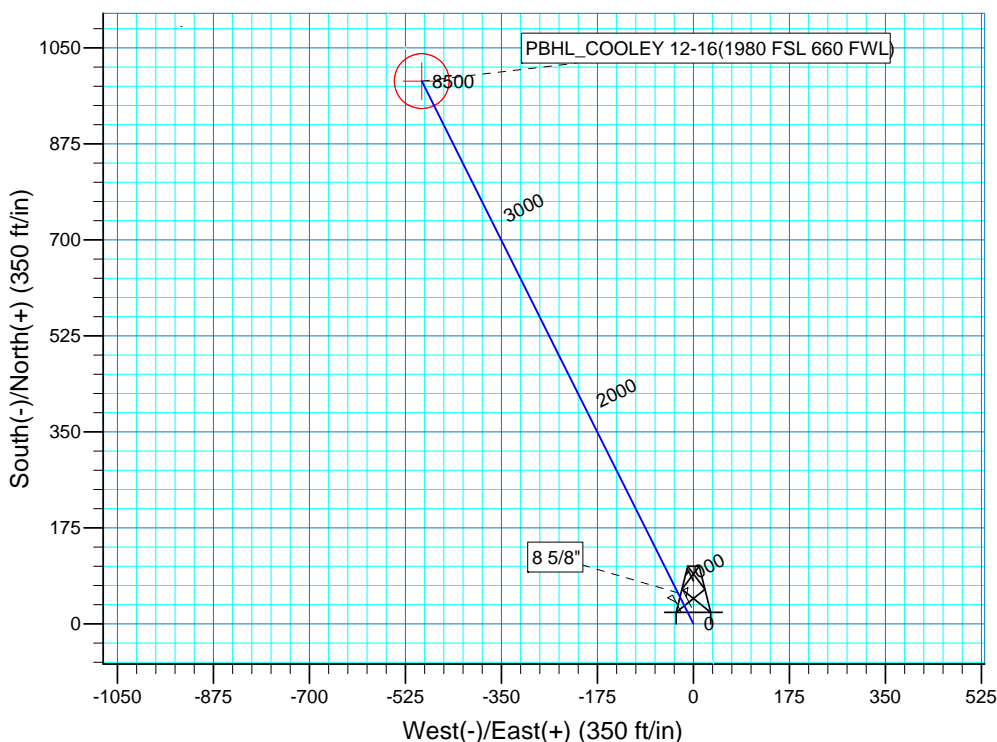
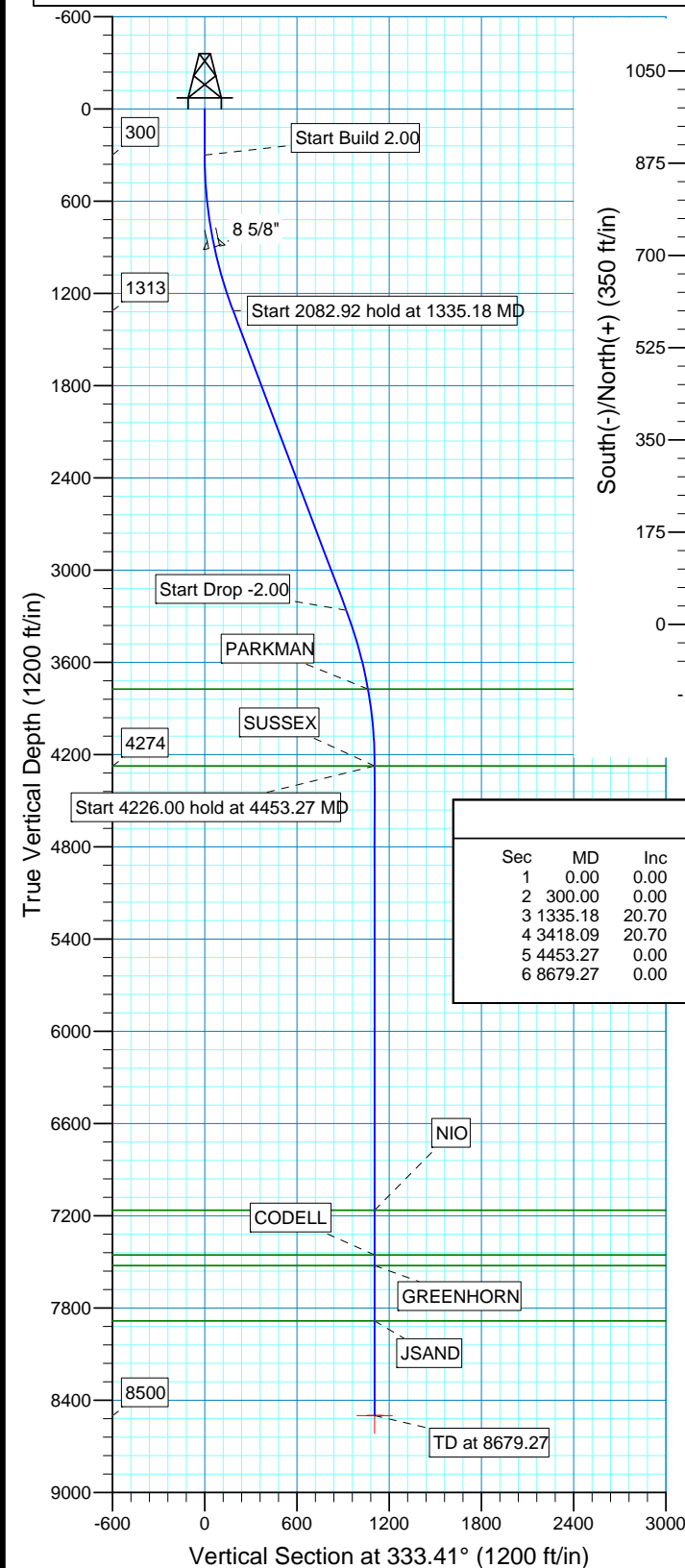
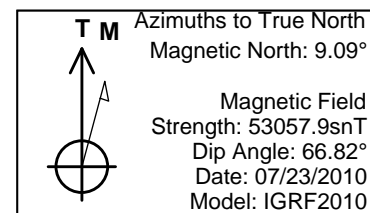


