

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-68W-22 Hilgers 16-22HZ Pad

HILGERS 33N2-22HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

08 September, 2015

Project: WELD-NAD83-UTMFT13N

Site: 3N-68W-22 Hilgers 16-22HZ Pad

Well: HILGERS 33N2-22HZ

Wellbore: Plan A

Design: Permit Rev-1

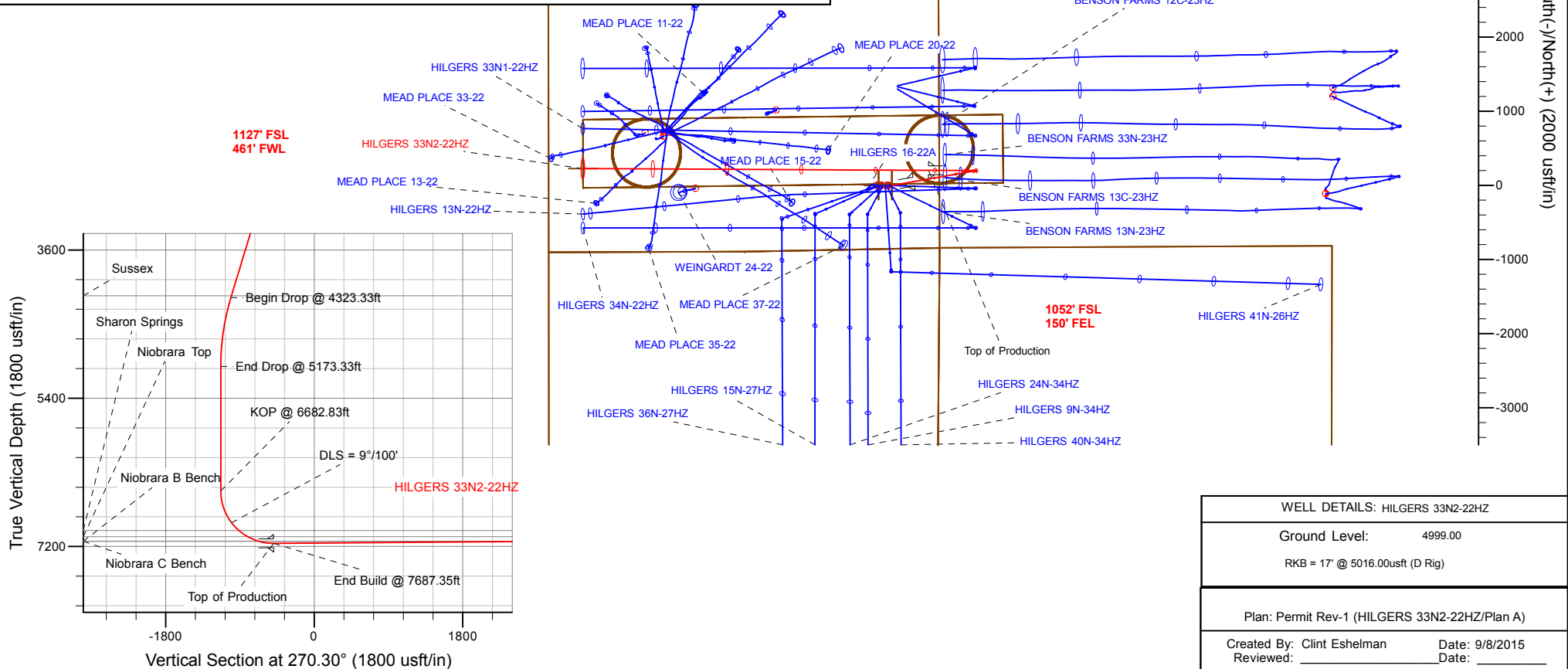
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1383.33	17.00	80.00	1366.78	28.98	164.37	1.50	80.00	-164.21	
4	4323.33	17.00	80.00	4178.31	178.25	1010.88	0.00	0.00	-1009.93	
5	5173.33	0.00	0.00	5015.90	199.98	1134.16	2.00	180.00	-1133.10	
6	6682.83	0.00	0.00	6525.40	199.98	1134.16	0.00	0.00	-1133.10	
7	7687.35	90.41	270.30	7162.00	203.32	493.03	9.00	270.30	-491.96	
8	12342.35	90.41	270.30	7129.00	227.58	-4161.79	0.00	0.00	4162.93	HILGERS 33N2-22HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HILGERS 33N2-22HZ_SHL	0.00	0.00	0.00	40.206603	-104.981831	Point
HILGERS 33N2-22HZ_BHL	7129.00	227.58	-4161.79	40.207227	-104.996737	Point



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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Project	WELD-NAD83-UTMFT13N		
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		3N-68W-22 Hilgers 16-22HZ Pad			
Site Position:		Northing:	14,601,968.89 usft	Latitude:	40.206606
From:	Lat/Long	Easting:	1,645,309.73 usft	Longitude:	-104.982475
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.01 °

Well		HILGERS 33N2-22HZ				
Well Position	+N/-S	-1.09 usft	Northing:	14,601,967.84 usft	Latitude:	40.206603
	+E/-W	179.81 usft	Easting:	1,645,489.54 usft	Longitude:	-104.981831
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,999.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/6/2015	8.39	66.71	52,561

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	270.30

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,383.33	17.00	80.00	1,366.78	28.98	164.37	1.50	1.50	0.00	80.00	
4,323.33	17.00	80.00	4,178.31	178.25	1,010.88	0.00	0.00	0.00	0.00	
5,173.33	0.00	0.00	5,015.90	199.98	1,134.16	2.00	-2.00	0.00	180.00	
6,682.83	0.00	0.00	6,525.40	199.98	1,134.16	0.00	0.00	0.00	0.00	
7,687.35	90.41	270.30	7,162.00	203.32	493.03	9.00	9.00	-8.93	270.30	
12,342.35	90.41	270.30	7,129.00	227.58	-4,161.79	0.00	0.00	0.00	0.00	HILGERS 33N2-22HZ

