

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Saddleback 18-29 pad

Saddleback 29-29

Saddleback 29-29

Plan: Saddleback 29-29 (wp01)

Standard Planning Report

27 July, 2011



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_Saddleback 18-29 pad
Well: Saddleback 29-29
Wellbore: Saddleback 29-29
Section:
SHL:
Design: Saddleback 29-29 (wp01)
Latitude: 40.113192
Longitude: -104.919447
GL: 5015.00
KB: 15 rkb + 5015' gl @ 5030.00ft

FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
4164.00	4330.00	PK Depth
4569.00	4742.60	SX Depth
7327.00	7501.69	NIO Depth
7614.00	7788.69	CD Depth
7691.00	7865.69	GH Depth
8040.00	8214.69	J Depth



Azimuths to True North
Magnetic North: 8.91°

Magnetic Field
Strength: 52950.1snT
Dip Angle: 66.79°
Date: 7/26/2011
Model: IGRF2010

WELL DETAILS: Saddleback 29-29

+N/-S	+E/-W	Northing	Ground Level: Easting	5015.00 Latitude	Longitude	Slot
0.00	0.00	1284611.49	3162372.90	40.113192	-104.919447	

CASING DETAILS

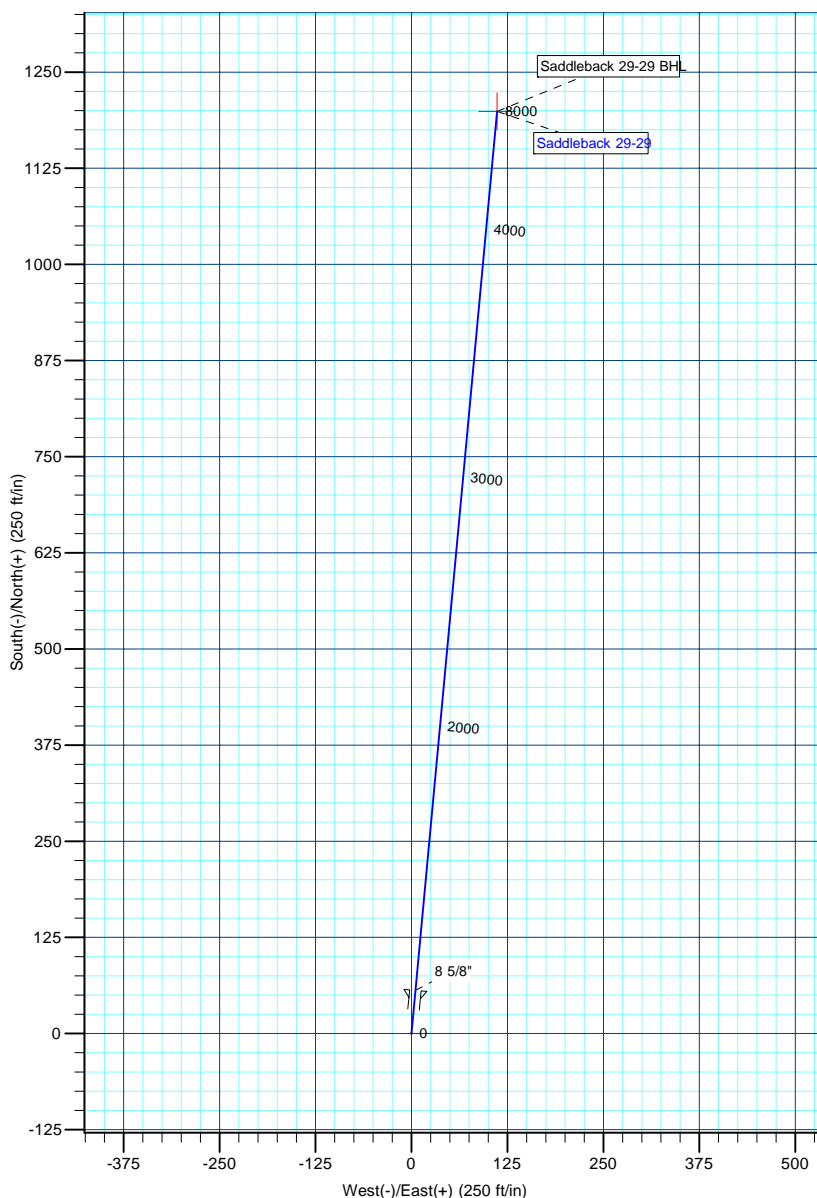
TVD	MD	Name	Size
865.00	868.73	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Saddleback 29-29 BHL	8180.00	1199.22	111.59	1285811.41	3162476.63	40.116484	-104.919048	

