

# Anadarko Petroleum Corporation

Weld County, CO (NAD 83)

Sec. 15-T3N-R68W

RMF 30N-15HZ

Plan B

Plan: Permit Rev-2

## Sperry Drilling Services

### Proposal Report

11 December, 2014

Well Coordinates: 1,327,558.52 N, 3,144,665.45 E (40° 13' 52.99" N, 104° 58' 54.70" W)

Ground Level: 4,970.00 usft

Local Coordinate Origin:

Centered on Well RMF 30N-15HZ

Viewing Datum:

RKB = 17' @ 4987.00usft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
Site: Sec. 15-T3N-R68W  
Well: RMF 30N-15HZ  
Wellbore: Plan B  
Design: Permit Rev-2

# Anadarko Petroleum Corporation

**HALLIBURTON**  
Sperry Drilling

## SECTION DETAILS

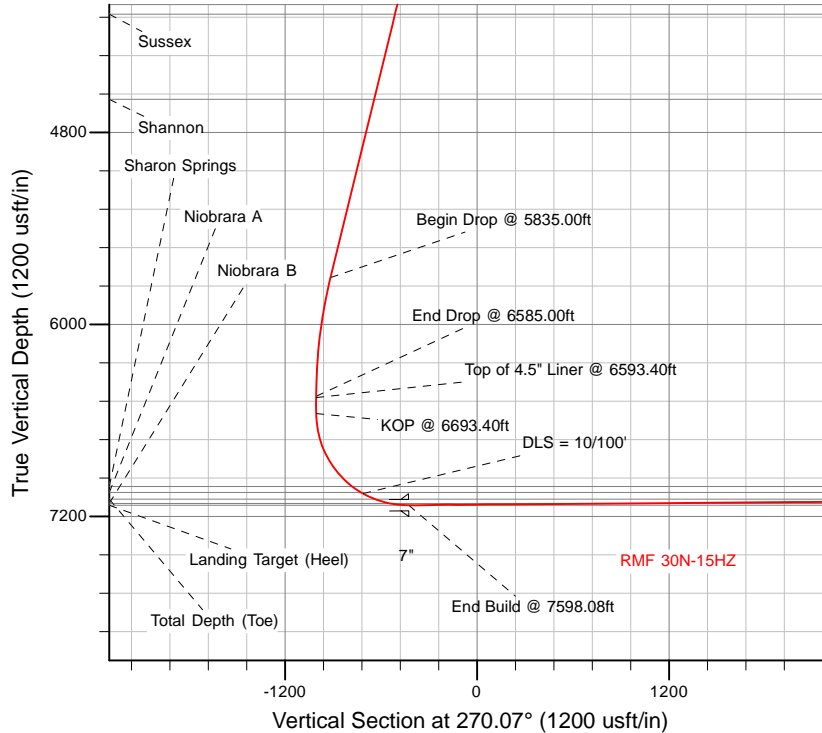
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1585.00	0.00	0.00	1585.00	0.00	0.00	0.00	0.00	0.00	
3	2335.00	15.00	66.00	2326.46	39.70	89.18	2.00	66.00	-89.13	
4	5835.00	15.00	66.00	5707.20	408.15	916.73	0.00	0.00	-916.23	
5	6585.00	0.00	0.00	6448.66	447.86	1095.90	2.00	180.00	-1005.35	
6	6693.40	0.00	0.00	6557.06	447.86	1005.90	0.00	0.00	-1005.35	
7	7598.08	90.47	270.07	7130.00	448.61	428.26	10.00	270.07	-427.71	
8	12247.60	90.47	270.07	7092.00	454.65	-4221.10	0.00	0.00	4221.65	RMF 30N-15HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

