

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

HILGERS 7N-34HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

19 October, 2016

Project: WELD-NAD83-UTMFT13N
Site: 3N-68W-22 Hilgers 16-22HZ Pad
Well: HILGERS 7N-34HZ
Wellbore: Plan A
Design: Permit Rev-1

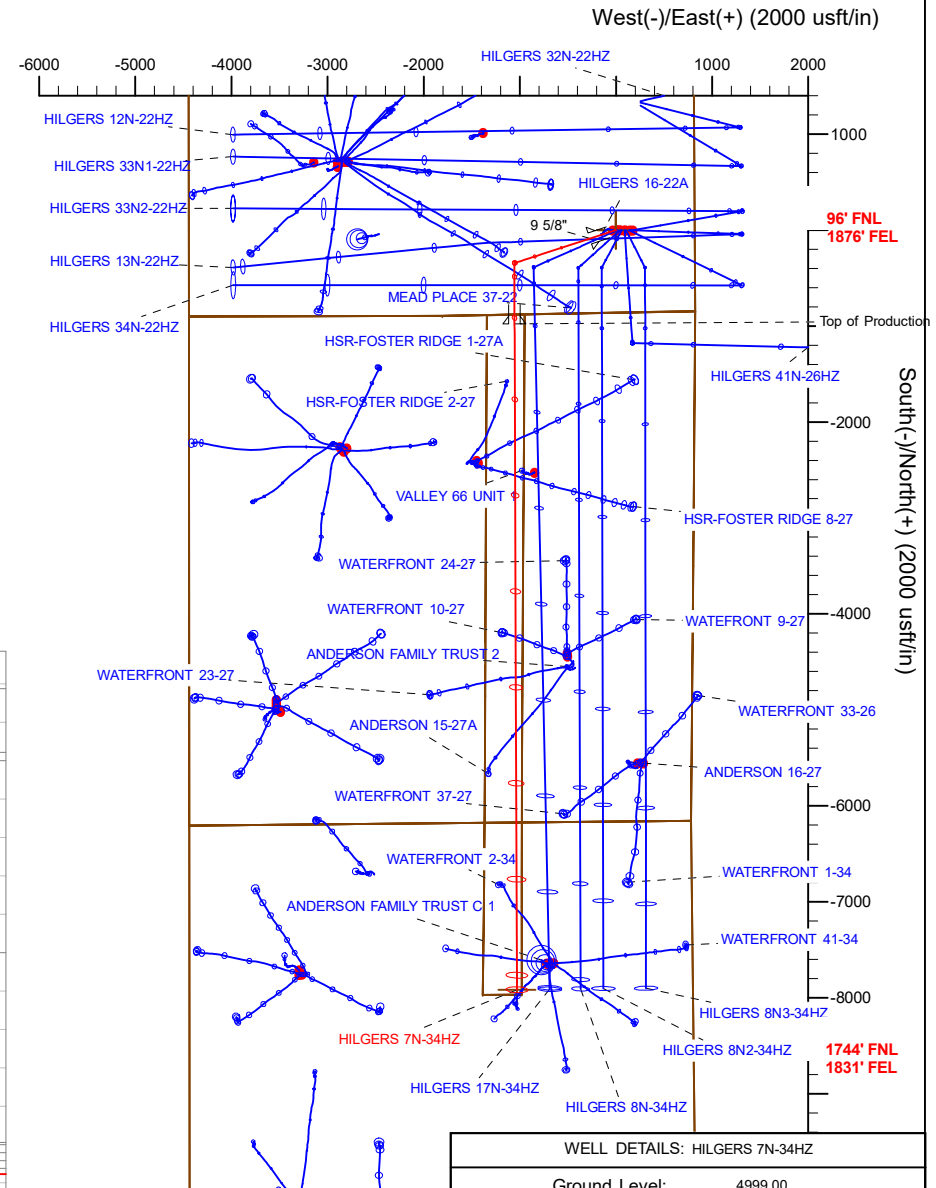
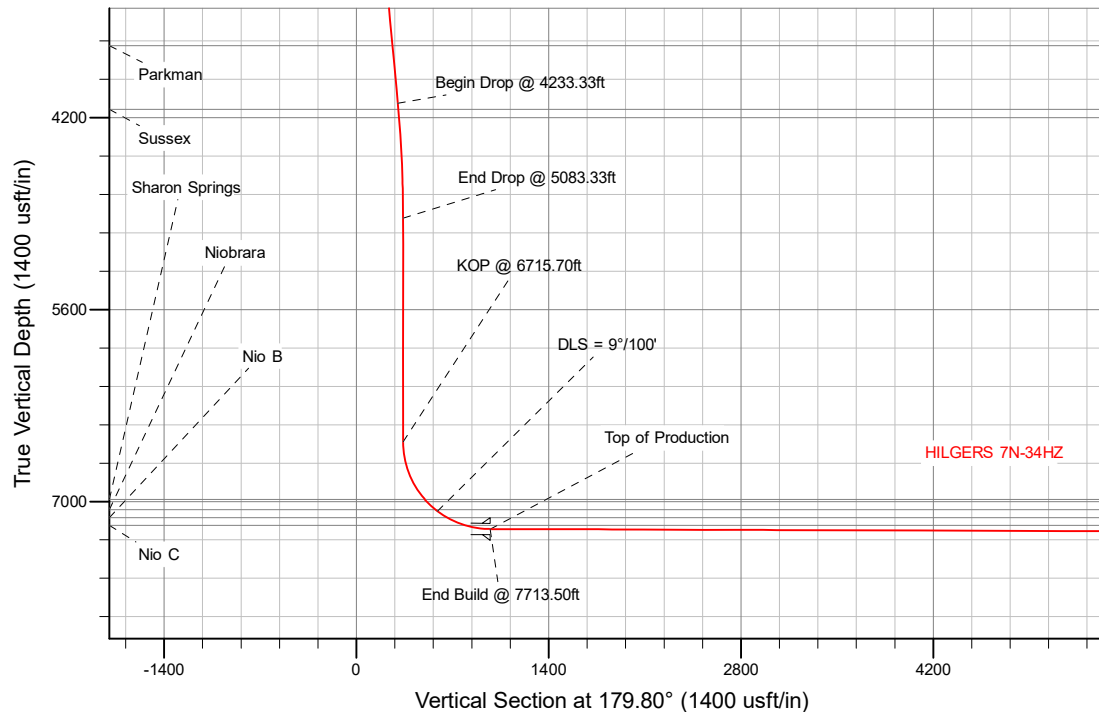
US ROCKIES WATTENBERG PLANNING

