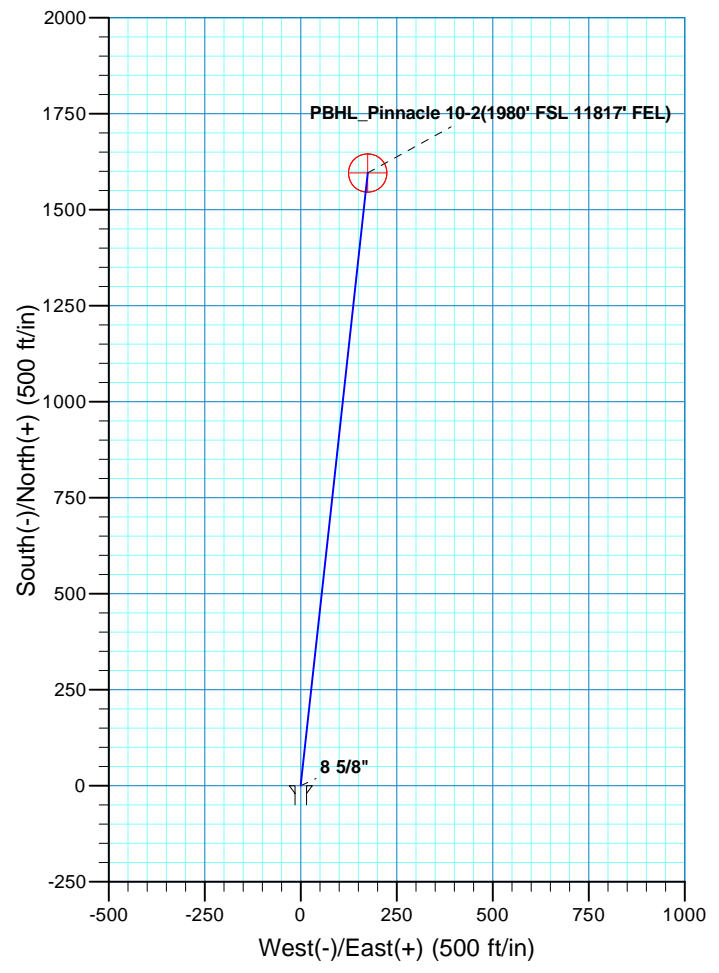
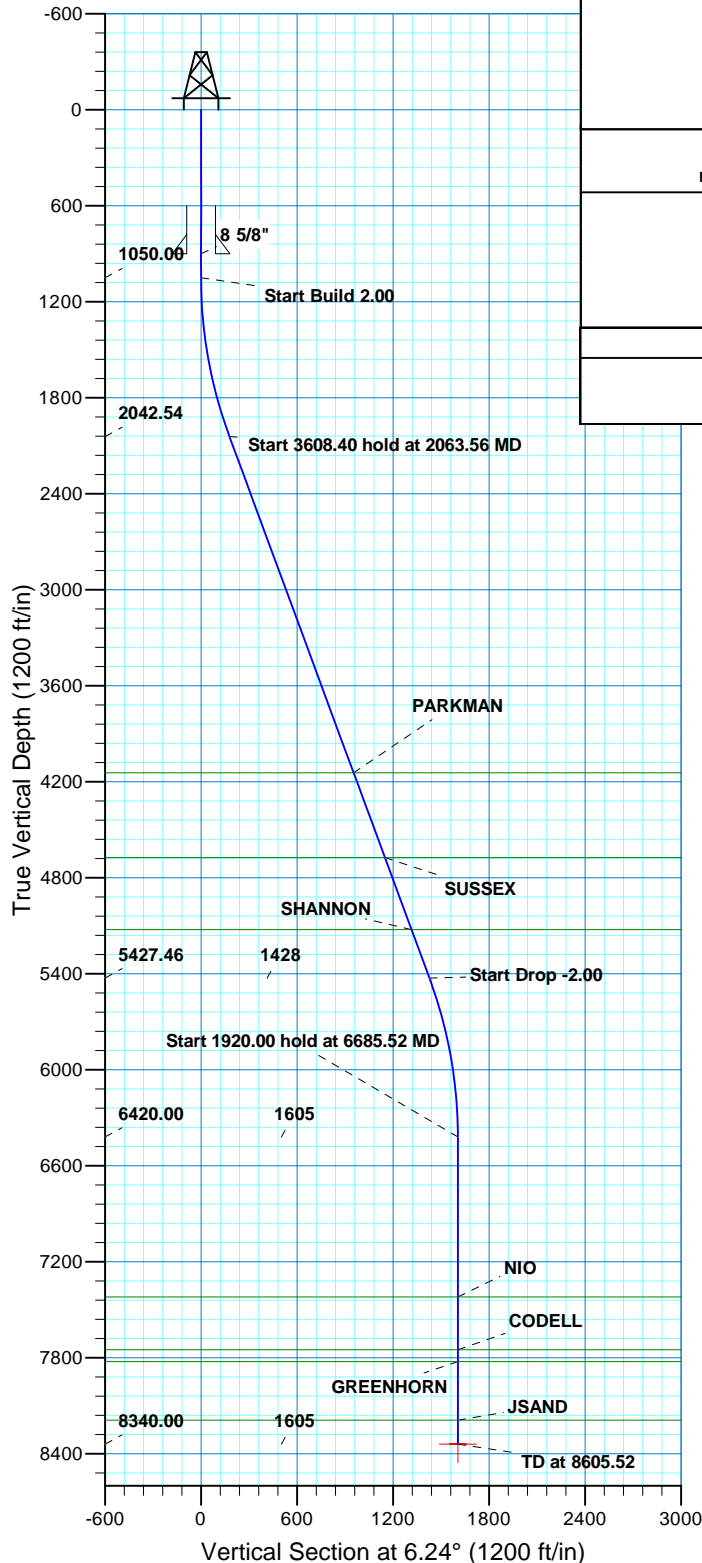


