

WELL DETAILS: Johnson 28C-14HZ

GL 4980' & KB 17' @ 4997.00ft (Xtreme 24) 4980.00
 Northing 14543106.18 Easting 1678152.61 Latitude 40.0448840 Longitude -104.8651650

Design: OH (Johnson 28C-14HZ/OH)

Created By: Seth Burstad Date: 10-30-2017

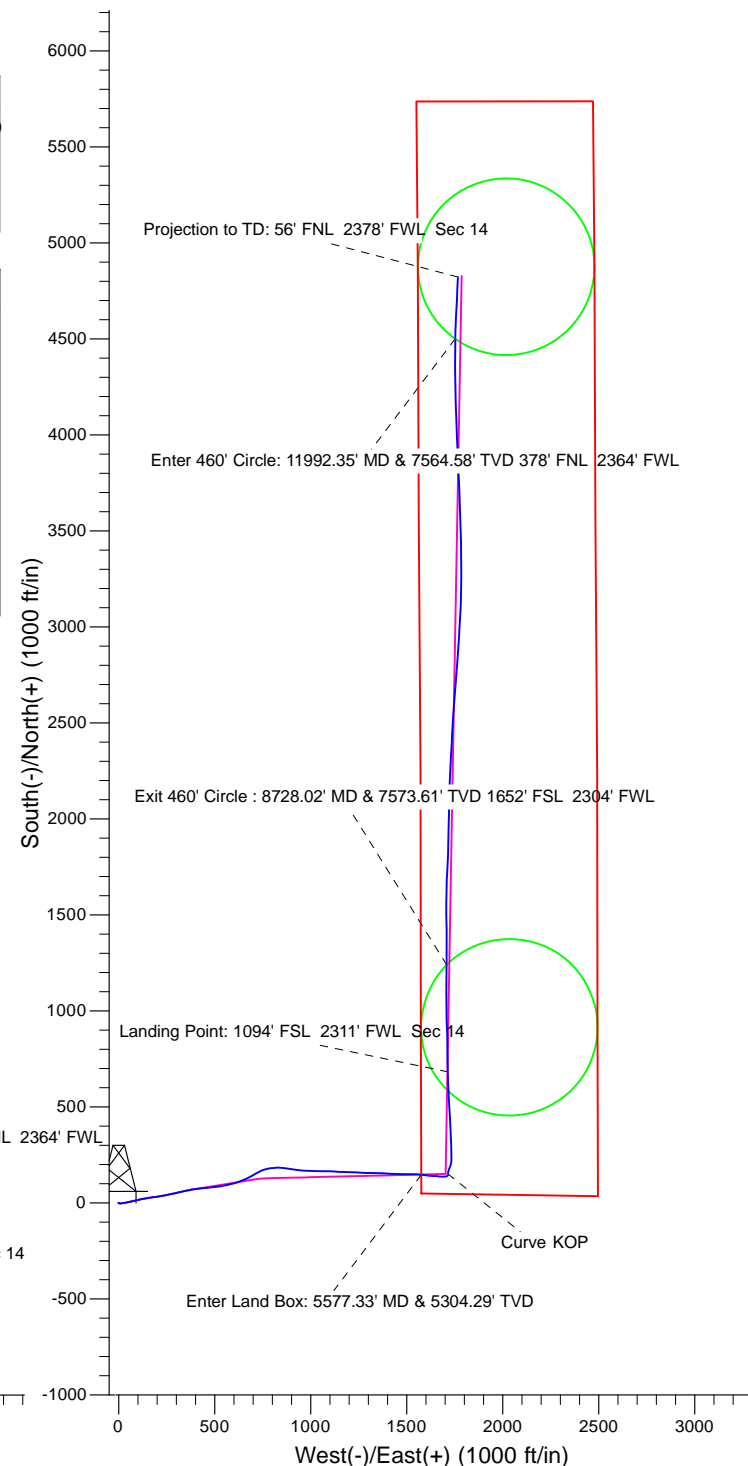
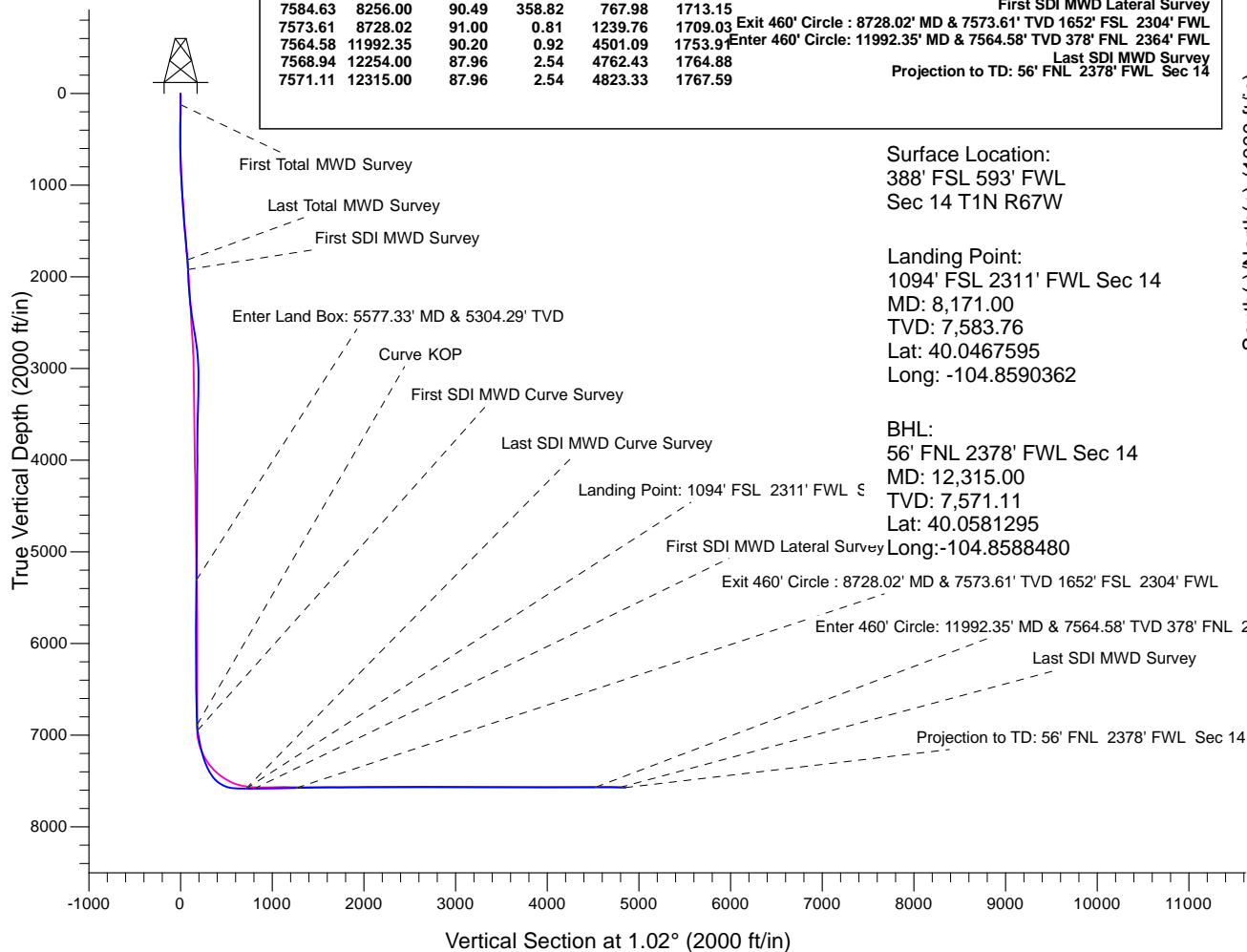
PROJECT DETAILS: US Rockies Wattenberg Planning UTM83

