

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_SARCHET 28-32HZ Pad

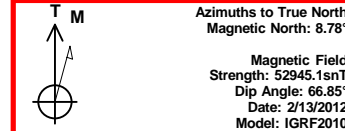
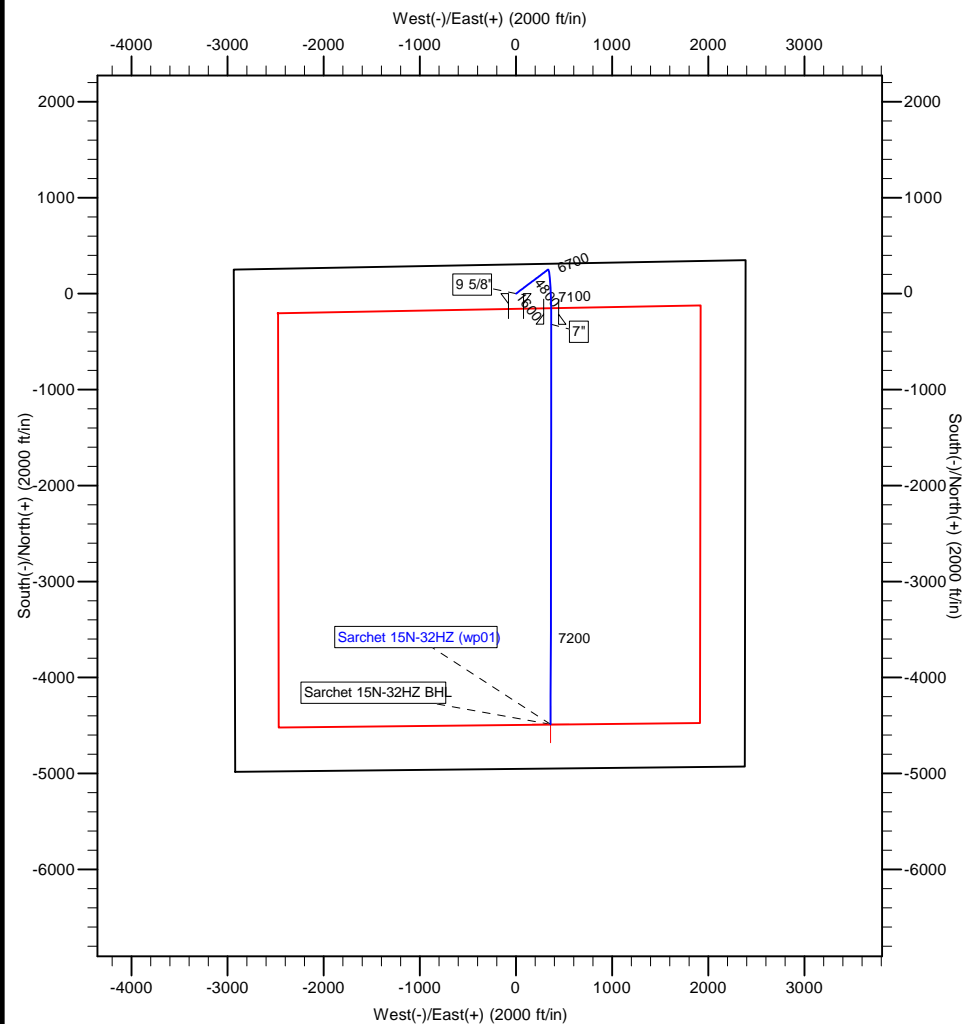
Sarchet 15N-32HZ

Sarchet 15N-32HZ

Plan: Sarchet 15N-32HZ (wp01)

Standard Planning Report

13 February, 2012



Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_SARCHET 28-32HZ Pad
 Well: Sarchet 15N-32HZ
 Wellbore: Sarchet 15N-32HZ
 Section:
 SHL:
 Design: Sarchet 15N-32HZ (wp01)
 Latitude: 40.187712
 Longitude: -104.800145
 GL: 4914.00
 KB: gl + rkb @ 4930.00ft

