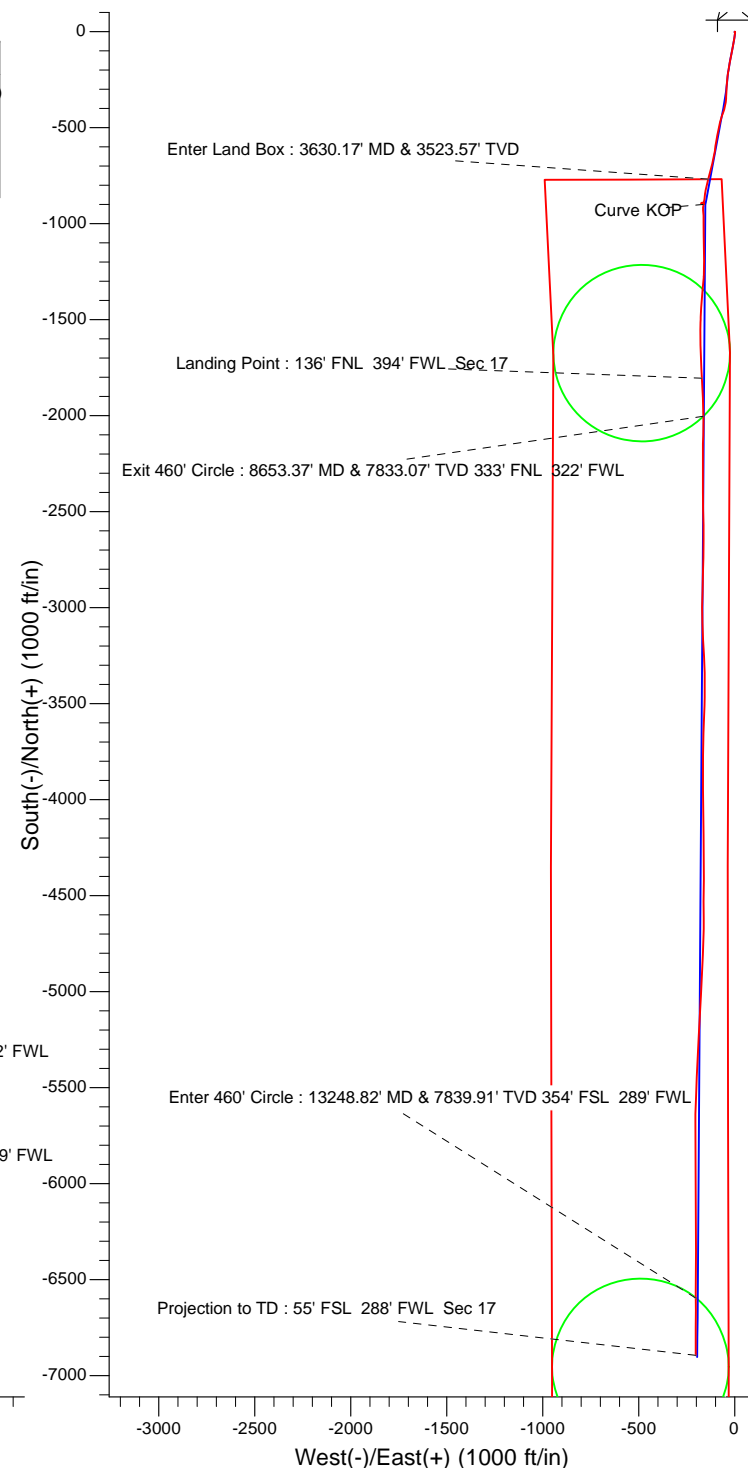
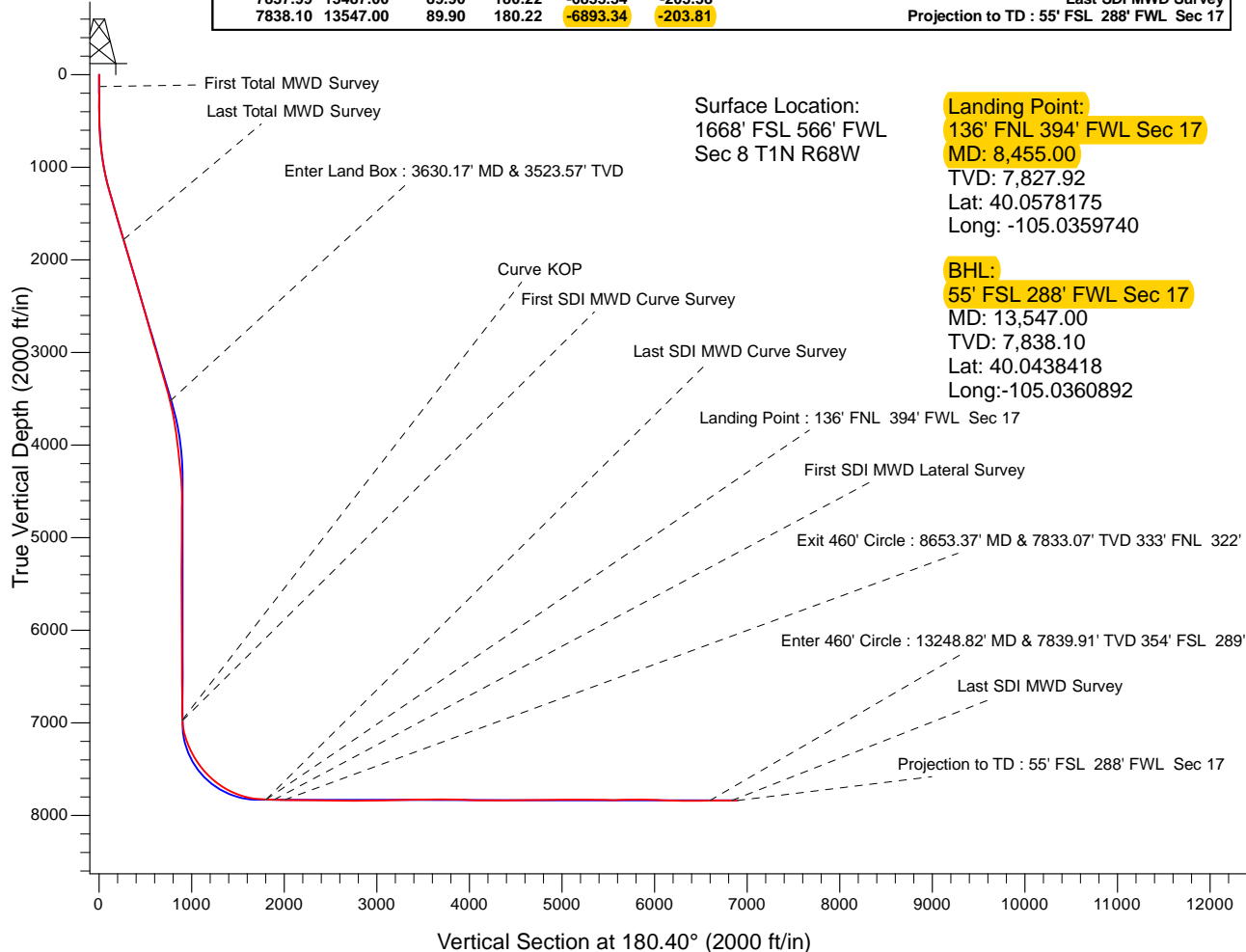