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
122.00	122.00	0.70	302.48	0.40	-0.63	First Total MWD Survey
1812.72	1874.00	19.16	80.73	69.27	377.82	Last Total MWD Survey
1918.68	1986.00	18.65	81.24	74.96	413.66	First SDI MWD Survey
5304.37	5577.33	12.45	96.39	147.14	1576.37	Enter Land Box: 5577.33' MD & 5304.29' TVD
6886.32	7170.00	3.02	350.41	151.45	1715.18	Curve KOP
6947.07	7231.00	7.11	9.97	156.76	1715.57	First SDI MWD Curve Survey
7583.76	8171.00	88.73	358.62	683.01	1715.22	Last SDI MWD Curve Survey
7583.76	8171.00	88.73	358.62	683.01	1715.22	Landing Point: 1094' FSL 2311' FWL Sec 14
7584.63	8256.00	90.49	358.82	767.98	1713.15	First SDI MWD Lateral Survey
7573.61	8728.02	91.00	0.81	1239.76	1709.03	Exit 460' Circle : 8728.02' MD & 7573.61' TVD 1652' FSL 2304' FWL
7564.58	11992.35	90.20	0.92	4501.09	1753.91	Enter 460' Circle: 11992.35' MD & 7564.58' TVD 378' FNL 2364' FWL
7568.94	12254.00	87.96	2.54	4762.43	1764.88	Last SDI MWD Survey
7571.11	12315.00	87.96	2.54	4823.33	1767.59	Projection to TD: 56' FNL 2378' FWL Sec 14





