

Project: COLORADO NORTHERN ZONE - 83  
 Site: WELD\_STREAR 18-10 PAD  
 Well: STREAR 6-10  
 Wellbore: OH  
 Section: SECTION 10 T2N R67W  
 SHL:  
 Design: STREAR 6-10(wp01)  
 Latitude: 40° 9' 19.444 N  
 Longitude: 104° 52' 47.305 W  
 GL: 4942.00  
 KB: GL 4942' & KB 15' @ 4957.00ft (ASSUMED)

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4282.00	4338.33	PARKMAN
4392.00	4448.36	SUSSEX
7235.00	7291.36	NIOBRARA
7492.00	7548.36	CODELL
7575.00	7631.36	GREENHORN
7932.00	7988.36	J-SAND



Azimuths to Grid North  
 True North: -0.40°  
 Magnetic North: 8.54°  
 Magnetic Field  
 Strength: 53015.5nT  
 Dip Angle: 66.84°  
 Date: 03/16/2011  
 Model: IGRF2010

#### WELL DETAILS: STREAR 6-10

+N/-S	+E/-W	Northing	Ground Level: Easting	4942.00 Latitude	Longitude	Slot
0.00	0.00	1300062.07	3173351.96	40° 9' 19.444 N	104° 52' 47.305 W	

