

**5D Plan Report**

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**Anadarko Petroleum**

**Field Name:** *WATTENBERG\_ANADARKO\_NAD 83*  
**Site Name:** *ELLIOTT STATE 5-17HZ PAD*  
**Well Name:** *ELLIOTT STATE 40C-17HZ*  
**Plan:** *WP01 PERMIT*

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**Weatherford**

### Plan Data for ELLIOTT STATE 40C-17HZ

Field: WATTENBERG\_ANADARKO\_NAD 83

Map Unit: USFt

Vertical Reference Datum (VRD): Mean Sea Level

Projected Coordinate System: NAD83 / Colorado North (ftUS)

Slot: ELLIOTT STATE 40C-17HZ

Position:

Offset is from Site centre

+N/-S: 0.00USft Northing: 1326761.59USft

Latitude: 40.228907°

+E/-W: 0.00USft Easting: 3161812.70USft

Longitude: -104.920465°

Elevation Above VRD: 4812.00USft

### Plan Point Information:

DogLeg Severity Unit: °/100.00ft

Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(DLSU)	(°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0R
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.0R
2062.27	17.25	235.77	2049.31	-72.44	-106.49	-106.00	2.00	124.2L
5900.23	17.25	235.77	5714.73	-712.43	-1047.26	-1042.51	0.00	0.0R
6762.50	0.00	0.00	6564.04	-784.87	-1153.75	-1148.52	2.00	180.0R
7662.85	90.03	90.38	7137.00	-788.71	-580.46	-575.21	10.00	90.4R
12611.29	90.03	90.38	7134.00	-821.81	4367.87	4373.23	0.00	0.0R

### Plan Data for ELLIOTT STATE 40C-17HZ

#### Casing Point Information:

Name	MD	TVD
	(USft)	(USft)
9 5/8 in	776.00	776.00
7 in	7662.85	7137.00

### Plan Data for ELLIOTT STATE 40C-17HZ

#### Target Set Information:

Name: 23

Name	TVD	Lat	Long	Shape
	(USft)	(°)	(°)	

HEEL 7137.00 40.226742 -104.922544 Cuboid

PBHL 7134.00 40.226650 -104.904822 Cuboid

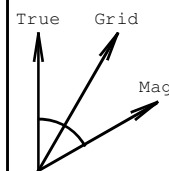
### Plan Data for ELLIOTT STATE 40C-17HZ

#### Formation Point Information:

Name	TVD	Elevation	MD
	(USft)	(USft)	(USft)
FOX HILLS BASE	726.00	4103.00	726.00
PARKMAN	3529.00	1300.00	3611.61
SUSSEX	3992.00	837.00	4096.41
SHARON SPRINGS	6806.00	-1977.00	7012.30
NIOBRARA A	6865.00	-2036.00	7079.37
NIOBRARA B	6912.00	-2083.00	7136.45
NIOBRARA C	6982.00	-2153.00	7230.93
FORT HAYS	7112.00	-2283.00	7492.63
CODELL	7132.00	-2303.00	7586.77

