

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_Hidden Creek 11-29 PAD**

**Hidden Creek 23-29**

**Hidden Creek 23-29**

**Plan: Hidden Creek 23-29 (wp01)**

## **Standard Planning Report**

**28 July, 2011**



Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_Hidden Creek 11-29 PAD  
Well: Hidden Creek 23-29  
Wellbore: Hidden Creek 23-29  
Section:  
SHL:  
Design: Hidden Creek 23-29 (wp01)  
Latitude: 40.108225  
Longitude: -104.916544  
GL: 5029.00  
KB: 15' rkb + 5029' GL @ 5044.00ft

## FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
4180.00	4340.42	PK Depth
4573.00	4733.45	SX Depth
7338.00	7498.45	NIO Depth
7644.00	7804.45	CD Depth
7730.00	7890.45	GH Depth
8063.00	8223.45	J Depth



Azimuths to True North  
Magnetic North: 8.90°

Magnetic Field  
Strength: 52947.1snT  
Dip Angle: 66.78°  
Date: 7/28/2011  
Model: IGRF2010

## WELL DETAILS: Hidden Creek 23-29

+N/-S	+E/-W	Northing	Ground Level: Easting	5029.00 Latitude	Longitude	Slot
0.00	0.00	1282807.49	3163196.72	40.108225	-104.916544	

