

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Green Pad

Green 2N-8HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

27 October, 2014

Well Coordinates: 14,553,211.46 N, 1,726,031.38 E (40° 04' 20.31" N, 104° 41' 38.28" W)

Ground Level: 4,971.00 usft

Local Coordinate Origin:

Centered on Well Green 2N-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 2N-8HZ

Wellbore: Plan A

Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

HALLIBURTON

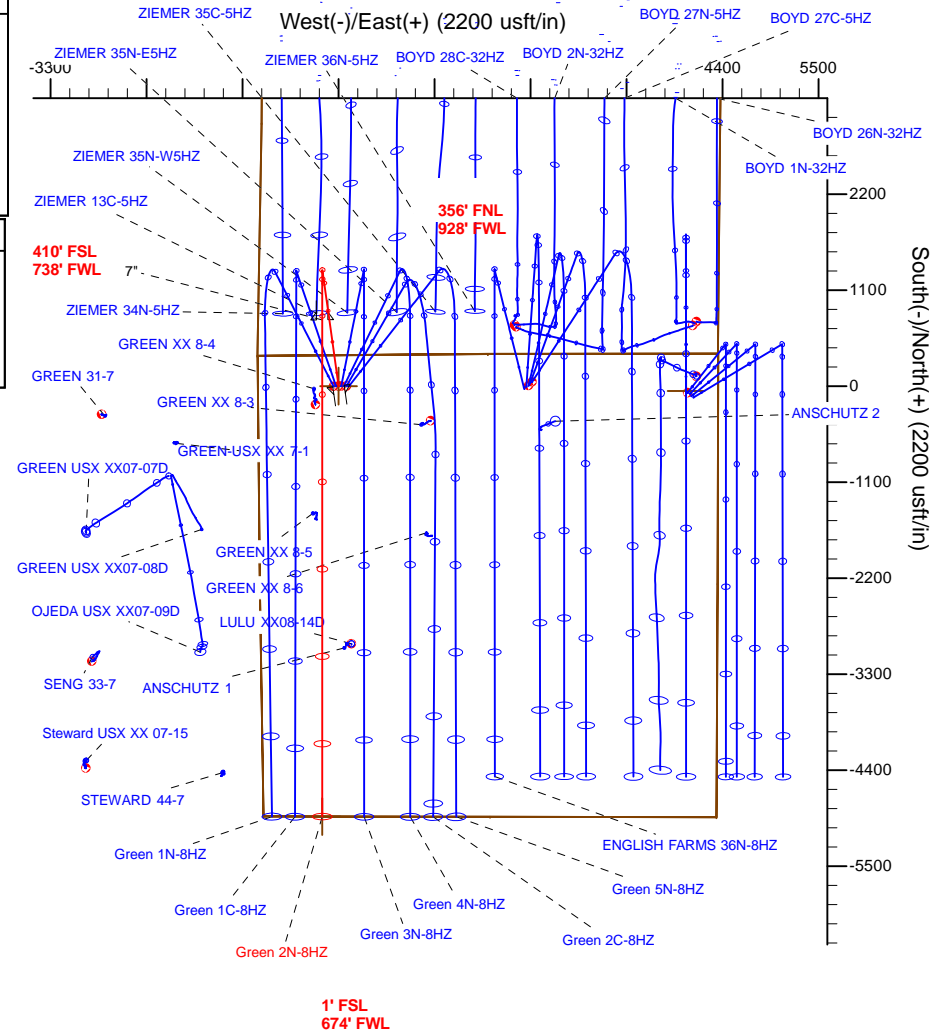
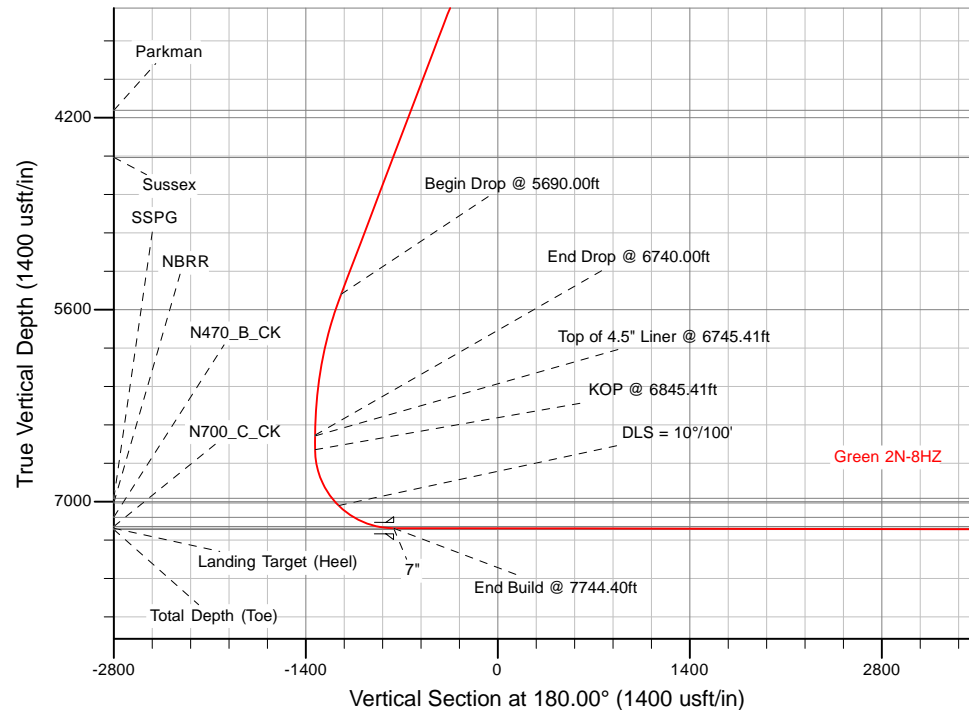
Sperry Drilling