WELL DETAILS: P_COOLEY 12-16					
GL 4885 & RKB 15' @ 4900.00ft (ASSUMED) 4885.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1292105.11	3136017.45	40° 8' 3.113 N	105° 0' 48.708 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	8500.00	989.39	-495.16	1293091.77	3135516.88	40° 8' 12.890 N	105° 0' 55.084 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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1335.18	20.70	333.41	1312.80	165.44	-82.80	2.00	333.41	185.00	
4	3418.09	20.70	333.41	3261.20	823.95	-412.36	0.00	0.00	921.38	
5	4453.27	0.00	0.00	4274.00	989.39	-495.16	2.00	180.00	1106.38	
6	8679.27	0.00	0.00	8500.00	989.39	-495.16	0.00	0.00	1106.38	PBHL_COOLEY 12-16(1980 FSL 660 FWL)

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3774.00	3950.70	PARKMAN
4274.00	4453.27	SUSSEX
7165.00	7344.27	NIO
7455.00	7634.27	CODELL
7525.00	7704.27	GREENHORN
7885.00	8064.27	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 12-16**

**P\_COOLEY 12-16**

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

## **Standard Planning Report**

**26 July, 2010**

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 12-16
<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 12-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 12-16		
<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		

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

Well	P_COOLEY 12-16, 988 FSL 1153 FWL					
Well Position	+N-S	0.00 ft	Northing:	1,292,105.11 ft	Latitude:	40° 8' 3.113 N
	+E-W	0.00 ft	Easting:	3,136,017.45 ft	Longitude:	105° 0' 48.708 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,885.00 ft

<b>Wellbore</b>	P_COOLEY 12-16				
<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	333.41

<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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,335.18	20.70	333.41	1,312.80	165.44	-82.80	2.00	2.00	0.00	333.41	
3,418.09	20.70	333.41	3,261.20	823.95	-412.36	0.00	0.00	0.00	0.00	
4,453.27	0.00	0.00	4,274.00	989.39	-495.16	2.00	-2.00	0.00	180.00	
8,679.27	0.00	0.00	8,500.00	989.39	-495.16	0.00	0.00	0.00	0.00	PBHL_COOLEY 12

