

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-65W-22 Powers 2-22

POWERS 1N-27HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

11 March, 2015

Well Coordinates: 14,574,463.42 N, 1,739,652.85 E (40° 07' 49.91" N, 104° 38' 41.90" W)

Ground Level: 4,894.00 usft

Local Coordinate Origin:

Centered on Well POWERS 1N-27HZ

Viewing Datum:

RKB = 17' @ 4911.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

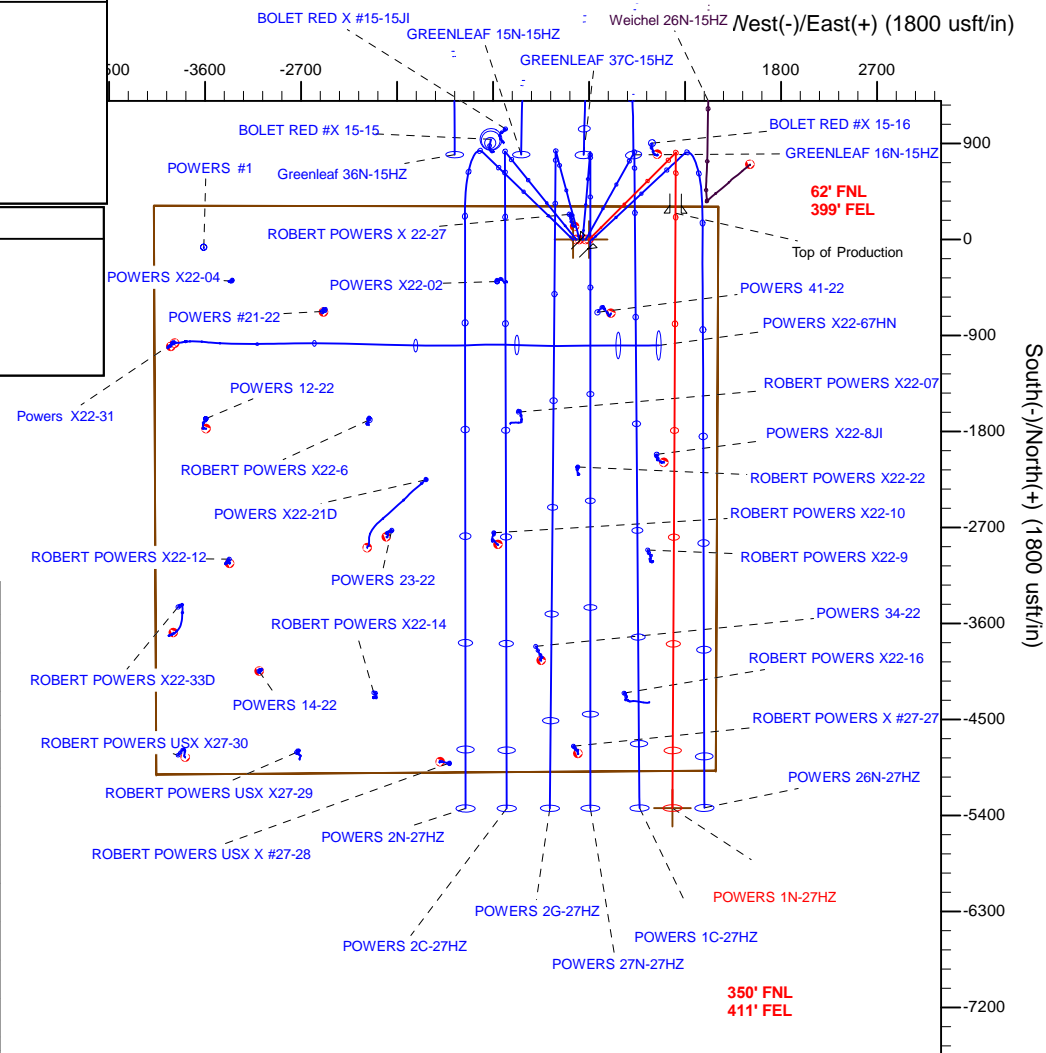
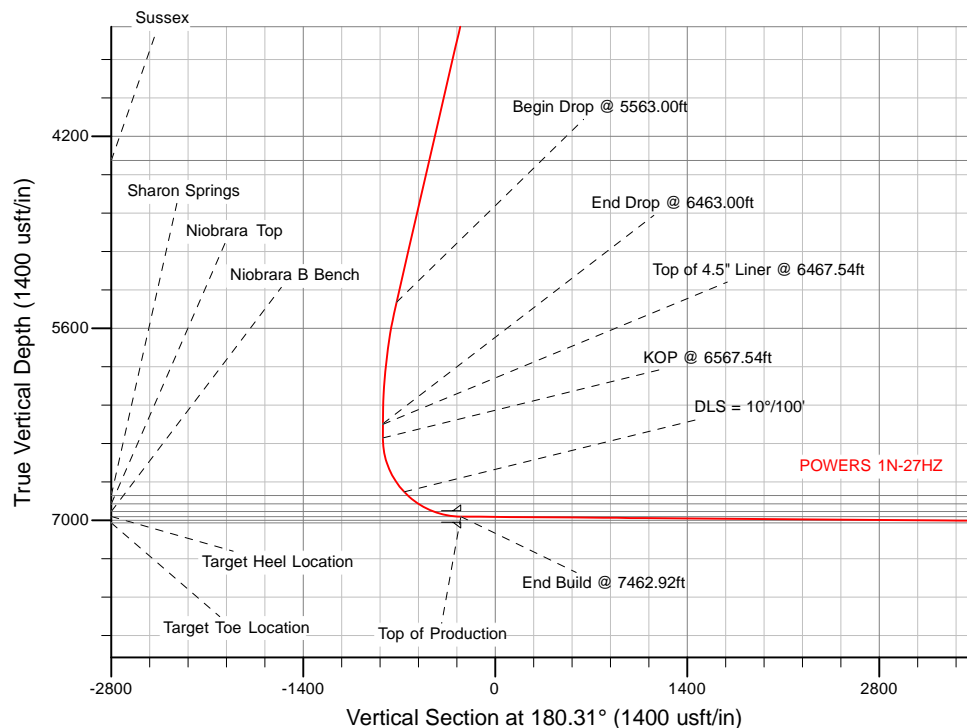
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