#### CASING DETAILS

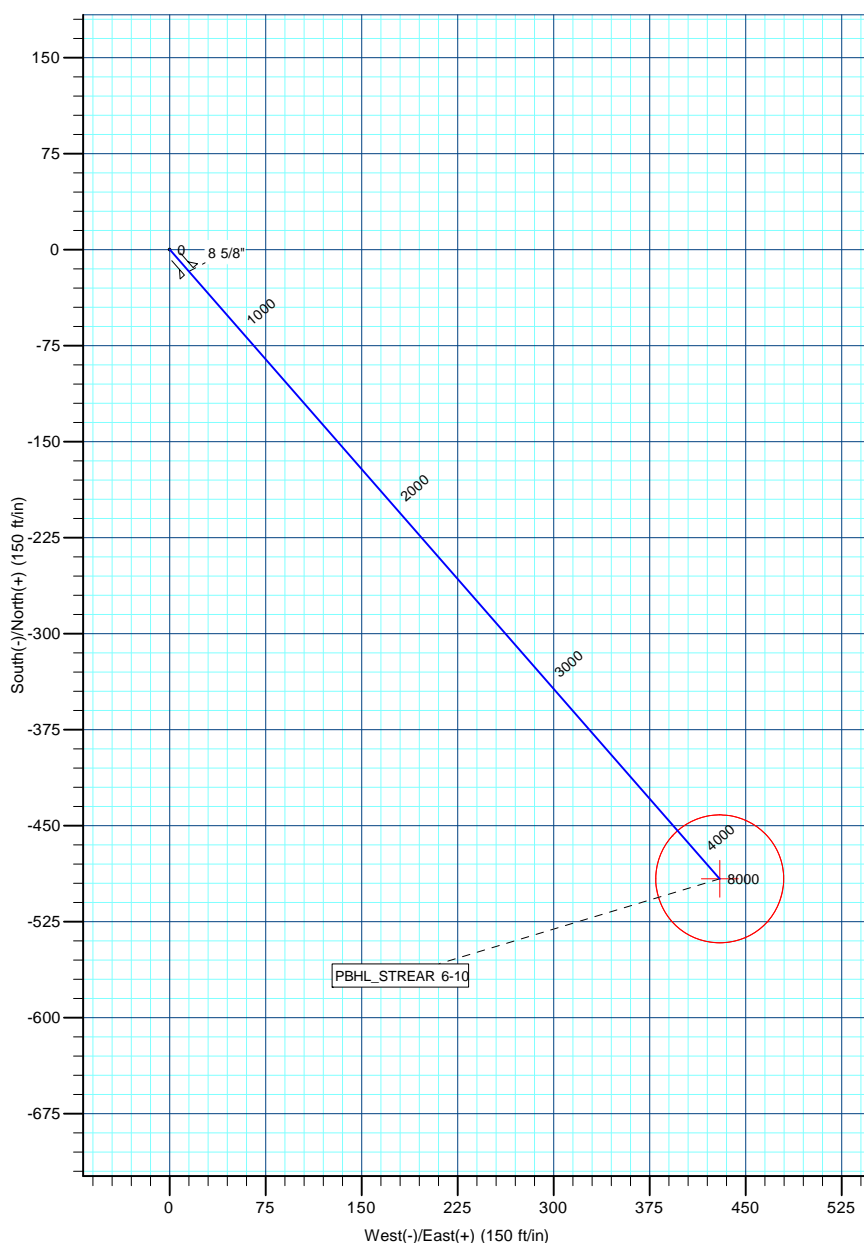
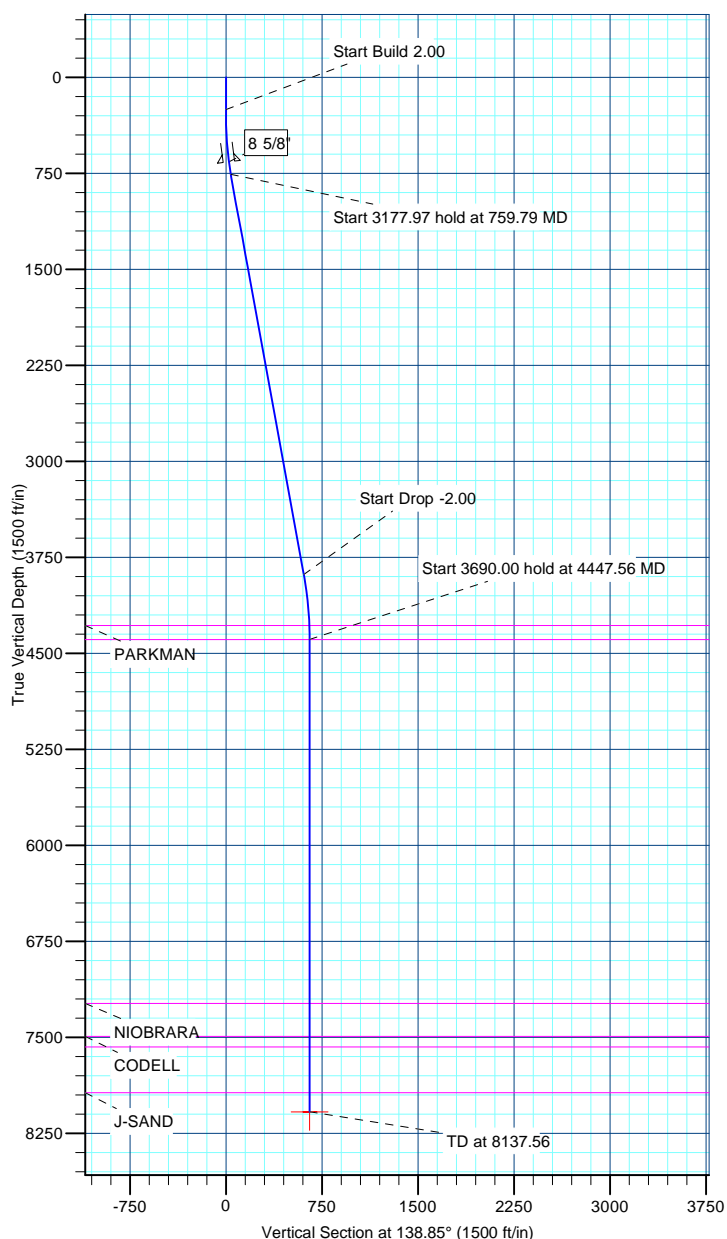
TVD	MD	Name	Size
660.00	660.95	8 5/8"	8.625