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	80.00	300.00	0.06	0.32	-0.32	1.50	1.50	0.00
316.00	0.99	80.00	316.00	0.10	0.56	-0.56	1.50	1.50	0.00
Fox Hills									
400.00	2.25	80.00	399.96	0.51	2.90	-2.90	1.50	1.50	0.00
500.00	3.75	80.00	499.82	1.42	8.05	-8.05	1.50	1.50	0.00
600.00	5.25	80.00	599.51	2.78	15.78	-15.77	1.50	1.50	0.00
700.00	6.75	80.00	698.96	4.60	26.07	-26.05	1.50	1.50	0.00
800.00	8.25	80.00	798.10	6.86	38.93	-38.89	1.50	1.50	0.00
900.00	9.75	80.00	896.87	9.58	54.33	-54.28	1.50	1.50	0.00
1,000.00	11.25	80.00	995.19	12.74	72.28	-72.21	1.50	1.50	0.00
1,100.00	12.75	80.00	1,093.00	16.36	92.75	-92.67	1.50	1.50	0.00
1,200.00	14.25	80.00	1,190.24	20.41	115.74	-115.64	1.50	1.50	0.00
1,300.00	15.75	80.00	1,286.83	24.90	141.23	-141.10	1.50	1.50	0.00
1,383.33	17.00	80.00	1,366.77	28.98	164.37	-164.21	1.50	1.50	0.00
End Nudge @ 1383.33ft									
1,400.00	17.00	80.00	1,382.72	29.83	169.17	-169.01	0.00	0.00	0.00
1,500.00	17.00	80.00	1,478.35	34.91	197.96	-197.77	0.00	0.00	0.00
1,600.00	17.00	80.00	1,573.98	39.98	226.75	-226.54	0.00	0.00	0.00
1,700.00	17.00	80.00	1,669.61	45.06	255.55	-255.31	0.00	0.00	0.00
1,800.00	17.00	80.00	1,765.24	50.14	284.34	-284.07	0.00	0.00	0.00
1,836.35	17.00	80.00	1,800.00	51.98	294.81	-294.53	0.00	0.00	0.00
9 5/8"									
1,900.00	17.00	80.00	1,860.87	55.21	313.13	-312.84	0.00	0.00	0.00
2,000.00	17.00	80.00	1,956.50	60.29	341.92	-341.60	0.00	0.00	0.00
2,100.00	17.00	80.00	2,052.13	65.37	370.72	-370.37	0.00	0.00	0.00
2,200.00	17.00	80.00	2,147.76	70.44	399.51	-399.14	0.00	0.00	0.00
2,300.00	17.00	80.00	2,243.39	75.52	428.30	-427.90	0.00	0.00	0.00
2,400.00	17.00	80.00	2,339.02	80.60	457.10	-456.67	0.00	0.00	0.00
2,500.00	17.00	80.00	2,434.65	85.68	485.89	-485.43	0.00	0.00	0.00
2,600.00	17.00	80.00	2,530.28	90.75	514.68	-514.20	0.00	0.00	0.00
2,700.00	17.00	80.00	2,625.91	95.83	543.48	-542.97	0.00	0.00	0.00
2,800.00	17.00	80.00	2,721.54	100.91	572.27	-571.73	0.00	0.00	0.00
2,900.00	17.00	80.00	2,817.17	105.98	601.06	-600.50	0.00	0.00	0.00
3,000.00	17.00	80.00	2,912.80	111.06	629.85	-629.26	0.00	0.00	0.00
3,100.00	17.00	80.00	3,008.43	116.14	658.65	-658.03	0.00	0.00	0.00
3,200.00	17.00	80.00	3,104.06	121.21	687.44	-686.80	0.00	0.00	0.00
3,300.00	17.00	80.00	3,199.70	126.29	716.23	-715.56	0.00	0.00	0.00
3,400.00	17.00	80.00	3,295.33	131.37	745.03	-744.33	0.00	0.00	0.00
3,500.00	17.00	80.00	3,390.96	136.45	773.82	-773.09	0.00	0.00	0.00
3,600.00	17.00	80.00	3,486.59	141.52	802.61	-801.86	0.00	0.00	0.00
3,700.00	17.00	80.00	3,582.22	146.60	831.41	-830.63	0.00	0.00	0.00
3,800.00	17.00	80.00	3,677.85	151.68	860.20	-859.39	0.00	0.00	0.00
3,900.00	17.00	80.00	3,773.48	156.75	888.99	-888.16	0.00	0.00	0.00
4,000.00	17.00	80.00	3,869.11	161.83	917.78	-916.92	0.00	0.00	0.00
4,100.00	17.00	80.00	3,964.74	166.91	946.58	-945.69	0.00	0.00	0.00
4,200.00	17.00	80.00	4,060.37	171.98	975.37	-974.46	0.00	0.00	0.00
4,300.00	17.00	80.00	4,156.00	177.06	1,004.16	-1,003.22	0.00	0.00	0.00
Sussex									
4,323.33	17.00	80.00	4,178.31	178.25	1,010.88	-1,009.93	0.00	0.00	0.00