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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1433.33	17.00	252.00	1416.78	-51.58	-158.73	1.50	252.00	51.02	
4	4233.33	17.00	252.00	4094.43	-304.55	-937.31	0.00	0.00	301.28	
5	5083.33	0.00	0.00	4932.01	-343.23	-1056.36	2.00	180.00	339.54	
6	6715.70	0.00	0.00	6564.38	-343.23	-1056.36	0.00	0.00	339.54	
7	7713.50	89.80	179.80	7201.00	-977.65	-1054.09	9.00	179.80	973.96	
8	14651.60	89.80	179.80	7225.00	-7915.66	-1029.30	0.00	0.00	7912.02	HILGERS 7N-34HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HILGERS 7N-34HZ_SHL	0.00	0.00	0.00	40.206606	-104.982475	Point
HILGERS 7N-34HZ_BHL	7225.00	-7915.66	-1029.30	40.184869	-104.986160	Point



WELL DETAILS: HILGERS 7N-34HZ

Ground Level: 4999.00

RKB = 17' @ 5016.00usft (D Rig)

Plan: Permit Rev-1 (HILGERS 7N-34HZ/Plan A)

Created By: _____ Date: 10/19/2016
Reviewed: _____ Date: _____

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 7N-34HZ
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 7N-34HZ	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 7N-34HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,601,968.89 usft	Latitude:	40.206606
	+E/-W	0.00 usft	Easting:	1,645,309.73 usft	Longitude:	-104.982475
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	8.40	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	179.80

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,433.33	17.00	252.00	1,416.78	-51.58	-158.73	1.50	1.50	0.00	252.00	
4,233.33	17.00	252.00	4,094.43	-304.55	-937.31	0.00	0.00	0.00	0.00	
5,083.33	0.00	0.00	4,932.01	-343.23	-1,056.36	2.00	-2.00	0.00	180.00	
6,715.70	0.00	0.00	6,564.38	-343.23	-1,056.36	0.00	0.00	0.00	0.00	
7,713.50	89.80	179.80	7,201.00	-977.65	-1,054.09	9.00	9.00	18.02	179.80	
14,651.60	89.80	179.80	7,225.00	-7,915.66	-1,029.30	0.00	0.00	0.00	0.00	HILGERS 7N-34HZ_E

