

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_HEDGE 1-27 PAD

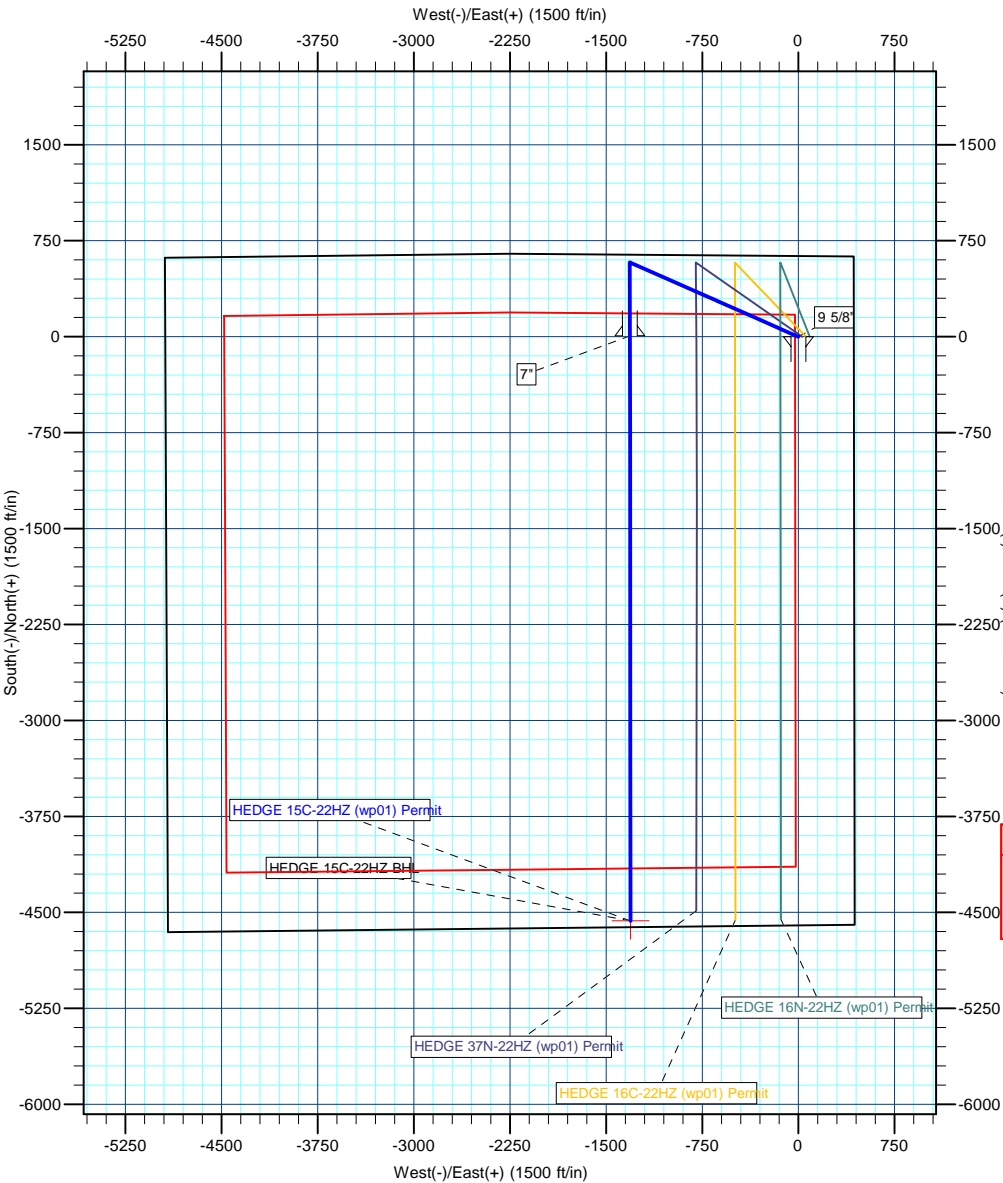
HEDGE 15C-22HZ

HEDGE 15C-22HZ

Plan: HEDGE 15C-22HZ (wp01) Permit

Standard Planning Report

20 September, 2012



Azimuths to True North
 Magnetic North: 8.67°

Magnetic Field
 Strength: 52901.9snT
 Dip Angle: 66.86°
 Date: 9/19/2012
 Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_HEDGE 1-27 PAD
 Well: HEDGE 15C-22HZ
 Wellbore: HEDGE 15C-22HZ
 Section:
 SHL:
 Design: HEDGE 15C-22HZ (wp01) Permit
 Latitude: 40.216082
 Longitude: -104.755355
 GL: 4905.00
 KB: 16' RKB + 4905' GL @ 4921.00ft