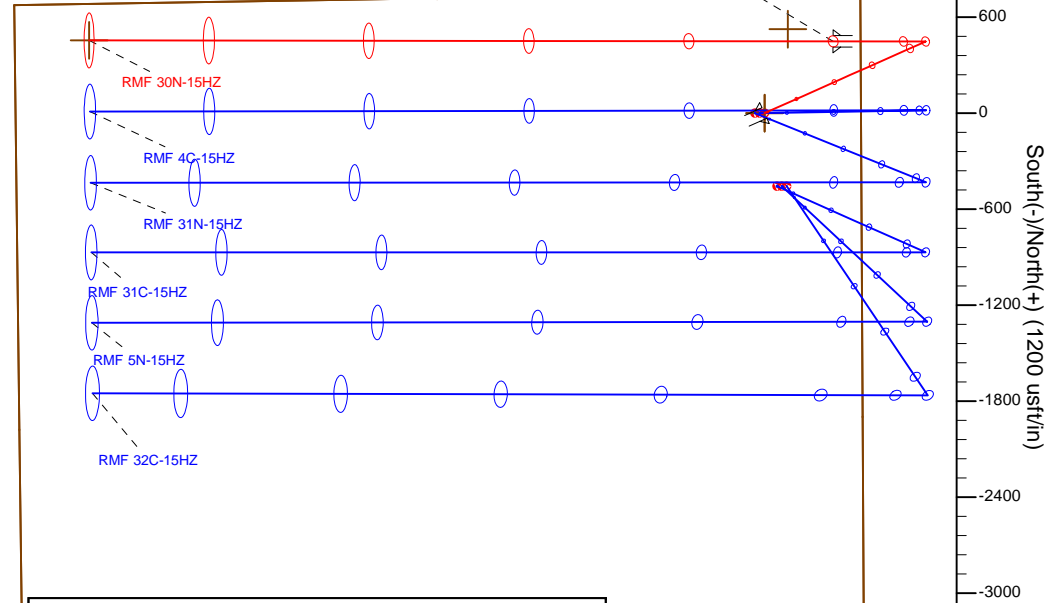
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
RMF 30N-15HZ_SEC	0.00	0.00	0.00	40.231386	-104.981860	Polygon
RMF 30N-15HZ_SHL	0.00	0.00	0.00	40.231386	-104.981860	Polygon
RMF 30N-15HZ_BHL	7092.00	454.65	-4221.10	40.232633	-104.996978	Point
RMF 30N-15HZ_CP	7130.00	525.18	145.08	40.232828	-104.981340	Point

West(-)/East(+) (1200 usft/in)

-3600 -3000 -2400 -1800 -1200 -600 0 600



225' FNL  
460' FWL



TVD MD

6457.06 6593.40 Top of 4.5" Liner @ 6593.40ft  
6557.06 6693.40 KOP @ 6693.40ft

WELL DETAILS: RMF 30N-15HZ

Ground Level: 4970.00

RKB = 17' @ 4987.00usft (Drilling Rig)

Plan: Permit Rev-2 (RMF 30N-15HZ/Plan B)

Created By: Clint Eshelman Date: 12/11/2014  
Reviewed: Date:



## Plan Report for RMF 30N-15HZ - Permit Rev-2

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	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>RMF 30N-15HZ_SHL - RMF 30N-15HZ_SEC</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
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
1,067.00	0.00	0.00	1,067.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,585.00	0.00	0.00	1,585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 1585.00ft</b>										
1,600.00	0.30	66.00	1,600.00	0.02	0.04	-0.04	2.00	2.00	0.00	66.00
1,700.00	2.30	66.00	1,699.97	0.94	2.11	-2.11	2.00	2.00	0.00	0.00
1,800.00	4.30	66.00	1,799.80	3.28	7.37	-7.36	2.00	2.00	0.00	0.00
1,900.00	6.30	66.00	1,899.37	7.04	15.80	-15.80	2.00	2.00	0.00	0.00
2,000.00	8.30	66.00	1,998.55	12.20	27.41	-27.40	2.00	2.00	0.00	0.00
2,100.00	10.30	66.00	2,097.23	18.78	42.17	-42.15	2.00	2.00	0.00	0.00
2,200.00	12.30	66.00	2,195.29	26.75	60.07	-60.04	2.00	2.00	0.00	0.00
2,300.00	14.30	66.00	2,292.60	36.10	81.09	-81.05	2.00	2.00	0.00	0.00
2,335.00	15.00	66.00	2,326.46	39.70	89.18	-89.13	2.00	2.00	0.00	0.00
<b>End Nudge @ 2335.00ft</b>										
2,400.00	15.00	66.00	2,389.25	46.55	104.54	-104.49	0.00	0.00	0.00	0.00
2,500.00	15.00	66.00	2,485.84	57.07	128.19	-128.12	0.00	0.00	0.00	0.00
2,600.00	15.00	66.00	2,582.43	67.60	151.83	-151.75	0.00	0.00	0.00	0.00
2,700.00	15.00	66.00	2,679.02	78.13	175.48	-175.38	0.00	0.00	0.00	0.00
2,800.00	15.00	66.00	2,775.62	88.65	199.12	-199.01	0.00	0.00	0.00	0.00
2,900.00	15.00	66.00	2,872.21	99.18	222.77	-222.64	0.00	0.00	0.00	0.00
3,000.00	15.00	66.00	2,968.80	109.71	246.41	-246.28	0.00	0.00	0.00	0.00
3,100.00	15.00	66.00	3,065.40	120.24	270.05	-269.91	0.00	0.00	0.00	0.00
3,200.00	15.00	66.00	3,161.99	130.76	293.70	-293.54	0.00	0.00	0.00	0.00
3,300.00	15.00	66.00	3,258.58	141.29	317.34	-317.17	0.00	0.00	0.00	0.00
3,400.00	15.00	66.00	3,355.17	151.82	340.99	-340.80	0.00	0.00	0.00	0.00
3,500.00	15.00	66.00	3,451.77	162.34	364.63	-364.43	0.00	0.00	0.00	0.00
3,600.00	15.00	66.00	3,548.36	172.87	388.28	-388.06	0.00	0.00	0.00	0.00
3,700.00	15.00	66.00	3,644.95	183.40	411.92	-411.70	0.00	0.00	0.00	0.00
3,800.00	15.00	66.00	3,741.54	193.93	435.56	-435.33	0.00	0.00	0.00	0.00
3,900.00	15.00	66.00	3,838.14	204.45	459.21	-458.96	0.00	0.00	0.00	0.00
4,000.00	15.00	66.00	3,934.73	214.98	482.85	-482.59	0.00	0.00	0.00	0.00
4,100.00	15.00	66.00	4,031.32	225.51	506.50	-506.22	0.00	0.00	0.00	0.00
4,130.73	15.00	66.00	4,061.00	228.74	513.76	-513.48	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,200.00	15.00	66.00	4,127.91	236.03	530.14	-529.85	0.00	0.00	0.00	0.00
4,300.00	15.00	66.00	4,224.51	246.56	553.79	-553.48	0.00	0.00	0.00	0.00
4,400.00	15.00	66.00	4,321.10	257.09	577.43	-577.12	0.00	0.00	0.00	0.00
4,500.00	15.00	66.00	4,417.69	267.62	601.08	-600.75	0.00	0.00	0.00	0.00
4,600.00	15.00	66.00	4,514.28	278.14	624.72	-624.38	0.00	0.00	0.00	0.00
4,681.49	15.00	66.00	4,593.00	286.72	643.99	-643.64	0.00	0.00	0.00	0.00
<b>Shannon</b>										