KOP- 6762.5' MD

LINER TOP- 6662.5' MD



Grid Convergence: 0.37°

Mag Declination: 8.67°

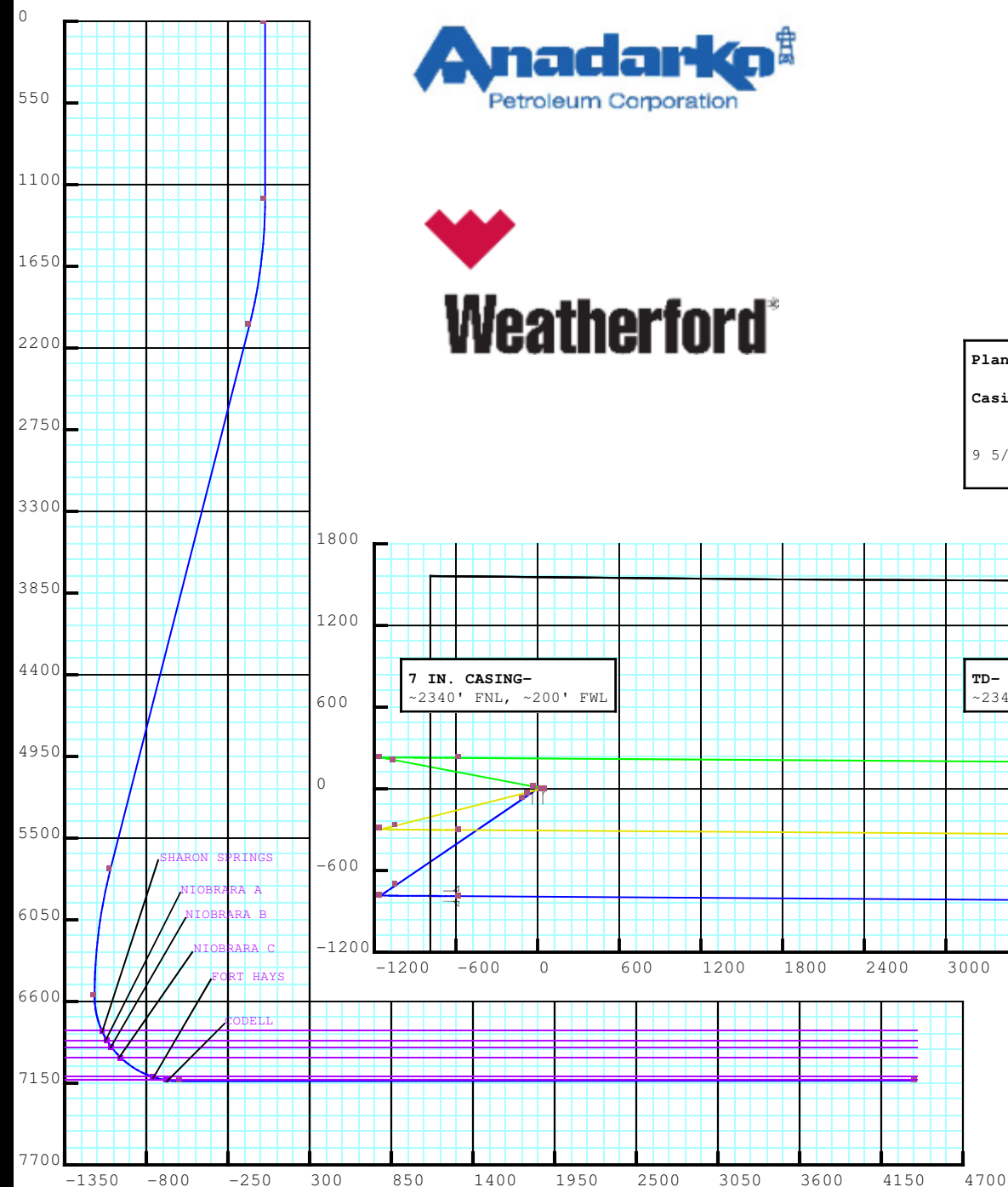
Bearing:

True = Mag + 8.67°

Grid = True - 0.37°

WP01 PERMIT 8/22/13

BY: JA UNDERWOOD





# Weatherford®



## Plan Surveys for the ELLIOTT STATE 40C-17HZ

<b>Site Name</b>  ELLIOTT STATE 5-17HZ PAD	<b>Units :</b> US ft	<b>North Reference :</b> True	<b>Convergence Angle :</b> 0.37
	<b>Position</b>	<b>Northing :</b> 1326761.59 US ft	<b>Latitude :</b> 40.228907
		<b>Easting :</b> 3161812.70 US ft	<b>Longitude :</b> -104.920465
	<b>Elevation above:</b> 4812.00 US ft <b>Comment :</b>		
<b>Slot Name</b>  ELLIOTT STATE 40C-17HZ	<b>Position (Offsets relative to Site Centre)</b>		
	<b>+N / -S :</b> 0.00 US ft	<b>Northing :</b> 1326761.59 US ft	<b>Latitude :</b> 40.228907
	<b>+E / -W :</b> 0.00 US ft	<b>Easting :</b> 3161812.70 US ft	<b>Longitude :</b> -104.920465
	<b>Slot TVD Reference :</b> Ground Elevation <b>Elevation above :</b> 4812.00 US ft <b>Comment :</b>		
<b>Well Name</b>  ELLIOTT STATE 40C-17HZ	<b>Type :</b> Main well	<b>UWI :</b>	<b>Plan :</b> WP01 PERMIT
	<b>Rig Height</b> <b>Drill Floor :</b> 17.00 US ft	<b>Comment :</b>	
	<b>Relative to :</b> 4829.00 US ft		
	<b>Closure Distance :</b> 4444.51 US ft	<b>Closure Azimuth :</b> 100.656°	
	<b>Vertical Section (Position of Origin Relative to Slot )</b>		
	<b>+N / -S :</b> 0.00 US ft	<b>+E / -W :</b> 0.00 US ft	<b>Az :</b> 90.38°
	<b>Magnetic Parameters</b>		
	<b>Model :</b> BGGM	<b>Field Strength :</b> 52684.0nT	<b>Dec :</b> 8.67°
			<b>Dip :</b> 66.64°
			<b>Date :</b> 22/May/2013

