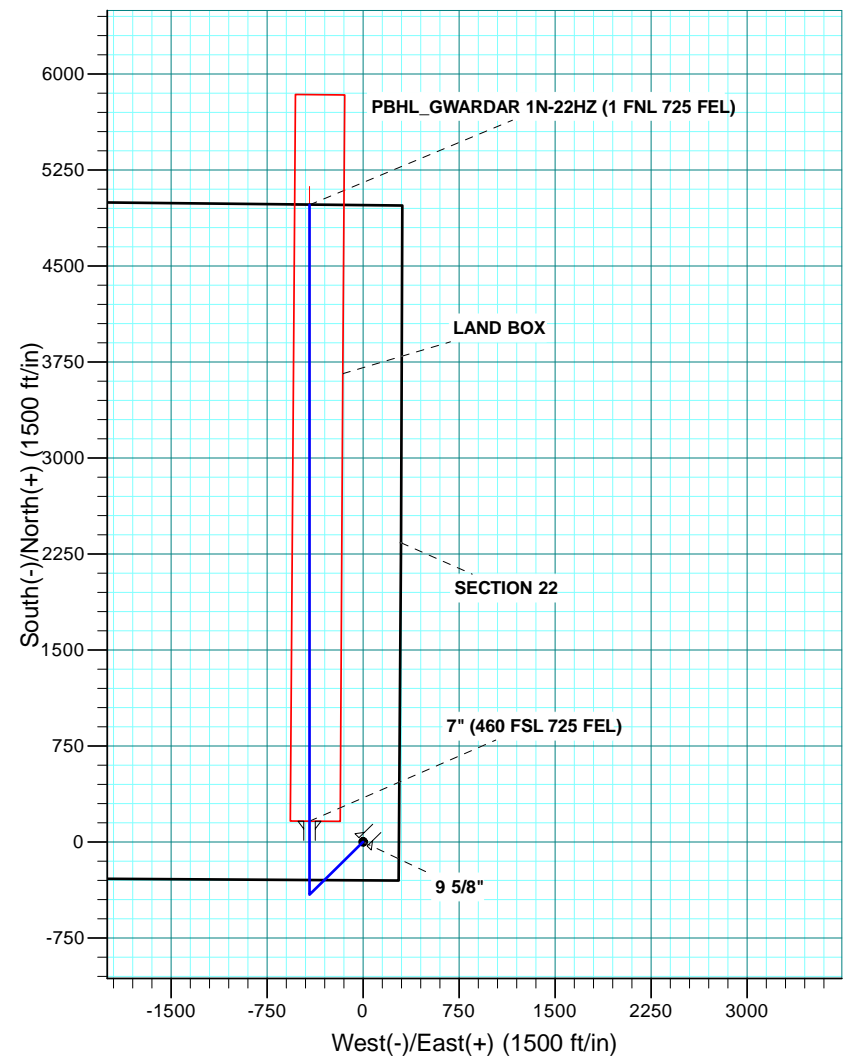
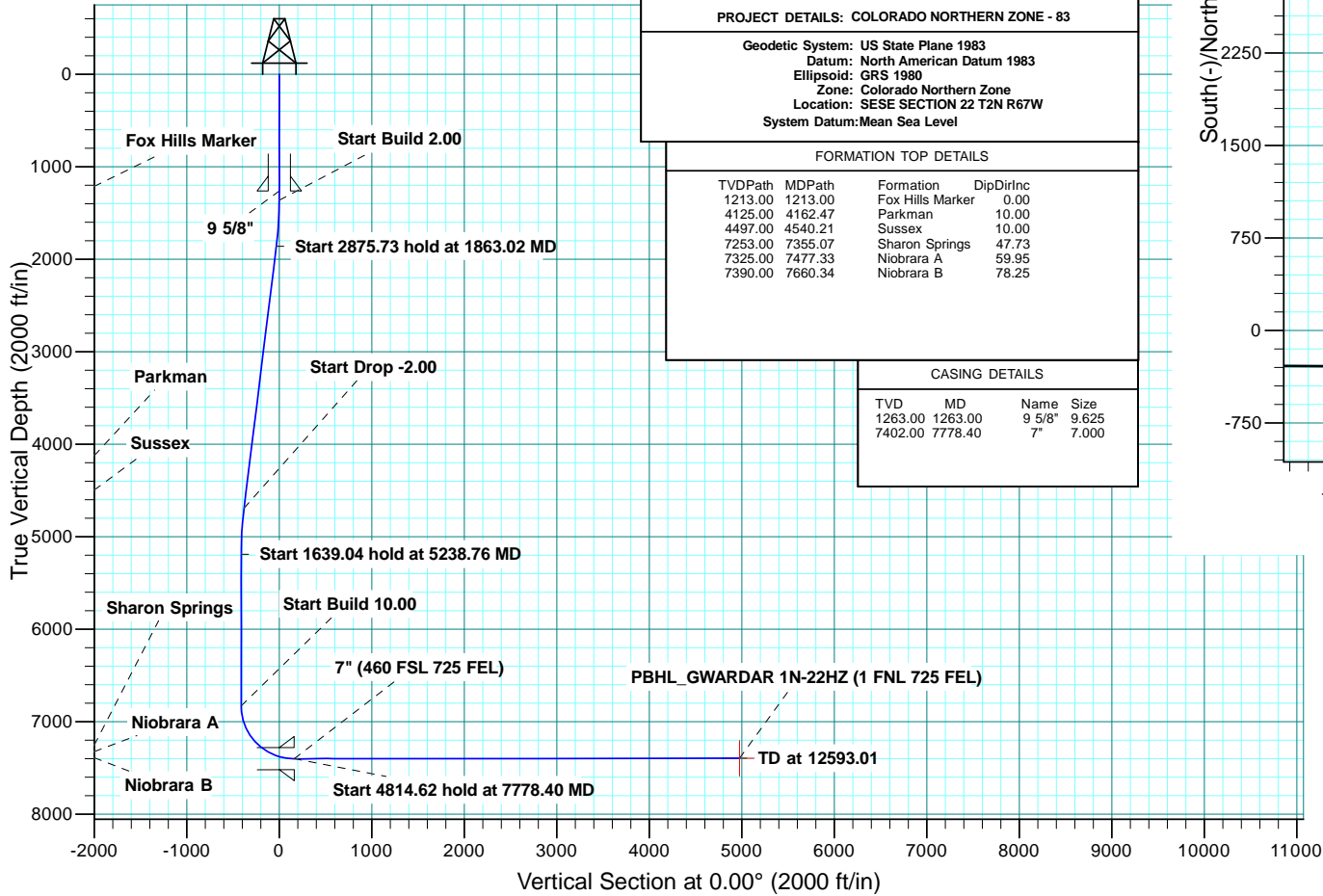


