

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-66W-24 GRACIE 35-24HZ PAD  
GRACIE 24-1HZ**

**Plan A**

**Plan: Permit-Rev2**

## **Standard Planning Report**

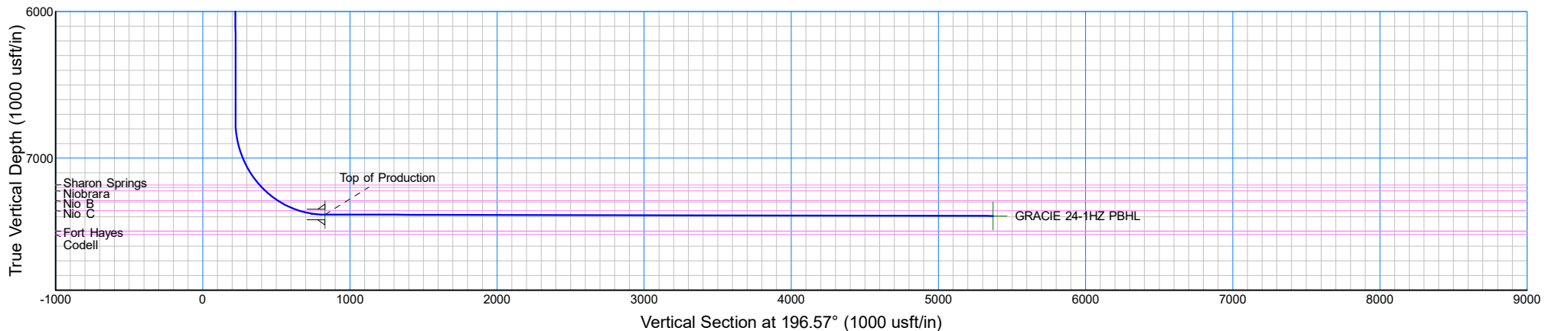
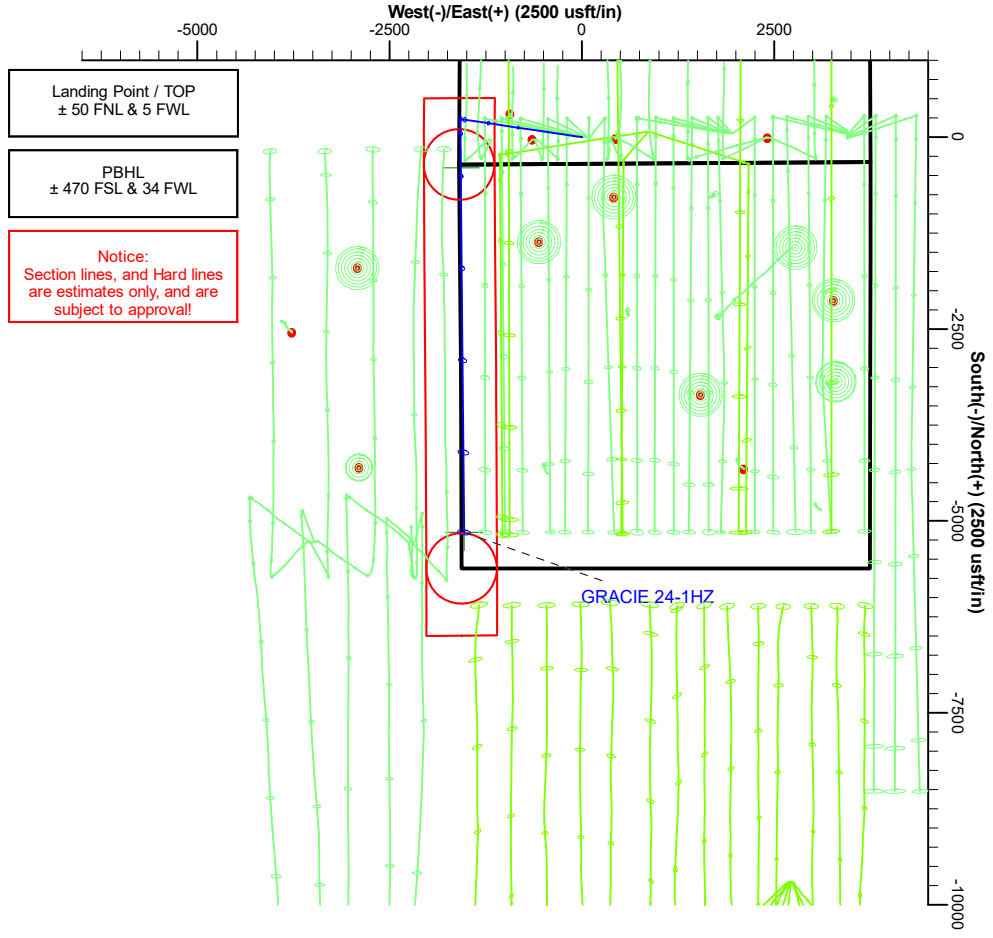
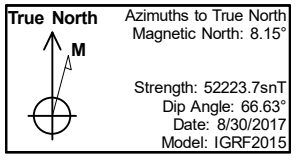
**11 September, 2017**

