

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 19-T1N-R67W

Ralph 34N-19HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

## Sperry Drilling Services

# Proposal Report

27 August, 2012

Well Coordinates: 1,259,108.01 N, 3,157,293.57 E (40° 02' 35.78" N, 104° 56' 17.47" W)

Ground Level: 5,118.00 ft

Local Coordinate Origin:	Centered on Well Ralph 34N-19HZ
Viewing Datum:	RKB=17 @ 5135.00ft (Drilling Rig)
TVDs to System:	N
North Reference:	True
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
 Site: Sec. 19-T1N-R67W  
 Well: Ralph 34N-19HZ  
 Wellbore: Plan A Rev 0  
 Design: Plan A Rev 0 Permit

# Anadarko Petroleum Corp.



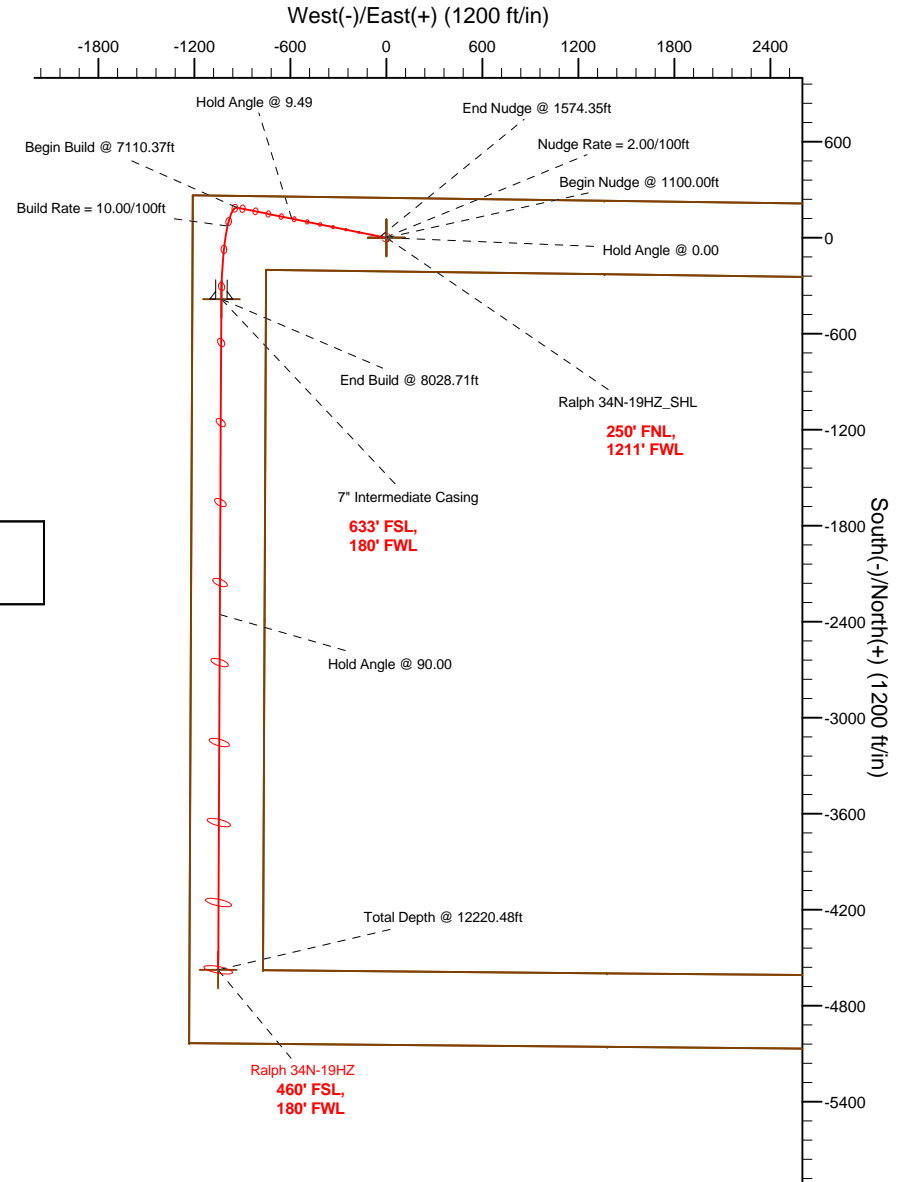
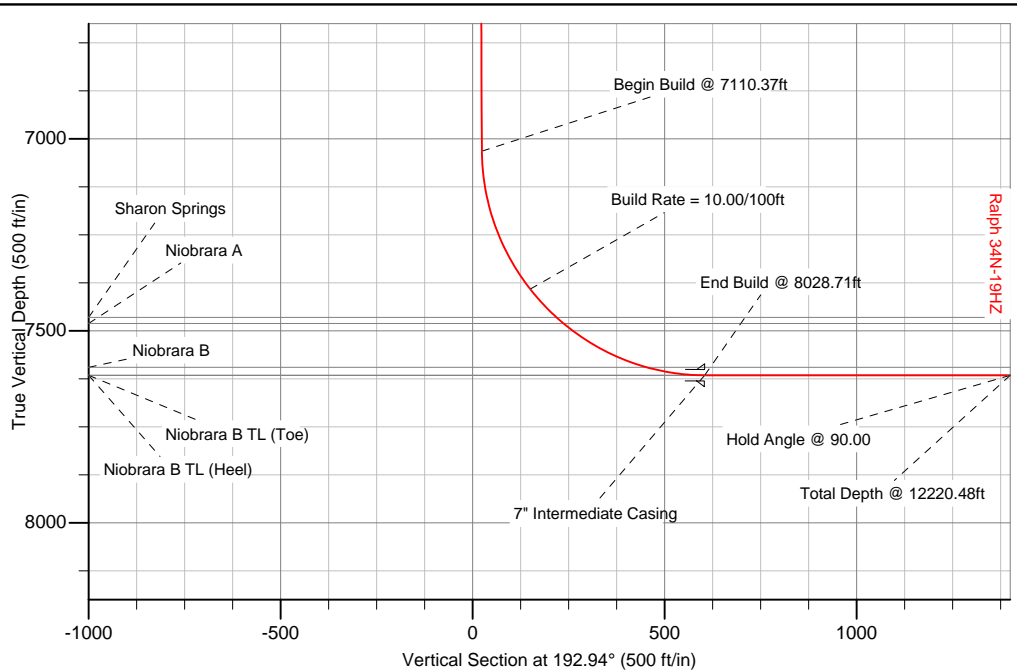
### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1574.35	9.49	281.47	1572.19	7.79	-38.40	2.00	281.47	1.00	
4	7110.37	9.49	281.47	7032.49	189.21	-932.66	0.00	0.00	24.37	
5	8028.71	90.00	180.27	7616.00	-383.00	-1031.00	10.00	-101.05	604.07	Ralph 34N-19HZ_Casing Point
6	12220.48	90.00	180.27	7616.00	-4574.71	-1050.70	0.00	0.00	4693.82	Ralph 34N-19HZ_BHL