WELL DETAILS: GWARDAR 1N-22HZ											
GL 4978 & KB 17 @ 4995.00ft (ASSUMED)											
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
		0.00	0.00	1286183.10	3176614.99	40.1172390	-104.8684870				
SECTION DETAILS											
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target		Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
1363.00	0.00	0.00	1363.00	0.00	0.00	0.00	0.00	0.00			Start Build 2.00
1863.02	10.00	225.50	1860.48	-30.50	-31.05	2.00	225.50	-30.50			Start 2875.73 hold at 1863.02 MD
4738.74	10.00	225.50	4692.52	-380.50	-387.26	0.00	0.00	-380.50			Start Drop -2.00
5238.76	0.00	0.00	5190.00	-411.00	-418.31	2.00	180.00	-411.00			Start 1639.04 hold at 5238.76 MD
6877.80	0.00	0.00	6829.04	-411.00	-418.31	0.00	0.00	-411.00			Start Build 10.00
7778.40	90.06	0.00	7402.00	162.55	-418.31	10.00	0.00	162.55			Start 4814.62 hold at 7778.40 MD
12593.01	90.06	0.00	7397.00	4977.17	-418.31	0.00	0.00	4977.17	PBHL_GWARDAR 1N-22HZ		TD at 12593.01
DESIGN TARGET DETAILS											
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape			
PBHL 7397.00		4977.17	-418.31	1291157.15	3176161.25	40.1309020	-104.8699830	Point			

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83											
Geodetic System: US State Plane 1983											
Datum: North American Datum 1983											
Ellipsoid: GRS 1980											
Zone: Colorado Northern Zone											
Location: SESE SECTION 22 T2N R67W											
System Datum: Mean Sea Level											
FORMATION TOP DETAILS											
TVDPath	MDPath	Formation	DipDirInc								
1213.00	1213.00	Fox Hills Marker	0.00								
4125.00	4162.47	Parkman	10.00								
4497.00	4540.21	Sussex	10.00								
7253.00	7355.07	Sharon Springs	47.73								
7325.00	7477.33	Niobrara A	59.95								
7390.00	7660.34	Niobrara B	78.25								
CASING DETAILS											
TVD	MD	Name	Size								
1263.00	1263.00	9 5/8"	9.625								
7402.00	7778.40	7"	7.000								





