

WELL DETAILS: Norden 26N-14HZ

GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)	4951.00
Northing 14543160.20	Easting 1681012.77
Latitude 40.0450200	Longitude -104.8549450

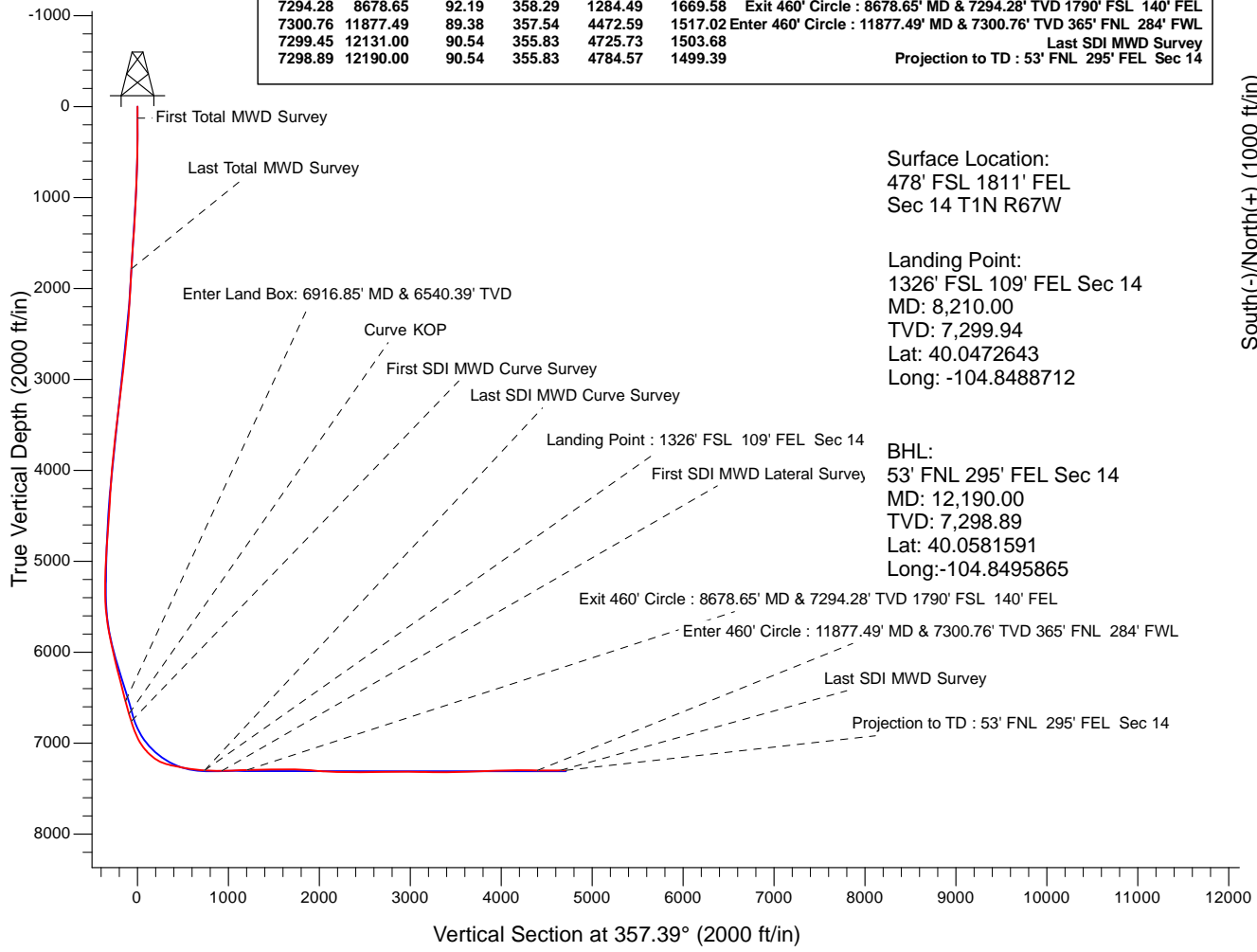
Design: OH (Norden 26N-14HZ/OH)
Created By: Seth Burstad Date: 8-24-2017

