

WELL DETAILS: Hilgers 34N-22HZ

GL 5001' & KB 17' @ 5018.00ft (Xtreme 24) 5001.00
 Northing 14601968.20 Easting 1645444.59 Latitude 40.2066040 Longitude -104.9819920

Design: OH (Hilgers 34N-22HZ/OH)

Created By: Seth Burstad Date: 7-7-2017

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

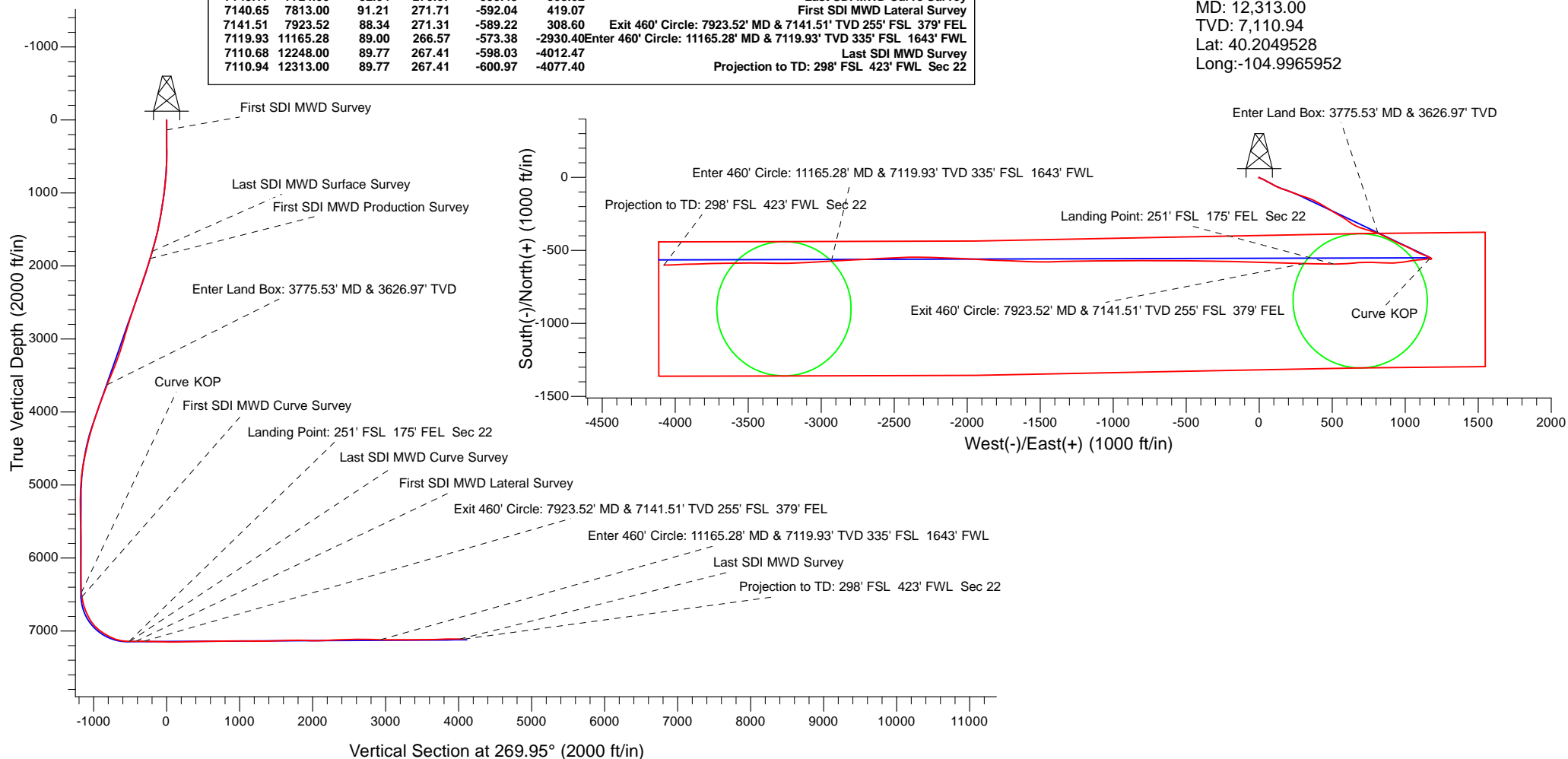
Surface Hole:
 856' FSL 685' FEL
 Sec 22 T3N R68W