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Ralph 34N-19HZ_Section Lines	0.00	0.00	0.00	40.043272	-104.938185	Polygon
Ralph 34N-19HZ_Setback Lines	0.00	0.00	0.00	40.043272	-104.938185	Polygon
Ralph 34N-19HZ_SHL	0.00	0.00	0.00	40.043272	-104.938185	Point
Ralph 34N-19HZ_BHL	7616.00	-4574.71	-1050.70	40.030714	-104.941937	Point
Ralph 34N-19HZ_Casing Point	7616.00	-383.00	-1031.00	40.042221	-104.941867	Point

**Target Line:**  
**7616' TVDkb @ 0' VS Drilling 90.00°**



WELL DETAILS: Ralph 34N-19HZ	
Ground Level: 5118.00	RKB=17 @ 5135.00ft (Drilling Rig)
Plan: Plan A Rev 0 Permit (Ralph 34N-19HZ/Plan A Rev 0)	
Created By: Fred Hartmann	Date: 08/24/2012
Reviewed: _____	Date: _____

**Plan Report for Ralph 34N-19HZ - Plan A Rev 0 Permit**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Ralph 34N-19HZ_SHL - Ralph 34N-19HZ_Section Lines - Ralph 34N-19HZ_Setback Lines</b>										
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hold Angle @ 0.00</b>										
600.00	0.00	0.00	600.00	0.00	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	0.00
800.00	0.00	0.00	800.00	0.00	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	0.00
1,000.00	0.00	0.00	1,000.00	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	0.00
<b>Begin Nudge @ 1100.00ft</b>										
1,200.00	2.00	281.47	1,199.98	0.35	-1.71	0.04	2.00	2.00	0.00	281.47
1,300.00	4.00	281.47	1,299.84	1.39	-6.84	0.18	2.00	2.00	0.00	0.00
<b>Nudge Rate = 2.00/100ft</b>										
1,400.00	6.00	281.47	1,399.45	3.12	-15.38	0.40	2.00	2.00	0.00	0.00
1,500.00	8.00	281.47	1,498.70	5.54	-27.32	0.71	2.00	2.00	0.00	0.00
1,574.35	9.49	281.47	1,572.19	7.79	-38.40	1.00	2.00	2.00	0.00	0.00
<b>End Nudge @ 1574.35ft</b>										
1,600.00	9.49	281.47	1,597.48	8.63	-42.54	1.11	0.00	0.00	0.00	0.00
1,700.00	9.49	281.47	1,696.12	11.91	-58.70	1.53	0.00	0.00	0.00	0.00
1,800.00	9.49	281.47	1,794.75	15.18	-74.85	1.96	0.00	0.00	0.00	0.00
1,900.00	9.49	281.47	1,893.38	18.46	-91.00	2.38	0.00	0.00	0.00	0.00
2,000.00	9.49	281.47	1,992.01	21.74	-107.16	2.80	0.00	0.00	0.00	0.00
2,100.00	9.49	281.47	2,090.65	25.02	-123.31	3.22	0.00	0.00	0.00	0.00
2,200.00	9.49	281.47	2,189.28	28.29	-139.46	3.64	0.00	0.00	0.00	0.00
2,300.00	9.49	281.47	2,287.91	31.57	-155.62	4.07	0.00	0.00	0.00	0.00
2,400.00	9.49	281.47	2,386.54	34.85	-171.77	4.49	0.00	0.00	0.00	0.00
2,500.00	9.49	281.47	2,485.18	38.12	-187.92	4.91	0.00	0.00	0.00	0.00
2,600.00	9.49	281.47	2,583.81	41.40	-204.08	5.33	0.00	0.00	0.00	0.00
2,700.00	9.49	281.47	2,682.44	44.68	-220.23	5.75	0.00	0.00	0.00	0.00
2,800.00	9.49	281.47	2,781.07	47.96	-236.38	6.18	0.00	0.00	0.00	0.00
2,900.00	9.49	281.47	2,879.70	51.23	-252.54	6.60	0.00	0.00	0.00	0.00
3,000.00	9.49	281.47	2,978.34	54.51	-268.69	7.02	0.00	0.00	0.00	0.00
3,100.00	9.49	281.47	3,076.97	57.79	-284.84	7.44	0.00	0.00	0.00	0.00
3,200.00	9.49	281.47	3,175.60	61.06	-301.00	7.86	0.00	0.00	0.00	0.00
3,300.00	9.49	281.47	3,274.23	64.34	-317.15	8.29	0.00	0.00	0.00	0.00
3,400.00	9.49	281.47	3,372.87	67.62	-333.30	8.71	0.00	0.00	0.00	0.00
3,500.00	9.49	281.47	3,471.50	70.89	-349.46	9.13	0.00	0.00	0.00	0.00
3,600.00	9.49	281.47	3,570.13	74.17	-365.61	9.55	0.00	0.00	0.00	0.00
3,700.00	9.49	281.47	3,668.76	77.45	-381.76	9.97	0.00	0.00	0.00	0.00
3,800.00	9.49	281.47	3,767.39	80.73	-397.92	10.40	0.00	0.00	0.00	0.00
3,900.00	9.49	281.47	3,866.03	84.00	-414.07	10.82	0.00	0.00	0.00	0.00
4,000.00	9.49	281.47	3,964.66	87.28	-430.22	11.24	0.00	0.00	0.00	0.00
4,100.00	9.49	281.47	4,063.29	90.56	-446.38	11.66	0.00	0.00	0.00	0.00
4,200.00	9.49	281.47	4,161.92	93.83	-462.53	12.08	0.00	0.00	0.00	0.00
4,300.00	9.49	281.47	4,260.56	97.11	-478.68	12.51	0.00	0.00	0.00	0.00
4,400.00	9.49	281.47	4,359.19	100.39	-494.84	12.93	0.00	0.00	0.00	0.00
4,500.00	9.49	281.47	4,457.82	103.67	-510.99	13.35	0.00	0.00	0.00	0.00
4,600.00	9.49	281.47	4,556.45	106.94	-527.15	13.77	0.00	0.00	0.00	0.00
4,700.00	9.49	281.47	4,655.09	110.22	-543.30	14.19	0.00	0.00	0.00	0.00
4,800.00	9.49	281.47	4,753.72	113.50	-559.45	14.62	0.00	0.00	0.00	0.00
4,900.00	9.49	281.47	4,852.35	116.77	-575.61	15.04	0.00	0.00	0.00	0.00
4,933.10	9.49	281.47	4,885.00	117.86	-580.95	15.18	0.00	0.00	0.00	0.00
<b>Sussex</b>										