**Target Set****Name :** 23**Number of Targets :** 2**Comment :**

<b>TargetName:</b>	<b>Position (Relative to centre)</b>			
HEEL	<b>+N / -S :</b> -788.67US ft	<b>Northing :</b> 1325969.14 US ft	<b>Latitude :</b> 40°13'36.271200"	
<b>Shape:</b>	<b>+E / -W :</b> -580.51 US ft	<b>Easting :</b> 3161237.36US ft	<b>Longitude :</b> -104°55'21.158400"	
Cuboid	<b>TVD (Drill Floor) :</b> 7137.00 US ft			
	<b>Orientation</b>	<b>Azimuth :</b> 0.00°	<b>Inclination :</b> 0.00°	
	<b>Dimensions</b>	<b>Length :</b> 1.00 US ft	<b>Breadth :</b> 1.00 US ft	<b>Height :</b> 1.00 US ft

<b>TargetName:</b>	<b>Position (Relative to centre)</b>			
PBHL	<b>+N / -S :</b> -821.81US ft	<b>Northing :</b> 1325968.34 US ft	<b>Latitude :</b> 40°13'35.940000"	
<b>Shape:</b>	<b>+E / -W :</b> 4367.87 US ft	<b>Easting :</b> 3166185.85US ft	<b>Longitude :</b> -104°54'17.359200"	
Cuboid	<b>TVD (Drill Floor) :</b> 7134.00 US ft			
	<b>Orientation</b>	<b>Azimuth :</b> 0.00°	<b>Inclination :</b> 0.00°	
	<b>Dimensions</b>	<b>Length :</b> 1.00 US ft	<b>Breadth :</b> 1.00 US ft	<b>Height :</b> 1.00 US ft

Casing Points (Relative to centre, TVD relative to Drill Floor )								
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (°)	Longitude (°)
9 5/8 in	776.00	0.00	0.00	776.00	0.00	0.00	40.228907	-104.920465
7 in	7662.85	90.03	90.38	7137.00	-788.71	-580.46	40.226742	-104.922544

**Well path created using minimum curvature**

Salient Points (Relative to centre, TVD relative to Drill Floor )											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	1326761.59	3161812.70	0.00	0.00	-0.00	SURFACE
776.00	0.00	0.00	776.00	0.00	0.00	1326761.59	3161812.70	0.00	0.00	-0.00	9 5/8 in
1200.00	0.00	0.00	1200.00	0.00	0.00	1326761.59	3161812.70	0.00	0.00	-0.00	BEGIN NUDGE
2062.27	17.25	235.77	2049.31	-72.44	-106.49	1326688.45	3161706.69	2.00	235.77	-106.00	
5900.23	17.25	235.77	5714.73	-712.43	-1047.26	1326042.33	3160770.12	0.00	0.00	-1042.51	

## 5D Plan Report

Salient Points (Relative to centre, TVD relative to Drill Floor )											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
6762.50	0.00	0.00	6564.04	-784.87	-1153.75	1325969.20	3160664.10	2.00	180.00	-1148.52	KOP
7662.85	90.03	90.38	7137.00	-788.71	-580.46	1325969.11	3161237.41	10.00	90.38	-575.21	7 in
12611.29	90.03	90.38	7134.00	-821.81	4367.87	1325968.34	3166185.85	0.00	0.00	4373.23	TD