WELL DETAILS: P_Pinnacle 10-2						
GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	1270310.16	3148802.61	40° 4' 27.001 N	104° 58' 5.779 W	

DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8340.00	1595.55	174.34	1271906.73	3148967.38	40° 4' 42.769 N	104° 58' 3.536 W	Circle (Radius: 50.00)
- plan hits target center								

SECTION DETAILS											
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	PBHL_Pinnacle 10-2(1980' FSL 11817' FEL)		
1050.00	0.00	0.00	1050.00	0.00	0.00	0.00	0.00	0.00			
2063.56	20.27	6.24	2042.54	176.39	19.27	2.00	6.24	177.43			
5671.96	20.27	6.24	5427.46	1419.17	155.06	0.00	0.00	1427.61			
6685.52	0.00	0.00	6420.00	1595.55	174.34	2.00	180.00	1605.05			
8605.52	0.00	0.00	8340.00	1595.55	174.34	0.00	0.00	1605.05			
PROJECT DETAILS: COLORADO NORTHERN ZONE - 83							FORMATION TOP DETAILS				
Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Colorado Northern Zone Location: SECTION 2 T1N R68W System Datum: Mean Sea Level							TVDPath	MDPath	Formation		
							4144.00	4303.76	PARKMAN		
							4674.00	4868.76	SUSSEX		
							5124.00	5348.47	SHANNON		
							7420.00	7685.52	NIO		
							7750.00	8015.52	CODELL		
							7825.00	8090.52	GREENHORN		
							8190.00	8455.52	JSAND		
CASING DETAILS											
	TVD	MD	Name	Size							
	900.00	900.00	8 5/8"	8.625							





