



# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-66W-24 GRACIE 35-24HZ PAD  
GRACIE 24-5HZ**

**Plan A**

**Plan: Permit-Rev2**

## **Standard Planning Report**

**11 September, 2017**

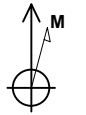
Well: GRACIE 24-5HZ	Plan: Permit-Rev2	Field: WELD-NAD83-UTMFT13N	Site: 2N-66W-24 GRACIE 35-24HZ PAD
Borehole: Plan A	Plan Date: 15:30, September 11 2017	Datum: UTM (US Survey Ft)	RKB: 5099ft
Grid Conv: 0.17	VSec: 185.23deg	Zone: Zone 13N (108 W to 102 W)	GL: 5082.00ft
Latitude: 40.117475		Longitude: -104.729055	
Northing / Y: 14569626.71		Easting / X: 1716164.93	
Model: IGRF2015		Date: 30-Aug-17	DEC: 8.15°
DIP: 66.63°		FS: 52223.76504927nT	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	525.00	0.00	0.00	525.00	0.00	0.00	0.00	0.00	0.00	Build 1.5°/100 DLS
3	1658.33	17.00	295.80	1641.78	72.63	-150.27	1.50	295.80	-58.64	Hold Inc
4	2424.11	17.00	295.80	2374.09	170.07	-351.85	0.00	0.00	-137.31	Drop 1.5°/100 DLS
5	3557.44	0.00	0.00	3490.87	242.70	-502.12	1.50	180.00	-195.95	Vertical Point
6	6736.95	0.00	0.00	6670.38	242.70	-502.12	0.00	0.00	-195.95	KOP, Build 10°/100 DLS
7	7734.68	89.80	179.67	7307.00	-391.63	-498.42	9.00	179.67	435.41	Landing Target
8	12489.15	89.80	179.67	7324.00	-5146.00	-470.71	0.00	0.00	5167.48	PBHL/TD

