

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_BUFFALO & BADGER 4W-15HZ PAD

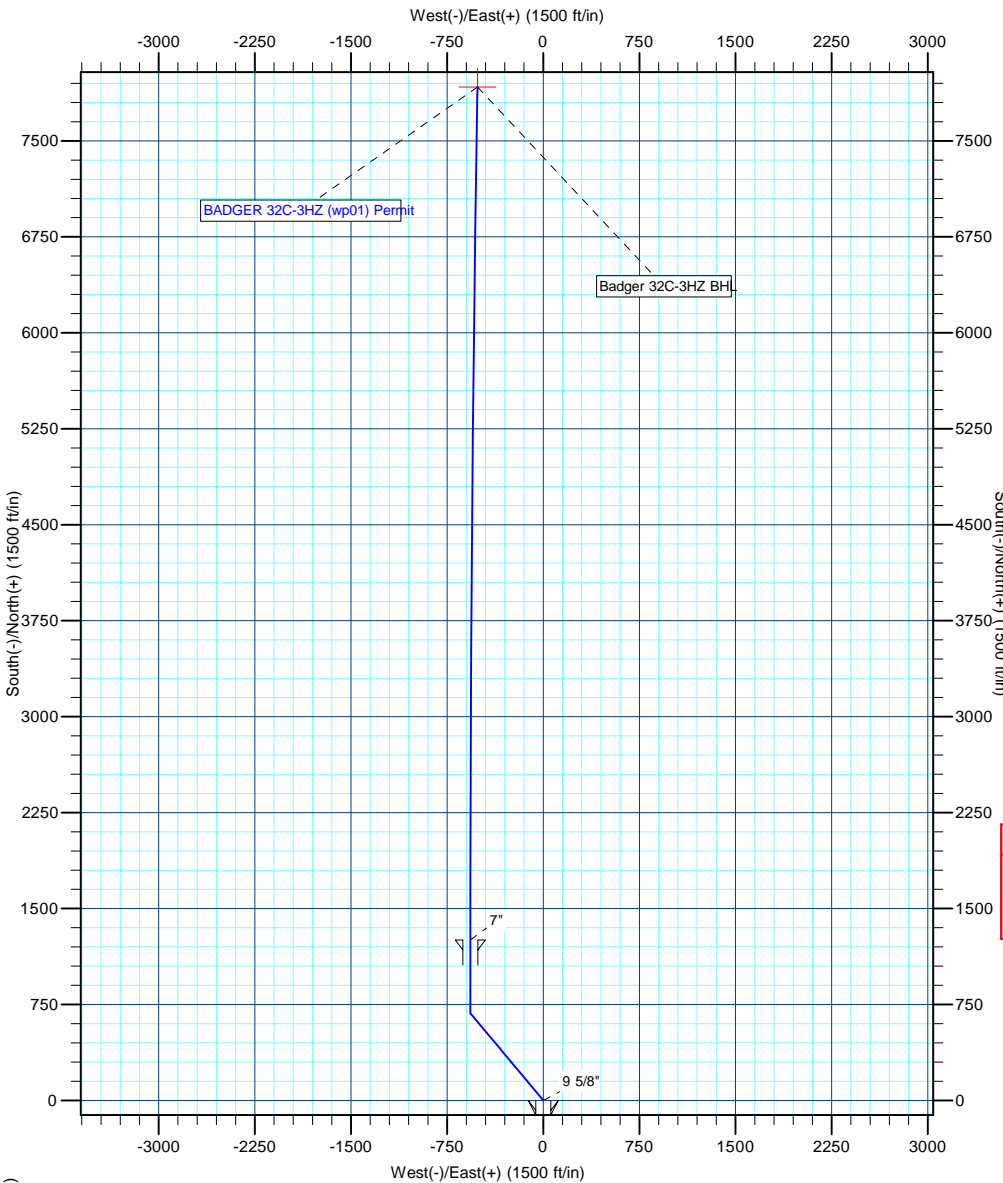
BADGER 32C-3HZ

BADGER 32C-3HZ

Plan: BADGER 32C-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 32C-3HZ

Wellbore: BADGER 32C-3HZ

Section:

SHL:

Design: BADGER 32C-3HZ (wp01) Permit

Latitude: 40.057330

Longitude: -104.996454

GL: 5141.00

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

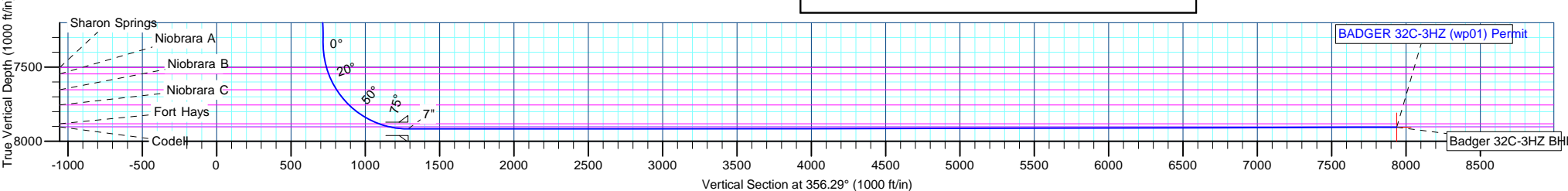
WELL DETAILS: BADGER 32C-3HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	5141.00 Latitude	Longitude	Slot
0.00	0.00	1264130.91	3140950.87	40.057330	-104.996454	

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
1426.51	8.53	320.12	1424.94	24.32	-20.32	2.00	320.12	25.58
6982.13	8.53	320.12	6919.10	656.72	-548.68	0.00	0.00	690.85
7408.65	0.00	0.00	7344.04	681.04	-569.00	2.00	180.00	716.44
8308.65	90.00	0.00	7917.00	1254.00	-569.00	10.00	0.00	1288.20
14976.56	90.21	0.95	7905.00	7921.59	-513.77	0.01	77.74	7938.23

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Badger 32C-3HZ BHL	7905.00	7921.59	-513.77	40.079076	-104.998290	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4320.00	4353.96	Parkman
4766.00	4804.95	Sussex
5236.00	5280.20	Shannon
7503.00	7569.72	Sharon Springs
7546.00	7615.04	Niobrara A
7653.00	7734.96	Niobrara B
7755.00	7866.93	Niobrara C
7882.00	8107.35	Fort Hays
7903.00	8181.73	Codell

CASING DETAILS			
TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7917.00	8308.65	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BADGER 32C-3HZ
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:	BADGER 32C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BADGER 32C-3HZ		
Design:	BADGER 32C-3HZ (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	BADGER 32C-3HZ			
Well Position	+N/-S	1.08 ft	Northing:	1,264,130.90 usft
	+E/-W	59.90 ft	Easting:	3,140,950.87 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 40.057330
				Longitude: -104.996454
				Ground Level: 5,141.00 ft

Wellbore	BADGER 32C-3HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2012	8.81	66.70	52,808

Design	BADGER 32C-3HZ (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	356.29

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	
1,426.51	8.53	320.12	1,424.94	24.32	-20.32	2.00	2.00	0.00	320.12	
6,982.13	8.53	320.12	6,919.10	656.72	-548.68	0.00	0.00	0.00	0.00	
7,408.65	0.00	0.00	7,344.04	681.04	-569.00	2.00	-2.00	0.00	180.00	
8,308.65	90.00	0.00	7,917.00	1,254.00	-569.00	10.00	10.00	0.00	0.00	
14,976.56	90.21	0.95	7,905.00	7,921.59	-513.77	0.01	0.00	0.01	77.74	Badger 32C-3HZ BHL