Interpolated Points (Relative to centre, TVD relative to Drill Floor )											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	SURFACE		
100.00	0.00	0.00	100.00	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			
300.00	0.00	0.00	300.00	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			
500.00	0.00	0.00	500.00	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			
700.00	0.00	0.00	700.00	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			
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	-0.00			
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	-0.00			
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	-0.00			
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	-0.00	BEGIN NUDGE		
1300.00	2.00	235.77	1299.98	-0.98	-1.44	2.00	235.77	-1.44			
1400.00	4.00	235.77	1399.84	-3.93	-5.77	2.00	0.00	-5.74			
1500.00	6.00	235.77	1499.45	-8.83	-12.98	2.00	0.00	-12.92			
1600.00	8.00	235.77	1598.70	-15.68	-23.05	2.00	0.00	-22.95			
1700.00	10.00	235.77	1697.47	-24.48	-35.99	2.00	0.00	-35.82			
1800.00	12.00	235.77	1795.62	-35.21	-51.76	2.00	0.00	-51.53			
1900.00	14.00	235.77	1893.06	-47.86	-70.36	2.00	0.00	-70.04			
2000.00	16.00	235.77	1989.64	-62.42	-91.76	2.00	0.00	-91.34			
2062.27	17.25	235.77	2049.31	-72.44	-106.49	2.00	0.00	-106.00			
2100.00	17.25	235.77	2085.34	-78.73	-115.73	0.00	0.00	-115.21			
2200.00	17.25	235.77	2180.85	-95.41	-140.25	0.00	0.00	-139.61			
2300.00	17.25	235.77	2276.35	-112.08	-164.76	0.00	0.00	-164.01			
2400.00	17.25	235.77	2371.86	-128.76	-189.27	0.00	0.00	-188.41			
2500.00	17.25	235.77	2467.36	-145.43	-213.78	0.00	0.00	-212.82			
2600.00	17.25	235.77	2562.86	-162.11	-238.30	0.00	0.00	-237.22			
2700.00	17.25	235.77	2658.37	-178.78	-262.81	0.00	0.00	-261.62			
2800.00	17.25	235.77	2753.87	-195.46	-287.32	0.00	0.00	-286.02			
2900.00	17.25	235.77	2849.38	-212.13	-311.83	0.00	0.00	-310.42			
3000.00	17.25	235.77	2944.88	-228.81	-336.35	0.00	0.00	-334.82			
3100.00	17.25	235.77	3040.39	-245.48	-360.86	0.00	0.00	-359.22			
3200.00	17.25	235.77	3135.89	-262.16	-385.37	0.00	0.00	-383.62			
3300.00	17.25	235.77	3231.40	-278.83	-409.88	0.00	0.00	-408.03			

## 5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor )									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
3400.00	17.25	235.77	3326.90	-295.51	-434.40	0.00	0.00	-432.43	
3500.00	17.25	235.77	3422.40	-312.19	-458.91	0.00	0.00	-456.83	
3600.00	17.25	235.77	3517.91	-328.86	-483.42	0.00	0.00	-481.23	
3700.00	17.25	235.77	3613.41	-345.54	-507.93	0.00	0.00	-505.63	
3800.00	17.25	235.77	3708.92	-362.21	-532.45	0.00	0.00	-530.03	
3900.00	17.25	235.77	3804.42	-378.89	-556.96	0.00	0.00	-554.43	
4000.00	17.25	235.77	3899.93	-395.56	-581.47	0.00	0.00	-578.83	
4100.00	17.25	235.77	3995.43	-412.24	-605.98	0.00	0.00	-603.24	
4200.00	17.25	235.77	4090.93	-428.91	-630.50	0.00	0.00	-627.64	
4300.00	17.25	235.77	4186.44	-445.59	-655.01	0.00	0.00	-652.04	
4400.00	17.25	235.77	4281.94	-462.26	-679.52	0.00	0.00	-676.44	
4500.00	17.25	235.77	4377.45	-478.94	-704.03	0.00	0.00	-700.84	
4600.00	17.25	235.77	4472.95	-495.61	-728.55	0.00	0.00	-725.24	
4700.00	17.25	235.77	4568.46	-512.29	-753.06	0.00	0.00	-749.64	
4800.00	17.25	235.77	4663.96	-528.96	-777.57	0.00	0.00	-774.04	
4900.00	17.25	235.77	4759.46	-545.64	-802.08	0.00	0.00	-798.45	
5000.00	17.25	235.77	4854.97	-562.31	-826.59	0.00	0.00	-822.85	
5100.00	17.25	235.77	4950.47	-578.99	-851.11	0.00	0.00	-847.25	
5200.00	17.25	235.77	5045.98	-595.66	-875.62	0.00	0.00	-871.65	
5300.00	17.25	235.77	5141.48	-612.34	-900.13	0.00	0.00	-896.05	
5400.00	17.25	235.77	5236.99	-629.01	-924.64	0.00	0.00	-920.45	
5500.00	17.25	235.77	5332.49	-645.69	-949.16	0.00	0.00	-944.85	
5600.00	17.25	235.77	5427.99	-662.37	-973.67	0.00	0.00	-969.25	
5700.00	17.25	235.77	5523.50	-679.04	-998.18	0.00	0.00	-993.66	
5800.00	17.25	235.77	5619.00	-695.72	-1022.69	0.00	0.00	-1018.06	
5900.00	17.25	235.77	5714.51	-712.39	-1047.21	0.00	0.00	-1042.46	
5900.23	17.25	235.77	5714.73	-712.43	-1047.26	0.00	0.00	-1042.51	
6000.00	15.25	235.77	5810.51	-728.13	-1070.34	2.00	180.00	-1065.49	
6100.00	13.25	235.77	5907.43	-741.97	-1090.69	2.00	180.00	-1085.75	
6200.00	11.25	235.77	6005.14	-753.91	-1108.24	2.00	180.00	-1103.21	
6300.00	9.25	235.77	6103.54	-763.92	-1122.95	2.00	180.00	-1117.86	
6400.00	7.25	235.77	6202.50	-771.99	-1134.81	2.00	180.00	-1129.67	
6500.00	5.25	235.77	6301.90	-778.11	-1143.81	2.00	180.00	-1138.63	
6600.00	3.25	235.77	6401.62	-782.28	-1149.94	2.00	180.00	-1144.73	
6700.00	1.25	235.77	6501.54	-784.49	-1153.19	2.00	180.00	-1147.96	
6762.50	0.00	0.00	6564.04	-784.87	-1153.75	2.00	180.00	-1148.52	KOP
6800.00	3.75	90.38	6601.51	-784.88	-1152.52	10.00	90.38	-1147.29	
6900.00	13.75	90.38	6700.22	-784.98	-1137.33	10.00	0.00	-1132.10	
7000.00	23.75	90.38	6794.79	-785.19	-1105.23	10.00	0.00	-1100.00	
7100.00	33.75	90.38	6882.36	-785.52	-1057.19	10.00	0.00	-1051.96	
7200.00	43.75	90.38	6960.25	-785.93	-994.68	10.00	0.00	-989.45	