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_STREAR 6-10	8082.00	-491.70	429.73	1299570.37	3173781.69	40° 9' 14.555 N	104° 52' 41.815 W	Circle (Radius: 50.00)

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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
817.92	10.36	138.85	815.10	-35.15	30.72	2.00	138.85	46.69
3930.44	10.36	138.85	3876.90	-456.54	399.01	0.00	0.00	606.33
4448.36	0.00	0.00	4392.00	-491.70	429.73	2.00	180.00	653.02
8138.36	0.00	0.00	8082.00	-491.70	429.73	0.00	0.00	653.02



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_STREAR 18-10 PAD**

**STREAR 6-10**

**OH**

**Plan: STREAR 6-10(wp01)**

## **Standard Planning Report**

**16 March, 2011**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well STREAR 6-10
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 18-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 6-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 6-10(wp01)		

<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		

<b>Site</b>	WELD_STREAR 18-10 PAD, SECTION 10 T2N R67W			
<b>Site Position:</b>		<b>Northing:</b>	1,300,062.07 usft	<b>Latitude:</b> 40° 9' 19.444 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,173,351.96 usft	<b>Longitude:</b> 104° 52' 47.305 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 0.40 °

<b>Well</b>	STREAR 6-10			
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	1,300,062.07 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,173,351.96 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,942.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	03/16/2011	8.94	66.84	53,015

<b>Design</b>	STREAR 6-10(wp01)			
<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	138.85

<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	
817.92	10.36	138.85	815.10	-35.15	30.72	2.00	2.00	0.00	138.85	
3,930.44	10.36	138.85	3,876.90	-456.54	399.01	0.00	0.00	0.00	0.00	
4,448.36	0.00	0.00	4,392.00	-491.70	429.73	2.00	-2.00	0.00	180.00	
8,138.36	0.00	0.00	8,082.00	-491.70	429.73	0.00	0.00	0.00	0.00	PBHL_STREAR 6-10

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well STREAR 6-10
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 18-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 6-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 6-10(wp01)		

