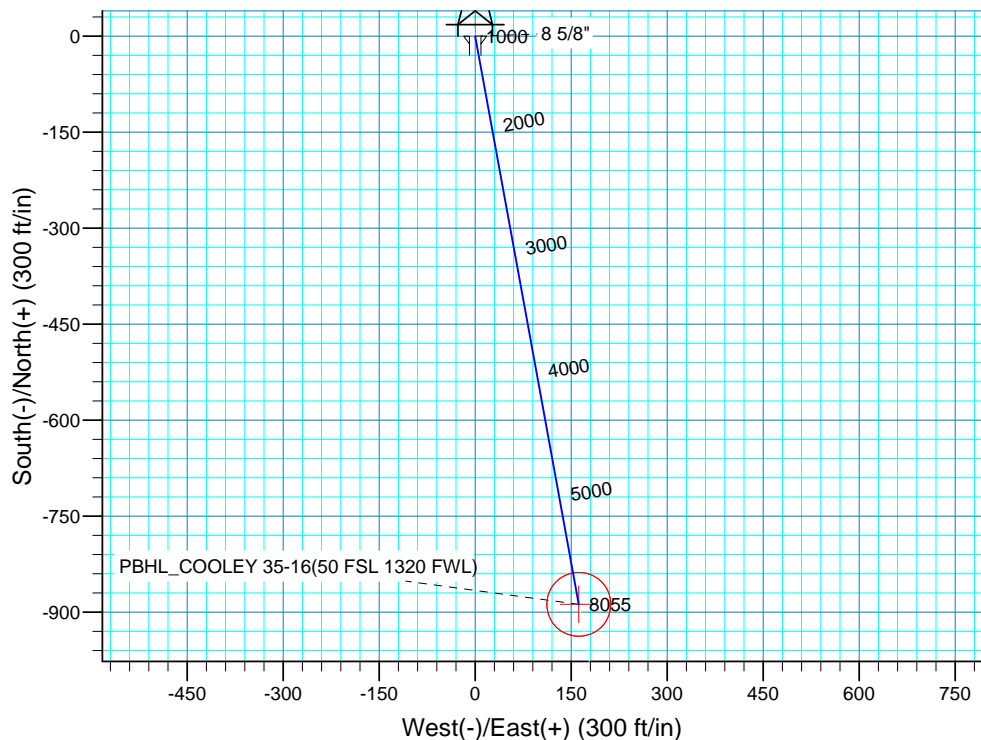
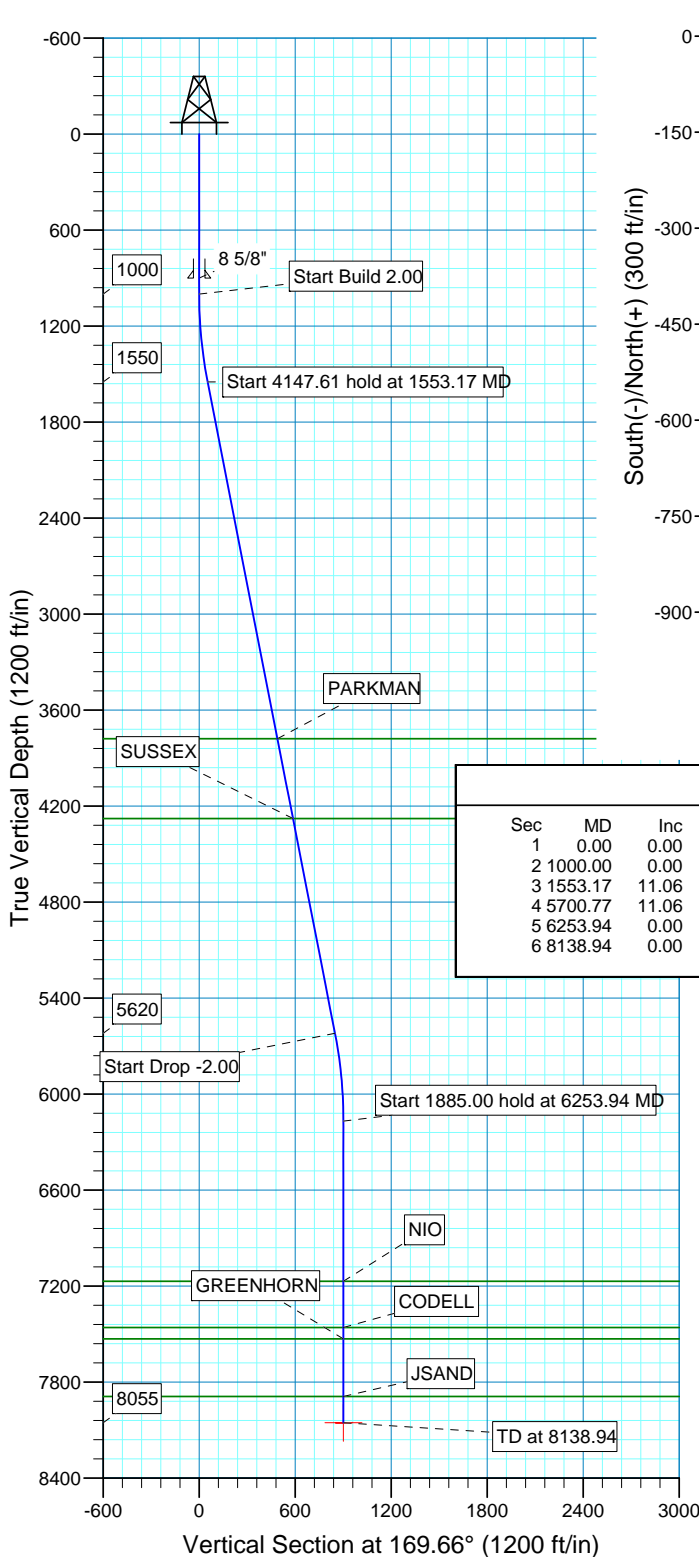
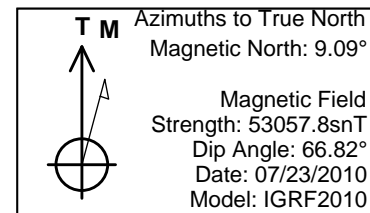