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Johnson 13-14HZ Pad

Johnson 28C-14HZ

OH

Design: OH

Standard Survey Report

30 October, 2017



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Johnson 28C-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Site:	Johnson 13-14HZ Pad	MD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Well:	Johnson 28C-14HZ	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		Johnson 13-14HZ Pad, Site Center : Johnson 3N-14HZ			
Site Position:		Northing:	14,543,080.71 usft	Latitude:	40.0448140
From:	Lat/Long	Easting:	1,678,168.60 usft	Longitude:	-104.8651080
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.09 °

Well	Johnson 28C-14HZ, 388' FSL 593' FWL Sec 14 T1N R67W					
Well Position	+N/-S	0.00 ft	Northing:	14,543,106.18 usft	Latitude:	40.0448840
	+E/-W	0.00 ft	Easting:	1,678,152.60 usft	Longitude:	-104.8651650
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,980.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	9/28/2017	8.38	66.58	52,164

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	1.02	

Survey Program	Date	10/30/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
122.00	1,924.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,986.00	6,060.00	Survey #2 - Vertical (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
6,140.00	12,315.00	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
122.00	0.70	302.48	122.00	0.40	-0.63	0.39	0.57	0.57	0.00	
First Total MWD Survey										
154.00	0.26	257.83	154.00	0.49	-0.86	0.47	1.71	-1.38	-139.53	
186.00	0.26	215.82	186.00	0.42	-0.98	0.40	0.58	0.00	-131.28	
218.00	0.35	148.05	218.00	0.27	-0.97	0.26	1.09	0.28	-211.78	
249.00	0.35	156.23	248.99	0.11	-0.88	0.09	0.16	0.00	26.39	
281.00	0.57	117.64	280.99	-0.06	-0.70	-0.07	1.15	0.69	-120.59	
313.00	0.97	122.57	312.99	-0.28	-0.33	-0.28	1.27	1.25	15.41	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Johnson 28C-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Site:	Johnson 13-14HZ Pad	MD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Well:	Johnson 28C-14HZ	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
344.00	1.54	113.34	343.98	-0.58	0.27	-0.58	1.95	1.84	-29.77
376.00	1.76	110.70	375.97	-0.93	1.13	-0.91	0.73	0.69	-8.25
408.00	2.07	108.06	407.95	-1.28	2.14	-1.24	1.01	0.97	-8.25
440.00	2.29	104.90	439.93	-1.62	3.30	-1.56	0.78	0.69	-9.88
472.00	2.64	98.22	471.90	-1.89	4.65	-1.81	1.41	1.09	-20.88
503.00	3.21	92.68	502.86	-2.04	6.22	-1.92	2.05	1.84	-17.87
535.00	3.74	91.54	534.80	-2.11	8.16	-1.96	1.67	1.66	-3.56
566.00	4.44	89.52	565.72	-2.12	10.37	-1.94	2.31	2.26	-6.52
598.00	5.05	84.68	597.61	-1.98	13.01	-1.75	2.28	1.91	-15.13
629.00	6.24	84.51	628.46	-1.69	16.05	-1.41	3.84	3.84	-0.55
661.00	7.25	82.40	660.24	-1.26	19.78	-0.91	3.25	3.16	-6.59
693.00	7.95	80.91	691.96	-0.64	23.97	-0.22	2.27	2.19	-4.66
725.00	8.79	78.36	723.62	0.20	28.55	0.71	2.87	2.63	-7.97
756.00	9.32	78.97	754.23	1.16	33.33	1.75	1.74	1.71	1.97
788.00	9.93	79.41	785.78	2.16	38.59	2.85	1.92	1.91	1.38
819.00	10.63	77.57	816.28	3.27	44.01	4.05	2.49	2.26	-5.94
851.00	11.34	78.62	847.69	4.52	49.97	5.41	2.31	2.22	3.28
883.00	12.08	77.39	879.03	5.87	56.33	6.88	2.44	2.31	-3.84
914.00	12.74	77.39	909.30	7.33	62.83	8.45	2.13	2.13	0.00
946.00	13.40	78.01	940.47	8.87	69.90	10.11	2.11	2.06	1.94
977.00	13.93	76.16	970.60	10.51	77.04	11.88	2.22	1.71	-5.97
1,009.00	14.55	75.81	1,001.61	12.42	84.67	13.92	1.96	1.94	-1.09
1,041.00	15.38	76.60	1,032.53	14.38	92.70	16.03	2.67	2.59	2.47
1,072.00	16.04	76.77	1,062.37	16.32	100.87	18.11	2.13	2.13	0.55
1,104.00	16.57	77.65	1,093.08	18.31	109.63	20.25	1.83	1.66	2.75
1,135.00	17.14	78.97	1,122.75	20.12	118.43	22.23	2.21	1.84	4.26
1,167.00	18.15	80.11	1,153.25	21.88	127.97	24.16	3.34	3.16	3.56
1,199.00	19.03	80.29	1,183.58	23.62	138.02	26.07	2.76	2.75	0.56
1,231.00	19.69	81.43	1,213.77	25.30	148.49	27.94	2.38	2.06	3.56
1,262.00	20.39	81.08	1,242.89	26.92	158.99	29.74	2.29	2.26	-1.13
1,294.00	20.65	81.08	1,272.86	28.66	170.07	31.68	0.81	0.81	0.00
1,326.00	21.40	81.26	1,302.73	30.42	181.42	33.64	2.35	2.34	0.56
1,357.00	21.93	81.87	1,331.54	32.10	192.74	35.52	1.86	1.71	1.97
1,389.00	21.36	81.08	1,361.28	33.85	204.41	37.48	2.00	-1.78	-2.47
1,421.00	21.27	80.20	1,391.09	35.74	215.89	39.57	1.04	-0.28	-2.75
1,452.00	21.84	79.85	1,419.92	37.71	227.11	41.75	1.88	1.84	-1.13
1,484.00	22.68	80.03	1,449.54	39.83	239.04	44.08	2.63	2.63	0.56
1,515.00	22.76	79.76	1,478.13	41.93	250.83	46.39	0.42	0.26	-0.87
1,547.00	22.24	78.09	1,507.70	44.28	262.84	48.95	2.57	-1.63	-5.22
1,579.00	22.02	77.21	1,537.34	46.86	274.62	51.74	1.24	-0.69	-2.75
1,611.00	22.68	77.74	1,566.94	49.49	286.50	54.59	2.16	2.06	1.66
1,641.00	22.50	77.74	1,594.64	51.94	297.76	57.23	0.60	-0.60	0.00
1,673.00	21.75	77.30	1,624.28	54.55	309.53	60.05	2.40	-2.34	-1.38

