

# US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Green Pad

Green 2C-8HZ

Plan A

Plan: Permit Rev-1

## Sperry Drilling Services Proposal Report

27 October, 2014

Well Coordinates: 14,553,213.23 N, 1,726,121.46 E (40° 04' 20.33" N, 104° 41' 37.12" W)

Ground Level: 4,971.00 usft

Local Coordinate Origin:

Centered on Well Green 2C-8HZ

Viewing Datum:

RKB = 17' @ 4988.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

**HALLIBURTON**

Project: WELD-NAD83-UTMFT13N  
Site: Green Pad  
Well: Green 2C-8HZ  
Wellbore: Plan A  
Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

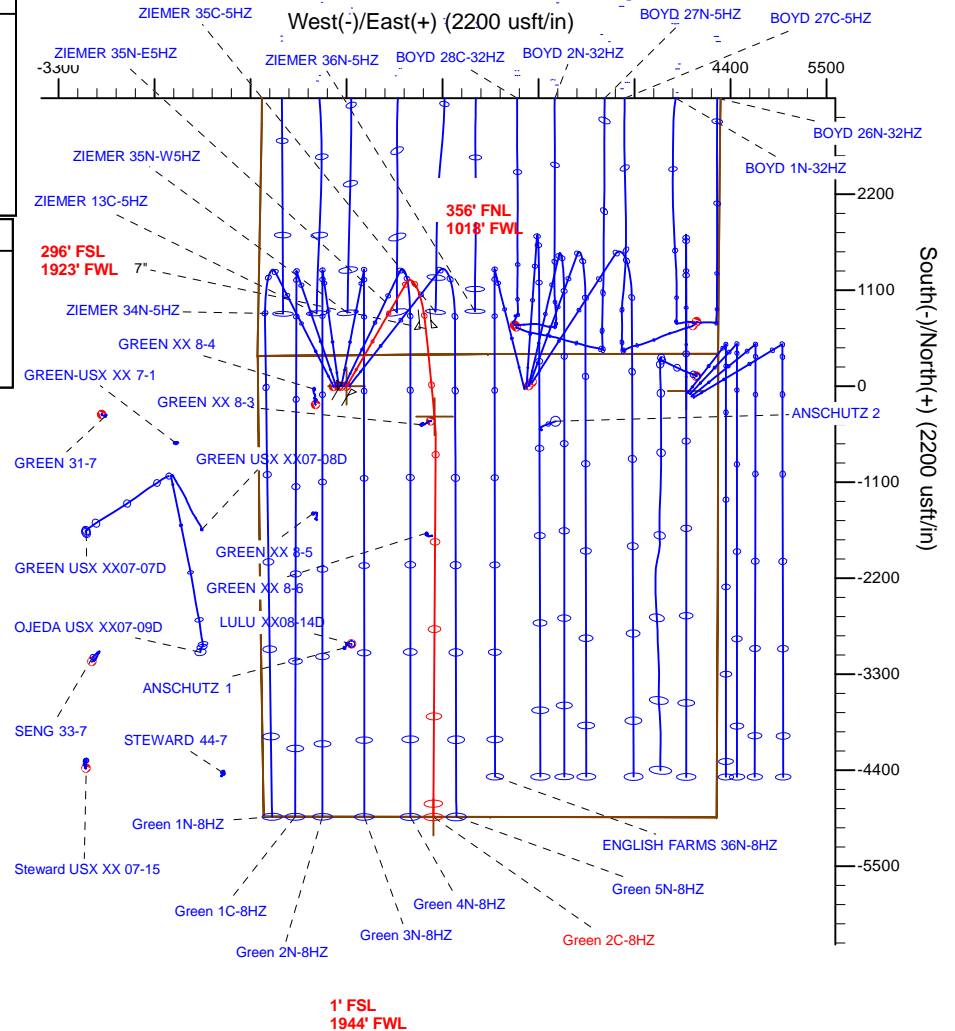
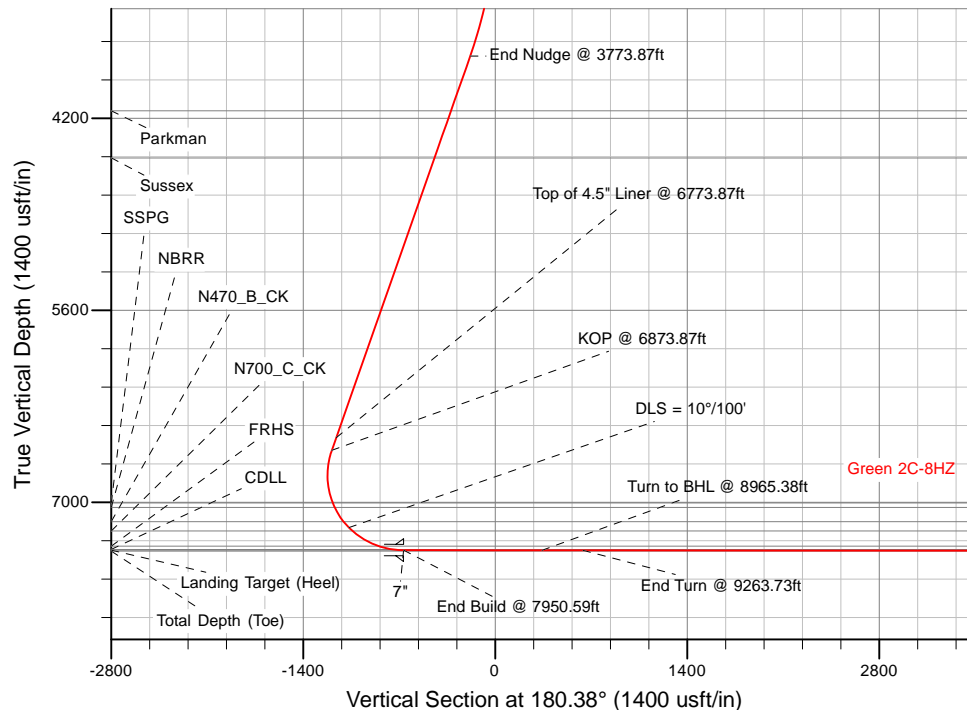
**HALLIBURTON**  
Sperry Drilling