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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	138.85	399.98	-1.31	1.15	1.75	2.00	2.00	0.00
500.00	4.00	138.85	499.84	-5.25	4.59	6.98	2.00	2.00	0.00
600.00	6.00	138.85	599.45	-11.82	10.33	15.69	2.00	2.00	0.00
660.95	7.22	138.85	660.00	-17.10	14.94	22.71	2.00	2.00	0.00
<b>8 5/8"</b>									
700.00	8.00	138.85	698.70	-20.99	18.35	27.88	2.00	2.00	0.00
759.79	9.20	138.85	757.82	-27.72	24.23	36.82	2.00	2.00	0.00
<b>Start 3177.97 hold at 759.79 MD</b>									
800.00	10.00	138.85	797.47	-32.77	28.64	43.52	2.00	2.00	0.00
817.92	10.36	138.85	815.10	-35.15	30.72	46.69	2.00	2.00	0.00
900.00	10.36	138.85	895.85	-46.27	40.44	61.45	0.00	0.00	0.00
1,000.00	10.36	138.85	994.22	-59.81	52.27	79.43	0.00	0.00	0.00
1,100.00	10.36	138.85	1,092.59	-73.34	64.10	97.41	0.00	0.00	0.00
1,200.00	10.36	138.85	1,190.96	-86.88	75.93	115.39	0.00	0.00	0.00
1,300.00	10.36	138.85	1,289.33	-100.42	87.77	133.37	0.00	0.00	0.00
1,400.00	10.36	138.85	1,387.70	-113.96	99.60	151.35	0.00	0.00	0.00
1,500.00	10.36	138.85	1,486.07	-127.50	111.43	169.33	0.00	0.00	0.00
1,600.00	10.36	138.85	1,584.44	-141.04	123.26	187.31	0.00	0.00	0.00
1,700.00	10.36	138.85	1,682.81	-154.58	135.10	205.29	0.00	0.00	0.00
1,800.00	10.36	138.85	1,781.18	-168.11	146.93	223.27	0.00	0.00	0.00
1,900.00	10.36	138.85	1,879.55	-181.65	158.76	241.25	0.00	0.00	0.00
2,000.00	10.36	138.85	1,977.92	-195.19	170.59	259.23	0.00	0.00	0.00
2,100.00	10.36	138.85	2,076.29	-208.73	182.43	277.21	0.00	0.00	0.00
2,200.00	10.36	138.85	2,174.66	-222.27	194.26	295.19	0.00	0.00	0.00
2,300.00	10.36	138.85	2,273.03	-235.81	206.09	313.17	0.00	0.00	0.00
2,400.00	10.36	138.85	2,371.40	-249.34	217.92	331.15	0.00	0.00	0.00
2,500.00	10.36	138.85	2,469.77	-262.88	229.76	349.13	0.00	0.00	0.00
2,600.00	10.36	138.85	2,568.14	-276.42	241.59	367.11	0.00	0.00	0.00
2,700.00	10.36	138.85	2,666.51	-289.96	253.42	385.09	0.00	0.00	0.00
2,800.00	10.36	138.85	2,764.88	-303.50	265.25	403.08	0.00	0.00	0.00
2,900.00	10.36	138.85	2,863.25	-317.04	277.08	421.06	0.00	0.00	0.00
3,000.00	10.36	138.85	2,961.62	-330.57	288.92	439.04	0.00	0.00	0.00
3,100.00	10.36	138.85	3,059.99	-344.11	300.75	457.02	0.00	0.00	0.00
3,200.00	10.36	138.85	3,158.36	-357.65	312.58	475.00	0.00	0.00	0.00
3,300.00	10.36	138.85	3,256.73	-371.19	324.41	492.98	0.00	0.00	0.00
3,400.00	10.36	138.85	3,355.10	-384.73	336.25	510.96	0.00	0.00	0.00
3,500.00	10.36	138.85	3,453.47	-398.27	348.08	528.94	0.00	0.00	0.00
3,600.00	10.36	138.85	3,551.84	-411.81	359.91	546.92	0.00	0.00	0.00
3,700.00	10.36	138.85	3,650.21	-425.34	371.74	564.90	0.00	0.00	0.00
3,800.00	10.36	138.85	3,748.58	-438.88	383.58	582.88	0.00	0.00	0.00
3,900.00	10.36	138.85	3,846.95	-452.42	395.41	600.86	0.00	0.00	0.00
3,930.44	10.36	138.85	3,876.90	-456.54	399.01	606.33	0.00	0.00	0.00
3,937.77	10.21	138.85	3,884.11	-457.53	399.87	607.64	2.00	-2.00	0.00
<b>Start Drop -2.00</b>									
4,000.00	8.97	138.85	3,945.47	-465.33	406.69	618.01	2.00	-2.00	0.00
4,100.00	6.97	138.85	4,044.50	-475.77	415.81	631.87	2.00	-2.00	0.00
4,200.00	4.97	138.85	4,143.95	-483.60	422.65	642.26	2.00	-2.00	0.00
4,300.00	2.97	138.85	4,243.71	-488.81	427.21	649.18	2.00	-2.00	0.00

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 18-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 6-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 6-10(wp01)		