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Interpolated Points (Relative to centre, TVD relative to Drill Floor )									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
7300.00	53.75	90.38	7026.10	-786.44	-919.60	10.00	0.00	-914.36	
7400.00	63.75	90.38	7077.91	-787.01	-834.22	10.00	0.00	-828.98	
7500.00	73.75	90.38	7114.11	-787.63	-741.13	10.00	0.00	-735.89	
7600.00	83.75	90.38	7133.59	-788.29	-643.18	10.00	0.00	-637.94	
7662.85	90.03	90.38	7137.00	-788.71	-580.46	10.00	0.00	-575.21	
7700.00	90.03	90.38	7136.98	-788.95	-543.31	0.00	0.00	-538.06	
7800.00	90.03	90.38	7136.91	-789.62	-443.31	0.00	0.00	-438.06	
7900.00	90.03	90.38	7136.85	-790.29	-343.31	0.00	0.00	-338.06	
8000.00	90.03	90.38	7136.79	-790.96	-243.32	0.00	0.00	-238.06	
8100.00	90.03	90.38	7136.73	-791.63	-143.32	0.00	0.00	-138.06	
8200.00	90.03	90.38	7136.67	-792.30	-43.32	0.00	0.00	-38.06	
8300.00	90.03	90.38	7136.61	-792.97	56.68	0.00	0.00	61.94	
8400.00	90.03	90.38	7136.55	-793.64	156.67	0.00	0.00	161.94	
8500.00	90.03	90.38	7136.49	-794.31	256.67	0.00	0.00	261.94	
8600.00	90.03	90.38	7136.43	-794.97	356.67	0.00	0.00	361.94	
8700.00	90.03	90.38	7136.37	-795.64	456.67	0.00	0.00	461.94	
8800.00	90.03	90.38	7136.31	-796.31	556.67	0.00	0.00	561.94	
8900.00	90.03	90.38	7136.25	-796.98	656.66	0.00	0.00	661.94	
9000.00	90.03	90.38	7136.19	-797.65	756.66	0.00	0.00	761.94	
9100.00	90.03	90.38	7136.13	-798.32	856.66	0.00	0.00	861.93	
9200.00	90.03	90.38	7136.07	-798.99	956.66	0.00	0.00	961.93	
9300.00	90.03	90.38	7136.01	-799.66	1056.65	0.00	0.00	1061.93	
9400.00	90.03	90.38	7135.95	-800.33	1156.65	0.00	0.00	1161.93	
9500.00	90.03	90.38	7135.88	-801.00	1256.65	0.00	0.00	1261.93	
9600.00	90.03	90.38	7135.82	-801.66	1356.65	0.00	0.00	1361.93	
9700.00	90.03	90.38	7135.76	-802.33	1456.65	0.00	0.00	1461.93	
9800.00	90.03	90.38	7135.70	-803.00	1556.64	0.00	0.00	1561.93	
9900.00	90.03	90.38	7135.64	-803.67	1656.64	0.00	0.00	1661.93	
10000.00	90.03	90.38	7135.58	-804.34	1756.64	0.00	0.00	1761.93	
10100.00	90.03	90.38	7135.52	-805.01	1856.64	0.00	0.00	1861.93	
10200.00	90.03	90.38	7135.46	-805.68	1956.63	0.00	0.00	1961.93	
10300.00	90.03	90.38	7135.40	-806.35	2056.63	0.00	0.00	2061.93	
10400.00	90.03	90.38	7135.34	-807.02	2156.63	0.00	0.00	2161.93	
10500.00	90.03	90.38	7135.28	-807.69	2256.63	0.00	0.00	2261.93	
10600.00	90.03	90.38	7135.22	-808.35	2356.63	0.00	0.00	2361.93	
10700.00	90.03	90.38	7135.16	-809.02	2456.62	0.00	0.00	2461.93	
10800.00	90.03	90.38	7135.10	-809.69	2556.62	0.00	0.00	2561.93	
10900.00	90.03	90.38	7135.04	-810.36	2656.62	0.00	0.00	2661.93	
11000.00	90.03	90.38	7134.98	-811.03	2756.62	0.00	0.00	2761.93	
11100.00	90.03	90.38	7134.92	-811.70	2856.61	0.00	0.00	2861.93	
11200.00	90.03	90.38	7134.85	-812.37	2956.61	0.00	0.00	2961.93	

