



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Shell 797-03A Pad



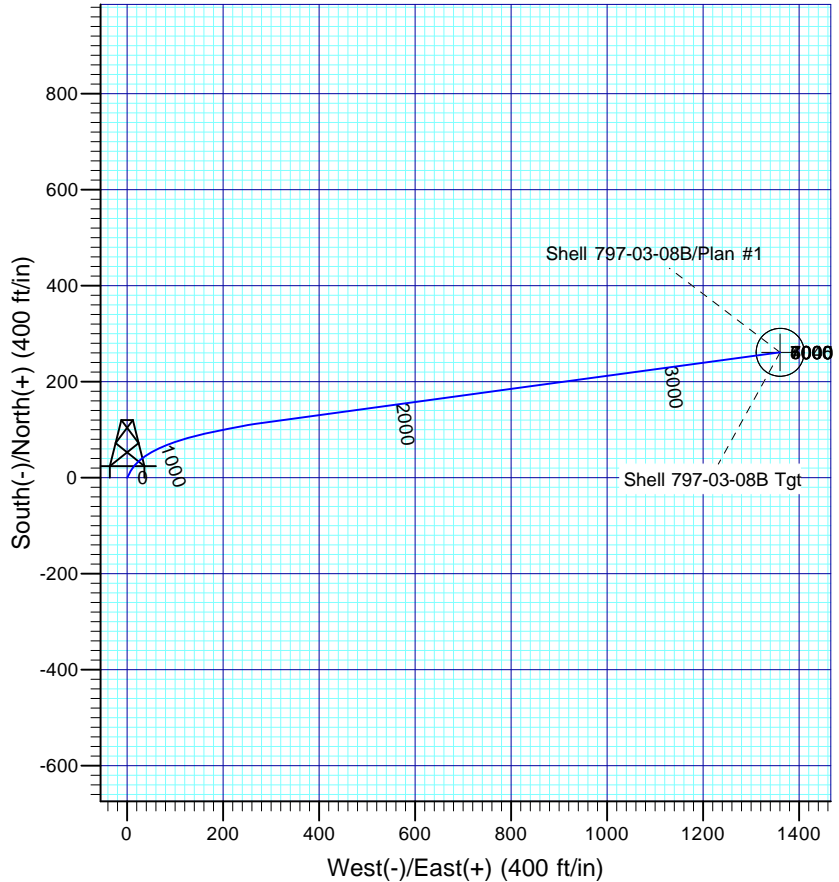
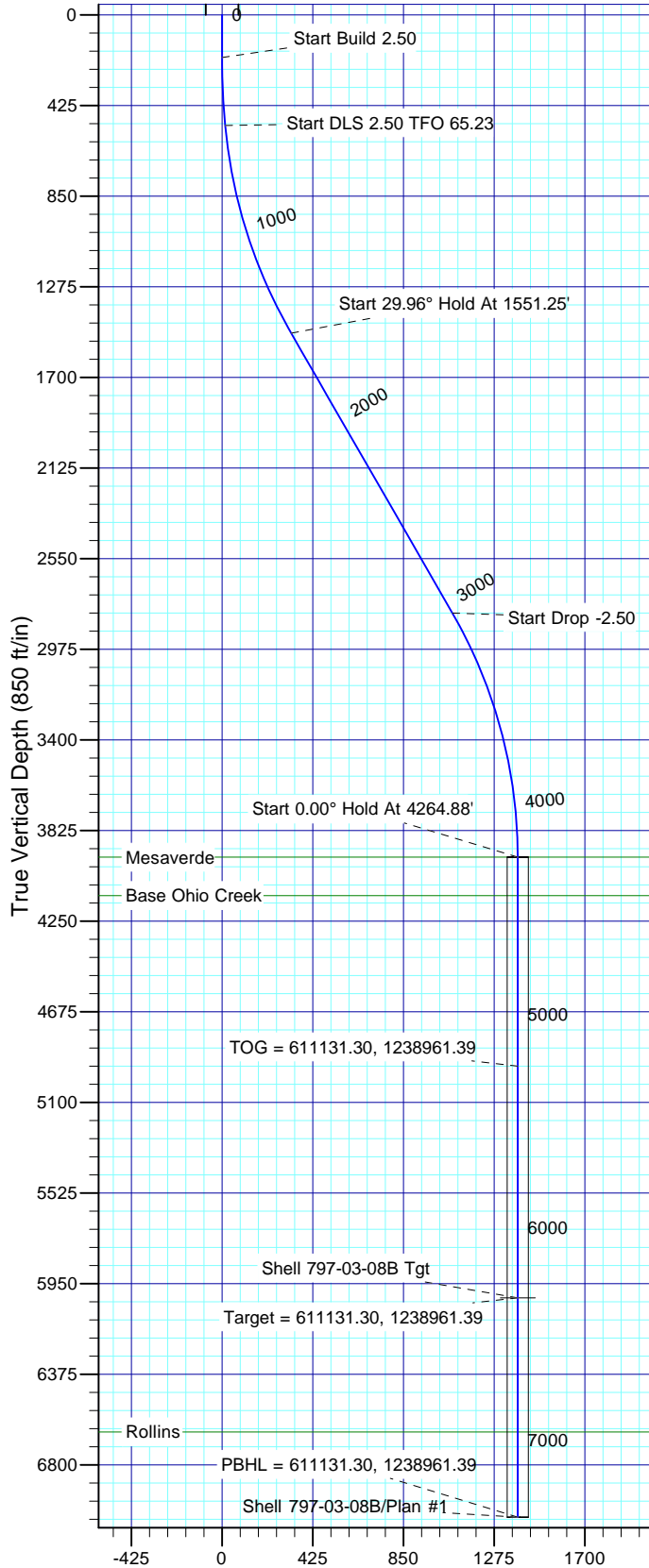
Well Details: Shell 797-03-08B