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Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Begin Drop @ 4323.33ft									
4,400.00	15.47	80.00	4,251.92	181.97	1,031.99	-1,031.02	2.00	-2.00	0.00
4,500.00	13.47	80.00	4,348.75	186.31	1,056.59	-1,055.60	2.00	-2.00	0.00
4,600.00	11.47	80.00	4,446.38	190.05	1,077.85	-1,076.84	2.00	-2.00	0.00
4,700.00	9.47	80.00	4,544.71	193.21	1,095.74	-1,094.71	2.00	-2.00	0.00
4,800.00	7.47	80.00	4,643.62	195.76	1,110.24	-1,109.20	2.00	-2.00	0.00
4,900.00	5.47	80.00	4,742.98	197.72	1,121.33	-1,120.28	2.00	-2.00	0.00
5,000.00	3.47	80.00	4,842.67	199.07	1,129.00	-1,127.94	2.00	-2.00	0.00
5,100.00	1.47	80.00	4,942.57	199.82	1,133.23	-1,132.17	2.00	-2.00	0.00
5,173.33	0.00	80.00	5,015.89	199.98	1,134.16	-1,133.10	2.00	-2.00	0.00
End Drop @ 5173.33ft									
5,200.00	0.00	0.00	5,042.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
5,300.00	0.00	0.00	5,142.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
5,400.00	0.00	0.00	5,242.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
5,500.00	0.00	0.00	5,342.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
5,600.00	0.00	0.00	5,442.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
5,700.00	0.00	0.00	5,542.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
5,800.00	0.00	0.00	5,642.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
5,900.00	0.00	0.00	5,742.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,000.00	0.00	0.00	5,842.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,100.00	0.00	0.00	5,942.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,200.00	0.00	0.00	6,042.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,300.00	0.00	0.00	6,142.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,400.00	0.00	0.00	6,242.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,500.00	0.00	0.00	6,342.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,600.00	0.00	0.00	6,442.56	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
6,682.83	0.00	0.00	6,525.39	199.98	1,134.16	-1,133.10	0.00	0.00	0.00
KOP @ 6682.83ft									
6,700.00	1.55	270.30	6,542.56	199.98	1,133.93	-1,132.86	9.00	9.00	0.00
6,800.00	10.55	270.30	6,641.90	200.04	1,123.41	-1,122.34	9.00	9.00	0.00
6,900.00	19.55	270.30	6,738.38	200.17	1,097.48	-1,096.41	9.00	9.00	0.00
7,000.00	28.55	270.30	6,829.61	200.39	1,056.77	-1,055.71	9.00	9.00	0.00
7,100.00	37.55	270.30	6,913.34	200.67	1,002.30	-1,001.24	9.00	9.00	0.00
DLS = 9°/100'									
7,200.00	46.55	270.30	6,987.53	201.02	935.40	-934.33	9.00	9.00	0.00
7,228.41	49.10	270.30	7,006.60	201.13	914.35	-913.28	9.00	9.00	0.00
Sharon Springs									
7,300.00	55.55	270.30	7,050.34	201.42	857.72	-856.65	9.00	9.00	0.00
7,359.38	60.89	270.30	7,081.60	201.69	807.26	-806.19	9.00	9.00	0.00
Niobrara Top									
7,400.00	64.55	270.30	7,100.22	201.87	771.16	-770.10	9.00	9.00	0.00
7,500.00	73.55	270.30	7,135.94	202.36	677.87	-676.81	9.00	9.00	0.00
7,503.77	73.88	270.30	7,137.00	202.38	674.25	-673.19	9.00	9.00	0.00
Niobrara B Bench - Niobrara C Bench									
7,600.00	82.55	270.30	7,156.64	202.87	580.15	-579.08	9.00	9.00	0.00
7,687.35	90.41	270.30	7,162.00	203.32	493.03	-491.96	9.00	9.00	0.00
End Build @ 7687.35ft - Top of Production									
7,700.00	90.41	270.30	7,161.91	203.39	480.38	-479.31	0.00	0.00	0.00
7,800.00	90.41	270.30	7,161.20	203.91	380.38	-379.31	0.00	0.00	0.00
7,900.00	90.41	270.30	7,160.49	204.43	280.39	-279.31	0.00	0.00	0.00
8,000.00	90.41	270.30	7,159.78	204.95	180.39	-179.32	0.00	0.00	0.00
8,100.00	90.41	270.30	7,159.08	205.47	80.40	-79.32	0.00	0.00	0.00
8,200.00	90.41	270.30	7,158.37	206.00	-19.60	20.68	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,300.00	90.41	270.30	7,157.66	206.52	-119.60	120.68	0.00	0.00	0.00	
8,400.00	90.41	270.30	7,156.95	207.04	-219.59	220.67	0.00	0.00	0.00	
8,500.00	90.41	270.30	7,156.24	207.56	-319.59	320.67	0.00	0.00	0.00	
8,600.00	90.41	270.30	7,155.53	208.08	-419.58	420.67	0.00	0.00	0.00	
8,700.00	90.41	270.30	7,154.82	208.60	-519.58	520.67	0.00	0.00	0.00	
8,800.00	90.41	270.30	7,154.11	209.12	-619.58	620.66	0.00	0.00	0.00	
8,900.00	90.41	270.30	7,153.40	209.64	-719.57	720.66	0.00	0.00	0.00	
9,000.00	90.41	270.30	7,152.70	210.16	-819.57	820.66	0.00	0.00	0.00	
9,100.00	90.41	270.30	7,151.99	210.69	-919.57	920.66	0.00	0.00	0.00	
9,200.00	90.41	270.30	7,151.28	211.21	-1,019.56	1,020.65	0.00	0.00	0.00	
9,300.00	90.41	270.30	7,150.57	211.73	-1,119.56	1,120.65	0.00	0.00	0.00	
9,400.00	90.41	270.30	7,149.86	212.25	-1,219.55	1,220.65	0.00	0.00	0.00	
9,500.00	90.41	270.30	7,149.15	212.77	-1,319.55	1,320.65	0.00	0.00	0.00	
9,600.00	90.41	270.30	7,148.44	213.29	-1,419.55	1,420.64	0.00	0.00	0.00	
9,700.00	90.41	270.30	7,147.73	213.81	-1,519.54	1,520.64	0.00	0.00	0.00	
9,800.00	90.41	270.30	7,147.02	214.33	-1,619.54	1,620.64	0.00	0.00	0.00	
9,900.00	90.41	270.30	7,146.31	214.85	-1,719.53	1,720.64	0.00	0.00	0.00	
10,000.00	90.41	270.30	7,145.61	215.38	-1,819.53	1,820.63	0.00	0.00	0.00	
10,100.00	90.41	270.30	7,144.90	215.90	-1,919.53	1,920.63	0.00	0.00	0.00	
10,200.00	90.41	270.30	7,144.19	216.42	-2,019.52	2,020.63	0.00	0.00	0.00	
10,300.00	90.41	270.30	7,143.48	216.94	-2,119.52	2,120.63	0.00	0.00	0.00	
10,400.00	90.41	270.30	7,142.77	217.46	-2,219.51	2,220.62	0.00	0.00	0.00	
10,500.00	90.41	270.30	7,142.06	217.98	-2,319.51	2,320.62	0.00	0.00	0.00	
10,600.00	90.41	270.30	7,141.35	218.50	-2,419.51	2,420.62	0.00	0.00	0.00	
10,700.00	90.41	270.30	7,140.64	219.02	-2,519.50	2,520.62	0.00	0.00	0.00	
10,800.00	90.41	270.30	7,139.93	219.54	-2,619.50	2,620.61	0.00	0.00	0.00	
10,900.00	90.41	270.30	7,139.23	220.07	-2,719.50	2,720.61	0.00	0.00	0.00	
11,000.00	90.41	270.30	7,138.52	220.59	-2,819.49	2,820.61	0.00	0.00	0.00	
11,100.00	90.41	270.30	7,137.81	221.11	-2,919.49	2,920.61	0.00	0.00	0.00	
11,200.00	90.41	270.30	7,137.10	221.63	-3,019.48	3,020.60	0.00	0.00	0.00	
11,300.00	90.41	270.30	7,136.39	222.15	-3,119.48	3,120.60	0.00	0.00	0.00	
11,400.00	90.41	270.30	7,135.68	222.67	-3,219.48	3,220.60	0.00	0.00	0.00	
11,500.00	90.41	270.30	7,134.97	223.19	-3,319.47	3,320.60	0.00	0.00	0.00	
11,600.00	90.41	270.30	7,134.26	223.71	-3,419.47	3,420.59	0.00	0.00	0.00	
11,700.00	90.41	270.30	7,133.55	224.23	-3,519.46	3,520.59	0.00	0.00	0.00	
11,800.00	90.41	270.30	7,132.85	224.76	-3,619.46	3,620.59	0.00	0.00	0.00	
11,900.00	90.41	270.30	7,132.14	225.28	-3,719.46	3,720.59	0.00	0.00	0.00	
12,000.00	90.41	270.30	7,131.43	225.80	-3,819.45	3,820.58	0.00	0.00	0.00	
12,100.00	90.41	270.30	7,130.72	226.32	-3,919.45	3,920.58	0.00	0.00	0.00	
12,200.00	90.41	270.30	7,130.01	226.84	-4,019.45	4,020.58	0.00	0.00	0.00	
12,300.00	90.41	270.30	7,129.30	227.36	-4,119.44	4,120.58	0.00	0.00	0.00	
12,342.35	90.41	270.30	7,129.00	227.58	-4,161.79	4,162.92	0.00	0.00	0.00	
TD Well @ 12342.35ft										

