

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_BERGER PAD

BERGER 31-2

BERGER 31-2

Plan: BERGER 31-2 (wp01)

Standard Planning Report

06 October, 2011

Project: COLORADO NORTHERN ZONE - 83
Site: WELD_BERGER PAD
Well: BERGER 31-2
Wellbore: BERGER 31-2
Section:
SHL:
Design: BERGER 31-2 (wp01)
Latitude: 40.083701
Longitude: -104.863832
GL: 4959.01
KB: 15' rkb + 4959' gl @ 4974.00ft

FORMATION TOP DETAILS			
TVDPath	MDPath	PK Depth	Formation
4062.00	4216.54		
4522.00	4676.54	SX Depth	
7242.00	7396.54	NIO Depth	
7552.00	7706.54	CD Depth	
7640.00	7794.54	GH Depth	
7992.00	8146.54	J Depth	

WELL DETAILS: BERGER 31-2						
+N/-S	+E/-W	Northing	Ground Level: Easting	4959.01 Latitude	Longitude	Slot
0.00	0.00	1273975.56	3178004.48	40.083701	-104.863832	

CASING DETAILS
No casing data is available

T

M

A

Azimuths to True North

Magnetic North: 8.85°

Magnetic Field

Strength: 52920.4snT

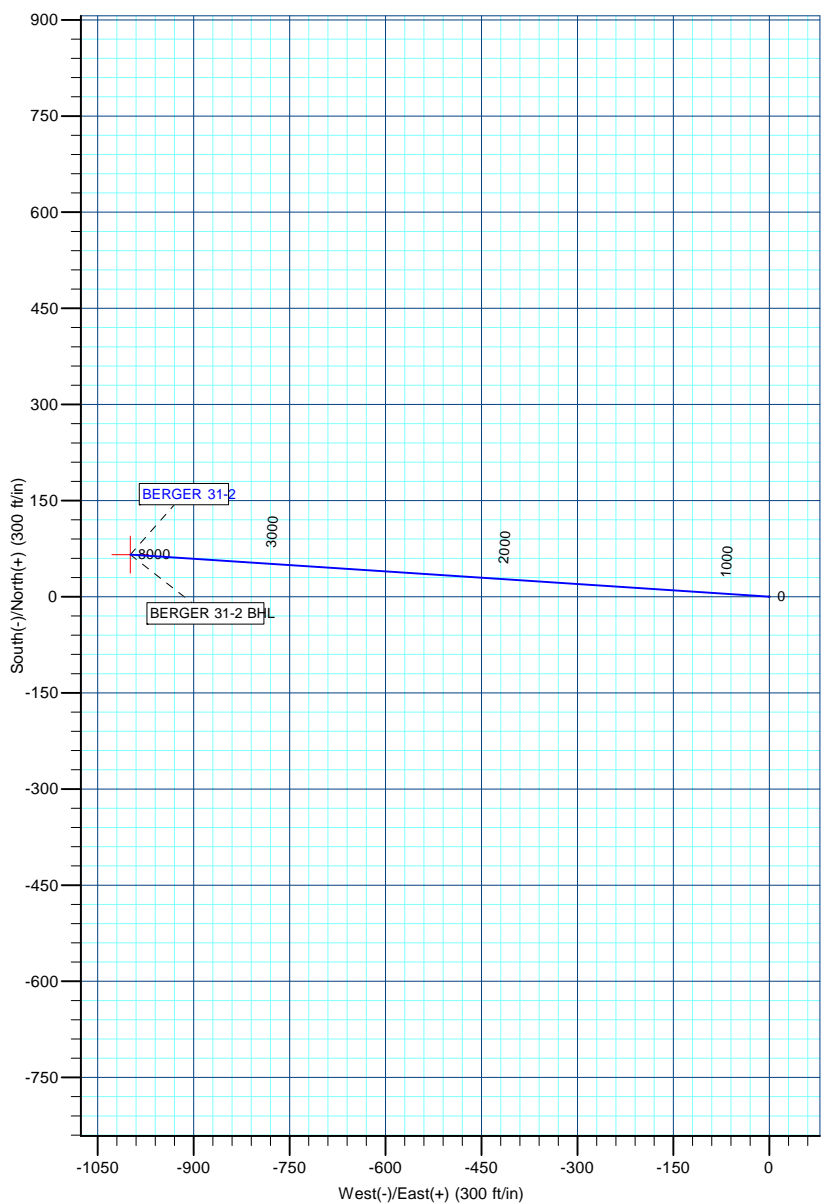
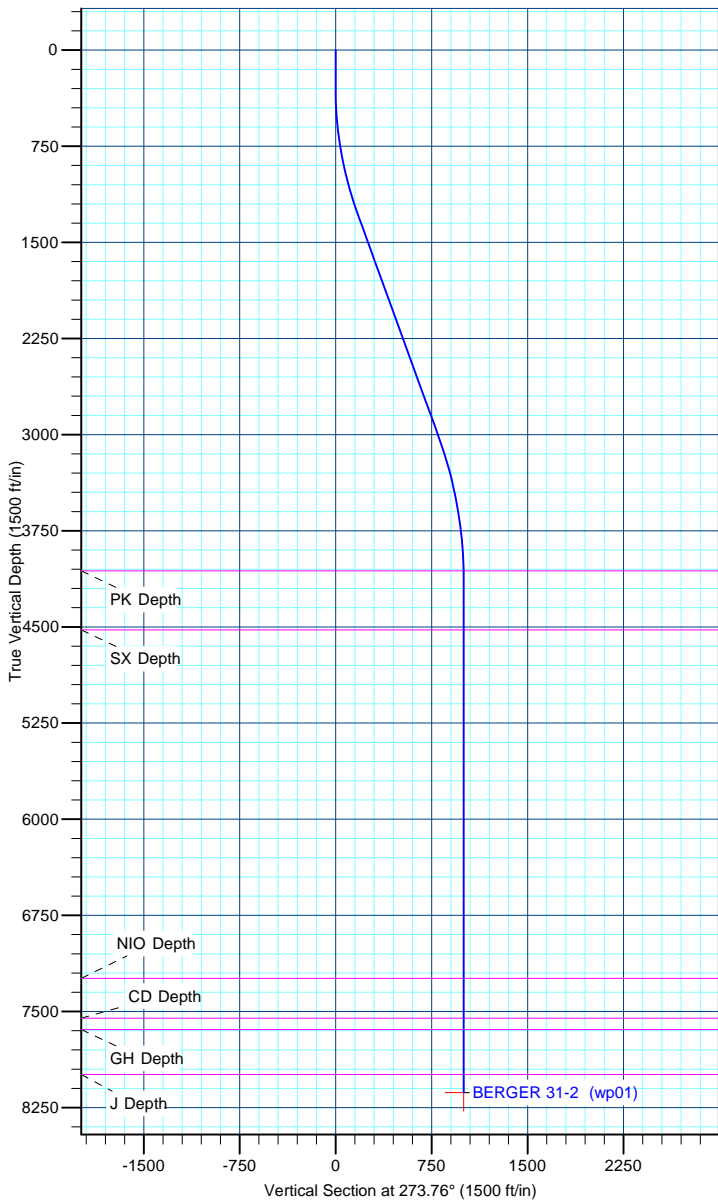
Dip Angle: 66.77°