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WARDAR 16-22HZ PAD**

**WARDAR 1N-22HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**18 February, 2014**



<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well GWARDAR 1N-22HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Site:</b>	WARDAR 16-22HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WARDAR 1N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	WARDAR 16-22HZ PAD, SESE SECTION 22 T2N R67W				
<b>Site Position:</b>	<b>Northing:</b>	1,286,183.11 usft	<b>Latitude:</b>	40.1172390	
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,176,615.00 usft	<b>Longitude:</b>	-104.8684870
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.41 °

<b>Well</b>	WARDAR 1N-22HZ, 300 FSL 280 FEL					
<b>Well Position</b>	<b>+N/-S</b>	-0.01 ft	<b>Northing:</b>	1,286,183.10 usft	<b>Latitude:</b>	40.1172390
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,176,615.00 usft	<b>Longitude:</b>	-104.8684870
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b>	4,978.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	2/18/2014	8.58	66.70	52,608

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	0.00

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,363.00	0.00	0.00	1,363.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,863.02	10.00	225.50	1,860.48	-30.50	-31.05	2.00	2.00	0.00	225.50	
4,738.75	10.00	225.50	4,692.52	-380.50	-387.26	0.00	0.00	0.00	0.00	
5,238.76	0.00	0.00	5,190.00	-411.00	-418.31	2.00	-2.00	0.00	180.00	
6,877.80	0.00	0.00	6,829.04	-411.00	-418.31	0.00	0.00	0.00	0.00	
7,778.40	90.06	0.00	7,402.00	162.55	-418.31	10.00	10.00	0.00	0.00	
12,593.01	90.06	0.00	7,397.00	4,977.17	-418.31	0.00	0.00	0.00	0.00	PBHL_GWARDAR 1N

