-6.51	14,549,602.10	1,630,516.62	40.0627960	-105.0353833	
1,110.00	9.67	189.33	1,107.89	-41.26	-7.35	14,549,596.92	1,630,515.79	40.0627817	-105.0353862	
1,142.00	9.93	189.86	1,139.42	-46.63	-8.25	14,549,591.55	1,630,514.88	40.0627670	-105.0353895	
1,174.00	10.55	190.74	1,170.91	-52.22	-9.27	14,549,585.95	1,630,513.86	40.0627516	-105.0353931	
1,205.00	11.07	190.39	1,201.36	-57.94	-10.34	14,549,580.24	1,630,512.79	40.0627359	-105.0353969	
1,237.00	11.38	191.71	1,232.75	-64.05	-11.53	14,549,574.12	1,630,511.59	40.0627191	-105.0354012	
1,269.00	11.60	192.15	1,264.11	-70.29	-12.85	14,549,567.89	1,630,510.27	40.0627020	-105.0354059	
1,301.00	12.52	192.24	1,295.40	-76.82	-14.26	14,549,561.35	1,630,508.86	40.0626841	-105.0354110	
1,312.00	13.75	191.97	1,306.11	-79.27	-14.79	14,549,558.91	1,630,508.33	40.0626773	-105.0354128	
1,364.00	14.41	192.41	1,356.55	-91.63	-17.46	14,549,546.54	1,630,505.66	40.0626434	-105.0354224	
1,396.00	14.94	191.62	1,387.51	-99.56	-19.15	14,549,538.62	1,630,503.97	40.0626216	-105.0354284	
1,459.00	15.29	189.60	1,448.33	-115.71	-22.17	14,549,522.47	1,630,500.94	40.0625773	-105.0354392	
1,491.00	16.00	191.53	1,479.14	-124.19	-23.75	14,549,513.99	1,630,499.35	40.0625540	-105.0354449	
1,522.00	16.52	190.57	1,508.90	-132.71	-25.42	14,549,505.47	1,630,497.68	40.0625306	-105.0354508	
1,554.00	16.26	189.95	1,539.60	-141.59	-27.02	14,549,496.59	1,630,496.07	40.0625062	-105.0354566	
1,586.00	16.66	190.57	1,570.29	-150.51	-28.64	14,549,487.67	1,630,494.45	40.0624817	-105.0354623	
1,618.00	17.67	189.95	1,600.86	-159.81	-30.32	14,549,478.38	1,630,492.77	40.0624562	-105.0354683	
1,649.00	18.68	190.92	1,630.32	-169.32	-32.07	14,549,468.87	1,630,491.01	40.0624301	-105.0354746	
1,681.00	19.12	192.32	1,660.59	-179.47	-34.16	14,549,458.72	1,630,488.92	40.0624022	-105.0354821	
1,713.00	19.56	192.06	1,690.79	-189.83	-36.40	14,549,448.36	1,630,486.68	40.0623737	-105.0354901	
1,745.00	20.43	192.32	1,720.86	-200.52	-38.71	14,549,437.66	1,630,484.36	40.0623444	-105.0354983	
1,776.00	21.09	193.11	1,749.84	-211.24	-41.13	14,549,426.95	1,630,481.94	40.0623149	-105.0355070	
1,808.00	21.84	193.55	1,779.62	-222.63	-43.83	14,549,415.55	1,630,479.23	40.0622836	-105.0355166	
1,837.00	22.15	194.26	1,806.51	-233.18	-46.44	14,549,405.01	1,630,476.62	40.0622547	-105.0355260	
Last Total MWD Survey										
1,928.00	23.32	195.08	1,890.44	-267.20	-55.35	14,549,371.00	1,630,467.69	40.0621613	-105.0355578	
First SDI MWD Survey										
2,017.00	21.79	192.78	1,972.63	-300.32	-63.59	14,549,337.88	1,630,459.44	40.0620703	-105.0355872	
2,106.00	23.54	189.78	2,054.76	-333.95	-70.27	14,549,304.25	1,630,452.75	40.0619780	-105.0356111	
2,195.00	23.35	187.27	2,136.41	-368.96	-75.52	14,549,269.25	1,630,447.49	40.0618818	-105.0356299	
2,284.00	25.26	188.78	2,217.52	-405.22	-80.65	14,549,232.98	1,630,442.34	40.0617822	-105.0356482	
2,373.00	24.84	188.55	2,298.15	-442.48	-86.33	14,549,195.73	1,630,436.65	40.0616799	-105.0356685	
2,383.95	24.72	188.36	2,308.09	-447.02	-87.00	14,549,191.19	1,630,435.98	40.0616675	-105.0356709	