## 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	2673.87	0.00	0.00	2673.87	0.00	0.00	0.00	0.00	0.00	
3	3773.87	22.00	30.00	3747.04	180.66	104.30	2.00	30.00	-181.34	
4	6873.87	22.00	30.00	6621.31	1186.35	684.94	0.00	0.00	-1190.87	
5	7950.59	89.93	174.41	7349.00	660.51	908.14	10.00	142.35	-666.52	
6	8965.38	89.93	174.41	7350.16	-349.46	1007.02	0.00	0.00	342.77	Green 2C-8HZ_Lat Tgt
7	9263.73	89.94	180.38	7350.49	-647.36	1020.59	2.00	89.96	640.58	
8	13552.10	89.94	180.38	7355.00	-4935.64	992.49	0.00	0.00	4928.95	Green 2C-8HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Green 2C-8HZ_SHL	0.00	0.00	0.00	40.072313	-104.693644	
1N-R65W-Sec. 8 Section lines	7.00	-4321.17	7967.77	40.060443	-104.665168	Polygon
1N-R65W-Sec. 5 Section Lines	39.00	-55.05	3890.04	40.072161	-104.679739	Polygon
Green 2C-8HZ_Lat Tgt	7350.16	-349.46	1007.02	40.071353	-104.690044	
Green 2C-8HZ_BHL	7355.00	-4935.64	992.49	40.058759	-104.690097	Point



TVD MD

6528.59 6773.87 Top of 4.5" Liner @ 6773.87ft  
6621.31 6873.87 KOP @ 6873.87ft

WELL DETAILS: Green 2C-8HZ

Ground Level: 4971.00  
RKB = 17' @ 4988.00usft (D Rig)

Plan: Permit Rev-1 (Green 2C-8HZ/Plan A)

Created By: Clint Eshelman Date: 10/27/2014  
Reviewed: Date:

## Plan Report for Green 2C-8HZ - Permit Rev-1

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>Green 2C-8HZ_SHL</b>										
7.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1N-R65W-Sec. 8_Section lines</b>										
39.00	0.00	0.00	39.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1N-R65W-Sec. 5_Section 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
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
1,021.00	0.00	0.00	1,021.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Base Fox Hills</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
1,497.00	0.00	0.00	1,497.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Csg Setting Depth - 9 5/8"</b>										
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,673.87	0.00	0.00	2,673.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 2673.87ft</b>										
2,700.00	0.52	30.00	2,700.00	0.10	0.06	-0.10	2.00	2.00	0.00	30.00
2,800.00	2.52	30.00	2,799.96	2.40	1.39	-2.41	2.00	2.00	0.00	0.00
2,900.00	4.52	30.00	2,899.77	7.73	4.46	-7.75	2.00	2.00	0.00	0.00
3,000.00	6.52	30.00	2,999.30	16.06	9.27	-16.12	2.00	2.00	0.00	0.00
3,100.00	8.52	30.00	3,098.43	27.40	15.82	-27.50	2.00	2.00	0.00	0.00
3,200.00	10.52	30.00	3,197.05	41.72	24.09	-41.88	2.00	2.00	0.00	0.00
3,300.00	12.52	30.00	3,295.03	59.02	34.08	-59.25	2.00	2.00	0.00	0.00
3,400.00	14.52	30.00	3,392.25	79.27	45.77	-79.57	2.00	2.00	0.00	0.00
3,500.00	16.52	30.00	3,488.60	102.45	59.15	-102.84	2.00	2.00	0.00	0.00
3,600.00	18.52	30.00	3,583.95	128.52	74.20	-129.01	2.00	2.00	0.00	0.00
3,700.00	20.52	30.00	3,678.20	157.46	90.91	-158.06	2.00	2.00	0.00	0.00
3,773.87	22.00	30.00	3,747.04	180.66	104.30	-181.34	2.00	2.00	0.00	0.00
<b>End Nudge @ 3773.87ft</b>										
3,800.00	22.00	30.00	3,771.27	189.13	109.20	-189.85	0.00	0.00	0.00	0.00
3,900.00	22.00	30.00	3,863.98	221.57	127.93	-222.42	0.00	0.00	0.00	0.00
4,000.00	22.00	30.00	3,956.70	254.02	146.66	-254.98	0.00	0.00	0.00	0.00
4,100.00	22.00	30.00	4,049.42	286.46	165.39	-287.55	0.00	0.00	0.00	0.00
4,200.00	22.00	30.00	4,142.14	318.90	184.12	-320.11	0.00	0.00	0.00	0.00
4,203.08	22.00	30.00	4,145.00	319.90	184.69	-321.12	0.00	0.00	0.00	0.00
<b>Parkman</b>										