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 7N-34HZ
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 7N-34HZ	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 300.00ft									
400.00	1.50	252.00	399.99	-0.40	-1.24	0.40	1.50	1.50	0.00
500.00	3.00	252.00	499.91	-1.62	-4.98	1.60	1.50	1.50	0.00
600.00	4.50	252.00	599.69	-3.64	-11.20	3.60	1.50	1.50	0.00
700.00	6.00	252.00	699.27	-6.47	-19.90	6.40	1.50	1.50	0.00
800.00	7.50	252.00	798.57	-10.10	-31.08	9.99	1.50	1.50	0.00
900.00	9.00	252.00	897.54	-14.53	-44.73	14.38	1.50	1.50	0.00
1,000.00	10.50	252.00	996.09	-19.77	-60.83	19.55	1.50	1.50	0.00
1,100.00	12.00	252.00	1,094.16	-25.79	-79.38	25.52	1.50	1.50	0.00
1,200.00	13.50	252.00	1,191.70	-32.61	-100.37	32.26	1.50	1.50	0.00
1,300.00	15.00	252.00	1,288.62	-40.22	-123.78	39.79	1.50	1.50	0.00
1,400.00	16.50	252.00	1,384.86	-48.61	-149.60	48.08	1.50	1.50	0.00
1,433.33	17.00	252.00	1,416.78	-51.58	-158.73	51.02	1.50	1.50	0.00
End Nudge @ 1433.33ft									
1,500.00	17.00	252.00	1,480.53	-57.60	-177.27	56.98	0.00	0.00	0.00
1,600.00	17.00	252.00	1,576.16	-66.63	-205.08	65.92	0.00	0.00	0.00
1,700.00	17.00	252.00	1,671.79	-75.67	-232.88	74.86	0.00	0.00	0.00
1,800.00	17.00	252.00	1,767.42	-84.70	-260.69	83.79	0.00	0.00	0.00
1,834.07	17.00	252.00	1,800.00	-87.78	-270.16	86.84	0.00	0.00	0.00
9 5/8"									
1,900.00	17.00	252.00	1,863.05	-93.74	-288.50	92.73	0.00	0.00	0.00
2,000.00	17.00	252.00	1,958.68	-102.77	-316.30	101.67	0.00	0.00	0.00
2,100.00	17.00	252.00	2,054.31	-111.81	-344.11	110.61	0.00	0.00	0.00
2,200.00	17.00	252.00	2,149.94	-120.84	-371.92	119.54	0.00	0.00	0.00
2,300.00	17.00	252.00	2,245.58	-129.88	-399.72	128.48	0.00	0.00	0.00
2,400.00	17.00	252.00	2,341.21	-138.91	-427.53	137.42	0.00	0.00	0.00
2,500.00	17.00	252.00	2,436.84	-147.95	-455.33	146.36	0.00	0.00	0.00
2,600.00	17.00	252.00	2,532.47	-156.98	-483.14	155.29	0.00	0.00	0.00
2,700.00	17.00	252.00	2,628.10	-166.02	-510.95	164.23	0.00	0.00	0.00
2,800.00	17.00	252.00	2,723.73	-175.05	-538.75	173.17	0.00	0.00	0.00
2,900.00	17.00	252.00	2,819.36	-184.09	-566.56	182.11	0.00	0.00	0.00
3,000.00	17.00	252.00	2,914.99	-193.12	-594.37	191.05	0.00	0.00	0.00
3,100.00	17.00	252.00	3,010.62	-202.16	-622.17	199.98	0.00	0.00	0.00
3,200.00	17.00	252.00	3,106.25	-211.19	-649.98	208.92	0.00	0.00	0.00
3,300.00	17.00	252.00	3,201.88	-220.23	-677.78	217.86	0.00	0.00	0.00
3,400.00	17.00	252.00	3,297.51	-229.26	-705.59	226.80	0.00	0.00	0.00
3,500.00	17.00	252.00	3,393.14	-238.29	-733.40	235.73	0.00	0.00	0.00
3,600.00	17.00	252.00	3,488.77	-247.33	-761.20	244.67	0.00	0.00	0.00
3,700.00	17.00	252.00	3,584.40	-256.36	-789.01	253.61	0.00	0.00	0.00
3,800.00	17.00	252.00	3,680.03	-265.40	-816.81	262.55	0.00	0.00	0.00
3,900.00	17.00	252.00	3,775.66	-274.43	-844.62	271.48	0.00	0.00	0.00
4,000.00	17.00	252.00	3,871.29	-283.47	-872.43	280.42	0.00	0.00	0.00
4,100.00	17.00	252.00	3,966.92	-292.50	-900.23	289.36	0.00	0.00	0.00
4,200.00	17.00	252.00	4,062.55	-301.54	-928.04	298.30	0.00	0.00	0.00
4,233.33	17.00	252.00	4,094.43	-304.55	-937.31	301.28	0.00	0.00	0.00
