

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_BERGER PAD**

**Berger 5-2**

**Berger 5-2**

**Plan: Berger 5-2 (wp01)**

## **Standard Planning Report**

**06 October, 2011**

Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_BERGER PAD  
Well: Berger 5-2  
Wellbore: Berger 5-2  
Section:  
SHL:  
Design: Berger 5-2 (wp01)  
Latitude: 40.083737  
Longitude: -104.863805  
GL: 4959.01  
KB: rkb + gl @ 4974.00ft

## FORMATION TOP DETAILS

TVDPath	MDPath	PK Depth	Formation
4062.00	4202.28		
4522.00	4662.28	SX Depth	
7242.00	7382.28	NIO Depth	
7552.00	7692.28	CD Depth	
7640.00	7780.28	GH Depth	
7992.00	8132.28	J Depth	

## WELL DETAILS: Berger 5-2

+N/-S	+E/-W	Northing	Ground Level: Easting	4959.01 Latitude	Longitude	Slot
0.00	0.00	1273988.73	3178011.94	40.083737	-104.863805	

## CASING DETAILS

No casing data is available



Azimuths to True North  
Magnetic North: 8.85°

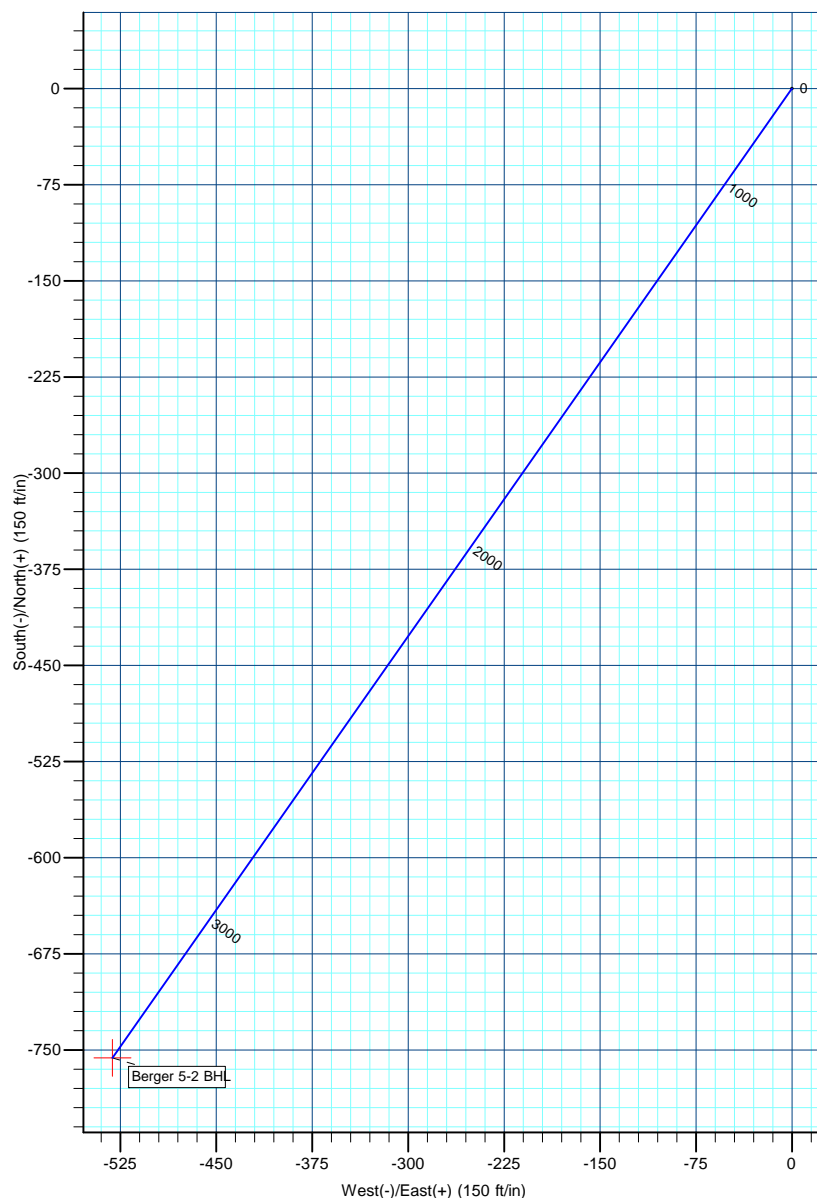
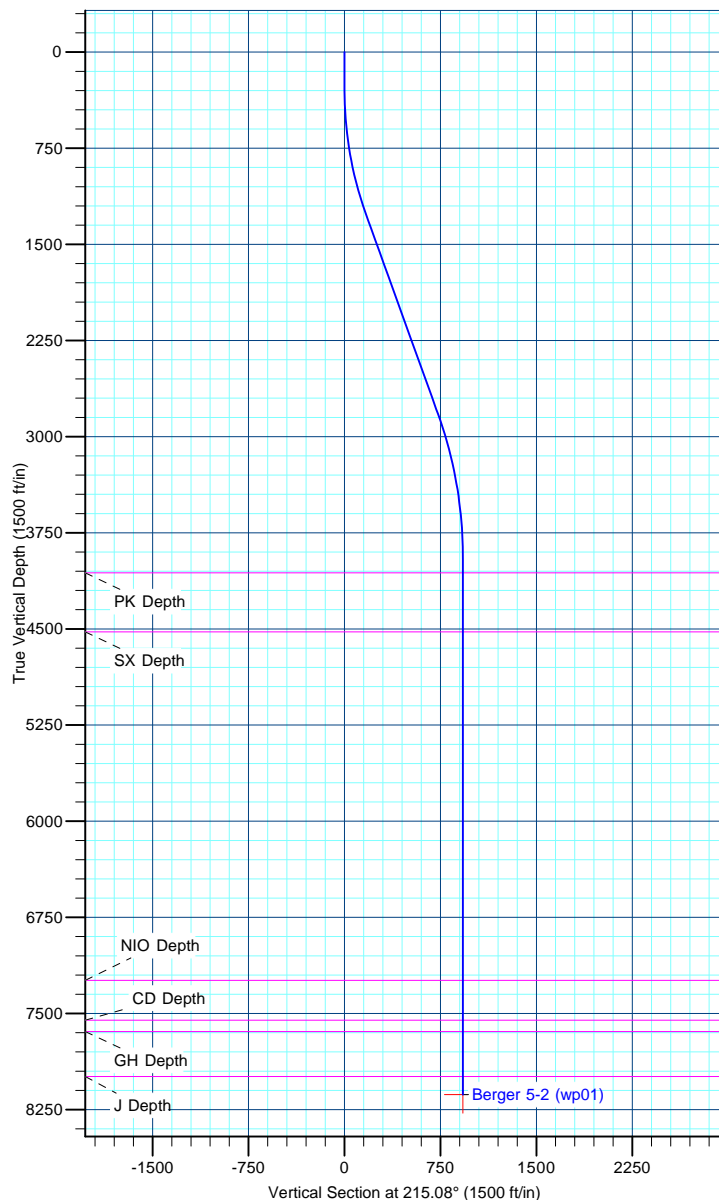
Magnetic Field  
Strength: 52920.4nT  
Dip Angle: 66.77°  
Date: 10/6/2011  
Model: IGRF2010

