



# **US ROCKIES REGION PLANNING**

COLORADO NORTHERN ZONE - 83

WELD\_SATER 25-8 PAD

P\_SATER 2-8

P\_SATER 2-8

Plan: PLAN #1 5-10-10 RHS

## **Standard Planning Report**

10 May, 2010





Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_SATER 25-8 PAD  
Well: P\_SATER 2-8  
Wellbore: P\_SATER 2-8  
Section: SECTION 8 T2N R67W  
SHL: 2466 FNL 2522 FEL  
Design: PLAN #1 5-10-10 RHS  
Latitude: 40° 9' 12.575 N  
Longitude: 104° 54' 48.910 W  
GL: 4908.00  
KB: WELL @ 4923.00ft (Original Well Elev)



**Weatherford**



Azimuths to True North  
Magnetic North: 9.07°

Magnetic Field  
Strength: 53100.4snT  
Dip Angle: 66.86°  
Date: 5/10/2010  
Model: IGRF2010

#### LEGEND

- P\_SATER 21-8, P\_SATER 21-8, PLAN #1 5-10-10 RHS V0
- P\_SATER 24-8, P\_SATER 24-8, PLAN #1 5-10-10 RHS V0
- P\_SATER 28-8, P\_SATER 28-8, PLAN #1 5-10-10 RHS V0
- P\_SATER 7-8, P\_SATER 7-8, PLAN #1 5-10-10 RHS V0
- P\_SATER 8-8, P\_SATER 8-8, PLAN #1 5-10-10 RHS V0
- PLAN #1 5-10-10 RHS

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3840.00	4120.08	PARKMAN
4358.00	4691.63	SUSSEX
7148.00	7524.99	NIO
7408.00	7784.99	CODELL
7480.00	7856.99	GREEN HORN
7830.00	8206.99	JSAND