Begin Drop @ 4233.33ft									
4,300.00	15.67	252.00	4,158.41	-310.34	-955.14	307.01	2.00	-2.00	0.00
4,400.00	13.67	252.00	4,255.14	-318.17	-979.22	314.75	2.00	-2.00	0.00
4,500.00	11.67	252.00	4,352.70	-324.94	-1,000.07	321.45	2.00	-2.00	0.00
4,600.00	9.67	252.00	4,450.97	-330.66	-1,017.67	327.11	2.00	-2.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 7N-34HZ
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 7N-34HZ	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)
4,700.00	7.67	252.00	4,549.82	-335.32	-1,032.00	331.71	2.00	-2.00	0.00
4,800.00	5.67	252.00	4,649.14	-338.91	-1,043.04	335.26	2.00	-2.00	0.00
4,900.00	3.67	252.00	4,748.81	-341.42	-1,050.78	337.75	2.00	-2.00	0.00
5,000.00	1.67	252.00	4,848.69	-342.86	-1,055.21	339.17	2.00	-2.00	0.00
5,083.33	0.00	0.00	4,932.01	-343.23	-1,056.36	339.54	2.00	-2.00	0.00
End Drop @ 5083.33ft									
5,100.00	0.00	0.00	4,948.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,200.00	0.00	0.00	5,048.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,300.00	0.00	0.00	5,148.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,400.00	0.00	0.00	5,248.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,500.00	0.00	0.00	5,348.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,600.00	0.00	0.00	5,448.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,700.00	0.00	0.00	5,548.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,800.00	0.00	0.00	5,648.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
5,900.00	0.00	0.00	5,748.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,000.00	0.00	0.00	5,848.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,100.00	0.00	0.00	5,948.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,200.00	0.00	0.00	6,048.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,300.00	0.00	0.00	6,148.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,400.00	0.00	0.00	6,248.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,500.00	0.00	0.00	6,348.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,600.00	0.00	0.00	6,448.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,700.00	0.00	0.00	6,548.68	-343.23	-1,056.36	339.54	0.00	0.00	0.00
6,715.70	0.00	0.00	6,564.38	-343.23	-1,056.36	339.54	0.00	0.00	0.00
KOP @ 6715.70ft									
6,800.00	7.59	179.80	6,648.43	-348.80	-1,056.34	345.12	9.00	9.00	0.00
6,900.00	16.59	179.80	6,746.12	-369.72	-1,056.26	366.03	9.00	9.00	0.00
7,000.00	25.59	179.80	6,839.33	-405.66	-1,056.14	401.97	9.00	9.00	0.00
7,100.00	34.59	179.80	6,925.76	-455.74	-1,055.96	452.05	9.00	9.00	0.00
7,200.00	43.59	179.80	7,003.30	-518.73	-1,055.73	515.04	9.00	9.00	0.00
7,300.00	52.59	179.80	7,070.03	-593.07	-1,055.47	589.38	9.00	9.00	0.00
DLS = 9°/100'									
7,400.00	61.59	179.80	7,124.32	-676.93	-1,055.17	673.24	9.00	9.00	0.00
7,500.00	70.59	179.80	7,164.81	-768.25	-1,054.84	764.56	9.00	9.00	0.00
7,600.00	79.59	179.80	7,190.52	-864.78	-1,054.50	861.09	9.00	9.00	0.00
7,700.00	88.59	179.80	7,200.81	-964.15	-1,054.14	960.46	9.00	9.00	0.00
7,713.50	89.80	179.80	7,201.00	-977.64	-1,054.09	973.96	9.00	9.00	0.00