Date: 10/6/2011

Model: IGRF2010

DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
BERGER 31-2 BHL	8132.00	65.60	-998.92	1274033.99	3177005.12	40.083881	-104.867402	

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
1300.46	20.01	273.76	1280.25	11.33	-172.55	2.00	273.76	172.93
3143.16	20.01	273.76	3011.71	52.65	-801.72	0.00	0.00	803.44
4286.54	0.00	0.00	4132.00	65.60	-998.92	1.75	180.00	1001.07
8286.54	0.00	0.00	8132.00	65.60	-998.92	0.00	0.00	1001.07



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BERGER 31-2
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' rkb + 4959' gl @ 4974.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4959' gl @ 4974.00ft
Site:	WELD_BERGER PAD	North Reference:	True
Well:	BERGER 31-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	BERGER 31-2		
Design:	BERGER 31-2 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

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

Well	BERGER 31-2			
Well Position	+N/-S	-91.45 ft	Northing:	1,273,975.56 usft
	+E/-W	-52.32 ft	Easting:	3,178,004.48 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,959.01 ft

Wellbore	BERGER 31-2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/6/2011	8.85	66.77	52,920

Design	BERGER 31-2 (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	273.76

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
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	
1,300.46	20.01	273.76	1,280.25	11.33	-172.55	2.00	2.00	0.00	273.76	
3,143.16	20.01	273.76	3,011.71	52.65	-801.72	0.00	0.00	0.00	0.00	
4,286.54	0.00	0.00	4,132.00	65.60	-998.92	1.75	-1.75	0.00	180.00	
8,286.54	0.00	0.00	8,132.00	65.60	-998.92	0.00	0.00	0.00	0.00	BERGER 31-2 BHL