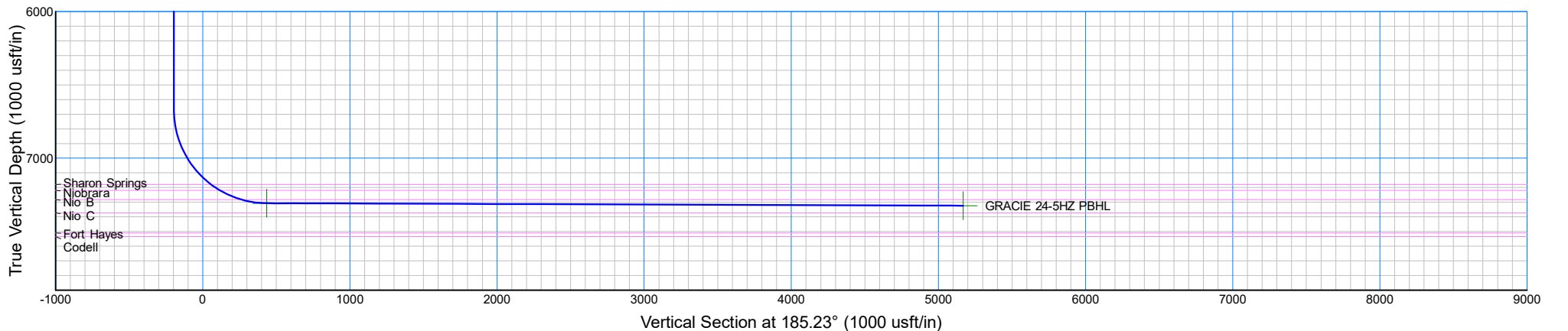
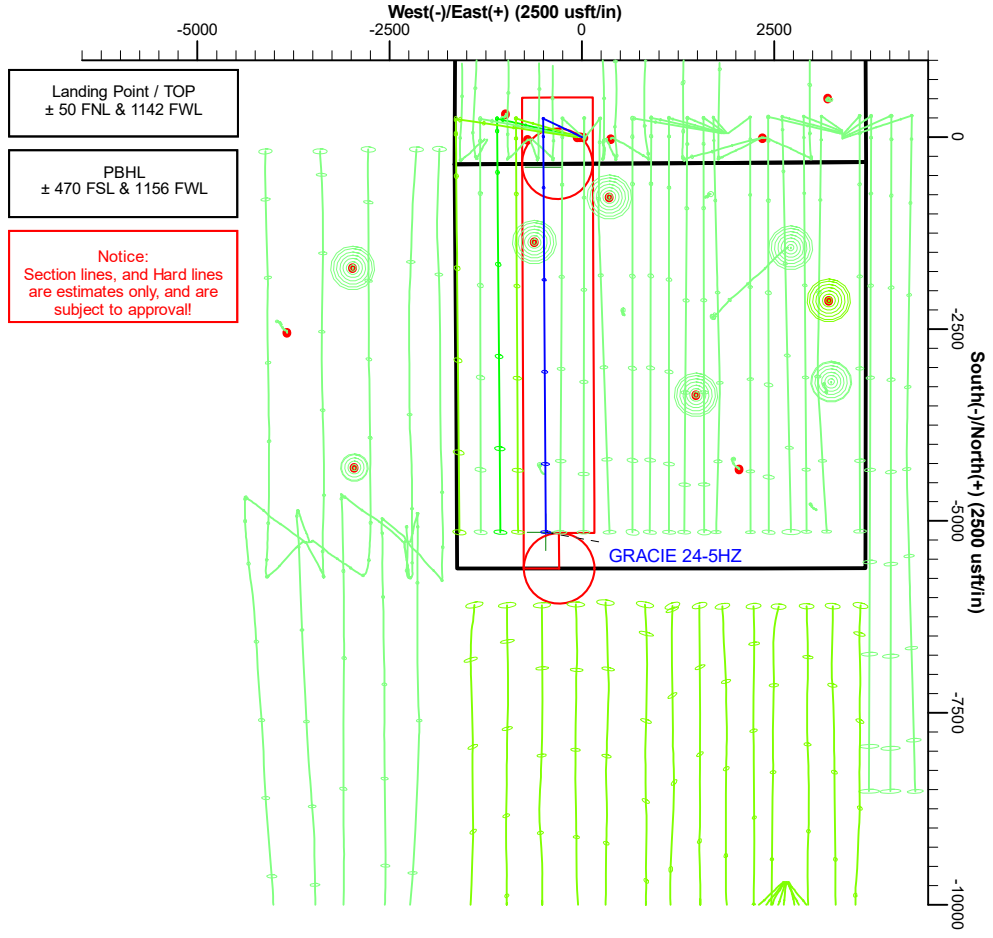
Target Details							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
GRACIE 24-5HZ HEEL	7307.00	-391.65	-498.44	14569233.54	1715667.69	40.116382	-104.730897
GRACIE 24-5HZ PBHL	7324.00	-5146.00	-470.71	14564479.30	1715709.90	40.103343	-104.730738

FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
1512.00	1523.33	Fox Hills
4229.00	4295.57	Parkman
4717.00	4783.57	Sussex
7179.00	7326.16	Sharon Springs
7219.00	7398.24	Niobrara
7283.00	7561.59	Nio B

**True North** Azimuths to True North  
Magnetic North: 8.15°



Strength: 52223.8snT  
Dip Angle: 66.63°  
Date: 8/30/2017  
Model: IGRF2015



<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-5HZ
<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 24-5HZ	<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 24-5HZ					
<b>Well Position</b>	<b>+N/-S</b>	-0.36 usft	<b>Northing:</b>	14,569,626.71 usft	<b>Latitude:</b>	40.117475
	<b>+E/-W</b>	60.11 usft	<b>Easting:</b>	1,716,164.93 usft	<b>Longitude:</b>	-104.729055
<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	52,223.76504927

<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	185.23

<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	1,824.00	Permit-Rev2 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declinatio	
2	1,824.00	12,489.15	Permit-Rev2 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-5HZ
<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 24-5HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit-Rev2		