End Build @ 7713.50ft - Top of Production									
7,800.00	89.80	179.80	7,201.30	-1,064.14	-1,053.78	1,060.46	0.00	0.00	0.00
7,900.00	89.80	179.80	7,201.65	-1,164.14	-1,053.43	1,160.46	0.00	0.00	0.00
8,000.00	89.80	179.80	7,201.99	-1,264.14	-1,053.07	1,260.46	0.00	0.00	0.00
8,100.00	89.80	179.80	7,202.34	-1,364.14	-1,052.71	1,360.46	0.00	0.00	0.00
8,200.00	89.80	179.80	7,202.68	-1,464.14	-1,052.35	1,460.46	0.00	0.00	0.00
8,300.00	89.80	179.80	7,203.03	-1,564.14	-1,052.00	1,560.46	0.00	0.00	0.00
8,400.00	89.80	179.80	7,203.38	-1,664.14	-1,051.64	1,660.45	0.00	0.00	0.00
8,500.00	89.80	179.80	7,203.72	-1,764.13	-1,051.28	1,760.45	0.00	0.00	0.00
8,600.00	89.80	179.80	7,204.07	-1,864.13	-1,050.92	1,860.45	0.00	0.00	0.00
8,700.00	89.80	179.80	7,204.41	-1,964.13	-1,050.57	1,960.45	0.00	0.00	0.00
8,800.00	89.80	179.80	7,204.76	-2,064.13	-1,050.21	2,060.45	0.00	0.00	0.00
8,900.00	89.80	179.80	7,205.10	-2,164.13	-1,049.85	2,160.45	0.00	0.00	0.00
9,000.00	89.80	179.80	7,205.45	-2,264.13	-1,049.50	2,260.45	0.00	0.00	0.00
9,100.00	89.80	179.80	7,205.80	-2,364.13	-1,049.14	2,360.45	0.00	0.00	0.00
9,200.00	89.80	179.80	7,206.14	-2,464.13	-1,048.78	2,460.45	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 7N-34HZ
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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 7N-34HZ	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)
9,300.00	89.80	179.80	7,206.49	-2,564.12	-1,048.42	2,560.45	0.00	0.00	0.00
9,400.00	89.80	179.80	7,206.83	-2,664.12	-1,048.07	2,660.45	0.00	0.00	0.00
9,500.00	89.80	179.80	7,207.18	-2,764.12	-1,047.71	2,760.45	0.00	0.00	0.00
9,600.00	89.80	179.80	7,207.53	-2,864.12	-1,047.35	2,860.45	0.00	0.00	0.00
9,700.00	89.80	179.80	7,207.87	-2,964.12	-1,046.99	2,960.45	0.00	0.00	0.00
9,800.00	89.80	179.80	7,208.22	-3,064.12	-1,046.64	3,060.45	0.00	0.00	0.00
9,900.00	89.80	179.80	7,208.56	-3,164.12	-1,046.28	3,160.45	0.00	0.00	0.00
10,000.00	89.80	179.80	7,208.91	-3,264.12	-1,045.92	3,260.45	0.00	0.00	0.00
10,100.00	89.80	179.80	7,209.26	-3,364.11	-1,045.56	3,360.44	0.00	0.00	0.00
10,200.00	89.80	179.80	7,209.60	-3,464.11	-1,045.21	3,460.44	0.00	0.00	0.00
10,300.00	89.80	179.80	7,209.95	-3,564.11	-1,044.85	3,560.44	0.00	0.00	0.00
10,400.00	89.80	179.80	7,210.29	-3,664.11	-1,044.49	3,660.44	0.00	0.00	0.00
10,500.00	89.80	179.80	7,210.64	-3,764.11	-1,044.14	3,760.44	0.00	0.00	0.00
10,600.00	89.80	179.80	7,210.99	-3,864.11	-1,043.78	3,860.44	0.00	0.00	0.00
10,700.00	89.80	179.80	7,211.33	-3,964.11	-1,043.42	3,960.44	0.00	0.00	0.00
10,800.00	89.80	179.80	7,211.68	-4,064.11	-1,043.06	4,060.44	0.00	0.00	0.00
10,900.00	89.80	179.80	7,212.02	-4,164.11	-1,042.71	4,160.44	0.00	0.00	0.00
11,000.00	89.80	179.80	7,212.37	-4,264.10	-1,042.35	4,260.44	0.00	0.00	0.00
11,100.00	89.80	179.80	7,212.71	-4,364.10	-1,041.99	4,360.44	0.00	0.00	0.00
11,200.00	89.80	179.80	7,213.06	-4,464.10	-1,041.63	4,460.44	0.00	0.00	0.00
11,300.00	89.80	179.80	7,213.41	-4,564.10	-1,041.28	4,560.44	0.00	0.00	0.00
11,400.00	89.80	179.80	7,213.75	-4,664.10	-1,040.92	4,660.44	0.00	0.00	0.00