Scientific Drilling
Rocky Mountain Operations

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Pinnacle 15-2 Pad

P_Pinnacle 10-2

P_Pinnacle 10-2

Plan: PLAN #2 9-29-10 RHS

Standard Planning Report

04 October, 2010



Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well P_Pinnacle 10-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Site:	WELD_Pinnacle 15-2 Pad	North Reference:	True
Well:	P_Pinnacle 10-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Pinnacle 10-2		
Design:	PLAN #2 9-29-10 RHS		

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

Site	WELD_Pinnacle 15-2 Pad, SECTION 2 T1N R68W				
Site Position:		Northing:	1,270,310.23 usft	Latitude:	40° 4' 27.001 N
From:	Lat/Long	Easting:	3,148,812.69 usft	Longitude:	104° 58' 5.650 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.34 °

Well	P_Pinnacle 10-2, 386' FSL 1998 'FEL					
Well Position	+N/-S	-0.02 ft	Northing:	1,270,310.16 usft	Latitude:	40° 4' 27.001 N
	+E/-W	-10.07 ft	Easting:	3,148,802.61 usft	Longitude:	104° 58' 5.779 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,005.00 ft

Wellbore	P_Pinnacle 10-2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/17/2010	9.05	66.78	53,023

Design	PLAN #2 9-29-10 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	6.24

Plan Sections										
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	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,063.56	20.27	6.24	2,042.54	176.39	19.27	2.00	2.00	0.00	6.24	
5,671.96	20.27	6.24	5,427.46	1,419.17	155.06	0.00	0.00	0.00	0.00	
6,685.52	0.00	0.00	6,420.00	1,595.55	174.34	2.00	-2.00	0.00	180.00	
8,605.52	0.00	0.00	8,340.00	1,595.55	174.34	0.00	0.00	0.00	0.00	PBHL_Pinnacle 10-2(

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well P_Pinnacle 10-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Site:	WELD_Pinnacle 15-2 Pad	North Reference:	True
Well:	P_Pinnacle 10-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Pinnacle 10-2		
Design:	PLAN #2 9-29-10 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	
8 5/8"										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start Build 2.00										
1,100.00	1.00	6.24	1,100.00	0.43	0.05	0.44	2.00	2.00	0.00	
1,200.00	3.00	6.24	1,199.93	3.90	0.43	3.93	2.00	2.00	0.00	