WELL DETAILS: HEDGE 15C-22HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4905.00 Latitude	40.216082 Longitude	Slot
0.00	0.00	1322433.98	3207951.53			

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
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00
1944.83	16.90	293.84	1932.64	49.99	-113.12	2.00	293.84	-16.88
6038.93	16.90	293.84	5850.00	531.00	-1201.50	0.00	0.00	-179.27
6883.77	0.00	0.00	6682.64	580.99	-1314.62	2.00	180.00	-196.14
6987.17	0.00	0.00	6786.04	580.99	-1314.62	0.00	0.00	-196.14
7888.17	90.10	179.94	7359.00	7.03	-1314.02	10.00	179.94	355.42
7892.75	90.10	179.94	7358.99	2.45	-1314.01	0.06	84.84	359.82
12461.09	90.10	179.94	7351.00	-4565.88	-1309.44	0.00	0.00	4749.94

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

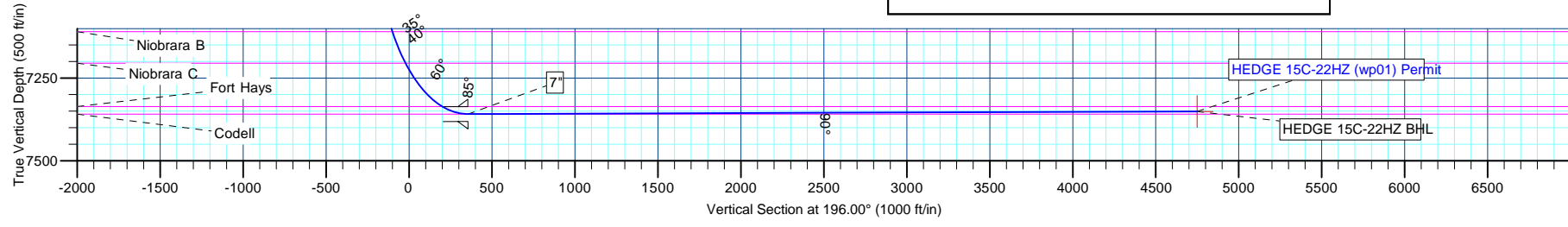
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
HEDGE 15C-22HZ BHL	7351.00	-4565.88	-1309.44	40.203548	-104.760043	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
691.00	691.00	Fox Hills
3933.00	4035.44	Parkman
4456.00	4582.04	Sussex
7008.00	7215.09	Sharon Springs
7068.00	7281.96	Niobrara A
7110.00	7331.48	Niobrara B
7205.00	7457.05	Niobrara C
7336.00	7724.27	Fort Hays
7359.00	7885.84	Codell

CASING DETAILS

TVD	MD	Name	Size
937.00	937.00	9 5/8"	9-5/8
7359.00	7888.17	7"	7



Andarko Petroleum Corporation

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well HEDGE 15C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	16' RKB + 4905' GL @ 4921.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	16' RKB + 4905' GL @ 4921.00ft
Site:	WELD_HEDGE 1-27 PAD	North Reference:	True
Well:	HEDGE 15C-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HEDGE 15C-22HZ		
Design:	HEDGE 15C-22HZ (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_HEDGE 1-27 PAD					
Site Position:		Northing:	1,322,434.03 usft	Latitude:	40.216080
From:	Lat/Long	Easting:	3,208,041.18 usft	Longitude:	-104.755034
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.48 °

Well HEDGE 15C-22HZ						
Well Position	+N/-S	0.70 ft	Northing:	1,322,433.98 usft	Latitude:	40.216082
	+E/-W	-89.64 ft	Easting:	3,207,951.53 usft	Longitude:	-104.755355
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,905.00 ft

Wellbore HEDGE 15C-22HZ					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/19/2012	8.67	66.86	52,902