WELL DETAILS: Sarchet 15N-32HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4914.00 Latitude	Longitude	Slot
0.00	0.00	1311997.72	3195525.19	40.187712	-104.800145	

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
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00
1216.49	4.33	52.86	1216.28	4.94	6.52	2.00	52.86	-4.40
6606.54	4.33	52.86	6590.95	250.63	330.90	0.00	0.00	-223.42
7530.94	89.82	180.08	7189.00	-320.00	366.00	10.00	127.16	348.19
7532.46	89.81	180.09	7189.00	-321.52	366.00	1.00	154.60	349.70
1699.65	89.81	180.09	7203.00	-4488.68	359.35	0.00	0.00	4503.04

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

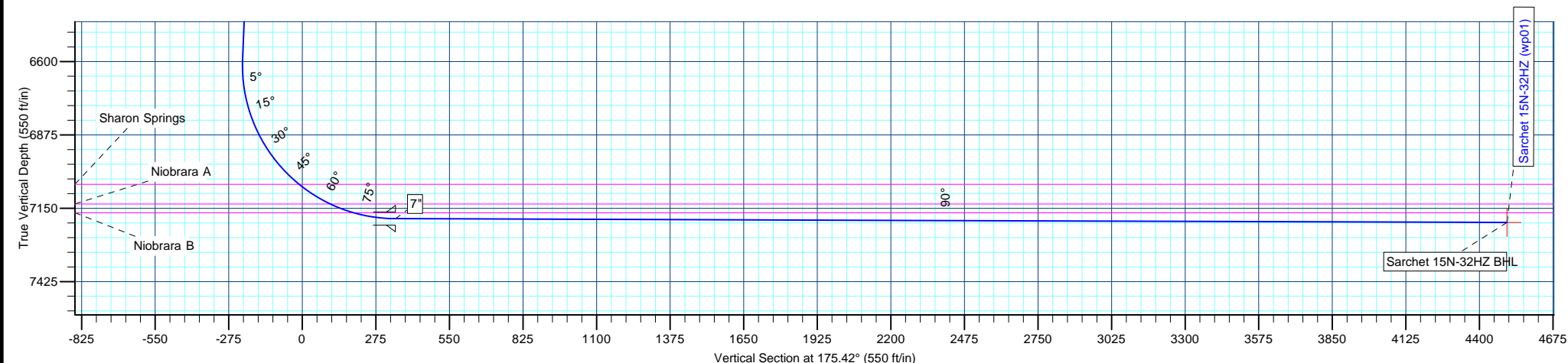
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Sarchet 15N-32HZ BHL	7203.00	-4488.68	359.35	40.175390	-104.798859	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3913.00	3920.92	Parkman
4490.00	4499.58	Sussex
7060.00	7140.27	Sharon Springs
7134.00	7279.39	Niobrara A
7167.00	7373.28	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
750.00	750.00	9 5/8"	9-5/8
7189.00	7530.94	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sarchet 15N-32HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4930.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4930.00ft
Site:	WELD_SARCHET 28-32HZ Pad	North Reference:	True
Well:	Sarchet 15N-32HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sarchet 15N-32HZ		
Design:	Sarchet 15N-32HZ (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_SARCHET 28-32HZ Pad			
Site Position:		Northing:	1,312,027.61 usft	Latitude: 40.187794
From:	Lat/Long	Easting:	3,195,524.95 usft	Longitude: -104.800145
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.45 °

Well	Sarchet 15N-32HZ			
Well Position	+N/-S	-29.88 ft	Northing:	1,311,997.72 usft
	+E/-W	0.00 ft	Easting:	3,195,525.19 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,914.00 ft

Wellbore	Sarchet 15N-32HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/13/2012	8.78	66.85	52,945

Design	Sarchet 15N-32HZ (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	175.42