Sperry Drilling

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	1843.00	0.00	0.00	1843.00	0.00	0.00	0.00	0.00	0.00	
3	2743.00	18.00	45.00	2728.27	99.15	99.15	2.00	45.00	-99.68	
4	5563.00	18.00	45.00	5410.25	715.34	715.34	2.00	0.00	-719.20	
5	6463.00	0.00	0.00	6295.52	814.48	814.48	2.00	-180.00	-818.88	
6	6567.54	0.00	0.00	6400.00	814.48	814.48	0.00	0.00	0.00	
7	7462.92	89.54	180.31	6973.00	246.16	811.45	10.00	180.31	-250.54	
8	13039.21	89.54	180.31	7018.00	-5329.88	881.73	0.00	0.00	5325.57	POWERS 1N-27HZ BHL

Name	TVD	+N/- S	+E/-W	Latitude	Longitude
2N-R65W-Sec. 22, Section Lines	0.00	0.00	-149.82	40.130530	-104.645509
POWERS 1N-27HZ_SHL	0.00	0.00	0.00	40.130530	-104.644973
POWERS 1N-27HZ_BHL	7018.00	-5329.88	781.73	40.115894	-104.642177



WELL DETAILS: POWERS 1N-27HZ	
Ground Level:	4894.00
RKB = 17' @ 4911.00usft (D Rig)	
Plan: Permit Rev-1 (POWERS 1N-27HZ/Plan A)	
Created By: Clint Eshelman	Date: 3/11/2015
Reviewed: _____	Date: _____