Design HEDGE 15C-22HZ (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	196.00

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	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,944.84	16.90	293.84	1,932.64	49.99	-113.12	2.00	2.00	-7.83	293.84	
6,038.93	16.90	293.84	5,850.00	531.00	-1,201.50	0.00	0.00	0.00	0.00	
6,883.77	0.00	0.00	6,682.64	580.99	-1,314.62	2.00	-2.00	0.00	180.00	
6,987.17	0.00	0.00	6,786.04	580.99	-1,314.62	0.00	0.00	0.00	0.00	
7,888.17	90.10	179.94	7,359.00	7.03	-1,314.02	10.00	10.00	0.00	179.94	
7,892.75	90.10	179.94	7,358.99	2.45	-1,314.01	0.06	0.01	0.06	84.84	
12,461.09	90.10	179.94	7,351.00	-4,565.88	-1,309.44	0.00	0.00	0.00	0.00	HEDGE 15C-22HZ BI

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Well:	HEDGE 15C-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HEDGE 15C-22HZ		
Design:	HEDGE 15C-22HZ (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	
691.00	0.00	0.00	691.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fox Hills										
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	
937.00	0.00	0.00	937.00	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	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
Start DLS 2.00 TFO 293.84										
1,200.00	2.00	293.84	1,199.98	0.71	-1.60	-0.24	2.00	2.00	0.00	
1,300.00	4.00	293.84	1,299.84	2.82	-6.38	-0.95	2.00	2.00	0.00	
1,400.00	6.00	293.84	1,399.45	6.34	-14.35	-2.14	2.00	2.00	0.00	
1,500.00	8.00	293.84	1,498.70	11.27	-25.50	-3.80	2.00	2.00	0.00	
1,600.00	10.00	293.84	1,597.47	17.59	-39.81	-5.94	2.00	2.00	0.00	
1,700.00	12.00	293.84	1,695.62	25.31	-57.26	-8.54	2.00	2.00	0.00	
1,800.00	14.00	293.84	1,793.06	34.40	-77.83	-11.61	2.00	2.00	0.00	
1,900.00	16.00	293.84	1,889.64	44.86	-101.51	-15.14	2.00	2.00	0.00	
1,944.84	16.90	293.84	1,932.64	49.99	-113.12	-16.88	2.00	2.00	0.00	
Start 4094.10 hold at 1944.83 MD										
2,000.00	16.90	293.84	1,985.43	56.47	-127.78	-19.07	0.00	0.00	0.00	
2,100.00	16.90	293.84	2,081.11	68.22	-154.37	-23.03	0.00	0.00	0.00	
2,200.00	16.90	293.84	2,176.79	79.97	-180.95	-27.00	0.00	0.00	0.00	
2,300.00	16.90	293.84	2,272.48	91.72	-207.54	-30.96	0.00	0.00	0.00	
2,400.00	16.90	293.84	2,368.16	103.47	-234.12	-34.93	0.00	0.00	0.00	
2,500.00	16.90	293.84	2,463.84	115.22	-260.70	-38.90	0.00	0.00	0.00	
2,600.00	16.90	293.84	2,559.52	126.97	-287.29	-42.86	0.00	0.00	0.00	
2,700.00	16.90	293.84	2,655.21	138.71	-313.87	-46.83	0.00	0.00	0.00	
2,800.00	16.90	293.84	2,750.89	150.46	-340.46	-50.80	0.00	0.00	0.00	
2,900.00	16.90	293.84	2,846.57	162.21	-367.04	-54.76	0.00	0.00	0.00	
3,000.00	16.90	293.84	2,942.26	173.96	-393.62	-58.73	0.00	0.00	0.00	
3,100.00	16.90	293.84	3,037.94	185.71	-420.21	-62.70	0.00	0.00	0.00	
3,200.00	16.90	293.84	3,133.62	197.46	-446.79	-66.66	0.00	0.00	0.00	
3,300.00	16.90	293.84	3,229.31	209.21	-473.38	-70.63	0.00	0.00	0.00	
3,400.00	16.90	293.84	3,324.99	220.96	-499.96	-74.59	0.00	0.00	0.00	
3,500.00	16.90	293.84	3,420.67	232.71	-526.55	-78.56	0.00	0.00	0.00	
3,600.00	16.90	293.84	3,516.36	244.45	-553.13	-82.53	0.00	0.00	0.00	
3,700.00	16.90	293.84	3,612.04	256.20	-579.71	-86.49	0.00	0.00	0.00	
3,800.00	16.90	293.84	3,707.72	267.95	-606.30	-90.46	0.00	0.00	0.00	
3,900.00	16.90	293.84	3,803.40	279.70	-632.88	-94.43	0.00	0.00	0.00	
4,000.00	16.90	293.84	3,899.09	291.45	-659.47	-98.39	0.00	0.00	0.00	
4,035.44	16.90	293.84	3,933.00	295.61	-668.89	-99.80	0.00	0.00	0.00	
Parkman										
4,100.00	16.90	293.84	3,994.77	303.20	-686.05	-102.36	0.00	0.00	0.00	
4,200.00	16.90	293.84	4,090.45	314.95	-712.63	-106.33	0.00	0.00	0.00	
4,300.00	16.90	293.84	4,186.14	326.70	-739.22	-110.29	0.00	0.00	0.00	
4,400.00	16.90	293.84	4,281.82	338.44	-765.80	-114.26	0.00	0.00	0.00	

