

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 4-T2N-R65W

Reigle 2N-4HZ

Plan B Rev 0

Plan: Plan B Rev 0 Permit

## Sperry Drilling Services

### Proposal Report

05 September, 2012

Well Coordinates: 1,302,990.92 N, 3,232,556.02 E (40° 09' 43.60" N, 104° 40' 04.47" W)

Ground Level: 4,858.00 ft

Local Coordinate Origin:

Centered on Well Reigle 2N-4HZ

Viewing Datum:

RKB=16 @ 4874.00ft (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. 4-T2N-R65W

Well: Reigle 2N-4HZ

Wellbore: Plan B Rev 0

Design: Plan B Rev 0 Permit

# Anadarko Petroleum Corp.

HALLIBURTON

Sperry Drilling

## SECTION DETAILS

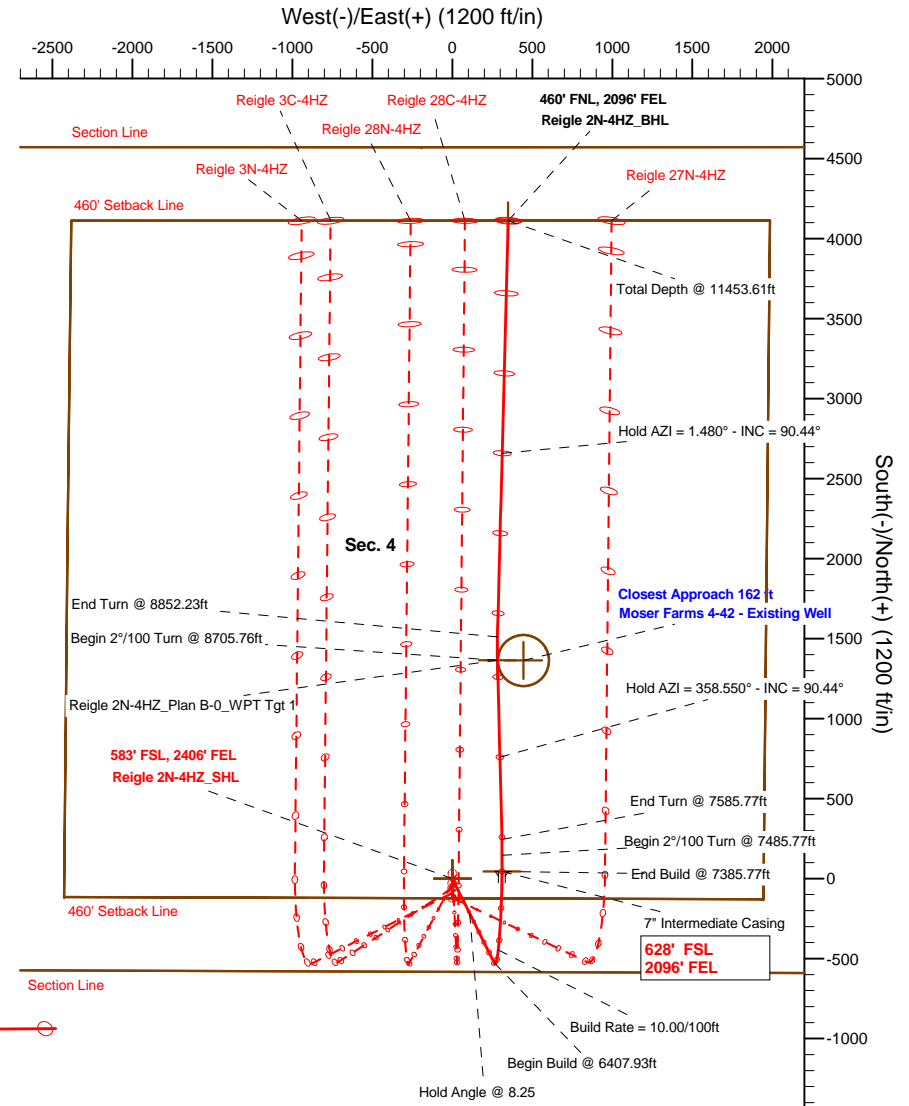
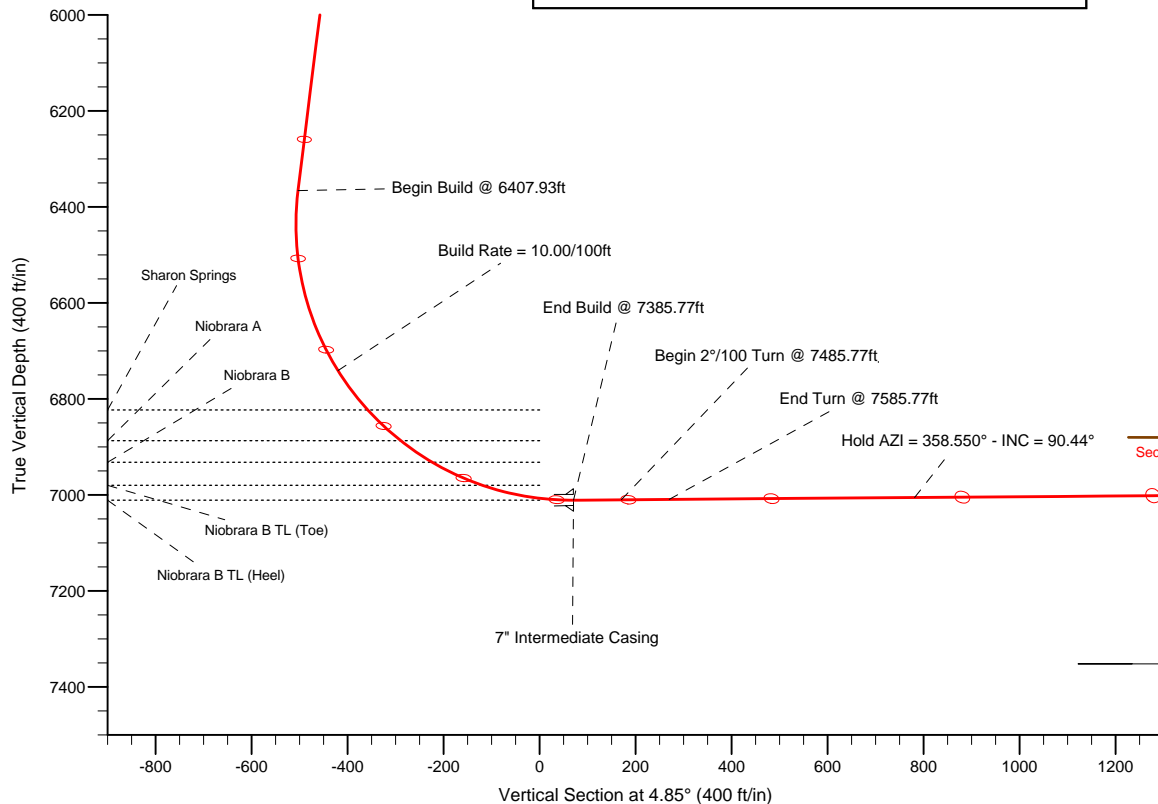
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	2100.00	0.00	0.000	2100.00	0.00	0.00	0.00	0.00	0.00	
3	2512.49	8.25	153.591	2511.07	-26.55	13.19	2.00	153.59	-25.34	
4	6407.93	8.25	153.591	6366.19	-527.17	261.79	0.00	0.00	-503.14	