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	1950.00	0.00	0.00	1950.00	0.00	0.00	0.00	0.00	0.00	
3	3000.00	21.00	352.00	2976.65	188.43	-26.48	2.00	352.00	-188.43	
4	5690.00	21.00	352.00	5487.98	1143.05	-160.65	0.00	0.00	-1143.05	
5	6740.00	0.00	0.00	6514.63	1331.48	-187.13	2.00	180.00	-1331.48	
6	6845.41	0.00	0.00	6620.04	1331.48	-187.13	0.00	0.00	-1331.48	
7	7744.40	89.90	180.00	7193.00	759.53	-187.12	10.00	180.00	-759.53	
8	13435.94	89.90	180.00	7203.00	-4932.00	-187.00	0.00	0.00	4932.00	Green 2N-8HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
Green 2N-8HZ_SHL	0.00	0.00	0.00	40.072309	-104.693966	Polygon
1N-R65W-Sec. 8 Section lines	7.00	-4319.68	8057.86	40.060443	-104.665168	Polygon
1N-R65W-Sec. 5 Section Lines	39.00	-53.58	3980.12	40.072161	-104.679739	Polygon
Green 2N-8HZ_TOE	7203.00	-4932.00	-187.00	40.058765	-104.694634	Polygon



WELL DETAILS: Green 2N-8HZ		
Ground Level: 4971.00		
RKB = 17' @ 4988.00usft (D Rig)		
Plan: Permit Rev-1 (Green 2N-8HZ/Plan A)		
Created By: Clint Eshelman		Date: 10/27/2014
Reviewed:		Date:

TVD	MD	
6520.04	6745.41	Top of 4.5" Liner @ 6745.41ft
6620.04	6845.41	KOP @ 6845.41ft