## CASING DETAILS

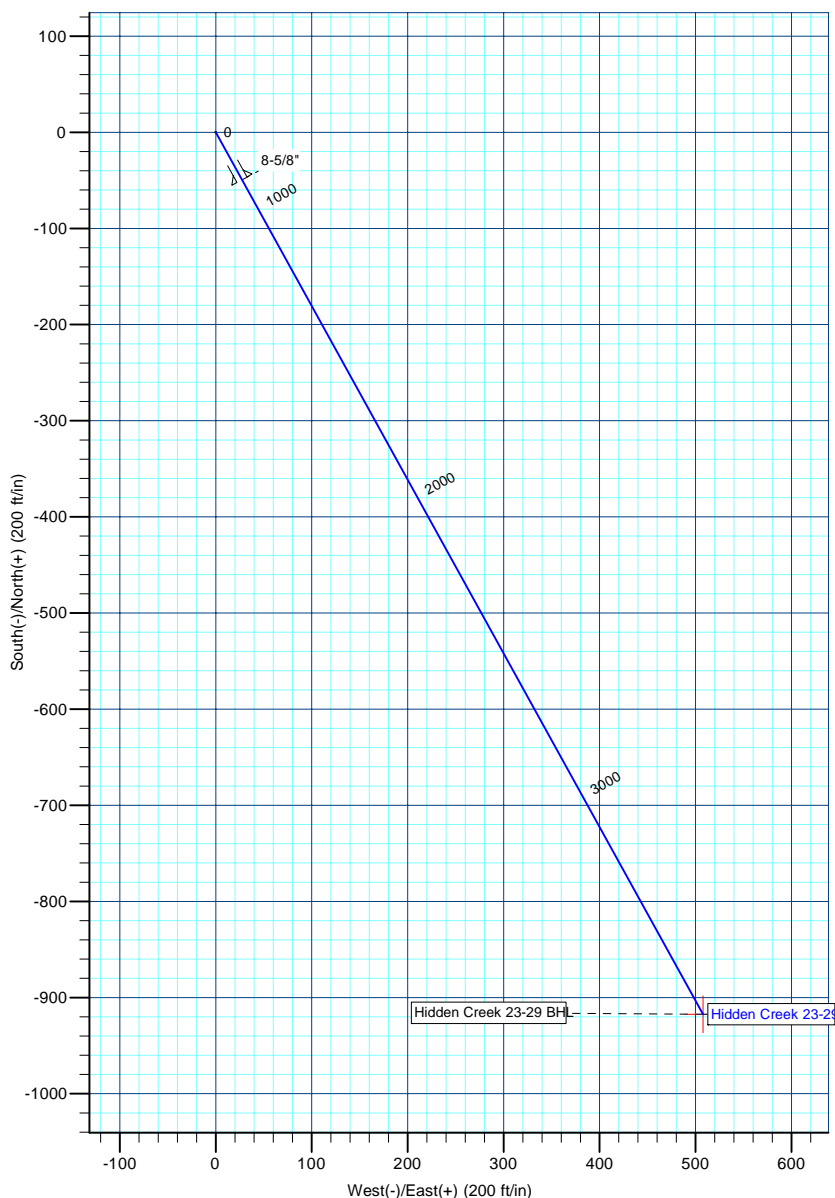
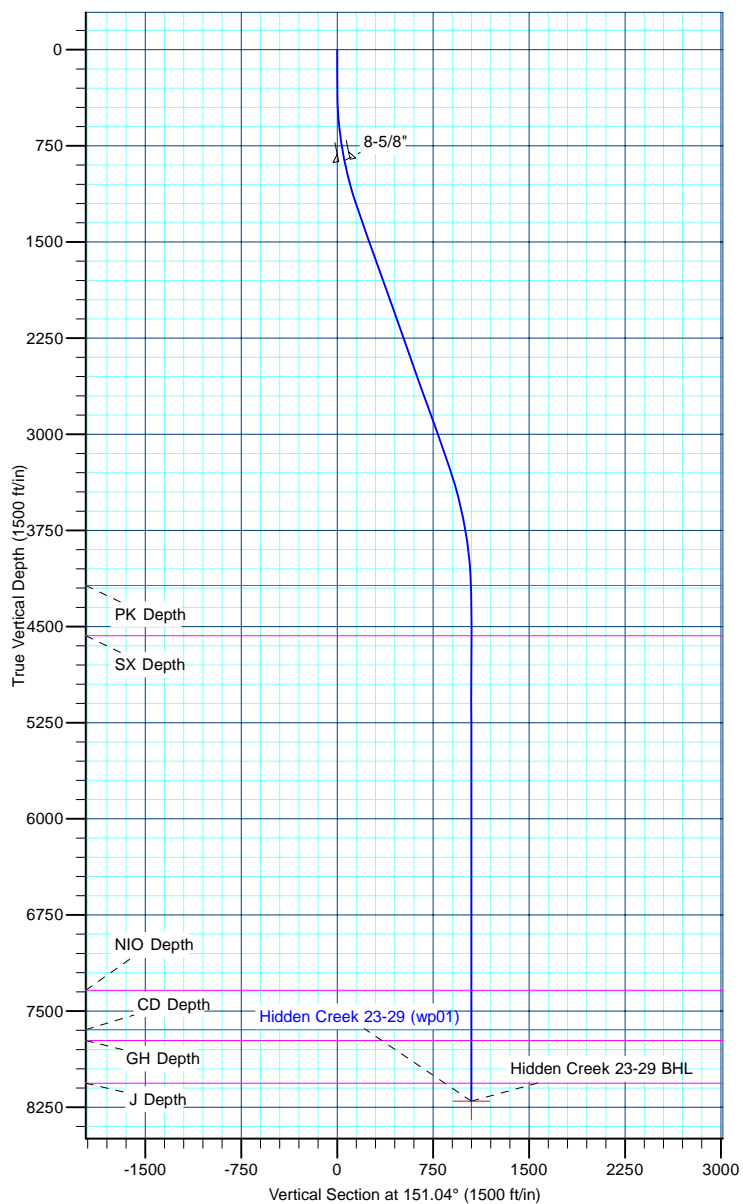
TVD	MD	Name	Size
865.00	868.73	8-5/8"	8-5/8

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Hidden Creek 23-29 BHL	8203.00	-917.23	507.69	1281893.61	3163710.43	40.105707	-104.914729	

