

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_BUFFALO & BADGER 4W-15HZ PAD**

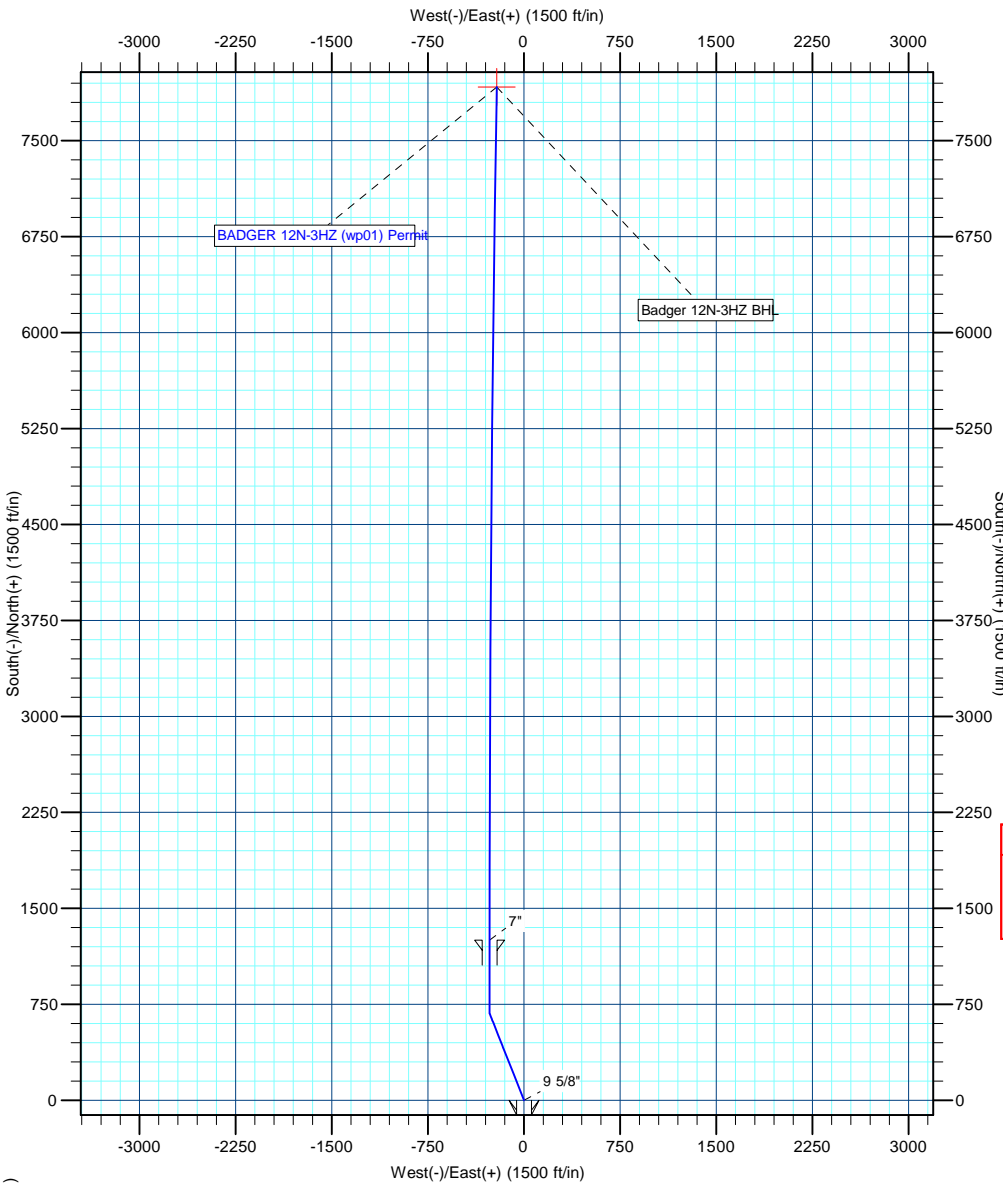
**BADGER 12N-3HZ**

**BADGER 12N-3HZ**

**Plan: BADGER 12N-3HZ (wp01) Permit**

## **Standard Planning Report**

**17 July, 2012**



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Azimuths to True North

Magnetic North: 8.81°

Magnetic Field

Strength: 52808.5snT

Dip Angle: 66.70°

Date: 7/17/2012

Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83

Site: WELD\_BUFFALO & BADGER 4W-15HZ PAD

Well: BADGER 12N-3HZ

Wellbore: BADGER 12N-3HZ

Section:

