

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_BUFFALO & BADGER 4W-15HZ PAD

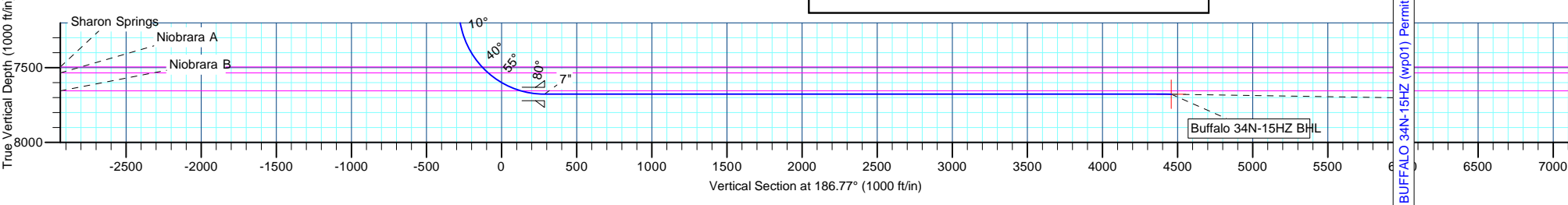
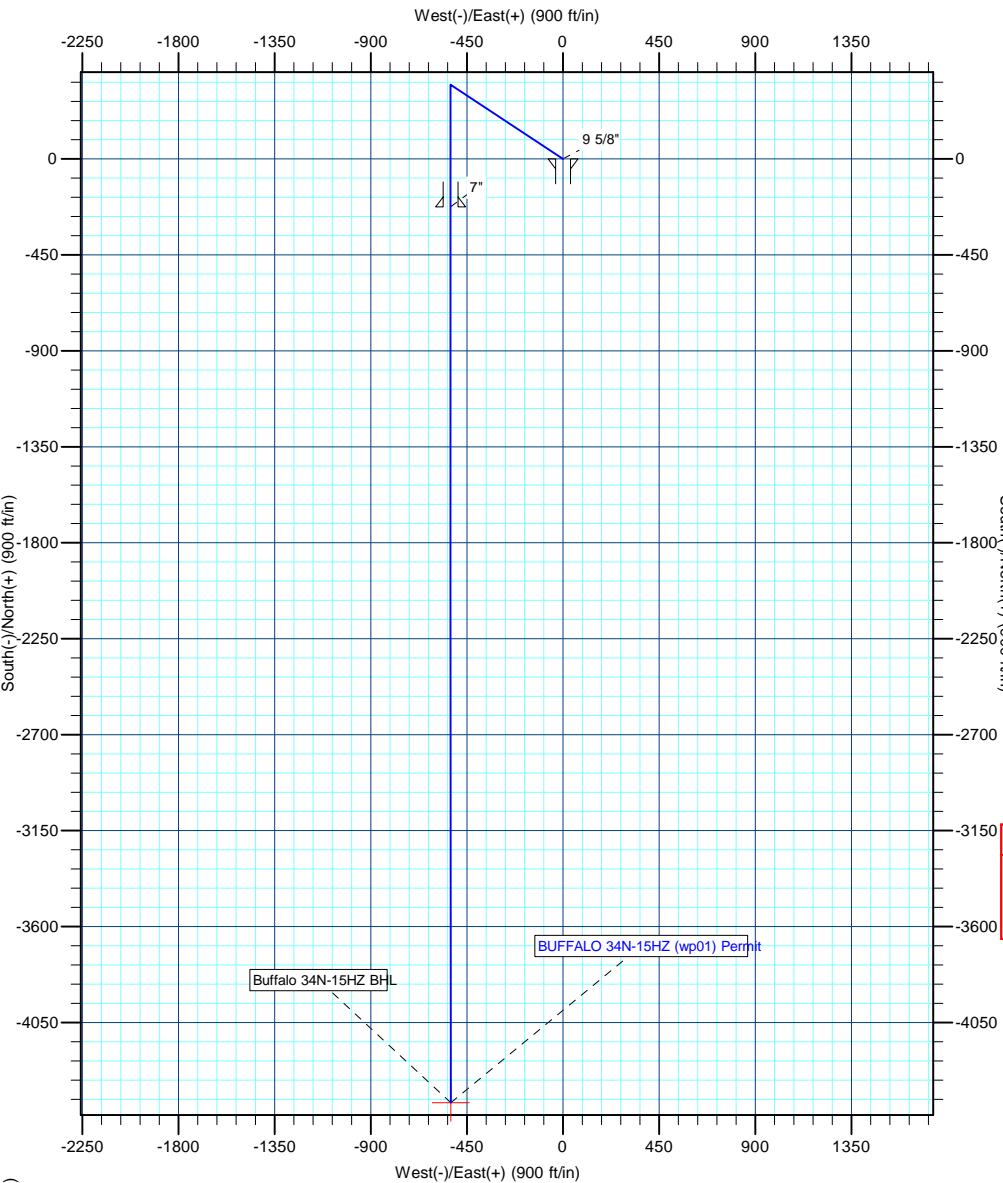
BUFFALO 34N-15HZ