Enter Land Box : 2383.95' MD & 2308.09' TVD										

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 30N-8HZ
<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 30N-8HZ	<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
2,461.00	23.88	186.99	2,378.32	-478.43	-91.24	14,549,159.77	1,630,431.72	40.0615812	-105.0356861
2,550.00	24.15	187.05	2,459.61	-514.38	-95.67	14,549,123.83	1,630,427.28	40.0614825	-105.0357019
2,639.00	23.32	184.91	2,541.09	-550.01	-99.41	14,549,088.21	1,630,423.52	40.0613846	-105.0357153
2,728.00	23.63	186.56	2,622.72	-585.28	-102.96	14,549,052.94	1,630,419.96	40.0612878	-105.0357279
2,817.00	24.76	190.63	2,703.91	-621.32	-108.43	14,549,016.90	1,630,414.47	40.0611888	-105.0357475
2,906.00	25.56	192.57	2,784.46	-658.38	-116.05	14,548,979.84	1,630,406.84	40.0610870	-105.0357747
2,995.00	24.68	192.84	2,865.05	-695.23	-124.36	14,548,942.99	1,630,398.52	40.0609858	-105.0358044
3,084.00	22.15	189.57	2,946.71	-729.90	-131.28	14,548,908.32	1,630,391.59	40.0608906	-105.0358291
3,173.00	23.77	189.47	3,028.66	-764.14	-137.02	14,548,874.09	1,630,385.83	40.0607966	-105.0358497
3,262.00	24.11	189.41	3,110.00	-799.77	-142.94	14,548,838.46	1,630,379.89	40.0606987	-105.0358708
3,350.00	26.21	190.96	3,189.65	-836.58	-149.58	14,548,801.65	1,630,373.25	40.0605976	-105.0358945
3,439.00	24.94	189.50	3,269.93	-874.38	-156.41	14,548,763.85	1,630,366.40	40.0604938	-105.0359190
3,528.00	22.06	190.78	3,351.54	-909.32	-162.63	14,548,728.92	1,630,360.16	40.0603979	-105.0359412
3,617.00	21.62	191.17	3,434.15	-941.82	-168.94	14,548,696.42	1,630,353.84	40.0603086	-105.0359637
3,706.00	24.55	191.86	3,516.02	-976.01	-175.91	14,548,662.23	1,630,346.85	40.0602148	-105.0359887
3,794.00	25.17	193.15	3,595.86	-1,012.12	-183.93	14,548,626.12	1,630,338.82	40.0601156	-105.0360173
3,908.00	21.80	189.29	3,700.41	-1,056.64	-192.86	14,548,581.61	1,630,329.87	40.0599933	-105.0360492
3,996.00	24.02	186.35	3,781.47	-1,090.57	-197.48	14,548,547.68	1,630,325.24	40.0599002	-105.0360658
4,085.00	21.60	184.92	3,863.50	-1,124.90	-200.89	14,548,513.36	1,630,321.81	40.0598059	-105.0360779
4,174.00	22.23	191.18	3,946.08	-1,157.74	-205.56	14,548,480.52	1,630,317.13	40.0597157	-105.0360946
4,263.00	24.83	190.79	4,027.67	-1,192.62	-212.33	14,548,445.64	1,630,310.35	40.0596199	-105.0361188
4,352.00	25.44	190.48	4,108.24	-1,229.77	-219.30	14,548,408.49	1,630,303.36	40.0595179	-105.0361437
4,441.00	25.54	188.70	4,188.58	-1,267.53	-225.68	14,548,370.73	1,630,296.97	40.0594142	-105.0361665
4,529.00	24.64	189.71	4,268.28	-1,304.37	-231.64	14,548,333.90	1,630,290.99	40.0593130	-105.0361878
4,618.00	24.61	190.91	4,349.19	-1,340.85	-238.28	14,548,297.42	1,630,284.34	40.0592128	-105.0362116
4,707.00	24.11	189.59	4,430.26	-1,376.97	-244.82	14,548,261.30	1,630,277.79	40.0591136	-105.0362349
4,796.00	24.93	189.39	4,511.24	-1,413.40	-250.91	14,548,224.87	1,630,271.69	40.0590136	-105.0362567
4,885.00	27.99	187.87	4,590.90	-1,452.61	-256.83	14,548,185.67	1,630,265.75	40.0589059	-105.0362778