WELL DETAILS: Yellowhammer 34C-17HZ				
GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)		5063.00		
Northing	Easting	Latitude	Longitude	
14549593.39	1630522.86	40.0627720	-105.0353610	
Design: OH (Yellowhammer 34C-17HZ/OH)				
Created By: Seth Burstad Date: 12-27-2017				

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
127.99	128.00	0.97	191.88	-1.06	-0.22	First Total MWD Survey
1782.64	1815.00	16.74	185.12	-265.36	-40.61	Last Total MWD Survey
3523.57	3630.17	14.25	193.64	-767.86	-137.41	Enter Land Box : 3630.17' MD & 3523.57' TVD
6966.21	7083.00	2.16	188.82	-899.65	-163.18	Curve KOP
6976.20	7093.00	2.47	188.81	-900.05	-163.24	First SDI MWD Curve Survey
7827.92	8455.00	89.06	177.51	-1804.16	-171.54	Landing Point : 136' FNL 394' FWL Sec 17
7827.92	8455.00	89.06	177.51	-1804.16	-171.54	Last SDI MWD Curve Survey
7830.32	8540.00	87.71	176.38	-1889.01	-167.01	First SDI MWD Lateral Survey
7833.07	8653.37	89.38	179.76	-2002.26	-163.21	Exit 460' Circle : 8653.37' MD & 7833.07' TVD 333' FNL 322' FWL
7839.91	13248.82	91.06	180.07	-6595.19	-203.14	Enter 460' Circle : 13248.82' MD & 7839.91' TVD 354' FSL 289' FWL
7837.99	13487.00	89.90	180.22	-6833.34	-203.58	Last SDI MWD Survey
7838.10	13547.00	89.90	180.22	-6893.34	-203.81	Projection to TD : 55' FSL 288' FWL Sec 17





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Yellowhammer 12-8HZ Pad

Yellowhammer 34C-17HZ

OH

Design: OH

Survey Report - Geographic

27 December, 2017



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

Project	US Rockies Wattenberg Planning UTM83		
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						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 34C-17HZ, 1668' FSL 566' FWL Sec 8 T1N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,549,593.38 usft	Latitude:	40.0627720
	+E/-W	0.00 ft	Easting:	1,630,522.86 usft	Longitude:	-105.0353610
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,063.00 ft

