

WELL DETAILS: Hilgers 13N-22HZ

GL 5001' & KB 17' @ 5018.00ft (Xtreme 24) 5001.00
 Northing 14601968.20 Easting 1645459.67 Latitude 40.2066040 Longitude -104.9819380

Design: OH (Hilgers 13N-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

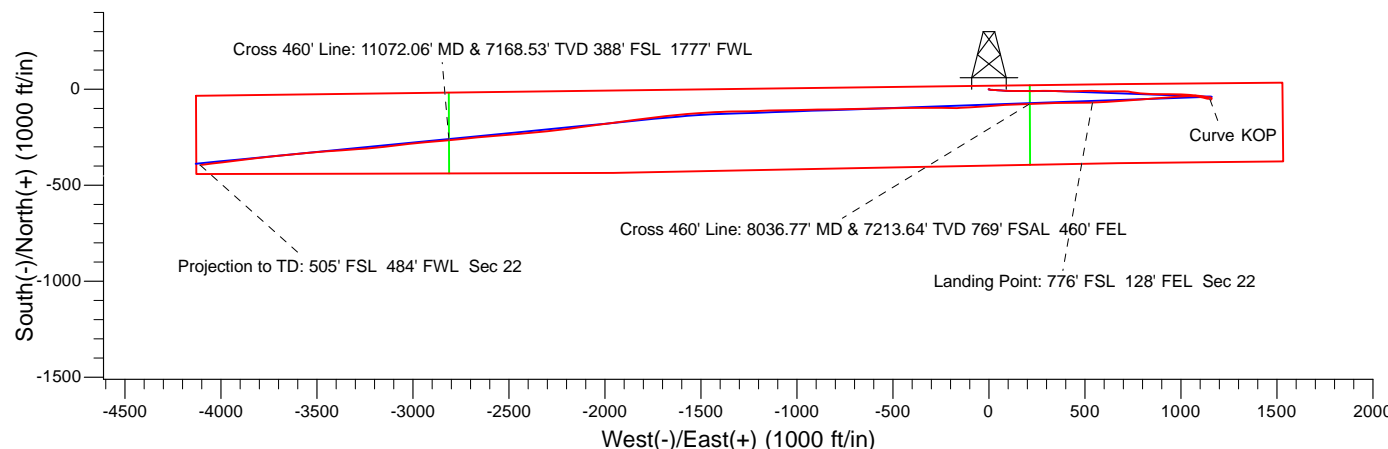
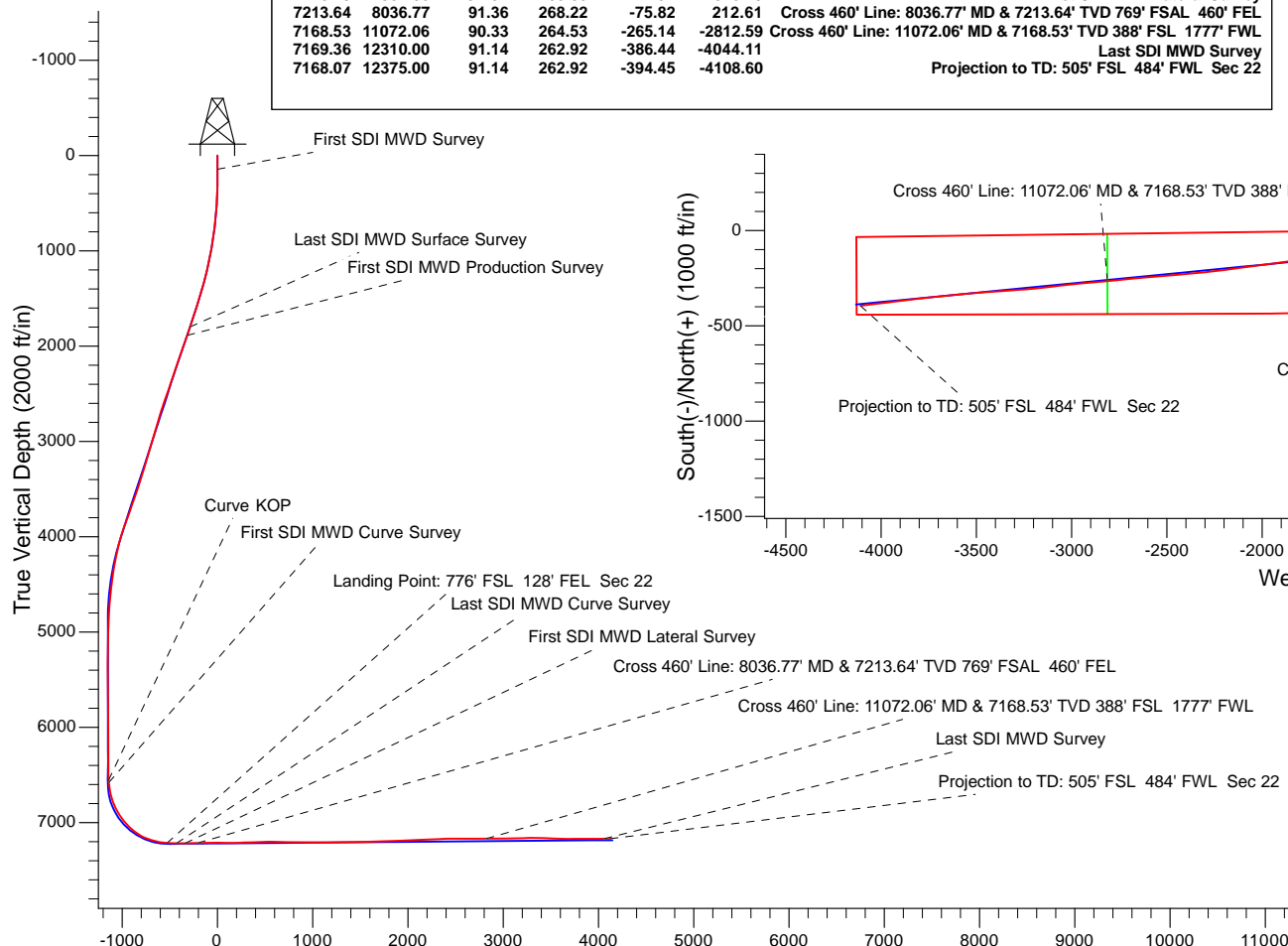
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
143.00	143.00	0.75	283.39	0.22	-0.91	First SDI MWD Survey
1798.40	1834.00	19.16	91.20	-7.78	289.67	Last SDI MWD Surface Survey
1887.39	1928.00	18.41	89.87	-8.07	319.94	First SDI MWD Production Survey
6555.57	6722.00	3.46	274.77	-49.90	1150.73	Curve KOP
6579.51	6746.00	4.56	272.39	-49.80	1149.05	First SDI MWD Curve Survey
7214.24	7710.00	86.56	269.03	-69.23	539.23	Landing Point: 776' FSL 128' FEL Sec 22
7216.79	7812.00	89.63	269.34	-70.21	437.27	Last SDI MWD Curve Survey
7216.29	7901.00	91.01	268.60	-71.81	348.29	First SDI MWD Lateral Survey
7213.64	8036.77	91.36	268.22	-75.82	212.61	Cross 460' Line: 8036.77' MD & 7213.64' TVD 769' FSAL 460' FEL
7168.53	11072.06	90.33	264.53	-265.14	-2812.59	Cross 460' Line: 11072.06' MD & 7168.53' TVD 388' FSL 1777' FWL
7169.36	12310.00	91.14	262.92	-386.44	-4044.11	Last SDI MWD Survey
7168.07	12375.00	91.14	262.92	-394.45	-4108.60	Projection to TD: 505' FSL 484' FWL Sec 22

