

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD STREAR 18-10 PAD
 Well: STREAR 29-10
 Wellbore: OH
 Section: SECTION 10 T2N R67W
 SHL:
 Design: STREAR 29-10(wp01)
 Latitude: 40° 9' 19.839 N
 Longitude: 104° 52' 47.305 W
 GL: 4942.00
 KB: GL 4942' & KB 15' @ 4957.00ft (ASSUMED)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4281.00	4445.87	PARKMAN
4391.00	4561.20	SUSSEX
7234.00	7465.36	NIOBRARA
7491.00	7722.36	CODELL
7574.00	7805.36	GREENHORN
7931.00	8162.36	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 29-10

+N/-S	+E/-W	Northing	Easting	Ground Level: 4942.00	Latitude	Longitude	Slot
0.00	0.00	1300102.12	3173351.68		40° 9' 19.839 N	104° 52' 47.305 W	

CASING DETAILS

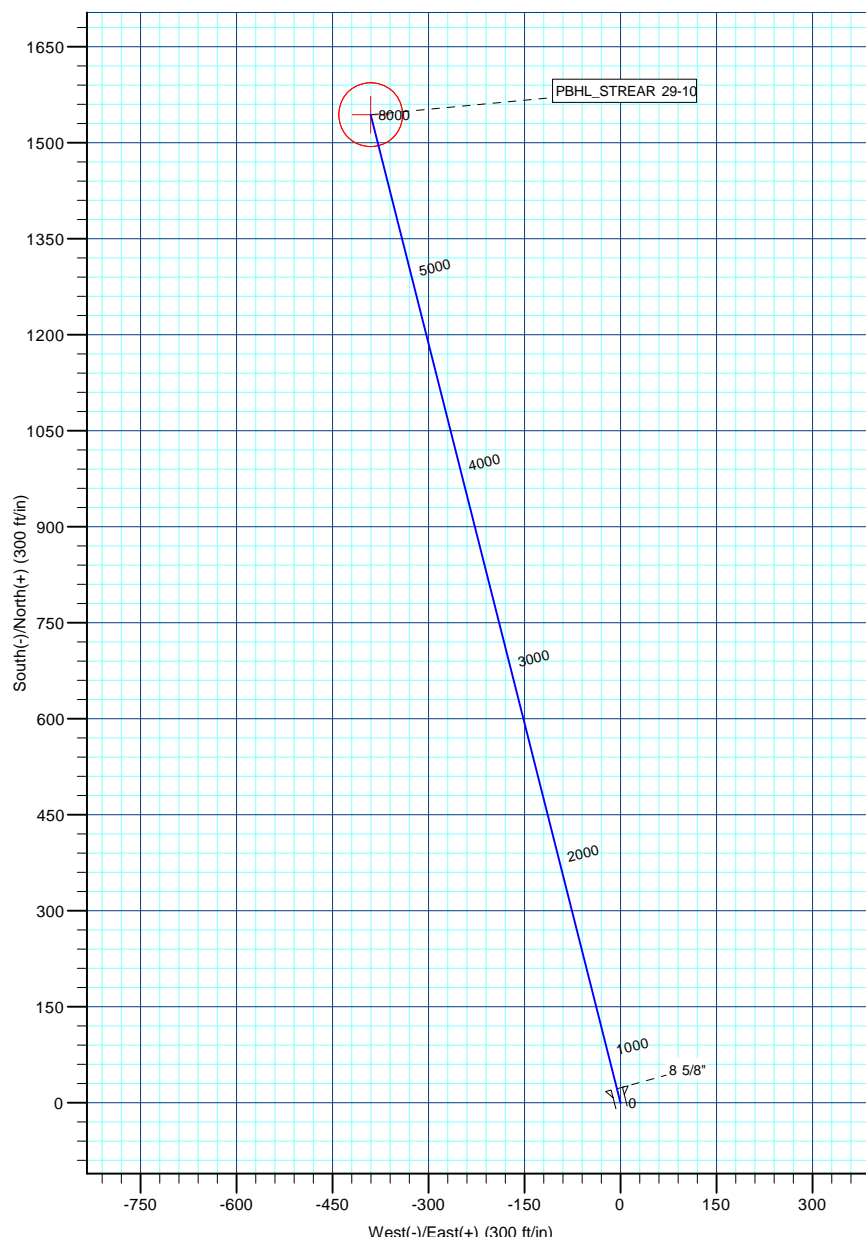
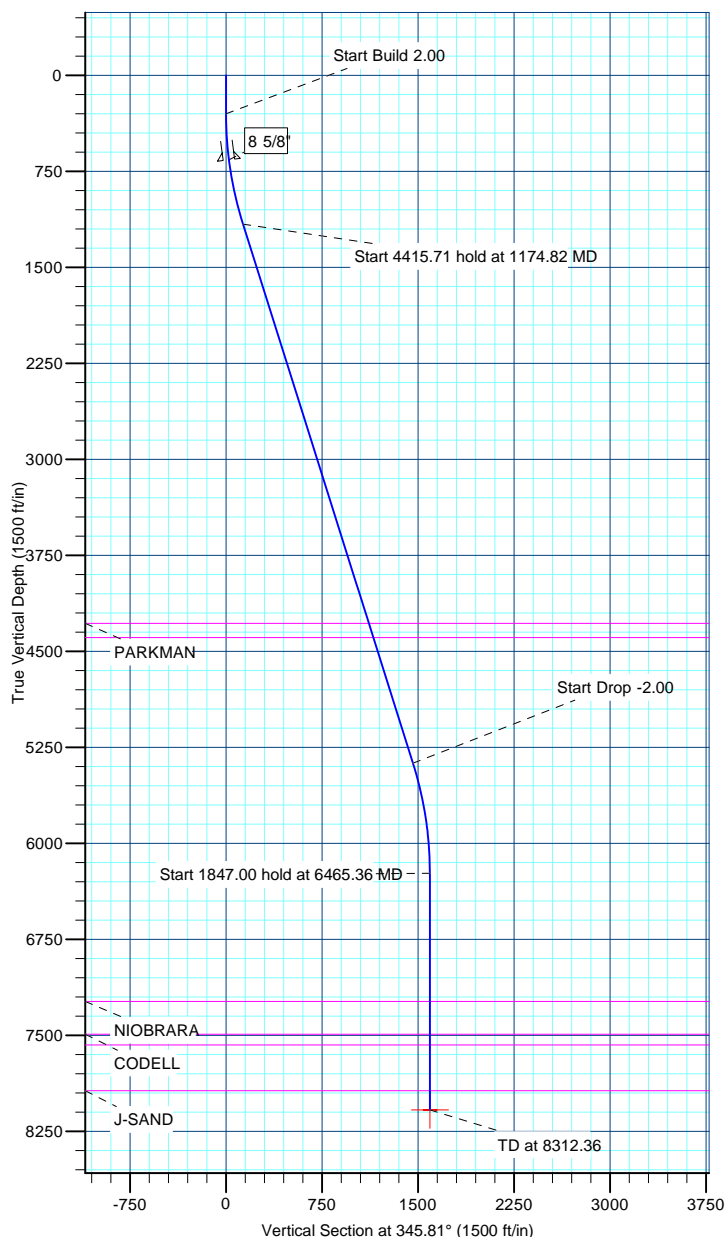
TVD	MD	Name	Size
660.00	660.95	8 5/8"	8.625

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_STREAR 29-10	8081.00	1544.06	-390.37	1301646.18	3172961.31	40° 9' 35.125 N	104° 52' 52.194 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
1174.82	17.50	345.81	1161.29	128.49	-32.49	2.00	345.81	132.54
5590.53	17.50	345.81	5372.71	1415.57	-357.88	0.00	0.00	1460.11
6465.36	0.00	0.00	6234.00	1544.06	-390.37	2.00	180.00	1592.64
8312.36	0.00	0.00	8081.00	1544.06	-390.37	0.00	0.00	1592.64