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
3N-R68W-Sec. 27_Secti	0.00	0.00	0.00	1.09	-179.81	14,601,968.89	1,645,309.73	40.206606	-104.982475
- plan misses target center by 179.81usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-901.61	-4,440.91	14,601,066.37	1,640,869.01		
Point 2			0.00	-893.57	-1,805.40	14,601,074.95	1,643,504.52		
Point 3			0.00	-845.64	823.41	14,601,123.42	1,646,133.32		
Point 4			0.00	-3,498.41	802.83	14,598,470.65	1,646,113.28		
Point 5			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.52		
Point 6			0.00	-6,204.04	-4,436.84	14,595,763.95	1,640,874.16		
HILGERS 33N2-22HZ_4	0.00	0.00	0.00	0.00	0.00	14,601,967.84	1,645,489.54	40.206603	-104.981831
- plan hits target center									
- Polygon									
Point 1			0.00	907.47	-3,304.65	14,602,874.63	1,642,184.71		
Point 2			0.00	906.17	-3,270.27	14,602,873.34	1,642,219.09		
Point 3			0.00	902.25	-3,235.34	14,602,869.42	1,642,254.02		
Point 4			0.00	895.74	-3,200.80	14,602,862.92	1,642,288.56		
Point 5			0.00	886.67	-3,166.85	14,602,853.86	1,642,322.51		
Point 6			0.00	875.08	-3,133.67	14,602,842.28	1,642,355.69		
Point 7			0.00	861.04	-3,101.45	14,602,828.24	1,642,387.91		
Point 8			0.00	844.64	-3,070.36	14,602,811.85	1,642,419.01		
Point 9			0.00	825.95	-3,040.59	14,602,793.16	1,642,448.78		
Point 10			0.00	805.10	-3,012.30	14,602,772.32	1,642,477.08		
Point 11			0.00	782.19	-2,985.64	14,602,749.42	1,642,503.74		
Point 12			0.00	757.36	-2,960.78	14,602,724.59	1,642,528.61		
Point 13			0.00	730.72	-2,937.83	14,602,697.96	1,642,551.56		
Point 14			0.00	702.46	-2,916.94	14,602,669.70	1,642,572.46		
Point 15			0.00	672.70	-2,898.23	14,602,639.94	1,642,591.17		
Point 16			0.00	641.64	-2,881.78	14,602,608.89	1,642,607.63		
Point 17			0.00	609.44	-2,867.71	14,602,576.69	1,642,621.71		
Point 18			0.00	576.26	-2,856.09	14,602,543.51	1,642,633.33		
Point 19			0.00	542.32	-2,846.96	14,602,509.57	1,642,642.47		
Point 20			0.00	507.79	-2,840.41	14,602,475.05	1,642,649.03		
Point 21			0.00	472.87	-2,836.46	14,602,440.13	1,642,652.98		
Point 22			0.00	437.75	-2,835.12	14,602,405.01	1,642,654.33		
Point 23			0.00	402.62	-2,836.41	14,602,369.88	1,642,653.05		
Point 24			0.00	367.70	-2,840.33	14,602,334.96	1,642,649.14		
Point 25			0.00	333.16	-2,846.85	14,602,300.41	1,642,642.62		
Point 26			0.00	299.20	-2,855.92	14,602,266.45	1,642,633.56		
Point 27			0.00	266.02	-2,867.51	14,602,233.27	1,642,621.98		
Point 28			0.00	233.80	-2,881.55	14,602,201.05	1,642,607.94		
Point 29			0.00	202.71	-2,897.95	14,602,169.95	1,642,591.55		
Point 30			0.00	172.95	-2,916.63	14,602,140.19	1,642,572.88		
Point 31			0.00	144.65	-2,937.48	14,602,111.89	1,642,552.03		
Point 32			0.00	118.00	-2,960.40	14,602,085.23	1,642,529.12		
Point 33			0.00	93.13	-2,985.24	14,602,060.36	1,642,504.28		
Point 34			0.00	70.19	-3,011.86	14,602,037.41	1,642,477.67		
Point 35			0.00	49.30	-3,040.13	14,602,016.51	1,642,449.40		
Point 36			0.00	30.59	-3,069.88	14,601,997.80	1,642,419.65		
Point 37			0.00	14.14	-3,100.94	14,601,981.34	1,642,388.60		
Point 38			0.00	0.07	-3,133.14	14,601,967.27	1,642,356.40		
Point 39			0.00	-11.56	-3,166.32	14,601,955.63	1,642,323.22		
Point 40			0.00	-20.68	-3,200.26	14,601,946.50	1,642,289.29		
Point 41			0.00	-27.23	-3,234.79	14,601,939.94	1,642,254.76		
Point 42			0.00	-31.19	-3,269.72	14,601,935.98	1,642,219.83		
Point 43			0.00	-32.53	-3,305.21	14,601,934.63	1,642,184.34		
Point 44			0.00	-31.23	-3,339.96	14,601,935.92	1,642,149.59		
Point 45			0.00	-27.31	-3,374.89	14,601,939.84	1,642,114.66		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 46	0.00	-20.80	-3,409.43	14,601,946.34	1,642,080.12
Point 47	0.00	-11.73	-3,443.39	14,601,955.40	1,642,046.15
Point 48	0.00	-0.14	-3,476.56	14,601,966.99	1,642,012.98
Point 49	0.00	13.90	-3,508.79	14,601,981.02	1,641,980.75
Point 50	0.00	30.30	-3,539.87	14,601,997.41	1,641,949.66
Point 51	0.00	48.99	-3,569.64	14,602,016.10	1,641,919.89
Point 52	0.00	69.85	-3,597.93	14,602,036.95	1,641,891.60
Point 53	0.00	92.75	-3,624.59	14,602,059.84	1,641,864.93
Point 54	0.00	117.59	-3,649.46	14,602,084.68	1,641,840.06
Point 55	0.00	144.22	-3,672.39	14,602,111.31	1,641,817.12
Point 56	0.00	172.49	-3,693.29	14,602,139.57	1,641,796.22
Point 57	0.00	202.23	-3,712.00	14,602,169.31	1,641,777.50
Point 58	0.00	233.30	-3,728.45	14,602,200.37	1,641,761.04
Point 59	0.00	265.51	-3,742.52	14,602,232.58	1,641,746.97
Point 60	0.00	298.67	-3,754.14	14,602,265.74	1,641,735.34
Point 61	0.00	332.62	-3,763.27	14,602,299.69	1,641,726.20
Point 62	0.00	367.15	-3,769.82	14,602,334.22	1,641,719.65
Point 63	0.00	402.07	-3,773.77	14,602,369.13	1,641,715.69
Point 64	0.00	437.19	-3,775.10	14,602,404.25	1,641,714.35
Point 65	0.00	472.31	-3,773.82	14,602,439.37	1,641,715.62
Point 66	0.00	507.24	-3,769.90	14,602,474.31	1,641,719.54
Point 67	0.00	541.78	-3,763.38	14,602,508.85	1,641,726.05
Point 68	0.00	575.74	-3,754.31	14,602,542.81	1,641,735.11
Point 69	0.00	608.92	-3,742.72	14,602,575.99	1,641,746.70
Point 70	0.00	641.14	-3,728.68	14,602,608.21	1,641,760.73
Point 71	0.00	672.23	-3,712.28	14,602,639.31	1,641,777.12
Point 72	0.00	702.00	-3,693.60	14,602,669.08	1,641,795.80
Point 73	0.00	730.29	-3,672.74	14,602,697.38	1,641,816.65
Point 74	0.00	756.95	-3,649.83	14,602,724.04	1,641,839.56
Point 75	0.00	781.81	-3,624.99	14,602,748.90	1,641,864.39
Point 76	0.00	804.76	-3,598.37	14,602,771.86	1,641,891.01
Point 77	0.00	825.64	-3,570.11	14,602,792.75	1,641,919.26
Point 78	0.00	844.35	-3,540.35	14,602,811.46	1,641,949.02
Point 79	0.00	860.80	-3,509.29	14,602,827.92	1,641,980.07
Point 80	0.00	874.87	-3,477.09	14,602,842.00	1,642,012.27
Point 81	0.00	886.50	-3,443.91	14,602,853.63	1,642,045.45
Point 82	0.00	895.62	-3,409.97	14,602,862.76	1,642,079.39
Point 83	0.00	902.17	-3,375.44	14,602,869.32	1,642,113.92
Point 84	0.00	906.13	-3,340.52	14,602,873.28	1,642,148.84
Point 85	0.00	907.47	-3,305.39	14,602,874.63	1,642,183.97
Point 86	0.00	887.48	-3,304.65	14,602,854.64	1,642,184.71
Point 87	0.00	886.25	-3,338.28	14,602,853.40	1,642,151.08
Point 88	0.00	882.52	-3,371.72	14,602,849.67	1,642,117.64
Point 89	0.00	876.30	-3,404.79	14,602,843.44	1,642,084.57
Point 90	0.00	867.62	-3,437.32	14,602,834.75	1,642,052.04
Point 91	0.00	856.54	-3,469.09	14,602,823.67	1,642,020.28
Point 92	0.00	843.12	-3,499.94	14,602,810.24	1,641,989.43
Point 93	0.00	827.42	-3,529.71	14,602,794.53	1,641,959.66
Point 94	0.00	809.55	-3,558.23	14,602,776.66	1,641,931.15
Point 95	0.00	789.59	-3,585.32	14,602,756.69	1,641,904.06
Point 96	0.00	767.67	-3,610.86	14,602,734.77	1,641,878.52
Point 97	0.00	743.89	-3,634.67	14,602,710.98	1,641,854.72
Point 98	0.00	718.41	-3,656.66	14,602,685.50	1,641,832.73
Point 99	0.00	691.35	-3,676.66	14,602,658.43	1,641,812.74
Point 100	0.00	662.88	-3,694.60	14,602,629.96	1,641,794.81
Point 101	0.00	633.14	-3,710.35	14,602,600.22	1,641,779.06
Point 102	0.00	602.31	-3,723.84	14,602,569.38	1,641,765.58
Point 103	0.00	570.55	-3,734.99	14,602,537.62	1,641,754.43
Point 104	0.00	538.07	-3,743.73	14,602,505.14	1,641,745.70
Point 105	0.00	505.00	-3,750.03	14,602,472.07	1,641,739.41
Point 106	0.00	471.57	-3,753.83	14,602,438.64	1,641,735.61
Point 107	0.00	437.94	-3,755.12	14,602,405.01	1,641,734.33
Point 108	0.00	404.31	-3,753.90	14,602,371.38	1,641,735.56
Point 109	0.00	370.86	-3,750.17	14,602,337.93	1,641,739.30