BUFFALO 34N-15HZ

Plan: BUFFALO 34N-15HZ (wp01) Permit

Standard Planning Report

17 July, 2012



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Azimuths to True North

Magnetic North: 8.81°

Magnetic Field

Strength: 52808.7snT

Dip Angle: 66.70°

Date: 7/16/2012

Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83

Site: WELD_BUFFALO & BADGER 4W-15HZ PAD

Well: BUFFALO 34N-15HZ

Wellbore: BUFFALO 34N-15HZ

Section:

SHL:

Design: BUFFALO 34N-15HZ (wp01) Permit

Latitude: 40.057327

Longitude: -104.996668

GL: 5141.00

KB: 17' RKB + 5141' GL @ 5158.00ft

WELL DETAILS: BUFFALO 34N-15HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	5141.00 Latitude	Longitude	Slot
0.00	0.00	1264129.47	3140890.98	40.057327	-104.996668	

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
1310.63	6.21	303.49	1310.02	9.28	-14.03	2.00	303.49	-7.56
6828.03	6.21	303.49	6795.02	338.72	-512.00	0.00	0.00	-275.99
7138.66	0.00	0.00	7105.04	348.00	-526.03	2.00	180.00	-283.55
8038.66	90.00	180.00	7678.00	-224.96	-526.03	10.00	180.00	285.41
12239.65	90.00	179.99	7678.00	-4425.95	-525.50	0.00	-90.11	4457.03

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
Buffalo 34N-15HZ BHL	7678.00	-4425.95	-525.50	40.045177	-104.998545	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4320.01	4338.40	Parkman
4778.01	4799.10	Sussex
5266.01	5289.99	Shannon
7495.01	7567.59	Sharon Springs
7535.02	7624.95	Niobrara A
7655.02	7875.83	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7678.00	8038.66	7"	7

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BUFFALO 34N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5141' GL @ 5158.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5141' GL @ 5158.00ft
Site:	WELD_BUFFALO & BADGER 4W-15HZ PAD	North Reference:	True
Well:	BUFFALO 34N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BUFFALO 34N-15HZ		
Design:	BUFFALO 34N-15HZ (wp01) Permit		

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_BUFFALO & BADGER 4W-15HZ PAD			
Site Position:		Northing:	1,264,129.48 usft	Latitude:	40.057327
From:	Lat/Long	Easting:	3,140,890.98 usft	Longitude:	-104.996668
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.33 °

Well		BUFFALO 34N-15HZ				
Well Position	+N/-S	-0.01 ft	Northing:	1,264,129.47 usft	Latitude:	40.057327
	+E/-W	0.00 ft	Easting:	3,140,890.98 usft	Longitude:	-104.996668
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,141.00 ft

Wellbore	BUFFALO 34N-15HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/16/2012	8.81	66.70	52,809

Design	BUFFALO 34N-15HZ (wp01) Permit			
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	186.77

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	
1,310.63	6.21	303.49	1,310.02	9.28	-14.03	2.00	2.00	0.00	303.49	
6,828.03	6.21	303.49	6,795.02	338.72	-512.00	0.00	0.00	0.00	0.00	
7,138.66	0.00	0.00	7,105.04	348.00	-526.03	2.00	-2.00	0.00	180.00	
8,038.66	90.00	180.00	7,678.00	-224.96	-526.03	10.00	10.00	0.00	180.00	
12,239.65	90.00	179.99	7,678.00	-4,425.95	-525.50	0.00	0.00	0.00	-90.11	Buffalo 34N-15HZ BH

Anadarko Petroleum Corp

Planning Report

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5141' GL @ 5158.00ft
Site:	WELD_BUFFALO & BADGER 4W-15HZ PAD	North Reference:	True
Well:	BUFFALO 34N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BUFFALO 34N-15HZ		
Design:	BUFFALO 34N-15HZ (wp01) Permit		