## Plan Report for Green 2C-8HZ - Permit Rev-1

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 (°)
4,300.00	22.00	30.00	4,234.86	351.34	202.85	-352.68	0.00	0.00	0.00	0.00
4,400.00	22.00	30.00	4,327.58	383.78	221.58	-385.24	0.00	0.00	0.00	0.00
4,500.00	22.00	30.00	4,420.29	416.23	240.31	-417.81	0.00	0.00	0.00	0.00
4,575.18	22.00	30.00	4,490.00	440.62	254.39	-442.29	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,600.00	22.00	30.00	4,513.01	448.67	259.04	-450.38	0.00	0.00	0.00	0.00
4,700.00	22.00	30.00	4,605.73	481.11	277.77	-482.94	0.00	0.00	0.00	0.00
4,800.00	22.00	30.00	4,698.45	513.55	296.50	-515.51	0.00	0.00	0.00	0.00
4,900.00	22.00	30.00	4,791.17	545.99	315.23	-548.07	0.00	0.00	0.00	0.00
5,000.00	22.00	30.00	4,883.89	578.44	333.96	-580.64	0.00	0.00	0.00	0.00
5,100.00	22.00	30.00	4,976.61	610.88	352.69	-613.20	0.00	0.00	0.00	0.00
5,200.00	22.00	30.00	5,069.32	643.32	371.42	-645.77	0.00	0.00	0.00	0.00
5,300.00	22.00	30.00	5,162.04	675.76	390.15	-678.33	0.00	0.00	0.00	0.00
5,400.00	22.00	30.00	5,254.76	708.20	408.88	-710.90	0.00	0.00	0.00	0.00
5,500.00	22.00	30.00	5,347.48	740.64	427.61	-743.46	0.00	0.00	0.00	0.00
5,600.00	22.00	30.00	5,440.20	773.09	446.34	-776.03	0.00	0.00	0.00	0.00
5,700.00	22.00	30.00	5,532.92	805.53	465.07	-808.59	0.00	0.00	0.00	0.00
5,800.00	22.00	30.00	5,625.63	837.97	483.80	-841.16	0.00	0.00	0.00	0.00
5,900.00	22.00	30.00	5,718.35	870.41	502.53	-873.73	0.00	0.00	0.00	0.00
6,000.00	22.00	30.00	5,811.07	902.85	521.26	-906.29	0.00	0.00	0.00	0.00
6,100.00	22.00	30.00	5,903.79	935.30	539.99	-938.86	0.00	0.00	0.00	0.00
6,200.00	22.00	30.00	5,996.51	967.74	558.72	-971.42	0.00	0.00	0.00	0.00
6,300.00	22.00	30.00	6,089.23	1,000.18	577.45	-1,003.99	0.00	0.00	0.00	0.00
6,400.00	22.00	30.00	6,181.94	1,032.62	596.18	-1,036.55	0.00	0.00	0.00	0.00
6,500.00	22.00	30.00	6,274.66	1,065.06	614.91	-1,069.12	0.00	0.00	0.00	0.00
6,600.00	22.00	30.00	6,367.38	1,097.51	633.64	-1,101.68	0.00	0.00	0.00	0.00
6,700.00	22.00	30.00	6,460.10	1,129.95	652.38	-1,134.25	0.00	0.00	0.00	0.00
6,773.87	22.00	30.00	6,528.59	1,153.91	666.21	-1,158.30	0.00	0.00	0.00	0.00
<b>Top of 4.5" Liner @ 6773.87ft</b>										
6,800.00	22.00	30.00	6,552.82	1,162.39	671.11	-1,166.81	0.00	0.00	0.00	0.00
6,873.87	22.00	30.00	6,621.31	1,186.35	684.94	-1,190.87	0.00	0.00	0.00	0.00
<b>KOP @ 6873.87ft</b>										
6,900.00	19.99	34.67	6,645.70	1,194.27	689.93	-1,198.82	10.00	-7.69	17.88	142.35
7,000.00	14.17	63.02	6,741.41	1,213.93	710.62	-1,218.62	10.00	-5.82	28.34	137.99
7,100.00	14.08	104.86	6,838.64	1,216.37	733.34	-1,221.21	10.00	-0.09	41.85	110.81
7,200.00	19.81	133.68	6,934.42	1,201.51	757.41	-1,206.51	10.00	5.72	28.82	70.13
7,275.49	25.86	145.41	7,004.00	1,179.09	776.03	-1,184.21	10.00	8.02	15.55	42.48
<b>SSPG</b>										
7,300.00	27.97	148.16	7,025.85	1,169.81	782.10	-1,174.97	10.00	8.63	11.19	31.64
7,313.83	29.19	149.54	7,038.00	1,164.14	785.52	-1,169.33	10.00	8.78	10.00	29.20
<b>NBRR</b>										
7,400.00	37.00	156.25	7,110.16	1,122.22	806.66	-1,127.55	10.00	9.06	7.79	27.98
7,439.60	40.69	158.56	7,141.00	1,099.29	816.18	-1,104.68	10.00	9.31	5.83	22.35
<b>N470_B_CK</b>										
7,500.00	46.38	161.48	7,184.77	1,060.20	830.33	-1,065.69	10.00	9.43	4.84	20.55
<b>DLS = 10°/100'</b>										
7,534.74	49.69	162.92	7,208.00	1,035.61	838.22	-1,041.15	10.00	9.51	4.14	18.43
<b>N700_C_CK</b>										
7,600.00	55.94	165.28	7,247.43	985.63	852.41	-991.26	10.00	9.58	3.62	17.46
7,700.00	65.58	168.30	7,296.23	900.77	872.22	-906.53	10.00	9.65	3.02	16.03
7,762.47	71.64	169.95	7,319.00	843.67	883.18	-849.51	10.00	9.69	2.64	14.55
<b>FRHS</b>										
7,800.00	75.28	170.88	7,329.68	808.20	889.16	-814.08	10.00	9.71	2.49	13.95
7,874.45	82.52	172.66	7,344.00	735.94	899.60	-741.89	10.00	9.72	2.38	13.68
<b>CDLL</b>										
7,900.00	85.01	173.25	7,346.77	710.74	902.71	-716.71	10.00	9.73	2.32	13.34
7,950.59	89.93	174.41	7,349.00	660.51	908.14	-666.52	10.00	9.73	2.29	13.28
<b>End Build @ 7950.59ft - Landing Target (Heel) - 7"</b>										