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

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	180.40	

Survey Program	Date	12/27/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
128.00	1,815.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,976.00	5,809.00	Survey #2 - Intermediate (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
5,983.00	13,547.00	Survey #3 - Curve / Lateral (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,549,593.38	1,630,522.86	40.0627720	-105.0353610
128.00	0.97	191.88	127.99	-1.06	-0.22	14,549,592.32	1,630,522.63	40.0627691	-105.0353618
First Total MWD Survey									
160.00	0.57	204.10	159.99	-1.47	-0.34	14,549,591.91	1,630,522.51	40.0627680	-105.0353622
192.00	0.62	185.38	191.99	-1.79	-0.43	14,549,591.59	1,630,522.43	40.0627671	-105.0353625
223.00	0.53	122.19	222.99	-2.03	-0.32	14,549,591.35	1,630,522.53	40.0627665	-105.0353621
254.00	0.79	123.86	253.99	-2.23	-0.02	14,549,591.15	1,630,522.83	40.0627659	-105.0353610
286.00	0.92	95.64	285.98	-2.38	0.42	14,549,591.01	1,630,523.27	40.0627655	-105.0353595
317.00	0.53	103.47	316.98	-2.43	0.81	14,549,590.95	1,630,523.66	40.0627654	-105.0353581
349.00	0.66	148.64	348.98	-2.62	1.05	14,549,590.76	1,630,523.90	40.0627648	-105.0353572

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Yellowhammer 34C-17HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
Site:	Yellowhammer 12-8HZ Pad	MD Reference:	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
Well:	Yellowhammer 34C-17HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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
380.00	0.79	124.38	379.98	-2.90	1.31	14,549,590.48	1,630,524.17	40.0627641	-105.0353563
412.00	0.79	183.80	411.97	-3.24	1.48	14,549,590.14	1,630,524.34	40.0627631	-105.0353557
444.00	1.14	171.05	443.97	-3.78	1.52	14,549,589.60	1,630,524.37	40.0627617	-105.0353556
475.00	0.97	175.80	474.96	-4.34	1.58	14,549,589.04	1,630,524.44	40.0627601	-105.0353553
507.00	1.36	175.01	506.96	-4.99	1.64	14,549,588.39	1,630,524.49	40.0627583	-105.0353551
538.00	1.80	174.04	537.95	-5.84	1.72	14,549,587.54	1,630,524.57	40.0627560	-105.0353548
570.00	2.29	184.41	569.92	-6.98	1.72	14,549,586.40	1,630,524.57	40.0627529	-105.0353548
602.00	3.30	188.28	601.89	-8.53	1.54	14,549,584.85	1,630,524.39	40.0627486	-105.0353555
634.00	3.91	188.37	633.82	-10.52	1.25	14,549,582.86	1,630,524.10	40.0627431	-105.0353565
697.00	4.39	190.83	696.66	-15.01	0.48	14,549,578.37	1,630,523.33	40.0627308	-105.0353592
729.00	4.31	184.15	728.57	-17.42	0.17	14,549,575.97	1,630,523.01	40.0627242	-105.0353604
761.00	4.92	184.06	760.46	-19.98	-0.02	14,549,573.40	1,630,522.83	40.0627172	-105.0353610
793.00	6.15	186.52	792.31	-23.06	-0.31	14,549,570.33	1,630,522.54	40.0627087	-105.0353621
824.00	7.47	185.47	823.09	-26.71	-0.69	14,549,566.67	1,630,522.15	40.0626987	-105.0353634
856.00	7.78	188.19	854.81	-30.93	-1.20	14,549,562.46	1,630,521.65	40.0626871	-105.0353653
888.00	8.22	190.83	886.50	-35.32	-1.94	14,549,558.07	1,630,520.91	40.0626750	-105.0353679
920.00	8.44	189.77	918.16	-39.88	-2.76	14,549,553.50	1,630,520.08	40.0626625	-105.0353709
951.00	9.05	190.21	948.80	-44.52	-3.58	14,549,548.86	1,630,519.26	40.0626498	-105.0353738
983.00	10.37	191.62	980.34	-49.82	-4.61	14,549,543.57	1,630,518.23	40.0626352	-105.0353774
1,015.00	11.29	190.21	1,011.77	-55.72	-5.74	14,549,537.66	1,630,517.09	40.0626190	-105.0353815