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well GWARDAR 1N-22HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Site:</b>	GWARDAR 16-22HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GWARDAR 1N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,213.00	0.00	0.00	1,213.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Marker</b>										
1,263.00	0.00	0.00	1,263.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,363.00	0.00	0.00	1,363.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>										
1,400.00	0.74	225.50	1,400.00	-0.17	-0.17	-0.17	2.00	2.00	0.00	0.00
1,500.00	2.74	225.50	1,499.95	-2.30	-2.34	-2.30	2.00	2.00	0.00	0.00
1,600.00	4.74	225.50	1,599.73	-6.87	-6.99	-6.87	2.00	2.00	0.00	0.00
1,700.00	6.74	225.50	1,699.22	-13.88	-14.12	-13.88	2.00	2.00	0.00	0.00
1,800.00	8.74	225.50	1,798.31	-23.31	-23.73	-23.31	2.00	2.00	0.00	0.00
1,863.02	10.00	225.50	1,860.48	-30.50	-31.05	-30.50	2.00	2.00	0.00	0.00
<b>Start 2875.73 hold at 1863.02 MD</b>										
1,900.00	10.00	225.50	1,896.90	-35.01	-35.63	-35.01	0.00	0.00	0.00	0.00
2,000.00	10.00	225.50	1,995.38	-47.18	-48.01	-47.18	0.00	0.00	0.00	0.00
2,100.00	10.00	225.50	2,093.86	-59.35	-60.40	-59.35	0.00	0.00	0.00	0.00
2,200.00	10.00	225.50	2,192.35	-71.52	-72.79	-71.52	0.00	0.00	0.00	0.00
2,300.00	10.00	225.50	2,290.83	-83.69	-85.18	-83.69	0.00	0.00	0.00	0.00
2,400.00	10.00	225.50	2,389.31	-95.86	-97.56	-95.86	0.00	0.00	0.00	0.00
2,500.00	10.00	225.50	2,487.79	-108.03	-109.95	-108.03	0.00	0.00	0.00	0.00
2,600.00	10.00	225.50	2,586.27	-120.20	-122.34	-120.20	0.00	0.00	0.00	0.00
2,700.00	10.00	225.50	2,684.75	-132.37	-134.72	-132.37	0.00	0.00	0.00	0.00
2,800.00	10.00	225.50	2,783.23	-144.54	-147.11	-144.54	0.00	0.00	0.00	0.00
2,900.00	10.00	225.50	2,881.71	-156.71	-159.50	-156.71	0.00	0.00	0.00	0.00
3,000.00	10.00	225.50	2,980.19	-168.88	-171.88	-168.88	0.00	0.00	0.00	0.00
3,100.00	10.00	225.50	3,078.67	-181.05	-184.27	-181.05	0.00	0.00	0.00	0.00
3,200.00	10.00	225.50	3,177.15	-193.22	-196.66	-193.22	0.00	0.00	0.00	0.00
3,300.00	10.00	225.50	3,275.63	-205.39	-209.04	-205.39	0.00	0.00	0.00	0.00
3,400.00	10.00	225.50	3,374.11	-217.56	-221.43	-217.56	0.00	0.00	0.00	0.00
3,500.00	10.00	225.50	3,472.59	-229.73	-233.82	-229.73	0.00	0.00	0.00	0.00
3,600.00	10.00	225.50	3,571.07	-241.90	-246.20	-241.90	0.00	0.00	0.00	0.00
3,700.00	10.00	225.50	3,669.56	-254.07	-258.59	-254.07	0.00	0.00	0.00	0.00
3,800.00	10.00	225.50	3,768.04	-266.25	-270.98	-266.25	0.00	0.00	0.00	0.00
3,900.00	10.00	225.50	3,866.52	-278.42	-283.37	-278.42	0.00	0.00	0.00	0.00
4,000.00	10.00	225.50	3,965.00	-290.59	-295.75	-290.59	0.00	0.00	0.00	0.00
4,100.00	10.00	225.50	4,063.48	-302.76	-308.14	-302.76	0.00	0.00	0.00	0.00
4,162.47	10.00	225.50	4,125.00	-310.36	-315.88	-310.36	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,200.00	10.00	225.50	4,161.96	-314.93	-320.53	-314.93	0.00	0.00	0.00	0.00
4,300.00	10.00	225.50	4,260.44	-327.10	-332.91	-327.10	0.00	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well GWARDAR 1N-22HZ
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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Site:</b>	GWARDAR 16-22HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GWARDAR 1N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.00	10.00	225.50	4,358.92	-339.27	-345.30	-339.27	0.00	0.00	0.00
4,500.00	10.00	225.50	4,457.40	-351.44	-357.69	-351.44	0.00	0.00	0.00
4,540.21	10.00	225.50	4,497.00	-356.33	-362.67	-356.33	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	10.00	225.50	4,555.88	-363.61	-370.07	-363.61	0.00	0.00	0.00
4,700.00	10.00	225.50	4,654.36	-375.78	-382.46	-375.78	0.00	0.00	0.00
4,738.75	10.00	225.50	4,692.52	-380.50	-387.26	-380.50	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
4,800.00	8.78	225.50	4,752.95	-387.50	-394.39	-387.50	2.00	-2.00	0.00
4,900.00	6.78	225.50	4,852.03	-396.98	-404.04	-396.98	2.00	-2.00	0.00
5,000.00	4.78	225.50	4,951.52	-404.03	-411.21	-404.03	2.00	-2.00	0.00
5,100.00	2.78	225.50	5,051.29	-408.65	-415.91	-408.65	2.00	-2.00	0.00
5,200.00	0.78	225.50	5,151.24	-410.82	-418.12	-410.82	2.00	-2.00	0.00
5,238.76	0.00	0.00	5,190.00	-411.00	-418.31	-411.00	2.00	-2.00	0.00
<b>Start 1639.04 hold at 5238.76 MD</b>									
5,300.00	0.00	0.00	5,251.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,351.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,451.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,551.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,651.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,751.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,851.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,951.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,051.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,151.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,251.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,351.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,451.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,551.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,651.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,751.24	-411.00	-418.31	-411.00	0.00	0.00	0.00