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
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
9 5/8"									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	2.00	303.49	1,099.98	0.96	-1.46	-0.78	2.00	2.00	0.00
1,200.00	4.00	303.49	1,199.84	3.85	-5.82	-3.14	2.00	2.00	0.00
1,300.00	6.00	303.49	1,299.45	8.66	-13.09	-7.06	2.00	2.00	0.00
1,310.63	6.21	303.49	1,310.02	9.28	-14.03	-7.56	2.00	2.00	0.00
Start 5517.40 hold at 1310.63 MD									
1,400.00	6.21	303.49	1,398.87	14.62	-22.10	-11.91	0.00	0.00	0.00
1,500.00	6.21	303.49	1,498.28	20.59	-31.12	-16.78	0.00	0.00	0.00
1,600.00	6.21	303.49	1,597.69	26.56	-40.15	-21.64	0.00	0.00	0.00
1,700.00	6.21	303.49	1,697.11	32.53	-49.17	-26.51	0.00	0.00	0.00
1,800.00	6.21	303.49	1,796.52	38.50	-58.20	-31.37	0.00	0.00	0.00
1,900.00	6.21	303.49	1,895.93	44.47	-67.22	-36.24	0.00	0.00	0.00
2,000.00	6.21	303.49	1,995.34	50.44	-76.25	-41.10	0.00	0.00	0.00
2,100.00	6.21	303.49	2,094.76	56.41	-85.28	-45.97	0.00	0.00	0.00
2,200.00	6.21	303.49	2,194.17	62.39	-94.30	-50.83	0.00	0.00	0.00
2,300.00	6.21	303.49	2,293.58	68.36	-103.33	-55.70	0.00	0.00	0.00
2,400.00	6.21	303.49	2,392.99	74.33	-112.35	-60.56	0.00	0.00	0.00
2,500.00	6.21	303.49	2,492.41	80.30	-121.38	-65.43	0.00	0.00	0.00
2,600.00	6.21	303.49	2,591.82	86.27	-130.40	-70.29	0.00	0.00	0.00
2,700.00	6.21	303.49	2,691.23	92.24	-139.43	-75.16	0.00	0.00	0.00
2,800.00	6.21	303.49	2,790.65	98.21	-148.45	-80.02	0.00	0.00	0.00
2,900.00	6.21	303.49	2,890.06	104.18	-157.48	-84.89	0.00	0.00	0.00
3,000.00	6.21	303.49	2,989.47	110.15	-166.50	-89.75	0.00	0.00	0.00
3,100.00	6.21	303.49	3,088.88	116.12	-175.53	-94.62	0.00	0.00	0.00
3,200.00	6.21	303.49	3,188.30	122.09	-184.55	-99.48	0.00	0.00	0.00
3,300.00	6.21	303.49	3,287.71	128.06	-193.58	-104.35	0.00	0.00	0.00
3,400.00	6.21	303.49	3,387.12	134.04	-202.61	-109.21	0.00	0.00	0.00
3,500.00	6.21	303.49	3,486.53	140.01	-211.63	-114.08	0.00	0.00	0.00
3,600.00	6.21	303.49	3,585.95	145.98	-220.66	-118.94	0.00	0.00	0.00
3,700.00	6.21	303.49	3,685.36	151.95	-229.68	-123.81	0.00	0.00	0.00
3,800.00	6.21	303.49	3,784.77	157.92	-238.71	-128.67	0.00	0.00	0.00
3,900.00	6.21	303.49	3,884.19	163.89	-247.73	-133.54	0.00	0.00	0.00
4,000.00	6.21	303.49	3,983.60	169.86	-256.76	-138.40	0.00	0.00	0.00
4,100.00	6.21	303.49	4,083.01	175.83	-265.78	-143.27	0.00	0.00	0.00
4,200.00	6.21	303.49	4,182.42	181.80	-274.81	-148.13	0.00	0.00	0.00
4,300.00	6.21	303.49	4,281.84	187.77	-283.83	-153.00	0.00	0.00	0.00
4,338.40	6.21	303.49	4,320.01	190.07	-287.30	-154.87	0.00	0.00	0.00
Parkman									
4,400.00	6.21	303.49	4,381.25	193.74	-292.86	-157.86	0.00	0.00	0.00
4,500.00	6.21	303.49	4,480.66	199.72	-301.88	-162.73	0.00	0.00	0.00
4,600.00	6.21	303.49	4,580.07	205.69	-310.91	-167.59	0.00	0.00	0.00
4,700.00	6.21	303.49	4,679.49	211.66	-319.94	-172.46	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BUFFALO 34N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5141' GL @ 5158.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5141' GL @ 5158.00ft
Site:	WELD_BUFFALO & BADGER 4W-15HZ PAD	North Reference:	True
Well:	BUFFALO 34N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BUFFALO 34N-15HZ		
Design:	BUFFALO 34N-15HZ (wp01) Permit		

