

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_STREAR 16-10 PAD
 Well: STREAR 23-10
 Wellbore: OH
 Section: SECTION 36 T10N R67W
 SHL:
 Design: STREAR 23-10(wp01)
 Latitude: 40° 8' 49.103 N
 Longitude: 104° 52' 10.704 W
 GL: 4961.00
 KB: GL 4961' & KB 15' @ 4976.00ft (ASSUMED)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4301.00	4545.52	PARKMAN
4456.00	4712.04	SUSSEX
7261.00	7635.43	NIOBRARA
7528.00	7902.43	CODELL
7608.00	7982.43	GREENHORN
7961.00	8335.43	J-SAND



Azimuths to Grid North
 True North: -0.41°
 Magnetic North: 8.52°
 Magnetic Field
 Strength: 53012.0snT
 Dip Angle: 66.84°
 Date: 03/16/2011
 Model: IGRF2010

WELL DETAILS: STREAR 23-10

+N/-S	+E/-W	Northing	Easting	Ground Level: 4961.00	Latitude	Longitude	Slot
0.00	0.00	1297012.01	3176215.54		40° 8' 49.103 N	104° 52' 10.704 W	

CASING DETAILS

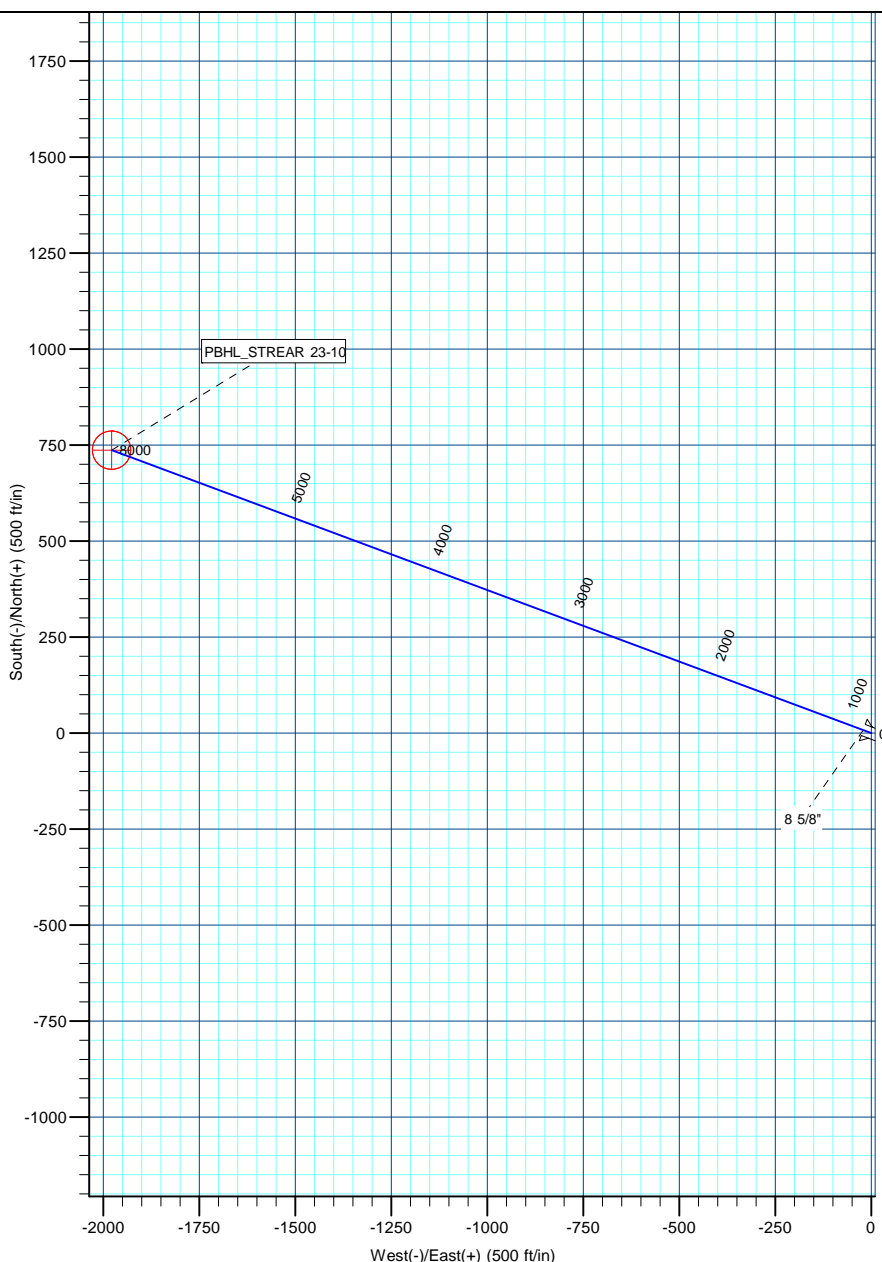
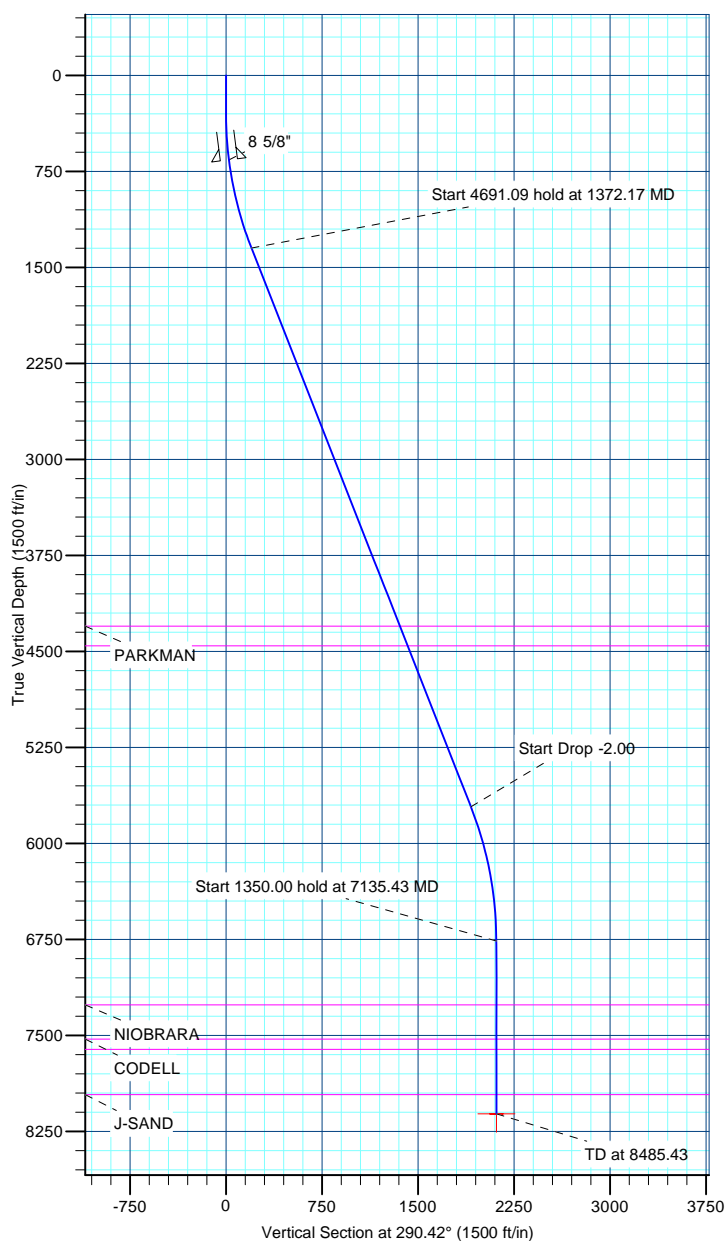
TVD	MD	Name	Size
660.00	660.95	8 5/8"	8.625

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_STREAR 23-10	8111.00	736.83	-1978.85	1297748.84	3174236.69	40° 8' 56.522 N	104° 52' 36.120 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
1372.17	21.44	290.42	1347.31	69.20	-185.84	2.00	290.42	198.30
6063.26	21.44	290.42	5713.69	667.63	-1793.02	0.00	0.00	1913.28
7135.43	0.00	0.00	6761.00	736.83	-1978.85	2.00	180.00	2111.58
8485.43	0.00	0.00	8111.00	736.83	-1978.85	0.00	0.00	2111.58