Surface Hole:
 855' FSL 670' FEL
 Sec 22 T3N R68W

Landing Point:
 776' FSL 128' FEL Sec 22
 MD: 7,710.00
 TVD: 7,214.24
 Lat: 40.2064139
 Long: -104.9800067

BHL:
 505' FSL 484' FWL Sec 22
 MD: 12,375.00
 TVD: 7,168.07
 Lat: 40.2055199
 Long: -104.9966531





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Hilgers 16-22 Pad

Hilgers 13N-22HZ

OH

Design: OH

Standard Survey Report

10 July, 2017



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 13N-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 13N-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 13N-22HZ, 855' FSL 670' FEL Sec 22 T3N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,601,968.20 usft	Latitude:	40.2066040
	+E/-W	0.00 ft	Easting:	1,645,459.67 usft	Longitude:	-104.9819380
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		264.41

Survey Program	Date	7/10/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.00	1,834.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,834.00	12,375.00	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	
143.00	0.75	283.39	143.00	0.22	-0.91	0.89	0.52	0.52	0.00	
First SDI MWD Survey										
230.00	0.17	151.34	229.99	0.24	-1.40	1.37	1.00	-0.67	-151.78	
318.00	1.16	118.02	317.99	-0.30	-0.55	0.58	1.16	1.13	-37.86	
405.00	1.95	107.12	404.95	-1.15	1.64	-1.52	0.97	0.91	-12.53	
494.00	3.39	97.43	493.86	-1.93	5.70	-5.48	1.69	1.62	-10.89	
583.00	4.40	94.99	582.65	-2.57	11.71	-11.40	1.15	1.13	-2.74	
672.00	6.03	90.17	671.28	-2.88	19.78	-19.41	1.89	1.83	-5.42	
760.00	7.29	95.83	758.68	-3.46	29.96	-29.48	1.61	1.43	6.43	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 13N-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 13N-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)
847.00	8.28	92.98	844.88	-4.35	41.71	-41.08	1.22	1.14	-3.28
936.00	9.11	95.44	932.86	-5.35	55.12	-54.34	1.02	0.93	2.76
1,023.00	10.85	94.04	1,018.54	-6.58	70.15	-69.17	2.02	2.00	-1.61
1,109.00	12.59	94.32	1,102.74	-7.86	87.57	-86.39	2.02	2.02	0.33
1,198.00	12.97	92.24	1,189.54	-8.98	107.22	-105.84	0.67	0.43	-2.34
1,287.00	14.23	87.79	1,276.04	-8.95	128.13	-126.65	1.84	1.42	-5.00
1,374.00	15.49	88.65	1,360.13	-8.26	150.43	-148.91	1.47	1.45	0.99
1,460.00	16.19	91.05	1,442.87	-8.21	173.90	-172.27	1.11	0.81	2.79
1,547.00	16.75	92.35	1,526.30	-8.94	198.55	-196.74	0.77	0.64	1.49