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Site:	Johnson 13-14HZ Pad	MD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Well:	Johnson 28C-14HZ	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,705.00	21.01	76.07	1,654.08	57.23	320.88	62.93	2.70	-2.31	-3.84
1,768.00	20.79	78.01	1,712.93	62.27	342.78	68.36	1.15	-0.35	3.08
1,800.00	19.69	78.09	1,742.96	64.56	353.61	70.85	3.44	-3.44	0.25
1,832.00	19.47	78.80	1,773.11	66.71	364.12	73.18	1.01	-0.69	2.22
1,864.00	19.38	79.59	1,803.28	68.71	374.57	75.36	0.87	-0.28	2.47
1,874.00	19.16	80.73	1,812.72	69.27	377.82	75.99	4.36	-2.20	11.40
Last Total MWD Survey									
1,924.00	18.93	80.95	1,859.99	71.87	393.93	78.87	0.48	-0.46	0.45
Projection to TD									
1,986.00	18.65	81.24	1,918.68	74.96	413.66	82.31	0.48	-0.46	0.46
First SDI MWD Survey									
2,071.00	22.44	86.05	1,998.27	78.15	443.29	86.03	4.88	4.46	5.66
2,156.00	27.51	85.70	2,075.29	80.74	479.07	89.25	5.97	5.96	-0.41
2,241.00	26.57	81.19	2,151.01	85.12	517.44	94.32	2.65	-1.11	-5.31
2,326.00	24.66	78.69	2,227.65	91.51	553.62	101.35	2.58	-2.25	-2.94
2,411.00	23.34	76.14	2,305.31	99.02	587.35	109.46	1.97	-1.55	-3.00
2,497.00	21.63	71.15	2,384.77	108.23	618.90	119.23	2.98	-1.99	-5.80
2,582.00	20.19	67.03	2,464.18	119.02	647.23	130.52	2.42	-1.69	-4.85
2,667.00	19.22	64.44	2,544.20	130.78	673.36	142.74	1.54	-1.14	-3.05
2,754.00	18.39	60.67	2,626.56	143.68	698.25	156.09	1.69	-0.95	-4.33
2,839.00	17.14	58.94	2,707.50	156.71	720.67	169.51	1.60	-1.47	-2.04
2,924.00	14.91	66.87	2,789.21	167.47	741.46	180.64	3.67	-2.62	9.33
3,009.00	14.42	74.49	2,871.44	174.60	761.71	188.13	2.34	-0.58	8.96
3,094.00	14.22	78.15	2,953.81	179.57	782.13	193.46	1.09	-0.24	4.31
3,179.00	15.18	84.72	3,036.03	182.74	803.43	197.01	2.26	1.13	7.73
3,264.00	15.80	88.30	3,117.94	184.11	826.08	198.78	1.34	0.73	4.21
3,350.00	15.85	94.38	3,200.69	183.56	849.49	198.65	1.93	0.06	7.07
3,435.00	17.87	98.66	3,282.03	180.71	873.96	196.23	2.79	2.38	5.04
3,521.00	18.78	99.30	3,363.67	176.48	900.67	192.49	1.08	1.06	0.74
3,606.00	19.17	96.88	3,444.05	172.60	928.03	189.09	1.03	0.46	-2.85
3,691.00	19.17	94.71	3,524.34	169.78	955.79	186.77	0.84	0.00	-2.55
3,776.00	18.72	92.74	3,604.74	167.98	983.33	185.46	0.92	-0.53	-2.32
3,861.00	19.12	91.59	3,685.15	166.94	1,010.87	184.91	0.64	0.47	-1.35
3,946.00	19.86	92.05	3,765.27	166.04	1,039.21	184.51	0.89	0.87	0.54
4,030.00	19.49	90.80	3,844.37	165.34	1,067.48	184.31	0.67	-0.44	-1.49
4,115.00	16.43	90.04	3,925.22	165.13	1,093.69	184.57	3.61	-3.60	-0.89
4,199.00	17.93	94.10	4,005.47	164.20	1,118.47	184.08	2.29	1.79	4.83
4,284.00	21.08	92.99	4,085.58	162.46	1,146.79	182.85	3.73	3.71	-1.31
4,369.00	21.59	92.26	4,164.76	161.05	1,177.68	181.99	0.68	0.60	-0.86
4,455.00	21.05	90.74	4,244.87	160.23	1,208.93	181.72	0.90	-0.63	-1.77
4,540.00	20.29	93.48	4,324.40	159.13	1,238.91	181.16	1.45	-0.89	3.22
4,625.00	19.73	92.82	4,404.27	157.53	1,267.95	180.08	0.71	-0.66	-0.78
4,711.00	19.29	91.03	4,485.33	156.56	1,296.65	179.62	0.86	-0.51	-2.08
4,796.00	19.60	89.63	4,565.49	156.40	1,324.95	179.96	0.66	0.36	-1.65