Plan Report for Green 2N-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
Green 2N-8HZ_SHL										
7.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1N-R65W-Sec. 8_Section lines										
39.00	0.00	0.00	39.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1N-R65W-Sec. 5_Section Lines										
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
Base Fox Hills										
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
Surface Csg Setting Depth - 9 5/8"										
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
1,950.00	0.00	0.00	1,950.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1950.00ft										
2,000.00	1.00	352.00	2,000.00	0.43	-0.06	-0.43	2.00	2.00	0.00	352.00
2,100.00	3.00	352.00	2,099.93	3.89	-0.55	-3.89	2.00	2.00	0.00	0.00
2,200.00	5.00	352.00	2,199.68	10.80	-1.52	-10.80	2.00	2.00	0.00	0.00
2,300.00	7.00	352.00	2,299.13	21.15	-2.97	-21.15	2.00	2.00	0.00	0.00
2,400.00	9.00	352.00	2,398.15	34.93	-4.91	-34.93	2.00	2.00	0.00	0.00
2,500.00	11.00	352.00	2,496.63	52.12	-7.33	-52.12	2.00	2.00	0.00	0.00
2,600.00	13.00	352.00	2,594.44	72.71	-10.22	-72.71	2.00	2.00	0.00	0.00
2,700.00	15.00	352.00	2,691.46	96.67	-13.59	-96.67	2.00	2.00	0.00	0.00
2,800.00	17.00	352.00	2,787.58	123.96	-17.42	-123.96	2.00	2.00	0.00	0.00
2,900.00	19.00	352.00	2,882.68	154.56	-21.72	-154.56	2.00	2.00	0.00	0.00
3,000.00	21.00	352.00	2,976.65	188.43	-26.48	-188.43	2.00	2.00	0.00	0.00
End Nudge @ 3000.00ft										
3,100.00	21.00	352.00	3,070.01	223.91	-31.47	-223.91	0.00	0.00	0.00	0.00
3,200.00	21.00	352.00	3,163.36	259.40	-36.46	-259.40	0.00	0.00	0.00	0.00
3,300.00	21.00	352.00	3,256.72	294.89	-41.44	-294.89	0.00	0.00	0.00	0.00
3,400.00	21.00	352.00	3,350.08	330.38	-46.43	-330.38	0.00	0.00	0.00	0.00
3,500.00	21.00	352.00	3,443.44	365.87	-51.42	-365.87	0.00	0.00	0.00	0.00
3,600.00	21.00	352.00	3,536.80	401.35	-56.41	-401.35	0.00	0.00	0.00	0.00
3,700.00	21.00	352.00	3,630.15	436.84	-61.39	-436.84	0.00	0.00	0.00	0.00
3,800.00	21.00	352.00	3,723.51	472.33	-66.38	-472.33	0.00	0.00	0.00	0.00
3,900.00	21.00	352.00	3,816.87	507.82	-71.37	-507.82	0.00	0.00	0.00	0.00
4,000.00	21.00	352.00	3,910.23	543.31	-76.36	-543.31	0.00	0.00	0.00	0.00
4,100.00	21.00	352.00	4,003.59	578.79	-81.34	-578.79	0.00	0.00	0.00	0.00
4,200.00	21.00	352.00	4,096.95	614.28	-86.33	-614.28	0.00	0.00	0.00	0.00
4,251.47	21.00	352.00	4,145.00	632.55	-88.90	-632.55	0.00	0.00	0.00	0.00
Parkman										
4,300.00	21.00	352.00	4,190.30	649.77	-91.32	-649.77	0.00	0.00	0.00	0.00