1,636.00	17.88	89.18	1,611.26	-9.28	225.03	-223.06	1.65	1.27	-3.56
1,724.00	19.28	87.53	1,694.68	-8.46	253.05	-251.03	1.70	1.59	-1.88
1,809.00	19.65	89.51	1,774.82	-7.73	281.37	-279.28	0.89	0.44	2.33
1,834.00	19.16	91.20	1,798.40	-7.78	289.67	-287.54	2.98	-1.96	6.76
Last SDI MWD Surface Survey									
1,928.00	18.41	89.87	1,887.39	-8.07	319.94	-317.63	0.92	-0.80	-1.41
First SDI MWD Production Survey									
2,017.00	19.31	93.05	1,971.61	-8.82	348.69	-346.17	1.53	1.01	3.57
2,105.00	18.90	92.77	2,054.77	-10.28	377.45	-374.66	0.48	-0.47	-0.32
2,194.00	17.40	90.41	2,139.34	-11.07	405.16	-402.15	1.88	-1.69	-2.65
2,283.00	19.94	87.92	2,223.65	-10.62	433.64	-430.54	2.99	2.85	-2.80
2,372.00	20.27	88.05	2,307.22	-9.54	464.21	-461.07	0.37	0.37	0.15
2,461.00	18.86	86.75	2,391.08	-8.20	493.98	-490.83	1.66	-1.58	-1.46
2,549.00	19.69	91.09	2,474.16	-7.68	523.01	-519.77	1.88	0.94	4.93
2,638.00	19.41	92.44	2,558.02	-8.59	552.77	-549.31	0.60	-0.31	1.52
2,727.00	18.04	92.09	2,642.31	-9.73	581.32	-577.61	1.54	-1.54	-0.39
2,816.00	16.05	91.09	2,727.40	-10.46	607.40	-603.49	2.26	-2.24	-1.12
2,905.00	17.42	89.56	2,812.63	-10.59	633.02	-628.98	1.62	1.54	-1.72
2,994.00	16.98	89.26	2,897.65	-10.32	659.34	-655.20	0.50	-0.49	-0.34
3,083.00	14.81	89.26	2,983.24	-10.01	683.71	-679.48	2.44	-2.44	0.00
3,172.00	16.39	93.12	3,068.96	-10.55	707.62	-703.23	2.12	1.78	4.34
3,261.00	18.47	96.91	3,153.87	-12.93	734.16	-729.41	2.66	2.34	4.26
3,349.00	17.19	99.97	3,237.65	-16.85	760.81	-755.55	1.80	-1.45	3.48
3,438.00	17.05	97.94	3,322.70	-20.93	786.68	-780.90	0.69	-0.16	-2.28
3,527.00	17.81	94.58	3,407.62	-23.82	813.17	-806.99	1.42	0.85	-3.78
3,616.00	19.21	88.88	3,492.02	-24.62	841.38	-834.98	2.57	1.57	-6.40
3,705.00	18.82	90.31	3,576.16	-24.42	870.38	-863.86	0.68	-0.44	1.61
3,793.00	19.10	90.44	3,659.39	-24.60	898.97	-892.30	0.32	0.32	0.15
3,995.00	20.46	91.41	3,849.47	-25.73	967.32	-960.21	0.69	0.67	0.48
4,084.00	19.08	91.88	3,933.22	-26.59	997.41	-990.07	1.56	-1.55	0.53
4,172.00	16.44	93.32	4,017.02	-27.78	1,024.22	-1,016.64	3.04	-3.00	1.64
4,261.00	13.76	94.60	4,102.94	-29.36	1,047.35	-1,039.51	3.03	-3.01	1.44
4,350.00	11.73	95.51	4,189.74	-31.07	1,066.90	-1,058.80	2.29	-2.28	1.02
4,439.00	10.44	96.78	4,277.08	-32.90	1,083.92	-1,075.56	1.48	-1.45	1.43