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 110			0.00	337.79	-3,743.95	14,602,304.86	1,641,745.52		
Point 111			0.00	305.27	-3,735.27	14,602,272.34	1,641,754.21		
Point 112			0.00	273.50	-3,724.19	14,602,240.57	1,641,765.29		
Point 113			0.00	242.64	-3,710.76	14,602,209.72	1,641,778.73		
Point 114			0.00	212.87	-3,695.07	14,602,179.95	1,641,794.43		
Point 115			0.00	184.36	-3,677.19	14,602,151.44	1,641,812.31		
Point 116			0.00	157.26	-3,657.23	14,602,124.35	1,641,832.28		
Point 117			0.00	131.73	-3,635.31	14,602,098.82	1,641,854.20		
Point 118			0.00	107.91	-3,611.54	14,602,075.01	1,641,877.98		
Point 119			0.00	85.93	-3,586.06	14,602,053.03	1,641,903.46		
Point 120			0.00	65.92	-3,559.00	14,602,033.03	1,641,930.53		
Point 121			0.00	47.98	-3,530.52	14,602,015.09	1,641,959.01		
Point 122			0.00	32.23	-3,500.79	14,601,999.35	1,641,988.74		
Point 123			0.00	18.74	-3,469.95	14,601,985.87	1,642,019.59		
Point 124			0.00	7.59	-3,438.20	14,601,974.72	1,642,051.34		
Point 125			0.00	-1.15	-3,405.70	14,601,965.99	1,642,083.84		
Point 126			0.00	-7.44	-3,372.65	14,601,959.71	1,642,116.89		
Point 127			0.00	-11.25	-3,339.21	14,601,955.90	1,642,150.33		
Point 128			0.00	-12.52	-3,305.21	14,601,954.64	1,642,184.33		
Point 129			0.00	-11.31	-3,271.95	14,601,955.86	1,642,217.59		
Point 130			0.00	-7.58	-3,238.51	14,601,959.59	1,642,251.03		
Point 131			0.00	-1.35	-3,205.43	14,601,965.83	1,642,284.11		
Point 132			0.00	7.32	-3,172.92	14,601,974.51	1,642,316.62		
Point 133			0.00	18.40	-3,141.14	14,601,985.59	1,642,348.40		
Point 134			0.00	31.83	-3,110.29	14,601,999.03	1,642,379.24		
Point 135			0.00	47.52	-3,080.51	14,602,014.73	1,642,409.02		
Point 136			0.00	65.39	-3,052.00	14,602,032.60	1,642,437.53		
Point 137			0.00	85.35	-3,024.91	14,602,052.57	1,642,464.61		
Point 138			0.00	107.27	-2,999.37	14,602,074.49	1,642,490.15		
Point 139			0.00	131.05	-2,975.56	14,602,098.28	1,642,513.95		
Point 140			0.00	156.53	-2,953.57	14,602,123.76	1,642,535.94		
Point 141			0.00	183.59	-2,933.57	14,602,150.83	1,642,555.93		
Point 142			0.00	212.07	-2,915.63	14,602,179.31	1,642,573.87		
Point 143			0.00	241.80	-2,899.87	14,602,209.04	1,642,589.62		
Point 144			0.00	272.63	-2,886.39	14,602,239.88	1,642,603.10		
Point 145			0.00	304.39	-2,875.24	14,602,271.64	1,642,614.24		
Point 146			0.00	336.88	-2,866.50	14,602,304.13	1,642,622.97		
Point 147			0.00	369.93	-2,860.21	14,602,337.18	1,642,629.26		
Point 148			0.00	403.37	-2,856.40	14,602,370.62	1,642,633.06		
Point 149			0.00	437.00	-2,855.10	14,602,404.25	1,642,634.35		
Point 150			0.00	470.63	-2,856.33	14,602,437.88	1,642,633.11		
Point 151			0.00	504.07	-2,860.06	14,602,471.32	1,642,629.38		
Point 152			0.00	537.16	-2,866.28	14,602,504.41	1,642,623.15		
Point 153			0.00	569.67	-2,874.97	14,602,536.92	1,642,614.45		
Point 154			0.00	601.44	-2,886.04	14,602,568.69	1,642,603.38		
Point 155			0.00	632.30	-2,899.47	14,602,599.54	1,642,589.94		
Point 156			0.00	662.07	-2,915.17	14,602,629.31	1,642,574.24		
Point 157			0.00	690.58	-2,933.04	14,602,657.82	1,642,556.36		
Point 158			0.00	717.68	-2,953.00	14,602,684.91	1,642,536.39		
Point 159			0.00	743.21	-2,974.92	14,602,710.44	1,642,514.47		
Point 160			0.00	767.03	-2,998.69	14,602,734.25	1,642,490.69		
Point 161			0.00	789.01	-3,024.17	14,602,756.23	1,642,465.21		
Point 162			0.00	809.02	-3,051.23	14,602,776.23	1,642,438.15		
Point 163			0.00	826.96	-3,079.70	14,602,794.17	1,642,409.67		
Point 164			0.00	842.71	-3,109.44	14,602,809.91	1,642,379.93		
Point 165			0.00	856.20	-3,140.28	14,602,823.39	1,642,349.09		
Point 166			0.00	867.35	-3,172.03	14,602,834.54	1,642,317.33		
Point 167			0.00	876.10	-3,204.52	14,602,843.28	1,642,284.84		
Point 168			0.00	882.38	-3,237.58	14,602,849.55	1,642,251.78		
Point 169			0.00	886.19	-3,271.02	14,602,853.36	1,642,218.34		
Point 170			0.00	887.48	-3,305.39	14,602,854.64	1,642,183.97		
Point 171			0.00	907.47	-3,304.65	14,602,874.63	1,642,184.71		
HILGERS 33N2-22HZ 4	0.00	0.00	0.00	0.00	0.00	14,601,967.84	1,645,489.54	40.206603	-104.981831

