

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-66W-08 FL Greens Federal Pad

FL GREENS 29C-5HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

22 April, 2015

Well Coordinates: 14,552,327.88 N, 1,694,747.74 E (40° 04' 12.45" N, 104° 48' 20.87" W)

Ground Level: 4,923.00 usft

Local Coordinate Origin:

Centered on Well FL GREENS 29C-5HZ

Viewing Datum:

RKB = 17' @ 4940.00usft (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: 1N-66W-08 FL Greens Federal Pad
 Well: FL GREENS 29C-5HZ
 Wellbore: Plan A
 Design: Permit Rev-1



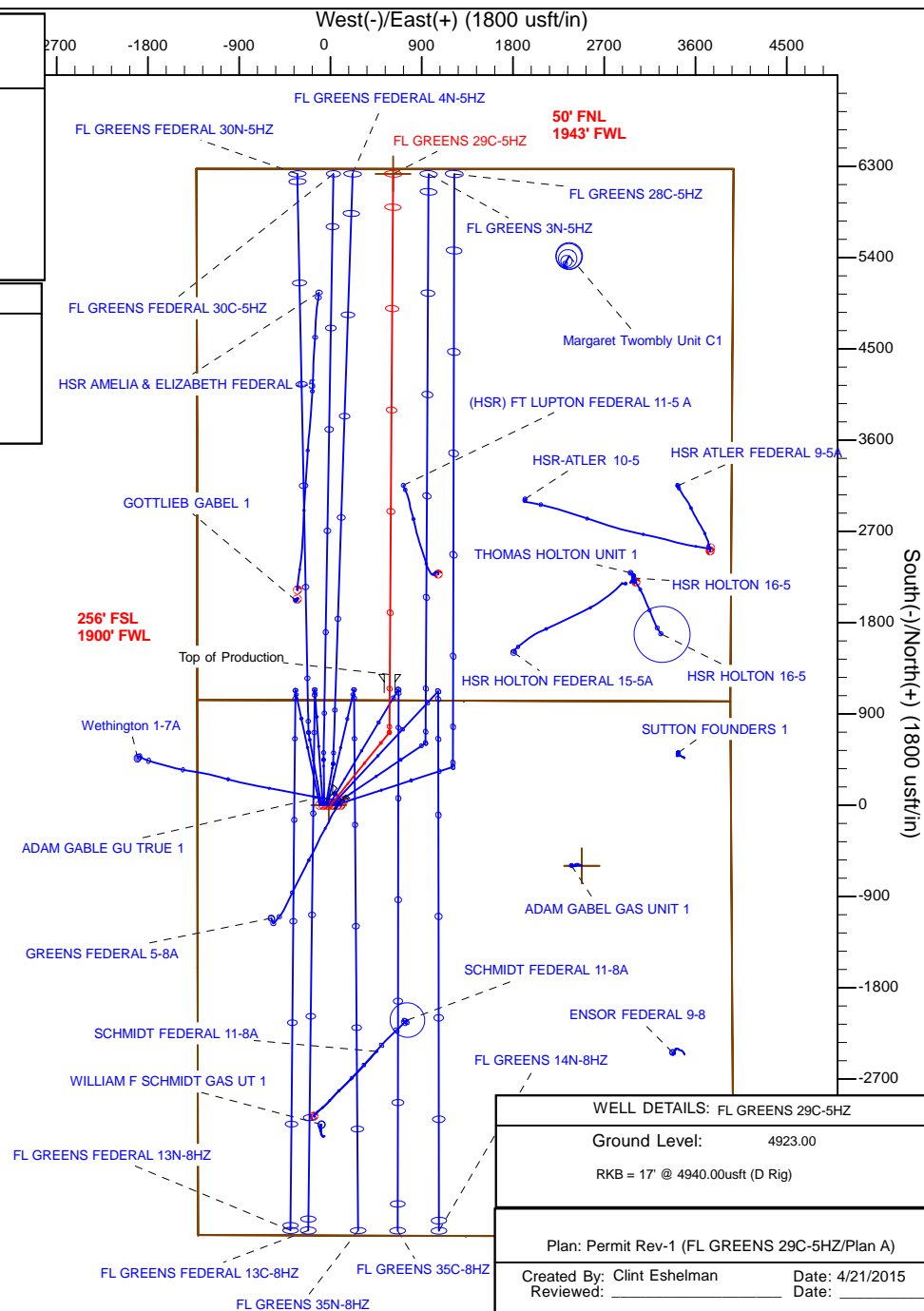
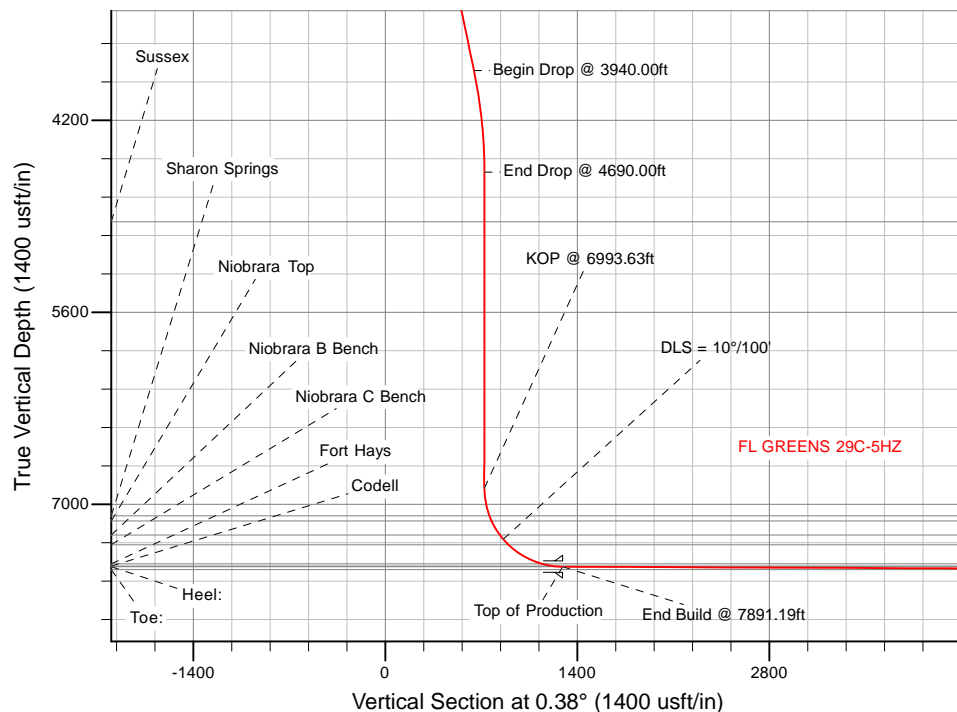
HALLIBURTON
 Sperry Drilling