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

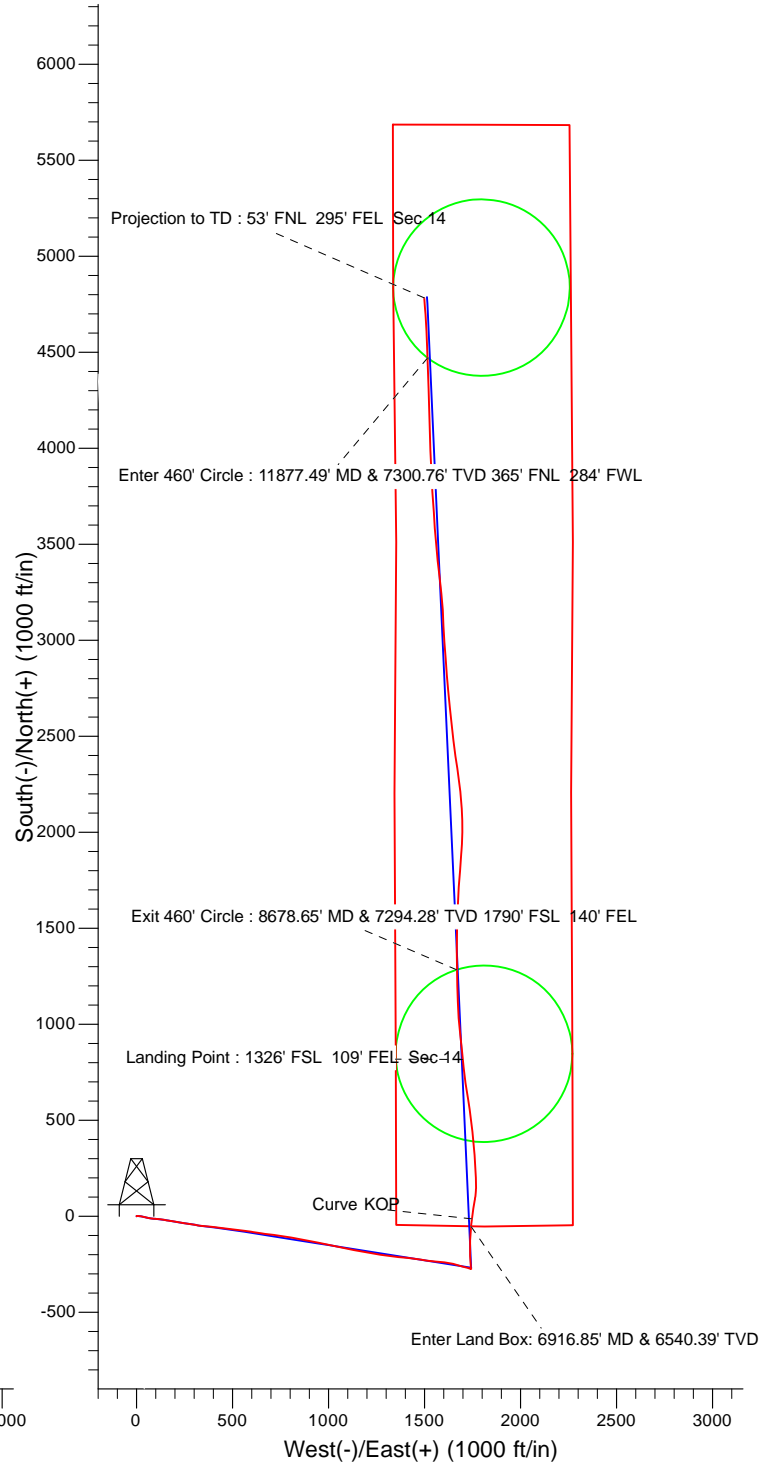
TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
126.00	126.00	0.83	64.38	0.39	0.82	First Total MWD Survey
1783.64	1832.00	17.62	96.73	-50.79	348.21	Last Total MWD Survey
6540.39	6916.85	15.89	0.02	-51.58	1742.47	Enter Land Box: 6916.85' MD & 6540.39' TVD
6676.96	7059.00	16.17	10.09	-12.43	1746.55	Curve KOP
6758.29	7144.00	18.29	10.36	11.84	1751.14	First SDI MWD Curve Survey
7299.94	8210.00	86.76	354.22	817.28	1699.80	Last SDI MWD Curve Survey
7299.94	8210.00	86.76	354.22	817.28	1699.80	Landing Point : 1326' FSL 109' FEL Sec 14
7303.59	8400.00	90.11	355.17	1006.28	1680.93	First SDI MWD Lateral Survey
7294.28	8678.65	92.19	358.29	1284.49	1669.58	Exit 460' Circle : 8678.65' MD & 7294.28' TVD 1790' FSL 140' FEL
7300.76	11877.49	89.38	357.54	4472.59	1517.02	Enter 460' Circle : 11877.49' MD & 7300.76' TVD 365' FNL 284' FWL
7299.45	12131.00	90.54	355.83	4725.73	1503.68	Last SDI MWD Survey
7298.89	12190.00	90.54	355.83	4784.57	1499.39	Projection to TD : 53' FNL 295' FEL Sec 14