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 12-16
<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 12-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 12-16		
<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
<b>Start Build 2.00</b>									
400.00	2.00	333.41	399.98	1.56	-0.78	1.75	2.00	2.00	0.00
500.00	4.00	333.41	499.84	6.24	-3.12	6.98	2.00	2.00	0.00
600.00	6.00	333.41	599.45	14.03	-7.02	15.69	2.00	2.00	0.00
700.00	8.00	333.41	698.70	24.93	-12.48	27.88	2.00	2.00	0.00
800.00	10.00	333.41	797.47	38.92	-19.48	43.52	2.00	2.00	0.00
900.00	12.00	333.41	895.62	55.98	-28.02	62.60	2.00	2.00	0.00
904.48	12.09	333.41	900.00	56.82	-28.44	63.54	2.00	2.00	0.00
<b>8 5/8"</b>									
1,000.00	14.00	333.41	993.06	76.10	-38.08	85.10	2.00	2.00	0.00
1,100.00	16.00	333.41	1,089.64	99.24	-49.67	110.98	2.00	2.00	0.00
1,200.00	18.00	333.41	1,185.27	125.39	-62.75	140.21	2.00	2.00	0.00
1,300.00	20.00	333.41	1,279.82	154.50	-77.32	172.77	2.00	2.00	0.00
1,335.18	20.70	333.41	1,312.80	165.44	-82.80	185.00	2.00	2.00	0.00
<b>Start 2082.92 hold at 1335.18 MD</b>									
1,400.00	20.70	333.41	1,373.43	185.93	-93.05	207.92	0.00	0.00	0.00
1,500.00	20.70	333.41	1,466.98	217.55	-108.88	243.27	0.00	0.00	0.00
1,600.00	20.70	333.41	1,560.52	249.16	-124.70	278.63	0.00	0.00	0.00
1,700.00	20.70	333.41	1,654.06	280.78	-140.52	313.98	0.00	0.00	0.00
1,800.00	20.70	333.41	1,747.60	312.39	-156.34	349.33	0.00	0.00	0.00
1,900.00	20.70	333.41	1,841.14	344.01	-172.16	384.69	0.00	0.00	0.00
2,000.00	20.70	333.41	1,934.69	375.62	-187.99	420.04	0.00	0.00	0.00
2,100.00	20.70	333.41	2,028.23	407.24	-203.81	455.39	0.00	0.00	0.00
2,200.00	20.70	333.41	2,121.77	438.85	-219.63	490.74	0.00	0.00	0.00
2,300.00	20.70	333.41	2,215.31	470.47	-235.45	526.10	0.00	0.00	0.00
2,400.00	20.70	333.41	2,308.86	502.08	-251.28	561.45	0.00	0.00	0.00
2,500.00	20.70	333.41	2,402.40	533.70	-267.10	596.80	0.00	0.00	0.00
2,600.00	20.70	333.41	2,495.94	565.31	-282.92	632.16	0.00	0.00	0.00
2,700.00	20.70	333.41	2,589.48	596.93	-298.74	667.51	0.00	0.00	0.00
2,800.00	20.70	333.41	2,683.02	628.54	-314.56	702.86	0.00	0.00	0.00
2,900.00	20.70	333.41	2,776.57	660.16	-330.39	738.22	0.00	0.00	0.00
3,000.00	20.70	333.41	2,870.11	691.77	-346.21	773.57	0.00	0.00	0.00
3,100.00	20.70	333.41	2,963.65	723.39	-362.03	808.92	0.00	0.00	0.00
3,200.00	20.70	333.41	3,057.19	755.00	-377.85	844.28	0.00	0.00	0.00
3,300.00	20.70	333.41	3,150.74	786.62	-393.68	879.63	0.00	0.00	0.00
3,400.00	20.70	333.41	3,244.28	818.23	-409.50	914.98	0.00	0.00	0.00
3,418.09	20.70	333.41	3,261.20	823.95	-412.36	921.38	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
3,500.00	19.07	333.41	3,338.22	848.87	-424.83	949.24	2.00	-2.00	0.00
3,600.00	17.07	333.41	3,433.29	876.60	-438.71	980.25	2.00	-2.00	0.00
3,700.00	15.07	333.41	3,529.38	901.34	-451.09	1,007.92	2.00	-2.00	0.00
3,800.00	13.07	333.41	3,626.38	923.07	-461.97	1,032.22	2.00	-2.00	0.00
3,900.00	11.07	333.41	3,724.16	941.77	-471.32	1,053.12	2.00	-2.00	0.00
3,950.70	10.05	333.41	3,774.00	950.07	-475.48	1,062.41	2.00	-2.00	0.00
<b>PARKMAN</b>									
4,000.00	9.07	333.41	3,822.62	957.39	-479.14	1,070.60	2.00	-2.00	0.00
4,100.00	7.07	333.41	3,921.62	969.94	-485.42	1,084.63	2.00	-2.00	0.00
4,200.00	5.07	333.41	4,021.06	979.39	-490.15	1,095.19	2.00	-2.00	0.00
4,300.00	3.07	333.41	4,120.80	985.73	-493.32	1,102.28	2.00	-2.00	0.00