4,974.00	26.15	188.72	4,670.15	-1,492.68	-262.66	14,548,145.59	1,630,259.90	40.0587959	-105.0362987
5,062.00	25.25	186.58	4,749.45	-1,530.50	-267.75	14,548,107.78	1,630,254.79	40.0586920	-105.0363169
5,151.00	24.06	188.16	4,830.33	-1,567.32	-272.50	14,548,070.97	1,630,250.03	40.0585909	-105.0363338
5,239.00	24.93	189.71	4,910.41	-1,603.35	-278.18	14,548,034.93	1,630,244.34	40.0584920	-105.0363541
5,328.00	22.79	187.45	4,991.80	-1,638.94	-283.58	14,547,999.35	1,630,238.93	40.0583942	-105.0363734
5,417.00	24.41	189.76	5,073.36	-1,674.16	-288.93	14,547,964.13	1,630,233.56	40.0582975	-105.0363925
5,506.00	23.87	188.21	5,154.58	-1,710.11	-294.62	14,547,928.19	1,630,227.86	40.0581988	-105.0364129
5,595.00	25.15	187.89	5,235.55	-1,746.66	-299.79	14,547,891.63	1,630,222.67	40.0580984	-105.0364313
5,684.00	24.94	188.14	5,316.19	-1,783.97	-305.04	14,547,854.32	1,630,217.41	40.0579960	-105.0364501
5,773.00	23.20	188.43	5,397.44	-1,819.89	-310.27	14,547,818.41	1,630,212.17	40.0578973	-105.0364688
5,862.00	22.57	192.29	5,479.44	-1,853.92	-316.47	14,547,784.38	1,630,205.95	40.0578039	-105.0364910
5,951.00	21.11	191.89	5,562.05	-1,886.30	-323.41	14,547,752.01	1,630,198.99	40.0577150	-105.0365158
6,040.00	23.26	191.71	5,644.46	-1,919.19	-330.28	14,547,719.12	1,630,192.11	40.0576246	-105.0365403
6,129.00	22.54	190.00	5,726.44	-1,953.20	-336.81	14,547,685.11	1,630,185.57	40.0575312	-105.0365636
6,218.00	23.19	187.35	5,808.45	-1,987.38	-342.01	14,547,650.93	1,630,180.35	40.0574374	-105.0365822
6,307.00	22.72	185.40	5,890.41	-2,021.87	-345.87	14,547,616.44	1,630,176.48	40.0573427	-105.0365960
6,396.00	24.07	192.97	5,972.11	-2,056.67	-351.56	14,547,581.64	1,630,170.77	40.0572471	-105.0366164
6,485.00	22.03	189.51	6,054.00	-2,090.83	-358.40	14,547,547.49	1,630,163.93	40.0571533	-105.0366408
6,573.00	19.75	186.81	6,136.21	-2,121.87	-362.89	14,547,516.45	1,630,159.42	40.0570680	-105.0366568
6,662.00	15.86	191.07	6,220.94	-2,148.75	-367.01	14,547,489.57	1,630,155.29	40.0569942	-105.0366716
6,751.00	13.13	190.86	6,307.10	-2,170.62	-371.25	14,547,467.70	1,630,151.04	40.0569342	-105.0366867
6,840.00	10.85	189.20	6,394.15	-2,188.82	-374.49	14,547,449.51	1,630,147.79	40.0568842	-105.0366983
6,928.00	8.55	185.47	6,480.89	-2,203.51	-376.44	14,547,434.82	1,630,145.84	40.0568438	-105.0367053
7,017.00	6.27	183.11	6,569.14	-2,214.95	-377.33	14,547,423.38	1,630,144.94	40.0568124	-105.0367085
7,106.00	4.76	186.80	6,657.72	-2,223.47	-378.03	14,547,414.86	1,630,144.24	40.0567890	-105.0367110
7,195.00	2.88	178.20	6,746.52	-2,229.37	-378.40	14,547,408.96	1,630,143.87	40.0567728	-105.0367123
7,284.00	1.71	143.31	6,835.45	-2,232.67	-377.54	14,547,405.66	1,630,144.73	40.0567638	-105.0367092

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 30N-8HZ
<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 30N-8HZ	<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
7,317.00	1.77	137.37	6,868.44	-2,233.44	-376.90	14,547,404.88	1,630,145.37	40.0567616	-105.0367069