Surface Location:
 478' FSL 1811' FEL
 Sec 14 T1N R67W

Landing Point:
 1326' FSL 109' FEL Sec 14
 MD: 8,210.00
 TVD: 7,299.94
 Lat: 40.0472643
 Long: -104.8488712

BHL:
 53' FNL 295' FEL Sec 14
 MD: 12,190.00
 TVD: 7,298.89
 Lat: 40.0581591
 Long: -104.8495865





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Norden 15-14HZ Pad

Norden 26N-14HZ

OH

Design: OH

Standard Survey Report

24 August, 2017



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Norden 26N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Site:	Norden 15-14HZ Pad	MD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Well:	Norden 26N-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	Norden 15-14HZ Pad, Site Center : Norden 26N-14HZ				
Site Position:		Northing:	14,543,160.20 usft	Latitude:	40.0450200
From:	Lat/Long	Easting:	1,681,012.77 usft	Longitude:	-104.8549450
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.09 °

Well	Norden 26N-14HZ, 478' FSL 1811' FEL Sec 14 T1N R67W					
Well Position	+N/-S	0.00 ft	Northing:	14,543,160.20 usft	Latitude:	40.0450200
	+E/-W	0.00 ft	Easting:	1,681,012.77 usft	Longitude:	-104.8549450
Position Uncertainty	0.00 ft		Wellhead Elevation:	0.00 ft	Ground Level:	4,951.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/3/2017	8.33	66.47	52,213