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

- plan hits target center						
- Polygon						
Point 1	0.00	957.73	640.48	14,602,925.70	1,646,129.82	
Point 2	0.00	956.43	674.85	14,602,924.41	1,646,164.20	
Point 3	0.00	952.51	709.78	14,602,920.49	1,646,199.13	
Point 4	0.00	946.01	744.32	14,602,914.00	1,646,233.67	
Point 5	0.00	936.93	778.28	14,602,904.93	1,646,267.63	
Point 6	0.00	925.34	811.46	14,602,893.34	1,646,300.81	
Point 7	0.00	911.31	843.68	14,602,879.32	1,646,333.03	
Point 8	0.00	894.90	874.77	14,602,862.92	1,646,364.13	
Point 9	0.00	876.21	904.54	14,602,844.23	1,646,393.90	
Point 10	0.00	855.36	932.83	14,602,823.39	1,646,422.20	
Point 11	0.00	832.45	959.49	14,602,800.48	1,646,448.86	
Point 12	0.00	807.62	984.35	14,602,775.66	1,646,473.73	
Point 13	0.00	780.98	1,007.30	14,602,749.02	1,646,496.68	
Point 14	0.00	752.72	1,028.18	14,602,720.77	1,646,517.57	
Point 15	0.00	722.98	1,046.89	14,602,691.03	1,646,536.28	
Point 16	0.00	691.90	1,063.34	14,602,659.95	1,646,552.74	
Point 17	0.00	659.70	1,077.41	14,602,627.76	1,646,566.82	
Point 18	0.00	626.54	1,089.04	14,602,594.60	1,646,578.45	
Point 19	0.00	592.58	1,098.16	14,602,560.64	1,646,587.58	
Point 20	0.00	558.05	1,104.71	14,602,526.11	1,646,594.14	
Point 21	0.00	523.13	1,108.67	14,602,491.19	1,646,598.10	
Point 22	0.00	488.01	1,110.01	14,602,456.07	1,646,599.45	
Point 23	0.00	452.89	1,108.71	14,602,420.95	1,646,598.16	
Point 24	0.00	417.96	1,104.79	14,602,386.02	1,646,594.25	
Point 25	0.00	383.42	1,098.28	14,602,351.48	1,646,587.74	
Point 26	0.00	349.47	1,089.21	14,602,317.53	1,646,578.68	
Point 27	0.00	316.29	1,077.62	14,602,284.35	1,646,567.10	
Point 28	0.00	284.06	1,063.58	14,602,252.11	1,646,553.06	
Point 29	0.00	252.97	1,047.18	14,602,221.02	1,646,536.67	
Point 30	0.00	223.21	1,028.49	14,602,191.26	1,646,517.99	
Point 31	0.00	194.91	1,007.64	14,602,162.95	1,646,497.14	
Point 32	0.00	168.26	984.73	14,602,136.30	1,646,474.24	
Point 33	0.00	143.39	959.90	14,602,111.42	1,646,449.41	
Point 34	0.00	120.45	933.26	14,602,088.48	1,646,422.78	
Point 35	0.00	99.56	905.00	14,602,067.58	1,646,394.52	
Point 36	0.00	80.85	875.25	14,602,048.87	1,646,364.77	
Point 37	0.00	64.41	844.18	14,602,032.42	1,646,333.71	
Point 38	0.00	50.33	811.98	14,602,018.33	1,646,301.51	
Point 39	0.00	38.70	778.81	14,602,006.70	1,646,268.34	
Point 40	0.00	29.59	744.86	14,601,997.58	1,646,234.39	
Point 41	0.00	23.03	710.33	14,601,991.01	1,646,199.87	
Point 42	0.00	19.07	675.41	14,601,987.05	1,646,164.95	
Point 43	0.00	17.73	639.91	14,601,985.70	1,646,129.45	
Point 44	0.00	19.04	605.17	14,601,987.00	1,646,094.71	
Point 45	0.00	22.95	570.24	14,601,990.90	1,646,059.78	
Point 46	0.00	29.46	535.70	14,601,997.41	1,646,025.23	
Point 47	0.00	38.54	501.74	14,602,006.48	1,645,991.27	
Point 48	0.00	50.12	468.57	14,602,018.05	1,645,958.10	
Point 49	0.00	64.16	436.34	14,602,032.09	1,645,925.87	
Point 50	0.00	80.57	405.25	14,602,048.49	1,645,894.77	
Point 51	0.00	99.25	375.49	14,602,067.16	1,645,865.01	
Point 52	0.00	120.11	347.19	14,602,088.02	1,645,836.71	
Point 53	0.00	143.01	320.54	14,602,110.91	1,645,810.05	
Point 54	0.00	167.85	295.67	14,602,135.75	1,645,785.18	
Point 55	0.00	194.48	272.73	14,602,162.37	1,645,762.23	
Point 56	0.00	222.75	251.84	14,602,190.64	1,645,741.34	
Point 57	0.00	252.49	233.13	14,602,220.37	1,645,722.62	
Point 58	0.00	283.57	216.68	14,602,251.45	1,645,706.16	
Point 59	0.00	315.77	202.61	14,602,283.65	1,645,692.09	
Point 60	0.00	348.93	190.98	14,602,316.81	1,645,680.45	
Point 61	0.00	382.88	181.86	14,602,350.75	1,645,671.32	
Point 62	0.00	417.41	175.31	14,602,385.28	1,645,664.77	

