

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-65W-21 Meguire 21-1HZ Pad

MEGUIRE 29C-16HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

23 April, 2015

Well Coordinates: 14,572,328.07 N, 1,730,689.64 E (40° 07' 29.14" N, 104° 40' 37.44" W)

Ground Level: 4,896.00 usft

Local Coordinate Origin:

Centered on Well MEGUIRE 29C-16HZ

Viewing Datum:

RKB = 17' @ 4913.00usft (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: 2N-65W-21 Meguire 21-1HZ Pad

Well: MEGUIRE 29C-16HZ

Wellbore: Plan A

Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

HALLIBURTON

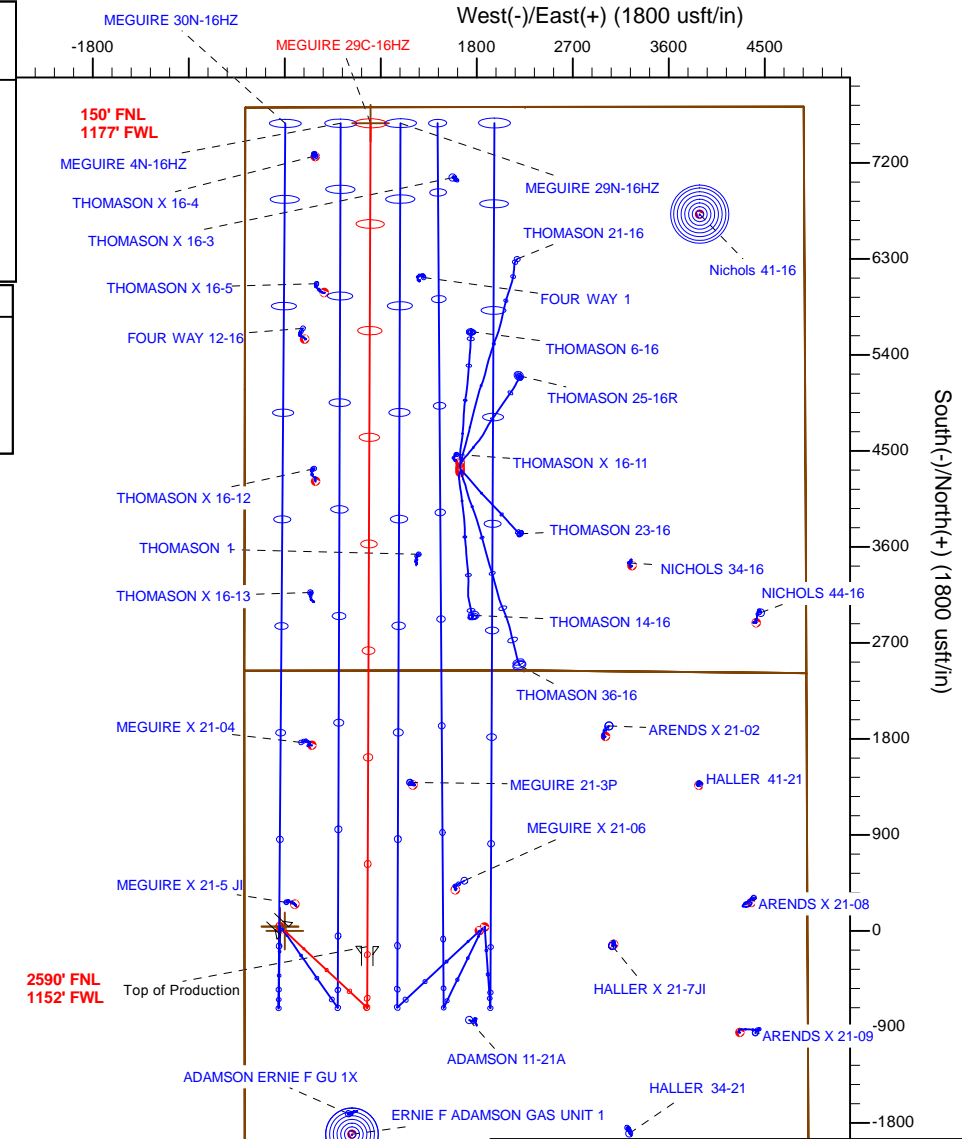
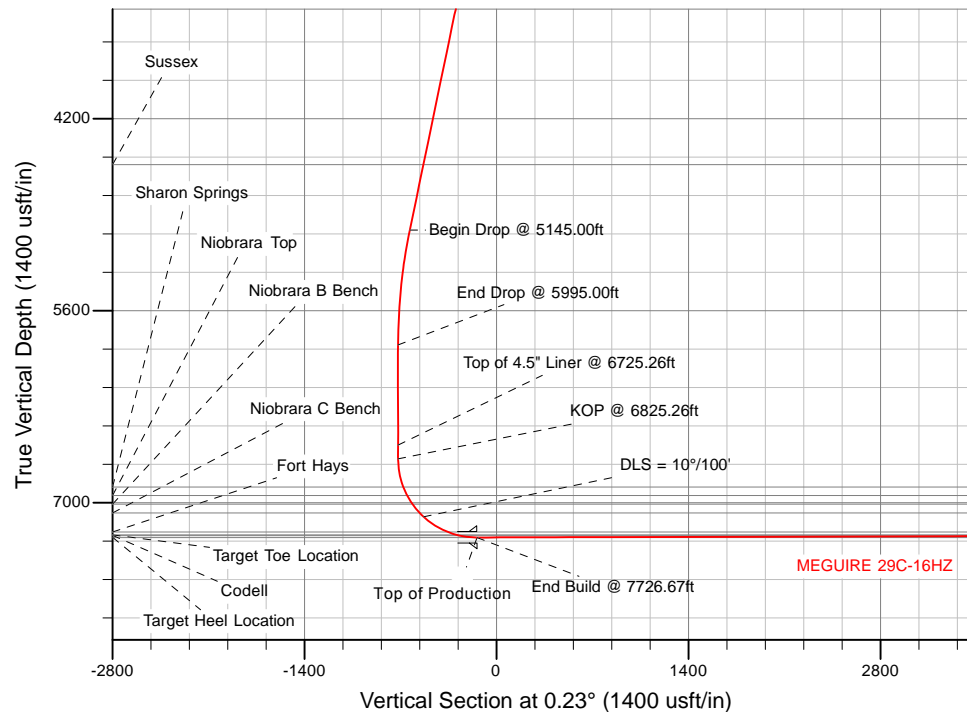
Sperry Drilling