5	7385.77	90.44	0.550	7011.00	45.00	310.00	10.00	-152.77	71.06	Reigle 2N-4HZ_Casing Point
6	7485.77	90.44	0.550	7010.24	144.99	310.96	0.00	0.00	170.78	
7	7585.76	90.44	358.550	7009.48	244.98	310.17	2.00	-90.04	270.34	
8	8705.76	90.44	358.550	7000.97	1364.58	281.83	0.00	0.00	1383.53	Reigle 2N-4HZ_Plan B-0_WPT Tgt 1
9	8852.23	90.44	1.480	6999.86	1511.04	281.87	2.00	89.94	1529.46	
10	11453.61	90.44	1.480	6980.00	4111.47	349.04	0.00	0.00	4126.26	Reigle 2N-4HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Reigle 2N-4HZ_Section Lines	0.00	0.00	0.00	40.162110	-104.667908	Polygon
Reigle 2N-4HZ_Setback Lines	0.00	0.00	0.00	40.162110	-104.667908	Polygon
Reigle 2N-4HZ_SHL	0.00	0.00	0.00	40.162110	-104.667908	Point
Reigle 2N-4HZ_BHL	6980.00	4111.47	349.04	40.173396	-104.666659	Point
Reigle 2N-4HZ_Casing Point	7011.00	45.00	310.00	40.162233	-104.666799	Point
Moser Farms 4-42 - Existing Well	7352.00	1362.85	444.10	40.165851	-104.666319	Circle (Radius: 160.00)