Well: GRACIE 24-1HZ	Plan: Permit-Rev2	Field: WELD-NAD83-UTMFT13N	Site: 2N-66W-24 GRACIE 35-24HZ PAD	Rig: D Rig
Borehole: Plan A	Plan Date: 15:22, September 11 2017	Datum: UTM (US Survey Ft)	RKB: 5099ft	Latitude: 40.117476
Grid Conv: 0.17	VSec: 196.57deg	Zone: Zone 13N (108 W to 102 W)	GL: 5082.00ft	Longitude: -104.729270
				Model: IGRF2015
				Date: 30-Aug-17
				DEC: 8.15°
				DIP: 66.63°
				FS: 52223.74289757nT
				North Ref: True

Critical Points										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
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	Build 1.5°/100 DLS
3	1566.67	19.00	278.54	1543.58	30.92	-205.79	1.50	278.54	29.06	Hold Inc
4	5195.90	19.00	278.54	4975.09	206.46	-1374.25	0.00	0.00	194.08	Drop 1.5°/100 DLS
5	6462.57	0.00	0.00	6218.67	237.38	-1580.04	1.50	180.00	223.15	Vertical Point
6	6992.28	0.00	0.00	6748.38	237.38	-1580.04	0.00	0.00	223.15	KOP, Build 10°/100 DLS
7	7991.08	89.89	179.49	7385.00	-398.01	-1574.34	9.00	179.49	830.51	Landing Target
8	12740.51	89.89	179.49	7394.00	-5147.25	-1531.74	0.00	0.00	5370.33	PBHL/TD

Target Details									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
GRACIE 24-1HZ HEEL	7385.00	-398.02	-1574.38	14569224.08	1714531.66	40.116363	-104.734962		
GRACIE 24-1HZ PBHL	7394.00	-5147.25	-1531.74	14564475.00	1714588.77	40.103341	-104.734748		

FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
1512.00	1533.32	Fox Hills
4229.00	4406.82	Parkman
4717.00	4922.94	Sussex
7182.00	7469.30	Sharon Springs
7222.00	7526.39	Niobrara
7289.00	7638.12	Nio B
7358.00	7806.21	Nio C



## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-1HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 35-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-1HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit-Rev2		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

<b>Site</b>	2N-66W-24 GRACIE 35-24HZ PAD				
<b>Site Position:</b>	<b>Northing:</b>	14,569,626.89 usft	<b>Latitude:</b>	40.117476	
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,716,104.82 usft	<b>Longitude:</b>	-104.729270
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.17 °

<b>Well</b>	GRACIE 24-1HZ					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	14,569,626.89 usft	<b>Latitude:</b>	40.117476
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,716,104.82 usft	<b>Longitude:</b>	-104.729270
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,082.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	8/30/2017	8.15	66.63	52,223.74289757

<b>Design</b>	Permit-Rev2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	196.57

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/11/2017			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	12,740.51	Permit-Rev2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	