## 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
1280.70	19.61	151.04	1261.66	-145.44	80.50	2.00	151.04	166.23
3342.65	19.61	151.04	3203.96	-751.02	415.69	0.00	0.00	858.39
4463.45	0.00	0.00	4303.00	-917.23	507.69	1.75	180.00	1048.37
8363.45	0.00	0.00	8203.00	-917.23	507.69	0.00	0.00	1048.37



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Hidden Creek 23-29
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' rkb + 5029' GL @ 5044.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' rkb + 5029' GL @ 5044.00ft
<b>Site:</b>	WELD_Hidden Creek 11-29 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Hidden Creek 23-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hidden Creek 23-29		
<b>Design:</b>	Hidden Creek 23-29 (wp01)		

<b>Project</b>	COLORADO NORTHERN ZONE - 83		
<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		

Site						WELD_Hidden Creek 11-29 PAD											
Site Position:						Northing:			1,282,817.70 ft			Latitude:			40.108253		
From:			Lat/Long			Easting:			3,163,196.65 ft			Longitude:			-104.916544		
Position Uncertainty:			0.00 ft			Slot Radius:			0 "			Grid Convergence:			0.38		

Well	Hidden Creek 23-29					
Well Position	+N-S	-10.21 ft	Northing:	1,282,807.48 ft	Latitude:	40.108225
	+E-W	0.00 ft	Easting:	3,163,196.72 ft	Longitude:	-104.916544
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,029.00 ft

<b>Wellbore</b>	Hidden Creek 23-29				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/28/2011	8.90	66.78	52,947

<b>Design</b>	Hidden Creek 23-29 (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	151.04

<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	
1,280.70	19.61	151.04	1,261.66	-145.44	80.50	2.00	2.00	0.00	151.04	
3,342.65	19.61	151.04	3,203.96	-751.02	415.69	0.00	0.00	0.00	0.00	
4,463.45	0.00	0.00	4,303.00	-917.24	507.69	1.75	-1.75	0.00	180.00	
8,363.45	0.00	0.00	8,203.00	-917.24	507.69	0.00	0.00	0.00	0.00	Hidden Creek 23-29