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)
4,799.10	6.21	303.49	4,778.01	217.57	-328.88	-177.28	0.00	0.00	0.00
Sussex									
4,800.00	6.21	303.49	4,778.90	217.63	-328.96	-177.32	0.00	0.00	0.00
4,900.00	6.21	303.49	4,878.31	223.60	-337.99	-182.19	0.00	0.00	0.00
5,000.00	6.21	303.49	4,977.73	229.57	-347.01	-187.05	0.00	0.00	0.00
5,100.00	6.21	303.49	5,077.14	235.54	-356.04	-191.92	0.00	0.00	0.00
5,200.00	6.21	303.49	5,176.55	241.51	-365.06	-196.78	0.00	0.00	0.00
5,289.99	6.21	303.49	5,266.01	246.88	-373.18	-201.16	0.00	0.00	0.00
Shannon									
5,300.00	6.21	303.49	5,275.96	247.48	-374.09	-201.65	0.00	0.00	0.00
5,400.00	6.21	303.49	5,375.38	253.45	-383.11	-206.51	0.00	0.00	0.00
5,500.00	6.21	303.49	5,474.79	259.42	-392.14	-211.38	0.00	0.00	0.00
5,600.00	6.21	303.49	5,574.20	265.39	-401.16	-216.24	0.00	0.00	0.00
5,700.00	6.21	303.49	5,673.61	271.37	-410.19	-221.11	0.00	0.00	0.00
5,800.00	6.21	303.49	5,773.03	277.34	-419.21	-225.97	0.00	0.00	0.00
5,900.00	6.21	303.49	5,872.44	283.31	-428.24	-230.84	0.00	0.00	0.00
6,000.00	6.21	303.49	5,971.85	289.28	-437.27	-235.70	0.00	0.00	0.00
6,100.00	6.21	303.49	6,071.27	295.25	-446.29	-240.57	0.00	0.00	0.00
6,200.00	6.21	303.49	6,170.68	301.22	-455.32	-245.43	0.00	0.00	0.00
6,300.00	6.21	303.49	6,270.09	307.19	-464.34	-250.30	0.00	0.00	0.00
6,400.00	6.21	303.49	6,369.50	313.16	-473.37	-255.16	0.00	0.00	0.00
6,500.00	6.21	303.49	6,468.92	319.13	-482.39	-260.03	0.00	0.00	0.00
6,600.00	6.21	303.49	6,568.33	325.10	-491.42	-264.90	0.00	0.00	0.00
6,700.00	6.21	303.49	6,667.74	331.07	-500.44	-269.76	0.00	0.00	0.00
6,800.00	6.21	303.49	6,767.15	337.04	-509.47	-274.63	0.00	0.00	0.00
6,828.03	6.21	303.49	6,795.02	338.72	-512.00	-275.99	0.00	0.00	0.00
Start Drop -2.00									
6,900.00	4.77	303.49	6,866.66	342.52	-517.74	-279.09	2.00	-2.00	0.00
7,000.00	2.77	303.49	6,966.44	346.15	-523.23	-282.04	2.00	-2.00	0.00
7,100.00	0.77	303.49	7,066.38	347.86	-525.81	-283.44	2.00	-2.00	0.00
7,138.66	0.00	0.00	7,105.04	348.00	-526.03	-283.55	2.00	-2.00	0.00
Start Build 10.00									
7,150.00	1.13	180.00	7,116.38	347.89	-526.03	-283.44	10.00	10.00	0.00
7,200.00	6.13	180.00	7,166.26	344.72	-526.03	-280.29	10.00	10.00	0.00
7,250.00	11.13	180.00	7,215.68	337.22	-526.03	-272.84	10.00	10.00	0.00
7,300.00	16.13	180.00	7,264.26	325.43	-526.03	-261.14	10.00	10.00	0.00
7,350.00	21.13	180.00	7,311.62	309.46	-526.03	-245.28	10.00	10.00	0.00
7,400.00	26.13	180.00	7,357.41	289.42	-526.03	-225.38	10.00	10.00	0.00
7,450.00	31.13	180.00	7,401.28	265.47	-526.03	-201.60	10.00	10.00	0.00
7,500.00	36.13	180.00	7,442.90	237.79	-526.03	-174.11	10.00	10.00	0.00
7,550.00	41.13	180.00	7,481.95	206.58	-526.03	-143.12	10.00	10.00	0.00
7,567.59	42.89	180.00	7,495.02	194.81	-526.03	-131.43	10.00	10.00	0.00
Sharon Springs									
7,600.00	46.13	180.00	7,518.12	172.09	-526.03	-108.87	10.00	10.00	0.00
7,624.95	48.63	180.00	7,535.02	153.73	-526.03	-90.63	10.00	10.00	0.00
Niobrara A									
7,650.00	51.13	180.00	7,551.16	134.57	-526.03	-71.61	10.00	10.00	0.00
7,700.00	56.13	180.00	7,580.79	94.32	-526.03	-31.65	10.00	10.00	0.00
7,750.00	61.13	180.00	7,606.81	51.64	-526.03	10.74	10.00	10.00	0.00
7,800.00	66.13	180.00	7,629.01	6.86	-526.03	55.21	10.00	10.00	0.00
7,850.00	71.13	180.00	7,647.22	-39.69	-526.03	101.43	10.00	10.00	0.00
7,875.83	73.72	180.00	7,655.02	-64.31	-526.03	125.88	10.00	10.00	0.00
Niobrara B									