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	357.39	

Survey Program	Date	8/24/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
126.00	1,832.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,948.00	7,743.00	Survey #2 - Intermediate (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
7,830.00	12,190.00	Survey #3 - 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	0.00
126.00	0.83	64.38	126.00	0.39	0.82	0.36	0.66	0.66	0.00	0.00
First Total MWD Survey										
158.00	0.83	74.84	157.99	0.56	1.26	0.50	0.47	0.00	32.69	
189.00	0.88	50.41	188.99	0.77	1.66	0.69	1.18	0.16	-78.81	
221.00	1.10	70.45	220.98	1.03	2.13	0.93	1.27	0.69	62.63	
253.00	1.32	80.91	252.98	1.19	2.79	1.06	0.97	0.69	32.69	
284.00	1.89	71.85	283.96	1.40	3.63	1.24	2.01	1.84	-29.23	
316.00	2.29	80.20	315.94	1.68	4.76	1.46	1.57	1.25	26.09	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Norden 26N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Site:	Norden 15-14HZ Pad	MD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Well:	Norden 26N-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)	
348.00	2.99	84.95	347.91	1.86	6.22	1.57	2.29	2.19	14.84	
380.00	3.16	88.99	379.86	1.95	7.93	1.58	0.86	0.53	12.63	
411.00	3.43	97.17	410.81	1.85	9.71	1.40	1.75	0.87	26.39	
443.00	3.69	96.90	442.75	1.60	11.68	1.07	0.81	0.81	-0.84	
475.00	4.13	97.17	474.68	1.34	13.84	0.70	1.38	1.38	0.84	
507.00	4.57	96.90	506.58	1.04	16.25	0.30	1.38	1.38	-0.84	
539.00	5.10	97.17	538.47	0.71	18.93	-0.16	1.66	1.66	0.84	
569.00	5.63	99.19	568.34	0.31	21.71	-0.68	1.88	1.77	6.73	
601.00	6.24	98.66	600.17	-0.21	24.97	-1.34	1.91	1.91	-1.66	
633.00	6.94	102.09	631.96	-0.87	28.58	-2.17	2.51	2.19	10.72	
665.00	7.65	101.30	663.70	-1.70	32.56	-3.18	2.24	2.22	-2.47	
696.00	8.26	101.03	694.40	-2.53	36.77	-4.20	1.97	1.97	-0.87	
728.00	8.96	103.23	726.04	-3.54	41.45	-5.42	2.42	2.19	6.88	
759.00	9.80	103.85	756.62	-4.72	46.37	-6.83	2.73	2.71	2.00	
791.00	10.55	102.26	788.12	-5.99	51.87	-8.35	2.50	2.34	-4.97	
823.00	11.47	102.09	819.53	-7.28	57.85	-9.91	2.88	2.88	-0.53	
854.00	12.17	102.53	849.87	-8.64	64.05	-11.54	2.28	2.26	1.42	
886.00	12.26	100.15	881.15	-9.97	70.69	-13.18	1.60	0.28	-7.44	
918.00	12.52	97.78	912.40	-11.04	77.47	-14.55	1.78	0.81	-7.41	
949.00	13.18	95.06	942.63	-11.80	84.32	-15.63	2.89	2.13	-8.77	
981.00	13.84	94.70	973.74	-12.44	91.77	-16.60	2.08	2.06	-1.13	
1,012.00	14.46	94.00	1,003.80	-13.01	99.32	-17.52	2.07	2.00	-2.26	
1,044.00	15.03	94.35	1,034.75	-13.61	107.45	-18.48	1.80	1.78	1.09	
1,076.00	14.41	95.32	1,065.70	-14.29	115.55	-19.54	2.08	-1.94	3.03	
1,107.00	14.37	98.66	1,095.72	-15.23	123.19	-20.82	2.68	-0.13	10.77	
1,171.00	16.00	99.71	1,157.49	-17.91	139.74	-24.25	2.58	2.55	1.64	
1,202.00	16.35	99.10	1,187.26	-19.32	148.26	-26.05	1.26	1.13	-1.97	
1,234.00	17.14	99.27	1,217.90	-20.79	157.36	-27.94	2.47	2.47	0.53	
1,266.00	17.01	99.36	1,248.49	-22.31	166.63	-29.88	0.41	-0.41	0.28	
1,297.00	16.70	97.87	1,278.16	-23.66	175.52	-31.63	1.72	-1.00	-4.81	
1,329.00	17.36	97.60	1,308.76	-24.92	184.80	-33.31	2.08	2.06	-0.84	
1,361.00	17.09	99.63	1,339.32	-26.34	194.17	-35.15	2.06	-0.84	6.34	
1,392.00	17.18	99.63	1,368.95	-27.87	203.18	-37.09	0.29	0.29	0.00	
1,424.00	18.33	100.59	1,399.42	-29.58	212.78	-39.24	3.71	3.59	3.00	
1,456.00	19.82	99.63	1,429.66	-31.42	223.08	-41.54	4.76	4.66	-3.00	
1,487.00	20.43	98.92	1,458.77	-33.13	233.60	-43.74	2.12	1.97	-2.29	
1,519.00	20.21	98.92	1,488.78	-34.86	244.58	-45.96	0.69	-0.69	0.00	
1,551.00	20.26	98.22	1,518.80	-36.51	255.53	-48.10	0.77	0.16	-2.19	
1,583.00	20.57	97.78	1,548.79	-38.06	266.58	-50.16	1.08	0.97	-1.38	
1,614.00	20.74	98.22	1,577.80	-39.58	277.41	-52.17	0.74	0.55	1.42	
1,645.00	20.52	99.10	1,606.81	-41.22	288.21	-54.31	1.23	-0.71	2.84	
1,677.00	19.78	99.71	1,636.86	-43.02	299.08	-56.60	2.40	-2.31	1.91	
1,708.00	19.42	100.24	1,666.06	-44.83	309.32	-58.87	1.30	-1.16	1.71	