11,500.00	89.80	179.80	7,214.10	-4,764.10	-1,040.56	4,760.44	0.00	0.00	0.00
11,600.00	89.80	179.80	7,214.44	-4,864.10	-1,040.20	4,860.44	0.00	0.00	0.00
11,700.00	89.80	179.80	7,214.79	-4,964.10	-1,039.85	4,960.44	0.00	0.00	0.00
11,800.00	89.80	179.80	7,215.14	-5,064.09	-1,039.49	5,060.43	0.00	0.00	0.00
11,900.00	89.80	179.80	7,215.48	-5,164.09	-1,039.13	5,160.43	0.00	0.00	0.00
12,000.00	89.80	179.80	7,215.83	-5,264.09	-1,038.78	5,260.43	0.00	0.00	0.00
12,100.00	89.80	179.80	7,216.17	-5,364.09	-1,038.42	5,360.43	0.00	0.00	0.00
12,200.00	89.80	179.80	7,216.52	-5,464.09	-1,038.06	5,460.43	0.00	0.00	0.00
12,300.00	89.80	179.80	7,216.87	-5,564.09	-1,037.70	5,560.43	0.00	0.00	0.00
12,400.00	89.80	179.80	7,217.21	-5,664.09	-1,037.35	5,660.43	0.00	0.00	0.00
12,500.00	89.80	179.80	7,217.56	-5,764.09	-1,036.99	5,760.43	0.00	0.00	0.00
12,600.00	89.80	179.80	7,217.90	-5,864.08	-1,036.63	5,860.43	0.00	0.00	0.00
12,700.00	89.80	179.80	7,218.25	-5,964.08	-1,036.27	5,960.43	0.00	0.00	0.00
12,800.00	89.80	179.80	7,218.60	-6,064.08	-1,035.92	6,060.43	0.00	0.00	0.00
12,900.00	89.80	179.80	7,218.94	-6,164.08	-1,035.56	6,160.43	0.00	0.00	0.00
13,000.00	89.80	179.80	7,219.29	-6,264.08	-1,035.20	6,260.43	0.00	0.00	0.00
13,100.00	89.80	179.80	7,219.63	-6,364.08	-1,034.84	6,360.43	0.00	0.00	0.00
13,200.00	89.80	179.80	7,219.98	-6,464.08	-1,034.49	6,460.43	0.00	0.00	0.00
13,300.00	89.80	179.80	7,220.32	-6,564.08	-1,034.13	6,560.43	0.00	0.00	0.00
13,400.00	89.80	179.80	7,220.67	-6,664.07	-1,033.77	6,660.43	0.00	0.00	0.00
13,500.00	89.80	179.80	7,221.02	-6,764.07	-1,033.42	6,760.42	0.00	0.00	0.00
13,600.00	89.80	179.80	7,221.36	-6,864.07	-1,033.06	6,860.42	0.00	0.00	0.00
13,700.00	89.80	179.80	7,221.71	-6,964.07	-1,032.70	6,960.42	0.00	0.00	0.00
13,800.00	89.80	179.80	7,222.05	-7,064.07	-1,032.34	7,060.42	0.00	0.00	0.00
13,900.00	89.80	179.80	7,222.40	-7,164.07	-1,031.99	7,160.42	0.00	0.00	0.00
14,000.00	89.80	179.80	7,222.75	-7,264.07	-1,031.63	7,260.42	0.00	0.00	0.00
14,100.00	89.80	179.80	7,223.09	-7,364.07	-1,031.27	7,360.42	0.00	0.00	0.00
14,200.00	89.80	179.80	7,223.44	-7,464.06	-1,030.91	7,460.42	0.00	0.00	0.00
14,300.00	89.80	179.80	7,223.78	-7,564.06	-1,030.56	7,560.42	0.00	0.00	0.00
14,400.00	89.80	179.80	7,224.13	-7,664.06	-1,030.20	7,660.42	0.00	0.00	0.00
14,500.00	89.80	179.80	7,224.48	-7,764.06	-1,029.84	7,760.42	0.00	0.00	0.00
14,600.00	89.80	179.80	7,224.82	-7,864.06	-1,029.48	7,860.42	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 7N-34HZ
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 7N-34HZ	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)
14,651.60	89.80	179.80	7,225.00	-7,915.66	-1,029.30	7,912.02	0.00	0.00	0.00
TD Well @ 14651.60ft									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
HILGERS 7N-34HZ_SHI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,601,968.89	1,645,309.73	40.206606	-104.982475
3N-R68W-Sec. 27_Secti - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,601,968.89	1,645,309.73	40.206606	-104.982475