Plan Sections										
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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,216.49	4.33	52.86	1,216.28	4.94	6.52	2.00	2.00	0.00	52.86	
6,606.54	4.33	52.86	6,590.95	250.63	330.90	0.00	0.00	0.00	0.00	
7,530.94	89.82	180.08	7,189.00	-320.00	366.00	10.00	9.25	13.76	127.16	
7,532.46	89.81	180.09	7,189.01	-321.52	366.00	1.00	-0.90	0.43	154.60	
11,699.65	89.81	180.09	7,203.00	-4,488.68	359.35	0.00	0.00	0.00	0.00	Sarchet 15N-32HZ Bt

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sarchet 15N-32HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4930.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4930.00ft
Site:	WELD_SARCHET 28-32HZ Pad	North Reference:	True
Well:	Sarchet 15N-32HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sarchet 15N-32HZ		
Design:	Sarchet 15N-32HZ (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	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	2.00	52.86	1,099.98	1.05	1.39	-0.94	2.00	2.00	0.00
1,200.00	4.00	52.86	1,199.84	4.21	5.56	-3.76	2.00	2.00	0.00
1,216.49	4.33	52.86	1,216.28	4.94	6.52	-4.40	2.00	2.00	0.00
1,300.00	4.33	52.86	1,299.56	8.74	11.54	-7.79	0.00	0.00	0.00
1,400.00	4.33	52.86	1,399.27	13.30	17.56	-11.86	0.00	0.00	0.00
1,500.00	4.33	52.86	1,498.98	17.86	23.58	-15.92	0.00	0.00	0.00
1,600.00	4.33	52.86	1,598.70	22.42	29.60	-19.98	0.00	0.00	0.00
1,700.00	4.33	52.86	1,698.41	26.98	35.62	-24.05	0.00	0.00	0.00
1,800.00	4.33	52.86	1,798.13	31.53	41.63	-28.11	0.00	0.00	0.00
1,900.00	4.33	52.86	1,897.84	36.09	47.65	-32.17	0.00	0.00	0.00
2,000.00	4.33	52.86	1,997.56	40.65	53.67	-36.24	0.00	0.00	0.00
2,100.00	4.33	52.86	2,097.27	45.21	59.69	-40.30	0.00	0.00	0.00
2,200.00	4.33	52.86	2,196.99	49.77	65.71	-44.37	0.00	0.00	0.00
2,300.00	4.33	52.86	2,296.70	54.33	71.73	-48.43	0.00	0.00	0.00
2,400.00	4.33	52.86	2,396.42	58.88	77.74	-52.49	0.00	0.00	0.00
2,500.00	4.33	52.86	2,496.13	63.44	83.76	-56.56	0.00	0.00	0.00
2,600.00	4.33	52.86	2,595.85	68.00	89.78	-60.62	0.00	0.00	0.00
2,700.00	4.33	52.86	2,695.56	72.56	95.80	-64.68	0.00	0.00	0.00
2,800.00	4.33	52.86	2,795.27	77.12	101.82	-68.75	0.00	0.00	0.00
2,900.00	4.33	52.86	2,894.99	81.68	107.84	-72.81	0.00	0.00	0.00
3,000.00	4.33	52.86	2,994.70	86.23	113.85	-76.87	0.00	0.00	0.00
3,100.00	4.33	52.86	3,094.42	90.79	119.87	-80.94	0.00	0.00	0.00
3,200.00	4.33	52.86	3,194.13	95.35	125.89	-85.00	0.00	0.00	0.00
3,300.00	4.33	52.86	3,293.85	99.91	131.91	-89.06	0.00	0.00	0.00
3,400.00	4.33	52.86	3,393.56	104.47	137.93	-93.13	0.00	0.00	0.00
3,500.00	4.33	52.86	3,493.28	109.03	143.94	-97.19	0.00	0.00	0.00
3,600.00	4.33	52.86	3,592.99	113.58	149.96	-101.25	0.00	0.00	0.00