## Plan Report for Green 2C-8HZ - Permit Rev-1

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 (°)
8,000.00	89.93	174.41	7,349.06	611.33	912.96	-617.38	0.00	0.00	0.00	13.23
8,100.00	89.93	174.41	7,349.17	511.81	922.70	-517.92	0.00	0.00	0.00	0.00
8,200.00	89.93	174.41	7,349.29	412.29	932.45	-418.46	0.00	0.00	0.00	0.00
8,300.00	89.93	174.41	7,349.40	312.76	942.19	-319.00	0.00	0.00	0.00	0.00
8,400.00	89.93	174.41	7,349.52	213.24	951.93	-219.55	0.00	0.00	0.00	0.00
8,500.00	89.93	174.41	7,349.63	113.71	961.68	-120.09	0.00	0.00	0.00	0.00
8,600.00	89.93	174.41	7,349.74	14.19	971.42	-20.63	0.00	0.00	0.00	0.00
8,700.00	89.93	174.41	7,349.86	-85.33	981.16	78.83	0.00	0.00	0.00	0.00
8,800.00	89.93	174.41	7,349.97	-184.86	990.91	178.28	0.00	0.00	0.00	0.00
8,900.00	89.93	174.41	7,350.09	-284.38	1,000.65	277.74	0.00	0.00	0.00	0.00
8,965.38	89.93	174.41	7,350.16	-349.46	1,007.02	342.77	0.00	0.00	0.00	0.00
Turn to BHL @ 8965.38ft - Green 2C-8HZ_Lat Tgt										
9,000.00	89.94	175.10	7,350.20	-383.93	1,010.19	377.22	2.00	0.00	2.00	89.96
9,100.00	89.94	177.10	7,350.31	-483.69	1,016.99	476.93	2.00	0.00	2.00	89.95
9,200.00	89.94	179.10	7,350.42	-583.63	1,020.30	576.85	2.00	0.00	2.00	89.95
9,263.73	89.94	180.38	7,350.49	-647.36	1,020.59	640.57	2.00	0.00	2.00	89.95
End Turn @ 9263.73ft										
9,300.00	89.94	180.38	7,350.53	-683.63	1,020.35	676.84	0.00	0.00	0.00	89.95
9,400.00	89.94	180.38	7,350.63	-783.62	1,019.70	776.84	0.00	0.00	0.00	0.00
9,500.00	89.94	180.38	7,350.74	-883.62	1,019.04	876.84	0.00	0.00	0.00	0.00
9,600.00	89.94	180.38	7,350.84	-983.62	1,018.39	976.84	0.00	0.00	0.00	0.00
9,700.00	89.94	180.38	7,350.95	-1,083.62	1,017.73	1,076.84	0.00	0.00	0.00	0.00
9,800.00	89.94	180.38	7,351.05	-1,183.62	1,017.08	1,176.84	0.00	0.00	0.00	0.00
9,900.00	89.94	180.38	7,351.16	-1,283.61	1,016.42	1,276.84	0.00	0.00	0.00	0.00
10,000.00	89.94	180.38	7,351.26	-1,383.61	1,015.77	1,376.84	0.00	0.00	0.00	0.00
10,100.00	89.94	180.38	7,351.37	-1,483.61	1,015.11	1,476.84	0.00	0.00	0.00	0.00
10,200.00	89.94	180.38	7,351.47	-1,583.61	1,014.46	1,576.84	0.00	0.00	0.00	0.00
10,300.00	89.94	180.38	7,351.58	-1,683.60	1,013.80	1,676.84	0.00	0.00	0.00	0.00
10,400.00	89.94	180.38	7,351.68	-1,783.60	1,013.15	1,776.84	0.00	0.00	0.00	0.00
10,500.00	89.94	180.38	7,351.79	-1,883.60	1,012.49	1,876.84	0.00	0.00	0.00	0.00