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:	BADGER 32C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BADGER 32C-3HZ		
Design:	BADGER 32C-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	320.12	1,099.98	1.34	-1.12	1.41	2.00	2.00	0.00
1,200.00	4.00	320.12	1,199.84	5.36	-4.47	5.63	2.00	2.00	0.00
1,300.00	6.00	320.12	1,299.45	12.04	-10.06	12.67	2.00	2.00	0.00
1,400.00	8.00	320.12	1,398.70	21.40	-17.88	22.51	2.00	2.00	0.00
1,426.51	8.53	320.12	1,424.94	24.32	-20.32	25.58	2.00	2.00	0.00
Start 5555.62 hold at 1426.51 MD									
1,500.00	8.53	320.12	1,497.61	32.69	-27.31	34.38	0.00	0.00	0.00
1,600.00	8.53	320.12	1,596.51	44.07	-36.82	46.36	0.00	0.00	0.00
1,700.00	8.53	320.12	1,695.40	55.45	-46.33	58.33	0.00	0.00	0.00
1,800.00	8.53	320.12	1,794.29	66.83	-55.84	70.31	0.00	0.00	0.00
1,900.00	8.53	320.12	1,893.19	78.22	-65.35	82.28	0.00	0.00	0.00
2,000.00	8.53	320.12	1,992.08	89.60	-74.86	94.26	0.00	0.00	0.00
2,100.00	8.53	320.12	2,090.98	100.98	-84.37	106.23	0.00	0.00	0.00
2,200.00	8.53	320.12	2,189.87	112.37	-93.88	118.21	0.00	0.00	0.00
2,300.00	8.53	320.12	2,288.76	123.75	-103.39	130.18	0.00	0.00	0.00
2,400.00	8.53	320.12	2,387.66	135.13	-112.90	142.16	0.00	0.00	0.00
2,500.00	8.53	320.12	2,486.55	146.52	-122.41	154.13	0.00	0.00	0.00
2,600.00	8.53	320.12	2,585.44	157.90	-131.92	166.11	0.00	0.00	0.00
2,700.00	8.53	320.12	2,684.34	169.28	-141.43	178.08	0.00	0.00	0.00
2,800.00	8.53	320.12	2,783.23	180.67	-150.94	190.06	0.00	0.00	0.00
2,900.00	8.53	320.12	2,882.13	192.05	-160.45	202.03	0.00	0.00	0.00
3,000.00	8.53	320.12	2,981.02	203.43	-169.96	214.00	0.00	0.00	0.00
3,100.00	8.53	320.12	3,079.91	214.81	-179.47	225.98	0.00	0.00	0.00
3,200.00	8.53	320.12	3,178.81	226.20	-188.98	237.95	0.00	0.00	0.00
3,300.00	8.53	320.12	3,277.70	237.58	-198.50	249.93	0.00	0.00	0.00
3,400.00	8.53	320.12	3,376.59	248.96	-208.01	261.90	0.00	0.00	0.00
3,500.00	8.53	320.12	3,475.49	260.35	-217.52	273.88	0.00	0.00	0.00
3,600.00	8.53	320.12	3,574.38	271.73	-227.03	285.85	0.00	0.00	0.00
3,700.00	8.53	320.12	3,673.28	283.11	-236.54	297.83	0.00	0.00	0.00
3,800.00	8.53	320.12	3,772.17	294.50	-246.05	309.80	0.00	0.00	0.00
3,900.00	8.53	320.12	3,871.06	305.88	-255.56	321.78	0.00	0.00	0.00
4,000.00	8.53	320.12	3,969.96	317.26	-265.07	333.75	0.00	0.00	0.00
4,100.00	8.53	320.12	4,068.85	328.64	-274.58	345.73	0.00	0.00	0.00
4,200.00	8.53	320.12	4,167.75	340.03	-284.09	357.70	0.00	0.00	0.00
4,300.00	8.53	320.12	4,266.64	351.41	-293.60	369.68	0.00	0.00	0.00
4,353.96	8.53	320.12	4,320.00	357.55	-298.73	376.14	0.00	0.00	0.00
Parkman									
4,400.00	8.53	320.12	4,365.53	362.79	-303.11	381.65	0.00	0.00	0.00
4,500.00	8.53	320.12	4,464.43	374.18	-312.62	393.63	0.00	0.00	0.00
4,600.00	8.53	320.12	4,563.32	385.56	-322.13	405.60	0.00	0.00	0.00
4,700.00	8.53	320.12	4,662.21	396.94	-331.64	417.58	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BADGER 32C-3HZ
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:	BADGER 32C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BADGER 32C-3HZ		
Design:	BADGER 32C-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)
4,800.00	8.53	320.12	4,761.11	408.33	-341.15	429.55	0.00	0.00	0.00