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Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	16' RKB + 4905' GL @ 4921.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	16' RKB + 4905' GL @ 4921.00ft
Site:	WELD_HEDGE 1-27 PAD	North Reference:	True
Well:	HEDGE 15C-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HEDGE 15C-22HZ		
Design:	HEDGE 15C-22HZ (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)
4,500.00	16.90	293.84	4,377.50	350.19	-792.39	-118.23	0.00	0.00	0.00
4,582.04	16.90	293.84	4,456.00	359.83	-814.20	-121.48	0.00	0.00	0.00
Sussex									
4,600.00	16.90	293.84	4,473.19	361.94	-818.97	-122.19	0.00	0.00	0.00
4,700.00	16.90	293.84	4,568.87	373.69	-845.56	-126.16	0.00	0.00	0.00
4,800.00	16.90	293.84	4,664.55	385.44	-872.14	-130.12	0.00	0.00	0.00
4,900.00	16.90	293.84	4,760.23	397.19	-898.72	-134.09	0.00	0.00	0.00
5,000.00	16.90	293.84	4,855.92	408.94	-925.31	-138.06	0.00	0.00	0.00
5,100.00	16.90	293.84	4,951.60	420.69	-951.89	-142.02	0.00	0.00	0.00
5,200.00	16.90	293.84	5,047.28	432.44	-978.48	-145.99	0.00	0.00	0.00
5,300.00	16.90	293.84	5,142.97	444.18	-1,005.06	-149.96	0.00	0.00	0.00
5,400.00	16.90	293.84	5,238.65	455.93	-1,031.64	-153.92	0.00	0.00	0.00
5,500.00	16.90	293.84	5,334.33	467.68	-1,058.23	-157.89	0.00	0.00	0.00
5,600.00	16.90	293.84	5,430.02	479.43	-1,084.81	-161.86	0.00	0.00	0.00
5,700.00	16.90	293.84	5,525.70	491.18	-1,111.40	-165.82	0.00	0.00	0.00
5,800.00	16.90	293.84	5,621.38	502.93	-1,137.98	-169.79	0.00	0.00	0.00
5,900.00	16.90	293.84	5,717.07	514.68	-1,164.57	-173.76	0.00	0.00	0.00
6,000.00	16.90	293.84	5,812.75	526.43	-1,191.15	-177.72	0.00	0.00	0.00
6,038.93	16.90	293.84	5,850.00	531.00	-1,201.50	-179.27	0.00	0.00	0.00
Start Drop -2.00									
6,100.00	15.68	293.84	5,908.62	537.92	-1,217.16	-181.60	2.00	-2.00	0.00
6,200.00	13.68	293.84	6,005.35	548.16	-1,240.33	-185.06	2.00	-2.00	0.00
6,300.00	11.68	293.84	6,102.91	557.03	-1,260.40	-188.05	2.00	-2.00	0.00
6,400.00	9.68	293.84	6,201.17	564.52	-1,277.35	-190.58	2.00	-2.00	0.00
6,500.00	7.68	293.84	6,300.02	570.62	-1,291.14	-192.64	2.00	-2.00	0.00
6,600.00	5.68	293.84	6,399.34	575.32	-1,301.77	-194.23	2.00	-2.00	0.00
6,700.00	3.68	293.84	6,499.00	578.61	-1,309.23	-195.34	2.00	-2.00	0.00
6,800.00	1.68	293.84	6,598.89	580.50	-1,313.50	-195.98	2.00	-2.00	0.00
6,883.77	0.00	0.00	6,682.64	580.99	-1,314.62	-196.14	2.00	-2.00	0.00
Start 103.40 hold at 6883.77 MD									
6,900.00	0.00	0.00	6,698.88	580.99	-1,314.62	-196.14	0.00	0.00	0.00
6,987.17	0.00	0.00	6,786.04	580.99	-1,314.62	-196.14	0.00	0.00	0.00
Start Build 10.00									
7,000.00	1.28	179.94	6,798.87	580.85	-1,314.62	-196.00	10.00	10.00	0.00
7,050.00	6.28	179.94	6,848.75	577.55	-1,314.61	-192.84	10.00	10.00	0.00
7,100.00	11.28	179.94	6,898.15	569.92	-1,314.61	-185.50	10.00	10.00	0.00
7,150.00	16.28	179.94	6,946.69	558.01	-1,314.59	-174.06	10.00	10.00	0.00
7,200.00	21.28	179.94	6,994.01	541.91	-1,314.58	-158.59	10.00	10.00	0.00
7,215.09	22.79	179.94	7,008.00	536.25	-1,314.57	-153.15	10.00	10.00	0.00
Sharon Springs									
7,250.00	26.28	179.94	7,039.75	521.76	-1,314.56	-139.22	10.00	10.00	0.00
7,281.96	29.48	179.94	7,068.00	506.81	-1,314.54	-124.86	10.00	10.00	0.00
Niobrara A									
7,300.00	31.28	179.94	7,083.56	497.69	-1,314.53	-116.09	10.00	10.00	0.00
7,331.48	34.43	179.94	7,110.00	480.61	-1,314.51	-99.68	10.00	10.00	0.00
Niobrara B									
7,350.00	36.28	179.94	7,125.11	469.90	-1,314.50	-89.38	10.00	10.00	0.00
7,400.00	41.28	179.94	7,164.07	438.59	-1,314.47	-59.30	10.00	10.00	0.00
7,450.00	46.28	179.94	7,200.16	404.00	-1,314.43	-26.06	10.00	10.00	0.00
7,457.05	46.99	179.94	7,205.00	398.87	-1,314.43	-21.13	10.00	10.00	0.00
Niobrara C									
7,500.00	51.28	179.94	7,233.09	366.40	-1,314.39	10.07	10.00	10.00	0.00
7,550.00	56.28	179.94	7,262.62	326.08	-1,314.35	48.82	10.00	10.00	0.00