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Hidden Creek 23-29
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' rkb + 5029' GL @ 5044.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' rkb + 5029' GL @ 5044.00ft
<b>Site:</b>	WELD_Hidden Creek 11-29 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Hidden Creek 23-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hidden Creek 23-29		
<b>Design:</b>	Hidden Creek 23-29 (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	151.04	399.98	-1.53	0.85	1.75	2.00	2.00	0.00
500.00	4.00	151.04	499.84	-6.11	3.38	6.98	2.00	2.00	0.00
600.00	6.00	151.04	599.45	-13.73	7.60	15.69	2.00	2.00	0.00
700.00	8.00	151.04	698.70	-24.39	13.50	27.88	2.00	2.00	0.00
800.00	10.00	151.04	797.47	-38.08	21.08	43.52	2.00	2.00	0.00
859.25	11.19	151.04	855.71	-47.61	26.35	54.41	2.00	2.00	0.00
Start 4803.44 hold at 859.25 MD									
868.73	11.37	151.04	865.00	-49.23	27.25	56.27	2.00	2.00	0.00
8-5/8"									
900.00	12.00	151.04	895.62	-54.77	30.32	62.60	2.00	2.00	0.00
1,000.00	14.00	151.04	993.06	-74.45	41.21	85.10	2.00	2.00	0.00
1,100.00	16.00	151.04	1,089.64	-97.10	53.74	110.98	2.00	2.00	0.00
1,200.00	18.00	151.04	1,185.27	-122.67	67.90	140.21	2.00	2.00	0.00
1,280.70	19.61	151.04	1,261.66	-145.44	80.50	166.23	2.00	2.00	0.00
1,300.00	19.61	151.04	1,279.84	-151.10	83.64	172.71	0.00	0.00	0.00
1,400.00	19.61	151.04	1,374.04	-180.47	99.89	206.28	0.00	0.00	0.00
1,500.00	19.61	151.04	1,468.23	-209.84	116.15	239.84	0.00	0.00	0.00
1,600.00	19.61	151.04	1,562.43	-239.21	132.40	273.41	0.00	0.00	0.00
1,700.00	19.61	151.04	1,656.63	-268.58	148.66	306.98	0.00	0.00	0.00
1,800.00	19.61	151.04	1,750.82	-297.95	164.92	340.55	0.00	0.00	0.00
1,900.00	19.61	151.04	1,845.02	-327.32	181.17	374.12	0.00	0.00	0.00
2,000.00	19.61	151.04	1,939.22	-356.69	197.43	407.69	0.00	0.00	0.00
2,100.00	19.61	151.04	2,033.42	-386.06	213.69	441.25	0.00	0.00	0.00
2,200.00	19.61	151.04	2,127.61	-415.43	229.94	474.82	0.00	0.00	0.00
2,300.00	19.61	151.04	2,221.81	-444.80	246.20	508.39	0.00	0.00	0.00
2,400.00	19.61	151.04	2,316.01	-474.17	262.45	541.96	0.00	0.00	0.00
2,500.00	19.61	151.04	2,410.21	-503.54	278.71	575.53	0.00	0.00	0.00
2,600.00	19.61	151.04	2,504.40	-532.91	294.97	609.10	0.00	0.00	0.00
2,700.00	19.61	151.04	2,598.60	-562.28	311.22	642.66	0.00	0.00	0.00
2,800.00	19.61	151.04	2,692.80	-591.65	327.48	676.23	0.00	0.00	0.00
2,900.00	19.61	151.04	2,787.00	-621.02	343.73	709.80	0.00	0.00	0.00
3,000.00	19.61	151.04	2,881.19	-650.39	359.99	743.37	0.00	0.00	0.00
3,100.00	19.61	151.04	2,975.39	-679.76	376.25	776.94	0.00	0.00	0.00
3,200.00	19.61	151.04	3,069.59	-709.13	392.50	810.50	0.00	0.00	0.00
3,300.00	19.61	151.04	3,163.79	-738.50	408.76	844.07	0.00	0.00	0.00
3,342.65	19.61	151.04	3,203.96	-751.02	415.69	858.39	0.00	0.00	0.00
3,400.00	18.61	151.04	3,258.15	-767.45	424.78	877.17	1.75	-1.75	0.00
3,500.00	16.86	151.04	3,353.39	-794.10	439.54	907.63	1.75	-1.75	0.00
3,600.00	15.11	151.04	3,449.52	-818.20	452.87	935.17	1.75	-1.75	0.00
3,700.00	13.36	151.04	3,546.45	-839.71	464.78	959.76	1.75	-1.75	0.00
3,800.00	11.61	151.04	3,644.08	-858.62	475.25	981.37	1.75	-1.75	0.00
3,900.00	9.86	151.04	3,742.33	-874.92	484.27	1,000.00	1.75	-1.75	0.00
4,000.00	8.11	151.04	3,841.10	-888.58	491.83	1,015.62	1.75	-1.75	0.00
4,100.00	6.36	151.04	3,940.30	-899.60	497.93	1,028.21	1.75	-1.75	0.00
4,200.00	4.61	151.04	4,039.83	-907.97	502.56	1,037.77	1.75	-1.75	0.00
4,300.00	2.86	151.04	4,139.62	-913.67	505.72	1,044.29	1.75	-1.75	0.00
4,340.42	2.15	151.04	4,180.00	-915.21	506.57	1,046.05	1.75	-1.75	0.00
PK Depth									
4,400.00	1.11	151.04	4,239.55	-916.70	507.39	1,047.75	1.75	-1.75	0.00