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)
4,338.33	2.20	138.85	4,282.00	-490.11	428.34	650.91	2.00	-2.00	0.00
<b>PARKMAN</b>									
4,400.00	0.97	138.85	4,343.64	-491.39	429.47	652.61	2.00	-2.00	0.00
4,447.56	0.02	138.85	4,391.20	-491.70	429.73	653.02	2.00	-2.00	0.00
<b>Start 3690.00 hold at 4447.56 MD</b>									
4,448.36	0.00	0.00	4,392.00	-491.70	429.73	653.02	2.00	-2.00	0.00
<b>SUSSEX</b>									
4,500.00	0.00	0.00	4,443.64	-491.70	429.73	653.02	0.00	0.00	0.00
4,600.00	0.00	0.00	4,543.64	-491.70	429.73	653.02	0.00	0.00	0.00
4,700.00	0.00	0.00	4,643.64	-491.70	429.73	653.02	0.00	0.00	0.00
4,800.00	0.00	0.00	4,743.64	-491.70	429.73	653.02	0.00	0.00	0.00
4,900.00	0.00	0.00	4,843.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,000.00	0.00	0.00	4,943.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,100.00	0.00	0.00	5,043.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,200.00	0.00	0.00	5,143.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,300.00	0.00	0.00	5,243.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,400.00	0.00	0.00	5,343.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,500.00	0.00	0.00	5,443.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,600.00	0.00	0.00	5,543.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,700.00	0.00	0.00	5,643.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,800.00	0.00	0.00	5,743.64	-491.70	429.73	653.02	0.00	0.00	0.00
5,900.00	0.00	0.00	5,843.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,000.00	0.00	0.00	5,943.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,100.00	0.00	0.00	6,043.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,200.00	0.00	0.00	6,143.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,300.00	0.00	0.00	6,243.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,400.00	0.00	0.00	6,343.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,500.00	0.00	0.00	6,443.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,600.00	0.00	0.00	6,543.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,700.00	0.00	0.00	6,643.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,800.00	0.00	0.00	6,743.64	-491.70	429.73	653.02	0.00	0.00	0.00
6,900.00	0.00	0.00	6,843.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,000.00	0.00	0.00	6,943.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,100.00	0.00	0.00	7,043.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,200.00	0.00	0.00	7,143.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,291.36	0.00	0.00	7,235.00	-491.70	429.73	653.02	0.00	0.00	0.00
<b>NIORARA</b>									
7,300.00	0.00	0.00	7,243.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,400.00	0.00	0.00	7,343.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,500.00	0.00	0.00	7,443.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,548.36	0.00	0.00	7,492.00	-491.70	429.73	653.02	0.00	0.00	0.00
<b>CODELL</b>									
7,600.00	0.00	0.00	7,543.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,631.36	0.00	0.00	7,575.00	-491.70	429.73	653.02	0.00	0.00	0.00
<b>GREENHORN</b>									
7,700.00	0.00	0.00	7,643.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,800.00	0.00	0.00	7,743.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,900.00	0.00	0.00	7,843.64	-491.70	429.73	653.02	0.00	0.00	0.00
7,988.36	0.00	0.00	7,932.00	-491.70	429.73	653.02	0.00	0.00	0.00
<b>J-SAND</b>									
8,000.00	0.00	0.00	7,943.64	-491.70	429.73	653.02	0.00	0.00	0.00
8,100.00	0.00	0.00	8,043.64	-491.70	429.73	653.02	0.00	0.00	0.00
8,137.56	0.00	0.00	8,081.20	-491.70	429.73	653.02	0.00	0.00	0.00

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<b>Well:</b>	STREAR 6-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 6-10(wp01)		

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)
TD at 8137.56									
8,138.36	0.00	0.00	8,082.00	-491.70	429.73	653.02	0.00	0.00	0.00
PBHL_STREAR 6-10									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_STREAR 6-10	0.00	0.01	8,082.00	-491.70	429.73	1,299,570.37	3,173,781.69	40° 9' 14.555 N	104° 52' 41.815 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
660.95	660.00	8 5/8"	8.625	11.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,338.33	4,282.00	PARKMAN				
4,448.36	4,392.00	SUSSEX				
7,291.36	7,235.00	NIOBRARA				
7,548.36	7,492.00	CODELL				
7,631.36	7,575.00	GREENHORN				
7,988.36	7,932.00	J-SAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
250.00	250.00	0.00	0.00	Start Build 2.00	
759.79	757.82	-27.72	24.23	Start 3177.97 hold at 759.79 MD	
3,937.77	3,884.11	-457.53	399.87	Start Drop -2.00	
4,447.56	4,391.20	-491.70	429.73	Start 3690.00 hold at 4447.56 MD	
8,137.56	8,081.20	-491.70	429.73	TD at 8137.56	