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Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 13N-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)	
4,527.00	9.32	98.54	4,363.77	-34.89	1,098.88	-1,090.26	1.32	-1.27	2.00	
4,616.00	8.03	97.63	4,451.75	-36.79	1,112.17	-1,103.30	1.46	-1.45	-1.02	
4,705.00	6.54	97.34	4,540.03	-38.26	1,123.36	-1,114.29	1.67	-1.67	-0.33	
4,793.00	5.11	98.88	4,627.57	-39.51	1,132.20	-1,122.97	1.63	-1.63	1.75	
4,882.00	4.46	96.85	4,716.26	-40.53	1,139.55	-1,130.19	0.75	-0.73	-2.28	
4,971.00	3.92	96.63	4,805.02	-41.30	1,146.01	-1,136.54	0.61	-0.61	-0.25	
5,059.00	2.95	98.59	4,892.86	-41.98	1,151.24	-1,141.67	1.11	-1.10	2.23	
5,148.00	2.15	110.47	4,981.78	-42.91	1,155.07	-1,145.39	1.07	-0.90	13.35	
5,237.00	1.48	123.03	5,070.73	-44.12	1,157.59	-1,147.79	0.87	-0.75	14.11	
5,326.00	1.16	122.86	5,159.71	-45.23	1,159.31	-1,149.39	0.36	-0.36	-0.19	
5,414.00	0.67	154.21	5,247.70	-46.18	1,160.29	-1,150.27	0.78	-0.56	35.63	
5,503.00	0.63	180.87	5,336.69	-47.14	1,160.51	-1,150.39	0.34	-0.04	29.96	
5,592.00	0.51	215.50	5,425.69	-47.95	1,160.27	-1,150.08	0.40	-0.13	38.91	
5,681.00	0.40	281.17	5,514.69	-48.21	1,159.73	-1,149.52	0.56	-0.12	73.79	
5,769.00	0.46	230.30	5,602.68	-48.38	1,159.16	-1,148.93	0.42	0.07	-57.81	
5,858.00	0.99	189.39	5,691.68	-49.37	1,158.76	-1,148.44	0.80	0.60	-45.97	
5,947.00	0.98	208.64	5,780.66	-50.79	1,158.27	-1,147.81	0.37	-0.01	21.63	
6,036.00	0.68	211.69	5,869.65	-51.91	1,157.63	-1,147.07	0.34	-0.34	3.43	
6,125.00	0.42	244.31	5,958.65	-52.50	1,157.06	-1,146.44	0.45	-0.29	36.65	
6,214.00	0.61	210.71	6,047.65	-53.05	1,156.52	-1,145.85	0.39	0.21	-37.75	
6,302.00	0.68	288.21	6,135.64	-53.29	1,155.78	-1,145.10	0.92	0.08	88.07	
6,391.00	0.80	320.27	6,224.64	-52.65	1,154.89	-1,144.27	0.48	0.13	36.02	
6,480.00	0.67	316.20	6,313.63	-51.79	1,154.13	-1,143.59	0.16	-0.15	-4.57	
6,569.00	0.51	321.61	6,402.62	-51.11	1,153.52	-1,143.06	0.19	-0.18	6.08	
6,657.00	0.71	320.95	6,490.62	-50.38	1,152.94	-1,142.55	0.23	0.23	-0.75	
6,722.00	3.46	274.77	6,555.57	-49.90	1,150.73	-1,140.39	4.63	4.23	-71.05	
Curve KOP										
6,746.00	4.56	272.39	6,579.51	-49.80	1,149.05	-1,138.74	4.63	4.58	-9.92	
First SDI MWD Curve Survey										
6,835.00	12.14	278.84	6,667.51	-48.21	1,136.25	-1,126.15	8.57	8.52	7.25	
6,923.00	17.76	287.26	6,752.50	-42.80	1,114.27	-1,104.80	6.83	6.39	9.57	
7,012.00	25.17	275.96	6,835.31	-36.80	1,082.43	-1,073.69	9.50	8.33	-12.70	
7,101.00	32.11	269.28	6,913.39	-35.13	1,039.89	-1,031.52	8.58	7.80	-7.51	
7,190.00	39.14	265.65	6,985.70	-37.56	988.16	-979.80	8.25	7.90	-4.08	
7,279.00	47.13	265.89	7,050.59	-42.04	927.52	-919.01	8.98	8.98	0.27	
7,368.00	54.38	265.67	7,106.86	-47.11	858.83	-850.15	8.15	8.15	-0.25	
7,457.00	64.50	265.44	7,152.05	-53.05	782.52	-773.63	11.37	11.37	-0.26	
7,545.00	73.70	265.77	7,183.41	-59.34	700.64	-691.53	10.46	10.45	0.38	
7,634.00	78.80	265.68	7,204.56	-65.78	614.46	-605.13	5.73	5.73	-0.10	
7,710.00	86.56	269.04	7,214.24	-69.23	539.23	-529.92	11.11	10.21	4.41	
Landing Point: 776' FSL 128' FEL Sec 22										
7,723.00	87.89	269.60	7,214.86	-69.39	526.24	-516.98	11.11	10.23	4.35	
7,812.00	89.63	269.34	7,216.79	-70.21	437.27	-428.35	1.98	1.96	-0.29	
Last SDI MWD Curve Survey										