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_STREAR 16-10 PAD

STREAR 23-10

OH

Plan: STREAR 23-10(wp01)

Standard Planning Report

16 March, 2011

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 23-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
Site:	WELD_STREAR 16-10 PAD	North Reference:	Grid
Well:	STREAR 23-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 23-10(wp01)		

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_STREAR 16-10 PAD, SECTION 36 T10N R67W			
Site Position:		Northing:	1,296,996.08 usft	Latitude:	40° 8' 48.944 N
From:	Lat/Long	Easting:	3,176,227.40 usft	Longitude:	104° 52' 10.553 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	STREAR 23-10					
Well Position	+N/-S	15.93 ft	Northing:	1,297,012.01 usft	Latitude:	40° 8' 49.103 N
	+E/-W	-11.85 ft	Easting:	3,176,215.54 usft	Longitude:	104° 52' 10.704 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,961.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/16/2011	8.93	66.84	53,012

Design	STREAR 23-10(wp01)			
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	290.42

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	
1,372.17	21.44	290.42	1,347.31	69.20	-185.84	2.00	2.00	0.00	290.42	
6,063.26	21.44	290.42	5,713.69	667.63	-1,793.02	0.00	0.00	0.00	0.00	
7,135.43	0.00	0.00	6,761.00	736.83	-1,978.85	2.00	-2.00	0.00	180.00	
8,485.43	0.00	0.00	8,111.00	736.83	-1,978.85	0.00	0.00	0.00	0.00	PBHL_STREAR 23-10