4,804.95	8.53	320.12	4,766.00	408.89	-341.62	430.14	0.00	0.00	0.00
Sussex									
4,900.00	8.53	320.12	4,860.00	419.71	-350.66	441.52	0.00	0.00	0.00
5,000.00	8.53	320.12	4,958.90	431.09	-360.17	453.50	0.00	0.00	0.00
5,100.00	8.53	320.12	5,057.79	442.48	-369.68	465.47	0.00	0.00	0.00
5,200.00	8.53	320.12	5,156.68	453.86	-379.19	477.45	0.00	0.00	0.00
5,280.20	8.53	320.12	5,236.00	462.99	-386.82	487.05	0.00	0.00	0.00
Shannon									
5,300.00	8.53	320.12	5,255.58	465.24	-388.70	489.42	0.00	0.00	0.00
5,400.00	8.53	320.12	5,354.47	476.62	-398.21	501.40	0.00	0.00	0.00
5,500.00	8.53	320.12	5,453.36	488.01	-407.72	513.37	0.00	0.00	0.00
5,600.00	8.53	320.12	5,552.26	499.39	-417.23	525.35	0.00	0.00	0.00
5,700.00	8.53	320.12	5,651.15	510.77	-426.74	537.32	0.00	0.00	0.00
5,800.00	8.53	320.12	5,750.05	522.16	-436.26	549.30	0.00	0.00	0.00
5,900.00	8.53	320.12	5,848.94	533.54	-445.77	561.27	0.00	0.00	0.00
6,000.00	8.53	320.12	5,947.83	544.92	-455.28	573.25	0.00	0.00	0.00
6,100.00	8.53	320.12	6,046.73	556.31	-464.79	585.22	0.00	0.00	0.00
6,200.00	8.53	320.12	6,145.62	567.69	-474.30	597.20	0.00	0.00	0.00
6,300.00	8.53	320.12	6,244.51	579.07	-483.81	609.17	0.00	0.00	0.00
6,400.00	8.53	320.12	6,343.41	590.46	-493.32	621.15	0.00	0.00	0.00
6,500.00	8.53	320.12	6,442.30	601.84	-502.83	633.12	0.00	0.00	0.00
6,600.00	8.53	320.12	6,541.20	613.22	-512.34	645.09	0.00	0.00	0.00
6,700.00	8.53	320.12	6,640.09	624.60	-521.85	657.07	0.00	0.00	0.00
6,800.00	8.53	320.12	6,738.98	635.99	-531.36	669.04	0.00	0.00	0.00
6,900.00	8.53	320.12	6,837.88	647.37	-540.87	681.02	0.00	0.00	0.00
6,982.13	8.53	320.12	6,919.10	656.72	-548.68	690.85	0.00	0.00	0.00
Start Drop -2.00									
7,000.00	8.17	320.12	6,936.78	658.71	-550.34	692.95	2.00	-2.00	0.00
7,100.00	6.17	320.12	7,035.99	668.29	-558.35	703.03	2.00	-2.00	0.00
7,200.00	4.17	320.12	7,135.58	675.21	-564.13	710.31	2.00	-2.00	0.00
7,300.00	2.17	320.12	7,235.42	679.46	-567.68	714.78	2.00	-2.00	0.00
7,408.65	0.00	0.00	7,344.04	681.04	-569.00	716.44	2.00	-2.00	0.00
Start Build 10.00									
7,450.00	4.14	0.00	7,385.36	682.53	-569.00	717.93	10.00	10.00	0.00
7,500.00	9.14	0.00	7,435.01	688.31	-569.00	723.69	10.00	10.00	0.00
7,550.00	14.14	0.00	7,483.96	698.39	-569.00	733.75	10.00	10.00	0.00
7,569.72	16.11	0.00	7,503.00	703.53	-569.00	738.88	10.00	10.00	0.00
Sharon Springs									
7,600.00	19.14	0.00	7,531.86	712.70	-569.00	748.03	10.00	10.00	0.00
7,615.04	20.64	0.00	7,546.00	717.81	-569.00	753.14	10.00	10.00	0.00
Niobrara A									
7,650.00	24.14	0.00	7,578.32	731.13	-569.00	766.42	10.00	10.00	0.00
7,700.00	29.14	0.00	7,623.00	753.54	-569.00	788.78	10.00	10.00	0.00
7,734.96	32.63	0.00	7,653.00	771.48	-569.00	806.69	10.00	10.00	0.00
Niobrara B									
7,750.00	34.14	0.00	7,665.56	779.75	-569.00	814.94	10.00	10.00	0.00
7,800.00	39.14	0.00	7,705.67	809.58	-569.00	844.71	10.00	10.00	0.00
7,850.00	44.14	0.00	7,743.02	842.79	-569.00	877.85	10.00	10.00	0.00
7,866.93	45.83	0.00	7,755.00	854.76	-569.00	889.79	10.00	10.00	0.00
Niobrara C									
7,900.00	49.14	0.00	7,777.34	879.13	-569.00	914.11	10.00	10.00	0.00
7,950.00	54.14	0.00	7,808.37	918.32	-569.00	953.22	10.00	10.00	0.00