1,047.00	11.65	190.83	1,043.13	-61.98	-6.91	14,549,531.41	1,630,515.92	40.0626018	-105.0353857
1,078.00	11.73	191.80	1,073.49	-68.14	-8.14	14,549,525.25	1,630,514.69	40.0625849	-105.0353901
1,110.00	12.44	191.00	1,104.78	-74.70	-9.46	14,549,518.68	1,630,513.36	40.0625669	-105.0353948
1,142.00	13.40	191.36	1,135.97	-81.72	-10.85	14,549,511.66	1,630,511.97	40.0625476	-105.0353997
1,173.00	14.19	190.74	1,166.07	-88.98	-12.27	14,549,504.41	1,630,510.55	40.0625277	-105.0354048
1,205.00	14.68	189.69	1,197.06	-96.83	-13.68	14,549,496.56	1,630,509.14	40.0625061	-105.0354099
1,237.00	15.16	190.47	1,227.99	-104.94	-15.12	14,549,488.45	1,630,507.69	40.0624839	-105.0354150
1,269.00	15.64	191.62	1,258.84	-113.28	-16.75	14,549,480.11	1,630,506.06	40.0624609	-105.0354208
1,301.00	15.95	190.39	1,289.63	-121.83	-18.41	14,549,471.56	1,630,504.39	40.0624375	-105.0354268
1,332.00	16.22	191.71	1,319.41	-130.26	-20.06	14,549,463.13	1,630,502.74	40.0624143	-105.0354327
1,364.00	16.26	191.09	1,350.14	-139.03	-21.83	14,549,454.36	1,630,500.97	40.0623902	-105.0354390
1,396.00	16.48	191.80	1,380.84	-147.87	-23.62	14,549,445.52	1,630,499.18	40.0623660	-105.0354454
1,427.00	16.57	190.65	1,410.56	-156.52	-25.33	14,549,436.87	1,630,497.46	40.0623422	-105.0354515
1,459.00	16.57	188.90	1,441.23	-165.51	-26.88	14,549,427.88	1,630,495.91	40.0623175	-105.0354571
1,491.00	16.70	190.57	1,471.89	-174.54	-28.43	14,549,418.85	1,630,494.35	40.0622927	-105.0354626
1,522.00	16.79	189.33	1,501.58	-183.34	-29.98	14,549,410.06	1,630,492.81	40.0622686	-105.0354681
1,554.00	16.83	188.37	1,532.21	-192.48	-31.40	14,549,400.91	1,630,491.38	40.0622435	-105.0354732
1,586.00	16.70	188.98	1,562.85	-201.60	-32.79	14,549,391.79	1,630,489.98	40.0622184	-105.0354782
1,617.00	16.74	188.72	1,592.54	-210.42	-34.16	14,549,382.98	1,630,488.61	40.0621942	-105.0354831
1,649.00	16.52	189.16	1,623.20	-219.46	-35.59	14,549,373.93	1,630,487.18	40.0621694	-105.0354882
1,681.00	16.44	188.28	1,653.89	-228.44	-36.96	14,549,364.96	1,630,485.80	40.0621447	-105.0354931
1,713.00	15.95	187.14	1,684.62	-237.28	-38.16	14,549,356.12	1,630,484.60	40.0621204	-105.0354974
1,744.00	15.64	183.53	1,714.45	-245.68	-38.95	14,549,347.72	1,630,483.81	40.0620974	-105.0355002
1,776.00	15.91	185.29	1,745.24	-254.35	-39.62	14,549,339.05	1,630,483.14	40.0620735	-105.0355026
1,808.00	16.88	185.03	1,775.94	-263.34	-40.43	14,549,330.05	1,630,482.32	40.0620488	-105.0355055
1,815.00	16.74	185.12	1,782.64	-265.36	-40.61	14,549,328.04	1,630,482.14	40.0620433	-105.0355061
Last Total MWD Survey									
1,976.00	17.98	182.23	1,936.31	-313.29	-43.64	14,549,280.11	1,630,479.09	40.0619117	-105.0355170
2,061.00	17.37	181.58	2,017.29	-339.08	-44.51	14,549,254.32	1,630,478.22	40.0618409	-105.0355200
2,146.00	15.27	187.28	2,098.87	-362.87	-46.27	14,549,230.53	1,630,476.44	40.0617755	-105.0355264
2,233.00	16.08	194.18	2,182.64	-385.92	-50.68	14,549,207.48	1,630,472.02	40.0617122	-105.0355421
2,318.00	16.57	195.05	2,264.21	-409.04	-56.71	14,549,184.37	1,630,465.98	40.0616488	-105.0355636
2,403.00	17.73	200.71	2,345.44	-432.85	-64.43	14,549,160.56	1,630,458.25	40.0615834	-105.0355913
2,489.00	15.82	196.18	2,427.78	-456.36	-72.33	14,549,137.05	1,630,450.34	40.0615188	-105.0356195
2,574.00	15.95	191.71	2,509.54	-478.92	-77.93	14,549,114.49	1,630,444.73	40.0614568	-105.0356395