Plan Report for Green 2N-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 (°)
4,400.00	21.00	352.00	4,283.66	685.26	-96.31	-685.26	0.00	0.00	0.00	0.00
4,500.00	21.00	352.00	4,377.02	720.75	-101.29	-720.75	0.00	0.00	0.00	0.00
4,600.00	21.00	352.00	4,470.38	756.23	-106.28	-756.23	0.00	0.00	0.00	0.00
4,621.02	21.00	352.00	4,490.00	763.69	-107.33	-763.69	0.00	0.00	0.00	0.00
Sussex										
4,700.00	21.00	352.00	4,563.74	791.72	-111.27	-791.72	0.00	0.00	0.00	0.00
4,800.00	21.00	352.00	4,657.09	827.21	-116.26	-827.21	0.00	0.00	0.00	0.00
4,900.00	21.00	352.00	4,750.45	862.70	-121.24	-862.70	0.00	0.00	0.00	0.00
5,000.00	21.00	352.00	4,843.81	898.19	-126.23	-898.19	0.00	0.00	0.00	0.00
5,100.00	21.00	352.00	4,937.17	933.67	-131.22	-933.67	0.00	0.00	0.00	0.00
5,200.00	21.00	352.00	5,030.53	969.16	-136.21	-969.16	0.00	0.00	0.00	0.00
5,300.00	21.00	352.00	5,123.88	1,004.65	-141.19	-1,004.65	0.00	0.00	0.00	0.00
5,400.00	21.00	352.00	5,217.24	1,040.14	-146.18	-1,040.14	0.00	0.00	0.00	0.00
5,500.00	21.00	352.00	5,310.60	1,075.63	-151.17	-1,075.63	0.00	0.00	0.00	0.00
5,600.00	21.00	352.00	5,403.96	1,111.12	-156.16	-1,111.12	0.00	0.00	0.00	0.00
5,690.00	21.00	352.00	5,487.98	1,143.05	-160.65	-1,143.05	0.00	0.00	0.00	0.00
Begin Drop @ 5690.00ft										
5,700.00	20.80	352.00	5,497.32	1,146.59	-161.14	-1,146.59	2.00	-2.00	0.00	180.00
5,800.00	18.80	352.00	5,591.41	1,180.13	-165.86	-1,180.13	2.00	-2.00	0.00	180.00
5,900.00	16.80	352.00	5,686.61	1,210.40	-170.11	-1,210.40	2.00	-2.00	0.00	180.00
6,000.00	14.80	352.00	5,782.83	1,237.36	-173.90	-1,237.36	2.00	-2.00	0.00	180.00
6,100.00	12.80	352.00	5,879.94	1,260.98	-177.22	-1,260.98	2.00	-2.00	0.00	180.00
6,200.00	10.80	352.00	5,977.82	1,281.23	-180.07	-1,281.23	2.00	-2.00	0.00	180.00
6,300.00	8.80	352.00	6,076.36	1,298.09	-182.43	-1,298.09	2.00	-2.00	0.00	180.00
6,400.00	6.80	352.00	6,175.43	1,311.52	-184.32	-1,311.52	2.00	-2.00	0.00	180.00
6,500.00	4.80	352.00	6,274.91	1,321.53	-185.73	-1,321.53	2.00	-2.00	0.00	180.00
6,600.00	2.80	352.00	6,374.68	1,328.09	-186.65	-1,328.09	2.00	-2.00	0.00	180.00
6,700.00	0.80	352.00	6,474.63	1,331.20	-187.09	-1,331.20	2.00	-2.00	0.00	180.00
6,740.00	0.00	0.00	6,514.63	1,331.48	-187.13	-1,331.48	2.00	-2.00	20.00	180.00
End Drop @ 6740.00ft										
6,745.41	0.00	0.00	6,520.04	1,331.48	-187.13	-1,331.48	0.00	0.00	0.00	180.00
Top of 4.5" Liner @ 6745.41ft										
6,800.00	0.00	0.00	6,574.63	1,331.48	-187.13	-1,331.48	0.00	0.00	0.00	0.00
6,845.41	0.00	0.00	6,620.04	1,331.48	-187.13	-1,331.48	0.00	0.00	0.00	0.00
KOP @ 6845.41ft										
6,900.00	5.46	180.00	6,674.55	1,328.88	-187.13	-1,328.88	10.00	10.00	0.00	180.00
7,000.00	15.46	180.00	6,772.76	1,310.75	-187.13	-1,310.75	10.00	10.00	0.00	0.00
7,100.00	25.46	180.00	6,866.33	1,275.84	-187.13	-1,275.84	10.00	10.00	0.00	0.00
7,200.00	35.46	180.00	6,952.42	1,225.21	-187.13	-1,225.21	10.00	10.00	0.00	0.00
7,228.22	38.28	180.00	6,975.00	1,208.28	-187.12	-1,208.28	10.00	10.00	0.00	0.00
SSPG										
7,272.96	42.76	180.00	7,009.00	1,179.22	-187.12	-1,179.22	10.00	10.00	0.00	0.00
NBRR										
7,300.00	45.46	180.00	7,028.41	1,160.41	-187.12	-1,160.41	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,400.00	55.46	180.00	7,092.00	1,083.39	-187.12	-1,083.39	10.00	10.00	0.00	0.00
7,440.97	59.56	180.00	7,114.00	1,048.84	-187.12	-1,048.84	10.00	10.00	0.00	0.00
N470_B_CK										
7,500.00	65.46	180.00	7,141.24	996.50	-187.12	-996.50	10.00	10.00	0.00	0.00
7,600.00	75.46	180.00	7,174.64	902.38	-187.12	-902.38	10.00	10.00	0.00	0.00
7,623.14	77.77	180.00	7,180.00	879.86	-187.12	-879.86	10.00	10.00	0.00	0.00
N700_C_CK										
7,700.00	85.46	180.00	7,191.20	803.89	-187.12	-803.89	10.00	10.00	0.00	0.00
7,744.40	89.90	180.00	7,193.00	759.53	-187.12	-759.53	10.00	10.00	0.00	0.00
End Build @ 7744.40ft - Landing Target (Heel) - 7"										
7,800.00	89.90	180.00	7,193.09	703.93	-187.11	-703.93	0.00	0.00	0.00	0.00
7,900.00	89.90	180.00	7,193.27	603.93	-187.11	-603.93	0.00	0.00	0.00	0.00
8,000.00	89.90	180.00	7,193.44	503.93	-187.11	-503.93	0.00	0.00	0.00	0.00