1,300.00	5.00	6.24	1,299.68	10.84	1.18	10.90	2.00	2.00	0.00	
1,400.00	7.00	6.24	1,399.13	21.23	2.32	21.35	2.00	2.00	0.00	
1,500.00	9.00	6.24	1,498.15	35.06	3.83	35.27	2.00	2.00	0.00	
1,600.00	11.00	6.24	1,596.63	52.32	5.72	52.63	2.00	2.00	0.00	
1,700.00	13.00	6.24	1,694.44	72.99	7.98	73.42	2.00	2.00	0.00	
1,800.00	15.00	6.24	1,791.46	97.04	10.60	97.62	2.00	2.00	0.00	
1,900.00	17.00	6.24	1,887.58	124.44	13.60	125.18	2.00	2.00	0.00	
2,000.00	19.00	6.24	1,982.68	155.15	16.95	156.08	2.00	2.00	0.00	
2,063.56	20.27	6.24	2,042.54	176.39	19.27	177.43	2.00	2.00	0.00	
Start 3608.40 hold at 2063.56 MD										
2,100.00	20.27	6.24	2,076.73	188.94	20.64	190.06	0.00	0.00	0.00	
2,200.00	20.27	6.24	2,170.54	223.38	24.41	224.71	0.00	0.00	0.00	
2,300.00	20.27	6.24	2,264.34	257.82	28.17	259.35	0.00	0.00	0.00	
2,400.00	20.27	6.24	2,358.15	292.26	31.93	294.00	0.00	0.00	0.00	
2,500.00	20.27	6.24	2,451.96	326.70	35.70	328.65	0.00	0.00	0.00	
2,600.00	20.27	6.24	2,545.76	361.14	39.46	363.29	0.00	0.00	0.00	
2,700.00	20.27	6.24	2,639.57	395.58	43.22	397.94	0.00	0.00	0.00	
2,800.00	20.27	6.24	2,733.37	430.03	46.99	432.59	0.00	0.00	0.00	
2,900.00	20.27	6.24	2,827.18	464.47	50.75	467.23	0.00	0.00	0.00	
3,000.00	20.27	6.24	2,920.99	498.91	54.51	501.88	0.00	0.00	0.00	
3,100.00	20.27	6.24	3,014.79	533.35	58.28	536.52	0.00	0.00	0.00	
3,200.00	20.27	6.24	3,108.60	567.79	62.04	571.17	0.00	0.00	0.00	
3,300.00	20.27	6.24	3,202.41	602.23	65.80	605.82	0.00	0.00	0.00	
3,400.00	20.27	6.24	3,296.21	636.67	69.56	640.46	0.00	0.00	0.00	
3,500.00	20.27	6.24	3,390.02	671.12	73.33	675.11	0.00	0.00	0.00	
3,600.00	20.27	6.24	3,483.83	705.56	77.09	709.76	0.00	0.00	0.00	
3,700.00	20.27	6.24	3,577.63	740.00	80.85	744.40	0.00	0.00	0.00	
3,800.00	20.27	6.24	3,671.44	774.44	84.62	779.05	0.00	0.00	0.00	
3,900.00	20.27	6.24	3,765.24	808.88	88.38	813.70	0.00	0.00	0.00	
4,000.00	20.27	6.24	3,859.05	843.32	92.14	848.34	0.00	0.00	0.00	
4,100.00	20.27	6.24	3,952.86	877.76	95.91	882.99	0.00	0.00	0.00	
4,200.00	20.27	6.24	4,046.66	912.21	99.67	917.63	0.00	0.00	0.00	
4,300.00	20.27	6.24	4,140.47	946.65	103.43	952.28	0.00	0.00	0.00	
4,303.76	20.27	6.24	4,144.00	947.94	103.58	953.58	0.00	0.00	0.00	
PARKMAN										
4,400.00	20.27	6.24	4,234.28	981.09	107.20	986.93	0.00	0.00	0.00	