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Berger 5-2 BHL	8132.00	-756.22	-531.10	1273228.72	3177486.29	40.081661	-104.865703	

## 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
1293.62	19.87	215.08	1273.82	-139.60	-98.04	2.00	215.08	170.59
2936.71	19.87	215.08	2819.06	-596.67	-419.04	0.00	0.00	729.12
4072.28	0.00	0.00	3932.00	-756.22	-531.10	1.75	180.00	924.09
8272.28	0.00	0.00	8132.00	-756.22	-531.10	0.00	0.00	924.09



# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well Berger 5-2
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	rkb + gl @ 4974.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	rkb + gl @ 4974.00ft
<b>Site:</b>	WELD_BERGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	Berger 5-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Berger 5-2		
<b>Design:</b>	Berger 5-2 (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		

<b>Site</b>	WELD_BERGER PAD			
<b>Site Position:</b>		<b>Northing:</b>	1,274,067.38 usft	<b>Latitude:</b> 40.083952
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,178,056.15 usft	<b>Longitude:</b> -104.863645
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.41 °

<b>Well</b>	Berger 5-2			
<b>Well Position</b>	<b>+N/-S</b>	-78.33 ft	<b>Northing:</b>	1,273,988.73 usft
	<b>+E/-W</b>	-44.77 ft	<b>Easting:</b>	3,178,011.94 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 40.083737
				<b>Longitude:</b> -104.863805
				<b>Ground Level:</b> 4,959.01 ft

<b>Wellbore</b>	Berger 5-2				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/6/2011	8.85	66.77	52,920

<b>Design</b>	Berger 5-2 (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	215.08

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	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	
1,293.62	19.87	215.08	1,273.82	-139.60	-98.04	2.00	2.00	0.00	215.08	
2,936.71	19.87	215.08	2,819.06	-596.67	-419.04	0.00	0.00	0.00	0.00	
4,072.28	0.00	0.00	3,932.00	-756.22	-531.10	1.75	-1.75	0.00	180.00	
8,272.28	0.00	0.00	8,132.00	-756.22	-531.10	0.00	0.00	0.00	0.00	Berger 5-2 BHL