Plan Report for Green 2N-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 (°)
8,100.00	89.90	180.00	7,193.62	403.93	-187.11	-403.93	0.00	0.00	0.00	0.00
8,200.00	89.90	180.00	7,193.80	303.93	-187.11	-303.93	0.00	0.00	0.00	0.00
8,300.00	89.90	180.00	7,193.97	203.93	-187.10	-203.93	0.00	0.00	0.00	0.00
8,400.00	89.90	180.00	7,194.15	103.93	-187.10	-103.93	0.00	0.00	0.00	0.00
8,500.00	89.90	180.00	7,194.32	3.93	-187.10	-3.93	0.00	0.00	0.00	0.00
8,600.00	89.90	180.00	7,194.50	-96.07	-187.10	96.07	0.00	0.00	0.00	0.00
8,700.00	89.90	180.00	7,194.68	-196.07	-187.10	196.07	0.00	0.00	0.00	0.00
8,800.00	89.90	180.00	7,194.85	-296.07	-187.09	296.07	0.00	0.00	0.00	0.00
8,900.00	89.90	180.00	7,195.03	-396.07	-187.09	396.07	0.00	0.00	0.00	0.00
9,000.00	89.90	180.00	7,195.20	-496.07	-187.09	496.07	0.00	0.00	0.00	0.00
9,100.00	89.90	180.00	7,195.38	-596.06	-187.09	596.06	0.00	0.00	0.00	0.00
9,200.00	89.90	180.00	7,195.55	-696.06	-187.09	696.06	0.00	0.00	0.00	0.00
9,300.00	89.90	180.00	7,195.73	-796.06	-187.08	796.06	0.00	0.00	0.00	0.00
9,400.00	89.90	180.00	7,195.91	-896.06	-187.08	896.06	0.00	0.00	0.00	0.00
9,500.00	89.90	180.00	7,196.08	-996.06	-187.08	996.06	0.00	0.00	0.00	0.00
9,600.00	89.90	180.00	7,196.26	-1,096.06	-187.08	1,096.06	0.00	0.00	0.00	0.00
9,700.00	89.90	180.00	7,196.43	-1,196.06	-187.08	1,196.06	0.00	0.00	0.00	0.00
9,800.00	89.90	180.00	7,196.61	-1,296.06	-187.07	1,296.06	0.00	0.00	0.00	0.00
9,900.00	89.90	180.00	7,196.78	-1,396.06	-187.07	1,396.06	0.00	0.00	0.00	0.00
10,000.00	89.90	180.00	7,196.96	-1,496.06	-187.07	1,496.06	0.00	0.00	0.00	0.00
10,100.00	89.90	180.00	7,197.14	-1,596.06	-187.07	1,596.06	0.00	0.00	0.00	0.00
10,200.00	89.90	180.00	7,197.31	-1,696.06	-187.07	1,696.06	0.00	0.00	0.00	0.00
10,300.00	89.90	180.00	7,197.49	-1,796.06	-187.06	1,796.06	0.00	0.00	0.00	0.00
10,400.00	89.90	180.00	7,197.66	-1,896.06	-187.06	1,896.06	0.00	0.00	0.00	0.00
10,500.00	89.90	180.00	7,197.84	-1,996.06	-187.06	1,996.06	0.00	0.00	0.00	0.00
10,600.00	89.90	180.00	7,198.01	-2,096.06	-187.06	2,096.06	0.00	0.00	0.00	0.00
10,700.00	89.90	180.00	7,198.19	-2,196.06	-187.06	2,196.06	0.00	0.00	0.00	0.00
10,800.00	89.90	180.00	7,198.37	-2,296.06	-187.05	2,296.06	0.00	0.00	0.00	0.00