10,600.00	89.94	180.38	7,351.89	-1,983.60	1,011.84	1,976.84	0.00	0.00	0.00	0.00
10,700.00	89.94	180.38	7,352.00	-2,083.60	1,011.18	2,076.84	0.00	0.00	0.00	0.00
10,800.00	89.94	180.38	7,352.10	-2,183.59	1,010.53	2,176.84	0.00	0.00	0.00	0.00
10,900.00	89.94	180.38	7,352.21	-2,283.59	1,009.87	2,276.84	0.00	0.00	0.00	0.00
11,000.00	89.94	180.38	7,352.31	-2,383.59	1,009.22	2,376.84	0.00	0.00	0.00	0.00
11,100.00	89.94	180.38	7,352.42	-2,483.59	1,008.56	2,476.84	0.00	0.00	0.00	0.00
11,200.00	89.94	180.38	7,352.52	-2,583.58	1,007.91	2,576.84	0.00	0.00	0.00	0.00
11,300.00	89.94	180.38	7,352.63	-2,683.58	1,007.25	2,676.84	0.00	0.00	0.00	0.00
11,400.00	89.94	180.38	7,352.74	-2,783.58	1,006.59	2,776.84	0.00	0.00	0.00	0.00
11,500.00	89.94	180.38	7,352.84	-2,883.58	1,005.94	2,876.84	0.00	0.00	0.00	0.00
11,600.00	89.94	180.38	7,352.95	-2,983.58	1,005.28	2,976.84	0.00	0.00	0.00	0.00
11,700.00	89.94	180.38	7,353.05	-3,083.57	1,004.63	3,076.84	0.00	0.00	0.00	0.00
11,800.00	89.94	180.38	7,353.16	-3,183.57	1,003.97	3,176.84	0.00	0.00	0.00	0.00
11,900.00	89.94	180.38	7,353.26	-3,283.57	1,003.32	3,276.84	0.00	0.00	0.00	0.00
12,000.00	89.94	180.38	7,353.37	-3,383.57	1,002.66	3,376.84	0.00	0.00	0.00	0.00
12,100.00	89.94	180.38	7,353.47	-3,483.56	1,002.01	3,476.84	0.00	0.00	0.00	0.00
12,200.00	89.94	180.38	7,353.58	-3,583.56	1,001.35	3,576.84	0.00	0.00	0.00	0.00
12,300.00	89.94	180.38	7,353.68	-3,683.56	1,000.70	3,676.84	0.00	0.00	0.00	0.00
12,400.00	89.94	180.38	7,353.79	-3,783.56	1,000.04	3,776.84	0.00	0.00	0.00	0.00
12,500.00	89.94	180.38	7,353.89	-3,883.56	999.39	3,876.84	0.00	0.00	0.00	0.00
12,600.00	89.94	180.38	7,354.00	-3,983.55	998.73	3,976.84	0.00	0.00	0.00	0.00
12,700.00	89.94	180.38	7,354.10	-4,083.55	998.08	4,076.84	0.00	0.00	0.00	0.00
12,800.00	89.94	180.38	7,354.21	-4,183.55	997.42	4,176.84	0.00	0.00	0.00	0.00
12,900.00	89.94	180.38	7,354.31	-4,283.55	996.77	4,276.84	0.00	0.00	0.00	0.00
13,000.00	89.94	180.38	7,354.42	-4,383.55	996.11	4,376.84	0.00	0.00	0.00	0.00
13,100.00	89.94	180.38	7,354.52	-4,483.54	995.46	4,476.84	0.00	0.00	0.00	0.00
13,200.00	89.94	180.38	7,354.63	-4,583.54	994.80	4,576.84	0.00	0.00	0.00	0.00
13,300.00	89.94	180.38	7,354.73	-4,683.54	994.15	4,676.84	0.00	0.00	0.00	0.00
13,400.00	89.94	180.38	7,354.84	-4,783.54	993.49	4,776.84	0.00	0.00	0.00	0.00
13,500.00	89.94	180.38	7,354.95	-4,883.53	992.84	4,876.84	0.00	0.00	0.00	0.00