<b>Plan Sections</b>										
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	
1,566.67	19.00	278.54	1,543.58	30.92	-205.79	1.50	1.50	0.00	278.54	
5,195.90	19.00	278.54	4,975.09	206.46	-1,374.25	0.00	0.00	0.00	0.00	
6,462.57	0.00	0.00	6,218.67	237.38	-1,580.04	1.50	-1.50	0.00	180.00	
6,992.28	0.00	0.00	6,748.38	237.38	-1,580.04	0.00	0.00	0.00	0.00	
7,991.08	89.89	179.49	7,385.00	-398.01	-1,574.34	9.00	9.00	17.97	179.49	
12,740.51	89.89	179.49	7,394.00	-5,147.25	-1,531.74	0.00	0.00	0.00	0.00	GRACIE 24-1HZ PBH

**Corporate**  
Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-1HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 35-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-1HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit-Rev2		

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
<b>Build 1.5°/100 DLS</b>									
400.00	1.50	278.54	399.99	0.19	-1.29	0.18	1.50	1.50	0.00
500.00	3.00	278.54	499.91	0.78	-5.18	0.73	1.50	1.50	0.00
600.00	4.50	278.54	599.69	1.75	-11.64	1.64	1.50	1.50	0.00
700.00	6.00	278.54	699.27	3.11	-20.69	2.92	1.50	1.50	0.00
800.00	7.50	278.54	798.57	4.85	-32.32	4.56	1.50	1.50	0.00
900.00	9.00	278.54	897.54	6.99	-46.51	6.57	1.50	1.50	0.00
1,000.00	10.50	278.54	996.09	9.50	-63.25	8.93	1.50	1.50	0.00
1,100.00	12.00	278.54	1,094.16	12.40	-82.54	11.66	1.50	1.50	0.00
1,200.00	13.50	278.54	1,191.70	15.68	-104.37	14.74	1.50	1.50	0.00
1,300.00	15.00	278.54	1,288.62	19.34	-128.71	18.18	1.50	1.50	0.00
1,400.00	16.50	278.54	1,384.86	23.37	-155.55	21.97	1.50	1.50	0.00
1,500.00	18.00	278.54	1,480.36	27.77	-184.88	26.11	1.50	1.50	0.00
1,533.32	18.50	278.54	1,512.00	29.32	-195.19	27.57	1.50	1.50	0.00
<b>Fox Hills</b>									
1,566.67	19.00	278.54	1,543.58	30.92	-205.79	29.06	1.50	1.50	0.00
<b>Hold Inc</b>									
1,600.00	19.00	278.54	1,575.10	32.53	-216.53	30.58	0.00	0.00	0.00
1,700.00	19.00	278.54	1,669.65	37.37	-248.72	35.13	0.00	0.00	0.00
1,800.00	19.00	278.54	1,764.20	42.20	-280.92	39.67	0.00	0.00	0.00
1,837.86	19.00	278.54	1,800.00	44.03	-293.11	41.39	0.00	0.00	0.00
<b>Surface Csg</b>									
1,900.00	19.00	278.54	1,858.75	47.04	-313.11	44.22	0.00	0.00	0.00
2,000.00	19.00	278.54	1,953.30	51.88	-345.31	48.77	0.00	0.00	0.00
2,100.00	19.00	278.54	2,047.86	56.71	-377.50	53.31	0.00	0.00	0.00
2,200.00	19.00	278.54	2,142.41	61.55	-409.70	57.86	0.00	0.00	0.00
2,300.00	19.00	278.54	2,236.96	66.39	-441.89	62.41	0.00	0.00	0.00
2,400.00	19.00	278.54	2,331.51	71.22	-474.09	66.95	0.00	0.00	0.00
2,500.00	19.00	278.54	2,426.06	76.06	-506.29	71.50	0.00	0.00	0.00
2,600.00	19.00	278.54	2,520.61	80.90	-538.48	76.05	0.00	0.00	0.00
2,700.00	19.00	278.54	2,615.17	85.74	-570.68	80.60	0.00	0.00	0.00
2,800.00	19.00	278.54	2,709.72	90.57	-602.87	85.14	0.00	0.00	0.00
2,900.00	19.00	278.54	2,804.27	95.41	-635.07	89.69	0.00	0.00	0.00
3,000.00	19.00	278.54	2,898.82	100.25	-667.26	94.24	0.00	0.00	0.00
3,100.00	19.00	278.54	2,993.37	105.08	-699.46	98.78	0.00	0.00	0.00
3,200.00	19.00	278.54	3,087.93	109.92	-731.65	103.33	0.00	0.00	0.00
3,300.00	19.00	278.54	3,182.48	114.76	-763.85	107.88	0.00	0.00	0.00
3,400.00	19.00	278.54	3,277.03	119.59	-796.05	112.42	0.00	0.00	0.00
3,500.00	19.00	278.54	3,371.58	124.43	-828.24	116.97	0.00	0.00	0.00
3,600.00	19.00	278.54	3,466.13	129.27	-860.44	121.52	0.00	0.00	0.00
3,700.00	19.00	278.54	3,560.69	134.10	-892.63	126.06	0.00	0.00	0.00
3,800.00	19.00	278.54	3,655.24	138.94	-924.83	130.61	0.00	0.00	0.00
3,900.00	19.00	278.54	3,749.79	143.78	-957.02	135.16	0.00	0.00	0.00
4,000.00	19.00	278.54	3,844.34	148.61	-989.22	139.71	0.00	0.00	0.00
4,100.00	19.00	278.54	3,938.89	153.45	-1,021.41	144.25	0.00	0.00	0.00
4,200.00	19.00	278.54	4,033.44	158.29	-1,053.61	148.80	0.00	0.00	0.00
4,300.00	19.00	278.54	4,128.00	163.13	-1,085.80	153.35	0.00	0.00	0.00
4,400.00	19.00	278.54	4,222.55	167.96	-1,118.00	157.89	0.00	0.00	0.00
4,406.82	19.00	278.54	4,229.00	168.29	-1,120.20	158.20	0.00	0.00	0.00