**Plan Report for Ralph 34N-19HZ - Plan A Rev 0 Permit**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
5,000.00	9.49	281.47	4,950.98	120.05	-591.76	15.46	0.00	0.00	0.00	0.00
<b>Hold Angle @ 9.49</b>										
5,100.00	9.49	281.47	5,049.61	123.33	-607.91	15.88	0.00	0.00	0.00	0.00
5,200.00	9.49	281.47	5,148.25	126.60	-624.07	16.30	0.00	0.00	0.00	0.00
5,300.00	9.49	281.47	5,246.88	129.88	-640.22	16.73	0.00	0.00	0.00	0.00
5,400.00	9.49	281.47	5,345.51	133.16	-656.37	17.15	0.00	0.00	0.00	0.00
5,500.00	9.49	281.47	5,444.14	136.44	-672.53	17.57	0.00	0.00	0.00	0.00
5,600.00	9.49	281.47	5,542.78	139.71	-688.68	17.99	0.00	0.00	0.00	0.00
5,700.00	9.49	281.47	5,641.41	142.99	-704.83	18.41	0.00	0.00	0.00	0.00
5,800.00	9.49	281.47	5,740.04	146.27	-720.99	18.84	0.00	0.00	0.00	0.00
5,900.00	9.49	281.47	5,838.67	149.54	-737.14	19.26	0.00	0.00	0.00	0.00
6,000.00	9.49	281.47	5,937.31	152.82	-753.29	19.68	0.00	0.00	0.00	0.00
6,100.00	9.49	281.47	6,035.94	156.10	-769.45	20.10	0.00	0.00	0.00	0.00
6,200.00	9.49	281.47	6,134.57	159.37	-785.60	20.52	0.00	0.00	0.00	0.00
6,300.00	9.49	281.47	6,233.20	162.65	-801.75	20.95	0.00	0.00	0.00	0.00
6,400.00	9.49	281.47	6,331.83	165.93	-817.91	21.37	0.00	0.00	0.00	0.00
6,500.00	9.49	281.47	6,430.47	169.21	-834.06	21.79	0.00	0.00	0.00	0.00
6,600.00	9.49	281.47	6,529.10	172.48	-850.21	22.21	0.00	0.00	0.00	0.00
6,700.00	9.49	281.47	6,627.73	175.76	-866.37	22.63	0.00	0.00	0.00	0.00
6,800.00	9.49	281.47	6,726.36	179.04	-882.52	23.06	0.00	0.00	0.00	0.00
6,900.00	9.49	281.47	6,825.00	182.31	-898.67	23.48	0.00	0.00	0.00	0.00
7,000.00	9.49	281.47	6,923.63	185.59	-914.83	23.90	0.00	0.00	0.00	0.00
7,100.00	9.49	281.47	7,022.26	188.87	-930.98	24.32	0.00	0.00	0.00	0.00
7,110.37	9.49	281.47	7,032.49	189.21	-932.66	24.37	0.00	0.00	0.00	0.00
<b>Begin Build @ 7110.37ft</b>										
7,200.00	11.71	232.56	7,120.75	185.14	-947.14	31.57	10.00	2.48	-54.56	-101.05
7,300.00	19.43	207.96	7,217.11	164.23	-963.04	55.51	10.00	7.72	-24.60	-52.87
7,400.00	28.57	197.79	7,308.41	126.68	-978.18	95.50	10.00	9.14	-10.17	-29.10
7,500.00	38.11	192.33	7,391.87	73.63	-992.11	150.32	10.00	9.55	-5.46	-19.77
<b>Build Rate = 10.00/100ft</b>										