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_STREAR 18-10 PAD

STREAR 29-10

OH

Plan: STREAR 29-10(wp01)

Standard Planning Report

16 March, 2011

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 29-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Site:	WELD_STREAR 18-10 PAD	North Reference:	Grid
Well:	STREAR 29-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 29-10(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 18-10 PAD, SECTION 10 T2N R67W			
Site Position:		Northing:	1,300,062.07 usft	Latitude: 40° 9' 19.444 N
From:	Lat/Long	Easting:	3,173,351.96 usft	Longitude: 104° 52' 47.305 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.40 °

Well	STREAR 29-10			
Well Position	+N/-S	40.06 ft	Northing:	1,300,102.12 usft
	+E/-W	-0.28 ft	Easting:	3,173,351.68 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 40° 9' 19.839 N
				Longitude: 104° 52' 47.305 W
				Ground Level: 4,942.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/16/2011	8.94	66.84	53,016

Design	STREAR 29-10(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	345.81

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	
1,174.82	17.50	345.81	1,161.29	128.49	-32.49	2.00	2.00	0.00	345.81	
5,590.53	17.50	345.81	5,372.71	1,415.57	-357.88	0.00	0.00	0.00	0.00	
6,465.36	0.00	0.00	6,234.00	1,544.06	-390.37	2.00	-2.00	0.00	180.00	
8,312.36	0.00	0.00	8,081.00	1,544.06	-390.37	0.00	0.00	0.00	0.00	PBHL_STREAR 29-10