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Well:	Hilgers 13N-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)
7,901.00	91.01	268.60	7,216.29	-71.81	348.29	-339.64	1.76	1.55	-0.83
First SDI MWD Lateral Survey									
7,990.00	91.11	268.14	7,214.65	-74.34	259.34	-250.87	0.53	0.11	-0.52
8,036.77	91.36	268.22	7,213.64	-75.82	212.61	-204.21	0.56	0.53	0.18
Cross 460' Line: 8036.77' MD & 7213.64' TVD 769' FSAL 460' FEL									
8,079.00	91.58	268.30	7,212.56	-77.10	170.41	-162.09	0.56	0.53	0.18
8,167.00	89.87	266.53	7,211.44	-81.07	82.51	-74.22	2.80	-1.94	-2.01
8,256.00	89.40	265.69	7,212.01	-87.11	-6.28	14.74	1.08	-0.53	-0.94
8,345.00	89.63	265.74	7,212.76	-93.76	-95.03	103.71	0.26	0.26	0.06
8,434.00	91.31	269.85	7,212.03	-97.18	-183.94	192.53	4.99	1.89	4.62
8,523.00	92.14	270.46	7,209.36	-96.94	-272.90	281.04	1.16	0.93	0.69
8,612.00	91.71	269.92	7,206.37	-96.65	-361.84	369.54	0.78	-0.48	-0.61
8,701.00	92.18	269.21	7,203.35	-97.32	-450.79	458.13	0.96	0.53	-0.80
8,790.00	91.37	268.95	7,200.59	-98.75	-539.73	546.79	0.96	-0.91	-0.29
8,878.00	88.53	268.45	7,200.67	-100.75	-627.70	634.53	3.28	-3.23	-0.57
8,967.00	88.09	268.72	7,203.29	-102.95	-716.64	723.26	0.58	-0.49	0.30
9,056.00	88.59	269.37	7,205.87	-104.43	-805.59	811.93	0.92	0.56	0.73
9,145.00	88.09	268.61	7,208.45	-106.00	-894.53	900.60	1.02	-0.56	-0.85
9,234.00	90.80	269.81	7,209.31	-107.22	-983.51	989.28	3.33	3.04	1.35
9,322.00	90.77	268.76	7,208.10	-108.32	-1,071.49	1,076.95	1.19	-0.03	-1.19
9,411.00	89.80	267.22	7,207.66	-111.44	-1,160.43	1,165.77	2.04	-1.09	-1.73
9,500.00	91.68	269.44	7,206.51	-114.04	-1,249.38	1,254.55	3.27	2.11	2.49
9,589.00	91.74	268.67	7,203.85	-115.50	-1,338.33	1,343.21	0.87	0.07	-0.87
9,678.00	90.30	266.84	7,202.27	-118.99	-1,427.24	1,432.04	2.62	-1.62	-2.06
9,767.00	90.37	266.12	7,201.75	-124.45	-1,516.07	1,520.98	0.81	0.08	-0.81
9,856.00	90.34	264.45	7,201.20	-131.77	-1,604.76	1,609.97	1.88	-0.03	-1.88
9,946.00	91.71	263.21	7,199.59	-141.44	-1,694.22	1,699.94	2.05	1.52	-1.38
10,035.00	92.28	263.21	7,196.49	-151.96	-1,782.55	1,788.87	0.64	0.64	0.00
10,124.00	92.92	262.61	7,192.45	-162.93	-1,870.77	1,877.75	0.99	0.72	-0.67
10,212.00	93.32	262.27	7,187.66	-174.49	-1,957.88	1,965.56	0.60	0.45	-0.39
10,301.00	91.78	262.67	7,183.70	-186.14	-2,046.02	2,054.42	1.79	-1.73	0.45
10,390.00	92.14	262.96	7,180.66	-197.27	-2,134.27	2,143.34	0.52	0.40	0.33
10,479.00	92.68	261.74	7,176.92	-209.10	-2,222.40	2,232.20	1.50	0.61	-1.37
10,568.00	92.92	264.40	7,172.57	-219.83	-2,310.63	2,321.06	3.00	0.27	2.99
10,657.00	90.54	265.26	7,169.88	-227.84	-2,399.22	2,410.01	2.84	-2.67	0.97
10,746.00	89.93	265.45	7,169.52	-235.05	-2,487.93	2,499.00	0.72	-0.69	0.21
10,835.00	89.77	264.84	7,169.75	-242.58	-2,576.61	2,587.99	0.71	-0.18	-0.69
10,924.00	90.34	264.90	7,169.66	-250.54	-2,665.25	2,676.98	0.64	0.64	0.07
11,013.00	90.54	263.93	7,168.98	-259.20	-2,753.83	2,765.98	1.11	0.22	-1.09
11,072.06	90.33	264.53	7,168.53	-265.14	-2,812.59	2,825.04	1.07	-0.35	1.01
Cross 460' Line: 11072.06' MD & 7168.53' TVD 388' FSL 1777' FWL									
11,102.00	90.23	264.83	7,168.38	-267.92	-2,842.40	2,854.98	1.07	-0.35	1.01
11,191.00	90.94	265.01	7,167.47	-275.80	-2,931.04	2,943.97	0.82	0.80	0.20
11,280.00	90.77	263.87	7,166.15	-284.42	-3,019.61	3,032.96	1.29	-0.19	-1.28