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Site:	Norden 15-14HZ Pad	MD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Well:	Norden 26N-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)
1,740.00	18.81	100.15	1,696.29	-46.68	319.64	-61.19	1.91	-1.91	-0.28
1,772.00	18.59	99.19	1,726.61	-48.40	329.75	-63.37	1.18	-0.69	-3.00
1,804.00	18.02	96.64	1,756.99	-49.79	339.70	-65.21	3.07	-1.78	-7.97
1,832.00	17.62	96.73	1,783.64	-50.79	348.21	-66.59	1.43	-1.43	0.32
Last Total MWD Survey									
1,948.00	16.23	94.61	1,894.62	-54.15	381.81	-71.48	1.31	-1.20	-1.83
2,033.00	18.37	94.69	1,975.77	-56.20	407.00	-74.67	2.52	2.52	0.09
2,119.00	21.00	97.53	2,056.74	-59.33	435.79	-79.11	3.25	3.06	3.30
2,204.00	23.48	98.17	2,135.41	-63.73	467.65	-84.96	2.93	2.92	0.75
2,289.00	22.93	96.58	2,213.53	-68.03	500.87	-90.77	0.98	-0.65	-1.87
2,374.00	24.39	97.57	2,291.38	-72.24	534.71	-96.52	1.78	1.72	1.16
2,459.00	25.67	95.67	2,368.40	-76.38	570.43	-102.27	1.78	1.51	-2.24
2,545.00	28.11	99.01	2,445.10	-81.39	608.99	-109.04	3.34	2.84	3.88
2,630.00	27.91	99.18	2,520.14	-87.70	648.40	-117.13	0.25	-0.24	0.20
2,716.00	27.20	96.85	2,596.39	-93.25	687.79	-124.48	1.50	-0.83	-2.71
2,801.00	27.63	98.79	2,671.85	-98.58	726.56	-131.57	1.17	0.51	2.28
2,886.00	25.49	96.12	2,747.87	-103.55	764.23	-138.24	2.88	-2.52	-3.14
2,971.00	26.45	99.30	2,824.29	-108.56	801.10	-144.92	1.99	1.13	3.74
3,056.00	27.35	101.24	2,900.10	-115.42	838.93	-153.50	1.48	1.06	2.28
3,142.00	27.67	102.34	2,976.37	-123.54	877.82	-163.38	0.70	0.37	1.28
3,227.00	28.68	101.25	3,051.30	-131.74	917.10	-173.36	1.33	1.19	-1.28
3,312.00	28.05	100.55	3,126.10	-139.38	956.75	-182.80	0.84	-0.74	-0.82
3,398.00	25.42	100.64	3,202.90	-146.49	994.78	-191.63	3.06	-3.06	0.10
3,484.00	25.37	101.17	3,280.59	-153.46	1,030.99	-200.25	0.27	-0.06	0.62
3,570.00	27.72	102.15	3,357.52	-161.24	1,068.63	-209.74	2.78	2.73	1.14
3,655.00	27.72	103.06	3,432.76	-169.87	1,107.21	-220.12	0.50	0.00	1.07
3,741.00	24.24	102.31	3,510.06	-178.16	1,143.96	-230.07	4.06	-4.05	-0.87
3,826.00	24.24	100.48	3,587.57	-185.05	1,178.16	-238.51	0.88	0.00	-2.15
3,911.00	28.66	98.13	3,663.65	-191.11	1,215.52	-246.26	5.34	5.20	-2.76
3,996.00	27.36	97.66	3,738.69	-196.60	1,255.06	-253.55	1.55	-1.53	-0.55
4,084.00	27.23	98.57	3,816.90	-202.29	1,295.01	-261.05	0.50	-0.15	1.03
4,169.00	27.37	96.88	3,892.43	-207.53	1,333.63	-268.05	0.93	0.16	-1.99
4,254.00	27.19	96.66	3,967.97	-212.13	1,372.32	-274.40	0.24	-0.21	-0.26
4,339.00	27.93	95.63	4,043.33	-216.33	1,411.42	-280.38	1.04	0.87	-1.21
4,425.00	27.12	98.06	4,119.60	-221.05	1,450.87	-286.89	1.61	-0.94	2.83
4,510.00	24.85	98.20	4,196.00	-226.32	1,487.74	-293.83	2.67	-2.67	0.16
4,595.00	22.76	97.36	4,273.76	-230.97	1,521.73	-300.03	2.49	-2.46	-0.99
4,680.00	20.47	96.61	4,352.78	-234.79	1,552.80	-305.26	2.71	-2.69	-0.88
4,765.00	16.72	93.98	4,433.33	-237.35	1,579.77	-309.04	4.52	-4.41	-3.09
4,850.00	15.30	94.88	4,515.03	-239.15	1,603.15	-311.91	1.70	-1.67	1.06
4,935.00	17.62	103.24	4,596.55	-243.06	1,626.85	-316.89	3.89	2.73	9.84
5,021.00	16.45	103.84	4,678.78	-248.95	1,651.35	-323.89	1.38	-1.36	0.70
5,106.00	16.25	103.82	4,760.34	-254.67	1,674.58	-330.66	0.24	-0.24	-0.02
5,191.00	13.60	106.77	4,842.47	-260.40	1,695.70	-337.34	3.24	-3.12	3.47