Andarko Petroleum Corporation

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7,600.00	61.28	179.94	7,288.53	283.33	-1,314.31	89.90	10.00	10.00	0.00	
7,650.00	66.28	179.94	7,310.61	238.49	-1,314.26	133.00	10.00	10.00	0.00	
7,700.00	71.28	179.94	7,328.70	191.89	-1,314.21	177.77	10.00	10.00	0.00	
7,724.27	73.71	179.94	7,336.00	168.75	-1,314.19	200.01	10.00	10.00	0.00	
Fort Hays										
7,750.00	76.28	179.94	7,342.66	143.90	-1,314.16	223.90	10.00	10.00	0.00	
7,800.00	81.28	179.94	7,352.38	94.87	-1,314.11	271.01	10.00	10.00	0.00	
7,850.00	86.28	179.94	7,357.80	45.18	-1,314.06	318.76	10.00	10.00	0.00	
7,885.84	89.87	179.94	7,359.00	9.37	-1,314.02	353.18	10.00	10.00	0.00	
Codell										
7,888.17	90.10	179.94	7,359.00	7.03	-1,314.02	355.42	10.00	10.00	0.00	
Start DLS 0.06 TFO 84.84 - 7"										
7,892.75	90.10	179.94	7,358.99	2.45	-1,314.01	359.82	0.06	0.01	0.06	
Start 4568.34 hold at 7892.75 MD										
7,900.00	90.10	179.94	7,358.98	-4.80	-1,314.00	366.79	0.00	0.00	0.00	
8,000.00	90.10	179.94	7,358.81	-104.80	-1,313.90	462.89	0.00	0.00	0.00	
8,100.00	90.10	179.94	7,358.63	-204.80	-1,313.80	558.98	0.00	0.00	0.00	
8,200.00	90.10	179.94	7,358.46	-304.80	-1,313.70	655.08	0.00	0.00	0.00	
8,300.00	90.10	179.94	7,358.28	-404.80	-1,313.60	751.18	0.00	0.00	0.00	
8,400.00	90.10	179.94	7,358.11	-504.80	-1,313.50	847.28	0.00	0.00	0.00	
8,500.00	90.10	179.94	7,357.93	-604.80	-1,313.40	943.38	0.00	0.00	0.00	
8,600.00	90.10	179.94	7,357.76	-704.80	-1,313.30	1,039.48	0.00	0.00	0.00	
8,700.00	90.10	179.94	7,357.58	-804.80	-1,313.20	1,135.58	0.00	0.00	0.00	
8,800.00	90.10	179.94	7,357.41	-904.80	-1,313.10	1,231.67	0.00	0.00	0.00	
8,900.00	90.10	179.94	7,357.23	-1,004.80	-1,313.00	1,327.77	0.00	0.00	0.00	
9,000.00	90.10	179.94	7,357.06	-1,104.80	-1,312.90	1,423.87	0.00	0.00	0.00	
9,100.00	90.10	179.94	7,356.88	-1,204.79	-1,312.80	1,519.97	0.00	0.00	0.00	
9,200.00	90.10	179.94	7,356.71	-1,304.79	-1,312.70	1,616.07	0.00	0.00	0.00	