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well P_Pinnacle 10-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Site:	WELD_Pinnacle 15-2 Pad	North Reference:	True
Well:	P_Pinnacle 10-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Pinnacle 10-2		
Design:	PLAN #2 9-29-10 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	20.27	6.24	4,328.08	1,015.53	110.96	1,021.57	0.00	0.00	0.00	
4,600.00	20.27	6.24	4,421.89	1,049.97	114.72	1,056.22	0.00	0.00	0.00	
4,700.00	20.27	6.24	4,515.70	1,084.41	118.49	1,090.87	0.00	0.00	0.00	
4,800.00	20.27	6.24	4,609.50	1,118.85	122.25	1,125.51	0.00	0.00	0.00	
4,868.76	20.27	6.24	4,674.00	1,142.53	124.84	1,149.33	0.00	0.00	0.00	
SUSSEX										
4,900.00	20.27	6.24	4,703.31	1,153.29	126.01	1,160.16	0.00	0.00	0.00	
5,000.00	20.27	6.24	4,797.11	1,187.74	129.78	1,194.80	0.00	0.00	0.00	
5,100.00	20.27	6.24	4,890.92	1,222.18	133.54	1,229.45	0.00	0.00	0.00	
5,200.00	20.27	6.24	4,984.73	1,256.62	137.30	1,264.10	0.00	0.00	0.00	
5,300.00	20.27	6.24	5,078.53	1,291.06	141.07	1,298.74	0.00	0.00	0.00	
5,348.47	20.27	6.24	5,124.00	1,307.75	142.89	1,315.54	0.00	0.00	0.00	
SHANNON										
5,400.00	20.27	6.24	5,172.34	1,325.50	144.83	1,333.39	0.00	0.00	0.00	
5,500.00	20.27	6.24	5,266.15	1,359.94	148.59	1,368.04	0.00	0.00	0.00	
5,600.00	20.27	6.24	5,359.95	1,394.38	152.35	1,402.68	0.00	0.00	0.00	
5,671.96	20.27	6.24	5,427.46	1,419.17	155.06	1,427.61	0.00	0.00	0.00	
Start Drop -2.00										
5,700.00	19.71	6.24	5,453.81	1,428.70	156.10	1,437.20	2.00	-2.00	0.00	
5,800.00	17.71	6.24	5,548.52	1,460.58	159.59	1,469.28	2.00	-2.00	0.00	
5,900.00	15.71	6.24	5,644.29	1,489.17	162.71	1,498.03	2.00	-2.00	0.00	
6,000.00	13.71	6.24	5,741.01	1,514.41	165.47	1,523.42	2.00	-2.00	0.00	
6,100.00	11.71	6.24	5,838.55	1,536.28	167.86	1,545.42	2.00	-2.00	0.00	
6,200.00	9.71	6.24	5,936.80	1,554.75	169.88	1,564.01	2.00	-2.00	0.00	
6,300.00	7.71	6.24	6,035.64	1,569.81	171.52	1,579.15	2.00	-2.00	0.00	
6,400.00	5.71	6.24	6,134.95	1,581.42	172.79	1,590.83	2.00	-2.00	0.00	
6,500.00	3.71	6.24	6,234.61	1,589.58	173.68	1,599.04	2.00	-2.00	0.00	
6,600.00	1.71	6.24	6,334.49	1,594.28	174.20	1,603.77	2.00	-2.00	0.00	
6,685.52	0.00	0.00	6,420.00	1,595.55	174.34	1,605.05	2.00	-2.00	0.00	
Start 1920.00 hold at 6685.52 MD										
6,700.00	0.00	0.00	6,434.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,534.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,634.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,734.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,834.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,934.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,034.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,134.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,234.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,334.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,685.52	0.00	0.00	7,420.00	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
NIO										
7,700.00	0.00	0.00	7,434.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,534.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,634.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,734.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
8,015.52	0.00	0.00	7,750.00	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
CODELL										
8,090.52	0.00	0.00	7,825.00	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
GREENHORN										
8,100.00	0.00	0.00	7,834.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well P_Pinnacle 10-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5005' & RKB 15' @ 5020.00ft (ASSUMED)
Site:	WELD_Pinnacle 15-2 Pad	North Reference:	True
Well:	P_Pinnacle 10-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Pinnacle 10-2		
Design:	PLAN #2 9-29-10 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)	
8,200.00	0.00	0.00	7,934.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,034.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,134.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
8,455.52	0.00	0.00	8,190.00	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
JSAND										
8,500.00	0.00	0.00	8,234.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,334.48	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
8,605.52	0.00	0.00	8,340.00	1,595.55	174.34	1,605.05	0.00	0.00	0.00	
PBHL_Pinnacle 10-2(1980' FSL 11817' FEL)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_Pinnacle 10-2(19 - hit/miss target - Shape - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,340.00	1,595.55	174.34	1,271,906.72	3,148,967.38	40° 4' 42.769 N	104° 58' 3.536 W	

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 (°)	
4,303.76	4,144.00	PARKMAN				
4,868.76	4,674.00	SUSSEX				
5,348.47	5,124.00	SHANNON				
7,685.52	7,420.00	NIO				
8,015.52	7,750.00	CODELL				
8,090.52	7,825.00	GREENHORN				
8,455.52	8,190.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,050.00	1,050.00	0.00	0.00	Start Build 2.00	
2,063.56	2,042.54	176.39	19.27	Start 3608.40 hold at 2063.56 MD	
5,671.96	5,427.46	1,419.17	155.06	Start Drop -2.00	
6,685.52	6,420.00	1,595.55	174.34	Start 1920.00 hold at 6685.52 MD	
8,605.52	8,340.00	1,595.55	174.34	TD at 8605.52	