6,877.80	0.00	0.00	6,829.04	-411.00	-418.31	-411.00	0.00	0.00	0.00
<b>Start Build 10.00</b>									
6,900.00	2.22	0.00	6,851.23	-410.57	-418.31	-410.57	10.00	10.00	0.00
7,000.00	12.22	0.00	6,950.31	-398.02	-418.31	-398.02	10.00	10.00	0.00
7,100.00	22.22	0.00	7,045.71	-368.45	-418.31	-368.45	10.00	10.00	0.00
7,200.00	32.22	0.00	7,134.52	-322.77	-418.31	-322.77	10.00	10.00	0.00
7,300.00	42.22	0.00	7,214.06	-262.36	-418.31	-262.36	10.00	10.00	0.00
7,355.07	47.73	0.00	7,253.00	-223.45	-418.31	-223.45	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,400.00	52.22	0.00	7,281.89	-189.06	-418.31	-189.06	10.00	10.00	0.00
7,477.33	59.95	0.00	7,325.00	-124.93	-418.31	-124.93	10.00	10.00	0.00
<b>Niobrara A</b>									
7,500.00	62.22	0.00	7,335.96	-105.09	-418.31	-105.09	10.00	10.00	0.00
7,600.00	72.22	0.00	7,374.63	-13.00	-418.31	-13.00	10.00	10.00	0.00
7,660.34	78.25	0.00	7,390.00	45.31	-418.31	45.31	10.00	10.00	0.00
<b>Niobrara B</b>									
7,700.00	82.22	0.00	7,396.72	84.39	-418.31	84.39	10.00	10.00	0.00
7,778.40	90.06	0.00	7,402.00	162.56	-418.31	162.56	10.00	10.00	0.00
<b>Start 4814.62 hold at 7778.40 MD - 7" (460 FSL 725 FEL)</b>									
7,800.00	90.06	0.00	7,401.98	184.16	-418.31	184.16	0.00	0.00	0.00
7,900.00	90.06	0.00	7,401.87	284.16	-418.31	284.16	0.00	0.00	0.00
8,000.00	90.06	0.00	7,401.77	384.16	-418.31	384.16	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well GWARDAR 1N-22HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Site:</b>	GWARDAR 16-22HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GWARDAR 1N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,100.00	90.06	0.00	7,401.66	484.16	-418.31	484.16	0.00	0.00	0.00
8,200.00	90.06	0.00	7,401.56	584.16	-418.31	584.16	0.00	0.00	0.00
8,300.00	90.06	0.00	7,401.46	684.16	-418.31	684.16	0.00	0.00	0.00
8,400.00	90.06	0.00	7,401.35	784.16	-418.31	784.16	0.00	0.00	0.00
8,500.00	90.06	0.00	7,401.25	884.16	-418.31	884.16	0.00	0.00	0.00
8,600.00	90.06	0.00	7,401.15	984.16	-418.31	984.16	0.00	0.00	0.00
8,700.00	90.06	0.00	7,401.04	1,084.16	-418.31	1,084.16	0.00	0.00	0.00
8,800.00	90.06	0.00	7,400.94	1,184.16	-418.31	1,184.16	0.00	0.00	0.00
8,900.00	90.06	0.00	7,400.83	1,284.16	-418.31	1,284.16	0.00	0.00	0.00
9,000.00	90.06	0.00	7,400.73	1,384.16	-418.31	1,384.16	0.00	0.00	0.00
9,100.00	90.06	0.00	7,400.63	1,484.16	-418.31	1,484.16	0.00	0.00	0.00
9,200.00	90.06	0.00	7,400.52	1,584.16	-418.31	1,584.16	0.00	0.00	0.00
9,300.00	90.06	0.00	7,400.42	1,684.16	-418.31	1,684.16	0.00	0.00	0.00
9,400.00	90.06	0.00	7,400.32	1,784.16	-418.31	1,784.16	0.00	0.00	0.00
9,500.00	90.06	0.00	7,400.21	1,884.16	-418.31	1,884.16	0.00	0.00	0.00
9,600.00	90.06	0.00	7,400.11	1,984.15	-418.31	1,984.15	0.00	0.00	0.00
9,700.00	90.06	0.00	7,400.00	2,084.15	-418.31	2,084.15	0.00	0.00	0.00
9,800.00	90.06	0.00	7,399.90	2,184.15	-418.31	2,184.15	0.00	0.00	0.00
9,900.00	90.06	0.00	7,399.80	2,284.15	-418.31	2,284.15	0.00	0.00	0.00
10,000.00	90.06	0.00	7,399.69	2,384.15	-418.31	2,384.15	0.00	0.00	0.00
10,100.00	90.06	0.00	7,399.59	2,484.15	-418.31	2,484.15	0.00	0.00	0.00
10,200.00	90.06	0.00	7,399.48	2,584.15	-418.31	2,584.15	0.00	0.00	0.00
10,300.00	90.06	0.00	7,399.38	2,684.15	-418.31	2,684.15	0.00	0.00	0.00
10,400.00	90.06	0.00	7,399.28	2,784.15	-418.31	2,784.15	0.00	0.00	0.00
10,500.00	90.06	0.00	7,399.17	2,884.15	-418.31	2,884.15	0.00	0.00	0.00
10,600.00	90.06	0.00	7,399.07	2,984.15	-418.31	2,984.15	0.00	0.00	0.00
10,700.00	90.06	0.00	7,398.97	3,084.15	-418.31	3,084.15	0.00	0.00	0.00
10,800.00	90.06	0.00	7,398.86	3,184.15	-418.31	3,184.15	0.00	0.00	0.00
10,900.00	90.06	0.00	7,398.76	3,284.15	-418.31	3,284.15	0.00	0.00	0.00
11,000.00	90.06	0.00	7,398.65	3,384.15	-418.31	3,384.15	0.00	0.00	0.00
11,100.00	90.06	0.00	7,398.55	3,484.15	-418.31	3,484.15	0.00	0.00	0.00
11,200.00	90.06	0.00	7,398.45	3,584.15	-418.31	3,584.15	0.00	0.00	0.00
11,300.00	90.06	0.00	7,398.34	3,684.15	-418.31	3,684.15	0.00	0.00	0.00
11,400.00	90.06	0.00	7,398.24	3,784.15	-418.31	3,784.15	0.00	0.00	0.00
11,500.00	90.06	0.00	7,398.13	3,884.15	-418.31	3,884.15	0.00	0.00	0.00
11,600.00	90.06	0.00	7,398.03	3,984.15	-418.31	3,984.15	0.00	0.00	0.00
11,700.00	90.06	0.00	7,397.93	4,084.15	-418.31	4,084.15	0.00	0.00	0.00
11,800.00	90.06	0.00	7,397.82	4,184.15	-418.31	4,184.15	0.00	0.00	0.00
11,900.00	90.06	0.00	7,397.72	4,284.15	-418.31	4,284.15	0.00	0.00	0.00
12,000.00	90.06	0.00	7,397.62	4,384.15	-418.31	4,384.15	0.00	0.00	0.00
12,100.00	90.06	0.00	7,397.51	4,484.15	-418.31	4,484.15	0.00	0.00	0.00
12,200.00	90.06	0.00	7,397.41	4,584.15	-418.31	4,584.15	0.00	0.00	0.00
12,300.00	90.06	0.00	7,397.30	4,684.15	-418.31	4,684.15	0.00	0.00	0.00
12,400.00	90.06	0.00	7,397.20	4,784.15	-418.31	4,784.15	0.00	0.00	0.00
12,500.00	90.06	0.00	7,397.10	4,884.15	-418.31	4,884.15	0.00	0.00	0.00
12,593.01	90.06	0.00	7,397.00	4,977.17	-418.31	4,977.17	0.00	0.00	0.00