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 29-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Site:	WELD_STREAR 18-10 PAD	North Reference:	Grid
Well:	STREAR 29-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 29-10(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	345.81	399.98	1.69	-0.43	1.75	2.00	2.00	0.00
500.00	4.00	345.81	499.84	6.77	-1.71	6.98	2.00	2.00	0.00
600.00	6.00	345.81	599.45	15.21	-3.85	15.69	2.00	2.00	0.00
660.95	7.22	345.81	660.00	22.02	-5.57	22.71	2.00	2.00	0.00
8 5/8"									
700.00	8.00	345.81	698.70	27.03	-6.83	27.88	2.00	2.00	0.00
800.00	10.00	345.81	797.47	42.19	-10.67	43.52	2.00	2.00	0.00
900.00	12.00	345.81	895.62	60.69	-15.34	62.60	2.00	2.00	0.00
1,000.00	14.00	345.81	993.06	82.50	-20.86	85.10	2.00	2.00	0.00
1,100.00	16.00	345.81	1,089.64	107.59	-27.20	110.98	2.00	2.00	0.00
1,174.82	17.50	345.81	1,161.29	128.49	-32.49	132.54	2.00	2.00	0.00
Start 4415.71 hold at 1174.82 MD									
1,200.00	17.50	345.81	1,185.30	135.83	-34.34	140.11	0.00	0.00	0.00
1,300.00	17.50	345.81	1,280.68	164.98	-41.71	170.17	0.00	0.00	0.00
1,400.00	17.50	345.81	1,376.05	194.13	-49.08	200.24	0.00	0.00	0.00
1,500.00	17.50	345.81	1,471.42	223.28	-56.45	230.30	0.00	0.00	0.00
1,600.00	17.50	345.81	1,566.80	252.42	-63.82	260.37	0.00	0.00	0.00
1,700.00	17.50	345.81	1,662.17	281.57	-71.19	290.43	0.00	0.00	0.00
1,800.00	17.50	345.81	1,757.54	310.72	-78.56	320.50	0.00	0.00	0.00
1,900.00	17.50	345.81	1,852.92	339.87	-85.92	350.56	0.00	0.00	0.00
2,000.00	17.50	345.81	1,948.29	369.01	-93.29	380.62	0.00	0.00	0.00
2,100.00	17.50	345.81	2,043.66	398.16	-100.66	410.69	0.00	0.00	0.00
2,200.00	17.50	345.81	2,139.04	427.31	-108.03	440.75	0.00	0.00	0.00
2,300.00	17.50	345.81	2,234.41	456.46	-115.40	470.82	0.00	0.00	0.00
2,400.00	17.50	345.81	2,329.78	485.60	-122.77	500.88	0.00	0.00	0.00
2,500.00	17.50	345.81	2,425.16	514.75	-130.14	530.95	0.00	0.00	0.00
2,600.00	17.50	345.81	2,520.53	543.90	-137.51	561.01	0.00	0.00	0.00
2,700.00	17.50	345.81	2,615.91	573.05	-144.88	591.08	0.00	0.00	0.00
2,800.00	17.50	345.81	2,711.28	602.19	-152.25	621.14	0.00	0.00	0.00
2,900.00	17.50	345.81	2,806.65	631.34	-159.61	651.21	0.00	0.00	0.00
3,000.00	17.50	345.81	2,902.03	660.49	-166.98	681.27	0.00	0.00	0.00
3,100.00	17.50	345.81	2,997.40	689.64	-174.35	711.34	0.00	0.00	0.00
3,200.00	17.50	345.81	3,092.77	718.78	-181.72	741.40	0.00	0.00	0.00
3,300.00	17.50	345.81	3,188.15	747.93	-189.09	771.47	0.00	0.00	0.00
3,400.00	17.50	345.81	3,283.52	777.08	-196.46	801.53	0.00	0.00	0.00
3,500.00	17.50	345.81	3,378.89	806.23	-203.83	831.59	0.00	0.00	0.00
3,600.00	17.50	345.81	3,474.27	835.38	-211.20	861.66	0.00	0.00	0.00
3,700.00	17.50	345.81	3,569.64	864.52	-218.57	891.72	0.00	0.00	0.00
3,800.00	17.50	345.81	3,665.01	893.67	-225.94	921.79	0.00	0.00	0.00
3,900.00	17.50	345.81	3,760.39	922.82	-233.30	951.85	0.00	0.00	0.00
4,000.00	17.50	345.81	3,855.76	951.97	-240.67	981.92	0.00	0.00	0.00
4,100.00	17.50	345.81	3,951.14	981.11	-248.04	1,011.98	0.00	0.00	0.00
4,200.00	17.50	345.81	4,046.51	1,010.26	-255.41	1,042.05	0.00	0.00	0.00
4,300.00	17.50	345.81	4,141.88	1,039.41	-262.78	1,072.11	0.00	0.00	0.00
4,400.00	17.50	345.81	4,237.26	1,068.56	-270.15	1,102.18	0.00	0.00	0.00
4,445.87	17.50	345.81	4,281.00	1,081.92	-273.53	1,115.97	0.00	0.00	0.00
PARKMAN									
4,500.00	17.50	345.81	4,332.63	1,097.70	-277.52	1,132.24	0.00	0.00	0.00
4,561.20	17.50	345.81	4,391.00	1,115.54	-282.03	1,150.64	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Site:	WELD_STREAR 18-10 PAD	North Reference:	Grid
Well:	STREAR 29-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 29-10(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)
SUSSEX									
4,600.00	17.50	345.81	4,428.00	1,126.85	-284.89	1,162.31	0.00	0.00	0.00
4,700.00	17.50	345.81	4,523.38	1,156.00	-292.26	1,192.37	0.00	0.00	0.00
4,800.00	17.50	345.81	4,618.75	1,185.15	-299.63	1,222.43	0.00	0.00	0.00
4,900.00	17.50	345.81	4,714.12	1,214.29	-307.00	1,252.50	0.00	0.00	0.00
5,000.00	17.50	345.81	4,809.50	1,243.44	-314.36	1,282.56	0.00	0.00	0.00
5,100.00	17.50	345.81	4,904.87	1,272.59	-321.73	1,312.63	0.00	0.00	0.00