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	
525.00	0.00	0.00	525.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,658.33	17.00	295.80	1,641.78	72.63	-150.27	1.50	1.50	0.00	295.80	
2,424.11	17.00	295.80	2,374.09	170.07	-351.85	0.00	0.00	0.00	0.00	
3,557.44	0.00	0.00	3,490.87	242.70	-502.12	1.50	-1.50	0.00	180.00	
6,736.95	0.00	0.00	6,670.38	242.70	-502.12	0.00	0.00	0.00	0.00	
7,734.68	89.80	179.67	7,307.00	-391.63	-498.42	9.00	9.00	18.01	179.67	
12,489.15	89.80	179.67	7,324.00	-5,146.00	-470.71	0.00	0.00	0.00	0.00	GRACIE 24-5HZ PBI

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-5HZ
<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 24-5HZ	<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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
525.00	0.00	0.00	525.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Build 1.5°/100 DLS</b>										
600.00	1.13	295.80	600.00	0.32	-0.66	-0.26	1.50	1.50	0.00	
700.00	2.63	295.80	699.94	1.74	-3.61	-1.41	1.50	1.50	0.00	
800.00	4.13	295.80	799.76	4.31	-8.91	-3.48	1.50	1.50	0.00	
900.00	5.63	295.80	899.40	8.00	-16.56	-6.46	1.50	1.50	0.00	
1,000.00	7.13	295.80	998.78	12.84	-26.56	-10.36	1.50	1.50	0.00	
1,100.00	8.63	295.80	1,097.83	18.80	-38.89	-15.18	1.50	1.50	0.00	
1,200.00	10.13	295.80	1,196.49	25.89	-53.56	-20.90	1.50	1.50	0.00	
1,300.00	11.63	295.80	1,294.69	34.10	-70.54	-27.53	1.50	1.50	0.00	
1,400.00	13.13	295.80	1,392.37	43.42	-89.84	-35.06	1.50	1.50	0.00	
1,500.00	14.63	295.80	1,489.45	53.86	-111.43	-43.49	1.50	1.50	0.00	
1,523.33	14.97	295.80	1,512.00	56.45	-116.79	-45.58	1.50	1.50	0.00	
<b>Fox Hills</b>										
1,600.00	16.13	295.80	1,585.87	65.40	-135.30	-52.80	1.50	1.50	0.00	
1,658.33	17.00	295.80	1,641.78	72.63	-150.27	-58.64	1.50	1.50	0.00	
<b>Hold Inc</b>										
1,700.00	17.00	295.80	1,681.62	77.93	-161.24	-62.92	0.00	0.00	0.00	
1,800.00	17.00	295.80	1,777.25	90.66	-187.56	-73.20	0.00	0.00	0.00	
1,900.00	17.00	295.80	1,872.88	103.38	-213.89	-83.47	0.00	0.00	0.00	
2,000.00	17.00	295.80	1,968.52	116.11	-240.21	-93.74	0.00	0.00	0.00	
2,100.00	17.00	295.80	2,064.15	128.83	-266.53	-104.01	0.00	0.00	0.00	
2,200.00	17.00	295.80	2,159.78	141.55	-292.86	-114.29	0.00	0.00	0.00	
2,300.00	17.00	295.80	2,255.41	154.28	-319.18	-124.56	0.00	0.00	0.00	
2,400.00	17.00	295.80	2,351.04	167.00	-345.50	-134.83	0.00	0.00	0.00	
2,424.11	17.00	295.80	2,374.09	170.07	-351.85	-137.31	0.00	0.00	0.00	
<b>Drop 1.5°/100 DLS</b>										
2,500.00	15.86	295.80	2,446.88	179.41	-371.18	-144.85	1.50	-1.50	0.00	
2,600.00	14.36	295.80	2,543.42	190.75	-394.65	-154.01	1.50	-1.50	0.00	
2,700.00	12.86	295.80	2,640.61	200.99	-415.84	-162.28	1.50	-1.50	0.00	
2,800.00	11.36	295.80	2,738.38	210.12	-434.73	-169.65	1.50	-1.50	0.00	
2,900.00	9.86	295.80	2,836.67	218.14	-451.31	-176.12	1.50	-1.50	0.00	
3,000.00	8.36	295.80	2,935.40	225.03	-465.56	-181.69	1.50	-1.50	0.00	
3,100.00	6.86	295.80	3,034.52	230.79	-477.49	-186.34	1.50	-1.50	0.00	
3,200.00	5.36	295.80	3,133.95	235.43	-487.07	-190.08	1.50	-1.50	0.00	
3,300.00	3.86	295.80	3,233.62	238.93	-494.31	-192.91	1.50	-1.50	0.00	
3,400.00	2.36	295.80	3,333.47	241.29	-499.20	-194.81	1.50	-1.50	0.00	
3,500.00	0.86	295.80	3,433.43	242.51	-501.73	-195.80	1.50	-1.50	0.00	
3,557.44	0.00	0.00	3,490.87	242.70	-502.12	-195.95	1.50	-1.50	0.00	
<b>Vertical Point</b>										
3,600.00	0.00	0.00	3,533.43	242.70	-502.12	-195.95	0.00	0.00	0.00	
3,700.00	0.00	0.00	3,633.43	242.70	-502.12	-195.95	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,733.43	242.70	-502.12	-195.95	0.00	0.00	0.00	
3,900.00	0.00	0.00	3,833.43	242.70	-502.12	-195.95	0.00	0.00	0.00	
4,000.00	0.00	0.00	3,933.43	242.70	-502.12	-195.95	0.00	0.00	0.00	
4,100.00	0.00	0.00	4,033.43	242.70	-502.12	-195.95	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,133.43	242.70	-502.12	-195.95	0.00	0.00	0.00	
4,295.57	0.00	0.00	4,229.00	242.70	-502.12	-195.95	0.00	0.00	0.00	