SHL:

Design: BADGER 12N-3HZ (wp01) Permit

Latitude: 40.057332

Longitude: -104.996347

GL: 5141.00

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

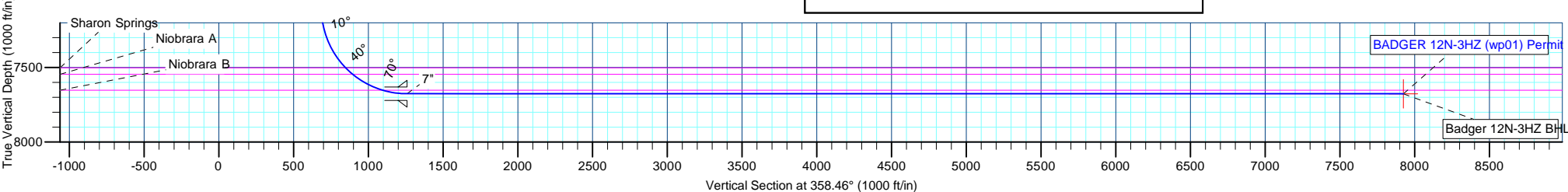
WELL DETAILS: BADGER 12N-3HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	5141.00 Latitude	Longitude	Slot
0.00	0.00	1264131.80	3140980.82	40.057332	-104.996347	

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
1362.51	7.25	338.39	1361.55	21.30	-8.44	2.00	338.39	21.52
6786.83	7.25	338.39	6742.49	657.74	-260.56	0.00	0.00	664.53
7149.34	0.00	0.00	7104.04	679.04	-269.00	2.00	180.00	686.04
8049.35	90.00	0.00	7677.00	1252.00	-269.00	10.00	0.00	1258.79
14718.15	90.00	0.95	7677.00	7920.49	-213.51	0.01	90.00	7923.37

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Badger 12N-3HZ BHL	7677.00	7920.49	-213.51	40.079075	-104.997110	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4320.00	4344.81	Parkman
4766.00	4794.41	Sussex
5236.00	5268.20	Shannon
7503.00	7590.67	Sharon Springs
7546.00	7654.11	Niobrara A
7653.00	7882.93	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7677.00	8049.35	7"	7



# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well BADGER 12N-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Site:</b>	WELD_BUFFALO & BADGER 4W-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BADGER 12N-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BADGER 12N-3HZ		
<b>Design:</b>	BADGER 12N-3HZ (wp01) Permit		

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

<b>Well</b>	BADGER 12N-3HZ			
<b>Well Position</b>	<b>+N/-S</b>	1.81 ft	<b>Northing:</b>	1,264,131.80 usft
	<b>+E/-W</b>	89.85 ft	<b>Easting:</b>	3,140,980.82 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 40.057332
				<b>Longitude:</b> -104.996347
				<b>Ground Level:</b> 5,141.00 ft

<b>Wellbore</b>	BADGER 12N-3HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/17/2012	8.81	66.70	52,808

<b>Design</b>	BADGER 12N-3HZ (wp01) Permit			
<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	358.46

<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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,362.51	7.25	338.39	1,361.55	21.30	-8.44	2.00	2.00	0.00	338.39	
6,786.83	7.25	338.39	6,742.49	657.74	-260.56	0.00	0.00	0.00	0.00	
7,149.34	0.00	0.00	7,104.04	679.04	-269.00	2.00	-2.00	0.00	180.00	
8,049.35	90.00	0.00	7,677.00	1,252.00	-269.00	10.00	10.00	0.00	0.00	
14,718.15	90.00	0.95	7,677.00	7,920.49	-213.51	0.01	0.00	0.01	90.00	Badger 12N-3HZ BHL