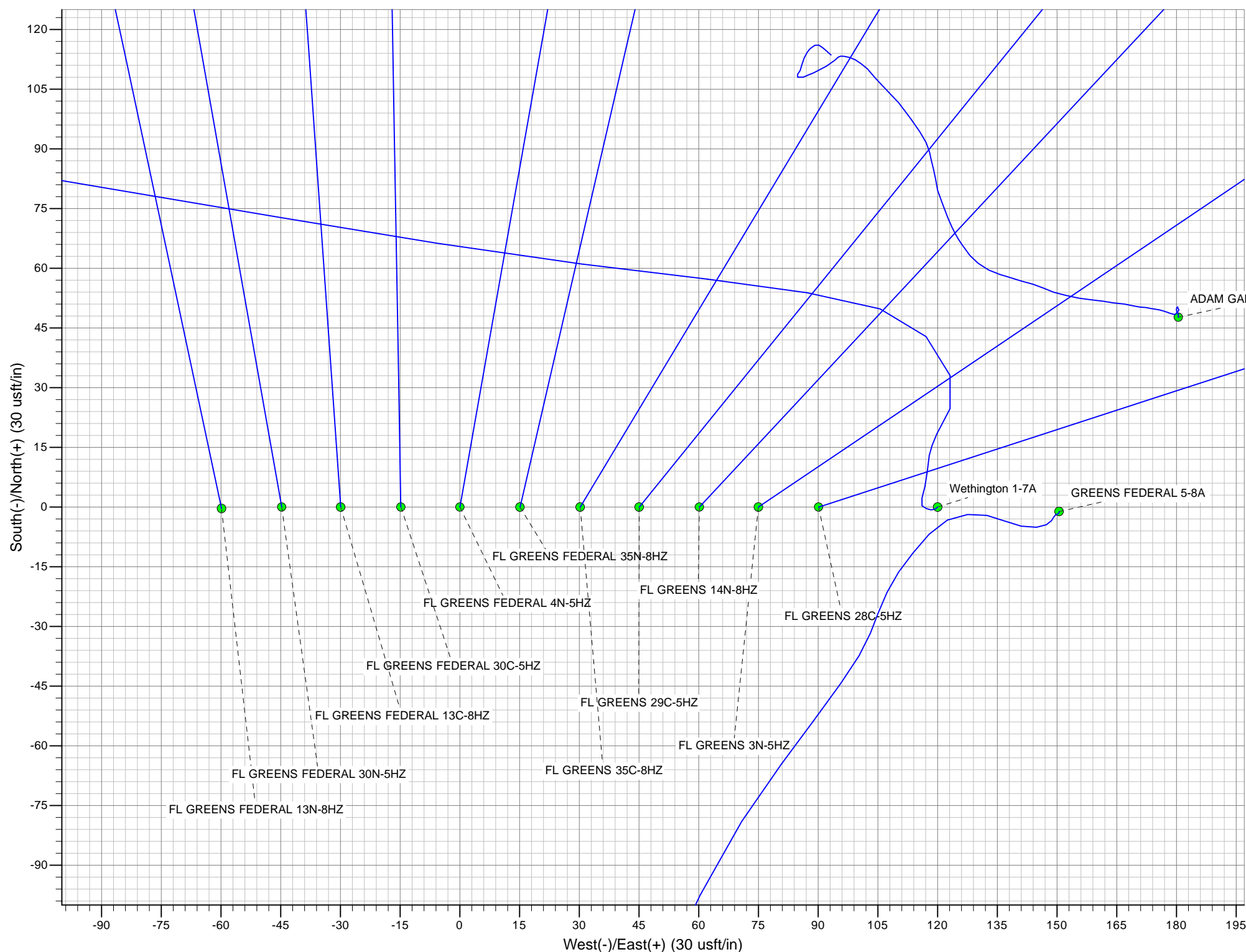
SECTION DETAILS

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1250.00	15.00	39.00	1238.62	101.15	81.91	1.50	39.00	101.69	
4	3940.00	15.00	39.00	3836.96	642.22	520.06	0.00	0.00	645.65	
5	4690.00	0.00	0.00	4578.42	718.08	581.49	2.00	180.00	721.92	
6	6993.63	0.00	0.00	6882.05	718.08	581.49	0.00	0.00	721.92	
7	7891.19	89.76	0.38	7455.00	1288.58	585.31	10.00	0.38	1292.44	
8	12827.86	89.76	0.38	7476.00	6225.09	618.40	0.00	0.00	6229.06	FL GREENS 29C-5HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
FL GREENS 29C-5HZ_SHL	0.00	0.00	0.00	40.070124	-104.805797	Point
FL GREENS 29C-5HZ_BHL	7476.00	6225.09	618.40	40.087219	-104.803586	Point