10,900.00	89.90	180.00	7,198.54	-2,396.06	-187.05	2,396.06	0.00	0.00	0.00	0.00
11,000.00	89.90	180.00	7,198.72	-2,496.06	-187.05	2,496.06	0.00	0.00	0.00	0.00
11,100.00	89.90	180.00	7,198.89	-2,596.06	-187.05	2,596.06	0.00	0.00	0.00	0.00
11,200.00	89.90	180.00	7,199.07	-2,696.06	-187.05	2,696.06	0.00	0.00	0.00	0.00
11,300.00	89.90	180.00	7,199.25	-2,796.06	-187.04	2,796.06	0.00	0.00	0.00	0.00
11,400.00	89.90	180.00	7,199.42	-2,896.06	-187.04	2,896.06	0.00	0.00	0.00	0.00
11,500.00	89.90	180.00	7,199.60	-2,996.06	-187.04	2,996.06	0.00	0.00	0.00	0.00
11,600.00	89.90	180.00	7,199.77	-3,096.06	-187.04	3,096.06	0.00	0.00	0.00	0.00
11,700.00	89.90	180.00	7,199.95	-3,196.06	-187.04	3,196.06	0.00	0.00	0.00	0.00
11,800.00	89.90	180.00	7,200.12	-3,296.06	-187.03	3,296.06	0.00	0.00	0.00	0.00
11,900.00	89.90	180.00	7,200.30	-3,396.06	-187.03	3,396.06	0.00	0.00	0.00	0.00
12,000.00	89.90	180.00	7,200.48	-3,496.06	-187.03	3,496.06	0.00	0.00	0.00	0.00
12,100.00	89.90	180.00	7,200.65	-3,596.06	-187.03	3,596.06	0.00	0.00	0.00	0.00
12,200.00	89.90	180.00	7,200.83	-3,696.06	-187.03	3,696.06	0.00	0.00	0.00	0.00
12,300.00	89.90	180.00	7,201.00	-3,796.06	-187.02	3,796.06	0.00	0.00	0.00	0.00
12,400.00	89.90	180.00	7,201.18	-3,896.06	-187.02	3,896.06	0.00	0.00	0.00	0.00
12,500.00	89.90	180.00	7,201.35	-3,996.06	-187.02	3,996.06	0.00	0.00	0.00	0.00
12,600.00	89.90	180.00	7,201.53	-4,096.06	-187.02	4,096.06	0.00	0.00	0.00	0.00
12,700.00	89.90	180.00	7,201.71	-4,196.06	-187.01	4,196.06	0.00	0.00	0.00	0.00
12,800.00	89.90	180.00	7,201.88	-4,296.06	-187.01	4,296.06	0.00	0.00	0.00	0.00
12,900.00	89.90	180.00	7,202.06	-4,396.06	-187.01	4,396.06	0.00	0.00	0.00	0.00
13,000.00	89.90	180.00	7,202.23	-4,496.06	-187.01	4,496.06	0.00	0.00	0.00	0.00
13,100.00	89.90	180.00	7,202.41	-4,596.06	-187.01	4,596.06	0.00	0.00	0.00	0.00
13,200.00	89.90	180.00	7,202.59	-4,696.06	-187.00	4,696.06	0.00	0.00	0.00	0.00
13,300.00	89.90	180.00	7,202.76	-4,796.06	-187.00	4,796.06	0.00	0.00	0.00	0.00
13,400.00	89.90	180.00	7,202.94	-4,896.06	-187.00	4,896.06	0.00	0.00	0.00	0.00
13,435.94	89.90	180.00	7,203.00	-4,932.00	-187.00	4,932.00	0.00	0.00	0.00	0.00