WELL DETAILS: P_COOLEY 35-16								
GL 4885 & RKB 15' @ 4900.00ft (ASSUMED) 4885.00								
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
0.00	0.00	1292055.98	3136026.11	40° 8' 2.627 N	105° 0' 48.600 W			
WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8055.00	-887.74	161.90	1291169.14	3136192.87	40° 7' 53.854 N	105° 0' 46.516 W	Circle (Radius: 50.00)



SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00		
3	1553.17	11.06	169.66	1549.74	-52.38	9.55	2.00	169.66	53.24		
4	5700.77	11.06	169.66	5620.26	-835.37	152.34	0.00	0.00	849.14		
5	6253.94	0.00	0.00	6170.00	-887.74	161.90	2.00	180.00	902.38		
6	8138.94	0.00	0.00	8055.00	-887.74	161.90	0.00	0.00	902.38	PBHL_COOLEY 35-16(50 FSL 1320 FWL)	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3779.00	3824.65	PARKMAN
4279.00	4334.11	SUSSEX
7170.00	7253.94	NIO
7460.00	7543.94	CODELL
7530.00	7613.94	GREENHORN
7890.00	7973.94	JSAND

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: SECTION 16 T2N R68W  
System Datum: Mean Sea Level  
Local North: No north reference data is available

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_COOLEY 19-16 Pad**

**P\_COOLEY 35-16**

**P\_COOLEY 35-16**

**Plan: Plan #1 7-23-10 RHS**

## **Standard Planning Report**

**23 July, 2010**

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 35-16
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Site:</b>	WELD_COOLEY 19-16 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_COOLEY 35-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 35-16		
<b>Design:</b>	Plan #1 7-23-10 RHS		