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well BADGER 12N-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Site:</b>	WELD_BUFFALO & BADGER 4W-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BADGER 12N-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BADGER 12N-3HZ		
<b>Design:</b>	BADGER 12N-3HZ (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	338.39	1,099.98	1.62	-0.64	1.64	2.00	2.00	0.00
1,200.00	4.00	338.39	1,199.84	6.49	-2.57	6.55	2.00	2.00	0.00
1,300.00	6.00	338.39	1,299.45	14.59	-5.78	14.74	2.00	2.00	0.00
1,362.51	7.25	338.39	1,361.55	21.30	-8.44	21.52	2.00	2.00	0.00
Start 5424.32 hold at 1362.51 MD									
1,400.00	7.25	338.39	1,398.73	25.69	-10.18	25.96	0.00	0.00	0.00
1,500.00	7.25	338.39	1,497.93	37.43	-14.83	37.81	0.00	0.00	0.00
1,600.00	7.25	338.39	1,597.13	49.16	-19.47	49.67	0.00	0.00	0.00
1,700.00	7.25	338.39	1,696.33	60.89	-24.12	61.52	0.00	0.00	0.00
1,800.00	7.25	338.39	1,795.54	72.63	-28.77	73.38	0.00	0.00	0.00
1,900.00	7.25	338.39	1,894.74	84.36	-33.42	85.23	0.00	0.00	0.00
2,000.00	7.25	338.39	1,993.94	96.09	-38.07	97.08	0.00	0.00	0.00
2,100.00	7.25	338.39	2,093.14	107.83	-42.72	108.94	0.00	0.00	0.00
2,200.00	7.25	338.39	2,192.34	119.56	-47.36	120.79	0.00	0.00	0.00
2,300.00	7.25	338.39	2,291.54	131.29	-52.01	132.65	0.00	0.00	0.00
2,400.00	7.25	338.39	2,390.74	143.03	-56.66	144.50	0.00	0.00	0.00
2,500.00	7.25	338.39	2,489.94	154.76	-61.31	156.36	0.00	0.00	0.00
2,600.00	7.25	338.39	2,589.14	166.49	-65.96	168.21	0.00	0.00	0.00
2,700.00	7.25	338.39	2,688.34	178.23	-70.60	180.06	0.00	0.00	0.00
2,800.00	7.25	338.39	2,787.54	189.96	-75.25	191.92	0.00	0.00	0.00
2,900.00	7.25	338.39	2,886.74	201.69	-79.90	203.77	0.00	0.00	0.00
3,000.00	7.25	338.39	2,985.94	213.43	-84.55	215.63	0.00	0.00	0.00
3,100.00	7.25	338.39	3,085.14	225.16	-89.20	227.48	0.00	0.00	0.00
3,200.00	7.25	338.39	3,184.34	236.89	-93.84	239.34	0.00	0.00	0.00
3,300.00	7.25	338.39	3,283.54	248.63	-98.49	251.19	0.00	0.00	0.00
3,400.00	7.25	338.39	3,382.74	260.36	-103.14	263.04	0.00	0.00	0.00
3,500.00	7.25	338.39	3,481.94	272.09	-107.79	274.90	0.00	0.00	0.00
3,600.00	7.25	338.39	3,581.14	283.83	-112.44	286.75	0.00	0.00	0.00
3,700.00	7.25	338.39	3,680.34	295.56	-117.08	298.61	0.00	0.00	0.00
3,800.00	7.25	338.39	3,779.54	307.29	-121.73	310.46	0.00	0.00	0.00
3,900.00	7.25	338.39	3,878.74	319.03	-126.38	322.32	0.00	0.00	0.00
4,000.00	7.25	338.39	3,977.94	330.76	-131.03	334.17	0.00	0.00	0.00
4,100.00	7.25	338.39	4,077.15	342.49	-135.68	346.02	0.00	0.00	0.00
4,200.00	7.25	338.39	4,176.35	354.23	-140.33	357.88	0.00	0.00	0.00
4,300.00	7.25	338.39	4,275.55	365.96	-144.97	369.73	0.00	0.00	0.00
4,344.81	7.25	338.39	4,320.00	371.22	-147.06	375.04	0.00	0.00	0.00
Parkman									
4,400.00	7.25	338.39	4,374.75	377.69	-149.62	381.59	0.00	0.00	0.00
4,500.00	7.25	338.39	4,473.95	389.42	-154.27	393.44	0.00	0.00	0.00
4,600.00	7.25	338.39	4,573.15	401.16	-158.92	405.29	0.00	0.00	0.00
4,700.00	7.25	338.39	4,672.35	412.89	-163.57	417.15	0.00	0.00	0.00