Landing Point:
 251' FSL 175' FEL Sec 22
 MD: 7,719.00
 TVD: 7,143.32
 Lat: 40.2049744
 Long: -104.9801546

BHL:
 298' FSL 423' FWL Sec 22
 MD: 12,313.00
 TVD: 7,110.94
 Lat: 40.2049528
 Long: -104.9965952

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
138.00	138.00	0.33	226.16	-0.28	-0.29	First SDI MWD Survey
1800.20	1823.00	17.38	111.65	-91.53	196.59	Last SDI MWD Surface Survey
1899.25	1927.00	18.12	110.97	-103.05	226.13	First SDI MWD Production Survey
3626.97	3775.53	23.07	111.52	-383.00	814.12	Enter Land Box: 3775.53' MD & 3626.97' TVD
6476.63	6689.00	3.95	263.91	-555.90	1168.81	Curve KOP
6534.14	6747.00	10.38	261.31	-556.91	1161.65	First SDI MWD Curve Survey
7143.32	7719.00	91.42	269.76	-593.42	513.02	Landing Point: 251' FSL 175' FEL Sec 22
7143.17	7724.00	92.04	270.07	-593.43	508.02	Last SDI MWD Curve Survey
7140.65	7813.00	91.21	271.71	-592.04	419.07	First SDI MWD Lateral Survey
7141.51	7923.52	88.34	271.31	-589.22	308.60	Exit 460' Circle: 7923.52' MD & 7141.51' TVD 255' FSL 379' FEL
7119.93	11165.28	89.00	266.57	-573.38	-2930.40	Enter 460' Circle: 11165.28' MD & 7119.93' TVD 335' FSL 1643' FWL
7110.68	12248.00	89.77	267.41	-598.03	-4012.47	Last SDI MWD Survey
7110.94	12313.00	89.77	267.41	-600.97	-4077.40	Projection to TD: 298' FSL 423' FWL Sec 22





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Hilgers 16-22 Pad

Hilgers 34N-22HZ

OH

Design: OH

Standard Survey Report

07 July, 2017



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 34N-22HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 34N-22HZ	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						Hilgers 16-22 Pad, Site Center : Hilgers 7N-34HZ											
Site Position:			Northing:			14,601,968.89 usft			Latitude:			40.2066060					
From:			Lat/Long			Easting:			1,645,309.73 usft			Longitude:			-104.9824750		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			0.01 °		

Well	Hilgers 34N-22HZ, 856' FSL 685' FEL Sec 22 T3N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,601,968.19 usft	Latitude:	40.2066040
	+E/-W	0.00 ft	Easting:	1,645,444.59 usft	Longitude:	-104.9819920
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,001.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	5/4/2017	8.49	66.69	52,274

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		269.95

Survey Program	Date	7/7/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
138.00	1,823.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,823.00	12,313.00	Survey #2 - Production (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	