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Well:	BADGER 32C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BADGER 32C-3HZ		
Design:	BADGER 32C-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)	
8,000.00	59.14	0.00	7,835.86	960.06	-569.00	994.88	10.00	10.00	0.00	
8,050.00	64.14	0.00	7,859.60	1,004.05	-569.00	1,038.77	10.00	10.00	0.00	
8,100.00	69.14	0.00	7,879.43	1,049.93	-569.00	1,084.56	10.00	10.00	0.00	
8,107.35	69.87	0.00	7,882.00	1,056.82	-569.00	1,091.43	10.00	10.00	0.00	
Fort Hays										
8,150.00	74.14	0.00	7,895.18	1,097.37	-569.00	1,131.90	10.00	10.00	0.00	
8,181.73	77.31	0.00	7,903.00	1,128.12	-569.00	1,162.58	10.00	10.00	0.00	
Codell										
8,200.00	79.14	0.00	7,906.73	1,146.00	-569.00	1,180.42	10.00	10.00	0.00	
8,250.00	84.14	0.00	7,914.00	1,195.45	-569.00	1,229.77	10.00	10.00	0.00	
8,300.00	89.14	0.00	7,916.93	1,245.35	-569.00	1,279.57	10.00	10.00	0.00	
8,308.65	90.00	0.00	7,917.00	1,254.00	-569.00	1,288.20	10.00	10.00	0.00	
Start DLS 0.01 TFO 77.74 - 7"										
8,400.00	90.00	0.01	7,917.00	1,345.35	-568.99	1,379.36	0.01	0.00	0.01	
8,500.00	90.01	0.03	7,916.99	1,445.35	-568.95	1,479.14	0.01	0.00	0.01	
8,600.00	90.01	0.04	7,916.98	1,545.35	-568.89	1,578.93	0.01	0.00	0.01	
8,700.00	90.01	0.06	7,916.96	1,645.35	-568.81	1,678.72	0.01	0.00	0.01	
8,800.00	90.02	0.07	7,916.93	1,745.35	-568.70	1,778.50	0.01	0.00	0.01	
8,900.00	90.02	0.08	7,916.90	1,845.35	-568.57	1,878.28	0.01	0.00	0.01	
9,000.00	90.02	0.10	7,916.87	1,945.35	-568.41	1,978.06	0.01	0.00	0.01	
9,100.00	90.02	0.11	7,916.83	2,045.35	-568.22	2,077.84	0.01	0.00	0.01	
9,200.00	90.03	0.13	7,916.78	2,145.35	-568.01	2,177.61	0.01	0.00	0.01	
9,300.00	90.03	0.14	7,916.73	2,245.35	-567.78	2,277.39	0.01	0.00	0.01	
9,400.00	90.03	0.16	7,916.68	2,345.35	-567.52	2,377.16	0.01	0.00	0.01	
9,500.00	90.04	0.17	7,916.62	2,445.35	-567.24	2,476.93	0.01	0.00	0.01	
9,600.00	90.04	0.18	7,916.55	2,545.35	-566.93	2,576.70	0.01	0.00	0.01	
9,700.00	90.04	0.20	7,916.48	2,645.35	-566.60	2,676.47	0.01	0.00	0.01	
9,800.00	90.05	0.21	7,916.40	2,745.35	-566.24	2,776.24	0.01	0.00	0.01	
9,900.00	90.05	0.23	7,916.32	2,845.35	-565.85	2,876.00	0.01	0.00	0.01	
10,000.00	90.05	0.24	7,916.23	2,945.35	-565.45	2,975.77	0.01	0.00	0.01	
10,100.00	90.06	0.26	7,916.13	3,045.35	-565.01	3,075.53	0.01	0.00	0.01	
10,200.00	90.06	0.27	7,916.03	3,145.34	-564.56	3,175.29	0.01	0.00	0.01	
10,300.00	90.06	0.28	7,915.93	3,245.34	-564.07	3,275.05	0.01	0.00	0.01	