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## Planning Report

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Site:</b>	WELD_BUFFALO & BADGER 4W-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BADGER 12N-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BADGER 12N-3HZ		
<b>Design:</b>	BADGER 12N-3HZ (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)
4,794.41	7.25	338.39	4,766.00	423.97	-167.95	428.34	0.00	0.00	0.00
<b>Sussex</b>									
4,800.00	7.25	338.39	4,771.55	424.62	-168.21	429.00	0.00	0.00	0.00
4,900.00	7.25	338.39	4,870.75	436.36	-172.86	440.86	0.00	0.00	0.00
5,000.00	7.25	338.39	4,969.95	448.09	-177.51	452.71	0.00	0.00	0.00
5,100.00	7.25	338.39	5,069.15	459.82	-182.16	464.57	0.00	0.00	0.00
5,200.00	7.25	338.39	5,168.35	471.56	-186.81	476.42	0.00	0.00	0.00
5,268.20	7.25	338.39	5,236.00	479.56	-189.98	484.50	0.00	0.00	0.00
<b>Shannon</b>									
5,300.00	7.25	338.39	5,267.55	483.29	-191.45	488.27	0.00	0.00	0.00
5,400.00	7.25	338.39	5,366.75	495.02	-196.10	500.13	0.00	0.00	0.00
5,500.00	7.25	338.39	5,465.95	506.76	-200.75	511.98	0.00	0.00	0.00
5,600.00	7.25	338.39	5,565.15	518.49	-205.40	523.84	0.00	0.00	0.00
5,700.00	7.25	338.39	5,664.35	530.22	-210.05	535.69	0.00	0.00	0.00
5,800.00	7.25	338.39	5,763.55	541.96	-214.69	547.55	0.00	0.00	0.00
5,900.00	7.25	338.39	5,862.75	553.69	-219.34	559.40	0.00	0.00	0.00
6,000.00	7.25	338.39	5,961.95	565.42	-223.99	571.25	0.00	0.00	0.00
6,100.00	7.25	338.39	6,061.15	577.16	-228.64	583.11	0.00	0.00	0.00
6,200.00	7.25	338.39	6,160.35	588.89	-233.29	594.96	0.00	0.00	0.00
6,300.00	7.25	338.39	6,259.55	600.62	-237.94	606.82	0.00	0.00	0.00
6,400.00	7.25	338.39	6,358.76	612.36	-242.58	618.67	0.00	0.00	0.00
6,500.00	7.25	338.39	6,457.96	624.09	-247.23	630.53	0.00	0.00	0.00
6,600.00	7.25	338.39	6,557.16	635.82	-251.88	642.38	0.00	0.00	0.00
6,700.00	7.25	338.39	6,656.36	647.56	-256.53	654.23	0.00	0.00	0.00
6,786.83	7.25	338.39	6,742.49	657.74	-260.56	664.53	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,800.00	6.99	338.39	6,755.56	659.26	-261.16	666.06	2.00	-2.00	0.00
6,900.00	4.99	338.39	6,855.01	668.96	-265.01	675.86	2.00	-2.00	0.00
7,000.00	2.99	338.39	6,954.76	675.42	-267.57	682.39	2.00	-2.00	0.00
7,100.00	0.99	338.39	7,054.70	678.64	-268.84	685.64	2.00	-2.00	0.00
7,149.34	0.00	0.00	7,104.04	679.04	-269.00	686.04	2.00	-2.00	0.00
<b>Start Build 10.00</b>									
7,200.00	5.07	0.00	7,154.63	681.28	-269.00	688.28	10.00	10.00	0.00
7,250.00	10.07	0.00	7,204.18	687.86	-269.00	694.86	10.00	10.00	0.00
7,300.00	15.07	0.00	7,252.97	698.73	-269.00	705.73	10.00	10.00	0.00
7,350.00	20.07	0.00	7,300.62	713.82	-269.00	720.81	10.00	10.00	0.00