9,300.00	90.10	179.94	7,356.53	-1,404.79	-1,312.60	1,712.17	0.00	0.00	0.00	
9,400.00	90.10	179.94	7,356.36	-1,504.79	-1,312.50	1,808.27	0.00	0.00	0.00	
9,500.00	90.10	179.94	7,356.18	-1,604.79	-1,312.40	1,904.37	0.00	0.00	0.00	
9,600.00	90.10	179.94	7,356.01	-1,704.79	-1,312.30	2,000.46	0.00	0.00	0.00	
9,700.00	90.10	179.94	7,355.83	-1,804.79	-1,312.20	2,096.56	0.00	0.00	0.00	
9,800.00	90.10	179.94	7,355.66	-1,904.79	-1,312.10	2,192.66	0.00	0.00	0.00	
9,900.00	90.10	179.94	7,355.48	-2,004.79	-1,312.00	2,288.76	0.00	0.00	0.00	
10,000.00	90.10	179.94	7,355.31	-2,104.79	-1,311.90	2,384.86	0.00	0.00	0.00	
10,100.00	90.10	179.94	7,355.13	-2,204.79	-1,311.80	2,480.96	0.00	0.00	0.00	
10,200.00	90.10	179.94	7,354.96	-2,304.79	-1,311.70	2,577.06	0.00	0.00	0.00	
10,300.00	90.10	179.94	7,354.78	-2,404.79	-1,311.60	2,673.16	0.00	0.00	0.00	
10,400.00	90.10	179.94	7,354.61	-2,504.79	-1,311.50	2,769.25	0.00	0.00	0.00	
10,500.00	90.10	179.94	7,354.43	-2,604.79	-1,311.40	2,865.35	0.00	0.00	0.00	
10,600.00	90.10	179.94	7,354.26	-2,704.79	-1,311.30	2,961.45	0.00	0.00	0.00	
10,700.00	90.10	179.94	7,354.08	-2,804.79	-1,311.20	3,057.55	0.00	0.00	0.00	
10,800.00	90.10	179.94	7,353.91	-2,904.79	-1,311.10	3,153.65	0.00	0.00	0.00	
10,900.00	90.10	179.94	7,353.73	-3,004.79	-1,311.00	3,249.75	0.00	0.00	0.00	
11,000.00	90.10	179.94	7,353.56	-3,104.79	-1,310.90	3,345.85	0.00	0.00	0.00	
11,100.00	90.10	179.94	7,353.38	-3,204.79	-1,310.80	3,441.95	0.00	0.00	0.00	
11,200.00	90.10	179.94	7,353.21	-3,304.79	-1,310.70	3,538.04	0.00	0.00	0.00	
11,300.00	90.10	179.94	7,353.03	-3,404.79	-1,310.60	3,634.14	0.00	0.00	0.00	
11,400.00	90.10	179.94	7,352.86	-3,504.79	-1,310.50	3,730.24	0.00	0.00	0.00	
11,500.00	90.10	179.94	7,352.68	-3,604.79	-1,310.40	3,826.34	0.00	0.00	0.00	
11,600.00	90.10	179.94	7,352.51	-3,704.79	-1,310.30	3,922.44	0.00	0.00	0.00	
11,700.00	90.10	179.94	7,352.33	-3,804.79	-1,310.20	4,018.54	0.00	0.00	0.00	