7,600.00	47.83	188.81	7,464.97	6.69	-1,004.41	218.31	10.00	9.71	-3.52	-15.19
7,600.05	47.83	188.81	7,465.00	6.66	-1,004.42	218.34	0.00	0.00	0.00	-17.62
<b>Sharon Springs</b>										
7,624.45	50.21	188.12	7,481.00	-11.56	-1,007.12	236.71	10.02	9.79	-2.85	-12.61
<b>Niobrara A</b>										
7,700.00	57.61	186.24	7,525.47	-72.10	-1,014.70	297.40	10.00	9.80	-2.49	-12.15
7,800.00	67.45	184.17	7,571.55	-160.35	-1,022.67	385.20	10.00	9.83	-2.06	-11.04
7,872.07	74.55	182.87	7,595.00	-228.32	-1,026.83	452.38	10.00	9.85	-1.81	-10.09
<b>Niobrara B</b>										
7,900.00	77.30	182.39	7,601.79	-255.38	-1,028.07	479.03	10.00	9.86	-1.72	-9.66
8,000.00	87.17	180.73	7,615.29	-354.30	-1,030.75	576.04	10.00	9.87	-1.65	-9.55
8,028.66	89.99	180.27	7,616.00	-382.94	-1,031.00	604.01	10.00	9.87	-1.62	-9.32
<b>Niobrara B TL (Heel) - Niobrara B TL (Toe)</b>										
8,028.71	90.00	180.27	7,616.00	-383.00	-1,031.00	604.07	9.17	9.05	-1.48	-9.31
<b>End Build @ 8028.71ft - 7" Intermediate Casing - Ralph 34N-19HZ_Casing Point</b>										
8,100.00	90.00	180.27	7,616.00	-454.28	-1,031.34	673.62	0.00	0.00	0.00	-9.31
8,200.00	90.00	180.27	7,616.00	-554.28	-1,031.81	771.18	0.00	0.00	0.00	0.00
8,300.00	90.00	180.27	7,616.00	-654.28	-1,032.28	868.75	0.00	0.00	0.00	0.00
8,400.00	90.00	180.27	7,616.00	-754.28	-1,032.75	966.32	0.00	0.00	0.00	0.00
8,500.00	90.00	180.27	7,616.00	-854.28	-1,033.22	1,063.88	0.00	0.00	0.00	0.00
8,600.00	90.00	180.27	7,616.00	-954.28	-1,033.69	1,161.45	0.00	0.00	0.00	0.00
8,700.00	90.00	180.27	7,616.00	-1,054.28	-1,034.16	1,259.02	0.00	0.00	0.00	0.00
8,800.00	90.00	180.27	7,616.00	-1,154.28	-1,034.63	1,356.58	0.00	0.00	0.00	0.00
8,900.00	90.00	180.27	7,616.00	-1,254.28	-1,035.10	1,454.15	0.00	0.00	0.00	0.00
9,000.00	90.00	180.27	7,616.00	-1,354.27	-1,035.57	1,551.72	0.00	0.00	0.00	0.00
9,100.00	90.00	180.27	7,616.00	-1,454.27	-1,036.04	1,649.28	0.00	0.00	0.00	0.00
9,200.00	90.00	180.27	7,616.00	-1,554.27	-1,036.51	1,746.85	0.00	0.00	0.00	0.00
9,300.00	90.00	180.27	7,616.00	-1,654.27	-1,036.98	1,844.42	0.00	0.00	0.00	0.00
9,400.00	90.00	180.27	7,616.00	-1,754.27	-1,037.45	1,941.98	0.00	0.00	0.00	0.00