7,400.00	25.07	0.00	7,346.78	733.00	-269.00	739.98	10.00	10.00	0.00
7,450.00	30.07	0.00	7,391.09	756.13	-269.00	763.10	10.00	10.00	0.00
7,500.00	35.07	0.00	7,433.21	783.03	-269.00	790.00	10.00	10.00	0.00
7,550.00	40.07	0.00	7,472.83	813.51	-269.00	820.46	10.00	10.00	0.00
7,590.67	44.13	0.00	7,503.00	840.77	-269.00	847.71	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,600.00	45.07	0.00	7,509.65	847.32	-269.00	854.26	10.00	10.00	0.00
7,650.00	50.07	0.00	7,543.37	884.21	-269.00	891.14	10.00	10.00	0.00
7,654.11	50.48	0.00	7,546.00	887.37	-269.00	894.30	10.00	10.00	0.00
<b>Niobrara A</b>									
7,700.00	55.07	0.00	7,573.76	923.90	-269.00	930.81	10.00	10.00	0.00
7,750.00	60.07	0.00	7,600.56	966.09	-269.00	972.98	10.00	10.00	0.00
7,800.00	65.07	0.00	7,623.59	1,010.45	-269.00	1,017.33	10.00	10.00	0.00
7,850.00	70.07	0.00	7,642.67	1,056.65	-269.00	1,063.52	10.00	10.00	0.00
7,882.93	73.36	0.00	7,653.00	1,087.91	-269.00	1,094.76	10.00	10.00	0.00
<b>Niobrara B</b>									
7,900.00	75.07	0.00	7,657.64	1,104.34	-269.00	1,111.19	10.00	10.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well BADGER 12N-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Site:</b>	WELD_BUFFALO & BADGER 4W-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BADGER 12N-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BADGER 12N-3HZ		
<b>Design:</b>	BADGER 12N-3HZ (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)	
7,950.00	80.07	0.00	7,668.41	1,153.15	-269.00	1,159.98	10.00	10.00	0.00	
8,000.00	85.07	0.00	7,674.88	1,202.71	-269.00	1,209.53	10.00	10.00	0.00	
8,049.35	90.00	0.00	7,677.00	1,252.00	-269.00	1,258.80	10.00	10.00	0.00	
Start DLS 0.01 TFO 90.00 - 7"										
8,100.00	90.00	0.01	7,677.00	1,302.65	-269.00	1,309.43	0.01	0.00	0.01	
8,200.00	90.00	0.02	7,677.00	1,402.65	-268.97	1,409.39	0.01	0.00	0.01	
8,300.00	90.00	0.04	7,677.00	1,502.65	-268.92	1,509.35	0.01	0.00	0.01	
8,400.00	90.00	0.05	7,677.00	1,602.65	-268.85	1,609.32	0.01	0.00	0.01	
8,500.00	90.00	0.06	7,677.00	1,702.65	-268.75	1,709.28	0.01	0.00	0.01	
8,600.00	90.00	0.08	7,677.00	1,802.65	-268.62	1,809.24	0.01	0.00	0.01	
8,700.00	90.00	0.09	7,677.00	1,902.65	-268.47	1,909.20	0.01	0.00	0.01	
8,800.00	90.00	0.11	7,677.00	2,002.65	-268.30	2,009.15	0.01	0.00	0.01	
8,900.00	90.00	0.12	7,677.00	2,102.65	-268.10	2,109.11	0.01	0.00	0.01	
9,000.00	90.00	0.14	7,677.00	2,202.65	-267.87	2,209.07	0.01	0.00	0.01	
9,100.00	90.00	0.15	7,677.00	2,302.65	-267.62	2,309.03	0.01	0.00	0.01	
9,200.00	90.00	0.16	7,677.00	2,402.65	-267.35	2,408.98	0.01	0.00	0.01	
9,300.00	90.00	0.18	7,677.00	2,502.65	-267.05	2,508.94	0.01	0.00	0.01	