<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>	WELD_COOLEY 19-16 Pad, SECTION 16 T2N R68W		
<b>Site Position:</b>		<b>Northing:</b>	1,292,095.29 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,136,019.18 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	in
		<b>Latitude:</b>	40° 8' 3.016 N
		<b>Longitude:</b>	105° 0' 48.686 W
		<b>Grid Convergence:</b>	0.31 °

<b>Well</b>	P_COOLEY 35-16, 939 FSL 1161 FWL		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b> 1,292,055.98 ft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b> 3,136,026.11 ft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40° 8' 2.627 N
		<b>Longitude:</b>	105° 0' 48.600 W
		<b>Ground Level:</b>	4,885.00 ft

<b>Wellbore</b>	P_COOLEY 35-16				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	07/23/2010	9.09	66.82	53,058

<b>Design</b>	Plan #1 7-23-10 RHS			
<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	169.66

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	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	
1,553.17	11.06	169.66	1,549.74	-52.38	9.55	2.00	2.00	0.00	169.66	
5,700.77	11.06	169.66	5,620.26	-835.37	152.34	0.00	0.00	0.00	0.00	
6,253.94	0.00	0.00	6,170.00	-887.74	161.90	2.00	-2.00	0.00	180.00	
8,138.94	0.00	0.00	8,055.00	-887.74	161.90	0.00	0.00	0.00	0.00	PBHL_COOLEY 35

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 35-16
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Site:</b>	WELD_COOLEY 19-16 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_COOLEY 35-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 35-16		
<b>Design:</b>	Plan #1 7-23-10 RHS		

#### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
600.00	0.00	0.00	600.00	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
800.00	0.00	0.00	800.00	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
<b>8 5/8"</b>									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
1,100.00	2.00	169.66	1,099.98	-1.72	0.31	1.75	2.00	2.00	0.00
1,200.00	4.00	169.66	1,199.84	-6.87	1.25	6.98	2.00	2.00	0.00
1,300.00	6.00	169.66	1,299.45	-15.44	2.82	15.69	2.00	2.00	0.00
1,400.00	8.00	169.66	1,398.70	-27.43	5.00	27.88	2.00	2.00	0.00
1,500.00	10.00	169.66	1,497.47	-42.82	7.81	43.52	2.00	2.00	0.00
1,553.17	11.06	169.66	1,549.74	-52.38	9.55	53.24	2.00	2.00	0.00
<b>Start 4147.61 hold at 1553.17 MD</b>									
1,600.00	11.06	169.66	1,595.70	-61.22	11.16	62.23	0.00	0.00	0.00
1,700.00	11.06	169.66	1,693.84	-80.10	14.61	81.42	0.00	0.00	0.00
1,800.00	11.06	169.66	1,791.98	-98.97	18.05	100.61	0.00	0.00	0.00
1,900.00	11.06	169.66	1,890.12	-117.85	21.49	119.80	0.00	0.00	0.00
2,000.00	11.06	169.66	1,988.26	-136.73	24.94	138.99	0.00	0.00	0.00
2,100.00	11.06	169.66	2,086.41	-155.61	28.38	158.17	0.00	0.00	0.00
2,200.00	11.06	169.66	2,184.55	-174.49	31.82	177.36	0.00	0.00	0.00
2,300.00	11.06	169.66	2,282.69	-193.36	35.26	196.55	0.00	0.00	0.00
2,400.00	11.06	169.66	2,380.83	-212.24	38.71	215.74	0.00	0.00	0.00
2,500.00	11.06	169.66	2,478.97	-231.12	42.15	234.93	0.00	0.00	0.00
2,600.00	11.06	169.66	2,577.11	-250.00	45.59	254.12	0.00	0.00	0.00
2,700.00	11.06	169.66	2,675.26	-268.88	49.03	273.31	0.00	0.00	0.00
2,800.00	11.06	169.66	2,773.40	-287.75	52.48	292.50	0.00	0.00	0.00
2,900.00	11.06	169.66	2,871.54	-306.63	55.92	311.69	0.00	0.00	0.00
3,000.00	11.06	169.66	2,969.68	-325.51	59.36	330.88	0.00	0.00	0.00
3,100.00	11.06	169.66	3,067.82	-344.39	62.81	350.07	0.00	0.00	0.00
3,200.00	11.06	169.66	3,165.96	-363.27	66.25	369.26	0.00	0.00	0.00
3,300.00	11.06	169.66	3,264.11	-382.15	69.69	388.45	0.00	0.00	0.00
3,400.00	11.06	169.66	3,362.25	-401.02	73.13	407.64	0.00	0.00	0.00
3,500.00	11.06	169.66	3,460.39	-419.90	76.58	426.83	0.00	0.00	0.00
3,600.00	11.06	169.66	3,558.53	-438.78	80.02	446.02	0.00	0.00	0.00
3,700.00	11.06	169.66	3,656.67	-457.66	83.46	465.21	0.00	0.00	0.00
3,800.00	11.06	169.66	3,754.81	-476.54	86.91	484.40	0.00	0.00	0.00
3,824.65	11.06	169.66	3,779.00	-481.19	87.75	489.12	0.00	0.00	0.00
<b>PARKMAN</b>									
3,900.00	11.06	169.66	3,852.95	-495.41	90.35	503.58	0.00	0.00	0.00
4,000.00	11.06	169.66	3,951.10	-514.29	93.79	522.77	0.00	0.00	0.00
4,100.00	11.06	169.66	4,049.24	-533.17	97.23	541.96	0.00	0.00	0.00
4,200.00	11.06	169.66	4,147.38	-552.05	100.68	561.15	0.00	0.00	0.00
4,300.00	11.06	169.66	4,245.52	-570.93	104.12	580.34	0.00	0.00	0.00
4,334.11	11.06	169.66	4,279.00	-577.37	105.29	586.89	0.00	0.00	0.00
<b>SUSSEX</b>									
4,400.00	11.06	169.66	4,343.66	-589.80	107.56	599.53	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 35-16
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Site:</b>	WELD_COOLEY 19-16 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_COOLEY 35-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 35-16		
<b>Design:</b>	Plan #1 7-23-10 RHS		

#### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	11.06	169.66	4,441.80	-608.68	111.00	618.72	0.00	0.00	0.00
4,600.00	11.06	169.66	4,539.95	-627.56	114.45	637.91	0.00	0.00	0.00
4,700.00	11.06	169.66	4,638.09	-646.44	117.89	657.10	0.00	0.00	0.00
4,800.00	11.06	169.66	4,736.23	-665.32	121.33	676.29	0.00	0.00	0.00
4,900.00	11.06	169.66	4,834.37	-684.19	124.78	695.48	0.00	0.00	0.00
5,000.00	11.06	169.66	4,932.51	-703.07	128.22	714.67	0.00	0.00	0.00
5,100.00	11.06	169.66	5,030.65	-721.95	131.66	733.86	0.00	0.00	0.00
5,200.00	11.06	169.66	5,128.79	-740.83	135.10	753.05	0.00	0.00	0.00
5,300.00	11.06	169.66	5,226.94	-759.71	138.55	772.24	0.00	0.00	0.00
5,400.00	11.06	169.66	5,325.08	-778.58	141.99	791.43	0.00	0.00	0.00
5,500.00	11.06	169.66	5,423.22	-797.46	145.43	810.62	0.00	0.00	0.00
5,600.00	11.06	169.66	5,521.36	-816.34	148.87	829.81	0.00	0.00	0.00
5,700.00	11.06	169.66	5,619.50	-835.22	152.32	848.99	0.00	0.00	0.00
5,700.77	11.06	169.66	5,620.26	-835.37	152.34	849.14	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,800.00	9.08	169.66	5,717.95	-852.43	155.46	866.49	2.00	-2.00	0.00
5,900.00	7.08	169.66	5,816.96	-866.26	157.98	880.55	2.00	-2.00	0.00
6,000.00	5.08	169.66	5,916.39	-876.68	159.88	891.14	2.00	-2.00	0.00
6,100.00	3.08	169.66	6,016.13	-883.67	161.15	898.25	2.00	-2.00	0.00
6,200.00	1.08	169.66	6,116.06	-887.24	161.81	901.88	2.00	-2.00	0.00
6,253.94	0.00	0.00	6,170.00	-887.74	161.90	902.38	2.00	-2.00	0.00
<b>Start 1885.00 hold at 6253.94 MD</b>									
6,300.00	0.00	0.00	6,216.06	-887.74	161.90	902.38	0.00	0.00	0.00
6,400.00	0.00	0.00	6,316.06	-887.74	161.90	902.38	0.00	0.00	0.00
6,500.00	0.00	0.00	6,416.06	-887.74	161.90	902.38	0.00	0.00	0.00
6,600.00	0.00	0.00	6,516.06	-887.74	161.90	902.38	0.00	0.00	0.00
6,700.00	0.00	0.00	6,616.06	-887.74	161.90	902.38	0.00	0.00	0.00
6,800.00	0.00	0.00	6,716.06	-887.74	161.90	902.38	0.00	0.00	0.00
6,900.00	0.00	0.00	6,816.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,000.00	0.00	0.00	6,916.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,100.00	0.00	0.00	7,016.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,200.00	0.00	0.00	7,116.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,253.94	0.00	0.00	7,170.00	-887.74	161.90	902.38	0.00	0.00	0.00
<b>NIO</b>									
7,300.00	0.00	0.00	7,216.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,400.00	0.00	0.00	7,316.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,500.00	0.00	0.00	7,416.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,543.94	0.00	0.00	7,460.00	-887.74	161.90	902.38	0.00	0.00	0.00
<b>CODELL</b>									
7,600.00	0.00	0.00	7,516.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,613.94	0.00	0.00	7,530.00	-887.74	161.90	902.38	0.00	0.00	0.00
<b>GREENHORN</b>									
7,700.00	0.00	0.00	7,616.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,800.00	0.00	0.00	7,716.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,900.00	0.00	0.00	7,816.06	-887.74	161.90	902.38	0.00	0.00	0.00
7,973.94	0.00	0.00	7,890.00	-887.74	161.90	902.38	0.00	0.00	0.00
<b>JSAND</b>									
8,000.00	0.00	0.00	7,916.06	-887.74	161.90	902.38	0.00	0.00	0.00
8,100.00	0.00	0.00	8,016.06	-887.74	161.90	902.38	0.00	0.00	0.00
8,138.94	0.00	0.00	8,055.00	-887.74	161.90	902.38	0.00	0.00	0.00
<b>PBHL_COOLEY 35-16(50 FSL 1320 FWL)</b>									