10,400.00	90.06	0.30	7,915.82	3,345.34	-563.57	3,374.80	0.01	0.00	0.01	
10,500.00	90.07	0.31	7,915.70	3,445.34	-563.03	3,474.56	0.01	0.00	0.01	
10,600.00	90.07	0.33	7,915.58	3,545.34	-562.48	3,574.31	0.01	0.00	0.01	
10,700.00	90.07	0.34	7,915.46	3,645.34	-561.90	3,674.06	0.01	0.00	0.01	
10,800.00	90.08	0.35	7,915.32	3,745.33	-561.29	3,773.81	0.01	0.00	0.01	
10,900.00	90.08	0.37	7,915.19	3,845.33	-560.66	3,873.56	0.01	0.00	0.01	
11,000.00	90.08	0.38	7,915.04	3,945.33	-560.00	3,973.30	0.01	0.00	0.01	
11,100.00	90.09	0.40	7,914.90	4,045.33	-559.32	4,073.05	0.01	0.00	0.01	
11,200.00	90.09	0.41	7,914.74	4,145.33	-558.61	4,172.79	0.01	0.00	0.01	
11,300.00	90.09	0.43	7,914.58	4,245.32	-557.88	4,272.53	0.01	0.00	0.01	
11,400.00	90.10	0.44	7,914.42	4,345.32	-557.13	4,372.27	0.01	0.00	0.01	
11,500.00	90.10	0.45	7,914.25	4,445.32	-556.35	4,472.00	0.01	0.00	0.01	
11,600.00	90.10	0.47	7,914.08	4,545.31	-555.54	4,571.74	0.01	0.00	0.01	
11,700.00	90.10	0.48	7,913.90	4,645.31	-554.71	4,671.47	0.01	0.00	0.01	
11,800.00	90.11	0.50	7,913.71	4,745.31	-553.86	4,771.20	0.01	0.00	0.01	
11,900.00	90.11	0.51	7,913.52	4,845.30	-552.98	4,870.93	0.01	0.00	0.01	
12,000.00	90.11	0.53	7,913.32	4,945.30	-552.07	4,970.66	0.01	0.00	0.01	
12,100.00	90.12	0.54	7,913.12	5,045.29	-551.14	5,070.39	0.01	0.00	0.01	
12,200.00	90.12	0.55	7,912.91	5,145.29	-550.19	5,170.11	0.01	0.00	0.01	
12,300.00	90.12	0.57	7,912.70	5,245.28	-549.21	5,269.83	0.01	0.00	0.01	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BADGER 32C-3HZ
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:	BADGER 32C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BADGER 32C-3HZ		
Design:	BADGER 32C-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)
12,400.00	90.13	0.58	7,912.48	5,345.28	-548.20	5,369.55	0.01	0.00	0.01
12,500.00	90.13	0.60	7,912.26	5,445.27	-547.18	5,469.27	0.01	0.00	0.01
12,600.00	90.13	0.61	7,912.03	5,545.27	-546.12	5,568.99	0.01	0.00	0.01
12,700.00	90.14	0.63	7,911.79	5,645.26	-545.04	5,668.70	0.01	0.00	0.01
12,800.00	90.14	0.64	7,911.56	5,745.25	-543.94	5,768.41	0.01	0.00	0.01
12,900.00	90.14	0.65	7,911.31	5,845.25	-542.81	5,868.12	0.01	0.00	0.01
13,000.00	90.15	0.67	7,911.06	5,945.24	-541.66	5,967.83	0.01	0.00	0.01
13,100.00	90.15	0.68	7,910.80	6,045.23	-540.48	6,067.54	0.01	0.00	0.01
13,200.00	90.15	0.70	7,910.54	6,145.23	-539.28	6,167.24	0.01	0.00	0.01
13,300.00	90.15	0.71	7,910.28	6,245.22	-538.05	6,266.95	0.01	0.00	0.01