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Well:	Johnson 28C-14HZ	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,881.00	20.05	92.83	4,645.45	155.78	1,353.76	179.85	1.38	0.53	3.76
4,967.00	20.28	93.69	4,726.18	154.09	1,383.36	178.69	0.44	0.27	1.00
5,052.00	22.40	92.95	4,805.35	152.31	1,414.23	177.46	2.51	2.49	-0.87
5,137.00	21.10	90.99	4,884.30	151.21	1,445.71	176.92	1.75	-1.53	-2.31
5,223.00	19.19	92.15	4,965.03	150.41	1,475.31	176.65	2.27	-2.22	1.35
5,308.00	17.92	89.58	5,045.61	149.98	1,502.35	176.70	1.78	-1.49	-3.02
5,393.00	17.98	89.85	5,126.48	150.11	1,528.54	177.30	0.12	0.07	0.32
5,478.00	15.53	94.19	5,207.86	149.32	1,553.02	176.94	3.23	-2.88	5.11
5,565.00	12.18	96.43	5,292.32	147.44	1,573.76	175.43	3.90	-3.85	2.57
5,577.33	12.45	96.39	5,304.37	147.14	1,576.37	175.18	2.20	2.20	-0.30
Enter Land Box: 5577.33' MD & 5304.29' TVD									
5,650.00	14.05	96.20	5,375.10	145.32	1,592.93	173.65	2.20	2.20	-0.26
5,735.00	10.57	97.48	5,458.13	143.19	1,610.92	171.84	4.11	-4.09	1.51
5,820.00	10.10	94.70	5,541.75	141.56	1,626.08	170.49	0.81	-0.55	-3.27
5,905.00	9.08	91.50	5,625.57	140.78	1,640.21	169.95	1.35	-1.20	-3.76
5,991.00	6.26	91.87	5,710.79	140.45	1,651.68	169.83	3.28	-3.28	0.43
6,060.00	8.77	96.73	5,779.19	139.71	1,660.67	169.25	3.75	3.64	7.04
6,140.00	7.50	96.01	5,858.38	138.44	1,671.92	168.19	1.59	-1.59	-0.90
6,231.00	6.47	91.64	5,948.71	137.68	1,682.95	167.61	1.27	-1.13	-4.80
6,316.00	5.67	89.08	6,033.23	137.61	1,691.94	167.70	0.99	-0.94	-3.01
6,401.00	4.99	84.11	6,117.86	138.05	1,699.81	168.29	0.97	-0.80	-5.85
6,487.00	4.04	80.37	6,203.60	138.94	1,706.52	169.30	1.16	-1.10	-4.35
6,572.00	1.79	57.65	6,288.48	140.16	1,710.59	170.58	2.93	-2.65	-26.73
6,657.00	1.28	31.08	6,373.45	141.68	1,712.21	172.14	1.01	-0.60	-31.26
6,744.00	1.03	38.32	6,460.44	143.12	1,713.19	173.60	0.33	-0.29	8.32
6,830.00	1.08	48.05	6,546.42	144.27	1,714.27	174.77	0.22	0.06	11.31
6,915.00	1.41	38.62	6,631.40	145.63	1,715.52	176.14	0.46	0.39	-11.09
7,001.00	0.91	354.45	6,717.38	147.13	1,716.12	177.66	1.15	-0.58	-51.36
7,086.00	1.05	341.05	6,802.37	148.54	1,715.80	179.06	0.31	0.16	-15.76
7,170.00	3.02	350.41	6,886.32	151.45	1,715.18	181.96	2.37	2.35	11.14
Curve KOP									
7,231.00	7.11	9.97	6,947.07	156.76	1,715.57	187.27	7.19	6.71	32.06
First SDI MWD Curve Survey									
7,255.00	8.80	12.57	6,970.84	160.01	1,716.22	190.54	7.19	7.03	10.84
7,341.00	10.92	21.42	7,055.57	174.02	1,720.63	204.62	3.02	2.47	10.29
7,426.00	15.30	18.96	7,138.33	192.13	1,727.22	222.85	5.19	5.15	-2.89
7,511.00	15.85	7.29	7,220.23	214.25	1,732.34	245.06	3.74	0.65	-13.73
7,596.00	19.78	0.22	7,301.15	240.16	1,733.86	270.99	5.27	4.62	-8.32
7,683.00	27.89	357.55	7,380.66	275.27	1,733.05	306.08	9.40	9.32	-3.07
7,769.00	37.11	359.18	7,453.12	321.41	1,731.82	352.19	10.77	10.72	1.90
7,853.00	52.40	355.96	7,512.60	380.30	1,729.09	411.02	18.40	18.20	-3.83
7,939.00	67.53	357.51	7,555.52	454.42	1,724.94	485.05	17.66	17.59	1.80
8,025.00	83.95	355.95	7,576.63	537.34	1,720.16	567.88	19.17	19.09	-1.81
8,110.00	88.46	359.04	7,582.26	622.04	1,716.46	652.50	6.43	5.31	3.64