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## Planning Report

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	rkb + gl @ 4974.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	rkb + gl @ 4974.00ft
<b>Site:</b>	WELD_BERGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	Berger 5-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Berger 5-2		
<b>Design:</b>	Berger 5-2 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
400.00	2.00	215.08	399.98	-1.43	-1.00	1.75	2.00	2.00	0.00
500.00	4.00	215.08	499.84	-5.71	-4.01	6.98	2.00	2.00	0.00
600.00	6.00	215.08	599.45	-12.84	-9.02	15.69	2.00	2.00	0.00
700.00	8.00	215.08	698.70	-22.82	-16.02	27.88	2.00	2.00	0.00
800.00	10.00	215.08	797.47	-35.62	-25.01	43.52	2.00	2.00	0.00
900.00	12.00	215.08	895.62	-51.23	-35.98	62.60	2.00	2.00	0.00
1,000.00	14.00	215.08	993.06	-69.64	-48.91	85.10	2.00	2.00	0.00
1,100.00	16.00	215.08	1,089.64	-90.82	-63.78	110.98	2.00	2.00	0.00
1,200.00	18.00	215.08	1,185.27	-114.74	-80.58	140.21	2.00	2.00	0.00
1,293.62	19.87	215.08	1,273.82	-139.60	-98.04	170.59	2.00	2.00	0.00
1,300.00	19.87	215.08	1,279.82	-141.38	-99.29	172.76	0.00	0.00	0.00
1,400.00	19.87	215.08	1,373.86	-169.20	-118.83	206.75	0.00	0.00	0.00
1,500.00	19.87	215.08	1,467.91	-197.01	-138.36	240.75	0.00	0.00	0.00
1,600.00	19.87	215.08	1,561.95	-224.83	-157.90	274.74	0.00	0.00	0.00
1,700.00	19.87	215.08	1,656.00	-252.65	-177.44	308.73	0.00	0.00	0.00
1,800.00	19.87	215.08	1,750.04	-280.47	-196.97	342.72	0.00	0.00	0.00
1,900.00	19.87	215.08	1,844.09	-308.29	-216.51	376.72	0.00	0.00	0.00
2,000.00	19.87	215.08	1,938.13	-336.10	-236.05	410.71	0.00	0.00	0.00
2,100.00	19.87	215.08	2,032.18	-363.92	-255.58	444.70	0.00	0.00	0.00
2,200.00	19.87	215.08	2,126.22	-391.74	-275.12	478.70	0.00	0.00	0.00
2,300.00	19.87	215.08	2,220.27	-419.56	-294.66	512.69	0.00	0.00	0.00
2,400.00	19.87	215.08	2,314.31	-447.37	-314.19	546.68	0.00	0.00	0.00
2,500.00	19.87	215.08	2,408.36	-475.19	-333.73	580.67	0.00	0.00	0.00
2,600.00	19.87	215.08	2,502.41	-503.01	-353.26	614.67	0.00	0.00	0.00
2,700.00	19.87	215.08	2,596.45	-530.83	-372.80	648.66	0.00	0.00	0.00
2,800.00	19.87	215.08	2,690.50	-558.65	-392.34	682.65	0.00	0.00	0.00
2,900.00	19.87	215.08	2,784.54	-586.46	-411.87	716.64	0.00	0.00	0.00
2,936.71	19.87	215.08	2,819.06	-596.67	-419.04	729.12	0.00	0.00	0.00
3,000.00	18.76	215.08	2,878.79	-613.81	-431.08	750.06	1.75	-1.75	0.00
3,100.00	17.01	215.08	2,973.95	-638.95	-448.73	780.78	1.75	-1.75	0.00
3,200.00	15.26	215.08	3,070.01	-661.69	-464.71	808.58	1.75	-1.75	0.00
3,300.00	13.51	215.08	3,166.87	-682.03	-478.99	833.43	1.75	-1.75	0.00
3,400.00	11.76	215.08	3,264.44	-699.94	-491.57	855.31	1.75	-1.75	0.00
3,500.00	10.01	215.08	3,362.63	-715.40	-502.42	874.20	1.75	-1.75	0.00
3,600.00	8.26	215.08	3,461.36	-728.40	-511.55	890.08	1.75	-1.75	0.00
3,700.00	6.51	215.08	3,560.53	-738.92	-518.94	902.94	1.75	-1.75	0.00
3,800.00	4.76	215.08	3,660.04	-746.96	-524.59	912.77	1.75	-1.75	0.00
3,900.00	3.01	215.08	3,759.80	-752.51	-528.49	919.55	1.75	-1.75	0.00
4,000.00	1.26	215.08	3,859.73	-755.57	-530.64	923.29	1.75	-1.75	0.00
4,072.28	0.00	0.00	3,932.00	-756.22	-531.10	924.09	1.75	-1.75	0.00
4,100.00	0.00	0.00	3,959.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,200.00	0.00	0.00	4,059.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,202.28	0.00	0.00	4,062.00	-756.22	-531.10	924.09	0.00	0.00	0.00
PK Depth									
4,300.00	0.00	0.00	4,159.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,400.00	0.00	0.00	4,259.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,500.00	0.00	0.00	4,359.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,600.00	0.00	0.00	4,459.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,662.28	0.00	0.00	4,522.00	-756.22	-531.10	924.09	0.00	0.00	0.00
SX Depth									