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-5HZ
<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 24-5HZ	<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>									
4,300.00	0.00	0.00	4,233.43	242.70	-502.12	-195.95	0.00	0.00	0.00
4,400.00	0.00	0.00	4,333.43	242.70	-502.12	-195.95	0.00	0.00	0.00
4,500.00	0.00	0.00	4,433.43	242.70	-502.12	-195.95	0.00	0.00	0.00
4,600.00	0.00	0.00	4,533.43	242.70	-502.12	-195.95	0.00	0.00	0.00
4,700.00	0.00	0.00	4,633.43	242.70	-502.12	-195.95	0.00	0.00	0.00
4,783.57	0.00	0.00	4,717.00	242.70	-502.12	-195.95	0.00	0.00	0.00
<b>Sussex</b>									
4,800.00	0.00	0.00	4,733.43	242.70	-502.12	-195.95	0.00	0.00	0.00
4,900.00	0.00	0.00	4,833.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,000.00	0.00	0.00	4,933.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,100.00	0.00	0.00	5,033.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,200.00	0.00	0.00	5,133.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,300.00	0.00	0.00	5,233.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,400.00	0.00	0.00	5,333.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,500.00	0.00	0.00	5,433.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,600.00	0.00	0.00	5,533.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,700.00	0.00	0.00	5,633.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,800.00	0.00	0.00	5,733.43	242.70	-502.12	-195.95	0.00	0.00	0.00
5,900.00	0.00	0.00	5,833.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,000.00	0.00	0.00	5,933.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,100.00	0.00	0.00	6,033.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,200.00	0.00	0.00	6,133.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,300.00	0.00	0.00	6,233.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,400.00	0.00	0.00	6,333.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,500.00	0.00	0.00	6,433.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,600.00	0.00	0.00	6,533.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,700.00	0.00	0.00	6,633.43	242.70	-502.12	-195.95	0.00	0.00	0.00
6,736.95	0.00	0.00	6,670.38	242.70	-502.12	-195.95	0.00	0.00	0.00
<b>KOP, Build 10°/100 DLS</b>									
6,800.00	5.67	179.67	6,733.32	239.58	-502.10	-192.85	9.00	9.00	0.00
6,900.00	14.67	179.67	6,831.65	221.93	-502.00	-175.28	9.00	9.00	0.00
7,000.00	23.67	179.67	6,926.01	189.12	-501.81	-142.63	9.00	9.00	0.00
7,100.00	32.67	179.67	7,014.07	141.96	-501.53	-95.68	9.00	9.00	0.00
7,200.00	41.67	179.67	7,093.67	81.60	-501.18	-35.61	9.00	9.00	0.00
7,300.00	50.67	179.67	7,162.84	9.53	-500.76	36.13	9.00	9.00	0.00
7,326.16	53.03	179.67	7,179.00	-11.04	-500.64	56.60	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,398.24	59.52	179.67	7,219.00	-70.96	-500.29	116.24	9.00	9.00	0.00
<b>Niobrara</b>									
7,400.00	59.67	179.67	7,219.89	-72.48	-500.28	117.75	9.00	9.00	0.00
7,500.00	68.67	179.67	7,263.41	-162.39	-499.76	207.24	9.00	9.00	0.00
7,561.59	74.22	179.67	7,283.00	-220.76	-499.42	265.33	9.00	9.00	0.00
<b>Nio B</b>									
7,600.00	77.67	179.67	7,292.33	-258.01	-499.20	302.41	9.00	9.00	0.00
7,700.00	86.67	179.67	7,305.93	-356.98	-498.62	400.91	9.00	9.00	0.00
7,734.68	89.80	179.67	7,307.00	-391.64	-498.42	435.41	9.00	9.00	0.00
<b>Landing Target</b>									
7,800.00	89.80	179.67	7,307.23	-456.96	-498.04	500.42	0.00	0.00	0.00
7,900.00	89.80	179.67	7,307.59	-556.95	-497.46	599.95	0.00	0.00	0.00
8,000.00	89.80	179.67	7,307.94	-656.95	-496.88	699.48	0.00	0.00	0.00
8,100.00	89.80	179.67	7,308.30	-756.95	-496.29	799.01	0.00	0.00	0.00
8,200.00	89.80	179.67	7,308.66	-856.95	-495.71	898.54	0.00	0.00	0.00