#### CASING DETAILS

TVD	MD	Name	Size
950.00	955.71	8 5/8"	8.62

#### SECTION DETAILS

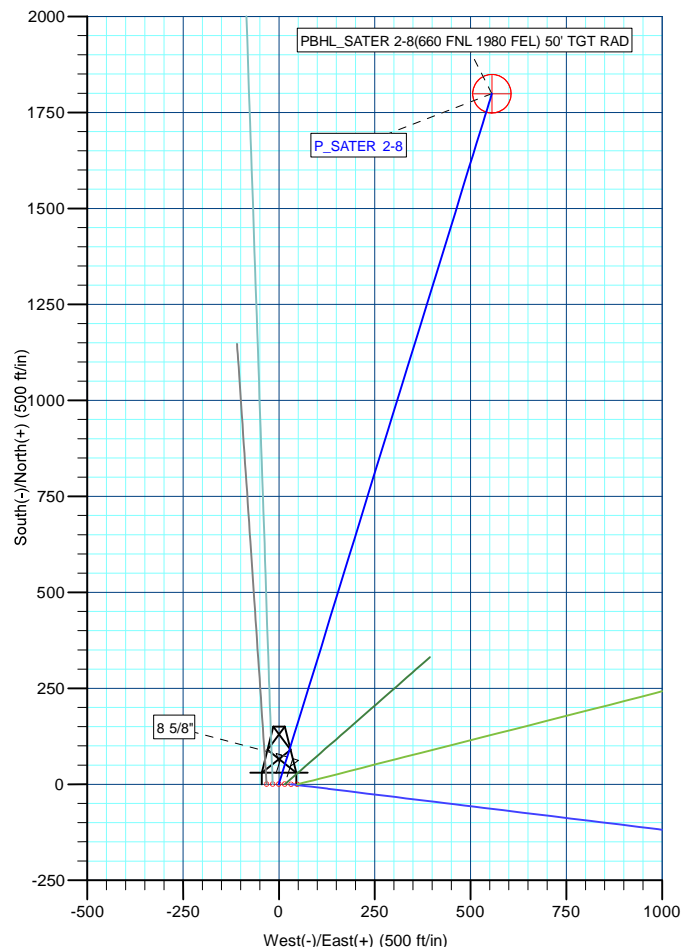
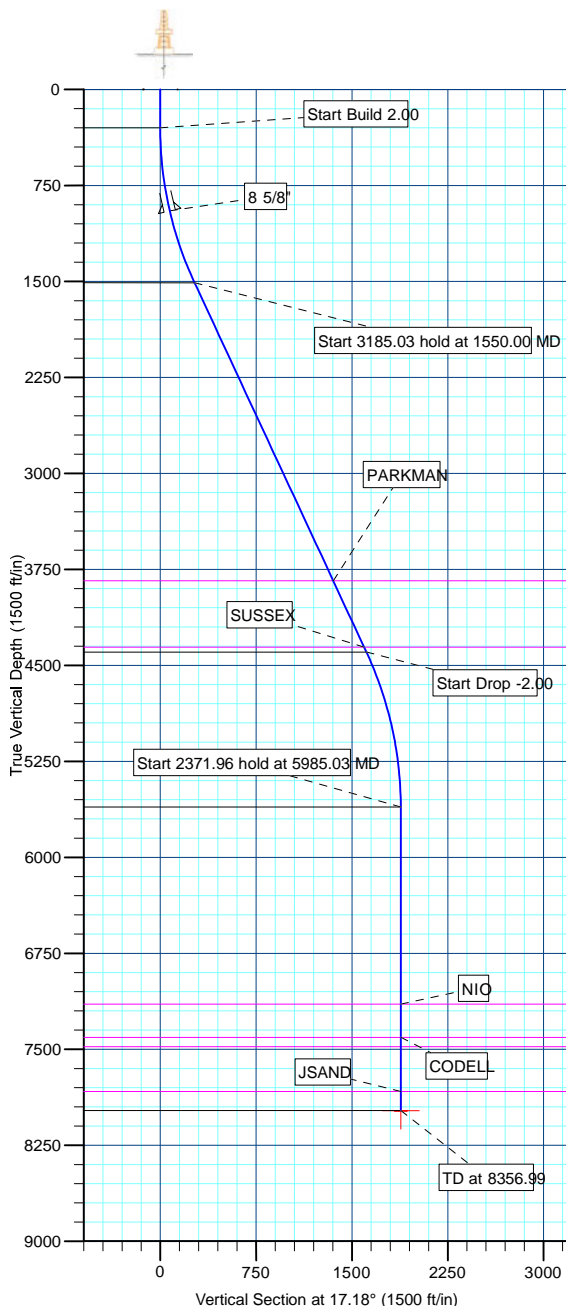
MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1550.00	25.00	17.18	1510.71	256.43	79.29	2.00	17.18	268.41	Start 3185.03 hold at 1550.00 MD
4735.03	25.00	17.18	4397.33	1542.41	476.92	0.00	0.00	1614.46	Start Drop -2.00
5985.03	0.00	0.00	5608.04	1798.84	556.21	2.00	180.00	1882.87	Start 2371.96 hold at 5985.03 MD
8356.99	0.00	0.00	7980.00	1798.84	556.21	0.00	0.00	1882.87	TD at 8356.99

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N-S	+E-W	Latitude	Longitude	Shape
PBHL	7980.00	1798.84	556.21	40° 9' 30.352 N	104° 54' 41.746 W	Circle (Radius: 50.00)

#### WELL DETAILS: P\_SATER 2-8

+N-S	+E-W	Northing	Ground Level:	Latitude	Longitude	Slot
0.00	0.00	1299302.79	4908.00 Easting 3163915.03	40° 9' 12.575 N	104° 54' 48.910 W	



Plan: PLAN #1 5-10-10 RHS (P\_SATER 2-8/P\_SATER 2-8)