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	
138.00	0.33	226.16	138.00	-0.28	-0.29	0.29	0.24	0.24	0.00	
First SDI MWD Survey										
199.00	0.39	243.96	199.00	-0.49	-0.60	0.60	0.21	0.10	29.18	
285.00	0.48	231.08	285.00	-0.84	-1.14	1.14	0.15	0.10	-14.98	
372.00	0.75	243.90	371.99	-1.32	-1.94	1.94	0.35	0.31	14.74	
505.00	0.62	124.01	504.99	-2.11	-2.12	2.13	0.89	-0.10	-90.14	
594.00	2.12	111.72	593.96	-2.99	-0.19	0.20	1.71	1.69	-13.81	
683.00	3.22	99.23	682.86	-4.00	3.80	-3.80	1.39	1.24	-14.03	
771.00	5.05	112.07	770.63	-5.85	9.83	-9.83	2.32	2.08	14.59	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 34N-22HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 34N-22HZ	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)
860.00	6.10	110.68	859.21	-8.99	17.89	-17.88	1.19	1.18	-1.56
949.00	7.32	117.01	947.60	-13.24	27.36	-27.35	1.60	1.37	7.11
1,035.00	8.44	121.23	1,032.78	-19.00	37.64	-37.62	1.46	1.30	4.91
1,120.00	9.36	119.05	1,116.76	-25.59	49.02	-48.99	1.15	1.08	-2.56
1,209.00	10.23	115.18	1,204.46	-32.46	62.50	-62.47	1.23	0.98	-4.35
1,297.00	11.46	116.81	1,290.89	-39.73	77.37	-77.34	1.44	1.40	1.85
1,386.00	12.08	118.20	1,378.02	-48.12	93.47	-93.43	0.77	0.70	1.56
1,475.00	13.06	118.26	1,464.88	-57.28	110.53	-110.48	1.10	1.10	0.07
1,564.00	14.33	115.65	1,551.35	-66.81	129.32	-129.26	1.59	1.43	-2.93
1,648.00	15.77	109.62	1,632.47	-75.15	149.45	-149.38	2.53	1.71	-7.18
1,735.00	16.58	107.64	1,716.03	-82.88	172.41	-172.34	1.13	0.93	-2.28
1,823.00	17.38	111.65	1,800.20	-91.53	196.59	-196.51	1.61	0.91	4.56
Last SDI MWD Surface Survey									
1,927.00	18.12	110.97	1,899.25	-103.05	226.13	-226.04	0.74	0.71	-0.65
First SDI MWD Production Survey									
2,016.00	17.11	109.74	1,984.07	-112.42	251.38	-251.28	1.21	-1.13	-1.38
2,105.00	18.63	109.10	2,068.78	-121.50	277.14	-277.03	1.72	1.71	-0.72
2,194.00	19.99	109.04	2,152.77	-131.11	304.95	-304.84	1.53	1.53	-0.07
2,283.00	20.86	108.84	2,236.17	-141.19	334.33	-334.21	0.98	0.98	-0.22
2,371.00	21.64	113.68	2,318.19	-152.77	364.02	-363.89	2.18	0.89	5.50
2,460.00	21.76	118.86	2,400.89	-167.33	393.50	-393.35	2.16	0.13	5.82
2,549.00	20.71	118.92	2,483.85	-182.90	421.72	-421.56	1.18	-1.18	0.07
2,638.00	21.53	121.43	2,566.87	-199.03	449.43	-449.26	1.37	0.92	2.82
2,727.00	20.04	123.04	2,650.08	-215.86	476.15	-475.97	1.79	-1.67	1.81
2,816.00	20.86	120.77	2,733.47	-232.28	502.55	-502.35	1.28	0.92	-2.55
2,904.00	19.24	121.02	2,816.13	-247.77	528.44	-528.23	1.84	-1.84	0.28
2,993.00	20.03	120.10	2,899.96	-262.97	554.20	-553.97	0.95	0.89	-1.03
3,082.00	18.71	121.09	2,983.92	-277.98	579.61	-579.37	1.53	-1.48	1.11
3,171.00	20.35	126.45	3,067.80	-294.55	604.28	-604.03	2.73	1.84	6.02
3,260.00	21.42	124.11	3,150.95	-312.86	630.19	-629.92	1.52	1.20	-2.63
3,349.00	20.21	118.16	3,234.15	-329.23	657.20	-656.91	2.74	-1.36	-6.69
3,438.00	23.75	109.37	3,316.69	-342.44	687.68	-687.38	5.42	3.98	-9.88
3,527.00	22.28	107.53	3,398.61	-353.46	720.68	-720.37	1.84	-1.65	-2.07
3,615.00	22.75	105.24	3,479.90	-362.96	753.00	-752.69	1.13	0.53	-2.60
3,704.00	24.38	108.24	3,561.48	-373.24	787.06	-786.73	2.27	1.83	3.37
3,775.53	23.07	111.52	3,626.97	-383.00	814.12	-813.78	2.60	-1.83	4.59
Enter Land Box: 3775.53' MD & 3626.97' TVD									
3,793.00	22.76	112.38	3,643.06	-385.54	820.43	-820.09	2.60	-1.77	4.90
3,882.00	22.27	114.28	3,725.28	-399.03	851.72	-851.37	0.99	-0.55	2.13
3,996.00	22.32	116.91	3,830.76	-417.71	890.71	-890.35	0.88	0.04	2.31
4,085.00	21.60	117.27	3,913.30	-432.87	920.35	-919.97	0.82	-0.81	0.40
4,173.00	23.08	114.60	3,994.69	-447.47	950.43	-950.04	2.04	1.68	-3.03
4,262.00	20.01	114.42	4,077.47	-461.03	980.16	-979.76	3.45	-3.45	-0.20
4,351.00	17.25	113.88	4,161.79	-472.67	1,006.10	-1,005.69	3.11	-3.10	-0.61