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 35-16
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4885 & RKB 15' @ 4900.00ft (ASSUMED)
<b>Site:</b>	WELD_COOLEY 19-16 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_COOLEY 35-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 35-16		
<b>Design:</b>	Plan #1 7-23-10 RHS		

#### Targets

##### Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
PBHL_COOLEY 35-16	0.00	0.00	8,055.00	-887.74	161.90	1,291,169.14	3,136,192.87	40° 7' 53.854 N	105° 0' 46.516 W
- plan hits target center									
- Circle (radius 50.00)									

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
900.00	900.00	8 5/8"	8.625	11.000

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,334.11	4,279.00	SUSSEX			
7,613.94	7,530.00	GREENHORN			
7,253.94	7,170.00	NIO			
3,824.65	3,779.00	PARKMAN			
7,543.94	7,460.00	CODELL			
7,973.94	7,890.00	JSAND			

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,000.00	1,000.00	0.00	0.00	Start Build 2.00
1,553.17	1,549.74	-52.38	9.55	Start 4147.61 hold at 1553.17 MD
5,700.77	5,620.26	-835.37	152.34	Start Drop -2.00
6,253.94	6,170.00	-887.74	161.90	Start 1885.00 hold at 6253.94 MD
8,138.94	8,055.00	-887.74	161.90	TD at 8138.94