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	rkb + gl @ 4974.00ft
<b>Site:</b>	WELD_BERGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	Berger 5-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Berger 5-2		
<b>Design:</b>	Berger 5-2 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	0.00	0.00	4,559.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,800.00	0.00	0.00	4,659.72	-756.22	-531.10	924.09	0.00	0.00	0.00
4,900.00	0.00	0.00	4,759.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,000.00	0.00	0.00	4,859.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,100.00	0.00	0.00	4,959.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,200.00	0.00	0.00	5,059.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,300.00	0.00	0.00	5,159.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,400.00	0.00	0.00	5,259.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,500.00	0.00	0.00	5,359.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,600.00	0.00	0.00	5,459.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,700.00	0.00	0.00	5,559.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,800.00	0.00	0.00	5,659.72	-756.22	-531.10	924.09	0.00	0.00	0.00
5,900.00	0.00	0.00	5,759.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,000.00	0.00	0.00	5,859.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,100.00	0.00	0.00	5,959.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,200.00	0.00	0.00	6,059.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,300.00	0.00	0.00	6,159.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,400.00	0.00	0.00	6,259.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,500.00	0.00	0.00	6,359.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,600.00	0.00	0.00	6,459.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,700.00	0.00	0.00	6,559.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,800.00	0.00	0.00	6,659.72	-756.22	-531.10	924.09	0.00	0.00	0.00
6,900.00	0.00	0.00	6,759.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,000.00	0.00	0.00	6,859.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,100.00	0.00	0.00	6,959.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,200.00	0.00	0.00	7,059.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,300.00	0.00	0.00	7,159.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,382.28	0.00	0.00	7,242.00	-756.22	-531.10	924.09	0.00	0.00	0.00
NIO Depth									
7,400.00	0.00	0.00	7,259.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,500.00	0.00	0.00	7,359.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,600.00	0.00	0.00	7,459.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,692.28	0.00	0.00	7,552.00	-756.22	-531.10	924.09	0.00	0.00	0.00
CD Depth									
7,700.00	0.00	0.00	7,559.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,780.28	0.00	0.00	7,640.00	-756.22	-531.10	924.09	0.00	0.00	0.00
GH Depth									
7,800.00	0.00	0.00	7,659.72	-756.22	-531.10	924.09	0.00	0.00	0.00
7,900.00	0.00	0.00	7,759.72	-756.22	-531.10	924.09	0.00	0.00	0.00
8,000.00	0.00	0.00	7,859.72	-756.22	-531.10	924.09	0.00	0.00	0.00
8,100.00	0.00	0.00	7,959.72	-756.22	-531.10	924.09	0.00	0.00	0.00
8,132.28	0.00	0.00	7,992.00	-756.22	-531.10	924.09	0.00	0.00	0.00
J Depth									
8,200.00	0.00	0.00	8,059.72	-756.22	-531.10	924.09	0.00	0.00	0.00
8,272.28	0.00	0.00	8,132.00	-756.22	-531.10	924.09	0.00	0.00	0.00
Berger 5-2 BHL									

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## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well Berger 5-2
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	rkb + gl @ 4974.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	rkb + gl @ 4974.00ft
<b>Site:</b>	WELD_BERGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	Berger 5-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Berger 5-2		
<b>Design:</b>	Berger 5-2 (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Berger 5-2 BHL	0.00	0.00	8,132.00	-756.22	-531.10	1,273,228.71	3,177,486.29	40.081661	-104.865703
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
4,202.28	4,062.00	PK Depth				
4,662.28	4,522.00	SX Depth				
7,382.28	7,242.00	NIO Depth				
7,692.28	7,552.00	CD Depth				
7,780.28	7,640.00	GH Depth				
8,132.28	7,992.00	J Depth				