3,700.00	4.33	52.86	3,692.71	118.14	155.98	-105.32	0.00	0.00	0.00
3,800.00	4.33	52.86	3,792.42	122.70	162.00	-109.38	0.00	0.00	0.00
3,900.00	4.33	52.86	3,892.14	127.26	168.02	-113.44	0.00	0.00	0.00
3,920.92	4.33	52.86	3,913.00	128.21	169.28	-114.29	0.00	0.00	0.00
Parkman									
4,000.00	4.33	52.86	3,991.85	131.82	174.04	-117.51	0.00	0.00	0.00
4,100.00	4.33	52.86	4,091.56	136.37	180.05	-121.57	0.00	0.00	0.00
4,200.00	4.33	52.86	4,191.28	140.93	186.07	-125.63	0.00	0.00	0.00
4,300.00	4.33	52.86	4,290.99	145.49	192.09	-129.70	0.00	0.00	0.00
4,400.00	4.33	52.86	4,390.71	150.05	198.11	-133.76	0.00	0.00	0.00
4,499.58	4.33	52.86	4,490.00	154.59	204.10	-137.81	0.00	0.00	0.00
Sussex									
4,500.00	4.33	52.86	4,490.42	154.61	204.13	-137.83	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sarchet 15N-32HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4930.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4930.00ft
Site:	WELD_SARCHET 28-32HZ Pad	North Reference:	True
Well:	Sarchet 15N-32HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sarchet 15N-32HZ		
Design:	Sarchet 15N-32HZ (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)
4,600.00	4.33	52.86	4,590.14	159.17	210.14	-141.89	0.00	0.00	0.00
4,700.00	4.33	52.86	4,689.85	163.72	216.16	-145.95	0.00	0.00	0.00
4,800.00	4.33	52.86	4,789.57	168.28	222.18	-150.02	0.00	0.00	0.00
4,900.00	4.33	52.86	4,889.28	172.84	228.20	-154.08	0.00	0.00	0.00
5,000.00	4.33	52.86	4,989.00	177.40	234.22	-158.14	0.00	0.00	0.00
5,100.00	4.33	52.86	5,088.71	181.96	240.24	-162.21	0.00	0.00	0.00
5,200.00	4.33	52.86	5,188.43	186.52	246.25	-166.27	0.00	0.00	0.00
5,300.00	4.33	52.86	5,288.14	191.07	252.27	-170.33	0.00	0.00	0.00
5,400.00	4.33	52.86	5,387.85	195.63	258.29	-174.40	0.00	0.00	0.00
5,500.00	4.33	52.86	5,487.57	200.19	264.31	-178.46	0.00	0.00	0.00
5,600.00	4.33	52.86	5,587.28	204.75	270.33	-182.52	0.00	0.00	0.00
5,700.00	4.33	52.86	5,687.00	209.31	276.35	-186.59	0.00	0.00	0.00
5,800.00	4.33	52.86	5,786.71	213.87	282.36	-190.65	0.00	0.00	0.00
5,900.00	4.33	52.86	5,886.43	218.42	288.38	-194.71	0.00	0.00	0.00
6,000.00	4.33	52.86	5,986.14	222.98	294.40	-198.78	0.00	0.00	0.00
6,100.00	4.33	52.86	6,085.86	227.54	300.42	-202.84	0.00	0.00	0.00
6,200.00	4.33	52.86	6,185.57	232.10	306.44	-206.90	0.00	0.00	0.00
6,300.00	4.33	52.86	6,285.29	236.66	312.45	-210.97	0.00	0.00	0.00
6,400.00	4.33	52.86	6,385.00	241.22	318.47	-215.03	0.00	0.00	0.00
6,500.00	4.33	52.86	6,484.72	245.77	324.49	-219.09	0.00	0.00	0.00
6,600.00	4.33	52.86	6,584.43	250.33	330.51	-223.16	0.00	0.00	0.00
6,606.54	4.33	52.86	6,590.95	250.63	330.90	-223.42	0.00	0.00	0.00
6,700.00	7.56	153.07	6,684.08	247.27	336.51	-219.63	10.00	3.45	107.23