**Plan Report for Ralph 34N-19HZ - Plan A Rev 0 Permit**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toothface Azimuth (°)
9,500.00	90.00	180.27	7,616.00	-1,854.27	-1,037.92	2,039.55	0.00	0.00	0.00	0.00
9,600.00	90.00	180.27	7,616.00	-1,954.27	-1,038.39	2,137.12	0.00	0.00	0.00	0.00
9,700.00	90.00	180.27	7,616.00	-2,054.27	-1,038.86	2,234.68	0.00	0.00	0.00	0.00
9,800.00	90.00	180.27	7,616.00	-2,154.27	-1,039.33	2,332.25	0.00	0.00	0.00	0.00
9,900.00	90.00	180.27	7,616.00	-2,254.26	-1,039.80	2,429.82	0.00	0.00	0.00	0.00
10,000.00	90.00	180.27	7,616.00	-2,354.26	-1,040.27	2,527.38	0.00	0.00	0.00	0.00
<b>Hold Angle @ 90.00</b>										
10,100.00	90.00	180.27	7,616.00	-2,454.26	-1,040.74	2,624.95	0.00	0.00	0.00	0.00
10,200.00	90.00	180.27	7,616.00	-2,554.26	-1,041.21	2,722.52	0.00	0.00	0.00	0.00
10,300.00	90.00	180.27	7,616.00	-2,654.26	-1,041.68	2,820.08	0.00	0.00	0.00	0.00
10,400.00	90.00	180.27	7,616.00	-2,754.26	-1,042.15	2,917.65	0.00	0.00	0.00	0.00
10,500.00	90.00	180.27	7,616.00	-2,854.26	-1,042.62	3,015.22	0.00	0.00	0.00	0.00
10,600.00	90.00	180.27	7,616.00	-2,954.26	-1,043.09	3,112.78	0.00	0.00	0.00	0.00
10,700.00	90.00	180.27	7,616.00	-3,054.26	-1,043.56	3,210.35	0.00	0.00	0.00	0.00
10,800.00	90.00	180.27	7,616.00	-3,154.25	-1,044.03	3,307.92	0.00	0.00	0.00	0.00
10,900.00	90.00	180.27	7,616.00	-3,254.25	-1,044.50	3,405.48	0.00	0.00	0.00	0.00
11,000.00	90.00	180.27	7,616.00	-3,354.25	-1,044.97	3,503.05	0.00	0.00	0.00	0.00
11,100.00	90.00	180.27	7,616.00	-3,454.25	-1,045.44	3,600.61	0.00	0.00	0.00	0.00
11,200.00	90.00	180.27	7,616.00	-3,554.25	-1,045.91	3,698.18	0.00	0.00	0.00	0.00
11,300.00	90.00	180.27	7,616.00	-3,654.25	-1,046.38	3,795.75	0.00	0.00	0.00	0.00
11,400.00	90.00	180.27	7,616.00	-3,754.25	-1,046.85	3,893.31	0.00	0.00	0.00	0.00
11,500.00	90.00	180.27	7,616.00	-3,854.25	-1,047.32	3,990.88	0.00	0.00	0.00	0.00
11,600.00	90.00	180.27	7,616.00	-3,954.25	-1,047.79	4,088.45	0.00	0.00	0.00	0.00
11,700.00	90.00	180.27	7,616.00	-4,054.24	-1,048.26	4,186.01	0.00	0.00	0.00	0.00
11,800.00	90.00	180.27	7,616.00	-4,154.24	-1,048.73	4,283.58	0.00	0.00	0.00	0.00
11,900.00	90.00	180.27	7,616.00	-4,254.24	-1,049.20	4,381.15	0.00	0.00	0.00	0.00
12,000.00	90.00	180.27	7,616.00	-4,354.24	-1,049.67	4,478.71	0.00	0.00	0.00	0.00
12,100.00	90.00	180.27	7,616.00	-4,454.24	-1,050.14	4,576.28	0.00	0.00	0.00	0.00
12,200.00	90.00	180.27	7,616.00	-4,554.24	-1,050.61	4,673.85	0.00	0.00	0.00	0.00
12,220.48	90.00	180.27	7,616.00	-4,574.71	-1,050.70	4,693.82	0.00	0.00	0.00	0.00
<b>Ralph 34N-19HZ_BHL</b>										