<b>Curve KOP</b>									
7,373.00	1.92	128.38	6,924.41	-2,234.66	-375.58	14,547,403.66	1,630,146.69	40.0567583	-105.0367022
<b>First SDI MWD Curve Survey</b>									
7,462.00	6.49	21.24	7,013.22	-2,230.89	-372.58	14,547,407.43	1,630,149.69	40.0567686	-105.0366915
7,550.00	15.78	4.00	7,099.49	-2,214.28	-369.94	14,547,424.04	1,630,152.34	40.0568143	-105.0366820
7,639.00	19.72	358.72	7,184.24	-2,187.18	-369.43	14,547,451.14	1,630,152.86	40.0568887	-105.0366802
7,728.00	26.91	354.46	7,265.92	-2,152.08	-371.71	14,547,486.24	1,630,150.59	40.0569851	-105.0366884
7,816.00	32.71	355.33	7,342.25	-2,108.52	-375.57	14,547,529.80	1,630,146.74	40.0571047	-105.0367022
7,905.00	37.63	354.08	7,414.98	-2,057.50	-380.34	14,547,580.83	1,630,142.00	40.0572448	-105.0367192
7,994.00	45.21	354.94	7,481.67	-1,998.93	-385.93	14,547,639.40	1,630,136.43	40.0574057	-105.0367392
8,083.00	50.49	357.51	7,541.38	-1,933.12	-390.21	14,547,705.21	1,630,132.17	40.0575864	-105.0367545
8,172.00	58.41	358.90	7,593.09	-1,860.80	-392.44	14,547,777.53	1,630,129.98	40.0577850	-105.0367625
8,261.00	68.00	358.36	7,633.16	-1,781.47	-394.35	14,547,856.86	1,630,128.10	40.0580028	-105.0367693
8,349.00	74.11	358.72	7,661.72	-1,698.31	-396.46	14,547,940.03	1,630,126.02	40.0582312	-105.0367769
8,438.00	79.17	359.06	7,682.28	-1,611.76	-398.14	14,548,026.57	1,630,124.38	40.0584689	-105.0367828
8,527.00	86.28	359.68	7,693.54	-1,523.54	-399.10	14,548,114.79	1,630,123.44	40.0587111	-105.0367863
8,616.00	89.33	0.07	7,696.95	-1,434.61	-399.30	14,548,203.72	1,630,123.29	40.0589553	-105.0367870
<b>Last SDI MWD Curve Survey</b>									
8,686.00	89.59	0.24	7,697.61	-1,364.62	-399.11	14,548,273.71	1,630,123.50	40.0591476	-105.0367863
<b>Landing Point : 350' FSL 170' FWL Sec 8</b>									
8,705.00	89.66	0.28	7,697.73	-1,345.62	-399.03	14,548,292.71	1,630,123.59	40.0591997	-105.0367860
<b>First SDI MWD Lateral Survey</b>									
8,784.00	88.85	359.93	7,698.76	-1,266.63	-398.88	14,548,371.71	1,630,123.77	40.0594167	-105.0367855
<b>Exit 460' Circle : 8784' MD &amp; 7698.76' TVD 446' FSL 170' FWL</b>									
8,793.00	88.76	359.89	7,698.95	-1,257.63	-398.90	14,548,380.70	1,630,123.76	40.0594414	-105.0367856
8,882.00	87.82	355.64	7,701.60	-1,168.76	-402.36	14,548,469.58	1,630,120.33	40.0596854	-105.0367980
8,971.00	88.33	353.60	7,704.59	-1,080.20	-410.70	14,548,558.13	1,630,112.02	40.0599286	-105.0368278
9,060.00	90.77	357.85	7,705.29	-991.48	-417.33	14,548,646.86	1,630,105.43	40.0601723	-105.0368515
9,149.00	90.70	0.68	7,704.15	-902.50	-418.48	14,548,735.83	1,630,104.32	40.0604166	-105.0368556
9,238.00	90.40	1.80	7,703.29	-813.53	-416.55	14,548,824.81	1,630,106.28	40.0606609	-105.0368487
9,327.00	87.92	1.40	7,704.60	-724.58	-414.07	14,548,913.75	1,630,108.80	40.0609052	-105.0368398
9,416.00	88.16	1.29	7,707.64	-635.66	-411.98	14,549,002.68	1,630,110.92	40.0611494	-105.0368324
9,504.00	88.79	0.30	7,709.99	-547.70	-410.76	14,549,090.63	1,630,112.18	40.0613910	-105.0368280