Point 1			0.00	-901.61	-4,440.91	14,601,066.41	1,640,869.00		
Point 2			0.00	-893.57	-1,805.40	14,601,074.97	1,643,504.51		
Point 3			0.00	-845.64	823.41	14,601,123.42	1,646,133.31		
Point 4			0.00	-3,498.41	802.83	14,598,470.64	1,646,113.25		
Point 5			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.48		
Point 6			0.00	-6,204.04	-4,436.84	14,595,763.98	1,640,874.12		
3N-R68W-Sec. 34_Secti - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,601,968.89	1,645,309.73	40.206606	-104.982475
Point 1			0.00	-6,204.04	-4,436.84	14,595,763.98	1,640,874.12		
Point 2			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.48		
Point 3			0.00	-11,510.48	839.68	14,590,458.58	1,646,151.69		
Point 4			0.00	-11,511.55	-4,434.16	14,590,456.47	1,640,877.85		
HILGERS 7N-34HZ_Har - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,601,968.89	1,645,309.73	40.206606	-104.982475
Point 1			0.00	-879.31	-948.11	14,601,089.40	1,644,361.80		
Point 2			0.00	-2,199.11	-956.47	14,599,769.59	1,644,353.70		
Point 3			0.00	-3,518.81	-964.83	14,598,449.89	1,644,345.60		
Point 4			0.00	-4,846.31	-972.19	14,597,122.39	1,644,338.50		
Point 5			0.00	-6,173.70	-979.55	14,595,795.00	1,644,331.40		
Point 6			0.00	-7,045.80	-980.43	14,594,922.90	1,644,330.69		
Point 7			0.00	-7,505.50	-980.82	14,594,463.20	1,644,330.39		
Point 8			0.00	-7,965.80	-981.31	14,594,002.90	1,644,330.00		
Point 9			0.00	-7,971.52	-1,384.51	14,593,997.10	1,643,926.80		
Point 10			0.00	-7,508.02	-1,379.92	14,594,460.60	1,643,931.30		
Point 11			0.00	-7,048.03	-1,375.43	14,594,920.59	1,643,935.69		
Point 12			0.00	-6,177.33	-1,364.36	14,595,791.29	1,643,946.59		
Point 13			0.00	-4,850.13	-1,359.79	14,597,118.49	1,643,950.90		
Point 14			0.00	-3,522.83	-1,355.13	14,598,445.80	1,643,955.30		
Point 15			0.00	-2,204.83	-1,348.77	14,599,763.80	1,643,961.40		
Point 16			0.00	-886.93	-1,342.41	14,601,081.70	1,643,967.50		
Point 17			0.00	-879.31	-948.11	14,601,089.40	1,644,361.80		
HILGERS 7N-34HZ_BHI - plan hits target center - Point	0.00	0.00	7,225.00	-7,915.66	-1,029.30	14,594,053.03	1,644,282.00	40.184869	-104.986161

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 7N-34HZ
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 7N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,834.07	1,800.00	9 5/8"	9-5/8	13-1/2	
7,713.50	7,201.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
717.83	717.00	Fox Hills Mkr				
3,794.74	3,675.00	Parkman				
4,280.87	4,140.00	Sussex				
7,175.19	6,985.00	Sharon Springs				
7,283.75	7,060.00	Niobrara				
7,384.95	7,117.00	Nio B				
7,533.12	7,175.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
300.00	300.00	0.00	0.00	Begin Nudge @ 300.00ft	
1,433.33	1,416.78	-51.58	-158.73	End Nudge @ 1433.33ft	
4,233.33	4,094.43	-304.55	-937.31	Begin Drop @ 4233.33ft	
5,083.33	4,932.01	-343.23	-1,056.36	End Drop @ 5083.33ft	
6,715.70	6,564.38	-343.23	-1,056.36	KOP @ 6715.70ft	
7,300.00	7,070.03	-593.07	-1,055.47	DLS = 9°/100'	
7,713.50	7,201.00	-977.64	-1,054.09	End Build @ 7713.50ft	
14,651.60	7,225.00	-7,915.66	-1,029.30	TD Well @ 14651.60ft	