Plan Report for POWERS 1N-27HZ - 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
POWERS 1N-27HZ_SHL - 2N-R65W-Sec. 22_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
1,100.00	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
1,362.00	0.00	0.00	1,362.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
1,600.00	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
1,843.00	0.00	0.00	1,843.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1843.00ft										
1,900.00	1.14	45.00	1,900.00	0.40	0.40	-0.40	2.00	2.00	0.00	45.00
2,000.00	3.14	45.00	1,999.92	3.04	3.04	-3.06	2.00	2.00	0.00	0.00
2,100.00	5.14	45.00	2,099.66	8.15	8.15	-8.19	2.00	2.00	0.00	0.00
2,200.00	7.14	45.00	2,199.08	15.71	15.71	-15.79	2.00	2.00	0.00	0.00
2,300.00	9.14	45.00	2,298.06	25.72	25.72	-25.86	2.00	2.00	0.00	0.00
2,400.00	11.14	45.00	2,396.50	38.17	38.17	-38.37	2.00	2.00	0.00	0.00
2,500.00	13.14	45.00	2,494.26	53.04	53.04	-53.32	2.00	2.00	0.00	0.00
2,600.00	15.14	45.00	2,591.22	70.31	70.31	-70.69	2.00	2.00	0.00	0.00
2,700.00	17.14	45.00	2,687.27	89.97	89.97	-90.45	2.00	2.00	0.00	0.00
2,743.00	18.00	45.00	2,728.27	99.15	99.15	-99.68	2.00	2.00	0.00	0.00
End Nudge @ 2743.00ft										
2,800.00	18.00	45.00	2,782.48	111.60	111.60	-112.20	0.00	0.00	0.00	0.00
2,900.00	18.00	45.00	2,877.58	133.45	133.45	-134.17	0.00	0.00	0.00	0.00
3,000.00	18.00	45.00	2,972.69	155.30	155.30	-156.14	0.00	0.00	0.00	0.00
3,100.00	18.00	45.00	3,067.80	177.15	177.15	-178.11	0.00	0.00	0.00	0.00
3,200.00	18.00	45.00	3,162.90	199.00	199.00	-200.08	0.00	0.00	0.00	0.00
3,300.00	18.00	45.00	3,258.01	220.85	220.85	-222.05	0.00	0.00	0.00	0.00
3,400.00	18.00	45.00	3,353.11	242.71	242.71	-244.01	0.00	0.00	0.00	0.00
3,500.00	18.00	45.00	3,448.22	264.56	264.56	-265.98	0.00	0.00	0.00	0.00
3,600.00	18.00	45.00	3,543.32	286.41	286.41	-287.95	0.00	0.00	0.00	0.00
3,700.00	18.00	45.00	3,638.43	308.26	308.26	-309.92	0.00	0.00	0.00	0.00
3,800.00	18.00	45.00	3,733.54	330.11	330.11	-331.89	0.00	0.00	0.00	0.00
3,900.00	18.00	45.00	3,828.64	351.96	351.96	-353.86	0.00	0.00	0.00	0.00
4,000.00	18.00	45.00	3,923.75	373.81	373.81	-375.83	0.00	0.00	0.00	0.00
4,100.00	18.00	45.00	4,018.85	395.66	395.66	-397.80	0.00	0.00	0.00	0.00
4,200.00	18.00	45.00	4,113.96	417.51	417.51	-419.76	0.00	0.00	0.00	0.00
4,300.00	18.00	45.00	4,209.06	439.36	439.36	-441.73	0.00	0.00	0.00	0.00
4,400.00	18.00	45.00	4,304.17	461.21	461.21	-463.70	0.00	0.00	0.00	0.00
4,475.53	18.00	45.00	4,376.00	477.72	477.72	-480.29	0.00	0.00	0.00	0.00
Sussex										
4,500.00	18.00	45.00	4,399.27	483.06	483.06	-485.67	0.00	0.00	0.00	0.00
4,600.00	18.00	45.00	4,494.38	504.91	504.91	-507.64	0.00	0.00	0.00	0.00
4,700.00	18.00	45.00	4,589.49	526.77	526.77	-529.61	0.00	0.00	0.00	0.00
4,800.00	18.00	45.00	4,684.59	548.62	548.62	-551.58	0.00	0.00	0.00	0.00