TD Well @ 13435.94ft - Green 2N-8HZ_TOE

Plan Report for Green 2N-8HZ - Permit Rev-1

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,950.00	1,950.00	0.00	0.00	Begin Nudge @ 1950.00ft
3,000.00	2,976.65	188.43	-26.48	End Nudge @ 3000.00ft
5,690.00	5,487.98	1,143.05	-160.65	Begin Drop @ 5690.00ft
6,740.00	6,514.63	1,331.48	-187.13	End Drop @ 6740.00ft
6,745.41	6,520.04	1,331.48	-187.13	Top of 4.5" Liner @ 6745.41ft
6,845.41	6,620.04	1,331.48	-187.13	KOP @ 6845.41ft
7,300.00	7,028.41	1,160.41	-187.12	DLS = 10°/100'
7,744.40	7,193.00	759.53	-187.12	End Build @ 7744.40ft
13,435.94	7,203.00	-4,932.00	-187.00	TD Well @ 13435.94ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
User	No Target (Freehand)	180.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,744.40	Permit Rev-1	MWD+IFR1
7,744.40	13,435.94	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
7,744.40	7,193.00	7"	7	8-3/4

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	
4,251.47	4,145.00	Parkman		0.00	
4,621.02	4,490.00	Sussex		0.00	
7,228.22	6,975.00	SSPG		0.00	
7,272.96	7,009.00	NBRR		0.00	
7,440.97	7,114.00	N470_B_CK		0.00	
7,623.14	7,180.00	N700_C_CK		0.00	
7,744.40	7,193.00	Landing Target (Heel)		0.00	
13,435.94	7,203.00	Total Depth (Toe)		0.00	

Plan Report for Green 2N-8HZ - Permit Rev-1

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Green 2N-8HZ_TOE	7,203.00	-4,932.00	-187.00	Point
Green 2N-8HZ_SHL	0.00	0.00	0.00	Point
1N-R65W-Sec. 5_Section Lines	39.00	-53.58	3,980.12	Polygon
1N-R65W-Sec. 8_Section lines	7.00	-4,319.68	8,057.86	Polygon

North Reference Sheet for Green Pad - Green 2N-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 2N-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: 0.99960838

Grid Coordinates of Well: 14,553,211.46 usft N, 1,726,031.38 usft E

Geographical Coordinates of Well: 40° 04' 20.31" N, 104° 41' 38.28" W

Grid Convergence at Surface is: 0.20°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,435.94usft the Bottom Hole Displacement is 4,935.54usft in the Direction of 182.17° (True).

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