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Well:	Norden 26N-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)	
5,277.00	10.18	102.95	4,926.61	-265.02	1,712.79	-342.74	4.08	-3.98	-4.44	
5,362.00	6.93	106.06	5,010.66	-268.12	1,725.05	-346.40	3.86	-3.82	3.66	
5,447.00	5.56	110.08	5,095.15	-270.95	1,733.84	-349.63	1.69	-1.61	4.73	
5,536.00	3.46	103.04	5,183.87	-273.04	1,740.51	-352.01	2.44	-2.36	-7.91	
5,621.00	1.35	98.21	5,268.79	-273.76	1,744.00	-352.89	2.49	-2.48	-5.68	
5,706.00	0.93	261.42	5,353.78	-274.01	1,744.31	-353.15	2.65	-0.49	192.01	
5,792.00	2.67	328.66	5,439.75	-272.40	1,742.57	-351.47	2.87	2.02	78.19	
5,877.00	5.01	359.55	5,524.56	-267.00	1,741.52	-346.02	3.58	2.75	36.34	
5,962.00	5.91	359.62	5,609.17	-258.91	1,741.46	-337.94	1.06	1.06	0.08	
6,047.00	8.90	355.38	5,693.45	-247.98	1,740.90	-327.00	3.57	3.52	-4.99	
6,135.00	10.94	358.07	5,780.13	-232.84	1,740.07	-311.84	2.38	2.32	3.06	
6,220.00	11.48	355.77	5,863.51	-216.35	1,739.17	-295.32	0.82	0.64	-2.71	
6,306.00	12.83	356.90	5,947.58	-198.28	1,738.03	-277.22	1.59	1.57	1.31	
6,393.00	12.47	1.01	6,032.47	-179.24	1,737.67	-258.18	1.11	-0.41	4.72	
6,478.00	12.70	359.00	6,115.43	-160.72	1,737.67	-239.68	0.58	0.27	-2.36	
6,563.00	15.01	2.78	6,197.95	-140.38	1,738.04	-219.38	2.92	2.72	4.45	
6,649.00	15.25	359.71	6,280.97	-117.95	1,738.52	-196.99	0.97	0.28	-3.57	
6,734.00	15.02	7.59	6,363.03	-95.85	1,739.92	-174.98	2.43	-0.27	9.27	
6,798.00	12.49	4.38	6,425.19	-80.73	1,741.54	-159.95	4.13	-3.95	-5.02	
6,915.00	15.89	359.85	6,538.61	-52.09	1,742.47	-131.38	3.05	2.91	-3.87	
6,916.85	15.89	0.02	6,540.39	-51.58	1,742.47	-130.87	2.56	0.23	9.31	
Enter Land Box: 6916.85' MD & 6540.39' TVD										
7,000.00	16.22	7.63	6,620.30	-28.68	1,744.01	-108.07	2.56	0.39	9.15	
7,059.00	16.17	10.09	6,676.96	-12.43	1,746.55	-91.95	1.17	-0.09	4.17	
Curve KOP										
7,085.00	16.15	11.18	6,701.94	-5.32	1,747.88	-84.90	1.17	-0.06	4.19	
7,144.00	18.29	10.36	6,758.29	11.84	1,751.14	-67.91	3.66	3.63	-1.38	
First SDI MWD Curve Survey										
7,170.00	19.24	10.06	6,782.91	20.08	1,752.62	-59.75	3.66	3.64	-1.17	
7,255.00	21.96	6.89	6,862.47	49.65	1,756.98	-30.41	3.46	3.20	-3.73	
7,318.00	23.42	10.04	6,920.59	73.68	1,760.57	-6.57	3.01	2.32	5.00	
7,403.00	31.38	7.09	6,996.00	112.34	1,766.26	31.79	9.50	9.36	-3.47	
7,488.00	40.40	1.38	7,064.81	161.95	1,769.66	81.20	11.31	10.61	-6.72	
7,573.00	47.07	356.13	7,126.21	220.62	1,768.22	139.87	8.93	7.85	-6.18	
7,658.00	56.21	355.22	7,178.91	287.01	1,763.17	206.42	10.79	10.75	-1.07	
7,743.00	69.86	355.26	7,217.36	362.33	1,756.90	281.95	16.06	16.06	0.05	
7,830.00	77.67	354.87	7,241.66	445.48	1,749.71	365.34	8.99	8.98	-0.45	
7,915.00	80.17	352.13	7,258.00	528.35	1,740.26	448.55	4.32	2.94	-3.22	
8,000.00	80.12	350.76	7,272.55	611.16	1,727.80	531.84	1.59	-0.06	-1.61	
8,085.00	80.85	351.50	7,286.60	693.98	1,714.88	615.17	1.21	0.86	0.87	