TVD Reference: GL 6485' & RKB 30' @ 6515.00ft (H&P) Ground Level: 6485.00
+N/-S 0.00 +E/-W 0.00 Northing 610910.61 Easting 1237593.69 Latitude 39° 28' 46.693 N Longitude 108° 12' 4.853 W Slot K



Azimuths to True North
Magnetic North: 10.42°

Magnetic Field
Strength: 52191.8snT
Dip Angle: 65.68°
Date: 08/19/2011
Model: IGRF2010



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3950.00	4264.88	Mesaverde
4130.00	4444.88	Base Ohio Creek
6645.00	6959.88	Rollins

Plan: Plan #1

13:12, September 09 2011
Created By: Rex Hall

PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Colorado Central 502

System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	520.00	8.00	30.00	518.96	19.32	11.15	2.50	30.00	14.59	
4	1551.23	29.96	82.25	1492.74	117.87	307.22	2.50	65.23	323.93	Shell 797-03-08B Tgt
5	1551.25	29.96	82.25	1492.76	117.87	307.23	2.00	180.00	323.94	
6	3066.34	29.96	82.25	2805.35	219.94	1057.02	0.00	0.00	1079.53	
7	4264.88	0.00	0.00	3950.00	261.25	1360.54	2.50	180.00	1385.40	
8	6331.13	0.00	0.00	6016.25	261.25	1360.54	0.00	0.00	1385.40	Shell 797-03-08B Tgt
9	7359.88	0.00	0.00	7045.00	261.25	1360.54	0.00	0.00	1385.40	

OXY USA RMAT

Garfield County, CO NAD27

Shell 797-03A Pad

Shell 797-03-08B - Slot K

OH

Plan: Plan #1

Standard Planning Report

09 September, 2011

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-08B - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-08B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site		Shell 797-03A Pad			
Site Position:		Northing:	610,902.00 usft	Latitude:	39° 28' 46.610 N
From:	Lat/Long	Easting:	1,237,601.62 usft	Longitude:	108° 12' 4.748 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.70 °

Well	Shell 797-03-08B - Slot K					
Well Position	+N/-S	8.38 ft	Northing:	610,910.62 usft	Latitude:	39° 28' 46.693 N
	+E/-W	-8.19 ft	Easting:	1,237,593.68 usft	Longitude:	108° 12' 4.853 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	6,485.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/19/11	10.42	65.68	52,192