Plan Report for POWERS 1N-27HZ - 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 (°)
4,900.00	18.00	45.00	4,779.70	570.47	570.47	-573.55	0.00	0.00	0.00	0.00
5,000.00	18.00	45.00	4,874.80	592.32	592.32	-595.51	0.00	0.00	0.00	0.00
5,100.00	18.00	45.00	4,969.91	614.17	614.17	-617.48	0.00	0.00	0.00	0.00
5,200.00	18.00	45.00	5,065.01	636.02	636.02	-639.45	0.00	0.00	0.00	0.00
5,300.00	18.00	45.00	5,160.12	657.87	657.87	-661.42	0.00	0.00	0.00	0.00
5,400.00	18.00	45.00	5,255.23	679.72	679.72	-683.39	0.00	0.00	0.00	0.00
5,500.00	18.00	45.00	5,350.33	701.57	701.57	-705.36	0.00	0.00	0.00	0.00
5,563.00	18.00	45.00	5,410.25	715.34	715.34	-719.20	0.00	0.00	0.00	0.00
Begin Drop @ 5563.00ft										
5,600.00	17.26	45.00	5,445.51	723.26	723.26	-727.16	2.00	-2.00	0.00	-180.00
5,700.00	15.26	45.00	5,541.51	743.06	743.06	-747.07	2.00	-2.00	0.00	-180.00
5,800.00	13.26	45.00	5,638.42	760.48	760.48	-764.58	2.00	-2.00	0.00	-180.00
5,900.00	11.26	45.00	5,736.13	775.49	775.49	-779.68	2.00	-2.00	0.00	-180.00
6,000.00	9.26	45.00	5,834.53	788.08	788.08	-792.34	2.00	-2.00	0.00	-180.00
6,100.00	7.26	45.00	5,933.49	798.24	798.24	-802.55	2.00	-2.00	0.00	-180.00
6,200.00	5.26	45.00	6,032.89	805.95	805.95	-810.30	2.00	-2.00	0.00	-180.00
6,300.00	3.26	45.00	6,132.60	811.21	811.21	-815.58	2.00	-2.00	0.00	-180.00
6,400.00	1.26	45.00	6,232.52	813.99	813.99	-818.39	2.00	-2.00	0.00	-180.00
6,463.00	0.00	0.00	6,295.52	814.48	814.48	-818.88	2.00	-2.00	0.00	-180.00
End Drop @ 6463.00ft										
6,467.54	0.00	0.00	6,300.06	814.48	814.48	-818.88	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6467.54ft										
6,500.00	0.00	0.00	6,332.52	814.48	814.48	-818.88	0.00	0.00	0.00	0.00
6,567.54	0.00	0.00	6,400.06	814.48	814.48	-818.88	0.00	0.00	0.00	0.00
KOP @ 6567.54ft										
6,600.00	3.25	180.31	6,432.50	813.56	814.48	-817.96	10.00	10.00	-553.59	-179.69
6,700.00	13.25	180.31	6,531.34	799.24	814.40	-803.63	10.00	10.00	0.00	0.00
6,800.00	23.25	180.31	6,626.19	767.97	814.24	-772.36	10.00	10.00	0.00	0.00
6,900.00	33.25	180.31	6,714.17	720.71	813.98	-725.10	10.00	10.00	0.00	0.00
7,000.00	43.25	180.31	6,792.61	658.88	813.65	-663.27	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,037.51	47.00	180.31	6,819.07	632.31	813.51	-636.70	10.00	10.00	0.00	0.00
Sharon Springs										
7,100.00	53.25	180.31	6,859.12	584.38	813.26	-588.77	10.00	10.00	0.00	0.00
7,136.60	56.91	180.31	6,880.07	554.37	813.10	-558.76	10.00	10.00	0.00	0.00
Niobrara Top										
7,200.00	63.25	180.31	6,911.68	499.45	812.80	-503.84	10.00	10.00	0.00	0.00
7,259.83	69.23	180.31	6,935.78	444.72	812.51	-449.11	10.00	10.00	0.00	0.00
Niobrara B Bench										
7,300.00	73.25	180.31	6,948.69	406.69	812.31	-411.08	10.00	10.00	0.00	0.00
7,400.00	83.25	180.31	6,969.04	308.92	811.79	-313.30	10.00	10.00	0.00	0.00
7,462.92	89.54	180.31	6,973.00	246.15	811.45	-250.54	10.00	10.00	0.00	0.00
End Build @ 7462.92ft - Target Heel Location - Top of Production										
7,500.00	89.54	180.31	6,973.29	209.08	811.26	-213.46	0.00	0.00	0.00	0.00
7,600.00	89.54	180.31	6,974.10	109.08	810.72	-113.46	0.00	0.00	0.00	0.00
7,700.00	89.54	180.31	6,974.91	9.08	810.19	-13.47	0.00	0.00	0.00	0.00
7,800.00	89.54	180.31	6,975.72	-90.91	809.66	86.53	0.00	0.00	0.00	0.00
7,900.00	89.54	180.31	6,976.52	-190.91	809.12	186.53	0.00	0.00	0.00	0.00
8,000.00	89.54	180.31	6,977.33	-290.90	808.59	286.52	0.00	0.00	0.00	0.00
8,100.00	89.54	180.31	6,978.14	-390.90	808.06	386.52	0.00	0.00	0.00	0.00
8,200.00	89.54	180.31	6,978.94	-490.89	807.52	486.52	0.00	0.00	0.00	0.00
8,300.00	89.54	180.31	6,979.75	-590.89	806.99	586.51	0.00	0.00	0.00	0.00
8,400.00	89.54	180.31	6,980.56	-690.88	806.46	686.51	0.00	0.00	0.00	0.00
8,500.00	89.54	180.31	6,981.37	-790.88	805.93	786.51	0.00	0.00	0.00	0.00
8,600.00	89.54	180.31	6,982.17	-890.87	805.39	886.50	0.00	0.00	0.00	0.00
8,700.00	89.54	180.31	6,982.98	-990.87	804.86	986.50	0.00	0.00	0.00	0.00
8,800.00	89.54	180.31	6,983.79	-1,090.86	804.33	1,086.50	0.00	0.00	0.00	0.00
8,900.00	89.54	180.31	6,984.59	-1,190.86	803.79	1,186.49	0.00	0.00	0.00	0.00