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Johnson 28C-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Site:	Johnson 13-14HZ Pad	MD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Well:	Johnson 28C-14HZ	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,171.00	88.73	358.62	7,583.76	683.01	1,715.22	713.44	0.82	0.44	-0.69	
Last SDI MWD Curve Survey - Landing Point: 1094' FSL 2311' FWL Sec 14										
8,195.00	88.83	358.45	7,584.27	707.00	1,714.60	737.41	0.82	0.44	-0.69	
8,256.00	90.49	358.82	7,584.63	767.98	1,713.15	798.35	2.79	2.72	0.61	
First SDI MWD Lateral Survey										
8,280.00	91.14	358.97	7,584.29	791.97	1,712.69	822.33	2.79	2.72	0.61	
8,365.00	91.31	358.76	7,582.48	876.93	1,711.00	907.25	0.32	0.20	-0.25	
8,451.00	91.64	358.71	7,580.26	962.88	1,709.11	993.16	0.39	0.38	-0.06	
8,536.00	92.08	358.39	7,577.50	1,047.81	1,706.96	1,078.03	0.64	0.52	-0.38	
8,621.00	90.80	1.48	7,575.37	1,132.77	1,706.86	1,162.98	3.93	-1.51	3.64	
8,706.00	91.04	0.98	7,574.00	1,217.74	1,708.69	1,247.97	0.65	0.28	-0.59	
8,728.02	91.00	0.81	7,573.61	1,239.76	1,709.03	1,269.98	0.79	-0.20	-0.76	
Exit 460' Circle : 8728.02' MD & 7573.61' TVD 1652' FSL 2304' FWL										
8,791.00	90.87	0.33	7,572.58	1,302.72	1,709.66	1,332.95	0.79	-0.20	-0.76	
8,876.00	90.27	358.17	7,571.74	1,387.71	1,708.54	1,417.90	2.64	-0.71	-2.54	
8,960.00	90.30	359.15	7,571.32	1,471.68	1,706.58	1,501.83	1.17	0.04	1.17	
9,044.00	90.77	1.29	7,570.54	1,555.67	1,706.90	1,585.81	2.61	0.56	2.55	
9,128.00	90.90	1.11	7,569.31	1,639.65	1,708.66	1,669.80	0.26	0.15	-0.21	
9,213.00	90.03	2.55	7,568.62	1,724.60	1,711.38	1,754.79	1.98	-1.02	1.69	
9,299.00	90.60	2.45	7,568.15	1,810.51	1,715.13	1,840.76	0.67	0.66	-0.12	
9,384.00	90.77	1.37	7,567.13	1,895.46	1,717.96	1,925.74	1.29	0.20	-1.27	
9,467.00	91.27	0.66	7,565.66	1,978.43	1,719.43	2,008.73	1.05	0.60	-0.86	
9,553.00	89.80	1.64	7,564.85	2,064.41	1,721.16	2,094.72	2.05	-1.71	1.14	
9,637.00	90.54	1.60	7,564.60	2,148.37	1,723.53	2,178.71	0.88	0.88	-0.05	
9,723.00	89.73	2.55	7,564.40	2,234.31	1,726.64	2,264.70	1.45	-0.94	1.10	
9,810.00	90.47	3.01	7,564.25	2,321.21	1,730.86	2,351.65	1.00	0.85	0.53	
9,896.00	90.80	2.56	7,563.30	2,407.10	1,735.04	2,437.61	0.65	0.38	-0.52	
9,981.00	89.09	3.91	7,563.38	2,491.96	1,739.84	2,522.54	2.56	-2.01	1.59	
10,068.00	90.03	4.21	7,564.05	2,578.74	1,746.00	2,609.41	1.13	1.08	0.34	
10,153.00	90.34	4.69	7,563.77	2,663.48	1,752.59	2,694.26	0.67	0.36	0.56	
10,238.00	89.97	3.84	7,563.54	2,748.25	1,758.91	2,779.12	1.09	-0.44	-1.00	
10,324.00	90.20	4.31	7,563.41	2,834.03	1,765.03	2,865.00	0.61	0.27	0.55	
10,409.00	89.87	3.49	7,563.36	2,918.83	1,770.81	2,949.89	1.04	-0.39	-0.96	
10,494.00	88.99	3.18	7,564.21	3,003.68	1,775.75	3,034.82	1.10	-1.04	-0.36	
10,579.00	89.83	2.97	7,565.08	3,088.55	1,780.31	3,119.76	1.02	0.99	-0.25	
10,664.00	90.74	1.57	7,564.66	3,173.48	1,783.68	3,204.73	1.96	1.07	-1.65	
10,749.00	91.24	0.58	7,563.19	3,258.45	1,785.27	3,289.72	1.30	0.59	-1.16	
10,835.00	89.23	358.80	7,562.84	3,344.44	1,784.81	3,375.69	3.12	-2.34	-2.07	