## Target Lines:

7011.69' TVDkb @ 0' VS Drilling 90.44°



## WELL DETAILS: Reigle 2N-4HZ

Ground Level:	4858.00	RKB=16 @ 4874.00ft (Drilling Rig)	
Northing	Easting	Latitude	Longitude
1302990.92	3232556.02	40.162110	-104.667908

Plan: Plan B Rev 0 Permit (Reigle 2N-4HZ/Plan B Rev 0)

Created By: Jerry Popp

Date: 09/04/2012

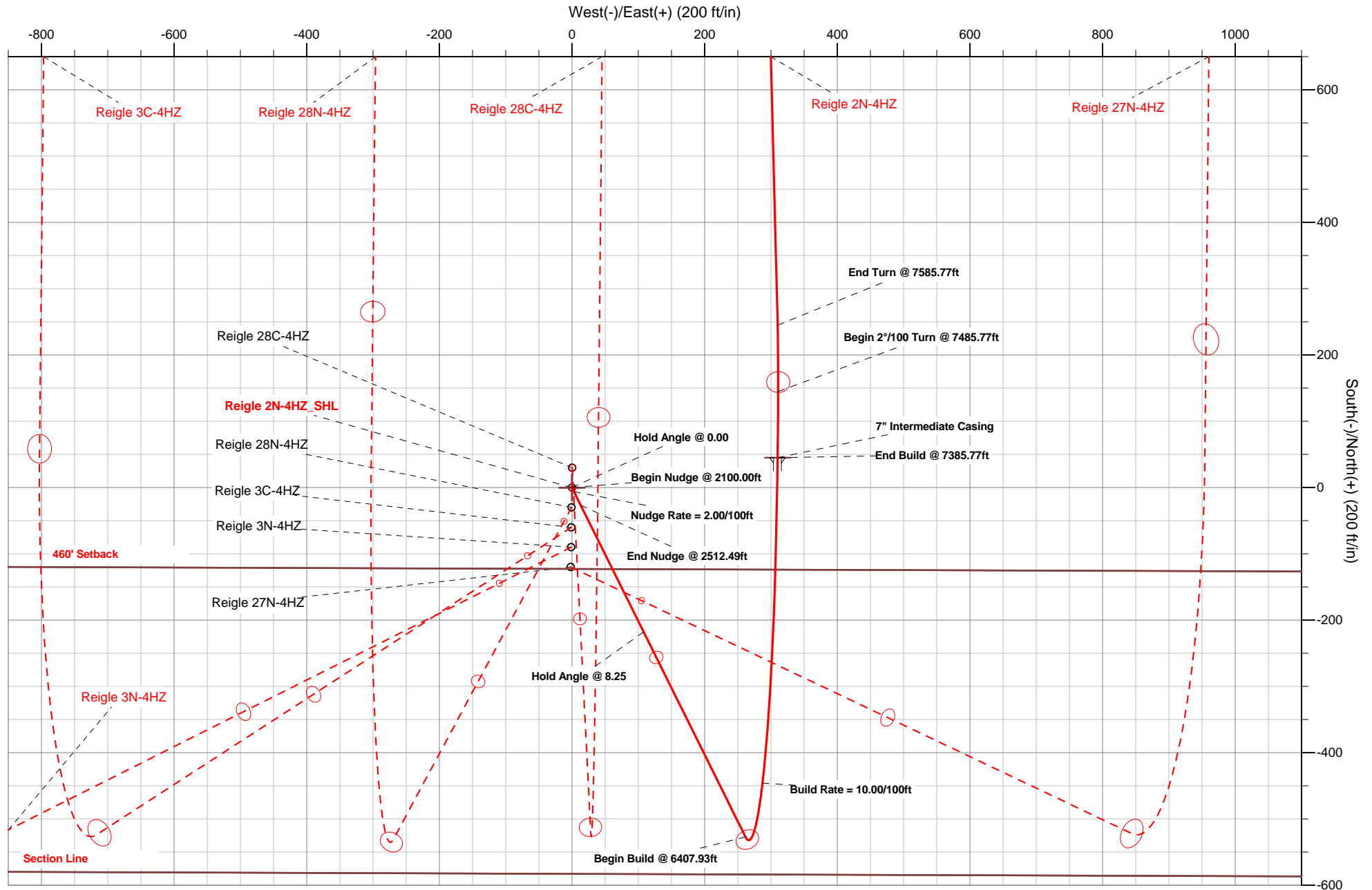
Reviewed:

Date:

Project: Weld County, CO (NAD 83)  
Site: Sec. 4-T2N-R65W  
Well: Reigle 2N-4HZ  
Wellbore: Plan B Rev 0  
Design: Plan B Rev 0 Permit

# Anadarko Petroleum Corp.

**HALLIBURTON**  
Sperry Drilling



**Plan Report for Reigle 2N-4HZ - Plan B 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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hold Angle @ 0.00</b>										
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.000	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.000	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.000	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.000	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.000	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.000	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.000	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 2100.00ft</b>										
2,200.00	2.00	153.591	2,199.98	-1.56	0.78	-1.49	2.00	2.00	0.00	153.59
2,300.00	4.00	153.591	2,299.84	-6.25	3.10	-5.97	2.00	2.00	0.00	0.00
<b>Nudge Rate = 2.00/100ft</b>										
2,400.00	6.00	153.591	2,399.45	-14.06	6.98	-13.42	2.00	2.00	0.00	0.00
2,500.00	8.00	153.591	2,498.70	-24.97	12.40	-23.83	2.00	2.00	0.00	0.00
2,512.49	8.25	153.591	2,511.07	-26.55	13.19	-25.34	2.00	2.00	0.00	0.00
<b>End Nudge @ 2512.49ft</b>										
2,600.00	8.25	153.591	2,597.67	-37.80	18.77	-36.07	0.00	0.00	0.00	0.00
2,700.00	8.25	153.591	2,696.64	-50.65	25.15	-48.34	0.00	0.00	0.00	0.00
2,800.00	8.25	153.591	2,795.60	-63.50	31.53	-60.61	0.00	0.00	0.00	0.00
2,900.00	8.25	153.591	2,894.57	-76.35	37.92	-72.87	0.00	0.00	0.00	0.00
3,000.00	8.25	153.591	2,993.53	-89.20	44.30	-85.14	0.00	0.00	0.00	0.00
3,100.00	8.25	153.591	3,092.50	-102.06	50.68	-97.40	0.00	0.00	0.00	0.00
3,200.00	8.25	153.591	3,191.46	-114.91	57.06	-109.67	0.00	0.00	0.00	0.00
3,300.00	8.25	153.591	3,290.43	-127.76	63.44	-121.93	0.00	0.00	0.00	0.00
3,400.00	8.25	153.591	3,389.39	-140.61	69.83	-134.20	0.00	0.00	0.00	0.00
3,500.00	8.25	153.591	3,488.36	-153.46	76.21	-146.47	0.00	0.00	0.00	0.00
3,600.00	8.25	153.591	3,587.32	-166.31	82.59	-158.73	0.00	0.00	0.00	0.00
3,700.00	8.25	153.591	3,686.29	-179.16	88.97	-171.00	0.00	0.00	0.00	0.00
3,800.00	8.25	153.591	3,785.25	-192.02	95.35	-183.26	0.00	0.00	0.00	0.00
3,862.39	8.25	153.591	3,847.00	-200.03	99.34	-190.91	0.00	0.00	0.00	0.00
<b>Parkman</b>										
3,900.00	8.25	153.591	3,884.22	-204.87	101.74	-195.53	0.00	0.00	0.00	0.00
4,000.00	8.25	153.591	3,983.18	-217.72	108.12	-207.79	0.00	0.00	0.00	0.00
<b>Hold Angle @ 8.25</b>										
4,100.00	8.25	153.591	4,082.15	-230.57	114.50	-220.06	0.00	0.00	0.00	0.00
4,200.00	8.25	153.591	4,181.11	-243.42	120.88	-232.32	0.00	0.00	0.00	0.00
4,300.00	8.25	153.591	4,280.08	-256.27	127.26	-244.59	0.00	0.00	0.00	0.00
4,400.00	8.25	153.591	4,379.04	-269.13	133.65	-256.86	0.00	0.00	0.00	0.00
4,459.57	8.25	153.591	4,438.00	-276.78	137.45	-264.16	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,500.00	8.25	153.591	4,478.01	-281.98	140.03	-269.12	0.00	0.00	0.00	0.00
4,600.00	8.25	153.591	4,576.97	-294.83	146.41	-281.39	0.00	0.00	0.00	0.00