9,400.00	90.00	0.19	7,677.00	2,602.65	-266.72	2,608.89	0.01	0.00	0.01	
9,500.00	90.00	0.21	7,677.00	2,702.65	-266.37	2,708.85	0.01	0.00	0.01	
9,600.00	90.00	0.22	7,677.00	2,802.65	-266.00	2,808.80	0.01	0.00	0.01	
9,700.00	90.00	0.24	7,677.00	2,902.65	-265.60	2,908.75	0.01	0.00	0.01	
9,800.00	90.00	0.25	7,677.00	3,002.65	-265.18	3,008.70	0.01	0.00	0.01	
9,900.00	90.00	0.26	7,677.00	3,102.65	-264.73	3,108.65	0.01	0.00	0.01	
10,000.00	90.00	0.28	7,677.00	3,202.65	-264.25	3,208.60	0.01	0.00	0.01	
10,100.00	90.00	0.29	7,677.00	3,302.64	-263.75	3,308.55	0.01	0.00	0.01	
10,200.00	90.00	0.31	7,677.00	3,402.64	-263.23	3,408.50	0.01	0.00	0.01	
10,300.00	90.00	0.32	7,677.00	3,502.64	-262.68	3,508.45	0.01	0.00	0.01	
10,400.00	90.00	0.34	7,677.00	3,602.64	-262.11	3,608.39	0.01	0.00	0.01	
10,500.00	90.00	0.35	7,677.00	3,702.64	-261.51	3,708.34	0.01	0.00	0.01	
10,600.00	90.00	0.36	7,677.00	3,802.64	-260.88	3,808.28	0.01	0.00	0.01	
10,700.00	90.00	0.38	7,677.00	3,902.63	-260.23	3,908.23	0.01	0.00	0.01	
10,800.00	90.00	0.39	7,677.00	4,002.63	-259.56	4,008.17	0.01	0.00	0.01	
10,900.00	90.00	0.41	7,677.00	4,102.63	-258.86	4,108.11	0.01	0.00	0.01	
11,000.00	90.00	0.42	7,677.00	4,202.63	-258.14	4,208.06	0.01	0.00	0.01	
11,100.00	90.00	0.44	7,677.00	4,302.62	-257.39	4,308.00	0.01	0.00	0.01	
11,200.00	90.00	0.45	7,677.00	4,402.62	-256.61	4,407.94	0.01	0.00	0.01	
11,300.00	90.00	0.46	7,677.00	4,502.62	-255.82	4,507.88	0.01	0.00	0.01	
11,400.00	90.00	0.48	7,677.00	4,602.61	-254.99	4,607.81	0.01	0.00	0.01	
11,500.00	90.00	0.49	7,677.00	4,702.61	-254.14	4,707.75	0.01	0.00	0.01	
11,600.00	90.00	0.51	7,677.00	4,802.61	-253.27	4,807.69	0.01	0.00	0.01	
11,700.00	90.00	0.52	7,677.00	4,902.60	-252.37	4,907.62	0.01	0.00	0.01	
11,800.00	90.00	0.54	7,677.00	5,002.60	-251.45	5,007.56	0.01	0.00	0.01	
11,900.00	90.00	0.55	7,677.00	5,102.59	-250.50	5,107.49	0.01	0.00	0.01	
12,000.00	90.00	0.56	7,677.00	5,202.59	-249.53	5,207.42	0.01	0.00	0.01	
12,100.00	90.00	0.58	7,677.00	5,302.58	-248.53	5,307.36	0.01	0.00	0.01	
12,200.00	90.00	0.59	7,677.00	5,402.58	-247.50	5,407.29	0.01	0.00	0.01	
12,300.00	90.00	0.61	7,677.00	5,502.57	-246.46	5,507.22	0.01	0.00	0.01	
12,400.00	90.00	0.62	7,677.00	5,602.57	-245.38	5,607.15	0.01	0.00	0.01	
12,500.00	90.00	0.64	7,677.00	5,702.56	-244.28	5,707.07	0.01	0.00	0.01	
12,600.00	90.00	0.65	7,677.00	5,802.56	-243.16	5,807.00	0.01	0.00	0.01	
12,700.00	90.00	0.66	7,677.00	5,902.55	-242.01	5,906.93	0.01	0.00	0.01	
12,800.00	90.00	0.68	7,677.00	6,002.54	-240.84	6,006.85	0.01	0.00	0.01	
12,900.00	90.00	0.69	7,677.00	6,102.53	-239.64	6,106.78	0.01	0.00	0.01	
13,000.00	90.00	0.71	7,677.00	6,202.53	-238.42	6,206.70	0.01	0.00	0.01	