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' rkb + 4959' gl @ 4974.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4959' gl @ 4974.00ft
Site:	WELD_BERGER PAD	North Reference:	True
Well:	BERGER 31-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	BERGER 31-2		
Design:	BERGER 31-2 (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	273.76	399.98	0.11	-1.74	1.75	2.00	2.00	0.00
500.00	4.00	273.76	499.84	0.46	-6.96	6.98	2.00	2.00	0.00
600.00	6.00	273.76	599.45	1.03	-15.66	15.69	2.00	2.00	0.00
700.00	8.00	273.76	698.70	1.83	-27.82	27.88	2.00	2.00	0.00
800.00	10.00	273.76	797.47	2.85	-43.43	43.52	2.00	2.00	0.00
900.00	12.00	273.76	895.62	4.10	-62.47	62.60	2.00	2.00	0.00
1,000.00	14.00	273.76	993.06	5.58	-84.91	85.10	2.00	2.00	0.00
1,100.00	16.00	273.76	1,089.64	7.27	-110.74	110.98	2.00	2.00	0.00
1,200.00	18.00	273.76	1,185.27	9.19	-139.91	140.21	2.00	2.00	0.00
1,300.00	20.00	273.76	1,279.82	11.32	-172.40	172.77	2.00	2.00	0.00
1,300.46	20.01	273.76	1,280.25	11.33	-172.55	172.93	2.00	2.00	0.00
1,400.00	20.01	273.76	1,373.78	13.56	-206.54	206.98	0.00	0.00	0.00
1,500.00	20.01	273.76	1,467.74	15.81	-240.68	241.20	0.00	0.00	0.00
1,600.00	20.01	273.76	1,561.71	18.05	-274.83	275.42	0.00	0.00	0.00
1,700.00	20.01	273.76	1,655.67	20.29	-308.97	309.64	0.00	0.00	0.00
1,800.00	20.01	273.76	1,749.63	22.53	-343.11	343.85	0.00	0.00	0.00
1,900.00	20.01	273.76	1,843.60	24.78	-377.26	378.07	0.00	0.00	0.00
2,000.00	20.01	273.76	1,937.56	27.02	-411.40	412.29	0.00	0.00	0.00
2,100.00	20.01	273.76	2,031.53	29.26	-445.54	446.50	0.00	0.00	0.00
2,200.00	20.01	273.76	2,125.49	31.50	-479.69	480.72	0.00	0.00	0.00
2,300.00	20.01	273.76	2,219.45	33.75	-513.83	514.94	0.00	0.00	0.00
2,400.00	20.01	273.76	2,313.42	35.99	-547.98	549.16	0.00	0.00	0.00
2,500.00	20.01	273.76	2,407.38	38.23	-582.12	583.37	0.00	0.00	0.00
2,600.00	20.01	273.76	2,501.34	40.47	-616.26	617.59	0.00	0.00	0.00
2,700.00	20.01	273.76	2,595.31	42.71	-650.41	651.81	0.00	0.00	0.00
2,800.00	20.01	273.76	2,689.27	44.96	-684.55	686.02	0.00	0.00	0.00
2,900.00	20.01	273.76	2,783.24	47.20	-718.69	720.24	0.00	0.00	0.00
3,000.00	20.01	273.76	2,877.20	49.44	-752.84	754.46	0.00	0.00	0.00
3,100.00	20.01	273.76	2,971.16	51.68	-786.98	788.68	0.00	0.00	0.00
3,143.16	20.01	273.76	3,011.71	52.65	-801.72	803.44	0.00	0.00	0.00
3,200.00	19.01	273.76	3,065.29	53.90	-820.66	822.43	1.75	-1.75	0.00
3,300.00	17.26	273.76	3,160.32	55.94	-851.73	853.56	1.75	-1.75	0.00
3,400.00	15.51	273.76	3,256.25	57.78	-879.88	881.78	1.75	-1.75	0.00
3,500.00	13.76	273.76	3,353.00	59.44	-905.10	907.05	1.75	-1.75	0.00
3,600.00	12.01	273.76	3,450.48	60.90	-927.36	929.35	1.75	-1.75	0.00
3,700.00	10.26	273.76	3,548.59	62.17	-946.63	948.67	1.75	-1.75	0.00
3,800.00	8.51	273.76	3,647.25	63.24	-962.91	964.99	1.75	-1.75	0.00
3,900.00	6.76	273.76	3,746.36	64.11	-976.18	978.28	1.75	-1.75	0.00
4,000.00	5.01	273.76	3,845.82	64.78	-986.42	988.54	1.75	-1.75	0.00
4,100.00	3.26	273.76	3,945.56	65.25	-993.62	995.76	1.75	-1.75	0.00
4,200.00	1.51	273.76	4,045.47	65.53	-997.78	999.93	1.75	-1.75	0.00
4,216.54	1.23	273.76	4,062.00	65.55	-998.17	1,000.32	1.75	-1.75	0.00
PK Depth									
4,286.54	0.00	0.00	4,132.00	65.60	-998.92	1,001.07	1.75	-1.75	0.00
4,300.00	0.00	0.00	4,145.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
4,400.00	0.00	0.00	4,245.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
4,500.00	0.00	0.00	4,345.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
4,600.00	0.00	0.00	4,445.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
4,676.54	0.00	0.00	4,522.00	65.60	-998.92	1,001.07	0.00	0.00	0.00
SX Depth									