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 63	0.00	452.33	171.35	14,602,420.20	1,645,660.80
Point 64	0.00	487.45	170.02	14,602,455.32	1,645,659.46
Point 65	0.00	522.57	171.31	14,602,490.44	1,645,660.74
Point 66	0.00	557.50	175.23	14,602,525.37	1,645,664.66
Point 67	0.00	592.04	181.74	14,602,559.91	1,645,671.16
Point 68	0.00	626.00	190.81	14,602,593.88	1,645,680.22
Point 69	0.00	659.18	202.40	14,602,627.06	1,645,691.81
Point 70	0.00	691.41	216.44	14,602,659.29	1,645,705.84
Point 71	0.00	722.49	232.84	14,602,690.37	1,645,722.23
Point 72	0.00	752.26	251.53	14,602,720.15	1,645,740.92
Point 73	0.00	780.55	272.39	14,602,748.44	1,645,761.77
Point 74	0.00	807.21	295.29	14,602,775.11	1,645,784.67
Point 75	0.00	832.07	320.13	14,602,799.97	1,645,809.50
Point 76	0.00	855.02	346.76	14,602,822.93	1,645,836.13
Point 77	0.00	875.90	375.03	14,602,843.81	1,645,864.39
Point 78	0.00	894.62	404.77	14,602,862.54	1,645,894.13
Point 79	0.00	911.06	435.84	14,602,878.99	1,645,925.19
Point 80	0.00	925.13	468.05	14,602,893.06	1,645,957.40
Point 81	0.00	936.77	501.21	14,602,904.71	1,645,990.56
Point 82	0.00	945.88	535.16	14,602,913.83	1,646,024.51
Point 83	0.00	952.43	569.69	14,602,920.38	1,646,059.04
Point 84	0.00	956.40	604.61	14,602,924.36	1,646,093.96
Point 85	0.00	957.73	639.73	14,602,925.70	1,646,129.07
Point 86	0.00	937.74	640.48	14,602,905.71	1,646,129.83
Point 87	0.00	936.52	606.85	14,602,904.48	1,646,096.20
Point 88	0.00	932.78	573.40	14,602,900.73	1,646,062.75
Point 89	0.00	926.56	540.33	14,602,894.51	1,646,029.68
Point 90	0.00	917.89	507.81	14,602,885.83	1,645,997.16
Point 91	0.00	906.80	476.04	14,602,874.73	1,645,965.40
Point 92	0.00	893.38	445.18	14,602,861.31	1,645,934.54
Point 93	0.00	877.68	415.42	14,602,845.60	1,645,904.78
Point 94	0.00	859.81	386.90	14,602,827.73	1,645,876.26
Point 95	0.00	839.86	359.80	14,602,807.77	1,645,849.17
Point 96	0.00	817.93	334.27	14,602,785.84	1,645,823.64
Point 97	0.00	794.16	310.45	14,602,762.06	1,645,799.83
Point 98	0.00	768.67	288.47	14,602,736.57	1,645,777.85
Point 99	0.00	741.61	268.46	14,602,709.50	1,645,757.85
Point 100	0.00	713.14	250.52	14,602,681.03	1,645,739.91
Point 101	0.00	683.40	234.77	14,602,651.29	1,645,724.17
Point 102	0.00	652.57	221.28	14,602,620.45	1,645,710.69
Point 103	0.00	620.82	210.13	14,602,588.70	1,645,699.54
Point 104	0.00	588.33	201.39	14,602,556.21	1,645,690.81
Point 105	0.00	555.26	195.10	14,602,523.14	1,645,684.53
Point 106	0.00	521.83	191.29	14,602,489.71	1,645,680.72
Point 107	0.00	488.20	190.01	14,602,456.08	1,645,679.45
Point 108	0.00	454.57	191.23	14,602,422.45	1,645,680.68
Point 109	0.00	421.12	194.96	14,602,389.00	1,645,684.41
Point 110	0.00	388.05	201.19	14,602,355.93	1,645,690.65
Point 111	0.00	355.54	209.86	14,602,323.42	1,645,699.33
Point 112	0.00	323.76	220.94	14,602,291.64	1,645,710.41
Point 113	0.00	292.90	234.37	14,602,260.78	1,645,723.85
Point 114	0.00	263.14	250.06	14,602,231.03	1,645,739.55
Point 115	0.00	234.62	267.93	14,602,202.51	1,645,757.42
Point 116	0.00	207.52	287.89	14,602,175.42	1,645,777.39
Point 117	0.00	182.00	309.81	14,602,149.90	1,645,799.31
Point 118	0.00	158.17	333.59	14,602,126.08	1,645,823.10
Point 119	0.00	136.20	359.07	14,602,104.11	1,645,848.58
Point 120	0.00	116.18	386.13	14,602,084.10	1,645,875.65
Point 121	0.00	98.24	414.61	14,602,066.16	1,645,904.13
Point 122	0.00	82.49	444.34	14,602,050.42	1,645,933.86
Point 123	0.00	69.00	475.17	14,602,036.93	1,645,964.70
Point 124	0.00	57.86	506.93	14,602,025.80	1,645,996.46
Point 125	0.00	49.11	539.42	14,602,017.06	1,646,028.95
Point 126	0.00	42.82	572.48	14,602,010.77	1,646,062.01