## 5D Plan Report

Interpolated Points (Relative to centre, TVD relative to Drill Floor )									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	T.Face (°)	VS (US ft)	Comment
11300.00	90.03	90.38	7134.79	-813.04	3056.61	0.00	0.00	3061.93	
11400.00	90.03	90.38	7134.73	-813.71	3156.61	0.00	0.00	3161.93	
11500.00	90.03	90.38	7134.67	-814.38	3256.61	0.00	0.00	3261.93	
11600.00	90.03	90.38	7134.61	-815.04	3356.60	0.00	0.00	3361.93	
11700.00	90.03	90.38	7134.55	-815.71	3456.60	0.00	0.00	3461.93	
11800.00	90.03	90.38	7134.49	-816.38	3556.60	0.00	0.00	3561.93	
11900.00	90.03	90.38	7134.43	-817.05	3656.60	0.00	0.00	3661.93	
12000.00	90.03	90.38	7134.37	-817.72	3756.59	0.00	0.00	3761.93	
12100.00	90.03	90.38	7134.31	-818.39	3856.59	0.00	0.00	3861.93	
12200.00	90.03	90.38	7134.25	-819.06	3956.59	0.00	0.00	3961.93	
12300.00	90.03	90.38	7134.19	-819.73	4056.59	0.00	0.00	4061.93	
12400.00	90.03	90.38	7134.13	-820.40	4156.58	0.00	0.00	4161.93	
12500.00	90.03	90.38	7134.07	-821.07	4256.58	0.00	0.00	4261.93	
12600.00	90.03	90.38	7134.01	-821.73	4356.58	0.00	0.00	4361.93	
12611.29	90.03	90.38	7134.00	-821.81	4367.87	0.00	0.00	4373.23	TD

Formation Points (Relative to centre, TVD relative to Drill Floor )		
Name	MD (US ft)	TVD (US ft)
FOX HILLS BASE	726.00	726.00
PARKMAN	3611.61	3529.00
SUSSEX	4096.41	3992.00
SHARON SPRINGS	7012.30	6806.00
NIOBRARA A	7079.37	6865.00
NIOBRARA B	7136.45	6912.00
NIOBRARA C	7230.93	6982.00
FORT HAYS	7492.63	7112.00
CODELL	7586.77	7132.00