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 23-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
Site:	WELD_STREAR 16-10 PAD	North Reference:	Grid
Well:	STREAR 23-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 23-10(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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
400.00	2.00	290.42	399.98	0.61	-1.64	1.75	2.00	2.00	0.00
500.00	4.00	290.42	499.84	2.44	-6.54	6.98	2.00	2.00	0.00
600.00	6.00	290.42	599.45	5.48	-14.71	15.69	2.00	2.00	0.00
660.95	7.22	290.42	660.00	7.92	-21.28	22.71	2.00	2.00	0.00
8 5/8"									
700.00	8.00	290.42	698.70	9.73	-26.13	27.88	2.00	2.00	0.00
800.00	10.00	290.42	797.47	15.19	-40.79	43.52	2.00	2.00	0.00
900.00	12.00	290.42	895.62	21.84	-58.67	62.60	2.00	2.00	0.00
1,000.00	14.00	290.42	993.06	29.69	-79.75	85.10	2.00	2.00	0.00
1,100.00	16.00	290.42	1,089.64	38.72	-104.00	110.98	2.00	2.00	0.00
1,200.00	18.00	290.42	1,185.27	48.93	-131.40	140.21	2.00	2.00	0.00
1,300.00	20.00	290.42	1,279.82	60.29	-161.91	172.77	2.00	2.00	0.00
1,372.17	21.44	290.42	1,347.31	69.20	-185.84	198.30	2.00	2.00	0.00
Start 4691.09 hold at 1372.17 MD									
1,400.00	21.44	290.42	1,373.22	72.75	-195.37	208.48	0.00	0.00	0.00
1,500.00	21.44	290.42	1,466.30	85.50	-229.63	245.04	0.00	0.00	0.00
1,600.00	21.44	290.42	1,559.37	98.26	-263.89	281.59	0.00	0.00	0.00
1,700.00	21.44	290.42	1,652.45	111.02	-298.15	318.15	0.00	0.00	0.00
1,800.00	21.44	290.42	1,745.53	123.77	-332.41	354.71	0.00	0.00	0.00
1,900.00	21.44	290.42	1,838.61	136.53	-366.67	391.27	0.00	0.00	0.00
2,000.00	21.44	290.42	1,931.69	149.29	-400.93	427.83	0.00	0.00	0.00
2,100.00	21.44	290.42	2,024.76	162.04	-435.19	464.38	0.00	0.00	0.00
2,200.00	21.44	290.42	2,117.84	174.80	-469.45	500.94	0.00	0.00	0.00
2,300.00	21.44	290.42	2,210.92	187.56	-503.71	537.50	0.00	0.00	0.00
2,400.00	21.44	290.42	2,304.00	200.31	-537.98	574.06	0.00	0.00	0.00
2,500.00	21.44	290.42	2,397.08	213.07	-572.24	610.62	0.00	0.00	0.00
2,600.00	21.44	290.42	2,490.15	225.83	-606.50	647.17	0.00	0.00	0.00
2,700.00	21.44	290.42	2,583.23	238.59	-640.76	683.73	0.00	0.00	0.00
2,800.00	21.44	290.42	2,676.31	251.34	-675.02	720.29	0.00	0.00	0.00
2,900.00	21.44	290.42	2,769.39	264.10	-709.28	756.85	0.00	0.00	0.00
3,000.00	21.44	290.42	2,862.47	276.86	-743.54	793.41	0.00	0.00	0.00
3,100.00	21.44	290.42	2,955.54	289.61	-777.80	829.97	0.00	0.00	0.00
3,200.00	21.44	290.42	3,048.62	302.37	-812.06	866.52	0.00	0.00	0.00
3,300.00	21.44	290.42	3,141.70	315.13	-846.32	903.08	0.00	0.00	0.00
3,400.00	21.44	290.42	3,234.78	327.88	-880.58	939.64	0.00	0.00	0.00
3,500.00	21.44	290.42	3,327.86	340.64	-914.84	976.20	0.00	0.00	0.00
3,600.00	21.44	290.42	3,420.93	353.40	-949.10	1,012.76	0.00	0.00	0.00
3,700.00	21.44	290.42	3,514.01	366.15	-983.36	1,049.31	0.00	0.00	0.00
3,800.00	21.44	290.42	3,607.09	378.91	-1,017.62	1,085.87	0.00	0.00	0.00
3,900.00	21.44	290.42	3,700.17	391.67	-1,051.88	1,122.43	0.00	0.00	0.00
4,000.00	21.44	290.42	3,793.25	404.42	-1,086.14	1,158.99	0.00	0.00	0.00
4,100.00	21.44	290.42	3,886.32	417.18	-1,120.40	1,195.55	0.00	0.00	0.00
4,200.00	21.44	290.42	3,979.40	429.94	-1,154.66	1,232.10	0.00	0.00	0.00
4,300.00	21.44	290.42	4,072.48	442.69	-1,188.92	1,268.66	0.00	0.00	0.00
4,400.00	21.44	290.42	4,165.56	455.45	-1,223.18	1,305.22	0.00	0.00	0.00
4,500.00	21.44	290.42	4,258.63	468.21	-1,257.44	1,341.78	0.00	0.00	0.00
4,545.52	21.44	290.42	4,301.00	474.01	-1,273.03	1,358.42	0.00	0.00	0.00
PARKMAN									
4,600.00	21.44	290.42	4,351.71	480.96	-1,291.70	1,378.34	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
Site:	WELD_STREAR 16-10 PAD	North Reference:	Grid
Well:	STREAR 23-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 23-10(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)
4,700.00	21.44	290.42	4,444.79	493.72	-1,325.96	1,414.90	0.00	0.00	0.00
4,712.04	21.44	290.42	4,456.00	495.26	-1,330.09	1,419.30	0.00	0.00	0.00
SUSSEX									
4,800.00	21.44	290.42	4,537.87	506.48	-1,360.22	1,451.45	0.00	0.00	0.00
4,900.00	21.44	290.42	4,630.95	519.23	-1,394.48	1,488.01	0.00	0.00	0.00
5,000.00	21.44	290.42	4,724.02	531.99	-1,428.74	1,524.57	0.00	0.00	0.00