Design	Plan #1				
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	79.13	

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
520.00	8.00	30.00	518.96	19.32	11.15	2.50	2.50	0.00	30.00	
1,551.23	29.96	82.25	1,492.74	117.87	307.22	2.50	2.13	5.07	65.23	Shell 797-03-08B Tgt
1,551.25	29.96	82.25	1,492.76	117.87	307.23	2.00	-2.00	0.00	180.00	
3,066.34	29.96	82.25	2,805.35	219.94	1,057.02	0.00	0.00	0.00	0.00	
4,264.88	0.00	0.00	3,950.00	261.25	1,360.54	2.50	-2.50	0.00	180.00	
6,331.13	0.00	0.00	6,016.25	261.25	1,360.54	0.00	0.00	0.00	0.00	Shell 797-03-08B Tgt
7,359.88	0.00	0.00	7,045.00	261.25	1,360.54	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-08B - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-08B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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
Start Build 2.50									
300.00	2.50	30.00	299.97	1.89	1.09	1.43	2.50	2.50	0.00
400.00	5.00	30.00	399.75	7.55	4.36	5.71	2.50	2.50	0.00
500.00	7.50	30.00	499.14	16.98	9.80	12.83	2.50	2.50	0.00
520.00	8.00	30.00	518.96	19.32	11.15	14.59	2.50	2.50	0.00
Start DLS 2.50 TFO 65.23									
600.00	9.02	41.66	598.09	28.82	18.11	23.22	2.50	1.28	14.57
700.00	10.69	52.58	696.61	40.32	30.69	37.74	2.50	1.67	10.92
800.00	12.64	60.39	794.55	51.36	47.56	56.40	2.50	1.94	7.81
900.00	14.75	66.07	891.71	61.93	68.71	79.16	2.50	2.11	5.68
1,000.00	16.96	70.33	987.90	72.01	94.08	105.97	2.50	2.21	4.26
1,100.00	19.24	73.61	1,082.95	81.57	123.63	136.79	2.50	2.28	3.29
1,200.00	21.57	76.22	1,176.67	90.60	157.30	171.56	2.50	2.33	2.61
1,300.00	23.94	78.34	1,268.88	99.08	195.03	210.21	2.50	2.36	2.12
1,400.00	26.32	80.09	1,359.41	107.00	236.74	252.67	2.50	2.39	1.76
1,500.00	28.73	81.57	1,448.09	114.34	282.36	298.86	2.50	2.40	1.48
1,551.23	29.96	82.25	1,492.74	117.87	307.22	323.93	2.50	2.42	1.32
1,551.25	29.96	82.25	1,492.76	117.87	307.23	323.94	2.00	-2.00	0.00
Start 29.96° Hold At 1551.25'									
1,600.00	29.96	82.25	1,534.99	121.15	331.35	348.26	0.00	0.00	0.00
1,700.00	29.96	82.25	1,621.63	127.89	380.84	398.13	0.00	0.00	0.00
1,800.00	29.96	82.25	1,708.26	134.62	430.33	448.00	0.00	0.00	0.00
1,900.00	29.96	82.25	1,794.90	141.36	479.82	497.87	0.00	0.00	0.00
2,000.00	29.96	82.25	1,881.53	148.10	529.31	547.74	0.00	0.00	0.00
2,100.00	29.96	82.25	1,968.16	154.84	578.80	597.61	0.00	0.00	0.00
2,200.00	29.96	82.25	2,054.80	161.57	628.28	647.48	0.00	0.00	0.00
2,300.00	29.96	82.25	2,141.43	168.31	677.77	697.35	0.00	0.00	0.00
2,400.00	29.96	82.25	2,228.07	175.05	727.26	747.22	0.00	0.00	0.00
2,500.00	29.96	82.25	2,314.70	181.78	776.75	797.09	0.00	0.00	0.00
2,600.00	29.96	82.25	2,401.34	188.52	826.24	846.96	0.00	0.00	0.00
2,700.00	29.96	82.25	2,487.97	195.26	875.73	896.84	0.00	0.00	0.00
2,800.00	29.96	82.25	2,574.60	201.99	925.21	946.71	0.00	0.00	0.00
2,900.00	29.96	82.25	2,661.24	208.73	974.70	996.58	0.00	0.00	0.00
3,000.00	29.96	82.25	2,747.87	215.47	1,024.19	1,046.45	0.00	0.00	0.00
3,066.34	29.96	82.25	2,805.35	219.94	1,057.02	1,079.53	0.00	0.00	0.00
Start Drop -2.50									
3,100.00	29.12	82.25	2,834.63	222.17	1,073.47	1,096.10	2.50	-2.50	0.00
3,200.00	26.62	82.25	2,923.02	228.48	1,119.79	1,142.78	2.50	-2.50	0.00
3,300.00	24.12	82.25	3,013.37	234.26	1,162.24	1,185.56	2.50	-2.50	0.00
3,400.00	21.62	82.25	3,105.50	239.50	1,200.75	1,224.37	2.50	-2.50	0.00
3,500.00	19.12	82.25	3,199.24	244.20	1,235.24	1,259.13	2.50	-2.50	0.00
3,600.00	16.62	82.25	3,294.40	248.33	1,265.65	1,289.77	2.50	-2.50	0.00
3,700.00	14.12	82.25	3,390.82	251.91	1,291.91	1,316.24	2.50	-2.50	0.00
3,800.00	11.62	82.25	3,488.30	254.91	1,313.98	1,338.48	2.50	-2.50	0.00
3,900.00	9.12	82.25	3,586.66	257.34	1,331.82	1,356.46	2.50	-2.50	0.00
4,000.00	6.62	82.25	3,685.71	259.19	1,345.39	1,370.13	2.50	-2.50	0.00
4,100.00	4.12	82.25	3,785.26	260.45	1,354.67	1,379.48	2.50	-2.50	0.00
4,200.00	1.62	82.25	3,885.13	261.13	1,359.63	1,384.48	2.50	-2.50	0.00
4,264.88	0.00	0.00	3,950.00	261.25	1,360.54	1,385.40	2.50	-2.50	0.00
Start 0.00° Hold At 4264.88' - Mesaverde									