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Well:	Hilgers 34N-22HZ	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)
4,440.00	18.64	116.19	4,246.46	-484.29	1,030.93	-1,030.51	1.75	1.56	2.60
4,528.00	17.13	118.33	4,330.21	-496.65	1,054.96	-1,054.52	1.87	-1.72	2.43
4,617.00	15.43	119.32	4,415.64	-508.67	1,076.82	-1,076.38	1.94	-1.91	1.11
4,706.00	13.72	114.35	4,501.77	-518.82	1,096.76	-1,096.31	2.38	-1.92	-5.58
4,794.00	12.56	110.72	4,587.47	-526.51	1,115.22	-1,114.76	1.62	-1.32	-4.13
4,883.00	11.04	110.80	4,674.59	-532.96	1,132.24	-1,131.77	1.71	-1.71	0.09
4,972.00	10.16	111.28	4,762.07	-538.83	1,147.52	-1,147.05	0.99	-0.99	0.54
5,060.00	8.34	114.35	4,848.92	-544.28	1,160.57	-1,160.09	2.14	-2.07	3.49
5,149.00	5.86	123.89	4,937.23	-549.48	1,170.22	-1,169.74	3.08	-2.79	10.72
5,238.00	3.36	112.24	5,025.94	-553.00	1,176.41	-1,175.92	2.99	-2.81	-13.09
5,327.00	1.65	131.88	5,114.85	-554.84	1,179.77	-1,179.29	2.12	-1.92	22.07
5,415.00	0.86	185.63	5,202.83	-556.34	1,180.65	-1,180.17	1.52	-0.90	61.08
5,504.00	0.57	205.05	5,291.83	-557.41	1,180.40	-1,179.91	0.42	-0.33	21.82
5,593.00	0.62	217.42	5,380.82	-558.19	1,179.92	-1,179.43	0.15	0.06	13.90
5,682.00	0.75	239.87	5,469.82	-558.87	1,179.12	-1,178.64	0.33	0.15	25.22
5,770.00	1.12	235.98	5,557.80	-559.64	1,177.91	-1,177.42	0.43	0.42	-4.42
5,859.00	1.95	252.53	5,646.77	-560.58	1,175.75	-1,175.26	1.05	0.93	18.60
5,948.00	1.97	240.01	5,735.72	-561.80	1,172.98	-1,172.49	0.48	0.02	-14.07
6,037.00	0.89	21.79	5,824.71	-561.92	1,171.91	-1,171.42	3.06	-1.21	159.30
6,126.00	0.85	21.39	5,913.69	-560.66	1,172.41	-1,171.92	0.05	-0.04	-0.45
6,214.00	0.74	1.81	6,001.69	-559.49	1,172.66	-1,172.17	0.33	-0.13	-22.25
6,303.00	0.64	15.08	6,090.68	-558.43	1,172.81	-1,172.32	0.21	-0.11	14.91
6,392.00	0.71	332.38	6,179.67	-557.46	1,172.68	-1,172.20	0.56	0.08	-47.98
6,481.00	0.71	307.60	6,268.67	-556.64	1,171.99	-1,171.50	0.34	0.00	-27.84
6,569.00	0.76	285.40	6,356.66	-556.15	1,171.00	-1,170.51	0.33	0.06	-25.23
6,658.00	0.57	289.95	6,445.65	-555.84	1,170.01	-1,169.53	0.22	-0.21	5.11
6,689.00	3.95	263.91	6,476.63	-555.90	1,168.81	-1,168.32	11.11	10.89	-84.01
Curve KOP									
6,747.00	10.38	261.31	6,534.14	-556.91	1,161.65	-1,161.16	11.11	11.09	-4.48
6,836.00	16.41	264.24	6,620.68	-559.38	1,141.20	-1,140.71	6.82	6.78	3.29
6,924.00	20.74	264.92	6,704.08	-562.01	1,113.29	-1,112.80	4.93	4.92	0.77
7,013.00	24.24	263.14	6,786.30	-565.59	1,079.45	-1,078.95	4.01	3.93	-2.00
7,102.00	33.68	262.15	6,864.08	-571.16	1,036.76	-1,036.27	10.62	10.61	-1.11
7,191.00	42.90	258.39	6,933.87	-580.64	982.52	-982.01	10.68	10.36	-4.22
7,280.00	52.88	270.59	6,993.60	-586.40	917.07	-916.56	15.10	11.21	13.71
7,369.00	59.63	272.18	7,043.01	-584.57	843.13	-842.62	7.73	7.58	1.79
7,458.00	64.92	271.98	7,084.40	-581.72	764.43	-763.92	5.95	5.94	-0.22
7,546.00	71.75	266.87	7,116.89	-582.62	682.73	-682.23	9.45	7.76	-5.81
7,635.00	81.04	264.44	7,137.81	-589.21	596.58	-596.07	10.77	10.44	-2.73
7,719.00	91.42	269.76	7,143.32	-593.42	513.02	-512.50	13.87	12.36	6.33
Landing Point: 251' FSL 175' FEL Sec 22									
7,724.00	92.04	270.07	7,143.17	-593.43	508.02	-507.50	13.87	12.37	6.29
7,813.00	91.21	271.71	7,140.65	-592.04	419.07	-418.55	2.06	-0.93	1.84