13,400.00	90.16	0.72	7,910.00	6,345.21	-536.80	6,366.65	0.01	0.00	0.01
13,500.00	90.16	0.74	7,909.73	6,445.20	-535.52	6,466.35	0.01	0.00	0.01
13,600.00	90.16	0.75	7,909.44	6,545.19	-534.22	6,566.04	0.01	0.00	0.01
13,700.00	90.17	0.77	7,909.15	6,645.18	-532.89	6,665.74	0.01	0.00	0.01
13,800.00	90.17	0.78	7,908.86	6,745.17	-531.54	6,765.43	0.01	0.00	0.01
13,900.00	90.17	0.80	7,908.56	6,845.16	-530.16	6,865.12	0.01	0.00	0.01
14,000.00	90.18	0.81	7,908.26	6,945.15	-528.76	6,964.81	0.01	0.00	0.01
14,100.00	90.18	0.82	7,907.95	7,045.14	-527.33	7,064.50	0.01	0.00	0.01
14,200.00	90.18	0.84	7,907.63	7,145.13	-525.88	7,164.19	0.01	0.00	0.01
14,300.00	90.19	0.85	7,907.31	7,245.12	-524.41	7,263.87	0.01	0.00	0.01
14,400.00	90.19	0.87	7,906.99	7,345.11	-522.91	7,363.55	0.01	0.00	0.01
14,500.00	90.19	0.88	7,906.65	7,445.10	-521.38	7,463.23	0.01	0.00	0.01
14,600.00	90.19	0.90	7,906.32	7,545.08	-519.83	7,562.91	0.01	0.00	0.01
14,700.00	90.20	0.91	7,905.97	7,645.07	-518.25	7,662.58	0.01	0.00	0.01
14,800.00	90.20	0.92	7,905.63	7,745.06	-516.65	7,762.26	0.01	0.00	0.01
14,900.00	90.20	0.94	7,905.27	7,845.04	-515.03	7,861.93	0.01	0.00	0.01
14,976.56	90.21	0.95	7,905.00	7,921.59	-513.77	7,938.23	0.01	0.00	0.01
TD at 14976.56 - Badger 32C-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 32C-3HZ BHL	0.00	0.00	7,905.00	7,921.59	-513.77	1,272,049.43	3,140,392.13	40.079076	-104.998290
- 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	
8,308.65	7,917.00	7"	7	8-3/4	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well BADGER 32C-3HZ
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:	BADGER 32C-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BADGER 32C-3HZ		
Design:	BADGER 32C-3HZ (wp01) Permit		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,353.96	4,320.00	Parkman				
4,804.95	4,766.00	Sussex				
5,280.20	5,236.00	Shannon				
7,569.72	7,503.00	Sharon Springs				
7,615.04	7,546.00	Niobrara A				
7,734.96	7,653.00	Niobrara B				
7,866.93	7,755.00	Niobrara C				
8,107.35	7,882.00	Fort Hays				
8,181.73	7,903.00	Codell				

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
1,426.51	1,424.94	24.32	-20.32	Start 5555.62 hold at 1426.51 MD
6,982.13	6,919.10	656.72	-548.68	Start Drop -2.00
7,408.65	7,344.04	681.04	-569.00	Start Build 10.00
8,308.65	7,917.00	1,254.00	-569.00	Start DLS 0.01 TFO 77.74
14,976.56	7,905.00	7,921.59	-513.77	TD at 14976.56