Created By: Robert H. Scott Date: 10:56, May 10 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 2-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 2-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 2-8		
Design:	PLAN #1 5-10-10 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_SATER 25-8 PAD, SECTION 8 T2N R67W											
Site Position:			Northing:			1,299,302.95 ft			Latitude:			40° 9' 12.578 N					
From:			Lat/Long			Easting:			3,163,883.16ft			Longitude:			104° 54' 49.320 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.38 °		

Well	P_SATER 2-8					
Well Position	+N/-S	-0.38 ft	Northing:	1,299,302.79 ft	Latitude:	40° 9' 12.575 N
	+E/-W	31.87 ft	Easting:	3,163,915.03 ft	Longitude:	104° 54' 48.910 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	4,908.00 ft

Wellbore	P_SATER 2-8				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/10/2010	9.07	66.86	53,100

Design	PLAN #1 5-10-10 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	17.18

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.00	25.00	17.18	1,510.71	256.43	79.29	2.00	2.00	0.00	17.18	
4,735.03	25.00	17.18	4,397.33	1,542.41	476.92	0.00	0.00	0.00	0.00	
5,985.03	0.00	0.00	5,608.04	1,798.84	556.21	2.00	-2.00	0.00	180.00	
8,356.99	0.00	0.00	7,980.00	1,798.84	556.21	0.00	0.00	0.00	0.00	PBHL_SATER 2-8(