**Plan Report for RMF 30N-15HZ - Permit Rev-2**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
4,700.00	15.00	66.00	4,610.88	288.67	648.36	-648.01	0.00	0.00	0.00	0.00
4,800.00	15.00	66.00	4,707.47	299.20	672.01	-671.64	0.00	0.00	0.00	0.00
4,900.00	15.00	66.00	4,804.06	309.72	695.65	-695.27	0.00	0.00	0.00	0.00
5,000.00	15.00	66.00	4,900.65	320.25	719.30	-718.90	0.00	0.00	0.00	0.00
5,100.00	15.00	66.00	4,997.25	330.78	742.94	-742.54	0.00	0.00	0.00	0.00
5,200.00	15.00	66.00	5,093.84	341.31	766.59	-766.17	0.00	0.00	0.00	0.00
5,300.00	15.00	66.00	5,190.43	351.83	790.23	-789.80	0.00	0.00	0.00	0.00
5,400.00	15.00	66.00	5,287.02	362.36	813.87	-813.43	0.00	0.00	0.00	0.00
5,500.00	15.00	66.00	5,383.62	372.89	837.52	-837.06	0.00	0.00	0.00	0.00
5,600.00	15.00	66.00	5,480.21	383.41	861.16	-860.69	0.00	0.00	0.00	0.00
5,700.00	15.00	66.00	5,576.80	393.94	884.81	-884.32	0.00	0.00	0.00	0.00
5,800.00	15.00	66.00	5,673.39	404.47	908.45	-907.96	0.00	0.00	0.00	0.00
5,835.00	15.00	66.00	5,707.20	408.15	916.73	-916.23	0.00	0.00	0.00	0.00
<b>Begin Drop @ 5835.00ft</b>										
5,900.00	13.70	66.00	5,770.17	414.71	931.44	-930.94	2.00	-2.00	0.00	180.00
6,000.00	11.70	66.00	5,867.72	423.65	951.53	-951.01	2.00	-2.00	0.00	180.00
6,100.00	9.70	66.00	5,965.98	431.20	968.49	-967.96	2.00	-2.00	0.00	180.00
6,200.00	7.70	66.00	6,064.82	437.35	982.30	-981.77	2.00	-2.00	0.00	180.00
6,300.00	5.70	66.00	6,164.13	442.10	992.96	-992.42	2.00	-2.00	0.00	-180.00
6,400.00	3.70	66.00	6,263.79	445.43	1,000.45	-999.90	2.00	-2.00	0.00	180.00
6,500.00	1.70	66.00	6,363.68	447.34	1,004.75	-1,004.20	2.00	-2.00	0.00	180.00
6,585.00	0.00	0.00	6,448.66	447.86	1,005.90	-1,005.35	2.00	-2.00	-77.65	-180.00
<b>End Drop @ 6585.00ft</b>										
6,593.40	0.00	0.00	6,457.06	447.86	1,005.90	-1,005.35	0.00	0.00	0.00	180.00
<b>Top of 4.5" Liner @ 6593.40ft</b>										
6,600.00	0.00	0.00	6,463.66	447.86	1,005.90	-1,005.35	0.00	0.00	0.00	0.00
6,693.40	0.00	0.00	6,557.06	447.86	1,005.90	-1,005.35	0.00	0.00	0.00	0.00
<b>KOP @ 6693.40ft</b>										
6,700.00	0.66	270.07	6,563.66	447.86	1,005.86	-1,005.32	10.00	10.00	0.00	270.07
6,800.00	10.66	270.07	6,663.05	447.87	996.01	-995.47	10.00	10.00	0.00	0.00
6,900.00	20.66	270.07	6,759.22	447.90	969.06	-968.51	10.00	10.00	0.00	0.00
7,000.00	30.66	270.07	6,849.24	447.96	925.81	-925.26	10.00	10.00	0.00	0.00
7,100.00	40.66	270.07	6,930.39	448.04	867.58	-867.04	10.00	10.00	0.00	0.00
7,200.00	50.66	270.07	7,000.19	448.13	796.15	-795.61	10.00	10.00	0.00	0.00
7,219.02	52.56	270.07	7,012.00	448.15	781.25	-780.70	10.00	10.00	0.00	0.00
<b>Sharon Springs</b>										
7,286.94	59.35	270.07	7,050.00	448.22	725.00	-724.45	10.00	10.00	0.00	0.00
<b>Niobrara A</b>										
7,300.00	60.66	270.07	7,056.53	448.24	713.69	-713.14	10.00	10.00	0.00	0.00
<b>DLS = 10/100'</b>										
7,400.00	70.66	270.07	7,097.69	448.35	622.69	-622.15	10.00	10.00	0.00	0.00
7,480.83	78.74	270.07	7,119.00	448.46	544.79	-544.24	10.00	10.00	0.00	0.00
<b>Niobrara B</b>										
7,500.00	80.66	270.07	7,122.43	448.48	525.93	-525.38	10.00	10.00	0.00	0.00
7,598.08	90.47	270.07	7,130.00	448.61	428.27	-427.72	10.00	10.00	0.00	0.00
<b>End Build @ 7598.08ft - Landing Target (Heel) - 7"</b>										
7,600.00	90.47	270.07	7,129.99	448.61	426.35	-425.80	0.02	0.02	0.00	0.00
7,700.00	90.47	270.07	7,129.17	448.74	326.35	-325.80	0.00	0.00	0.00	0.00
7,800.00	90.47	270.07	7,128.35	448.87	226.35	-225.80	0.00	0.00	0.00	0.00
7,881.35	90.47	270.07	7,127.69	448.98	145.00	-144.45	0.00	0.00	0.00	0.00
<b>RMF 30N-15HZ_CP</b>										
7,900.00	90.47	270.07	7,127.54	449.00	126.36	-125.81	0.00	0.00	0.00	0.00
8,000.00	90.47	270.07	7,126.72	449.13	26.36	-25.81	0.00	0.00	0.00	0.00
8,100.00	90.47	270.07	7,125.90	449.26	-73.64	74.19	0.00	0.00	0.00	0.00
8,200.00	90.47	270.07	7,125.08	449.39	-173.63	174.18	0.00	0.00	0.00	0.00
8,300.00	90.47	270.07	7,124.27	449.52	-273.63	274.18	0.00	0.00	0.00	0.00
8,400.00	90.47	270.07	7,123.45	449.65	-373.63	374.18	0.00	0.00	0.00	0.00
8,500.00	90.47	270.07	7,122.63	449.78	-473.62	474.17	0.00	0.00	0.00	0.00