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4959' gl @ 4974.00ft
Site:	WELD_BERGER PAD	North Reference:	True
Well:	BERGER 31-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	BERGER 31-2		
Design:	BERGER 31-2 (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	4,545.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
4,800.00	0.00	0.00	4,645.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
4,900.00	0.00	0.00	4,745.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,000.00	0.00	0.00	4,845.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,100.00	0.00	0.00	4,945.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,200.00	0.00	0.00	5,045.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,300.00	0.00	0.00	5,145.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,400.00	0.00	0.00	5,245.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,500.00	0.00	0.00	5,345.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,600.00	0.00	0.00	5,445.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,700.00	0.00	0.00	5,545.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,800.00	0.00	0.00	5,645.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
5,900.00	0.00	0.00	5,745.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,000.00	0.00	0.00	5,845.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,100.00	0.00	0.00	5,945.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,200.00	0.00	0.00	6,045.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,300.00	0.00	0.00	6,145.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,400.00	0.00	0.00	6,245.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,500.00	0.00	0.00	6,345.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,600.00	0.00	0.00	6,445.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,700.00	0.00	0.00	6,545.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,800.00	0.00	0.00	6,645.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
6,900.00	0.00	0.00	6,745.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,000.00	0.00	0.00	6,845.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,100.00	0.00	0.00	6,945.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,200.00	0.00	0.00	7,045.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,300.00	0.00	0.00	7,145.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,396.54	0.00	0.00	7,242.00	65.60	-998.92	1,001.07	0.00	0.00	0.00
NIO Depth									
7,400.00	0.00	0.00	7,245.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,500.00	0.00	0.00	7,345.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,600.00	0.00	0.00	7,445.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,700.00	0.00	0.00	7,545.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,706.54	0.00	0.00	7,552.00	65.60	-998.92	1,001.07	0.00	0.00	0.00
CD Depth									
7,794.54	0.00	0.00	7,640.00	65.60	-998.92	1,001.07	0.00	0.00	0.00
GH Depth									
7,800.00	0.00	0.00	7,645.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
7,900.00	0.00	0.00	7,745.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
8,000.00	0.00	0.00	7,845.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
8,100.00	0.00	0.00	7,945.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
8,146.54	0.00	0.00	7,992.00	65.60	-998.92	1,001.07	0.00	0.00	0.00
J Depth									
8,200.00	0.00	0.00	8,045.46	65.60	-998.92	1,001.07	0.00	0.00	0.00
8,286.54	0.00	0.00	8,132.00	65.60	-998.92	1,001.07	0.00	0.00	0.00
BERGER 31-2 BHL									

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' rkb + 4959' gl @ 4974.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' rkb + 4959' gl @ 4974.00ft
Site:	WELD_BERGER PAD	North Reference:	True
Well:	BERGER 31-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	BERGER 31-2		
Design:	BERGER 31-2 (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 31-2 BHL	0.00	0.00	8,132.00	65.60	-998.92	1,274,033.99	3,177,005.12	40.083881	-104.867402
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
4,216.54	4,062.00	PK Depth				
4,676.54	4,522.00	SX Depth				
7,396.54	7,242.00	NIO Depth				
7,706.54	7,552.00	CD Depth				
7,794.54	7,640.00	GH Depth				
8,146.54	7,992.00	J Depth				