9,593.00	90.30	0.32	7,710.69	-458.71	-410.28	14,549,179.63	1,630,112.70	40.0616353	-105.0368263
9,683.00	90.54	0.69	7,710.03	-368.71	-409.48	14,549,269.62	1,630,113.52	40.0618825	-105.0368235
9,771.00	89.93	0.00	7,709.67	-280.72	-408.95	14,549,357.62	1,630,114.09	40.0621241	-105.0368216
9,860.00	90.67	359.31	7,709.21	-191.72	-409.49	14,549,446.61	1,630,113.59	40.0623685	-105.0368235
9,949.00	90.77	359.45	7,708.09	-102.73	-410.45	14,549,535.60	1,630,112.66	40.0626129	-105.0368269
10,038.00	90.64	0.13	7,706.99	-13.74	-410.78	14,549,624.59	1,630,112.37	40.0628573	-105.0368281
10,127.00	90.74	1.21	7,705.92	75.25	-409.74	14,549,713.58	1,630,113.45	40.0631017	-105.0368244
10,216.00	89.83	1.80	7,705.48	164.21	-407.40	14,549,802.54	1,630,115.82	40.0633460	-105.0368161
10,305.00	90.47	0.92	7,705.24	253.19	-405.29	14,549,891.52	1,630,117.97	40.0635903	-105.0368085
10,394.00	92.48	0.54	7,702.95	342.14	-404.15	14,549,980.47	1,630,119.14	40.0638346	-105.0368045
10,483.00	90.70	0.47	7,700.48	431.10	-403.37	14,550,069.43	1,630,119.96	40.0640789	-105.0368017
10,572.00	90.63	1.06	7,699.45	520.09	-402.18	14,550,158.42	1,630,121.18	40.0643233	-105.0367974
10,661.00	90.37	2.65	7,698.67	609.04	-399.30	14,550,247.36	1,630,124.09	40.0645675	-105.0367871
10,749.00	86.21	359.50	7,701.30	696.95	-397.65	14,550,335.28	1,630,125.78	40.0648090	-105.0367812
10,838.00	88.69	358.72	7,705.26	785.84	-399.03	14,550,424.17	1,630,124.44	40.0650531	-105.0367862
10,927.00	90.10	358.79	7,706.20	874.82	-400.96	14,550,513.14	1,630,122.54	40.0652974	-105.0367931
11,016.00	91.24	358.07	7,705.16	963.77	-403.40	14,550,602.10	1,630,120.13	40.0655417	-105.0368018
11,105.00	90.00	358.46	7,704.20	1,052.73	-406.10	14,550,691.06	1,630,117.48	40.0657860	-105.0368114
11,194.00	90.30	359.62	7,703.96	1,141.71	-407.59	14,550,780.04	1,630,116.02	40.0660303	-105.0368168
11,283.00	91.34	0.57	7,702.69	1,230.70	-407.44	14,550,869.03	1,630,116.20	40.0662747	-105.0368163



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Yellowhammer 30N-8HZ
<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 30N-8HZ	<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
11,371.00	88.63	0.29	7,702.71	1,318.69	-406.78	14,550,957.02	1,630,116.90	40.0665164	-105.0368139
11,460.00	88.43	0.32	7,705.00	1,407.66	-406.31	14,551,045.99	1,630,117.41	40.0667607	-105.0368122
11,549.00	89.03	0.05	7,706.97	1,496.64	-406.02	14,551,134.96	1,630,117.73	40.0670050	-105.0368112
11,638.00	89.97	0.50	7,707.75	1,585.63	-405.59	14,551,223.96	1,630,118.19	40.0672494	-105.0368097
11,727.00	91.51	0.72	7,706.60	1,674.62	-404.64	14,551,312.94	1,630,119.17	40.0674938	-105.0368063
11,816.00	91.78	0.22	7,704.04	1,763.58	-403.91	14,551,401.90	1,630,119.94	40.0677381	-105.0368037
11,905.00	92.08	359.64	7,701.04	1,852.52	-404.02	14,551,490.85	1,630,119.87	40.0679823	-105.0368041
11,993.00	91.51	0.68	7,698.29	1,940.48	-403.78	14,551,578.81	1,630,120.15	40.0682239	-105.0368032
12,082.00	90.50	1.13	7,696.73	2,029.45	-402.37	14,551,667.78	1,630,121.59	40.0684682	-105.0367982