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Yellowhammer 34C-17HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
Site:	Yellowhammer 12-8HZ Pad	MD Reference:	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
Well:	Yellowhammer 34C-17HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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
2,659.00	16.89	192.87	2,591.07	-502.40	-83.05	14,549,091.02	1,630,439.60	40.0613924	-105.0356578
2,744.00	16.03	192.51	2,672.59	-525.89	-88.34	14,549,067.52	1,630,434.30	40.0613278	-105.0356767
2,829.00	16.81	189.72	2,754.12	-549.47	-92.96	14,549,043.95	1,630,429.68	40.0612631	-105.0356932
2,914.00	15.29	188.87	2,835.80	-572.66	-96.77	14,549,020.76	1,630,425.86	40.0611994	-105.0357068
2,999.00	17.74	188.59	2,917.29	-596.54	-100.43	14,548,996.88	1,630,422.19	40.0611338	-105.0357199
3,085.00	15.57	187.86	2,999.68	-620.93	-103.96	14,548,972.49	1,630,418.64	40.0610669	-105.0357325
3,170.00	16.60	191.83	3,081.35	-644.11	-108.01	14,548,949.31	1,630,414.59	40.0610032	-105.0357470
3,255.00	15.77	191.97	3,162.98	-667.30	-112.90	14,548,926.13	1,630,409.69	40.0609395	-105.0357645
3,340.00	15.52	194.42	3,244.83	-689.61	-118.13	14,548,903.82	1,630,404.46	40.0608782	-105.0357831
3,425.00	16.43	193.85	3,326.55	-712.30	-123.84	14,548,881.13	1,630,398.74	40.0608160	-105.0358036
3,511.00	17.06	193.89	3,408.90	-736.35	-129.78	14,548,857.08	1,630,392.79	40.0607499	-105.0358248
3,596.00	15.32	193.42	3,490.53	-759.38	-135.37	14,548,834.06	1,630,387.18	40.0606867	-105.0358448
3,630.17	14.25	193.64	3,523.57	-767.86	-137.41	14,548,825.58	1,630,385.14	40.0606634	-105.0358521
Enter Land Box : 3630.17' MD & 3523.57' TVD									
3,682.00	12.63	194.05	3,573.98	-779.56	-140.30	14,548,813.88	1,630,382.25	40.0606312	-105.0358624
3,767.00	11.40	194.16	3,657.11	-796.72	-144.61	14,548,796.72	1,630,377.93	40.0605841	-105.0358778
3,852.00	9.78	194.55	3,740.66	-811.85	-148.48	14,548,781.59	1,630,374.06	40.0605426	-105.0358916
3,937.00	9.23	191.53	3,824.50	-825.52	-151.65	14,548,767.93	1,630,370.88	40.0605050	-105.0359030
4,022.00	7.83	186.63	3,908.55	-837.95	-153.68	14,548,755.50	1,630,368.84	40.0604709	-105.0359102
4,108.00	6.16	185.56	3,993.91	-848.36	-154.81	14,548,745.08	1,630,367.71	40.0604423	-105.0359142
4,193.00	7.16	189.49	4,078.34	-858.12	-156.12	14,548,735.32	1,630,366.39	40.0604155	-105.0359189
4,278.00	6.68	186.53	4,162.72	-868.26	-157.56	14,548,725.18	1,630,364.95	40.0603876	-105.0359241
4,365.00	5.56	188.35	4,249.22	-877.46	-158.74	14,548,715.99	1,630,363.76	40.0603624	-105.0359283
4,450.00	4.90	192.82	4,333.87	-885.07	-160.15	14,548,708.37	1,630,362.36	40.0603415	-105.0359333
4,535.00	4.19	198.45	4,418.60	-891.56	-161.94	14,548,701.89	1,630,360.57	40.0603237	-105.0359397
4,620.00	0.45	155.67	4,503.52	-894.81	-162.78	14,548,698.64	1,630,359.72	40.0603147	-105.0359427
4,705.00	0.48	49.07	4,588.52	-894.88	-162.38	14,548,698.57	1,630,360.12	40.0603145	-105.0359413
4,789.00	0.19	129.38	4,672.51	-894.74	-162.00	14,548,698.71	1,630,360.50	40.0603149	-105.0359400
4,874.00	0.19	334.01	4,757.51	-894.70	-161.95	14,548,698.75	1,630,360.55	40.0603150	-105.0359398
4,960.00	0.24	342.46	4,843.51	-894.40	-162.07	14,548,699.05	1,630,360.43	40.0603159	-105.0359402
5,045.00	0.50	348.37	4,928.51	-893.87	-162.20	14,548,699.58	1,630,360.30	40.0603173	-105.0359407
5,129.00	0.48	329.44	5,012.51	-893.21	-162.45	14,548,700.24	1,630,360.05	40.0603191	-105.0359416
5,215.00	0.32	280.36	5,098.51	-892.85	-162.87	14,548,700.60	1,630,359.63	40.0603201	-105.0359431
5,298.00	0.50	269.33	5,181.50	-892.81	-163.46	14,548,700.63	1,630,359.04	40.0603202	-105.0359452
5,383.00	0.62	287.27	5,266.50	-892.68	-164.27	14,548,700.77	1,630,358.23	40.0603206	-105.0359481
5,469.00	1.23	297.35	5,352.49	-892.12	-165.54	14,548,701.33	1,630,356.96	40.0603221	-105.0359526
5,554.00	0.98	289.01	5,437.47	-891.46	-167.03	14,548,701.98	1,630,355.47	40.0603239	-105.0359579
5,639.00	1.17	297.53	5,522.46	-890.83	-168.49	14,548,702.62	1,630,354.01	40.0603257	-105.0359631
5,724.00	1.03	265.81	5,607.44	-890.48	-170.02	14,548,702.97	1,630,352.48	40.0603266	-105.0359686
5,809.00	1.27	228.00	5,692.43	-891.17	-171.48	14,548,702.28	1,630,351.02	40.0603247	-105.0359738
5,983.00	0.85	229.13	5,866.40	-893.30	-173.89	14,548,700.15	1,630,348.61	40.0603189	-105.0359825
6,154.00	0.74	279.03	6,037.38	-893.96	-175.94	14,548,699.49	1,630,346.56	40.0603171	-105.0359898
6,324.00	1.83	114.63	6,207.36	-894.92	-174.56	14,548,698.53	1,630,347.94	40.0603144	-105.0359848
6,410.00	1.62	98.79	6,293.32	-895.68	-172.11	14,548,697.78	1,630,350.39	40.0603124	-105.0359761
6,495.00	1.38	99.85	6,378.29	-896.03	-169.91	14,548,697.42	1,630,352.59	40.0603114	-105.0359682
6,580.00	1.27	91.66	6,463.27	-896.24	-167.96	14,548,697.21	1,630,354.54	40.0603108	-105.0359613
6,667.00	1.07	116.23	6,550.25	-896.62	-166.27	14,548,696.82	1,630,356.23	40.0603098	-105.0359552
6,753.00	0.97	116.54	6,636.24	-897.30	-164.90	14,548,696.14	1,630,357.60	40.0603079	-105.0359503
6,838.00	0.72	122.68	6,721.23	-897.91	-163.81	14,548,695.53	1,630,358.69	40.0603062	-105.0359464
6,923.00	0.31	128.79	6,806.23	-898.35	-163.18	14,548,695.10	1,630,359.32	40.0603050	-105.0359442
7,008.00	0.17	7.91	6,891.23	-898.37	-162.98	14,548,695.08	1,630,359.52	40.0603050	-105.0359435
7,083.00	2.16	188.82	6,966.21	-899.65	-163.18	14,548,693.80	1,630,359.32	40.0603014	-105.0359442
Curve KOP									
7,093.00	2.47	188.81	6,976.20	-900.05	-163.24	14,548,693.40	1,630,359.25	40.0603003	-105.0359444
First SDI MWD Curve Survey									