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Wellbore:	BUFFALO 34N-15HZ		
Design:	BUFFALO 34N-15HZ (wp01) Permit		

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)
7,900.00	76.13	180.00	7,661.30	-87.65	-526.03	149.06	10.00	10.00	0.00
7,950.00	81.13	180.00	7,671.15	-136.65	-526.03	197.72	10.00	10.00	0.00
8,000.00	86.13	180.00	7,676.70	-186.33	-526.03	247.05	10.00	10.00	0.00
8,038.66	90.00	180.00	7,678.00	-224.96	-526.03	285.41	10.00	10.00	0.00
Start DLS 0.00 TFO -90.11 - 7"									
8,100.00	90.00	180.00	7,678.00	-286.30	-526.03	346.32	0.00	0.00	0.00
8,200.00	90.00	180.00	7,678.00	-386.30	-526.03	445.62	0.00	0.00	0.00
8,300.00	90.00	180.00	7,678.00	-486.30	-526.03	544.93	0.00	0.00	0.00
8,400.00	90.00	180.00	7,678.00	-586.30	-526.03	644.23	0.00	0.00	0.00
8,500.00	90.00	180.00	7,678.00	-686.30	-526.02	743.53	0.00	0.00	0.00
8,600.00	90.00	180.00	7,678.00	-786.30	-526.02	842.83	0.00	0.00	0.00
8,700.00	90.00	180.00	7,678.00	-886.30	-526.02	942.14	0.00	0.00	0.00
8,800.00	90.00	180.00	7,678.00	-986.30	-526.01	1,041.44	0.00	0.00	0.00
8,900.00	90.00	180.00	7,678.00	-1,086.30	-526.01	1,140.74	0.00	0.00	0.00
9,000.00	90.00	180.00	7,678.00	-1,186.30	-526.00	1,240.04	0.00	0.00	0.00
9,100.00	90.00	180.00	7,678.00	-1,286.30	-526.00	1,339.34	0.00	0.00	0.00
9,200.00	90.00	180.00	7,678.00	-1,386.30	-525.99	1,438.64	0.00	0.00	0.00
9,300.00	90.00	180.00	7,678.00	-1,486.30	-525.98	1,537.95	0.00	0.00	0.00
9,400.00	90.00	180.00	7,678.00	-1,586.30	-525.97	1,637.25	0.00	0.00	0.00
9,500.00	90.00	179.99	7,678.00	-1,686.30	-525.97	1,736.55	0.00	0.00	0.00
9,600.00	90.00	179.99	7,678.00	-1,786.30	-525.96	1,835.85	0.00	0.00	0.00
9,700.00	90.00	179.99	7,678.00	-1,886.30	-525.95	1,935.15	0.00	0.00	0.00
9,800.00	90.00	179.99	7,678.00	-1,986.30	-525.94	2,034.45	0.00	0.00	0.00
9,900.00	90.00	179.99	7,678.00	-2,086.30	-525.93	2,133.75	0.00	0.00	0.00
10,000.00	90.00	179.99	7,678.00	-2,186.30	-525.91	2,233.06	0.00	0.00	0.00
10,100.00	90.00	179.99	7,678.00	-2,286.30	-525.90	2,332.36	0.00	0.00	0.00
10,200.00	90.00	179.99	7,678.00	-2,386.30	-525.89	2,431.66	0.00	0.00	0.00
10,300.00	90.00	179.99	7,678.00	-2,486.30	-525.88	2,530.96	0.00	0.00	0.00
10,400.00	90.00	179.99	7,678.00	-2,586.30	-525.86	2,630.26	0.00	0.00	0.00
10,500.00	90.00	179.99	7,678.00	-2,686.30	-525.85	2,729.56	0.00	0.00	0.00
10,600.00	90.00	179.99	7,678.00	-2,786.30	-525.83	2,828.86	0.00	0.00	0.00
10,700.00	90.00	179.99	7,678.00	-2,886.30	-525.82	2,928.16	0.00	0.00	0.00