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
1199.71	17.99	5.32	1185.00	139.52	12.98	2.00	5.32	140.12
4126.45	17.99	5.32	3968.58	1039.76	96.75	0.00	0.00	1044.26
5154.69	0.00	0.00	4980.00	1199.22	111.59	1.75	180.00	1204.40
8354.69	0.00	0.00	8180.00	1199.22	111.59	0.00	0.00	1204.40



Database:	edm5000p	Local Co-ordinate Reference:	Well Saddleback 29-29
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15 rkb + 5015' gl @ 5030.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15 rkb + 5015' gl @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 29-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 29-29		
Design:	Saddleback 29-29 (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_Saddleback 18-29 pad			
Site Position:		Northing:	1,284,591.46 ft	Latitude: 40.113137
From:	Lat/Long	Easting:	3,162,372.75 ft	Longitude: -104.919448
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence: 0.38 °

Well	Saddleback 29-29			
Well Position	+N/-S	20.02 ft	Northing:	1,284,611.49 ft
	+E/-W	0.28 ft	Easting:	3,162,372.90 ft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 40.113192
				Longitude: -104.919447
				Ground Level: 5,015.00 ft

Wellbore	Saddleback 29-29				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/26/2011	8.91	66.79	52,950

Design	Saddleback 29-29 (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	5.32

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	
1,199.71	17.99	5.32	1,185.00	139.52	12.98	2.00	2.00	0.00	5.32	
4,126.45	17.99	5.32	3,968.58	1,039.76	96.75	0.00	0.00	0.00	0.00	
5,154.69	0.00	0.00	4,980.00	1,199.22	111.59	1.75	-1.75	0.00	180.00	
8,354.69	0.00	0.00	8,180.00	1,199.22	111.59	0.00	0.00	0.00	0.00	Saddleback 29-29 BH