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Planning Report

Database:	PLANNING				Local Co-ordinate Reference:			Well HILGERS 33N2-22HZ		
Company:	US ROCKIES WATTENBERG PLANNING				TVD Reference:			RKB = 17' @ 5016.00usft (D Rig)		
Project:	WELD-NAD83-UTMFT13N				MD Reference:			RKB = 17' @ 5016.00usft (D Rig)		
Site:	3N-68W-22 Hilgers 16-22HZ Pad				North Reference:			True		
Well:	HILGERS 33N2-22HZ				Survey Calculation Method:			Minimum Curvature		
Wellbore:	Plan A									
Design:	Permit Rev-1									
	Point 127	0.00	39.02	605.91	14,602,006.98	1,646,095.44				
	Point 128	0.00	37.74	639.91	14,602,005.71	1,646,129.44				
	Point 129	0.00	38.95	673.17	14,602,006.92	1,646,162.70				
	Point 130	0.00	42.68	706.62	14,602,010.66	1,646,196.15				
	Point 131	0.00	48.91	739.70	14,602,016.90	1,646,229.23				
	Point 132	0.00	57.58	772.21	14,602,025.58	1,646,261.74				
	Point 133	0.00	68.66	803.98	14,602,036.66	1,646,293.51				
	Point 134	0.00	82.09	834.84	14,602,050.10	1,646,324.36				
	Point 135	0.00	97.78	864.61	14,602,065.79	1,646,354.13				
	Point 136	0.00	115.66	893.12	14,602,083.68	1,646,382.64				
	Point 137	0.00	135.61	920.22	14,602,103.64	1,646,409.73				
	Point 138	0.00	157.54	945.75	14,602,125.57	1,646,435.26				
	Point 139	0.00	181.31	969.57	14,602,149.35	1,646,459.07				
	Point 140	0.00	206.80	991.55	14,602,174.84	1,646,481.05				
	Point 141	0.00	233.85	1,011.56	14,602,201.89	1,646,501.05				
	Point 142	0.00	262.33	1,029.50	14,602,230.38	1,646,518.99				
	Point 143	0.00	292.07	1,045.25	14,602,260.12	1,646,534.73				
	Point 144	0.00	322.89	1,058.74	14,602,290.94	1,646,548.21				
	Point 145	0.00	354.65	1,069.89	14,602,322.71	1,646,559.36				
	Point 146	0.00	387.14	1,078.64	14,602,355.20	1,646,568.10				
	Point 147	0.00	420.21	1,084.92	14,602,388.27	1,646,574.37				
	Point 148	0.00	453.64	1,088.73	14,602,421.70	1,646,578.18				
	Point 149	0.00	487.27	1,090.02	14,602,455.33	1,646,579.46				
	Point 150	0.00	520.90	1,088.79	14,602,488.96	1,646,578.22				
	Point 151	0.00	554.35	1,085.06	14,602,522.41	1,646,574.49				
	Point 152	0.00	587.42	1,078.84	14,602,555.48	1,646,568.26				
	Point 153	0.00	619.93	1,070.16	14,602,587.99	1,646,559.57				
	Point 154	0.00	651.70	1,059.08	14,602,619.75	1,646,548.49				
	Point 155	0.00	682.57	1,045.66	14,602,650.62	1,646,535.06				
	Point 156	0.00	712.33	1,029.96	14,602,680.38	1,646,519.36				
	Point 157	0.00	740.84	1,012.09	14,602,708.88	1,646,501.48				
	Point 158	0.00	767.95	992.13	14,602,735.99	1,646,481.51				
	Point 159	0.00	793.47	970.21	14,602,761.51	1,646,459.59				
	Point 160	0.00	817.30	946.43	14,602,785.33	1,646,435.80				
	Point 161	0.00	839.27	920.95	14,602,807.30	1,646,410.32				
	Point 162	0.00	859.29	893.89	14,602,827.31	1,646,383.26				
	Point 163	0.00	877.22	865.42	14,602,845.23	1,646,354.78				
	Point 164	0.00	892.98	835.68	14,602,860.99	1,646,325.04				
	Point 165	0.00	906.46	804.85	14,602,874.46	1,646,294.21				
	Point 166	0.00	917.61	773.09	14,602,885.61	1,646,262.44				
	Point 167	0.00	926.36	740.61	14,602,894.35	1,646,229.96				
	Point 168	0.00	932.64	707.54	14,602,900.62	1,646,196.89				
	Point 169	0.00	936.45	674.11	14,602,904.43	1,646,163.46				
	Point 170	0.00	937.74	639.73	14,602,905.71	1,646,129.08				
	Point 171	0.00	957.73	640.48	14,602,925.70	1,646,129.82				
HILGERS 33N2-22HZ_ξ	0.00	0.00	0.00	0.00	0.00	14,601,967.84	1,645,489.54	40.206603	-104.981831	
- plan hits target center										
- Point										
3N-R68W-Sec. 34_Secti	0.00	0.00	0.00	1.09	-179.81	14,601,968.89	1,645,309.73	40.206606	-104.982475	
- plan misses target center by 179.81usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Polygon										
Point 1	0.00	-6,204.04	-4,436.84	14,595,763.95	1,640,874.16					
Point 2	0.00	-6,154.53	782.53	14,595,814.52	1,646,093.52					
Point 3	0.00	-11,510.48	839.68	14,590,458.59	1,646,151.77					
Point 4	0.00	-11,511.55	-4,434.16	14,590,456.44	1,640,877.93					
HILGERS 33N2-22HZ_⊥	0.00	0.00	0.00	0.00	0.00	14,601,967.84	1,645,489.54	40.206603	-104.981831	
- plan hits target center										
- Polygon										
Point 1	0.00	886.60	-4,160.96	14,602,853.59	1,641,328.40					
Point 2	0.00	897.50	-3,306.27	14,602,864.66	1,642,183.09					
Point 3	0.00	914.25	-1,991.59	14,602,881.68	1,643,497.76					
Point 4	0.00	930.99	-676.90	14,602,898.69	1,644,812.45					
Point 5	0.00	947.73	637.79	14,602,915.70	1,646,127.14					

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Planning Report

Database:	PLANNING				Local Co-ordinate Reference:		Well HILGERS 33N2-22HZ		
Company:	US ROCKIES WATTENBERG PLANNING				TVD Reference:		RKB = 17' @ 5016.00usft (D Rig)		
Project:	WELD-NAD83-UTMFT13N				MD Reference:		RKB = 17' @ 5016.00usft (D Rig)		
Site:	3N-68W-22 Hilgers 16-22HZ Pad				North Reference:		True		
Well:	HILGERS 33N2-22HZ				Survey Calculation Method:		Minimum Curvature		
Wellbore:	Plan A								
Design:	Permit Rev-1								
Point 6			0.00	954.57	1,490.47	14,602,922.71	1,646,979.82		
Point 7			0.00	34.61	1,498.74	14,602,002.75	1,646,988.27		
Point 8			0.00	27.73	642.23	14,601,995.70	1,646,131.77		
Point 9			0.00	10.98	-672.58	14,601,978.68	1,644,816.96		
Point 10			0.00	-5.77	-1,987.40	14,601,961.66	1,643,502.14		
Point 11			0.00	-22.54	-3,303.37	14,601,944.62	1,642,186.18		
Point 12			0.00	-33.45	-4,159.37	14,601,933.54	1,641,330.18		
Point 13			0.00	886.60	-4,160.96	14,602,853.59	1,641,328.40		
3N-R68W-Sec. 26_Secti	0.00	0.00	0.00	1.09	-179.81	14,601,968.89	1,645,309.73	40.206606	-104.982475
- plan misses target center by 179.81usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-842.64	823.41	14,601,126.42	1,646,133.32		
Point 2			0.00	-816.40	6,107.25	14,601,153.74	1,651,417.15		
Point 3			0.00	-6,122.12	6,096.28	14,595,848.02	1,651,407.27		
Point 4			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.52		
3N-R68W-Sec. 22_Secti	0.00	0.00	15.00	2,788.69	125.35	14,604,756.55	1,645,614.32	40.214261	-104.981382
- plan misses target center by 2791.51usft at 15.00usft MD (15.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			15.00	1,609.13	-4,756.64	14,606,364.71	1,640,857.35		
Point 2			15.00	1,644.10	-2,132.46	14,606,400.22	1,643,481.52		
Point 3			15.00	1,698.21	493.16	14,606,454.86	1,646,107.13		
Point 4			15.00	-967.02	505.37	14,603,789.64	1,646,119.89		
Point 5			15.00	-3,630.21	518.25	14,601,126.45	1,646,133.31		
Point 6			15.00	-3,681.09	-2,110.42	14,601,075.03	1,643,504.65		
Point 7			15.00	-3,689.13	-4,746.07	14,601,066.45	1,640,869.00		
Point 8			15.00	-1,042.08	-4,750.66	14,603,713.50	1,640,863.87		
HILGERS 33N2-22HZ_E	0.00	0.00	7,129.00	227.58	-4,161.79	14,602,194.57	1,641,327.70	40.207227	-104.996737
- plan hits target center									
- Point									

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
1,836.35	1,800.00	9 5/8"	9-5/8	13-1/2		
7,687.35	7,162.00	Top of Production	5-1/2	7-7/8		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
316.00	316.00	Fox Hills				
4,300.00	4,156.00	Sussex				
7,228.41	7,006.60	Sharon Springs				
7,359.38	7,081.60	Niobrara Top				
7,503.77	7,137.00	Niobrara B Bench				
7,503.77	7,137.00	Niobrara C Bench				

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 33N2-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 33N2-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
1,383.33	1,366.77	28.98	164.37	End Nudge @ 1383.33ft
4,323.33	4,178.31	178.25	1,010.88	Begin Drop @ 4323.33ft
5,173.33	5,015.89	199.98	1,134.16	End Drop @ 5173.33ft
6,682.83	6,525.39	199.98	1,134.16	KOP @ 6682.83ft
7,100.00	6,913.34	200.67	1,002.30	DLS = 9°/100'
7,687.35	7,162.00	203.32	493.03	End Build @ 7687.35ft
12,342.35	7,129.00	227.58	-4,161.79	TD Well @ 12342.35ft