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	1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	
3	2390.00	17.00	133.00	2377.58	-85.37	91.55	2.00	133.00	-85.00	
4	5145.00	17.00	133.00	5012.20	-634.71	680.64	0.00	0.00	-631.97	
5	5995.00	0.00	0.00	5849.79	-720.08	772.19	2.00	180.00	-716.98	
6	6825.26	0.00	0.00	6680.05	-720.08	772.19	0.00	0.00	-716.98	
7	7726.67	90.14	0.23	7253.00	-145.72	774.49	10.00	0.23	-142.61	
8	15444.30	90.14	0.23	7234.00	7571.83	805.35	0.00	0.00	7575.00	MEGUIRE 29C-16HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
	0.00	40.42	-44.45		
	0.00	40.42	-44.45		
MEGUIRE 29C-16HZ_SHL	0.00	-0.00	0.00	40.124760	-104.677067
MEGUIRE 29C-16HZ_BHL	7234.00	7571.83	805.35	40.145553	-104.674185



TVD MD
6680.05 6825.26 KOP @ 6825.26ft

WELL DETAILS: MEGUIRE 29C-16HZ

Ground Level: 4896.00

RKB = 17' @ 4913.00usft (D Rig)

Plan: Permit Rev-1 (MEGUIRE 29C-16HZ/Plan A)

Created By: Clint Eshelman

Date: 1/27/2015

Reviewed:

Date:

Plan Report for MEGUIRE 29C-16HZ - 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
2N-R65W-Sec. 16_Section Lines - MEGUIRE 29C-16HZ_SHL - 2N-R65W-Sec. 21_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
1,357.00	0.00	0.00	1,357.00	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
1,540.00	0.00	0.00	1,540.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1540.00ft										
1,600.00	1.20	133.00	1,600.00	-0.43	0.46	-0.43	2.00	2.00	0.00	133.00
1,700.00	3.20	133.00	1,699.92	-3.05	3.27	-3.03	2.00	2.00	0.00	0.00
1,800.00	5.20	133.00	1,799.64	-8.04	8.62	-8.01	2.00	2.00	0.00	0.00
1,900.00	7.20	133.00	1,899.05	-15.41	16.52	-15.34	2.00	2.00	0.00	0.00
2,000.00	9.20	133.00	1,998.03	-25.13	26.95	-25.02	2.00	2.00	0.00	0.00
2,100.00	11.20	133.00	2,096.44	-37.21	39.90	-37.05	2.00	2.00	0.00	0.00
2,200.00	13.20	133.00	2,194.18	-51.62	55.36	-51.40	2.00	2.00	0.00	0.00
2,300.00	15.20	133.00	2,291.12	-68.35	73.30	-68.06	2.00	2.00	0.00	0.00
2,390.00	17.00	133.00	2,377.58	-85.37	91.55	-85.00	2.00	2.00	0.00	0.00
End Nudge @ 2390.00ft										
2,400.00	17.00	133.00	2,387.15	-87.36	93.69	-86.99	0.00	0.00	0.00	0.00
2,500.00	17.00	133.00	2,482.78	-107.30	115.07	-106.84	0.00	0.00	0.00	0.00
2,600.00	17.00	133.00	2,578.41	-127.24	136.45	-126.70	0.00	0.00	0.00	0.00
2,700.00	17.00	133.00	2,674.04	-147.18	157.84	-146.55	0.00	0.00	0.00	0.00
2,800.00	17.00	133.00	2,769.67	-167.12	179.22	-166.40	0.00	0.00	0.00	0.00
2,900.00	17.00	133.00	2,865.30	-187.06	200.60	-186.26	0.00	0.00	0.00	0.00
3,000.00	17.00	133.00	2,960.93	-207.00	221.98	-206.11	0.00	0.00	0.00	0.00
3,100.00	17.00	133.00	3,056.56	-226.94	243.37	-225.96	0.00	0.00	0.00	0.00
3,200.00	17.00	133.00	3,152.19	-246.88	264.75	-245.82	0.00	0.00	0.00	0.00
3,300.00	17.00	133.00	3,247.82	-266.82	286.13	-265.67	0.00	0.00	0.00	0.00
3,400.00	17.00	133.00	3,343.45	-286.76	307.51	-285.53	0.00	0.00	0.00	0.00
3,500.00	17.00	133.00	3,439.08	-306.70	328.90	-305.38	0.00	0.00	0.00	0.00
3,600.00	17.00	133.00	3,534.71	-326.64	350.28	-325.23	0.00	0.00	0.00	0.00
3,700.00	17.00	133.00	3,630.34	-346.58	371.66	-345.09	0.00	0.00	0.00	0.00
3,800.00	17.00	133.00	3,725.97	-366.52	393.05	-364.94	0.00	0.00	0.00	0.00
3,900.00	17.00	133.00	3,821.60	-386.46	414.43	-384.79	0.00	0.00	0.00	0.00
4,000.00	17.00	133.00	3,917.23	-406.40	435.81	-404.65	0.00	0.00	0.00	0.00
4,100.00	17.00	133.00	4,012.86	-426.34	457.19	-424.50	0.00	0.00	0.00	0.00
4,200.00	17.00	133.00	4,108.49	-446.28	478.58	-444.35	0.00	0.00	0.00	0.00
4,300.00	17.00	133.00	4,204.13	-466.22	499.96	-464.21	0.00	0.00	0.00	0.00
4,400.00	17.00	133.00	4,299.76	-486.16	521.34	-484.06	0.00	0.00	0.00	0.00
4,500.00	17.00	133.00	4,395.39	-506.10	542.72	-503.92	0.00	0.00	0.00	0.00
4,600.00	17.00	133.00	4,491.02	-526.04	564.11	-523.77	0.00	0.00	0.00	0.00
4,645.99	17.00	133.00	4,535.00	-535.21	573.94	-532.90	0.00	0.00	0.00	0.00
Sussex										
4,700.00	17.00	133.00	4,586.65	-545.98	585.49	-543.62	0.00	0.00	0.00	0.00
4,800.00	17.00	133.00	4,682.28	-565.92	606.87	-563.48	0.00	0.00	0.00	0.00