10,920.00	89.36	359.55	7,563.88	3,429.43	1,783.58	3,460.64	0.90	0.15	0.88	
11,005.00	88.19	358.13	7,565.70	3,514.39	1,781.86	3,545.55	2.16	-1.38	-1.67	
11,091.00	89.67	358.01	7,567.31	3,600.32	1,778.97	3,631.42	1.73	1.72	-0.14	
11,176.00	89.77	357.80	7,567.72	3,685.26	1,775.86	3,716.29	0.27	0.12	-0.25	
11,261.00	89.50	357.57	7,568.26	3,770.19	1,772.43	3,801.15	0.42	-0.32	-0.27	
11,345.00	89.53	356.94	7,568.98	3,854.09	1,768.40	3,884.96	0.75	0.04	-0.75	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Johnson 28C-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Site:	Johnson 13-14HZ Pad	MD Reference:	GL 4980' & KB 17' @ 4997.00ft (Xtreme 24)
Well:	Johnson 28C-14HZ	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)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,430.00	89.70	356.87	7,569.55	3,938.97	1,763.81	3,969.74	0.22	0.20	-0.08
11,515.00	90.87	358.08	7,569.12	4,023.88	1,760.07	4,054.58	1.98	1.38	1.42
11,600.00	91.00	358.29	7,567.74	4,108.83	1,757.38	4,139.46	0.29	0.15	0.25
11,685.00	91.07	358.55	7,566.20	4,193.78	1,755.04	4,224.36	0.32	0.08	0.31
11,771.00	90.33	359.14	7,565.15	4,279.76	1,753.30	4,310.29	1.10	-0.86	0.69
11,856.00	89.46	359.86	7,565.31	4,364.75	1,752.56	4,395.26	1.33	-1.02	0.85
11,941.00	90.87	0.88	7,565.06	4,449.75	1,753.11	4,480.25	2.05	1.66	1.20
11,992.35	90.20	0.92	7,564.58	4,501.09	1,753.91	4,531.60	1.31	-1.31	0.07
Enter 460' Circle: 11992.35' MD & 7564.58' TVD 378' FNL 2364' FWL									
12,028.00	89.73	0.94	7,564.61	4,536.73	1,754.49	4,567.25	1.31	-1.31	0.07
12,113.00	89.33	3.39	7,565.30	4,621.66	1,757.70	4,652.22	2.92	-0.47	2.88
12,198.00	88.26	2.79	7,567.09	4,706.52	1,762.28	4,737.14	1.44	-1.26	-0.71
12,254.00	87.96	2.54	7,568.94	4,762.43	1,764.88	4,793.09	0.70	-0.54	-0.45
Last SDI MWD Survey									
12,315.00	87.96	2.54	7,571.11	4,823.33	1,767.59	4,854.03	0.00	0.00	0.00
Projection to TD: 56' FNL 2378' FWL Sec 14									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
122.00	122.00	0.40	-0.63	First Total MWD Survey
1,874.00	1,812.72	69.27	377.82	Last Total MWD Survey
1,924.00	1,859.99	71.87	393.93	Projection to TD
1,986.00	1,918.68	74.96	413.66	First SDI MWD Survey
5,577.33	5,304.37	147.14	1,576.37	Enter Land Box: 5577.33' MD & 5304.29' TVD
7,170.00	6,886.32	151.45	1,715.18	Curve KOP
7,231.00	6,947.07	156.76	1,715.57	First SDI MWD Curve Survey
8,171.00	7,583.76	683.01	1,715.22	Last SDI MWD Curve Survey
8,171.00	7,583.76	683.01	1,715.22	Landing Point: 1094' FSL 2311' FWL Sec 14
8,256.00	7,584.63	767.98	1,713.15	First SDI MWD Lateral Survey
8,728.02	7,573.61	1,239.76	1,709.03	Exit 460' Circle : 8728.02' MD & 7573.61' TVD 1652' FSL 2304' FWL
11,992.35	7,564.58	4,501.09	1,753.91	Enter 460' Circle: 11992.35' MD & 7564.58' TVD 378' FNL 2364' FWL
12,254.00	7,568.94	4,762.43	1,764.88	Last SDI MWD Survey
12,315.00	7,571.11	4,823.33	1,767.59	Projection to TD: 56' FNL 2378' FWL Sec 14

Checked By: _____	Approved By: _____	Date: _____
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