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well BADGER 12N-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Site:</b>	WELD_BUFFALO & BADGER 4W-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BADGER 12N-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BADGER 12N-3HZ		
<b>Design:</b>	BADGER 12N-3HZ (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)	
13,100.00	90.00	0.72	7,677.00	6,302.52	-237.17	6,306.62	0.01	0.00	0.01	
13,200.00	90.00	0.74	7,677.00	6,402.51	-235.90	6,406.54	0.01	0.00	0.01	
13,300.00	90.00	0.75	7,677.00	6,502.50	-234.60	6,506.46	0.01	0.00	0.01	
13,400.00	90.00	0.77	7,677.00	6,602.49	-233.28	6,606.38	0.01	0.00	0.01	
13,500.00	90.00	0.78	7,677.00	6,702.48	-231.93	6,706.30	0.01	0.00	0.01	
13,600.00	90.00	0.79	7,677.00	6,802.48	-230.56	6,806.22	0.01	0.00	0.01	
13,700.00	90.00	0.81	7,677.00	6,902.47	-229.16	6,906.13	0.01	0.00	0.01	
13,800.00	90.00	0.82	7,677.00	7,002.46	-227.74	7,006.05	0.01	0.00	0.01	
13,900.00	90.00	0.84	7,677.00	7,102.45	-226.29	7,105.96	0.01	0.00	0.01	
14,000.00	90.00	0.85	7,677.00	7,202.43	-224.82	7,205.88	0.01	0.00	0.01	
14,100.00	90.00	0.87	7,677.00	7,302.42	-223.32	7,305.79	0.01	0.00	0.01	
14,200.00	90.00	0.88	7,677.00	7,402.41	-221.80	7,405.70	0.01	0.00	0.01	
14,300.00	90.00	0.89	7,677.00	7,502.40	-220.25	7,505.61	0.01	0.00	0.01	
14,400.00	90.00	0.91	7,677.00	7,602.39	-218.68	7,605.52	0.01	0.00	0.01	
14,500.00	90.00	0.92	7,677.00	7,702.37	-217.08	7,705.43	0.01	0.00	0.01	
14,600.00	90.00	0.94	7,677.00	7,802.36	-215.46	7,805.33	0.01	0.00	0.01	
14,700.00	90.00	0.95	7,677.00	7,902.35	-213.81	7,905.24	0.01	0.00	0.01	
14,718.15	90.00	0.95	7,677.00	7,920.49	-213.51	7,923.37	0.01	0.00	0.01	
TD at 14718.15 - Badger 12N-3HZ 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										
Badger 12N-3HZ BHL	0.00	0.00	7,677.00	7,920.49	-213.51	1,272,050.94	3,140,722.33	40.079075	-104.997110	
- plan hits target center										
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")	
900.00	900.00	9 5/8"		9-5/8	12-1/4	
8,049.35	7,677.00	7"		7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,344.81	4,320.00	Parkman				
4,794.41	4,766.00	Sussex				
5,268.20	5,236.00	Shannon				
7,590.67	7,503.00	Sharon Springs				
7,654.11	7,546.00	Niobrara A				
7,882.93	7,653.00	Niobrara B				

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well BADGER 12N-3HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 5141' GL @ 5158.00ft
<b>Site:</b>	WELD_BUFFALO & BADGER 4W-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BADGER 12N-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BADGER 12N-3HZ		
<b>Design:</b>	BADGER 12N-3HZ (wp01) Permit		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00
1,362.51	1,361.55	21.30	-8.44	Start 5424.32 hold at 1362.51 MD
6,786.83	6,742.49	657.74	-260.56	Start Drop -2.00
7,149.34	7,104.04	679.04	-269.00	Start Build 10.00
8,049.35	7,677.00	1,252.00	-269.00	Start DLS 0.01 TFO 90.00
14,718.15	7,677.00	7,920.49	-213.51	TD at 14718.15