Plan Report for POWERS 1N-27HZ - 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 (°)
9,000.00	89.54	180.31	6,985.40	-1,290.85	803.26	1,286.49	0.00	0.00	0.00	0.00
9,100.00	89.54	180.31	6,986.21	-1,390.85	802.73	1,386.49	0.00	0.00	0.00	0.00
9,200.00	89.54	180.31	6,987.01	-1,490.85	802.19	1,486.48	0.00	0.00	0.00	0.00
9,300.00	89.54	180.31	6,987.82	-1,590.84	801.66	1,586.48	0.00	0.00	0.00	0.00
9,400.00	89.54	180.31	6,988.63	-1,690.84	801.13	1,686.48	0.00	0.00	0.00	0.00
9,500.00	89.54	180.31	6,989.44	-1,790.83	800.60	1,786.47	0.00	0.00	0.00	0.00
9,600.00	89.54	180.31	6,990.24	-1,890.83	800.06	1,886.47	0.00	0.00	0.00	0.00
9,700.00	89.54	180.31	6,991.05	-1,990.82	799.53	1,986.47	0.00	0.00	0.00	0.00
9,800.00	89.54	180.31	6,991.86	-2,090.82	799.00	2,086.46	0.00	0.00	0.00	0.00
9,900.00	89.54	180.31	6,992.66	-2,190.81	798.46	2,186.46	0.00	0.00	0.00	0.00
10,000.00	89.54	180.31	6,993.47	-2,290.81	797.93	2,286.46	0.00	0.00	0.00	0.00
10,100.00	89.54	180.31	6,994.28	-2,390.80	797.40	2,386.45	0.00	0.00	0.00	0.00
10,200.00	89.54	180.31	6,995.09	-2,490.80	796.86	2,486.45	0.00	0.00	0.00	0.00
10,300.00	89.54	180.31	6,995.89	-2,590.79	796.33	2,586.45	0.00	0.00	0.00	0.00
10,400.00	89.54	180.31	6,996.70	-2,690.79	795.80	2,686.44	0.00	0.00	0.00	0.00
10,500.00	89.54	180.31	6,997.51	-2,790.78	795.26	2,786.44	0.00	0.00	0.00	0.00
10,600.00	89.54	180.31	6,998.31	-2,890.78	794.73	2,886.44	0.00	0.00	0.00	0.00
10,700.00	89.54	180.31	6,999.12	-2,990.77	794.20	2,986.43	0.00	0.00	0.00	0.00
10,800.00	89.54	180.31	6,999.93	-3,090.77	793.67	3,086.43	0.00	0.00	0.00	0.00
10,900.00	89.54	180.31	7,000.74	-3,190.77	793.13	3,186.43	0.00	0.00	0.00	0.00
11,000.00	89.54	180.31	7,001.54	-3,290.76	792.60	3,286.42	0.00	0.00	0.00	0.00
11,100.00	89.54	180.31	7,002.35	-3,390.76	792.07	3,386.42	0.00	0.00	0.00	0.00
11,200.00	89.54	180.31	7,003.16	-3,490.75	791.53	3,486.42	0.00	0.00	0.00	0.00
11,300.00	89.54	180.31	7,003.96	-3,590.75	791.00	3,586.41	0.00	0.00	0.00	0.00
11,400.00	89.54	180.31	7,004.77	-3,690.74	790.47	3,686.41	0.00	0.00	0.00	0.00
11,500.00	89.54	180.31	7,005.58	-3,790.74	789.93	3,786.41	0.00	0.00	0.00	0.00
11,600.00	89.54	180.31	7,006.38	-3,890.73	789.40	3,886.40	0.00	0.00	0.00	0.00
11,700.00	89.54	180.31	7,007.19	-3,990.73	788.87	3,986.40	0.00	0.00	0.00	0.00
11,800.00	89.54	180.31	7,008.00	-4,090.72	788.34	4,086.40	0.00	0.00	0.00	0.00
11,900.00	89.54	180.31	7,008.81	-4,190.72	787.80	4,186.40	0.00	0.00	0.00	0.00
12,000.00	89.54	180.31	7,009.61	-4,290.71	787.27	4,286.39	0.00	0.00	0.00	0.00
12,100.00	89.54	180.31	7,010.42	-4,390.71	786.74	4,386.39	0.00	0.00	0.00	0.00
12,200.00	89.54	180.31	7,011.23	-4,490.70	786.20	4,486.39	0.00	0.00	0.00	0.00
12,300.00	89.54	180.31	7,012.03	-4,590.70	785.67	4,586.38	0.00	0.00	0.00	0.00
12,400.00	89.54	180.31	7,012.84	-4,690.70	785.14	4,686.38	0.00	0.00	0.00	0.00
12,500.00	89.54	180.31	7,013.65	-4,790.69	784.60	4,786.38	0.00	0.00	0.00	0.00
12,600.00	89.54	180.31	7,014.46	-4,890.69	784.07	4,886.37	0.00	0.00	0.00	0.00
12,700.00	89.54	180.31	7,015.26	-4,990.68	783.54	4,986.37	0.00	0.00	0.00	0.00
12,800.00	89.54	180.31	7,016.07	-5,090.68	783.01	5,086.37	0.00	0.00	0.00	0.00
12,900.00	89.54	180.31	7,016.88	-5,190.67	782.47	5,186.36	0.00	0.00	0.00	0.00
13,000.00	89.54	180.31	7,017.68	-5,290.67	781.94	5,286.36	0.00	0.00	0.00	0.00
13,039.21	89.54	180.31	7,018.00	-5,329.88	781.73	5,325.57	0.00	0.00	0.00	0.00