**TD at 12593.01 - PBHL\_GWARDAR 1N-22HZ (1 FNL 725 FEL)**

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well GWARDAR 1N-22HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4978 & KB 17 @ 4995.00ft (ASSUMED)
<b>Site:</b>	GWARDAR 16-22HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	GWARDAR 1N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_GWARDAR 1N-2 - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,397.00	4,977.17	-418.31	1,291,157.15	3,176,161.26	40.1309020	-104.8699830

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,263.00	1,263.00	9 5/8"	9.625	12.250		
7,778.40	7,402.00	7" (460 FSL 725 FEL)	7.000	7.500		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,213.00	1,213.00	Fox Hills Marker				
4,162.47	4,125.00	Parkman				
4,540.21	4,497.00	Sussex				
7,355.07	7,253.00	Sharon Springs				
7,477.33	7,325.00	Niobrara A				
7,660.34	7,390.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,363.00	1,363.00	0.00	0.00	Start Build 2.00	
1,863.02	1,860.48	-30.50	-31.05	Start 2875.73 hold at 1863.02 MD	
4,738.75	4,692.52	-380.50	-387.26	Start Drop -2.00	
5,238.76	5,190.00	-411.00	-418.31	Start 1639.04 hold at 5238.76 MD	
6,877.80	6,829.04	-411.00	-418.31	Start Build 10.00	
7,778.40	7,402.00	162.55	-418.31	Start 4814.62 hold at 7778.40 MD	
12,593.01	7,397.00	4,977.17	-418.31	TD at 12593.01	