Plan Report for MEGUIRE 29C-16HZ - 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	17.00	133.00	4,777.91	-585.86	628.26	-583.33	0.00	0.00	0.00	0.00
5,000.00	17.00	133.00	4,873.54	-605.80	649.64	-603.18	0.00	0.00	0.00	0.00
5,100.00	17.00	133.00	4,969.17	-625.74	671.02	-623.04	0.00	0.00	0.00	0.00
5,145.00	17.00	133.00	5,012.20	-634.71	680.64	-631.97	0.00	0.00	0.00	0.00
Begin Drop @ 5145.00ft										
5,200.00	15.90	133.00	5,064.95	-645.33	692.03	-642.55	2.00	-2.00	0.00	180.00
5,300.00	13.90	133.00	5,161.58	-662.87	710.84	-660.01	2.00	-2.00	0.00	180.00
5,400.00	11.90	133.00	5,259.05	-678.09	727.16	-675.17	2.00	-2.00	0.00	180.00
5,500.00	9.90	133.00	5,357.25	-690.99	740.99	-688.01	2.00	-2.00	0.00	180.00
5,600.00	7.90	133.00	5,456.04	-701.54	752.31	-698.51	2.00	-2.00	0.00	180.00
5,700.00	5.90	133.00	5,555.31	-709.73	761.09	-706.67	2.00	-2.00	0.00	180.00
5,800.00	3.90	133.00	5,654.94	-715.56	767.34	-712.47	2.00	-2.00	0.00	180.00
5,900.00	1.90	133.00	5,754.80	-719.01	771.04	-715.91	2.00	-2.00	0.00	-180.00
5,995.00	0.00	0.00	5,849.79	-720.08	772.19	-716.98	2.00	-2.00	-140.00	-180.00
End Drop @ 5995.00ft										
6,000.00	0.00	0.00	5,854.79	-720.08	772.19	-716.98	0.00	0.00	0.00	180.00
6,100.00	0.00	0.00	5,954.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,054.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,154.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,254.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,354.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,454.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,554.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,725.26	0.00	0.00	6,580.05	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6725.26ft										
6,800.00	0.00	0.00	6,654.79	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
6,825.26	0.00	0.00	6,680.05	-720.08	772.19	-716.98	0.00	0.00	0.00	0.00
KOP @ 6825.26ft										
6,900.00	7.47	0.23	6,754.57	-715.21	772.21	-712.11	10.00	10.00	0.00	0.23
7,000.00	17.47	0.23	6,852.09	-693.64	772.30	-690.54	10.00	10.00	0.00	0.00
7,034.51	20.92	0.23	6,884.68	-682.29	772.34	-679.19	10.00	10.00	0.00	0.00
Sharon Springs										
7,100.00	27.47	0.23	6,944.38	-655.46	772.45	-652.36	10.00	10.00	0.00	0.00
7,102.59	27.73	0.23	6,946.68	-654.26	772.46	-651.16	10.00	10.00	0.00	0.00
Niobrara Top										
7,176.14	35.09	0.23	7,009.40	-615.96	772.61	-612.85	10.00	10.00	0.00	0.00
Niobrara B Bench										
7,200.00	37.47	0.23	7,028.63	-601.84	772.66	-598.73	10.00	10.00	0.00	0.00
7,259.98	43.47	0.23	7,074.24	-562.92	772.82	-559.82	10.00	10.00	0.00	0.00
Niobrara C Bench										
7,300.00	47.47	0.23	7,102.30	-534.40	772.93	-531.29	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,400.00	57.47	0.23	7,163.13	-455.19	773.25	-452.09	10.00	10.00	0.00	0.00
7,500.00	67.47	0.23	7,209.29	-366.63	773.61	-363.52	10.00	10.00	0.00	0.00
7,510.55	68.53	0.23	7,213.24	-356.84	773.64	-353.73	10.00	10.00	0.00	0.00
Fort Hays										
7,598.50	77.32	0.23	7,239.04	-272.85	773.98	-269.74	10.00	10.00	0.00	0.00
Codell										
7,600.00	77.47	0.23	7,239.37	-271.39	773.99	-268.28	10.00	10.00	0.00	0.00
7,700.00	87.47	0.23	7,252.45	-172.38	774.38	-169.27	10.00	10.00	0.00	0.00
7,726.67	90.14	0.23	7,253.00	-145.72	774.49	-142.61	10.00	10.00	0.00	0.00
End Build @ 7726.67ft - Target Heel Location - Top of Production										
7,800.00	90.14	0.23	7,252.82	-72.39	774.78	-69.28	0.00	0.00	0.00	0.00
7,900.00	90.14	0.23	7,252.58	27.61	775.18	30.72	0.00	0.00	0.00	0.00
8,000.00	90.14	0.23	7,252.33	127.61	775.58	130.72	0.00	0.00	0.00	0.00
8,100.00	90.14	0.23	7,252.08	227.61	775.98	230.72	0.00	0.00	0.00	0.00
8,200.00	90.14	0.23	7,251.84	327.61	776.38	330.72	0.00	0.00	0.00	0.00
8,300.00	90.14	0.23	7,251.59	427.61	776.78	430.72	0.00	0.00	0.00	0.00