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-5HZ
<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 24-5HZ	<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)
8,300.00	89.80	179.67	7,309.02	-956.94	-495.13	998.07	0.00	0.00	0.00
8,400.00	89.80	179.67	7,309.38	-1,056.94	-494.54	1,097.60	0.00	0.00	0.00
8,500.00	89.80	179.67	7,309.73	-1,156.94	-493.96	1,197.12	0.00	0.00	0.00
8,600.00	89.80	179.67	7,310.09	-1,256.94	-493.38	1,296.65	0.00	0.00	0.00
8,700.00	89.80	179.67	7,310.45	-1,356.93	-492.80	1,396.18	0.00	0.00	0.00
8,800.00	89.80	179.67	7,310.81	-1,456.93	-492.21	1,495.71	0.00	0.00	0.00
8,900.00	89.80	179.67	7,311.16	-1,556.93	-491.63	1,595.24	0.00	0.00	0.00
9,000.00	89.80	179.67	7,311.52	-1,656.93	-491.05	1,694.77	0.00	0.00	0.00
9,100.00	89.80	179.67	7,311.88	-1,756.92	-490.46	1,794.30	0.00	0.00	0.00
9,200.00	89.80	179.67	7,312.24	-1,856.92	-489.88	1,893.83	0.00	0.00	0.00
9,300.00	89.80	179.67	7,312.59	-1,956.92	-489.30	1,993.36	0.00	0.00	0.00
9,400.00	89.80	179.67	7,312.95	-2,056.92	-488.72	2,092.88	0.00	0.00	0.00
9,500.00	89.80	179.67	7,313.31	-2,156.92	-488.13	2,192.41	0.00	0.00	0.00
9,600.00	89.80	179.67	7,313.67	-2,256.91	-487.55	2,291.94	0.00	0.00	0.00
9,700.00	89.80	179.67	7,314.02	-2,356.91	-486.97	2,391.47	0.00	0.00	0.00
9,800.00	89.80	179.67	7,314.38	-2,456.91	-486.38	2,491.00	0.00	0.00	0.00
9,900.00	89.80	179.67	7,314.74	-2,556.91	-485.80	2,590.53	0.00	0.00	0.00
10,000.00	89.80	179.67	7,315.10	-2,656.90	-485.22	2,690.06	0.00	0.00	0.00
10,100.00	89.80	179.67	7,315.46	-2,756.90	-484.64	2,789.59	0.00	0.00	0.00
10,200.00	89.80	179.67	7,315.81	-2,856.90	-484.05	2,889.11	0.00	0.00	0.00
10,300.00	89.80	179.67	7,316.17	-2,956.90	-483.47	2,988.64	0.00	0.00	0.00
10,400.00	89.80	179.67	7,316.53	-3,056.89	-482.89	3,088.17	0.00	0.00	0.00
10,500.00	89.80	179.67	7,316.89	-3,156.89	-482.30	3,187.70	0.00	0.00	0.00
10,600.00	89.80	179.67	7,317.24	-3,256.89	-481.72	3,287.23	0.00	0.00	0.00
10,700.00	89.80	179.67	7,317.60	-3,356.89	-481.14	3,386.76	0.00	0.00	0.00
10,800.00	89.80	179.67	7,317.96	-3,456.89	-480.56	3,486.29	0.00	0.00	0.00
10,900.00	89.80	179.67	7,318.32	-3,556.88	-479.97	3,585.82	0.00	0.00	0.00
11,000.00	89.80	179.67	7,318.67	-3,656.88	-479.39	3,685.35	0.00	0.00	0.00
11,100.00	89.80	179.67	7,319.03	-3,756.88	-478.81	3,784.87	0.00	0.00	0.00
11,200.00	89.80	179.67	7,319.39	-3,856.88	-478.22	3,884.40	0.00	0.00	0.00
11,300.00	89.80	179.67	7,319.75	-3,956.87	-477.64	3,983.93	0.00	0.00	0.00
11,400.00	89.80	179.67	7,320.10	-4,056.87	-477.06	4,083.46	0.00	0.00	0.00
11,500.00	89.80	179.67	7,320.46	-4,156.87	-476.48	4,182.99	0.00	0.00	0.00
11,600.00	89.80	179.67	7,320.82	-4,256.87	-475.89	4,282.52	0.00	0.00	0.00
11,700.00	89.80	179.67	7,321.18	-4,356.86	-475.31	4,382.05	0.00	0.00	0.00
11,800.00	89.80	179.67	7,321.54	-4,456.86	-474.73	4,481.58	0.00	0.00	0.00
11,900.00	89.80	179.67	7,321.89	-4,556.86	-474.14	4,581.10	0.00	0.00	0.00
12,000.00	89.80	179.67	7,322.25	-4,656.86	-473.56	4,680.63	0.00	0.00	0.00
12,100.00	89.80	179.67	7,322.61	-4,756.85	-472.98	4,780.16	0.00	0.00	0.00
12,200.00	89.80	179.67	7,322.97	-4,856.85	-472.40	4,879.69	0.00	0.00	0.00
12,300.00	89.80	179.67	7,323.32	-4,956.85	-471.81	4,979.22	0.00	0.00	0.00
12,400.00	89.80	179.67	7,323.68	-5,056.85	-471.23	5,078.75	0.00	0.00	0.00
12,489.15	89.80	179.67	7,324.00	-5,146.00	-470.71	5,167.48	0.00	0.00	0.00
<b>PBHL/TD</b>									