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

Survey										
Measured			Vertical			Map		Map		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Map	Map			
(ft)	(°)	(°)	(ft)	(ft)	(ft)	Northing	Easting		Latitude	Longitude
						(usft)	(usft)			
7,178.00	10.56	183.39	7,060.58	-909.65	-163.99	14,548,683.80	1,630,358.51		40.0602740	-105.0359470
7,263.00	16.46	179.66	7,143.19	-929.49	-164.38	14,548,663.96	1,630,358.11		40.0602195	-105.0359484
7,348.00	21.57	174.98	7,223.53	-957.11	-162.94	14,548,636.33	1,630,359.54		40.0601436	-105.0359433
7,433.00	25.83	182.25	7,301.36	-991.20	-162.30	14,548,602.24	1,630,360.17		40.0600500	-105.0359410
7,518.00	31.36	176.98	7,375.98	-1,031.83	-161.86	14,548,561.61	1,630,360.59		40.0599385	-105.0359394
7,603.00	36.79	181.04	7,446.37	-1,079.41	-161.15	14,548,514.04	1,630,361.27		40.0598078	-105.0359369
7,689.00	39.57	178.26	7,513.97	-1,132.55	-160.79	14,548,460.90	1,630,361.62		40.0596619	-105.0359356
7,774.00	45.08	178.87	7,576.79	-1,189.74	-159.37	14,548,403.70	1,630,363.01		40.0595048	-105.0359305
7,859.00	50.31	182.53	7,633.99	-1,252.56	-160.22	14,548,340.89	1,630,362.13		40.0593323	-105.0359336
7,944.00	58.58	185.64	7,683.38	-1,321.46	-165.24	14,548,271.99	1,630,357.09		40.0591431	-105.0359515
8,029.00	62.76	183.63	7,725.01	-1,395.30	-171.20	14,548,198.15	1,630,351.10		40.0589403	-105.0359728
8,115.00	67.79	183.74	7,760.97	-1,473.23	-176.22	14,548,120.23	1,630,346.05		40.0587263	-105.0359908
8,200.00	72.27	180.21	7,790.00	-1,553.03	-178.94	14,548,040.42	1,630,343.30		40.0585072	-105.0360005
8,285.00	79.33	179.18	7,810.84	-1,635.38	-178.49	14,547,958.07	1,630,343.72		40.0582810	-105.0359989
8,370.00	84.26	176.95	7,822.97	-1,719.43	-175.64	14,547,874.02	1,630,346.53		40.0580502	-105.0359887
8,455.00	89.06	177.51	7,827.92	-1,804.16	-171.54	14,547,789.29	1,630,350.60		40.0578175	-105.0359740
Landing Point : 136' FNL 394' FWL Sec 17 - Last SDI MWD Curve Survey										
8,540.00	87.71	176.38	7,830.32	-1,889.01	-167.01	14,547,704.45	1,630,355.09		40.0575845	-105.0359578
First SDI MWD Lateral Survey										
8,541.00	87.69	176.37	7,830.36	-1,890.00	-166.95	14,547,703.45	1,630,355.15		40.0575818	-105.0359576
8,626.00	89.13	178.98	7,832.72	-1,974.89	-163.51	14,547,618.56	1,630,358.57		40.0573487	-105.0359453
8,653.37	89.38	179.76	7,833.07	-2,002.26	-163.21	14,547,591.19	1,630,358.85		40.0572735	-105.0359442
Exit 460' Circle : 8653.37' MD & 7833.07' TVD 333' FNL 322' FWL										
8,711.00	89.90	181.41	7,833.44	-2,059.88	-163.79	14,547,533.57	1,630,358.24		40.0571153	-105.0359463
8,796.00	89.56	180.69	7,833.84	-2,144.86	-165.35	14,547,448.59	1,630,356.65		40.0568819	-105.0359519
8,882.00	89.40	180.06	7,834.62	-2,230.86	-165.92	14,547,362.59	1,630,356.05		40.0566457	-105.0359539
8,967.00	88.93	179.75	7,835.86	-2,315.85	-165.77	14,547,277.60	1,630,356.16		40.0564123	-105.0359534