12,171.00	88.46	1.59	7,697.53	2,118.42	-400.26	14,551,756.74	1,630,123.74	40.0687125	-105.0367906
12,259.00	88.76	0.75	7,699.67	2,206.37	-398.46	14,551,844.70	1,630,125.57	40.0689541	-105.0367842
12,348.00	89.77	0.73	7,700.81	2,295.36	-397.31	14,551,933.68	1,630,126.75	40.0691984	-105.0367801
12,437.00	90.90	359.72	7,700.29	2,384.35	-396.96	14,552,022.68	1,630,127.14	40.0694428	-105.0367789
12,525.00	89.87	359.47	7,699.70	2,472.35	-397.59	14,552,110.67	1,630,126.55	40.0696845	-105.0367811
12,614.00	89.36	359.68	7,700.30	2,561.34	-398.25	14,552,199.67	1,630,125.92	40.0699289	-105.0367835
12,703.00	91.20	359.47	7,699.86	2,650.34	-398.91	14,552,288.66	1,630,125.30	40.0701733	-105.0367858
12,792.00	91.10	0.45	7,698.07	2,739.32	-398.97	14,552,377.64	1,630,125.27	40.0704176	-105.0367861
12,881.00	89.30	0.68	7,697.76	2,828.31	-398.09	14,552,466.63	1,630,126.19	40.0706620	-105.0367829
12,970.00	89.63	0.49	7,698.60	2,917.30	-397.18	14,552,555.62	1,630,127.13	40.0709064	-105.0367797
13,059.00	91.54	359.90	7,697.69	3,006.29	-396.88	14,552,644.61	1,630,127.47	40.0711508	-105.0367786
13,148.00	90.23	0.55	7,696.31	3,095.28	-396.53	14,552,733.60	1,630,127.85	40.0713951	-105.0367774
13,236.00	89.97	0.65	7,696.16	3,183.27	-395.61	14,552,821.59	1,630,128.81	40.0716368	-105.0367741
13,303.20	89.54	0.66	7,696.45	3,250.47	-394.84	14,552,888.79	1,630,129.60	40.0718213	-105.0367713
<b>Enter 460' Circle : 13303.2' MD &amp; 7696.45' TVD 428' FNL 168' FWL</b>									
13,325.00	89.40	0.66	7,696.65	3,272.26	-394.59	14,552,910.58	1,630,129.86	40.0718812	-105.0367704
13,414.00	89.30	0.45	7,697.66	3,361.25	-393.73	14,552,999.57	1,630,130.76	40.0721255	-105.0367674
13,503.00	90.80	359.93	7,697.58	3,450.25	-393.43	14,553,088.57	1,630,131.09	40.0723699	-105.0367663
13,591.00	92.27	359.22	7,695.22	3,538.21	-394.09	14,553,176.53	1,630,130.47	40.0726115	-105.0367687
<b>Last SDI MWD Survey</b>									
13,681.00	92.27	359.22	7,691.66	3,628.13	-395.31	14,553,266.45	1,630,129.28	40.0728584	-105.0367730
<b>Projection to TD : 50' FNL 167' FWL Sec 8</b>									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
128.00	128.00	-0.46	-0.44	First Total MWD Survey	
1,837.00	1,806.51	-233.18	-46.44	Last Total MWD Survey	
1,928.00	1,890.44	-267.20	-55.35	First SDI MWD Survey	
2,383.95	2,308.09	-447.02	-87.00	Enter Land Box : 2383.95' MD & 2308.09' TVD	
7,317.00	6,868.44	-2,233.44	-376.90	Curve KOP	
7,373.00	6,924.41	-2,234.66	-375.58	First SDI MWD Curve Survey	
8,616.00	7,696.95	-1,434.61	-399.30	Last SDI MWD Curve Survey	
8,686.00	7,697.61	-1,364.62	-399.11	Landing Point : 350' FSL 170' FWL Sec 8	
8,705.00	7,697.73	-1,345.62	-399.03	First SDI MWD Lateral Survey	
8,784.00	7,698.76	-1,266.63	-398.88	Exit 460' Circle : 8784' MD & 7698.76' TVD 446' FSL 170' FWL	
13,303.20	7,696.45	3,250.47	-394.84	Enter 460' Circle : 13303.2' MD & 7696.45' TVD 428' FNL 168' FWL	
13,591.00	7,695.22	3,538.21	-394.09	Last SDI MWD Survey	
13,681.00	7,691.66	3,628.13	-395.31	Projection to TD : 50' FNL 167' FWL Sec 8	