**Corporate  
Planning Report**

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-1HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 35-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-1HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit-Rev2		

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)
<b>Parkman</b>									
4,500.00	19.00	278.54	4,317.10	172.80	-1,150.20	162.44	0.00	0.00	0.00
4,600.00	19.00	278.54	4,411.65	177.64	-1,182.39	166.99	0.00	0.00	0.00
4,700.00	19.00	278.54	4,506.20	182.47	-1,214.59	171.53	0.00	0.00	0.00
4,800.00	19.00	278.54	4,600.76	187.31	-1,246.78	176.08	0.00	0.00	0.00
4,900.00	19.00	278.54	4,695.31	192.15	-1,278.98	180.63	0.00	0.00	0.00
4,922.94	19.00	278.54	4,717.00	193.26	-1,286.36	181.67	0.00	0.00	0.00
<b>Sussex</b>									
5,000.00	19.00	278.54	4,789.86	196.98	-1,311.17	185.17	0.00	0.00	0.00
5,100.00	19.00	278.54	4,884.41	201.82	-1,343.37	189.72	0.00	0.00	0.00
5,195.90	19.00	278.54	4,975.09	206.46	-1,374.25	194.08	0.00	0.00	0.00
<b>Drop 1.5°/100 DLS</b>									
5,200.00	18.94	278.54	4,978.96	206.66	-1,375.56	194.27	1.50	-1.50	0.00
5,300.00	17.44	278.54	5,073.96	211.29	-1,406.43	198.63	1.50	-1.50	0.00
5,400.00	15.94	278.54	5,169.75	215.56	-1,434.83	202.64	1.50	-1.50	0.00
5,500.00	14.44	278.54	5,266.25	219.45	-1,460.74	206.30	1.50	-1.50	0.00
5,600.00	12.94	278.54	5,363.41	222.97	-1,484.14	209.60	1.50	-1.50	0.00
5,700.00	11.44	278.54	5,461.15	226.11	-1,505.01	212.55	1.50	-1.50	0.00
5,800.00	9.94	278.54	5,559.42	228.86	-1,523.36	215.14	1.50	-1.50	0.00
5,900.00	8.44	278.54	5,658.13	231.23	-1,539.15	217.37	1.50	-1.50	0.00
6,000.00	6.94	278.54	5,757.23	233.22	-1,552.38	219.24	1.50	-1.50	0.00
6,100.00	5.44	278.54	5,856.64	234.82	-1,563.04	220.74	1.50	-1.50	0.00
6,200.00	3.94	278.54	5,956.30	236.04	-1,571.12	221.89	1.50	-1.50	0.00
6,300.00	2.44	278.54	6,056.15	236.86	-1,576.62	222.66	1.50	-1.50	0.00
6,400.00	0.94	278.54	6,156.10	237.30	-1,579.53	223.07	1.50	-1.50	0.00
6,462.57	0.00	0.00	6,218.67	237.38	-1,580.04	223.15	1.50	-1.50	0.00
<b>Vertical Point</b>									
6,500.00	0.00	0.00	6,256.10	237.38	-1,580.04	223.15	0.00	0.00	0.00
6,600.00	0.00	0.00	6,356.10	237.38	-1,580.04	223.15	0.00	0.00	0.00
6,700.00	0.00	0.00	6,456.10	237.38	-1,580.04	223.15	0.00	0.00	0.00
6,800.00	0.00	0.00	6,556.10	237.38	-1,580.04	223.15	0.00	0.00	0.00
6,900.00	0.00	0.00	6,656.10	237.38	-1,580.04	223.15	0.00	0.00	0.00
6,992.28	0.00	0.00	6,748.38	237.38	-1,580.04	223.15	0.00	0.00	0.00
<b>KOP, Build 10°/100 DLS</b>									
7,000.00	0.69	179.49	6,756.10	237.33	-1,580.04	223.19	9.00	9.00	0.00
7,100.00	9.69	179.49	6,855.59	228.29	-1,579.96	231.84	9.00	9.00	0.00
7,200.00	18.69	179.49	6,952.43	203.79	-1,579.74	255.25	9.00	9.00	0.00
7,300.00	27.69	179.49	7,044.25	164.45	-1,579.39	292.86	9.00	9.00	0.00
7,400.00	36.69	179.49	7,128.79	111.22	-1,578.91	343.74	9.00	9.00	0.00
7,469.30	42.93	179.49	7,182.00	66.87	-1,578.51	386.13	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,500.00	45.69	179.49	7,203.96	45.43	-1,578.32	406.63	9.00	9.00	0.00
7,526.39	48.07	179.49	7,222.00	26.17	-1,578.15	425.04	9.00	9.00	0.00
<b>Niobrara</b>									
7,600.00	54.69	179.49	7,267.92	-31.31	-1,577.63	479.98	9.00	9.00	0.00
7,638.12	58.13	179.49	7,289.00	-63.05	-1,577.34	510.33	9.00	9.00	0.00
<b>Nio B</b>									
7,700.00	63.69	179.49	7,319.07	-117.11	-1,576.86	562.00	9.00	9.00	0.00
7,800.00	72.69	179.49	7,356.18	-209.85	-1,576.03	650.65	9.00	9.00	0.00
7,806.21	73.25	179.49	7,358.00	-215.79	-1,575.97	656.33	9.00	9.00	0.00
<b>Nio C</b>									
7,900.00	81.69	179.49	7,378.32	-307.26	-1,575.15	743.77	9.00	9.00	0.00
7,991.08	89.89	179.49	7,385.00	-398.02	-1,574.34	830.52	9.00	9.00	0.00

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-1HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 35-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-1HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit-Rev2		