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' rkb + 5029' GL @ 5044.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' rkb + 5029' GL @ 5044.00ft
<b>Site:</b>	WELD_Hidden Creek 11-29 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Hidden Creek 23-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hidden Creek 23-29		
<b>Design:</b>	Hidden Creek 23-29 (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)
4,463.45	0.00	0.00	4,303.00	-917.24	507.69	1,048.37	1.75	-1.75	0.00
4,500.00	0.00	0.00	4,339.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
4,600.00	0.00	0.00	4,439.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
4,700.00	0.00	0.00	4,539.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
4,733.45	0.00	0.00	4,573.00	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>SX Depth</b>									
4,800.00	0.00	0.00	4,639.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
4,900.00	0.00	0.00	4,739.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,000.00	0.00	0.00	4,839.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,100.00	0.00	0.00	4,939.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,200.00	0.00	0.00	5,039.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,300.00	0.00	0.00	5,139.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,400.00	0.00	0.00	5,239.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,500.00	0.00	0.00	5,339.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,600.00	0.00	0.00	5,439.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,662.69	0.00	0.00	5,502.24	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>Start Drop -1.75</b>									
5,700.00	0.00	0.00	5,539.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,800.00	0.00	0.00	5,639.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
5,900.00	0.00	0.00	5,739.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,000.00	0.00	0.00	5,839.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,100.00	0.00	0.00	5,939.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,200.00	0.00	0.00	6,039.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,300.00	0.00	0.00	6,139.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,301.83	0.00	0.00	6,141.38	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>Start 2000.00 hold at 6301.83 MD</b>									
6,400.00	0.00	0.00	6,239.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,500.00	0.00	0.00	6,339.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,600.00	0.00	0.00	6,439.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,700.00	0.00	0.00	6,539.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,800.00	0.00	0.00	6,639.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
6,900.00	0.00	0.00	6,739.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,000.00	0.00	0.00	6,839.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,100.00	0.00	0.00	6,939.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,200.00	0.00	0.00	7,039.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,300.00	0.00	0.00	7,139.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,400.00	0.00	0.00	7,239.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,498.45	0.00	0.00	7,338.00	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>NIO Depth</b>									
7,500.00	0.00	0.00	7,339.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,600.00	0.00	0.00	7,439.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,700.00	0.00	0.00	7,539.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,800.00	0.00	0.00	7,639.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
7,804.45	0.00	0.00	7,644.00	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>CD Depth</b>									
7,890.45	0.00	0.00	7,730.00	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>GH Depth</b>									
7,900.00	0.00	0.00	7,739.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
8,000.00	0.00	0.00	7,839.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
8,100.00	0.00	0.00	7,939.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
8,200.00	0.00	0.00	8,039.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
8,223.45	0.00	0.00	8,063.00	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>J Depth</b>									

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' rkb + 5029' GL @ 5044.00ft
<b>Site:</b>	WELD_Hidden Creek 11-29 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Hidden Creek 23-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hidden Creek 23-29		
<b>Design:</b>	Hidden Creek 23-29 (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)
8,300.00	0.00	0.00	8,139.55	-917.24	507.69	1,048.37	0.00	0.00	0.00
8,301.83	0.00	0.00	8,141.38	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>TD at 8301.83</b>									
8,363.45	0.00	0.00	8,203.00	-917.24	507.69	1,048.37	0.00	0.00	0.00
<b>Hidden Creek 23-29 BHL</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Hidden Creek 23-29 E	0.00	0.00	8,203.00	-917.24	507.69	1,281,893.61	3,163,710.43	40.105707	-104.914729
- plan hits target center									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
868.73	865.00	8-5/8"	8-5/8	11

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,340.42	4,180.00	PK Depth			
4,733.45	4,573.00	SX Depth			
7,498.45	7,338.00	NIO Depth			
7,804.45	7,644.00	CD Depth			
7,890.45	7,730.00	GH Depth			
8,223.45	8,063.00	J Depth			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
859.25	855.71	-47.61	26.35	Start 4803.44 hold at 859.25 MD
5,662.69	5,567.91	-862.83	477.57	Start Drop -1.75
6,301.83	6,203.00	-917.24	507.69	Start 2000.00 hold at 6301.83 MD
8,301.83	8,203.00	-917.24	507.69	TD at 8301.83