Database:	edm5000p	Local Co-ordinate Reference:	Well Saddleback 29-29
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15 rkb + 5015' gl @ 5030.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15 rkb + 5015' gl @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 29-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 29-29		
Design:	Saddleback 29-29 (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
400.00	2.00	5.32	399.98	1.74	0.16	1.75	2.00	2.00	0.00
500.00	4.00	5.32	499.84	6.95	0.65	6.98	2.00	2.00	0.00
600.00	6.00	5.32	599.45	15.63	1.45	15.69	2.00	2.00	0.00
700.00	8.00	5.32	698.70	27.76	2.58	27.88	2.00	2.00	0.00
800.00	10.00	5.32	797.47	43.34	4.03	43.52	2.00	2.00	0.00
868.73	11.37	5.32	865.00	56.03	5.21	56.27	2.00	2.00	0.00
8 5/8"									
900.00	12.00	5.32	895.62	62.33	5.80	62.60	2.00	2.00	0.00
1,000.00	14.00	5.32	993.06	84.73	7.88	85.10	2.00	2.00	0.00
1,100.00	16.00	5.32	1,089.64	110.50	10.28	110.98	2.00	2.00	0.00
1,199.71	17.99	5.32	1,185.00	139.52	12.98	140.12	2.00	2.00	0.00
1,200.00	17.99	5.32	1,185.27	139.61	12.99	140.21	0.00	0.00	0.00
1,300.00	17.99	5.32	1,280.38	170.37	15.85	171.10	0.00	0.00	0.00
1,400.00	17.99	5.32	1,375.49	201.13	18.72	202.00	0.00	0.00	0.00
1,500.00	17.99	5.32	1,470.59	231.89	21.58	232.89	0.00	0.00	0.00
1,600.00	17.99	5.32	1,565.70	262.65	24.44	263.78	0.00	0.00	0.00
1,700.00	17.99	5.32	1,660.81	293.41	27.30	294.67	0.00	0.00	0.00
1,800.00	17.99	5.32	1,755.92	324.17	30.16	325.57	0.00	0.00	0.00
1,900.00	17.99	5.32	1,851.03	354.92	33.03	356.46	0.00	0.00	0.00
2,000.00	17.99	5.32	1,946.14	385.68	35.89	387.35	0.00	0.00	0.00
2,100.00	17.99	5.32	2,041.25	416.44	38.75	418.24	0.00	0.00	0.00
2,200.00	17.99	5.32	2,136.36	447.20	41.61	449.13	0.00	0.00	0.00
2,300.00	17.99	5.32	2,231.46	477.96	44.48	480.03	0.00	0.00	0.00
2,400.00	17.99	5.32	2,326.57	508.72	47.34	510.92	0.00	0.00	0.00
2,500.00	17.99	5.32	2,421.68	539.48	50.20	541.81	0.00	0.00	0.00
2,600.00	17.99	5.32	2,516.79	570.24	53.06	572.70	0.00	0.00	0.00
2,700.00	17.99	5.32	2,611.90	601.00	55.92	603.60	0.00	0.00	0.00
2,800.00	17.99	5.32	2,707.01	631.76	58.79	634.49	0.00	0.00	0.00
2,900.00	17.99	5.32	2,802.12	662.52	61.65	665.38	0.00	0.00	0.00
3,000.00	17.99	5.32	2,897.23	693.28	64.51	696.27	0.00	0.00	0.00
3,100.00	17.99	5.32	2,992.33	724.04	67.37	727.16	0.00	0.00	0.00
3,200.00	17.99	5.32	3,087.44	754.80	70.24	758.06	0.00	0.00	0.00
3,300.00	17.99	5.32	3,182.55	785.56	73.10	788.95	0.00	0.00	0.00
3,400.00	17.99	5.32	3,277.66	816.31	75.96	819.84	0.00	0.00	0.00
3,500.00	17.99	5.32	3,372.77	847.07	78.82	850.73	0.00	0.00	0.00
3,600.00	17.99	5.32	3,467.88	877.83	81.68	881.63	0.00	0.00	0.00
3,700.00	17.99	5.32	3,562.99	908.59	84.55	912.52	0.00	0.00	0.00
3,800.00	17.99	5.32	3,658.10	939.35	87.41	943.41	0.00	0.00	0.00
3,900.00	17.99	5.32	3,753.20	970.11	90.27	974.30	0.00	0.00	0.00
4,000.00	17.99	5.32	3,848.31	1,000.87	93.13	1,005.19	0.00	0.00	0.00
4,100.00	17.99	5.32	3,943.42	1,031.63	96.00	1,036.09	0.00	0.00	0.00
4,126.45	17.99	5.32	3,968.58	1,039.76	96.75	1,044.26	0.00	0.00	0.00
4,200.00	16.71	5.32	4,038.78	1,061.60	98.79	1,066.19	1.75	-1.75	0.00
4,300.00	14.96	5.32	4,134.98	1,088.77	101.31	1,093.47	1.75	-1.75	0.00
4,330.00	14.43	5.32	4,164.00	1,096.35	102.02	1,101.08	1.75	-1.75	0.00
PK Depth									
4,400.00	13.21	5.32	4,231.97	1,112.99	103.57	1,117.80	1.75	-1.75	0.00
4,500.00	11.46	5.32	4,329.66	1,134.26	105.55	1,139.16	1.75	-1.75	0.00
4,600.00	9.71	5.32	4,427.96	1,152.54	107.25	1,157.52	1.75	-1.75	0.00
4,700.00	7.96	5.32	4,526.77	1,167.83	108.67	1,172.88	1.75	-1.75	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15 rkb + 5015' gl @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 29-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 29-29		
Design:	Saddleback 29-29 (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)
4,742.60	7.21	5.32	4,569.00	1,173.43	109.19	1,178.50	1.75	-1.75	0.00
SX Depth									
4,800.00	6.21	5.32	4,626.00	1,180.11	109.81	1,185.21	1.75	-1.75	0.00