Plan Report for FL GREENS 29C-5HZ - 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
1N-R66W-Sec. 5_Section Lines - FL GREENS 29C-5HZ_SHL - 1N-R66W-Sec. 8_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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft										
300.00	0.75	39.00	300.00	0.25	0.21	0.26	1.50	1.50	0.00	39.00
400.00	2.25	39.00	399.96	2.29	1.85	2.30	1.50	1.50	0.00	0.00
500.00	3.75	39.00	499.82	6.36	5.15	6.39	1.50	1.50	0.00	0.00
600.00	5.25	39.00	599.51	12.45	10.08	12.52	1.50	1.50	0.00	0.00
700.00	6.75	39.00	698.96	20.58	16.66	20.69	1.50	1.50	0.00	0.00
800.00	8.25	39.00	798.10	30.72	24.88	30.88	1.50	1.50	0.00	0.00
900.00	9.75	39.00	896.87	42.88	34.72	43.11	1.50	1.50	0.00	0.00
1,000.00	11.25	39.00	995.19	57.04	46.19	57.34	1.50	1.50	0.00	0.00
1,100.00	12.75	39.00	1,093.00	73.20	59.27	73.59	1.50	1.50	0.00	0.00
1,200.00	14.25	39.00	1,190.24	91.34	73.96	91.83	1.50	1.50	0.00	0.00
1,250.00	15.00	39.00	1,238.62	101.15	81.91	101.69	1.50	1.50	0.00	0.00
End Nudge @ 1250.00ft										
1,300.00	15.00	39.00	1,286.91	111.21	90.05	111.80	0.00	0.00	0.00	0.00
1,388.09	15.00	39.00	1,372.00	128.92	104.40	129.61	0.00	0.00	0.00	0.00
Fox Hills										
1,400.00	15.00	39.00	1,383.50	131.32	106.34	132.02	0.00	0.00	0.00	0.00
1,415.00	15.00	39.00	1,397.99	134.34	108.78	135.06	0.00	0.00	0.00	0.00
9 5/8"										
1,500.00	15.00	39.00	1,480.10	151.43	122.63	152.24	0.00	0.00	0.00	0.00
1,600.00	15.00	39.00	1,576.69	171.55	138.92	172.47	0.00	0.00	0.00	0.00
1,700.00	15.00	39.00	1,673.28	191.66	155.20	192.69	0.00	0.00	0.00	0.00
1,800.00	15.00	39.00	1,769.88	211.78	171.49	212.91	0.00	0.00	0.00	0.00
1,900.00	15.00	39.00	1,866.47	231.89	187.78	233.13	0.00	0.00	0.00	0.00
2,000.00	15.00	39.00	1,963.06	252.00	204.07	253.35	0.00	0.00	0.00	0.00
2,100.00	15.00	39.00	2,059.65	272.12	220.36	273.57	0.00	0.00	0.00	0.00
2,200.00	15.00	39.00	2,156.25	292.23	236.64	293.79	0.00	0.00	0.00	0.00
2,300.00	15.00	39.00	2,252.84	312.35	252.93	314.02	0.00	0.00	0.00	0.00
2,400.00	15.00	39.00	2,349.43	332.46	269.22	334.24	0.00	0.00	0.00	0.00
2,500.00	15.00	39.00	2,446.02	352.57	285.51	354.46	0.00	0.00	0.00	0.00
2,600.00	15.00	39.00	2,542.62	372.69	301.80	374.68	0.00	0.00	0.00	0.00
2,700.00	15.00	39.00	2,639.21	392.80	318.08	394.90	0.00	0.00	0.00	0.00
2,800.00	15.00	39.00	2,735.80	412.92	334.37	415.12	0.00	0.00	0.00	0.00
2,900.00	15.00	39.00	2,832.39	433.03	350.66	435.35	0.00	0.00	0.00	0.00
3,000.00	15.00	39.00	2,928.99	453.14	366.95	455.57	0.00	0.00	0.00	0.00
3,100.00	15.00	39.00	3,025.58	473.26	383.24	475.79	0.00	0.00	0.00	0.00
3,200.00	15.00	39.00	3,122.17	493.37	399.52	496.01	0.00	0.00	0.00	0.00
3,300.00	15.00	39.00	3,218.76	513.49	415.81	516.23	0.00	0.00	0.00	0.00
3,400.00	15.00	39.00	3,315.36	533.60	432.10	536.45	0.00	0.00	0.00	0.00
3,500.00	15.00	39.00	3,411.95	553.71	448.39	556.68	0.00	0.00	0.00	0.00
3,600.00	15.00	39.00	3,508.54	573.83	464.68	576.90	0.00	0.00	0.00	0.00
3,700.00	15.00	39.00	3,605.13	593.94	480.96	597.12	0.00	0.00	0.00	0.00
3,800.00	15.00	39.00	3,701.73	614.06	497.25	617.34	0.00	0.00	0.00	0.00
3,900.00	15.00	39.00	3,798.32	634.17	513.54	637.56	0.00	0.00	0.00	0.00
3,940.00	15.00	39.00	3,836.96	642.22	520.06	645.65	0.00	0.00	0.00	0.00
Begin Drop @ 3940.00ft										
4,000.00	13.80	39.00	3,895.07	653.81	529.45	657.31	2.00	-2.00	0.00	180.00
4,100.00	11.80	39.00	3,992.58	671.03	543.39	674.62	2.00	-2.00	0.00	180.00
4,200.00	9.80	39.00	4,090.80	685.59	555.18	689.26	2.00	-2.00	0.00	180.00
4,300.00	7.80	39.00	4,189.62	697.48	564.81	701.21	2.00	-2.00	0.00	180.00
4,400.00	5.80	39.00	4,288.91	706.68	572.26	710.46	2.00	-2.00	0.00	180.00
4,500.00	3.80	39.00	4,388.56	713.18	577.52	717.00	2.00	-2.00	0.00	180.00
4,600.00	1.80	39.00	4,488.43	716.98	580.60	720.81	2.00	-2.00	0.00	180.00