**Plan Report for Reigle 2N-4HZ - Plan B 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 (°)
4,700.00	8.25	153.591	4,675.94	-307.68	152.79	-293.65	0.00	0.00	0.00	0.00
4,800.00	8.25	153.591	4,774.90	-320.53	159.17	-305.92	0.00	0.00	0.00	0.00
4,900.00	8.25	153.591	4,873.87	-333.38	165.56	-318.18	0.00	0.00	0.00	0.00
5,000.00	8.25	153.591	4,972.84	-346.23	171.94	-330.45	0.00	0.00	0.00	0.00
5,100.00	8.25	153.591	5,071.80	-359.09	178.32	-342.71	0.00	0.00	0.00	0.00
5,200.00	8.25	153.591	5,170.77	-371.94	184.70	-354.98	0.00	0.00	0.00	0.00
5,300.00	8.25	153.591	5,269.73	-384.79	191.08	-367.25	0.00	0.00	0.00	0.00
5,400.00	8.25	153.591	5,368.70	-397.64	197.47	-379.51	0.00	0.00	0.00	0.00
5,500.00	8.25	153.591	5,467.66	-410.49	203.85	-391.78	0.00	0.00	0.00	0.00
5,600.00	8.25	153.591	5,566.63	-423.34	210.23	-404.04	0.00	0.00	0.00	0.00
5,700.00	8.25	153.591	5,665.59	-436.19	216.61	-416.31	0.00	0.00	0.00	0.00
5,800.00	8.25	153.591	5,764.56	-449.05	222.99	-428.57	0.00	0.00	0.00	0.00
5,900.00	8.25	153.591	5,863.52	-461.90	229.38	-440.84	0.00	0.00	0.00	0.00
6,000.00	8.25	153.591	5,962.49	-474.75	235.76	-453.11	0.00	0.00	0.00	0.00
6,100.00	8.25	153.591	6,061.45	-487.60	242.14	-465.37	0.00	0.00	0.00	0.00
6,200.00	8.25	153.591	6,160.42	-500.45	248.52	-477.64	0.00	0.00	0.00	0.00
6,300.00	8.25	153.591	6,259.38	-513.30	254.90	-489.90	0.00	0.00	0.00	0.00
6,400.00	8.25	153.591	6,358.35	-526.16	261.29	-502.17	0.00	0.00	0.00	0.00
6,407.93	8.25	153.591	6,366.20	-527.17	261.79	-503.14	0.00	0.00	0.00	0.00
<b>Begin Build @ 6407.93ft</b>										
6,500.00	4.20	64.246	6,457.86	-531.64	267.78	-507.08	10.00	-4.40	-97.04	-152.77
6,600.00	12.44	17.938	6,556.81	-519.77	274.41	-494.70	10.00	8.24	-46.31	-63.73
6,700.00	22.17	9.872	6,652.18	-490.87	280.98	-465.34	10.00	9.73	-8.07	-17.75
6,800.00	32.06	6.609	6,741.09	-445.80	287.28	-419.90	10.00	9.89	-3.26	-10.02
<b>Build Rate = 10.00/100ft</b>										
6,900.00	42.00	4.769	6,820.82	-385.95	293.13	-359.77	10.00	9.94	-1.84	-7.11
6,902.94	42.29	4.727	6,823.00	-383.98	293.30	-357.80	10.00	9.95	-1.46	-5.63
<b>Sharon Springs</b>										
6,996.82	51.64	3.564	6,887.00	-315.61	298.20	-289.25	10.00	9.96	-1.24	-5.60
<b>Niobrara A</b>										
7,000.00	51.96	3.530	6,888.96	-313.12	298.35	-286.76	10.00	9.97	-1.06	-4.80
7,076.57	59.59	2.792	6,932.00	-249.95	301.82	-223.52	10.00	9.97	-0.96	-4.78
<b>Niobrara B</b>										
7,100.00	61.93	2.590	6,943.44	-229.53	302.78	-203.10	10.00	9.97	-0.86	-4.37
7,200.00	71.90	1.811	6,982.60	-137.72	306.29	-111.32	10.00	9.97	-0.78	-4.27
7,300.00	81.88	1.117	7,005.26	-40.48	308.76	-14.22	10.00	9.98	-0.69	-3.96
7,385.77	90.44	0.550	7,011.00	45.00	310.00	71.06	10.00	9.98	-0.66	-3.80
<b>End Build @ 7385.77ft - Niobrara B TL (Heel) - 7" Intermediate Casing - Reigle 2N-4HZ_Casing Point</b>										
7,400.00	90.44	0.550	7,010.89	59.23	310.14	85.26	0.00	0.00	0.00	-3.76
7,485.77	90.44	0.550	7,010.24	145.00	310.96	170.78	0.00	0.00	0.00	0.00
<b>Begin 2°/100 Turn @ 7485.77ft</b>										
7,500.00	90.44	0.265	7,010.13	159.23	311.06	184.97	2.00	0.00	-2.00	-90.04
7,585.76	90.44	358.550	7,009.48	244.98	310.17	270.34	2.00	0.00	-2.00	-90.04
7,585.77	90.44	358.550	7,009.48	244.99	310.17	270.35	0.00	0.00	0.00	0.00
<b>End Turn @ 7585.77ft</b>										
7,600.00	90.44	358.550	7,009.37	259.21	309.81	284.49	0.00	0.00	0.00	0.00
7,700.00	90.44	358.550	7,008.61	359.18	307.28	383.88	0.00	0.00	0.00	0.00
7,800.00	90.44	358.550	7,007.85	459.14	304.75	483.27	0.00	0.00	0.00	0.00
7,900.00	90.44	358.550	7,007.09	559.11	302.22	582.67	0.00	0.00	0.00	0.00
8,000.00	90.44	358.550	7,006.33	659.07	299.69	682.06	0.00	0.00	0.00	0.00
8,100.00	90.44	358.550	7,005.57	759.04	297.16	781.45	0.00	0.00	0.00	0.00
<b>Hold AZI = 358.550° - INC = 90.44°</b>										
8,200.00	90.44	358.550	7,004.81	859.00	294.63	880.85	0.00	0.00	0.00	0.00
8,300.00	90.44	358.550	7,004.05	958.97	292.10	980.24	0.00	0.00	0.00	0.00
8,400.00	90.44	358.550	7,003.30	1,058.93	289.57	1,079.63	0.00	0.00	0.00	0.00
8,500.00	90.44	358.550	7,002.54	1,158.90	287.04	1,179.02	0.00	0.00	0.00	0.00
8,600.00	90.44	358.550	7,001.78	1,258.86	284.51	1,278.42	0.00	0.00	0.00	0.00
8,700.00	90.44	358.550	7,001.02	1,358.83	281.98	1,377.81	0.00	0.00	0.00	0.00
8,705.76	90.44	358.550	7,000.97	1,364.58	281.83	1,383.53	0.00	0.00	0.00	0.00