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Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 34N-22HZ	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)
First SDI MWD Lateral Survey									
7,902.00	88.46	271.30	7,140.90	-589.71	330.11	-329.59	3.12	-3.09	-0.46
7,923.52	88.34	271.31	7,141.51	-589.22	308.60	-308.09	0.58	-0.58	0.05
Exit 460' Circle: 7923.52' MD & 7141.51' TVD 255' FSL 379' FEL									
7,990.00	87.95	271.34	7,143.66	-587.68	242.18	-241.66	0.58	-0.58	0.05
8,080.00	89.09	271.64	7,145.99	-585.34	152.24	-151.73	1.31	1.27	0.33
8,168.00	88.72	271.67	7,147.67	-582.80	64.29	-63.78	0.42	-0.42	0.03
8,257.00	88.22	271.61	7,150.04	-580.25	-24.64	25.15	0.57	-0.56	-0.07
8,346.00	90.87	272.12	7,150.75	-577.36	-113.58	114.09	3.03	2.98	0.57
8,435.00	91.48	270.97	7,148.93	-574.96	-202.53	203.03	1.46	0.69	-1.29
8,524.00	91.95	271.25	7,146.26	-573.24	-291.47	291.97	0.61	0.53	0.31
8,613.00	91.58	270.49	7,143.52	-571.89	-380.42	380.92	0.95	-0.42	-0.85
8,702.00	89.66	270.22	7,142.56	-571.33	-469.41	469.91	2.18	-2.16	-0.30
8,791.00	90.74	270.41	7,142.25	-570.84	-558.40	558.90	1.23	1.21	0.21
8,879.00	91.01	270.24	7,140.90	-570.35	-646.39	646.89	0.36	0.31	-0.19
8,968.00	91.04	269.75	7,139.31	-570.35	-735.38	735.88	0.55	0.03	-0.55
9,057.00	91.21	269.88	7,137.56	-570.64	-824.36	824.86	0.24	0.19	0.15
9,146.00	89.83	270.52	7,136.76	-570.33	-913.35	913.85	1.71	-1.55	0.72
9,235.00	89.53	269.54	7,137.25	-570.28	-1,002.35	1,002.85	1.15	-0.34	-1.10
9,323.00	89.70	269.70	7,137.84	-570.87	-1,090.35	1,090.85	0.27	0.19	0.18
9,412.00	89.60	269.11	7,138.39	-571.79	-1,179.34	1,179.84	0.67	-0.11	-0.66
9,501.00	89.56	268.84	7,139.04	-573.38	-1,268.32	1,268.82	0.31	-0.04	-0.30
9,590.00	90.20	268.21	7,139.23	-575.67	-1,357.29	1,357.80	1.01	0.72	-0.71
9,679.00	91.81	268.27	7,137.67	-578.41	-1,446.23	1,446.74	1.81	1.81	0.07
9,768.00	92.01	272.49	7,134.70	-577.82	-1,535.16	1,535.67	4.74	0.22	4.74
9,857.00	92.78	272.21	7,130.98	-574.17	-1,624.01	1,624.51	0.92	0.87	-0.31
9,946.00	91.54	272.19	7,127.62	-570.76	-1,712.88	1,713.38	1.39	-1.39	-0.02
10,035.00	88.69	272.60	7,127.45	-567.04	-1,801.79	1,802.29	3.24	-3.20	0.46
10,124.00	88.39	272.70	7,129.71	-562.93	-1,890.67	1,891.16	0.36	-0.34	0.11
10,213.00	88.46	273.17	7,132.16	-558.37	-1,979.52	1,980.00	0.53	0.08	0.53
10,302.00	90.91	271.99	7,132.65	-554.36	-2,068.42	2,068.90	3.06	2.75	-1.33
10,391.00	91.64	272.02	7,130.67	-551.25	-2,157.34	2,157.82	0.82	0.82	0.03
10,479.00	92.75	272.37	7,127.30	-547.88	-2,245.21	2,245.69	1.32	1.26	0.40
10,568.00	93.62	270.03	7,122.35	-546.02	-2,334.05	2,334.52	2.80	0.98	-2.63
10,658.00	92.32	267.80	7,117.69	-547.72	-2,423.90	2,424.38	2.87	-1.44	-2.48
10,747.00	91.51	267.33	7,114.72	-551.50	-2,512.77	2,513.25	1.05	-0.91	-0.53
10,836.00	89.60	267.04	7,113.85	-555.87	-2,601.65	2,602.14	2.17	-2.15	-0.33
10,925.00	89.26	267.32	7,114.74	-560.25	-2,690.54	2,691.03	0.49	-0.38	0.31
11,014.00	88.83	267.20	7,116.22	-564.51	-2,779.43	2,779.92	0.50	-0.48	-0.13
11,103.00	88.29	266.33	7,118.46	-569.53	-2,868.26	2,868.75	1.15	-0.61	-0.98
11,165.28	89.00	266.57	7,119.93	-573.38	-2,930.40	2,930.90	1.20	1.13	0.39
Enter 460' Circle: 11165.28' MD & 7119.93' TVD 335' FSL 1643' FWL									
11,192.00	89.30	266.68	7,120.33	-574.95	-2,957.07	2,957.57	1.20	1.13	0.39
11,281.00	89.90	267.36	7,120.95	-579.58	-3,045.95	3,046.45	1.02	0.67	0.76