Plan Report for MEGUIRE 29C-16HZ - 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 (°)
8,400.00	90.14	0.23	7,251.34	527.61	777.18	530.72	0.00	0.00	0.00	0.00
8,500.00	90.14	0.23	7,251.10	627.60	777.58	630.72	0.00	0.00	0.00	0.00
8,600.00	90.14	0.23	7,250.85	727.60	777.98	730.72	0.00	0.00	0.00	0.00
8,700.00	90.14	0.23	7,250.61	827.60	778.38	830.72	0.00	0.00	0.00	0.00
8,800.00	90.14	0.23	7,250.36	927.60	778.78	930.72	0.00	0.00	0.00	0.00
8,900.00	90.14	0.23	7,250.11	1,027.60	779.18	1,030.72	0.00	0.00	0.00	0.00
9,000.00	90.14	0.23	7,249.87	1,127.60	779.58	1,130.72	0.00	0.00	0.00	0.00
9,100.00	90.14	0.23	7,249.62	1,227.60	779.98	1,230.72	0.00	0.00	0.00	0.00
9,200.00	90.14	0.23	7,249.37	1,327.60	780.38	1,330.72	0.00	0.00	0.00	0.00
9,300.00	90.14	0.23	7,249.13	1,427.60	780.78	1,430.72	0.00	0.00	0.00	0.00
9,400.00	90.14	0.23	7,248.88	1,527.59	781.18	1,530.72	0.00	0.00	0.00	0.00
9,500.00	90.14	0.23	7,248.64	1,627.59	781.58	1,630.72	0.00	0.00	0.00	0.00
9,600.00	90.14	0.23	7,248.39	1,727.59	781.98	1,730.72	0.00	0.00	0.00	0.00
9,700.00	90.14	0.23	7,248.14	1,827.59	782.38	1,830.72	0.00	0.00	0.00	0.00
9,800.00	90.14	0.23	7,247.90	1,927.59	782.78	1,930.72	0.00	0.00	0.00	0.00
9,900.00	90.14	0.23	7,247.65	2,027.59	783.18	2,030.72	0.00	0.00	0.00	0.00
10,000.00	90.14	0.23	7,247.40	2,127.59	783.58	2,130.72	0.00	0.00	0.00	0.00
10,100.00	90.14	0.23	7,247.16	2,227.59	783.98	2,230.72	0.00	0.00	0.00	0.00
10,200.00	90.14	0.23	7,246.91	2,327.59	784.38	2,330.72	0.00	0.00	0.00	0.00
10,300.00	90.14	0.23	7,246.67	2,427.58	784.78	2,430.71	0.00	0.00	0.00	0.00
10,400.00	90.14	0.23	7,246.42	2,527.58	785.18	2,530.71	0.00	0.00	0.00	0.00
10,500.00	90.14	0.23	7,246.17	2,627.58	785.58	2,630.71	0.00	0.00	0.00	0.00
10,600.00	90.14	0.23	7,245.93	2,727.58	785.98	2,730.71	0.00	0.00	0.00	0.00
10,700.00	90.14	0.23	7,245.68	2,827.58	786.38	2,830.71	0.00	0.00	0.00	0.00
10,800.00	90.14	0.23	7,245.44	2,927.58	786.78	2,930.71	0.00	0.00	0.00	0.00
10,900.00	90.14	0.23	7,245.19	3,027.58	787.18	3,030.71	0.00	0.00	0.00	0.00
11,000.00	90.14	0.23	7,244.94	3,127.58	787.58	3,130.71	0.00	0.00	0.00	0.00
11,100.00	90.14	0.23	7,244.70	3,227.58	787.98	3,230.71	0.00	0.00	0.00	0.00
11,200.00	90.14	0.23	7,244.45	3,327.57	788.38	3,330.71	0.00	0.00	0.00	0.00
11,300.00	90.14	0.23	7,244.20	3,427.57	788.78	3,430.71	0.00	0.00	0.00	0.00
11,400.00	90.14	0.23	7,243.96	3,527.57	789.18	3,530.71	0.00	0.00	0.00	0.00
11,500.00	90.14	0.23	7,243.71	3,627.57	789.58	3,630.71	0.00	0.00	0.00	0.00
11,600.00	90.14	0.23	7,243.47	3,727.57	789.98	3,730.71	0.00	0.00	0.00	0.00
11,700.00	90.14	0.23	7,243.22	3,827.57	790.38	3,830.71	0.00	0.00	0.00	0.00
11,800.00	90.14	0.23	7,242.97	3,927.57	790.78	3,930.71	0.00	0.00	0.00	0.00
11,900.00	90.14	0.23	7,242.73	4,027.57	791.18	4,030.71	0.00	0.00	0.00	0.00
12,000.00	90.14	0.23	7,242.48	4,127.57	791.58	4,130.71	0.00	0.00	0.00	0.00
12,100.00	90.14	0.23	7,242.23	4,227.56	791.98	4,230.71	0.00	0.00	0.00	0.00
12,200.00	90.14	0.23	7,241.99	4,327.56	792.38	4,330.71	0.00	0.00	0.00	0.00
12,300.00	90.14	0.23	7,241.74	4,427.56	792.78	4,430.71	0.00	0.00	0.00	0.00
12,400.00	90.14	0.23	7,241.50	4,527.56	793.18	4,530.71	0.00	0.00	0.00	0.00
12,500.00	90.14	0.23	7,241.25	4,627.56	793.58	4,630.71	0.00	0.00	0.00	0.00
12,600.00	90.14	0.23	7,241.00	4,727.56	793.98	4,730.71	0.00	0.00	0.00	0.00
12,700.00	90.14	0.23	7,240.76	4,827.56	794.38	4,830.71	0.00	0.00	0.00	0.00
12,800.00	90.14	0.23	7,240.51	4,927.56	794.78	4,930.71	0.00	0.00	0.00	0.00
12,900.00	90.14	0.23	7,240.26	5,027.56	795.18	5,030.71	0.00	0.00	0.00	0.00
13,000.00	90.14	0.23	7,240.02	5,127.55	795.58	5,130.71	0.00	0.00	0.00	0.00
13,100.00	90.14	0.23	7,239.77	5,227.55	795.98	5,230.71	0.00	0.00	0.00	0.00
13,200.00	90.14	0.23	7,239.53	5,327.55	796.38	5,330.71	0.00	0.00	0.00	0.00
13,300.00	90.14	0.23	7,239.28	5,427.55	796.78	5,430.71	0.00	0.00	0.00	0.00
13,400.00	90.14	0.23	7,239.03	5,527.55	797.18	5,530.71	0.00	0.00	0.00	0.00
13,500.00	90.14	0.23	7,238.79	5,627.55	797.58	5,630.71	0.00	0.00	0.00	0.00
13,600.00	90.14	0.23	7,238.54	5,727.55	797.98	5,730.70	0.00	0.00	0.00	0.00
13,700.00	90.14	0.23	7,238.29	5,827.55	798.37	5,830.70	0.00	0.00	0.00	0.00
13,800.00	90.14	0.23	7,238.05	5,927.55	798.77	5,930.70	0.00	0.00	0.00	0.00
13,900.00	90.14	0.23	7,237.80	6,027.54	799.17	6,030.70	0.00	0.00	0.00	0.00
14,000.00	90.14	0.23	7,237.56	6,127.54	799.57	6,130.70	0.00	0.00	0.00	0.00
14,100.00	90.14	0.23	7,237.31	6,227.54	799.97	6,230.70	0.00	0.00	0.00	0.00
14,200.00	90.14	0.23	7,237.06	6,327.54	800.37	6,330.70	0.00	0.00	0.00	0.00
14,300.00	90.14	0.23	7,236.82	6,427.54	800.77	6,430.70	0.00	0.00	0.00	0.00