**Plan Report for Reigle 2N-4HZ - Plan B 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 (°)
<b>Begin 2°/100 Turn @ 8705.76ft - Reigle 2N-4HZ_Plan B-0_WPT Tgt 1</b>										
8,800.00	90.44	0.435	7,000.26	1,458.81	281.00	1,477.36	2.00	0.00	2.00	89.94
8,852.23	90.44	1.479	6,999.86	1,511.03	281.87	1,529.46	2.00	0.00	2.00	89.96
<b>End Turn @ 8852.23ft</b>										
8,900.00	90.44	1.480	6,999.49	1,558.79	283.11	1,577.15	0.00	0.00	0.00	89.96
9,000.00	90.44	1.480	6,998.73	1,658.75	285.69	1,676.97	0.00	0.00	0.00	0.00
9,100.00	90.44	1.480	6,997.97	1,758.71	288.27	1,776.80	0.00	0.00	0.00	0.00
9,200.00	90.44	1.480	6,997.20	1,858.68	290.85	1,876.62	0.00	0.00	0.00	0.00
9,300.00	90.44	1.480	6,996.44	1,958.64	293.43	1,976.44	0.00	0.00	0.00	0.00
9,400.00	90.44	1.480	6,995.68	2,058.61	296.01	2,076.27	0.00	0.00	0.00	0.00
9,500.00	90.44	1.480	6,994.91	2,158.57	298.60	2,176.09	0.00	0.00	0.00	0.00
9,600.00	90.44	1.480	6,994.15	2,258.53	301.18	2,275.92	0.00	0.00	0.00	0.00
9,700.00	90.44	1.480	6,993.39	2,358.50	303.76	2,375.74	0.00	0.00	0.00	0.00
9,800.00	90.44	1.480	6,992.62	2,458.46	306.34	2,475.56	0.00	0.00	0.00	0.00
9,900.00	90.44	1.480	6,991.86	2,558.42	308.92	2,575.39	0.00	0.00	0.00	0.00
10,000.00	90.44	1.480	6,991.10	2,658.39	311.51	2,675.21	0.00	0.00	0.00	0.00
<b>Hold AZI = 1.480° - INC = 90.44°</b>										
10,100.00	90.44	1.480	6,990.33	2,758.35	314.09	2,775.03	0.00	0.00	0.00	0.00
10,200.00	90.44	1.480	6,989.57	2,858.32	316.67	2,874.86	0.00	0.00	0.00	0.00
10,300.00	90.44	1.480	6,988.81	2,958.28	319.25	2,974.68	0.00	0.00	0.00	0.00
10,400.00	90.44	1.480	6,988.04	3,058.24	321.83	3,074.51	0.00	0.00	0.00	0.00
10,500.00	90.44	1.480	6,987.28	3,158.21	324.42	3,174.33	0.00	0.00	0.00	0.00
10,600.00	90.44	1.480	6,986.52	3,258.17	327.00	3,274.15	0.00	0.00	0.00	0.00
10,700.00	90.44	1.480	6,985.75	3,358.13	329.58	3,373.98	0.00	0.00	0.00	0.00
10,800.00	90.44	1.480	6,984.99	3,458.10	332.16	3,473.80	0.00	0.00	0.00	0.00
10,900.00	90.44	1.480	6,984.23	3,558.06	334.74	3,573.63	0.00	0.00	0.00	0.00
11,000.00	90.44	1.480	6,983.46	3,658.03	337.33	3,673.45	0.00	0.00	0.00	0.00
11,100.00	90.44	1.480	6,982.70	3,757.99	339.91	3,773.27	0.00	0.00	0.00	0.00
11,200.00	90.44	1.480	6,981.94	3,857.95	342.49	3,873.10	0.00	0.00	0.00	0.00
11,300.00	90.44	1.480	6,981.17	3,957.92	345.07	3,972.92	0.00	0.00	0.00	0.00
11,400.00	90.44	1.480	6,980.41	4,057.88	347.65	4,072.75	0.00	0.00	0.00	0.00
11,452.53	90.44	1.480	6,980.01	4,110.39	349.01	4,125.18	0.00	0.00	0.00	0.00
<b>Niobrara B TL (Toe)</b>										
11,453.61	90.44	1.480	6,980.00	4,111.47	349.04	4,126.26	0.00	0.00	0.00	0.00
<b>Reigle 2N-4HZ_BHL</b>										