5,200.00	17.50	345.81	5,000.24	1,301.74	-329.10	1,342.69	0.00	0.00	0.00
5,300.00	17.50	345.81	5,095.62	1,330.88	-336.47	1,372.76	0.00	0.00	0.00
5,400.00	17.50	345.81	5,190.99	1,360.03	-343.84	1,402.82	0.00	0.00	0.00
5,500.00	17.50	345.81	5,286.37	1,389.18	-351.21	1,432.89	0.00	0.00	0.00
5,590.53	17.50	345.81	5,372.71	1,415.57	-357.88	1,460.11	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	17.31	345.81	5,381.74	1,418.31	-358.57	1,462.94	2.00	-2.00	0.00
5,700.00	15.31	345.81	5,477.72	1,445.53	-365.46	1,491.01	2.00	-2.00	0.00
5,800.00	13.31	345.81	5,574.61	1,469.49	-371.51	1,515.73	2.00	-2.00	0.00
5,900.00	11.31	345.81	5,672.31	1,490.15	-376.74	1,537.04	2.00	-2.00	0.00
6,000.00	9.31	345.81	5,770.69	1,507.50	-381.12	1,554.93	2.00	-2.00	0.00
6,100.00	7.31	345.81	5,869.63	1,521.51	-384.66	1,569.38	2.00	-2.00	0.00
6,200.00	5.31	345.81	5,969.02	1,532.16	-387.36	1,580.36	2.00	-2.00	0.00
6,300.00	3.31	345.81	6,068.74	1,539.44	-389.20	1,587.87	2.00	-2.00	0.00
6,400.00	1.31	345.81	6,168.65	1,543.34	-390.18	1,591.90	2.00	-2.00	0.00
6,465.36	0.00	0.00	6,234.00	1,544.06	-390.37	1,592.64	2.00	-2.00	0.00
Start 1847.00 hold at 6465.36 MD									
6,500.00	0.00	0.00	6,268.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
6,600.00	0.00	0.00	6,368.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
6,700.00	0.00	0.00	6,468.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
6,800.00	0.00	0.00	6,568.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
6,900.00	0.00	0.00	6,668.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,000.00	0.00	0.00	6,768.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,100.00	0.00	0.00	6,868.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,200.00	0.00	0.00	6,968.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,300.00	0.00	0.00	7,068.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,400.00	0.00	0.00	7,168.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,465.36	0.00	0.00	7,234.00	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
NIOBRARA									
7,500.00	0.00	0.00	7,268.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,600.00	0.00	0.00	7,368.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,700.00	0.00	0.00	7,468.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,722.36	0.00	0.00	7,491.00	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
CODELL									
7,800.00	0.00	0.00	7,568.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
7,805.36	0.00	0.00	7,574.00	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
GREENHORN									
7,900.00	0.00	0.00	7,668.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
8,000.00	0.00	0.00	7,768.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
8,100.00	0.00	0.00	7,868.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
8,162.36	0.00	0.00	7,931.00	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
J-SAND									
8,200.00	0.00	0.00	7,968.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
8,300.00	0.00	0.00	8,068.64	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
8,312.36	0.00	0.00	8,081.00	1,544.06	-390.37	1,592.64	0.00	0.00	0.00
PBHL_STREAR 29-10									

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Site:	WELD_STREAR 18-10 PAD	North Reference:	Grid
Well:	STREAR 29-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 29-10(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)

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 29-10	0.00	0.00	8,081.00	1,544.06	-390.37	1,301,646.18	3,172,961.31	40° 9' 35.125 N	104° 52' 52.194 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 (°)	
4,445.87	4,281.00	PARKMAN				
4,561.20	4,391.00	SUSSEX				
7,465.36	7,234.00	NIOBRARA				
7,722.36	7,491.00	CODELL				
7,805.36	7,574.00	GREENHORN				
8,162.36	7,931.00	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
1,174.82	1,161.29	128.49	-32.49	Start 4415.71 hold at 1174.82 MD
5,590.53	5,372.71	1,415.57	-357.88	Start Drop -2.00
6,465.36	6,234.00	1,544.06	-390.37	Start 1847.00 hold at 6465.36 MD
8,312.36	8,081.00	1,544.06	-390.37	TD at 8312.36