5,100.00	21.44	290.42	4,817.10	544.75	-1,463.00	1,561.13	0.00	0.00	0.00
5,200.00	21.44	290.42	4,910.18	557.50	-1,497.26	1,597.69	0.00	0.00	0.00
5,300.00	21.44	290.42	5,003.26	570.26	-1,531.52	1,634.24	0.00	0.00	0.00
5,400.00	21.44	290.42	5,096.34	583.02	-1,565.78	1,670.80	0.00	0.00	0.00
5,500.00	21.44	290.42	5,189.41	595.78	-1,600.04	1,707.36	0.00	0.00	0.00
5,600.00	21.44	290.42	5,282.49	608.53	-1,634.30	1,743.92	0.00	0.00	0.00
5,700.00	21.44	290.42	5,375.57	621.29	-1,668.56	1,780.48	0.00	0.00	0.00
5,800.00	21.44	290.42	5,468.65	634.05	-1,702.82	1,817.04	0.00	0.00	0.00
5,900.00	21.44	290.42	5,561.73	646.80	-1,737.08	1,853.59	0.00	0.00	0.00
6,000.00	21.44	290.42	5,654.80	659.56	-1,771.34	1,890.15	0.00	0.00	0.00
6,063.26	21.44	290.42	5,713.69	667.63	-1,793.02	1,913.28	0.00	0.00	0.00
Start Drop -2.00									
6,100.00	20.71	290.42	5,747.97	672.24	-1,805.40	1,926.49	2.00	-2.00	0.00
6,200.00	18.71	290.42	5,842.10	684.01	-1,837.00	1,960.21	2.00	-2.00	0.00
6,300.00	16.71	290.42	5,937.36	694.62	-1,865.50	1,990.63	2.00	-2.00	0.00
6,400.00	14.71	290.42	6,033.62	704.07	-1,890.87	2,017.70	2.00	-2.00	0.00
6,500.00	12.71	290.42	6,130.77	712.34	-1,913.08	2,041.40	2.00	-2.00	0.00
6,600.00	10.71	290.42	6,228.68	719.42	-1,932.10	2,061.69	2.00	-2.00	0.00
6,700.00	8.71	290.42	6,327.24	725.30	-1,947.90	2,078.55	2.00	-2.00	0.00
6,800.00	6.71	290.42	6,426.34	729.98	-1,960.47	2,091.97	2.00	-2.00	0.00
6,900.00	4.71	290.42	6,525.84	733.45	-1,969.79	2,101.91	2.00	-2.00	0.00
7,000.00	2.71	290.42	6,625.62	735.71	-1,975.85	2,108.38	2.00	-2.00	0.00
7,100.00	0.71	290.42	6,725.57	736.75	-1,978.65	2,111.36	2.00	-2.00	0.00
7,135.43	0.00	0.00	6,761.00	736.83	-1,978.85	2,111.58	2.00	-2.00	196.38
Start 1350.00 hold at 7135.43 MD									
7,200.00	0.00	0.00	6,825.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,300.00	0.00	0.00	6,925.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,400.00	0.00	0.00	7,025.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,500.00	0.00	0.00	7,125.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,600.00	0.00	0.00	7,225.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,635.43	0.00	0.00	7,261.00	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
NIOBRARA									
7,700.00	0.00	0.00	7,325.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,800.00	0.00	0.00	7,425.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,900.00	0.00	0.00	7,525.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
7,902.43	0.00	0.00	7,528.00	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
CODELL									
7,982.43	0.00	0.00	7,608.00	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
GREENHORN									
8,000.00	0.00	0.00	7,625.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
8,100.00	0.00	0.00	7,725.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
8,200.00	0.00	0.00	7,825.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
8,300.00	0.00	0.00	7,925.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
8,335.43	0.00	0.00	7,961.00	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
J-SAND									
8,400.00	0.00	0.00	8,025.57	736.83	-1,978.85	2,111.58	0.00	0.00	0.00
8,485.43	0.00	0.00	8,111.00	736.83	-1,978.85	2,111.58	0.00	0.00	0.00

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Well:	STREAR 23-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 23-10(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)
PBHL_STREAR 23-10									

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 23-10	0.00	0.00	8,111.00	736.83	-1,978.85	1,297,748.84	3,174,236.70	40° 8' 56.522 N	104° 52' 36.120 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 (°)	
4,545.52	4,301.00	PARKMAN				
4,712.04	4,456.00	SUSSEX				
7,635.43	7,261.00	NIOBRARA				
7,902.43	7,528.00	CODELL				
7,982.43	7,608.00	GREENHORN				
8,335.43	7,961.00	J-SAND				

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
1,372.17	1,347.31	69.20	-185.84	Start 4691.09 hold at 1372.17 MD
6,063.26	5,713.69	667.63	-1,793.02	Start Drop -2.00
7,135.43	6,761.00	736.83	-1,978.85	Start 1350.00 hold at 7135.43 MD
8,485.43	8,111.00	736.83	-1,978.85	TD at 8485.43