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00	
1,000.00	1,000.00	0.00	0.00	Hold Angle @ 0.00
2,100.00	2,100.00	0.00	0.00	Begin Nudge @ 2100.00ft
2,300.00	2,299.84	-6.25	3.10	Nudge Rate = 2.00/100ft
2,512.49	2,511.07	-26.55	13.19	End Nudge @ 2512.49ft
4,000.00	3,983.18	-217.72	108.12	Hold Angle @ 8.25
6,407.93	6,366.20	-527.17	261.79	Begin Build @ 6407.93ft
6,800.00	6,741.09	-445.80	287.28	Build Rate = 10.00/100ft
7,385.77	7,011.00	45.00	310.00	End Build @ 7385.77ft
7,485.77	7,010.24	145.00	310.96	Begin 2°/100 Turn @ 7485.77ft
7,585.77	7,009.48	244.99	310.17	End Turn @ 7585.77ft
8,100.00	7,005.57	759.04	297.16	Hold AZI = 358.550° - INC = 90.44°
8,705.76	7,000.97	1,364.58	281.83	Begin 2°/100 Turn @ 8705.76ft
8,852.23	6,999.86	1,511.03	281.87	End Turn @ 8852.23ft
10,000.00	6,991.10	2,658.39	311.51	Hold AZI = 1.480° - INC = 90.44°
11,453.61	6,980.00	4,111.47	349.04	Total Depth @ 11453.61ft