Plan Report for FL GREENS 29C-5HZ - 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 (°)
4,690.00	0.00	0.00	4,578.42	718.08	581.49	721.92	2.00	-2.00	0.00	-180.00
End Drop @ 4690.00ft										
4,700.00	0.00	0.00	4,588.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,688.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,788.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,888.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,050.58	0.00	0.00	4,939.00	718.08	581.49	721.92	0.00	0.00	0.00	0.00
Sussex										
5,100.00	0.00	0.00	4,988.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,088.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,188.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,288.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,388.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,488.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,588.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,688.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,788.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,888.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	5,988.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,088.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,188.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,288.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,388.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,488.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,588.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,688.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,788.42	718.08	581.49	721.92	0.00	0.00	0.00	0.00
6,993.63	0.00	0.00	6,882.05	718.08	581.49	721.92	0.00	0.00	0.00	0.00
KOP @ 6993.63ft										
7,000.00	0.64	0.38	6,888.42	718.11	581.49	721.95	10.00	10.00	0.00	0.38
7,100.00	10.64	0.38	6,987.81	727.92	581.55	731.76	10.00	10.00	0.00	0.00
7,200.00	20.64	0.38	7,083.99	754.84	581.73	758.68	10.00	10.00	0.00	0.00
7,200.29	20.67	0.38	7,084.25	754.94	581.73	758.78	10.00	10.00	0.00	0.00
Sharon Springs										
7,241.50	24.79	0.38	7,122.25	770.86	581.84	774.70	10.00	10.00	0.00	0.00
Niobrara Top										
7,300.00	30.64	0.38	7,174.03	798.05	582.02	801.90	10.00	10.00	0.00	0.00
7,359.89	36.63	0.38	7,223.87	831.21	582.25	835.05	10.00	10.00	0.00	0.00
Niobrara B Bench										
7,400.00	40.64	0.38	7,255.20	856.24	582.41	860.09	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,455.42	46.18	0.38	7,295.44	894.31	582.67	898.16	10.00	10.00	0.00	0.00
Niobrara C Bench										
7,500.00	50.64	0.38	7,325.03	927.64	582.89	931.49	10.00	10.00	0.00	0.00
7,600.00	60.64	0.38	7,381.40	1,010.08	583.44	1,013.93	10.00	10.00	0.00	0.00
7,700.00	70.64	0.38	7,422.60	1,101.06	584.05	1,104.91	10.00	10.00	0.00	0.00
7,735.94	74.23	0.38	7,433.44	1,135.32	584.28	1,139.17	10.00	10.00	0.00	0.00
Fort Hays										
7,800.00	80.64	0.38	7,447.37	1,197.81	584.70	1,201.66	10.00	10.00	0.00	0.00
7,822.83	82.92	0.38	7,450.64	1,220.41	584.85	1,224.26	10.00	10.00	0.00	0.00
Codell										
7,891.19	89.76	0.38	7,455.00	1,288.58	585.31	1,292.44	10.00	10.00	0.00	0.00
End Build @ 7891.19ft - Heel: - Top of Production										
7,900.00	89.76	0.38	7,455.04	1,297.39	585.37	1,301.25	0.00	0.00	0.00	0.00
8,000.00	89.76	0.38	7,455.46	1,397.39	586.04	1,401.24	0.00	0.00	0.00	0.00
8,100.00	89.76	0.38	7,455.89	1,497.39	586.71	1,501.24	0.00	0.00	0.00	0.00
8,200.00	89.76	0.38	7,456.31	1,597.38	587.38	1,601.24	0.00	0.00	0.00	0.00
8,300.00	89.76	0.38	7,456.74	1,697.38	588.05	1,701.24	0.00	0.00	0.00	0.00