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 12-16
<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 12-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 12-16		
<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)
4,400.00	1.07	333.41	4,220.73	988.95	-494.94	1,105.89	2.00	-2.00	0.00
4,453.27	0.00	0.00	4,274.00	989.39	-495.16	1,106.38	2.00	-2.00	0.00
<b>Start 4226.00 hold at 4453.27 MD - SUSSEX</b>									
4,500.00	0.00	0.00	4,320.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
4,600.00	0.00	0.00	4,420.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
4,700.00	0.00	0.00	4,520.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
4,800.00	0.00	0.00	4,620.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
4,900.00	0.00	0.00	4,720.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,000.00	0.00	0.00	4,820.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,100.00	0.00	0.00	4,920.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,200.00	0.00	0.00	5,020.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,300.00	0.00	0.00	5,120.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,400.00	0.00	0.00	5,220.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,500.00	0.00	0.00	5,320.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,600.00	0.00	0.00	5,420.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,700.00	0.00	0.00	5,520.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,800.00	0.00	0.00	5,620.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
5,900.00	0.00	0.00	5,720.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,000.00	0.00	0.00	5,820.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,100.00	0.00	0.00	5,920.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,200.00	0.00	0.00	6,020.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,300.00	0.00	0.00	6,120.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,400.00	0.00	0.00	6,220.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,500.00	0.00	0.00	6,320.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,600.00	0.00	0.00	6,420.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,700.00	0.00	0.00	6,520.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,800.00	0.00	0.00	6,620.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
6,900.00	0.00	0.00	6,720.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,000.00	0.00	0.00	6,820.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,100.00	0.00	0.00	6,920.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,200.00	0.00	0.00	7,020.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,300.00	0.00	0.00	7,120.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,344.27	0.00	0.00	7,165.00	989.39	-495.16	1,106.38	0.00	0.00	0.00
<b>NIO</b>									
7,400.00	0.00	0.00	7,220.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,500.00	0.00	0.00	7,320.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,600.00	0.00	0.00	7,420.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,634.27	0.00	0.00	7,455.00	989.39	-495.16	1,106.38	0.00	0.00	0.00
<b>CODELL</b>									
7,700.00	0.00	0.00	7,520.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,704.27	0.00	0.00	7,525.00	989.39	-495.16	1,106.38	0.00	0.00	0.00
<b>GREENHORN</b>									
7,800.00	0.00	0.00	7,620.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
7,900.00	0.00	0.00	7,720.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
8,000.00	0.00	0.00	7,820.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
8,064.27	0.00	0.00	7,885.00	989.39	-495.16	1,106.38	0.00	0.00	0.00
<b>JSAND</b>									
8,100.00	0.00	0.00	7,920.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
8,200.00	0.00	0.00	8,020.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
8,300.00	0.00	0.00	8,120.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
8,400.00	0.00	0.00	8,220.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
8,500.00	0.00	0.00	8,320.73	989.39	-495.16	1,106.38	0.00	0.00	0.00
8,600.00	0.00	0.00	8,420.73	989.39	-495.16	1,106.38	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_COOLEY 12-16
<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 12-16	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_COOLEY 12-16		
<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)
8,679.27	0.00	0.00	8,500.00	989.39	-495.16	1,106.38	0.00	0.00	0.00
PBHL_COOLEY 12-16(1980 FSL 660 FWL)									

#### 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 12-16	0.00	0.00	8,500.00	989.39	-495.16	1,293,091.77	3,135,516.88	40° 8' 12.890 N	105° 0' 55.084 W
- plan hits target center									
- Circle (radius 50.00)									

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
904.48	900.00	8 5/8"	8.625	11.000

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,453.27	4,274.00	SUSSEX			
7,344.27	7,165.00	NIO			
7,704.27	7,525.00	GREENHORN			
3,950.70	3,774.00	PARKMAN			
7,634.27	7,455.00	CODELL			
8,064.27	7,885.00	JSAND			

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.00	300.00	0.00	0.00	Start Build 2.00
1,335.18	1,312.80	165.44	-82.80	Start 2082.92 hold at 1335.18 MD
3,418.09	3,261.20	823.95	-412.36	Start Drop -2.00
4,453.27	4,274.00	989.39	-495.16	Start 4226.00 hold at 4453.27 MD
8,679.27	8,500.00	989.39	-495.16	TD at 8679.27