## Plan Report for Reigle 2N-4HZ - Plan B Rev 0 Permit

### Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Reigle 2N-4HZ_BHL	4.852	Slot	0.00	0.00	0.00

### Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,453.61	Plan B Rev 0 Permit	MWD

### Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,385.77	7,011.00	7" Intermediate Casing	7	8-3/4

### Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,862.39	3,847.00	Parkman		0.00	
4,459.57	4,438.00	Sussex		0.00	
6,902.94	6,823.00	Sharon Springs		0.00	
6,996.82	6,887.00	Niobrara A		0.00	
7,076.57	6,932.00	Niobrara B		0.00	
7,385.77	7,011.00	Niobrara B TL (Heel)		0.00	
11,452.53	6,980.01	Niobrara B TL (Toe)		0.00	

### *Targets associated with this wellbore*

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Moser Farms 4-42 - Existing Well	7,352.00	1,362.85	444.10	Circle
Reigle 2N-4HZ_Setback Lines	0.00	0.00	0.00	Polygon
Reigle 2N-4HZ_BHL	6,980.00	4,111.47	349.04	Point
Reigle 2N-4HZ_Casing Point	7,011.00	45.00	310.00	Point
Reigle 2N-4HZ_Plan B-0_WPT Tgt 1	7,000.97	1,364.58	281.83	Point
Reigle 2N-4HZ_SHL	0.00	0.00	0.00	Point
Reigle 2N-4HZ_Section Lines	0.00	0.00	0.00	Polygon

**North Reference Sheet for Sec. 4-T2N-R65W - Reigle 2N-4HZ - Plan B 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=16 @ 4874.00ft (Drilling Rig). Northing and Easting are relative to Reigle 2N-4HZ  
 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: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995804  
 Grid Coordinates of Well: 1,302,990.92 ft N, 3,232,556.02 ft E  
 Geographical Coordinates of Well: 40° 09' 43.60" N, 104° 40' 04.47" W  
 Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,453.61ft  
 the Bottom Hole Displacement is 4,126.26ft in the Direction of 4.85° (True).  
 Magnetic Convergence at surface is: -8.08° ( 4 September 2012, , BGGM2011)