**Plan Report for RMF 30N-15HZ - Permit Rev-2**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
8,600.00	90.47	270.07	7,121.81	449.91	-573.62	574.17	0.00	0.00	0.00	0.00
8,700.00	90.47	270.07	7,121.00	450.04	-673.62	674.17	0.00	0.00	0.00	0.00
8,800.00	90.47	270.07	7,120.18	450.17	-773.61	774.16	0.00	0.00	0.00	0.00
8,900.00	90.47	270.07	7,119.36	450.30	-873.61	874.16	0.00	0.00	0.00	0.00
9,000.00	90.47	270.07	7,118.54	450.43	-973.61	974.16	0.00	0.00	0.00	0.00
9,100.00	90.47	270.07	7,117.73	450.56	-1,073.60	1,074.15	0.00	0.00	0.00	0.00
9,200.00	90.47	270.07	7,116.91	450.69	-1,173.60	1,174.15	0.00	0.00	0.00	0.00
9,300.00	90.47	270.07	7,116.09	450.82	-1,273.60	1,274.15	0.00	0.00	0.00	0.00
9,400.00	90.47	270.07	7,115.27	450.95	-1,373.59	1,374.14	0.00	0.00	0.00	0.00
9,500.00	90.47	270.07	7,114.46	451.08	-1,473.59	1,474.14	0.00	0.00	0.00	0.00
9,600.00	90.47	270.07	7,113.64	451.21	-1,573.59	1,574.14	0.00	0.00	0.00	0.00
9,700.00	90.47	270.07	7,112.82	451.34	-1,673.58	1,674.13	0.00	0.00	0.00	0.00
9,800.00	90.47	270.07	7,112.01	451.47	-1,773.58	1,774.13	0.00	0.00	0.00	0.00
9,900.00	90.47	270.07	7,111.19	451.60	-1,873.58	1,874.13	0.00	0.00	0.00	0.00
10,000.00	90.47	270.07	7,110.37	451.73	-1,973.57	1,974.12	0.00	0.00	0.00	0.00
10,100.00	90.47	270.07	7,109.55	451.86	-2,073.57	2,074.12	0.00	0.00	0.00	0.00
10,200.00	90.47	270.07	7,108.74	451.99	-2,173.57	2,174.12	0.00	0.00	0.00	0.00
10,300.00	90.47	270.07	7,107.92	452.12	-2,273.56	2,274.11	0.00	0.00	0.00	0.00
10,400.00	90.47	270.07	7,107.10	452.25	-2,373.56	2,374.11	0.00	0.00	0.00	0.00
10,500.00	90.47	270.07	7,106.28	452.38	-2,473.56	2,474.11	0.00	0.00	0.00	0.00
10,600.00	90.47	270.07	7,105.47	452.51	-2,573.55	2,574.10	0.00	0.00	0.00	0.00
10,700.00	90.47	270.07	7,104.65	452.64	-2,673.55	2,674.10	0.00	0.00	0.00	0.00
10,800.00	90.47	270.07	7,103.83	452.77	-2,773.55	2,774.10	0.00	0.00	0.00	0.00
10,900.00	90.47	270.07	7,103.01	452.90	-2,873.54	2,874.09	0.00	0.00	0.00	0.00
11,000.00	90.47	270.07	7,102.20	453.03	-2,973.54	2,974.09	0.00	0.00	0.00	0.00
11,100.00	90.47	270.07	7,101.38	453.16	-3,073.53	3,074.09	0.00	0.00	0.00	0.00
11,200.00	90.47	270.07	7,100.56	453.29	-3,173.53	3,174.08	0.00	0.00	0.00	0.00
11,300.00	90.47	270.07	7,099.75	453.42	-3,273.53	3,274.08	0.00	0.00	0.00	0.00
11,400.00	90.47	270.07	7,098.93	453.55	-3,373.52	3,374.08	0.00	0.00	0.00	0.00
11,500.00	90.47	270.07	7,098.11	453.68	-3,473.52	3,474.07	0.00	0.00	0.00	0.00
11,600.00	90.47	270.07	7,097.29	453.81	-3,573.52	3,574.07	0.00	0.00	0.00	0.00
11,700.00	90.47	270.07	7,096.48	453.94	-3,673.51	3,674.07	0.00	0.00	0.00	0.00
11,800.00	90.47	270.07	7,095.66	454.07	-3,773.51	3,774.06	0.00	0.00	0.00	0.00
11,900.00	90.47	270.07	7,094.84	454.20	-3,873.51	3,874.06	0.00	0.00	0.00	0.00
12,000.00	90.47	270.07	7,094.02	454.33	-3,973.50	3,974.06	0.00	0.00	0.00	0.00
12,100.00	90.47	270.07	7,093.21	454.46	-4,073.50	4,074.05	0.00	0.00	0.00	0.00
12,200.00	90.47	270.07	7,092.39	454.59	-4,173.50	4,174.05	0.00	0.00	0.00	0.00
12,247.60	90.47	270.07	7,092.00	454.65	-4,221.10	4,221.65	0.00	0.00	0.00	0.00