8,170.00	85.00	353.67	7,297.07	777.61	1,704.00	699.21	5.50	4.88	2.55	
8,210.00	86.76	354.22	7,299.94	817.28	1,699.80	739.03	4.60	4.39	1.38	
Last SDI MWD Curve Survey - Landing Point : 1326' FSL 109' FEL Sec 14										
8,255.00	88.73	354.84	7,301.72	862.04	1,695.51	783.94	4.60	4.39	1.37	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Norden 26N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Site:	Norden 15-14HZ Pad	MD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Well:	Norden 26N-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)	
8,341.00	89.23	353.48	7,303.25	947.58	1,686.76	869.78	1.68	0.58	-1.58	
8,400.00	90.11	355.17	7,303.59	1,006.28	1,680.93	928.70	3.23	1.49	2.86	
First SDI MWD Lateral Survey										
8,426.00	90.50	355.91	7,303.45	1,032.20	1,678.90	954.68	3.23	1.49	2.86	
8,511.00	92.58	358.48	7,301.16	1,117.06	1,674.74	1,039.64	3.89	2.45	3.02	
8,596.00	92.32	358.08	7,297.53	1,201.94	1,672.20	1,124.55	0.56	-0.31	-0.47	
8,678.65	92.19	358.29	7,294.28	1,284.49	1,669.58	1,207.13	0.30	-0.16	0.26	
Exit 460' Circle : 8678.65' MD & 7294.28' TVD 1790' FSL 140' FEL										
8,682.00	92.18	358.30	7,294.15	1,287.83	1,669.48	1,210.48	0.30	-0.16	0.26	
8,767.00	91.21	0.51	7,291.64	1,372.79	1,668.60	1,295.38	2.84	-1.14	2.60	
8,853.00	90.47	1.03	7,290.38	1,458.77	1,669.76	1,381.22	1.05	-0.86	0.60	
8,938.00	90.30	1.32	7,289.81	1,543.75	1,671.50	1,466.03	0.40	-0.20	0.34	
9,023.00	90.70	2.30	7,289.06	1,628.70	1,674.18	1,550.77	1.25	0.47	1.15	
9,108.00	90.03	4.09	7,288.52	1,713.56	1,678.92	1,635.33	2.25	-0.79	2.11	
9,195.00	89.53	4.31	7,288.86	1,800.33	1,685.29	1,721.72	0.63	-0.57	0.25	
9,281.00	87.45	4.30	7,291.12	1,886.05	1,691.74	1,807.06	2.42	-2.42	-0.01	
9,366.00	85.33	2.04	7,296.48	1,970.74	1,696.44	1,891.45	3.64	-2.49	-2.66	
9,452.00	84.29	359.53	7,304.26	2,056.37	1,697.61	1,976.94	3.15	-1.21	-2.92	
9,537.00	86.21	354.95	7,311.30	2,140.96	1,693.53	2,061.62	5.83	2.26	-5.39	
9,622.00	87.15	353.66	7,316.22	2,225.39	1,685.11	2,146.35	1.88	1.11	-1.52	
9,707.00	90.07	351.86	7,318.28	2,309.68	1,674.40	2,231.03	4.04	3.44	-2.12	
9,794.00	89.77	351.28	7,318.40	2,395.74	1,661.65	2,317.59	0.75	-0.34	-0.67	
9,880.00	91.11	353.26	7,317.74	2,480.95	1,650.08	2,403.23	2.78	1.56	2.30	
9,965.00	91.21	354.52	7,316.02	2,565.45	1,641.03	2,488.06	1.49	0.12	1.48	
10,050.00	90.44	354.50	7,314.80	2,650.05	1,632.90	2,572.94	0.91	-0.91	-0.02	
10,135.00	89.46	354.04	7,314.87	2,734.62	1,624.42	2,657.81	1.27	-1.15	-0.54	
10,221.00	89.80	355.45	7,315.43	2,820.25	1,616.54	2,743.72	1.69	0.40	1.64	
10,306.00	89.93	355.90	7,315.63	2,905.01	1,610.13	2,828.68	0.55	0.15	0.53	
10,391.00	89.60	356.63	7,315.98	2,989.83	1,604.59	2,913.66	0.94	-0.39	0.86	
10,476.00	90.37	356.79	7,316.00	3,074.69	1,599.72	2,998.65	0.93	0.91	0.19	
10,561.00	89.56	356.86	7,316.05	3,159.56	1,595.01	3,083.65	0.96	-0.95	0.08	
10,646.00	88.56	354.86	7,317.45	3,244.32	1,588.87	3,168.60	2.63	-1.18	-2.35	