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)	
<b>Landing Target</b>										
7,991.09	89.89	179.49	7,385.00	-398.03	-1,574.34	830.53	0.00	0.00	0.00	
<b>Top of Production</b>										
8,000.00	89.89	179.49	7,385.02	-406.94	-1,574.26	839.05	0.00	0.00	0.00	
8,100.00	89.89	179.49	7,385.21	-506.93	-1,573.36	934.63	0.00	0.00	0.00	
8,200.00	89.89	179.49	7,385.39	-606.93	-1,572.47	1,030.22	0.00	0.00	0.00	
8,300.00	89.89	179.49	7,385.58	-706.92	-1,571.57	1,125.80	0.00	0.00	0.00	
8,400.00	89.89	179.49	7,385.77	-806.92	-1,570.67	1,221.39	0.00	0.00	0.00	
8,500.00	89.89	179.49	7,385.96	-906.91	-1,569.77	1,316.98	0.00	0.00	0.00	
8,600.00	89.89	179.49	7,386.15	-1,006.91	-1,568.88	1,412.56	0.00	0.00	0.00	
8,700.00	89.89	179.49	7,386.34	-1,106.91	-1,567.98	1,508.15	0.00	0.00	0.00	
8,800.00	89.89	179.49	7,386.53	-1,206.90	-1,567.08	1,603.74	0.00	0.00	0.00	
8,900.00	89.89	179.49	7,386.72	-1,306.90	-1,566.19	1,699.32	0.00	0.00	0.00	
9,000.00	89.89	179.49	7,386.91	-1,406.89	-1,565.29	1,794.91	0.00	0.00	0.00	
9,100.00	89.89	179.49	7,387.10	-1,506.89	-1,564.39	1,890.49	0.00	0.00	0.00	
9,200.00	89.89	179.49	7,387.29	-1,606.88	-1,563.50	1,986.08	0.00	0.00	0.00	
9,300.00	89.89	179.49	7,387.48	-1,706.88	-1,562.60	2,081.67	0.00	0.00	0.00	
9,400.00	89.89	179.49	7,387.67	-1,806.88	-1,561.70	2,177.25	0.00	0.00	0.00	
9,500.00	89.89	179.49	7,387.86	-1,906.87	-1,560.80	2,272.84	0.00	0.00	0.00	
9,600.00	89.89	179.49	7,388.05	-2,006.87	-1,559.91	2,368.43	0.00	0.00	0.00	
9,700.00	89.89	179.49	7,388.24	-2,106.86	-1,559.01	2,464.01	0.00	0.00	0.00	
9,800.00	89.89	179.49	7,388.43	-2,206.86	-1,558.11	2,559.60	0.00	0.00	0.00	
9,900.00	89.89	179.49	7,388.62	-2,306.86	-1,557.22	2,655.18	0.00	0.00	0.00	
10,000.00	89.89	179.49	7,388.81	-2,406.85	-1,556.32	2,750.77	0.00	0.00	0.00	
10,100.00	89.89	179.49	7,389.00	-2,506.85	-1,555.42	2,846.36	0.00	0.00	0.00	
10,200.00	89.89	179.49	7,389.19	-2,606.84	-1,554.52	2,941.94	0.00	0.00	0.00	
10,300.00	89.89	179.49	7,389.37	-2,706.84	-1,553.63	3,037.53	0.00	0.00	0.00	