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 34N-22HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 34N-22HZ	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)
11,370.00	89.36	266.76	7,121.53	-584.14	-3,134.83	3,135.34	0.91	-0.61	-0.67
11,459.00	90.27	269.22	7,121.81	-587.26	-3,223.76	3,224.27	2.95	1.02	2.76
11,547.00	90.47	270.76	7,121.25	-587.28	-3,311.76	3,312.27	1.76	0.23	1.75
11,636.00	90.57	270.29	7,120.44	-586.46	-3,400.75	3,401.26	0.54	0.11	-0.53
11,725.00	90.34	269.88	7,119.73	-586.33	-3,489.75	3,490.26	0.53	-0.26	-0.46
11,814.00	91.24	269.72	7,118.50	-586.64	-3,578.74	3,579.25	1.03	1.01	-0.18
11,903.00	91.68	268.60	7,116.24	-587.95	-3,667.70	3,668.21	1.35	0.49	-1.26
11,992.00	91.78	268.80	7,113.55	-589.96	-3,756.63	3,757.15	0.25	0.11	0.22
12,081.00	90.97	268.31	7,111.41	-592.21	-3,845.58	3,846.10	1.06	-0.91	-0.55
12,169.00	90.10	268.12	7,110.59	-594.95	-3,933.53	3,934.05	1.01	-0.99	-0.22
12,248.00	89.77	267.41	7,110.68	-598.03	-4,012.47	4,012.99	0.99	-0.42	-0.90
Last SDI MWD Survey									
12,313.00	89.77	267.41	7,110.94	-600.97	-4,077.40	4,077.93	0.00	0.00	0.00
Projection to TD: 298' FSL 423' FWL Sec 22									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
138.00	138.00	-0.28	-0.29	First SDI MWD Survey
1,823.00	1,800.20	-91.53	196.59	Last SDI MWD Surface Survey
1,927.00	1,899.25	-103.05	226.13	First SDI MWD Production Survey
3,775.53	3,626.97	-383.00	814.12	Enter Land Box: 3775.53' MD & 3626.97' TVD
6,689.00	6,476.63	-555.90	1,168.81	Curve KOP
7,719.00	7,143.32	-593.42	513.02	Landing Point: 251' FSL 175' FEL Sec 22
7,813.00	7,140.65	-592.04	419.07	First SDI MWD Lateral Survey
7,923.52	7,141.51	-589.22	308.60	Exit 460' Circle: 7923.52' MD & 7141.51' TVD 255' FSL 379' FEL
11,165.28	7,119.93	-573.38	-2,930.40	Enter 460' Circle: 11165.28' MD & 7119.93' TVD 335' FSL 1643' FWL
12,248.00	7,110.68	-598.03	-4,012.47	Last SDI MWD Survey
12,313.00	7,110.94	-600.97	-4,077.40	Projection to TD: 298' FSL 423' FWL Sec 22

Checked By: _____	Approved By: _____	Date: _____
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