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.00	500.00	0.00	0.00	Hold Angle @ 0.00
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,300.00	1,299.84	1.39	-6.84	Nudge Rate = 2.00/100ft
1,574.35	1,572.19	7.79	-38.40	End Nudge @ 1574.35ft
5,000.00	4,950.98	120.05	-591.76	Hold Angle @ 9.49
7,110.37	7,032.49	189.21	-932.66	Begin Build @ 7110.37ft
7,500.00	7,391.87	73.63	-992.11	Build Rate = 10.00/100ft
8,028.71	7,616.00	-383.00	-1,031.00	End Build @ 8028.71ft
10,000.00	7,616.00	-2,354.26	-1,040.27	Hold Angle @ 90.00
12,220.48	7,616.00	-4,574.72	-1,050.70	Total Depth @ 12220.48ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	+N/-S (ft)	+E/-W (ft)	Start TVD (ft)
Target	Ralph 34N-19HZ_BHL	192.94	Slot	0.00	0.00	7,616.00

**Plan Report for Ralph 34N-19HZ - Plan A Rev 0 Permit****Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,220.48	Plan A Rev 0 Permit	MWD

**Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
8,028.71	7,616.00	7" Intermediate Casing	7	8-3/4

**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,933.10	4,885.00	Sussex		0.00	
7,600.05	7,465.00	Sharon Springs		0.00	
7,624.45	7,481.00	Niobrara A		0.00	
7,872.07	7,595.00	Niobrara B		0.00	
8,028.66	7,616.00	Niobrara B TL (Heel)		0.00	
8,028.66	7,616.00	Niobrara B TL (Toe)		0.00	

***Targets associated with this wellbore***

Target Name	TVD (ft)	+N-S (ft)	+E-W (ft)	Shape
Ralph 34N-19HZ_SHL	0.00	0.00	0.00	Point
Ralph 34N-19HZ_Setback Lines	0.00	0.00	0.00	Polygon
Ralph 34N-19HZ_Section Lines	0.00	0.00	0.00	Polygon
Ralph 34N-19HZ_BHL	7,616.00	-4,574.71	-1,050.70	Point
Ralph 34N-19HZ_Casing Point	7,616.00	-383.00	-1,031.00	Point

**North Reference Sheet for Sec. 19-T1N-R67W - Ralph 34N-19HZ - Plan A Rev 0**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.  
 Vertical Depths are relative to RKB=17 @ 5135.00ft (Drilling Rig). Northing and Easting are relative to Ralph 34N-19HZ  
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)  
 Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°  
 False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99996337

Grid Coordinates of Well: 1,259,108.006741 ft N, 3,157,293.569174 ft E  
 Geographical Coordinates of Well: 40° 02' 35.78" N, 104° 56' 17.47" W  
 Grid Convergence at Surface is: 0.36°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,220.48ft  
 the Bottom Hole Displacement is 4,693.82ft in the Direction of 192.94° (True).

Magnetic Convergence at surface is: -8.40° (24 August 2012, , BGGM2011)