10,400.00	89.89	179.49	7,389.56	-2,806.83	-1,552.73	3,133.12	0.00	0.00	0.00	
10,500.00	89.89	179.49	7,389.75	-2,906.83	-1,551.83	3,228.70	0.00	0.00	0.00	
10,600.00	89.89	179.49	7,389.94	-3,006.83	-1,550.94	3,324.29	0.00	0.00	0.00	
10,700.00	89.89	179.49	7,390.13	-3,106.82	-1,550.04	3,419.87	0.00	0.00	0.00	
10,800.00	89.89	179.49	7,390.32	-3,206.82	-1,549.14	3,515.46	0.00	0.00	0.00	
10,900.00	89.89	179.49	7,390.51	-3,306.81	-1,548.25	3,611.05	0.00	0.00	0.00	
11,000.00	89.89	179.49	7,390.70	-3,406.81	-1,547.35	3,706.63	0.00	0.00	0.00	
11,100.00	89.89	179.49	7,390.89	-3,506.81	-1,546.45	3,802.22	0.00	0.00	0.00	
11,200.00	89.89	179.49	7,391.08	-3,606.80	-1,545.55	3,897.81	0.00	0.00	0.00	
11,300.00	89.89	179.49	7,391.27	-3,706.80	-1,544.66	3,993.39	0.00	0.00	0.00	
11,400.00	89.89	179.49	7,391.46	-3,806.79	-1,543.76	4,088.98	0.00	0.00	0.00	
11,500.00	89.89	179.49	7,391.65	-3,906.79	-1,542.86	4,184.56	0.00	0.00	0.00	
11,600.00	89.89	179.49	7,391.84	-4,006.78	-1,541.97	4,280.15	0.00	0.00	0.00	
11,700.00	89.89	179.49	7,392.03	-4,106.78	-1,541.07	4,375.74	0.00	0.00	0.00	
11,800.00	89.89	179.49	7,392.22	-4,206.78	-1,540.17	4,471.32	0.00	0.00	0.00	
11,900.00	89.89	179.49	7,392.41	-4,306.77	-1,539.28	4,566.91	0.00	0.00	0.00	
12,000.00	89.89	179.49	7,392.60	-4,406.77	-1,538.38	4,662.50	0.00	0.00	0.00	
12,100.00	89.89	179.49	7,392.79	-4,506.76	-1,537.48	4,758.08	0.00	0.00	0.00	
12,200.00	89.89	179.49	7,392.98	-4,606.76	-1,536.58	4,853.67	0.00	0.00	0.00	
12,300.00	89.89	179.49	7,393.17	-4,706.75	-1,535.69	4,949.25	0.00	0.00	0.00	
12,400.00	89.89	179.49	7,393.35	-4,806.75	-1,534.79	5,044.84	0.00	0.00	0.00	
12,500.00	89.89	179.49	7,393.54	-4,906.75	-1,533.89	5,140.43	0.00	0.00	0.00	
12,600.00	89.89	179.49	7,393.73	-5,006.74	-1,533.00	5,236.01	0.00	0.00	0.00	
12,700.00	89.89	179.49	7,393.92	-5,106.74	-1,532.10	5,331.60	0.00	0.00	0.00	
12,740.51	89.89	179.49	7,394.00	-5,147.25	-1,531.74	5,370.32	0.00	0.00	0.00	
<b>PBHL/TD</b>										