TD Well @ 12247.60ft - Total Depth (Toe) - RMF 30N-15HZ\_BHL

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,585.00	1,585.00	0.00	0.00	Begin Nudge @ 1585.00ft
2,335.00	2,326.46	39.70	89.18	End Nudge @ 2335.00ft
5,835.00	5,707.20	408.15	916.73	Begin Drop @ 5835.00ft
6,585.00	6,448.66	447.86	1,005.90	End Drop @ 6585.00ft
6,593.40	6,457.06	447.86	1,005.90	Top of 4.5" Liner @ 6593.40ft
6,693.40	6,557.06	447.86	1,005.90	KOP @ 6693.40ft
7,300.00	7,056.53	448.24	713.69	DLS = 10/100'
7,598.08	7,130.00	448.61	428.27	End Build @ 7598.08ft
12,247.60	7,092.00	454.65	-4,221.10	TD Well @ 12247.60ft

## Plan Report for RMF 30N-15HZ - Permit Rev-2

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	270.07	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,598.08	Permit Rev-2	MWD+IFR1
7,598.08	12,247.60	Permit Rev-2	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,067.00	1,067.00	9 5/8"	9-5/8	13-1/2
7,598.08	7,130.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,130.73	4,061.00	Sussex		0.00	
4,681.49	4,593.00	Shannon		0.00	
7,219.02	7,012.00	Sharon Springs		0.00	
7,286.94	7,050.00	Niobrara A		0.00	
7,480.83	7,119.00	Niobrara B		0.00	
7,598.08	7,130.00	Landing Target (Heel)		0.00	
12,247.60	7,092.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
RMF 30N-15HZ_SHL	0.00	0.00	0.00	Point
RMF 30N-15HZ_SEC	0.00	0.00	0.00	Polygon
RMF 30N-15HZ_BHL	7,092.00	454.65	-4,221.10	Point
RMF 30N-15HZ_CP	7,130.00	525.18	145.08	Point

**North Reference Sheet for Sec. 15-T3N-R68W - RMF 30N-15HZ - Plan B**

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' @ 4987.00usft (Drilling Rig). Northing and Easting are relative to RMF 30N-15HZ

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: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995690

Grid Coordinates of Well: 1,327,558.52 usft N, 3,144,665.45 usft E

Geographical Coordinates of Well: 40° 13' 52.99" N, 104° 58' 54.70" W

Grid Convergence at Surface is: 0.33°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,247.60usft  
the Bottom Hole Displacement is 4,245.51usft in the Direction of 276.15° ( True).

Magnetic Convergence at surface is: -8.35° ( 3 October 2013, , BGGM2013)