Plan Report for MEGUIRE 29C-16HZ - 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 (°)
14,400.00	90.14	0.23	7,236.57	6,527.54	801.17	6,530.70	0.00	0.00	0.00	0.00
14,500.00	90.14	0.23	7,236.33	6,627.54	801.57	6,630.70	0.00	0.00	0.00	0.00
14,600.00	90.14	0.23	7,236.08	6,727.54	801.97	6,730.70	0.00	0.00	0.00	0.00
14,700.00	90.14	0.23	7,235.83	6,827.54	802.37	6,830.70	0.00	0.00	0.00	0.00
14,800.00	90.14	0.23	7,235.59	6,927.53	802.77	6,930.70	0.00	0.00	0.00	0.00
14,900.00	90.14	0.23	7,235.34	7,027.53	803.17	7,030.70	0.00	0.00	0.00	0.00
15,000.00	90.14	0.23	7,235.09	7,127.53	803.57	7,130.70	0.00	0.00	0.00	0.00
15,100.00	90.14	0.23	7,234.85	7,227.53	803.97	7,230.70	0.00	0.00	0.00	0.00
15,200.00	90.14	0.23	7,234.60	7,327.53	804.37	7,330.70	0.00	0.00	0.00	0.00
15,300.00	90.14	0.23	7,234.36	7,427.53	804.77	7,430.70	0.00	0.00	0.00	0.00
15,400.00	90.14	0.23	7,234.11	7,527.53	805.17	7,530.70	0.00	0.00	0.00	0.00
15,444.30	90.14	0.23	7,234.00	7,571.83	805.35	7,575.00	0.00	0.00	0.00	0.00