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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 (°)
8,400.00	89.76	0.38	7,457.17	1,797.38	588.72	1,801.24	0.00	0.00	0.00	0.00
8,500.00	89.76	0.38	7,457.59	1,897.37	589.39	1,901.24	0.00	0.00	0.00	0.00
8,600.00	89.76	0.38	7,458.02	1,997.37	590.06	2,001.24	0.00	0.00	0.00	0.00
8,700.00	89.76	0.38	7,458.44	2,097.37	590.73	2,101.24	0.00	0.00	0.00	0.00
8,800.00	89.76	0.38	7,458.87	2,197.36	591.40	2,201.24	0.00	0.00	0.00	0.00
8,900.00	89.76	0.38	7,459.29	2,297.36	592.07	2,301.24	0.00	0.00	0.00	0.00
9,000.00	89.76	0.38	7,459.72	2,397.36	592.74	2,401.24	0.00	0.00	0.00	0.00
9,100.00	89.76	0.38	7,460.14	2,497.35	593.41	2,501.23	0.00	0.00	0.00	0.00
9,200.00	89.76	0.38	7,460.57	2,597.35	594.09	2,601.23	0.00	0.00	0.00	0.00
9,300.00	89.76	0.38	7,460.99	2,697.35	594.76	2,701.23	0.00	0.00	0.00	0.00
9,400.00	89.76	0.38	7,461.42	2,797.34	595.43	2,801.23	0.00	0.00	0.00	0.00
9,500.00	89.76	0.38	7,461.84	2,897.34	596.10	2,901.23	0.00	0.00	0.00	0.00
9,600.00	89.76	0.38	7,462.27	2,997.34	596.77	3,001.23	0.00	0.00	0.00	0.00
9,700.00	89.76	0.38	7,462.70	3,097.33	597.44	3,101.23	0.00	0.00	0.00	0.00
9,800.00	89.76	0.38	7,463.12	3,197.33	598.11	3,201.23	0.00	0.00	0.00	0.00
9,900.00	89.76	0.38	7,463.55	3,297.33	598.78	3,301.23	0.00	0.00	0.00	0.00
10,000.00	89.76	0.38	7,463.97	3,397.33	599.45	3,401.23	0.00	0.00	0.00	0.00
10,100.00	89.76	0.38	7,464.40	3,497.32	600.12	3,501.23	0.00	0.00	0.00	0.00
10,200.00	89.76	0.38	7,464.82	3,597.32	600.79	3,601.22	0.00	0.00	0.00	0.00
10,300.00	89.76	0.38	7,465.25	3,697.32	601.46	3,701.22	0.00	0.00	0.00	0.00
10,400.00	89.76	0.38	7,465.67	3,797.31	602.13	3,801.22	0.00	0.00	0.00	0.00
10,500.00	89.76	0.38	7,466.10	3,897.31	602.80	3,901.22	0.00	0.00	0.00	0.00
10,600.00	89.76	0.38	7,466.52	3,997.31	603.47	4,001.22	0.00	0.00	0.00	0.00
10,700.00	89.76	0.38	7,466.95	4,097.30	604.14	4,101.22	0.00	0.00	0.00	0.00
10,800.00	89.76	0.38	7,467.37	4,197.30	604.81	4,201.22	0.00	0.00	0.00	0.00
10,900.00	89.76	0.38	7,467.80	4,297.30	605.48	4,301.22	0.00	0.00	0.00	0.00
11,000.00	89.76	0.38	7,468.22	4,397.29	606.15	4,401.22	0.00	0.00	0.00	0.00
11,100.00	89.76	0.38	7,468.65	4,497.29	606.82	4,501.22	0.00	0.00	0.00	0.00
11,200.00	89.76	0.38	7,469.08	4,597.29	607.49	4,601.22	0.00	0.00	0.00	0.00
11,300.00	89.76	0.38	7,469.50	4,697.28	608.16	4,701.21	0.00	0.00	0.00	0.00
11,400.00	89.76	0.38	7,469.93	4,797.28	608.83	4,801.21	0.00	0.00	0.00	0.00
11,500.00	89.76	0.38	7,470.35	4,897.28	609.50	4,901.21	0.00	0.00	0.00	0.00
11,600.00	89.76	0.38	7,470.78	4,997.27	610.17	5,001.21	0.00	0.00	0.00	0.00
11,700.00	89.76	0.38	7,471.20	5,097.27	610.84	5,101.21	0.00	0.00	0.00	0.00
11,800.00	89.76	0.38	7,471.63	5,197.27	611.51	5,201.21	0.00	0.00	0.00	0.00
11,900.00	89.76	0.38	7,472.05	5,297.27	612.18	5,301.21	0.00	0.00	0.00	0.00
12,000.00	89.76	0.38	7,472.48	5,397.26	612.86	5,401.21	0.00	0.00	0.00	0.00
12,100.00	89.76	0.38	7,472.90	5,497.26	613.53	5,501.21	0.00	0.00	0.00	0.00
12,200.00	89.76	0.38	7,473.33	5,597.26	614.20	5,601.21	0.00	0.00	0.00	0.00
12,300.00	89.76	0.38	7,473.75	5,697.25	614.87	5,701.21	0.00	0.00	0.00	0.00
12,400.00	89.76	0.38	7,474.18	5,797.25	615.54	5,801.20	0.00	0.00	0.00	0.00
12,500.00	89.76	0.38	7,474.61	5,897.25	616.21	5,901.20	0.00	0.00	0.00	0.00
12,600.00	89.76	0.38	7,475.03	5,997.24	616.88	6,001.20	0.00	0.00	0.00	0.00
12,700.00	89.76	0.38	7,475.46	6,097.24	617.55	6,101.20	0.00	0.00	0.00	0.00
12,800.00	89.76	0.38	7,475.88	6,197.24	618.22	6,201.20	0.00	0.00	0.00	0.00
12,827.85	89.76	0.38	7,476.00	6,225.09	618.40	6,229.05	0.00	0.00	0.00	0.00