Andarko Petroleum Corporation

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well HEDGE 15C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	16' RKB + 4905' GL @ 4921.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	16' RKB + 4905' GL @ 4921.00ft
Site:	WELD_HEDGE 1-27 PAD	North Reference:	True
Well:	HEDGE 15C-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HEDGE 15C-22HZ		
Design:	HEDGE 15C-22HZ (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)	
11,800.00	90.10	179.94	7,352.16	-3,904.79	-1,310.10	4,114.64	0.00	0.00	0.00	
11,900.00	90.10	179.94	7,351.98	-4,004.79	-1,310.00	4,210.73	0.00	0.00	0.00	
12,000.00	90.10	179.94	7,351.81	-4,104.79	-1,309.90	4,306.83	0.00	0.00	0.00	
12,100.00	90.10	179.94	7,351.63	-4,204.79	-1,309.80	4,402.93	0.00	0.00	0.00	
12,200.00	90.10	179.94	7,351.46	-4,304.79	-1,309.70	4,499.03	0.00	0.00	0.00	
12,300.00	90.10	179.94	7,351.28	-4,404.79	-1,309.60	4,595.13	0.00	0.00	0.00	
12,400.00	90.10	179.94	7,351.11	-4,504.79	-1,309.50	4,691.23	0.00	0.00	0.00	
12,461.09	90.10	179.94	7,351.00	-4,565.88	-1,309.44	4,749.94	0.00	0.00	0.00	
TD at 12461.09 - HEDGE 15C-22HZ BHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
HEDGE 15C-22HZ BHL - hit/miss target - Shape - Point	0.00	0.00	7,351.00	-4,565.88	-1,309.44	1,317,857.28	3,206,680.48	40.203548	-104.760043

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
937.00	937.00	9 5/8"	9-5/8	12-1/4	
7,888.17	7,359.00	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
691.00	691.00	Fox Hills				
4,035.44	3,933.00	Parkman				
4,582.04	4,456.00	Sussex				
7,215.09	7,008.00	Sharon Springs				
7,281.96	7,068.00	Niobrara A				
7,331.48	7,110.00	Niobrara B				
7,457.05	7,205.00	Niobrara C				
7,724.27	7,336.00	Fort Hays				
7,885.84	7,359.00	Codell				

Andarko Petroleum Corporation

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well HEDGE 15C-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	16' RKB + 4905' GL @ 4921.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	16' RKB + 4905' GL @ 4921.00ft
Site:	WELD_HEDGE 1-27 PAD	North Reference:	True
Well:	HEDGE 15C-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	HEDGE 15C-22HZ		
Design:	HEDGE 15C-22HZ (wp01) Permit		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,100.00	1,100.00	0.00	0.00	Start DLS 2.00 TFO 293.84
1,944.84	1,932.64	49.99	-113.12	Start 4094.10 hold at 1944.83 MD
6,038.93	5,850.00	531.00	-1,201.50	Start Drop -2.00
6,883.77	6,682.64	580.99	-1,314.62	Start 103.40 hold at 6883.77 MD
6,987.17	6,786.04	580.99	-1,314.62	Start Build 10.00
7,888.17	7,359.00	7.03	-1,314.02	Start DLS 0.06 TFO 84.84
7,892.75	7,358.99	2.45	-1,314.01	Start 4568.34 hold at 7892.75 MD
12,461.09	7,351.00	-4,565.88	-1,309.44	TD at 12461.09