## Plan Report for Green 2C-8HZ - Permit Rev-1

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 (°)
13,552.10	89.94	180.38	7,355.00	-4,935.63	992.49	4,928.94	0.00	0.00	0.00	0.00
TD Well @ 13552.10ft - Green 2C-8HZ_BHL										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,673.87	2,673.87	0.00	0.00	Begin Nudge @ 2673.87ft
3,773.87	3,747.04	180.66	104.30	End Nudge @ 3773.87ft
6,773.87	6,528.59	1,153.91	666.21	Top of 4.5" Liner @ 6773.87ft
6,873.87	6,621.31	1,186.35	684.94	KOP @ 6873.87ft
7,500.00	7,184.77	1,060.20	830.33	DLS = 10°/100'
7,950.59	7,349.00	660.51	908.14	End Build @ 7950.59ft
8,965.38	7,350.16	-349.45	1,007.02	Turn to BHL @ 8965.38ft
9,263.73	7,350.49	-647.36	1,020.59	End Turn @ 9263.73ft
13,552.10	7,355.00	-4,935.63	992.49	TD Well @ 13552.10ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	180.38	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,950.59	Permit Rev-1	MWD+IFR1
7,950.59	13,552.10	Permit Rev-1	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,497.00	1,497.00	9 5/8"	9-5/8	13-1/2
7,950.59	7,349.00	7"	7	8-3/4

## Plan Report for Green 2C-8HZ - Permit Rev-1

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,021.00	1,021.00	Base Fox Hills		0.00	
1,497.00	1,497.00	Surface Csg Setting Depth		0.00	
4,203.08	4,145.00	Parkman		0.00	
4,575.18	4,490.00	Sussex		0.00	
7,275.49	7,004.00	SSPG		0.00	
7,313.83	7,038.00	NBRR		0.00	
7,439.60	7,141.00	N470_B_CK		0.00	
7,534.74	7,208.00	N700_C_CK		0.00	
7,762.47	7,319.00	FRHS		0.00	
7,874.45	7,344.00	CDLL		0.00	
7,950.59	7,349.00	Landing Target (Heel)		0.00	
13,552.10	7,355.00	Total Depth (Toe)		0.00	

***Targets associated with this wellbore***

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Green 2C-8HZ_BHL	7,355.00	-4,935.64	992.49	Point
Green 2C-8HZ_Lat Tgt	7,350.16	-349.46	1,007.02	Point
Green 2C-8HZ_SHL	0.00	0.00	0.00	Point
1N-R65W-Sec. 5_Section Lines	39.00	-55.05	3,890.04	Polygon
1N-R65W-Sec. 8_Section lines	7.00	-4,321.17	7,967.77	Polygon

**North Reference Sheet for Green Pad - Green 2C-8HZ - Plan A**

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' @ 4988.00usft (D Rig). Northing and Easting are relative to Green 2C-8HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960840

Grid Coordinates of Well: 14,553,213.23 usft N, 1,726,121.46 usft E

Geographical Coordinates of Well: 40° 04' 20.33" N, 104° 41' 37.12" W

Grid Convergence at Surface is: 0.20°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,552.10usft  
the Bottom Hole Displacement is 5,034.43usft in the Direction of 168.63° ( True).

Magnetic Convergence at surface is: -8.15° (23 October 2014, , IGRF2010)