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 13N-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 13N-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)
11,369.00	90.57	262.85	7,165.11	-294.71	-3,108.01	3,121.94	1.17	-0.22	-1.15
11,458.00	90.94	264.69	7,163.93	-304.37	-3,196.47	3,210.92	2.11	0.42	2.07
11,546.00	91.61	265.69	7,161.97	-311.74	-3,284.14	3,298.89	1.37	0.76	1.14
11,635.00	88.66	266.34	7,161.76	-317.93	-3,372.91	3,387.84	3.39	-3.31	0.73
11,724.00	87.65	266.01	7,164.63	-323.86	-3,461.67	3,476.75	1.19	-1.13	-0.37
11,813.00	87.49	263.78	7,168.40	-331.77	-3,550.23	3,565.66	2.51	-0.18	-2.51
11,902.00	89.26	264.46	7,170.93	-340.89	-3,638.72	3,654.62	2.13	1.99	0.76
11,991.00	90.84	264.89	7,170.85	-349.15	-3,727.33	3,743.62	1.84	1.78	0.48
12,080.00	89.53	262.89	7,170.56	-358.62	-3,815.82	3,832.61	2.69	-1.47	-2.25
12,169.00	89.77	262.69	7,171.11	-369.79	-3,904.11	3,921.57	0.35	0.27	-0.22
12,258.00	91.14	263.66	7,170.40	-380.36	-3,992.48	4,010.54	1.89	1.54	1.09
12,310.00	91.14	262.92	7,169.37	-386.44	-4,044.11	4,062.52	1.42	0.00	-1.42
Last SDI MWD Survey									
12,375.00	91.14	262.92	7,168.07	-394.45	-4,108.60	4,127.49	0.00	0.00	0.00
Projection to TD: 505' FSL 484' FWL Sec 22									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
143.00	143.00	0.22	-0.91	First SDI MWD Survey
1,834.00	1,798.40	-7.78	289.67	Last SDI MWD Surface Survey
1,928.00	1,887.39	-8.07	319.94	First SDI MWD Production Survey
6,722.00	6,555.57	-49.90	1,150.73	Curve KOP
6,746.00	6,579.51	-49.80	1,149.05	First SDI MWD Curve Survey
7,710.00	7,214.24	-69.23	539.23	Landing Point: 776' FSL 128' FEL Sec 22
7,812.00	7,216.79	-70.21	437.27	Last SDI MWD Curve Survey
7,901.00	7,216.29	-71.81	348.29	First SDI MWD Lateral Survey
8,036.77	7,213.64	-75.82	212.61	Cross 460' Line: 8036.77' MD & 7213.64' TVD 769' FSAL 460' FEL
11,072.06	7,168.53	-265.14	-2,812.59	Cross 460' Line: 11072.06' MD & 7168.53' TVD 388' FSL 1777' FWL
12,310.00	7,169.37	-386.44	-4,044.11	Last SDI MWD Survey
12,375.00	7,168.07	-394.45	-4,108.60	Projection to TD: 505' FSL 484' FWL Sec 22

Checked By: _____	Approved By: _____	Date: _____
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