Toe:

12,827.86	89.76	0.38	7,476.00	6,225.09	618.40	6,229.06	0.00	0.00	0.00	0.00
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TD Well @ 12827.86ft - FL GREENS 29C-5HZ_BHL

Plan Report for FL GREENS 29C-5HZ - Permit Rev-1

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
1,250.00	1,238.62	101.15	81.91	End Nudge @ 1250.00ft
3,940.00	3,836.96	642.22	520.06	Begin Drop @ 3940.00ft
4,690.00	4,578.42	718.08	581.49	End Drop @ 4690.00ft
6,993.63	6,882.05	718.08	581.49	KOP @ 6993.63ft
7,400.00	7,255.20	856.24	582.41	DLS = 10°/100'
7,891.19	7,455.00	1,288.58	585.31	End Build @ 7891.19ft
12,827.86	7,476.00	6,225.09	618.40	TD Well @ 12827.86ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.38	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,891.19	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1
7,891.19	12,827.86	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,415.00	1,397.99	9 5/8"	9-5/8	13-1/2
7,891.19	7,455.00	Top of Production	5-1/2	7-7/8

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,388.09	1,372.00	Fox Hills		0.00	
5,050.58	4,939.00	Sussex		0.00	
7,200.29	7,084.25	Sharon Springs		0.00	
7,241.50	7,122.25	Niobrara Top		0.00	
7,359.89	7,223.87	Niobrara B Bench		0.00	
7,455.42	7,295.44	Niobrara C Bench		0.00	
7,735.94	7,433.44	Fort Hays		0.00	
7,822.83	7,450.64	Codell		0.00	
7,891.19	7,455.00	Heel:		0.00	
12,827.85	7,476.00	Toe:		0.00	

Plan Report for FL GREENS 29C-5HZ - Permit Rev-1

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
1N-R66W-Sec. 5_Section Lines	-7.00	-597.80	2,478.78	Polygon
FL GREENS 29C-5HZ_SHL	0.00	0.00	0.00	Point
FL GREENS 29C-5HZ_BHL	7,476.00	6,225.09	618.40	Point
1N-R66W-Sec. 8_Section Lines	-7.00	-597.80	2,478.78	Polygon

North Reference Sheet for 1N-66W-08 FL Greens Federal Pad - FL GREENS 29C-5HZ - 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' @ 4940.00usft (D Rig). Northing and Easting are relative to FL GREENS 29C-5HZ

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: 0.99960338

Grid Coordinates of Well: 14,552,327.88 usft N, 1,694,747.74 usft E

Geographical Coordinates of Well: 40° 04' 12.45" N, 104° 48' 20.87" W

Grid Convergence at Surface is: 0.13°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,827.86usft
the Bottom Hole Displacement is 6,255.74usft in the Direction of 5.67° (True).

Magnetic Convergence at surface is: -8.22° (16 April 2015, , IGRF2010)