9,052.00	89.23	179.49	7,837.22	-2,400.84	-165.21	14,547,192.62	1,630,356.69		40.0561790	-105.0359514
9,137.00	89.06	178.98	7,838.49	-2,485.82	-164.08	14,547,107.63	1,630,357.79		40.0559456	-105.0359473
9,222.00	88.59	179.24	7,840.23	-2,570.79	-162.76	14,547,022.66	1,630,359.08		40.0557122	-105.0359426
9,308.00	90.13	180.55	7,841.19	-2,656.78	-162.60	14,546,936.67	1,630,359.20		40.0554761	-105.0359420
9,392.00	90.17	180.80	7,840.97	-2,740.77	-163.59	14,546,852.68	1,630,358.18		40.0552454	-105.0359456
9,478.00	90.70	181.35	7,840.32	-2,826.76	-165.20	14,546,766.70	1,630,356.53		40.0550093	-105.0359513
9,564.00	90.87	181.68	7,839.14	-2,912.72	-167.48	14,546,680.74	1,630,354.22		40.0547732	-105.0359595
9,649.00	90.20	181.04	7,838.35	-2,997.69	-169.49	14,546,595.77	1,630,352.17		40.0545399	-105.0359667
9,732.00	90.64	177.86	7,837.74	-3,080.67	-168.70	14,546,512.78	1,630,352.94		40.0543120	-105.0359638
9,819.00	90.57	176.12	7,836.82	-3,167.54	-164.13	14,546,425.91	1,630,357.47		40.0540734	-105.0359475
9,904.00	91.98	177.14	7,834.93	-3,252.37	-159.13	14,546,341.08	1,630,362.43		40.0538405	-105.0359296
9,991.00	92.85	179.34	7,831.26	-3,339.25	-156.46	14,546,254.20	1,630,365.07		40.0536019	-105.0359201
10,075.00	91.98	180.28	7,827.73	-3,423.17	-156.18	14,546,170.28	1,630,365.31		40.0533715	-105.0359191
10,161.00	90.70	181.58	7,825.71	-3,509.13	-157.58	14,546,084.32	1,630,363.88		40.0531354	-105.0359241
10,246.00	89.53	182.46	7,825.54	-3,594.08	-160.58	14,545,999.37	1,630,360.85		40.0529021	-105.0359348
10,330.00	89.53	181.59	7,826.23	-3,678.02	-163.54	14,545,915.43	1,630,357.85		40.0526716	-105.0359454
10,417.00	89.26	180.87	7,827.15	-3,765.00	-165.41	14,545,828.46	1,630,355.95		40.0524327	-105.0359521
10,502.00	89.03	179.99	7,828.42	-3,849.98	-166.05	14,545,743.47	1,630,355.28		40.0521994	-105.0359544
10,587.00	87.86	178.67	7,830.73	-3,934.94	-165.06	14,545,658.51	1,630,356.24		40.0519660	-105.0359508
10,671.00	88.59	179.24	7,833.33	-4,018.89	-163.53	14,545,574.57	1,630,357.73		40.0517355	-105.0359453
10,756.00	87.82	178.72	7,835.99	-4,103.83	-162.01	14,545,489.62	1,630,359.21		40.0515023	-105.0359399
10,841.00	89.70	180.20	7,837.83	-4,188.80	-161.21	14,545,404.65	1,630,359.98		40.0512689	-105.0359371
10,926.00	89.67	180.44	7,838.30	-4,273.80	-161.69	14,545,319.65	1,630,359.47		40.0510355	-105.0359388
11,010.00	91.30	180.65	7,837.59	-4,357.79	-162.49	14,545,235.67	1,630,358.64		40.0508048	-105.0359416
11,097.00	91.74	179.67	7,835.28	-4,444.76	-162.73	14,545,148.70	1,630,358.36		40.0505660	-105.0359425
11,183.00	89.67	179.39	7,834.22	-4,530.74	-162.02	14,545,062.71	1,630,359.03		40.0503299	-105.0359399
11,268.00	91.21	179.68	7,833.57	-4,615.74	-161.33	14,544,977.72	1,630,359.69		40.0500965	-105.0359375
11,353.00	90.64	181.61	7,832.20	-4,700.71	-162.29	14,544,892.74	1,630,358.70		40.0498631	-105.0359409