10,800.00	90.00	179.99	7,678.00	-2,986.30	-525.80	3,027.46	0.00	0.00	0.00
10,900.00	90.00	179.99	7,678.00	-3,086.30	-525.78	3,126.76	0.00	0.00	0.00
11,000.00	90.00	179.99	7,678.00	-3,186.30	-525.77	3,226.06	0.00	0.00	0.00
11,100.00	90.00	179.99	7,678.00	-3,286.30	-525.75	3,325.36	0.00	0.00	0.00
11,200.00	90.00	179.99	7,678.00	-3,386.30	-525.73	3,424.66	0.00	0.00	0.00
11,300.00	90.00	179.99	7,678.00	-3,486.30	-525.71	3,523.96	0.00	0.00	0.00
11,400.00	90.00	179.99	7,678.00	-3,586.30	-525.69	3,623.26	0.00	0.00	0.00
11,500.00	90.00	179.99	7,678.00	-3,686.30	-525.67	3,722.56	0.00	0.00	0.00
11,600.00	90.00	179.99	7,678.00	-3,786.30	-525.65	3,821.86	0.00	0.00	0.00
11,700.00	90.00	179.99	7,678.00	-3,886.30	-525.63	3,921.16	0.00	0.00	0.00
11,800.00	90.00	179.99	7,678.00	-3,986.30	-525.61	4,020.46	0.00	0.00	0.00
11,900.00	90.00	179.99	7,678.00	-4,086.30	-525.58	4,119.76	0.00	0.00	0.00
12,000.00	90.00	179.99	7,678.00	-4,186.30	-525.56	4,219.06	0.00	0.00	0.00
12,100.00	90.00	179.99	7,678.00	-4,286.30	-525.54	4,318.36	0.00	0.00	0.00
12,200.00	90.00	179.99	7,678.00	-4,386.30	-525.51	4,417.66	0.00	0.00	0.00
12,239.65	90.00	179.99	7,678.00	-4,425.95	-525.50	4,457.03	0.00	0.00	0.00
TD at 12239.65 - Buffalo 34N-15HZ BHL									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BUFFALO 34N-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5141' GL @ 5158.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5141' GL @ 5158.00ft
Site:	WELD_BUFFALO & BADGER 4W-15HZ PAD	North Reference:	True
Well:	BUFFALO 34N-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BUFFALO 34N-15HZ		
Design:	BUFFALO 34N-15HZ (wp01) Permit		

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									
Buffalo 34N-15HZ BHL	0.00	0.00	7,678.00	-4,425.95	-525.50	1,259,700.62	3,140,390.61	40.045177	-104.998545
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
900.00	900.00	9 5/8"		9-5/8	12-1/4
8,038.66	7,678.00	7"		7	8-3/4

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
4,338.40	4,320.01	Parkman				
4,799.10	4,778.01	Sussex				
5,289.99	5,266.01	Shannon				
7,567.59	7,495.02	Sharon Springs				
7,624.95	7,535.02	Niobrara A				
7,875.83	7,655.02	Niobrara B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,310.63	1,310.02	9.28	-14.03	Start 5517.40 hold at 1310.63 MD	
6,828.03	6,795.02	338.72	-512.00	Start Drop -2.00	
7,138.66	7,105.04	348.00	-526.03	Start Build 10.00	
8,038.66	7,678.00	-224.96	-526.03	Start DLS 0.00 TFO -90.11	
12,239.65	7,678.00	-4,425.95	-525.50	TD at 12239.65	