6,800.00	17.07	168.77	6,781.69	226.96	342.36	-198.92	10.00	9.51	15.70
6,900.00	26.93	173.28	6,874.30	189.98	347.88	-161.62	10.00	9.86	4.51
7,000.00	36.87	175.49	6,959.09	137.45	352.91	-108.85	10.00	9.93	2.20
7,100.00	46.82	176.85	7,033.50	70.97	357.28	-42.23	10.00	9.96	1.37
7,140.27	50.84	177.28	7,060.00	40.70	358.83	-11.94	10.00	9.97	1.06
Sharon Springs									
7,200.00	56.80	177.83	7,095.25	-7.44	360.87	36.22	10.00	9.97	0.93
7,279.39	64.72	178.46	7,134.00	-76.62	363.09	105.35	10.00	9.98	0.79
Niobrara A									
7,300.00	66.77	178.61	7,142.47	-95.40	363.57	124.11	10.00	9.98	0.72
7,373.28	74.09	179.11	7,167.00	-164.39	364.93	192.99	10.00	9.98	0.68
Niobrara B									
7,400.00	76.75	179.28	7,173.73	-190.24	365.30	218.79	10.00	9.98	0.64
7,500.00	86.73	179.90	7,188.07	-289.08	366.00	317.36	10.00	9.98	0.62
7,530.94	89.82	180.08	7,189.00	-320.00	366.00	348.19	10.00	9.98	0.60
7"									
7,532.46	89.81	180.09	7,189.01	-321.52	366.00	349.70	1.00	-0.90	0.43
7,600.00	89.81	180.09	7,189.23	-389.06	365.89	417.02	0.00	0.00	0.00
7,700.00	89.81	180.09	7,189.57	-489.06	365.73	516.69	0.00	0.00	0.00
7,800.00	89.81	180.09	7,189.90	-589.06	365.57	616.35	0.00	0.00	0.00
7,900.00	89.81	180.09	7,190.24	-689.06	365.41	716.02	0.00	0.00	0.00
8,000.00	89.81	180.09	7,190.58	-789.06	365.25	815.69	0.00	0.00	0.00
8,100.00	89.81	180.09	7,190.91	-889.06	365.09	915.36	0.00	0.00	0.00
8,200.00	89.81	180.09	7,191.25	-989.06	364.93	1,015.02	0.00	0.00	0.00
8,300.00	89.81	180.09	7,191.58	-1,089.06	364.77	1,114.69	0.00	0.00	0.00
8,400.00	89.81	180.09	7,191.92	-1,189.06	364.61	1,214.36	0.00	0.00	0.00
8,500.00	89.81	180.09	7,192.25	-1,289.05	364.45	1,314.03	0.00	0.00	0.00
8,600.00	89.81	180.09	7,192.59	-1,389.05	364.30	1,413.70	0.00	0.00	0.00
8,700.00	89.81	180.09	7,192.93	-1,489.05	364.14	1,513.36	0.00	0.00	0.00
8,800.00	89.81	180.09	7,193.26	-1,589.05	363.98	1,613.03	0.00	0.00	0.00
8,900.00	89.81	180.09	7,193.60	-1,689.05	363.82	1,712.70	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sarchet 15N-32HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4930.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4930.00ft
Site:	WELD_SARCHET 28-32HZ Pad	North Reference:	True
Well:	Sarchet 15N-32HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sarchet 15N-32HZ		
Design:	Sarchet 15N-32HZ (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)
9,000.00	89.81	180.09	7,193.93	-1,789.05	363.66	1,812.37	0.00	0.00	0.00
9,100.00	89.81	180.09	7,194.27	-1,889.05	363.50	1,912.03	0.00	0.00	0.00
9,200.00	89.81	180.09	7,194.61	-1,989.05	363.34	2,011.70	0.00	0.00	0.00
9,300.00	89.81	180.09	7,194.94	-2,089.05	363.18	2,111.37	0.00	0.00	0.00