TD Well @ 15444.30ft - Target Toe Location - MEGUIRE 29C-16HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,540.00	1,540.00	0.00	0.00	Begin Nudge @ 1540.00ft
2,390.00	2,377.58	-85.37	91.55	End Nudge @ 2390.00ft
5,145.00	5,012.20	-634.71	680.64	Begin Drop @ 5145.00ft
5,995.00	5,849.79	-720.08	772.19	End Drop @ 5995.00ft
6,725.26	6,580.05	-720.08	772.19	Top of 4.5" Liner @ 6725.26ft
6,825.26	6,680.05	-720.08	772.19	KOP @ 6825.26ft
7,300.00	7,102.30	-534.40	772.93	DLS = 10°/100'
7,726.67	7,253.00	-145.72	774.49	End Build @ 7726.67ft
15,444.30	7,234.00	7,571.83	805.35	TD Well @ 15444.30ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	0.23	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,726.67	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1
7,726.67	15,444.30	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,357.00	1,357.00	9 5/8"	9-5/8	13-1/2
7,726.67	7,253.00	Top of Production	5-1/2	7-7/8

Plan Report for MEGUIRE 29C-16HZ - Permit Rev-1

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,645.99	4,535.00	Sussex		0.00	
7,034.51	6,884.68	Sharon Springs		0.00	
7,102.59	6,946.68	Niobrara Top		0.00	
7,176.14	7,009.40	Niobrara B Bench		0.00	
7,259.98	7,074.24	Niobrara C Bench		0.00	
7,510.55	7,213.24	Fort Hays		0.00	
7,598.50	7,239.04	Codell		0.00	
7,726.67	7,253.00	Target Heel Location		0.00	
15,444.30	7,234.00	Target Toe Location		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
2N-R65W-Sec. 16_Section Lines	0.00	40.42	-44.45	Polygon
MEGUIRE 29C-16HZ_SHL	0.00	0.00	0.00	Point
2N-R65W-Sec. 21_Section Lines	0.00	40.42	-44.45	Polygon
MEGUIRE 29C-16HZ_BHL	7,234.00	7,571.83	805.35	Point

North Reference Sheet for 2N-65W-21 Meguire 21-1HZ Pad - MEGUIRE 29C-16HZ - 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' @ 4913.00usft (D Rig). Northing and Easting are relative to MEGUIRE 29C-16HZ

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: 0.99960932

Grid Coordinates of Well: 14,572,328.07 usft N, 1,730,689.64 usft E

Geographical Coordinates of Well: 40° 07' 29.14" N, 104° 40' 37.44" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 15,444.30usft the Bottom Hole Displacement is 7,614.54usft in the Direction of 6.07° (True).

Magnetic Convergence at surface is: -8.10° (26 January 2015, , IGRF2010)