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Yellowhammer 34C-17HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
Site:	Yellowhammer 12-8HZ Pad	MD Reference:	GL 5063' & KB 17' @ 5080.00ft (Xtreme 24)
Well:	Yellowhammer 34C-17HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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
11,438.00	90.54	182.44	7,831.32	-4,785.66	-165.29	14,544,807.80	1,630,355.66	40.0496298	-105.0359516
11,523.00	89.63	182.63	7,831.19	-4,870.57	-169.05	14,544,722.89	1,630,351.87	40.0493967	-105.0359651
11,608.00	89.90	182.87	7,831.54	-4,955.47	-173.13	14,544,637.99	1,630,347.76	40.0491635	-105.0359796
11,693.00	89.77	182.30	7,831.79	-5,040.39	-176.96	14,544,553.08	1,630,343.89	40.0489303	-105.0359933
11,778.00	90.44	182.94	7,831.63	-5,125.30	-180.85	14,544,468.17	1,630,339.97	40.0486971	-105.0360072
11,863.00	90.64	182.95	7,830.83	-5,210.18	-185.22	14,544,383.29	1,630,335.57	40.0484640	-105.0360228
11,951.00	89.53	183.80	7,830.70	-5,298.02	-190.40	14,544,295.44	1,630,330.35	40.0482228	-105.0360413
12,036.00	88.93	183.24	7,831.84	-5,382.86	-195.62	14,544,210.61	1,630,325.10	40.0479898	-105.0360600
12,121.00	89.60	181.98	7,832.93	-5,467.76	-199.49	14,544,125.71	1,630,321.20	40.0477567	-105.0360738
12,205.00	89.67	181.24	7,833.47	-5,551.72	-201.85	14,544,041.75	1,630,318.80	40.0475261	-105.0360822
12,290.00	91.74	181.68	7,832.42	-5,636.68	-204.01	14,543,956.79	1,630,316.60	40.0472928	-105.0360900
12,375.00	91.24	179.87	7,830.21	-5,721.64	-205.16	14,543,871.83	1,630,315.42	40.0470595	-105.0360941
12,460.00	90.64	179.66	7,828.82	-5,806.63	-204.81	14,543,786.84	1,630,315.74	40.0468261	-105.0360928
12,545.00	88.86	179.32	7,829.19	-5,891.62	-204.06	14,543,701.85	1,630,316.46	40.0465927	-105.0360901
12,630.00	88.49	179.08	7,831.15	-5,976.59	-202.87	14,543,616.88	1,630,317.61	40.0463593	-105.0360859
12,716.00	87.42	180.35	7,834.22	-6,062.53	-202.44	14,543,530.94	1,630,318.01	40.0461233	-105.0360843
12,802.00	87.82	179.88	7,837.79	-6,148.46	-202.61	14,543,445.02	1,630,317.80	40.0458874	-105.0360849
12,888.00	87.93	179.59	7,840.98	-6,234.40	-202.22	14,543,359.08	1,630,318.16	40.0456514	-105.0360835
12,973.00	90.30	180.45	7,842.30	-6,319.38	-202.25	14,543,274.09	1,630,318.10	40.0454180	-105.0360836
13,058.00	90.13	180.31	7,841.98	-6,404.38	-202.81	14,543,189.10	1,630,317.50	40.0451846	-105.0360856
13,143.00	90.60	179.93	7,841.43	-6,489.38	-202.99	14,543,104.10	1,630,317.29	40.0449511	-105.0360863
13,230.00	90.97	180.21	7,840.24	-6,576.37	-203.09	14,543,017.11	1,630,317.15	40.0447123	-105.0360867
13,248.82	91.06	180.07	7,839.91	-6,595.19	-203.14	14,542,998.29	1,630,317.10	40.0446606	-105.0360868
Enter 460' Circle : 13248.82' MD & 7839.91' TVD 354' FSL 289' FWL									
13,315.00	91.37	179.59	7,838.51	-6,661.35	-202.95	14,542,932.13	1,630,317.26	40.0444789	-105.0360861
13,402.00	89.70	180.52	7,837.70	-6,748.34	-203.03	14,542,845.13	1,630,317.15	40.0442400	-105.0360864
13,487.00	89.90	180.22	7,837.99	-6,833.34	-203.58	14,542,760.14	1,630,316.56	40.0440066	-105.0360884
Last SDI MWD Survey									
13,547.00	89.90	180.22	7,838.10	-6,893.34	-203.81	14,542,700.14	1,630,316.31	40.0438418	-105.0360892
Projection to TD : 55' FSL 288' FWL Sec 17									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
128.00	127.99	-1.06	-0.22	First Total MWD Survey
1,815.00	1,782.64	-265.36	-40.61	Last Total MWD Survey
3,630.17	3,523.57	-767.86	-137.41	Enter Land Box : 3630.17' MD & 3523.57' TVD
7,083.00	6,966.21	-899.65	-163.18	Curve KOP
7,093.00	6,976.20	-900.05	-163.24	First SDI MWD Curve Survey
8,455.00	7,827.92	-1,804.16	-171.54	Landing Point : 136' FNL 394' FWL Sec 17
8,455.00	7,827.92	-1,804.16	-171.54	Last SDI MWD Curve Survey
8,540.00	7,830.32	-1,889.01	-167.01	First SDI MWD Lateral Survey
8,653.37	7,833.07	-2,002.26	-163.21	Exit 460' Circle : 8653.37' MD & 7833.07' TVD 333' FNL 322' FWL
13,248.82	7,839.91	-6,595.19	-203.14	Enter 460' Circle : 13248.82' MD & 7839.91' TVD 354' FSL 289' FWL
13,487.00	7,837.99	-6,833.34	-203.58	Last SDI MWD Survey
13,547.00	7,838.10	-6,893.34	-203.81	Projection to TD : 55' FSL 288' FWL Sec 17

Checked By: _____ Approved By: _____ Date: _____