10,731.00	89.20	352.73	7,319.11	3,328.80	1,579.69	3,253.41	2.62	0.75	-2.51	
10,816.00	90.87	354.12	7,319.06	3,413.24	1,569.96	3,338.20	2.56	1.96	1.64	
10,902.00	90.44	354.29	7,318.07	3,498.79	1,561.27	3,424.07	0.54	-0.50	0.20	
10,987.00	91.51	356.45	7,316.63	3,583.49	1,554.41	3,508.99	2.84	1.26	2.54	
11,072.00	91.37	356.96	7,314.49	3,668.33	1,549.53	3,593.96	0.62	-0.16	0.60	
11,158.00	91.04	356.80	7,312.68	3,754.18	1,544.85	3,679.94	0.43	-0.38	-0.19	
11,247.00	91.41	356.58	7,310.78	3,843.01	1,539.71	3,768.91	0.48	0.42	-0.25	
11,332.00	92.48	356.22	7,307.89	3,927.79	1,534.38	3,853.85	1.33	1.26	-0.42	
11,417.00	93.76	357.08	7,303.27	4,012.52	1,529.42	3,938.71	1.81	1.51	1.01	
11,503.00	92.75	358.68	7,298.38	4,098.32	1,526.24	4,024.57	2.20	-1.17	1.86	
11,588.00	90.23	359.49	7,296.17	4,183.27	1,524.89	4,109.49	3.11	-2.96	0.95	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Norden 26N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Site:	Norden 15-14HZ Pad	MD Reference:	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
Well:	Norden 26N-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)
11,673.00	89.09	358.97	7,296.68	4,268.26	1,523.74	4,194.45	1.47	-1.34	-0.61
11,758.00	88.62	358.21	7,298.38	4,353.22	1,521.65	4,279.41	1.05	-0.55	-0.89
11,845.00	88.89	357.53	7,300.27	4,440.14	1,518.42	4,366.39	0.84	0.31	-0.78
11,877.49	89.38	357.54	7,300.76	4,472.59	1,517.02	4,398.87	1.52	1.52	0.03
Enter 460' Circle : 11877.49' MD & 7300.76' TVD 365' FNL 284' FWL									
11,931.00	90.20	357.56	7,300.95	4,526.05	1,514.74	4,452.38	1.52	1.52	0.03
12,016.00	90.50	357.08	7,300.43	4,610.96	1,510.76	4,537.38	0.67	0.35	-0.56
12,104.00	90.47	356.15	7,299.69	4,698.80	1,505.57	4,625.37	1.06	-0.03	-1.06
12,131.00	90.54	355.83	7,299.45	4,725.73	1,503.68	4,652.36	1.21	0.26	-1.19
Last SDI MWD Survey									
12,190.00	90.54	355.83	7,298.89	4,784.57	1,499.39	4,711.33	0.00	0.00	0.00
Projection to TD : 53' FNL 295' FEL Sec 14									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
126.00	126.00	0.39	0.82	First Total MWD Survey
1,832.00	1,783.64	-50.79	348.21	Last Total MWD Survey
6,916.85	6,540.39	-51.58	1,742.47	Enter Land Box: 6916.85' MD & 6540.39' TVD
7,059.00	6,676.96	-12.43	1,746.55	Curve KOP
7,144.00	6,758.29	11.84	1,751.14	First SDI MWD Curve Survey
8,210.00	7,299.94	817.28	1,699.80	Last SDI MWD Curve Survey
8,210.00	7,299.94	817.28	1,699.80	Landing Point : 1326' FSL 109' FEL Sec 14
8,400.00	7,303.59	1,006.28	1,680.93	First SDI MWD Lateral Survey
8,678.65	7,294.28	1,284.49	1,669.58	Exit 460' Circle : 8678.65' MD & 7294.28' TVD 1790' FSL 140' FEL
11,877.49	7,300.76	4,472.59	1,517.02	Enter 460' Circle : 11877.49' MD & 7300.76' TVD 365' FNL 284' FWL
12,131.00	7,299.45	4,725.73	1,503.68	Last SDI MWD Survey
12,190.00	7,298.89	4,784.57	1,499.39	Projection to TD : 53' FNL 295' FEL Sec 14

Checked By: _____	Approved By: _____	Date: _____
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