9,400.00	89.81	180.09	7,195.28	-2,189.05	363.02	2,211.04	0.00	0.00	0.00
9,500.00	89.81	180.09	7,195.61	-2,289.05	362.86	2,310.70	0.00	0.00	0.00
9,600.00	89.81	180.09	7,195.95	-2,389.05	362.70	2,410.37	0.00	0.00	0.00
9,700.00	89.81	180.09	7,196.28	-2,489.05	362.54	2,510.04	0.00	0.00	0.00
9,800.00	89.81	180.09	7,196.62	-2,589.05	362.38	2,609.71	0.00	0.00	0.00
9,900.00	89.81	180.09	7,196.96	-2,689.04	362.22	2,709.37	0.00	0.00	0.00
10,000.00	89.81	180.09	7,197.29	-2,789.04	362.06	2,809.04	0.00	0.00	0.00
10,100.00	89.81	180.09	7,197.63	-2,889.04	361.90	2,908.71	0.00	0.00	0.00
10,200.00	89.81	180.09	7,197.96	-2,989.04	361.74	3,008.38	0.00	0.00	0.00
10,300.00	89.81	180.09	7,198.30	-3,089.04	361.58	3,108.05	0.00	0.00	0.00
10,400.00	89.81	180.09	7,198.64	-3,189.04	361.42	3,207.71	0.00	0.00	0.00
10,500.00	89.81	180.09	7,198.97	-3,289.04	361.26	3,307.38	0.00	0.00	0.00
10,600.00	89.81	180.09	7,199.31	-3,389.04	361.11	3,407.05	0.00	0.00	0.00
10,700.00	89.81	180.09	7,199.64	-3,489.04	360.95	3,506.72	0.00	0.00	0.00
10,800.00	89.81	180.09	7,199.98	-3,589.04	360.79	3,606.38	0.00	0.00	0.00
10,900.00	89.81	180.09	7,200.31	-3,689.04	360.63	3,706.05	0.00	0.00	0.00
11,000.00	89.81	180.09	7,200.65	-3,789.04	360.47	3,805.72	0.00	0.00	0.00
11,100.00	89.81	180.09	7,200.99	-3,889.04	360.31	3,905.39	0.00	0.00	0.00
11,200.00	89.81	180.09	7,201.32	-3,989.04	360.15	4,005.05	0.00	0.00	0.00
11,300.00	89.81	180.09	7,201.66	-4,089.04	359.99	4,104.72	0.00	0.00	0.00
11,400.00	89.81	180.09	7,201.99	-4,189.03	359.83	4,204.39	0.00	0.00	0.00
11,500.00	89.81	180.09	7,202.33	-4,289.03	359.67	4,304.06	0.00	0.00	0.00
11,600.00	89.81	180.09	7,202.67	-4,389.03	359.51	4,403.72	0.00	0.00	0.00
11,699.65	89.81	180.09	7,203.00	-4,488.68	359.35	4,503.04	0.00	0.00	0.00
Sarchet 15N-32HZ BHL									

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									
Sarchet 15N-32HZ BHL	0.00	0.00	7,203.00	-4,488.68	359.35	1,307,512.03	3,195,919.95	40.175390	-104.798859
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
750.00	750.00	9 5/8"	9-5/8	12-1/4	
7,530.94	7,189.00	7"	7	8-3/4	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Sarchet 15N-32HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4930.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4930.00ft
Site:	WELD_SARCHET 28-32HZ Pad	North Reference:	True
Well:	Sarchet 15N-32HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sarchet 15N-32HZ		
Design:	Sarchet 15N-32HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,920.92	3,913.00	Parkman		0.00		
4,499.58	4,490.00	Sussex		0.00		
7,140.27	7,060.00	Sharon Springs		0.00		
7,279.39	7,134.00	Niobrara A		0.00		
7,373.28	7,167.00	Niobrara B		0.00		