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 2-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 2-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 2-8		
Design:	PLAN #1 5-10-10 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)
Start Build 2.00									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	17.18	399.98	1.67	0.52	1.75	2.00	2.00	0.00
500.00	4.00	17.18	499.84	6.67	2.06	6.98	2.00	2.00	0.00
600.00	6.00	17.18	599.45	14.99	4.64	15.69	2.00	2.00	0.00
700.00	8.00	17.18	698.70	26.64	8.24	27.88	2.00	2.00	0.00
800.00	10.00	17.18	797.47	41.58	12.86	43.52	2.00	2.00	0.00
900.00	12.00	17.18	895.62	59.81	18.49	62.60	2.00	2.00	0.00
8 5/8"									
955.71	13.11	17.18	950.00	71.38	22.07	74.71	2.00	2.00	0.00
1,000.00	14.00	17.18	993.06	81.30	25.14	85.10	2.00	2.00	0.00
1,100.00	16.00	17.18	1,089.64	106.02	32.78	110.98	2.00	2.00	0.00
1,200.00	18.00	17.18	1,185.27	133.96	41.42	140.21	2.00	2.00	0.00
1,300.00	20.00	17.18	1,279.82	165.06	51.04	172.77	2.00	2.00	0.00
1,400.00	22.00	17.18	1,373.17	199.29	61.62	208.60	2.00	2.00	0.00
1,500.00	24.00	17.18	1,465.21	236.62	73.16	247.67	2.00	2.00	0.00
Start 3185.03 hold at 1550.00 MD									
1,550.00	25.00	17.18	1,510.71	256.43	79.29	268.41	2.00	2.00	0.00
1,600.00	25.00	17.18	1,556.03	276.62	85.53	289.54	0.00	0.00	0.00
1,700.00	25.00	17.18	1,646.66	316.99	98.02	331.80	0.00	0.00	0.00
1,800.00	25.00	17.18	1,737.29	357.37	110.50	374.06	0.00	0.00	0.00
1,900.00	25.00	17.18	1,827.92	397.74	122.98	416.32	0.00	0.00	0.00
2,000.00	25.00	17.18	1,918.55	438.12	135.47	458.59	0.00	0.00	0.00
2,100.00	25.00	17.18	2,009.18	478.50	147.95	500.85	0.00	0.00	0.00
2,200.00	25.00	17.18	2,099.81	518.87	160.44	543.11	0.00	0.00	0.00
2,300.00	25.00	17.18	2,190.44	559.25	172.92	585.37	0.00	0.00	0.00
2,400.00	25.00	17.18	2,281.07	599.62	185.41	627.63	0.00	0.00	0.00
2,500.00	25.00	17.18	2,371.70	640.00	197.89	669.90	0.00	0.00	0.00
2,600.00	25.00	17.18	2,462.34	680.38	210.38	712.16	0.00	0.00	0.00
2,700.00	25.00	17.18	2,552.97	720.75	222.86	754.42	0.00	0.00	0.00
2,800.00	25.00	17.18	2,643.60	761.13	235.34	796.68	0.00	0.00	0.00
2,900.00	25.00	17.18	2,734.23	801.50	247.83	838.94	0.00	0.00	0.00
3,000.00	25.00	17.18	2,824.86	841.88	260.31	881.20	0.00	0.00	0.00
3,100.00	25.00	17.18	2,915.49	882.25	272.80	923.47	0.00	0.00	0.00
3,200.00	25.00	17.18	3,006.12	922.63	285.28	965.73	0.00	0.00	0.00
3,300.00	25.00	17.18	3,096.75	963.01	297.77	1,007.99	0.00	0.00	0.00
3,400.00	25.00	17.18	3,187.38	1,003.38	310.25	1,050.25	0.00	0.00	0.00
3,500.00	25.00	17.18	3,278.01	1,043.76	322.74	1,092.51	0.00	0.00	0.00
3,600.00	25.00	17.18	3,368.64	1,084.13	335.22	1,134.78	0.00	0.00	0.00
3,700.00	25.00	17.18	3,459.27	1,124.51	347.70	1,177.04	0.00	0.00	0.00
3,800.00	25.00	17.18	3,549.90	1,164.88	360.19	1,219.30	0.00	0.00	0.00
3,900.00	25.00	17.18	3,640.54	1,205.26	372.67	1,261.56	0.00	0.00	0.00
4,000.00	25.00	17.18	3,731.17	1,245.64	385.16	1,303.82	0.00	0.00	0.00
4,100.00	25.00	17.18	3,821.80	1,286.01	397.64	1,346.08	0.00	0.00	0.00
PARKMAN									
4,120.08	25.00	17.18	3,840.00	1,294.12	400.15	1,354.57	0.00	0.00	0.00
4,200.00	25.00	17.18	3,912.43	1,326.39	410.13	1,388.35	0.00	0.00	0.00
4,300.00	25.00	17.18	4,003.06	1,366.76	422.61	1,430.61	0.00	0.00	0.00
4,400.00	25.00	17.18	4,093.69	1,407.14	435.10	1,472.87	0.00	0.00	0.00
4,500.00	25.00	17.18	4,184.32	1,447.51	447.58	1,515.13	0.00	0.00	0.00
4,600.00	25.00	17.18	4,274.95	1,487.89	460.06	1,557.39	0.00	0.00	0.00
SUSSEX									
4,691.63	25.00	17.18	4,358.00	1,524.89	471.50	1,596.12	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 2-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 2-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 2-8		
Design:	PLAN #1 5-10-10 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)
4,700.00	25.00	17.18	4,365.58	1,528.27	472.55	1,599.66	0.00	0.00	0.00
Start Drop -2.00									
4,735.03	25.00	17.18	4,397.33	1,542.41	476.92	1,614.46	0.00	0.00	0.00
4,800.00	23.70	17.18	4,456.52	1,568.00	484.83	1,641.25	2.00	-2.00	0.00
4,900.00	21.70	17.18	4,548.77	1,604.87	496.23	1,679.84	2.00	-2.00	0.00
5,000.00	19.70	17.18	4,642.31	1,638.64	506.68	1,715.18	2.00	-2.00	0.00
5,100.00	17.70	17.18	4,737.02	1,669.27	516.15	1,747.25	2.00	-2.00	0.00