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-08B - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-08B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
4,300.00	0.00	0.00	3,985.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
4,400.00	0.00	0.00	4,085.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
4,444.88	0.00	0.00	4,130.00	261.25	1,360.54	1,385.40	0.00	0.00	0.00
Base Ohio Creek									
4,500.00	0.00	0.00	4,185.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
4,600.00	0.00	0.00	4,285.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
4,700.00	0.00	0.00	4,385.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
4,800.00	0.00	0.00	4,485.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
4,900.00	0.00	0.00	4,585.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,000.00	0.00	0.00	4,685.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,100.00	0.00	0.00	4,785.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,200.00	0.00	0.00	4,885.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,244.88	0.00	0.00	4,930.00	261.25	1,360.54	1,385.40	0.00	0.00	0.00
TOG = 611131.30, 1238961.39									
5,300.00	0.00	0.00	4,985.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,400.00	0.00	0.00	5,085.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,500.00	0.00	0.00	5,185.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,600.00	0.00	0.00	5,285.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,700.00	0.00	0.00	5,385.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,800.00	0.00	0.00	5,485.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
5,900.00	0.00	0.00	5,585.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,000.00	0.00	0.00	5,685.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,100.00	0.00	0.00	5,785.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,200.00	0.00	0.00	5,885.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,300.00	0.00	0.00	5,985.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,331.13	0.00	0.00	6,016.25	261.25	1,360.54	1,385.40	0.00	0.00	0.00
Target = 611131.30, 1238961.39									
6,400.00	0.00	0.00	6,085.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,500.00	0.00	0.00	6,185.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,600.00	0.00	0.00	6,285.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,700.00	0.00	0.00	6,385.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,800.00	0.00	0.00	6,485.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,900.00	0.00	0.00	6,585.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
6,959.88	0.00	0.00	6,645.00	261.25	1,360.54	1,385.40	0.00	0.00	0.00
Rollins									
7,000.00	0.00	0.00	6,685.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
7,100.00	0.00	0.00	6,785.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
7,200.00	0.00	0.00	6,885.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
7,300.00	0.00	0.00	6,985.12	261.25	1,360.54	1,385.40	0.00	0.00	0.00
7,359.88	0.00	0.00	7,045.00	261.25	1,360.54	1,385.40	0.00	0.00	0.00
PBHL = 611131.30, 1238961.39									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Shell 797-03-08B Tgt	0.00	0.00	6,016.25	261.25	1,360.54	611,131.30	1,238,961.39	39° 28' 49.274 N	108° 11' 47.501 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 50.00)									

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-08B - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 797-03-08B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,264.88	3,950.00	Mesaverde		0.00	
4,444.88	4,130.00	Base Ohio Creek		0.00	
6,959.88	6,645.00	Rollins		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.00	200.00	0.00	0.00	Start Build 2.50	
520.00	518.96	19.32	11.15	Start DLS 2.50 TFO 65.23	
1,551.25	1,492.76	117.87	307.23	Start 29.96° Hold At 1551.25'	
3,066.34	2,805.35	219.94	1,057.02	Start Drop -2.50	
4,264.88	3,950.00	261.25	1,360.54	Start 0.00° Hold At 4264.88'	
5,244.88	4,930.00	261.25	1,360.54	TOG = 611131.30, 1238961.39	
6,331.13	6,016.25	261.25	1,360.54	Target = 611131.30, 1238961.39	
7,359.88	7,045.00	261.25	1,360.54	PBHL = 611131.30, 1238961.39	