TD Well @ 13039.21ft - Target Toe Location - POWERS 1N-27HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,843.00	1,843.00	0.00	0.00	Begin Nudge @ 1843.00ft
2,743.00	2,728.27	99.15	99.15	End Nudge @ 2743.00ft
5,563.00	5,410.25	715.34	715.34	Begin Drop @ 5563.00ft
6,463.00	6,295.52	814.48	814.48	End Drop @ 6463.00ft
6,467.54	6,300.06	814.48	814.48	Top of 4.5" Liner @ 6467.54ft
6,567.54	6,400.06	814.48	814.48	KOP @ 6567.54ft
7,000.00	6,792.61	658.88	813.65	DLS = 10°/100'
7,462.92	6,973.00	246.15	811.45	End Build @ 7462.92ft
13,039.21	7,018.00	-5,329.88	781.73	TD Well @ 13039.21ft

Plan Report for POWERS 1N-27HZ - Permit Rev-1

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	180.31	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,462.92	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1
7,462.92	13,039.21	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,362.00	1,362.00	9 5/8"	9-5/8	13-1/2
7,462.92	6,973.00	Top of Production	5-1/2	7-7/8

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,475.53	4,376.00	Sussex		0.00	
7,037.51	6,819.07	Sharon Springs		0.00	
7,136.60	6,880.07	Niobrara Top		0.00	
7,259.83	6,935.78	Niobrara B Bench		0.00	
7,462.92	6,973.00	Target Heel Location		0.00	
13,039.21	7,018.00	Target Toe Location		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
POWERS 1N-27HZ_SHL	0.00	0.00	0.00	Point
POWERS 1N-27HZ_BHL	7,018.00	-5,329.88	781.73	Point
2N-R65W-Sec. 22_Section Lines	0.00	0.00	-149.82	Polygon

North Reference Sheet for 2N-65W-22 Powers 2-22 - POWERS 1N-27HZ - 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' @ 4911.00usft (D Rig). Northing and Easting are relative to POWERS 1N-27HZ

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: 0.99961126

Grid Coordinates of Well: 14,574,463.42 usft N, 1,739,652.85 usft E

Geographical Coordinates of Well: 40° 07' 49.91" N, 104° 38' 41.90" W

Grid Convergence at Surface is: 0.23°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,039.21usft
the Bottom Hole Displacement is 5,386.90usft in the Direction of 171.66° (True).

Magnetic Convergence at surface is: -8.07° (12 January 2015, , IGRF2010)