5,200.00	15.70	17.18	4,832.80	1,696.72	524.64	1,775.98	2.00	-2.00	0.00
5,300.00	13.70	17.18	4,929.52	1,720.96	532.13	1,801.36	2.00	-2.00	0.00
5,400.00	11.70	17.18	5,027.07	1,741.97	538.63	1,823.34	2.00	-2.00	0.00
5,500.00	9.70	17.18	5,125.33	1,759.71	544.11	1,841.91	2.00	-2.00	0.00
5,600.00	7.70	17.18	5,224.17	1,774.16	548.58	1,857.03	2.00	-2.00	0.00
5,700.00	5.70	17.18	5,323.48	1,785.30	552.03	1,868.70	2.00	-2.00	0.00
5,800.00	3.70	17.18	5,423.14	1,793.13	554.45	1,876.90	2.00	-2.00	0.00
5,900.00	1.70	17.18	5,523.02	1,797.64	555.84	1,881.61	2.00	-2.00	0.00
Start 2371.96 hold at 5985.03 MD									
5,985.03	0.00	0.00	5,608.04	1,798.84	556.21	1,882.87	2.00	-2.00	0.00
6,000.00	0.00	0.00	5,623.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,100.00	0.00	0.00	5,723.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,200.00	0.00	0.00	5,823.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,300.00	0.00	0.00	5,923.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,400.00	0.00	0.00	6,023.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,500.00	0.00	0.00	6,123.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,600.00	0.00	0.00	6,223.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,700.00	0.00	0.00	6,323.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,800.00	0.00	0.00	6,423.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
6,900.00	0.00	0.00	6,523.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,000.00	0.00	0.00	6,623.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,100.00	0.00	0.00	6,723.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,200.00	0.00	0.00	6,823.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,300.00	0.00	0.00	6,923.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,400.00	0.00	0.00	7,023.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,500.00	0.00	0.00	7,123.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
NIO									
7,524.99	0.00	0.00	7,148.00	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,600.00	0.00	0.00	7,223.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,700.00	0.00	0.00	7,323.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
CODELL									
7,784.99	0.00	0.00	7,408.00	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,800.00	0.00	0.00	7,423.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
GREEN HORN									
7,856.99	0.00	0.00	7,480.00	1,798.84	556.21	1,882.87	0.00	0.00	0.00
7,900.00	0.00	0.00	7,523.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
8,000.00	0.00	0.00	7,623.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
8,100.00	0.00	0.00	7,723.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
8,200.00	0.00	0.00	7,823.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
JSAND									
8,206.99	0.00	0.00	7,830.00	1,798.84	556.21	1,882.87	0.00	0.00	0.00
8,300.00	0.00	0.00	7,923.01	1,798.84	556.21	1,882.87	0.00	0.00	0.00
TD at 8356.99 - PBHL_SATER 2-8(660 FNL 1980 FEL) 50' TGT RAD									
8,356.99	0.00	0.00	7,980.00	1,798.84	556.21	1,882.87	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_SATER 2-8
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4923.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4923.00ft (Original Well Elev)
Site:	WELD_SATER 25-8 PAD	North Reference:	True
Well:	P_SATER 2-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_SATER 2-8		
Design:	PLAN #1 5-10-10 RHS		

#### Design 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_SATER 2-8(66	0.00	0.00	7,980.00	1,798.84	556.21	1,301,105.26	3,164,459.33	40° 9' 30.352 N	104° 54' 41.746 W
- plan hits target center									
- Circle (radius 50.00)									

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
955.71	950.00	8 5/8"	8.62	11.00

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,120.08	3,840.00	PARKMAN			
4,691.63	4,358.00	SUSSEX			
7,524.99	7,148.00	NIO			
7,784.99	7,408.00	CODELL			
7,856.99	7,480.00	GREEN HORN			
8,206.99	7,830.00	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
1,550.00	1,510.71	256.43	79.29	Start 3185.03 hold at 1550.00 MD
4,735.03	4,397.33	1,542.41	476.92	Start Drop -2.00
5,985.03	5,608.04	1,798.84	556.21	Start 2371.96 hold at 5985.03 MD
8,356.99	7,980.00	1,798.84	556.21	TD at 8356.99