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-1HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	KB @ 5099.00usft (D Rig)
<b>Site:</b>	2N-66W-24 GRACIE 35-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GRACIE 24-1HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit-Rev2		

### Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
GRACIE 24-1HZ HEEL - plan misses target center by 0.04usft at 7991.08usft MD (7385.00 TVD, -398.02 N, -1574.34 E) - Point	0.00	0.00	7,385.00	-398.02	-1,574.38	14,569,224.08	1,714,531.66	40.116383	-104.734902
GRACIE 24-1HZ PBHL - plan hits target center - Point	0.00	0.00	7,394.00	-5,147.25	-1,531.74	14,564,475.00	1,714,588.76	40.103341	-104.734748

### Casing Points

Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(usft)	(usft)		(")	(")
1,837.86	1,800.00	Surface Csg	9-5/8	13-1/2
7,991.09	7,385.00	Top of Production	5-1/2	7-7/8

### Formations

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
1,533.32	1,512.00	Fox Hills			
4,406.82	4,229.00	Parkman			
4,922.94	4,717.00	Sussex			
7,469.30	7,182.00	Sharon Springs			
7,526.39	7,222.00	Niobrara			
7,638.12	7,289.00	Nio B			
7,806.21	7,358.00	Nio C			

### Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
		+N/-S	+E/-W	
(usft)	(usft)	(usft)	(usft)	
300.00	300.00	0.00	0.00	Build 1.5°/100 DLS
1,566.67	1,543.58	30.92	-205.79	Hold Inc
5,195.90	4,975.09	206.46	-1,374.25	Drop 1.5°/100 DLS
6,462.57	6,218.67	237.38	-1,580.04	Vertical Point
6,992.28	6,748.38	237.38	-1,580.04	KOP, Build 10°/100 DLS
7,991.08	7,385.00	-398.02	-1,574.34	Landing Target
12,740.51	7,394.00	-5,147.25	-1,531.74	PBHL/TD