4,900.00	4.46	5.32	4,725.57	1,189.36	110.67	1,194.50	1.75	-1.75	0.00
5,000.00	2.71	5.32	4,825.37	1,195.58	111.25	1,200.75	1.75	-1.75	0.00
5,100.00	0.96	5.32	4,925.31	1,198.76	111.55	1,203.94	1.75	-1.75	0.00
5,154.69	0.00	0.00	4,980.00	1,199.22	111.59	1,204.40	1.75	-1.75	0.00
5,200.00	0.00	0.00	5,025.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
5,300.00	0.00	0.00	5,125.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
5,400.00	0.00	0.00	5,225.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
5,500.00	0.00	0.00	5,325.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
5,600.00	0.00	0.00	5,425.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
5,700.00	0.00	0.00	5,525.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
5,800.00	0.00	0.00	5,625.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
5,900.00	0.00	0.00	5,725.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,000.00	0.00	0.00	5,825.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,100.00	0.00	0.00	5,925.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,200.00	0.00	0.00	6,025.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,300.00	0.00	0.00	6,125.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,400.00	0.00	0.00	6,225.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,500.00	0.00	0.00	6,325.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,600.00	0.00	0.00	6,425.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,700.00	0.00	0.00	6,525.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,800.00	0.00	0.00	6,625.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
6,900.00	0.00	0.00	6,725.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,000.00	0.00	0.00	6,825.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,100.00	0.00	0.00	6,925.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,200.00	0.00	0.00	7,025.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,300.00	0.00	0.00	7,125.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,400.00	0.00	0.00	7,225.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,500.00	0.00	0.00	7,325.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,501.69	0.00	0.00	7,327.00	1,199.22	111.59	1,204.40	0.00	0.00	0.00
NIO Depth									
7,600.00	0.00	0.00	7,425.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,700.00	0.00	0.00	7,525.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,788.69	0.00	0.00	7,614.00	1,199.22	111.59	1,204.40	0.00	0.00	0.00
CD Depth									
7,800.00	0.00	0.00	7,625.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
7,865.69	0.00	0.00	7,691.00	1,199.22	111.59	1,204.40	0.00	0.00	0.00
GH Depth									
7,900.00	0.00	0.00	7,725.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
8,000.00	0.00	0.00	7,825.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
8,100.00	0.00	0.00	7,925.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
8,200.00	0.00	0.00	8,025.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
8,214.69	0.00	0.00	8,040.00	1,199.22	111.59	1,204.40	0.00	0.00	0.00
J Depth									
8,300.00	0.00	0.00	8,125.31	1,199.22	111.59	1,204.40	0.00	0.00	0.00
8,354.69	0.00	0.00	8,180.00	1,199.22	111.59	1,204.40	0.00	0.00	0.00
Saddleback 29-29 BHL									

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15 rkb + 5015' gl @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 29-29	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 29-29		
Design:	Saddleback 29-29 (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Saddleback 29-29 BHL	0.00	0.00	8,180.00	1,199.22	111.59	1,285,811.41	3,162,476.63	40.116484	-104.919048
- plan hits target center									
- Point									

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

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
4,330.00	4,164.00	PK Depth				
4,742.60	4,569.00	SX Depth				
7,501.69	7,327.00	NIO Depth				
7,788.69	7,614.00	CD Depth				
7,865.69	7,691.00	GH Depth				
8,214.69	8,040.00	J Depth				