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well GRACIE 24-5HZ
<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 24-5HZ	<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 24-5HZ HEEL - plan misses target center by 0.02usft at 7734.69usft MD (7307.00 TVD, -391.65 N, -498.42 E) - Point	0.00	0.00	7,307.00	-391.65	-498.44	14,569,233.54	1,715,667.68	40.116400	-104.730838
GRACIE 24-5HZ PBHL - plan hits target center - Point	0.00	0.00	7,324.00	-5,146.00	-470.71	14,564,479.30	1,715,709.90	40.103344	-104.730739

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,523.33	1,512.00	Fox Hills				
4,295.57	4,229.00	Parkman				
4,783.57	4,717.00	Sussex				
7,326.16	7,179.00	Sharon Springs				
7,398.24	7,219.00	Niobrara				
7,561.59	7,283.00	Nio B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
525.00	525.00	0.00	0.00	Build 1.5°/100 DLS	
1,658.33	1,641.78	72.63	-150.27	Hold Inc	
2,424.11	2,374.09	170.07	-351.85	Drop 1.5°/100 DLS	
3,557.44	3,490.87	242.70	-502.12	Vertical Point	
6,736.95	6,670.38	242.70	-502.12	KOP, Build 10°/100 DLS	
7,734.68	7,307.00	-391.64	-498.42	Landing Target	
12,489.15	7,324.00	-5,146.00	-470.71	PBHL/TD	