

# US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Cream 27-28HZ Pad

Cream State 28N-21HZ

Plan B

Plan: Rev B0 Permit

## Sperry Drilling Services Proposal Report

20 October, 2014

Well Coordinates: 14,600,660.80 N, 1,734,094.28 E (40° 12' 09.10" N, 104° 39' 52.22" W)

Ground Level: 4,828.00 usft

Local Coordinate Origin:

Centered on Well Cream State 28N-21HZ

Viewing Datum:

RKB = 17' @ 4845.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Version: 5000.1 Build: 70

**HALLIBURTON**

Project: WELD-NAD83-UTMFT13N  
Site: Cream 27-28HZ Pad  
Well: Cream State 28N-21HZ  
Wellbore: Plan B  
Design: Rev B0 Permit

# US ROCKIES WATTENBERG PLANNING

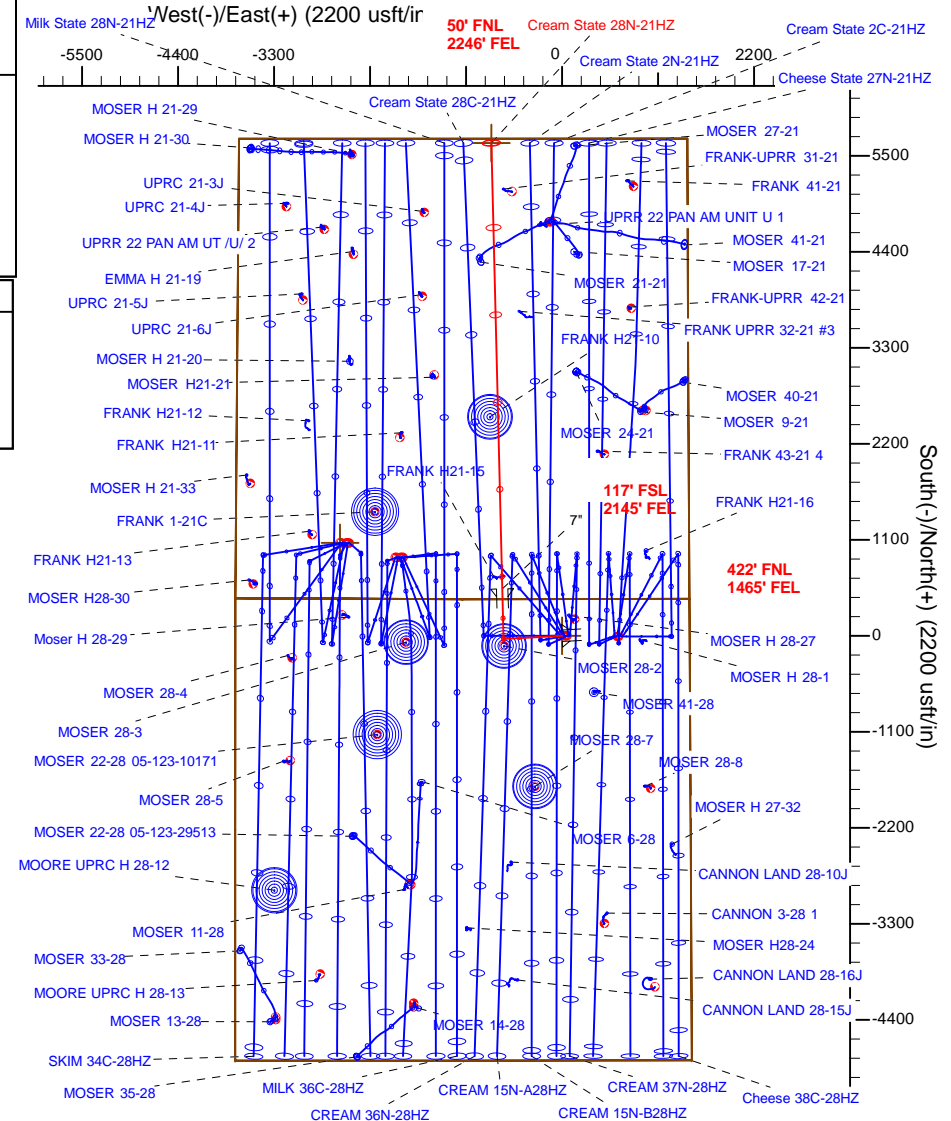
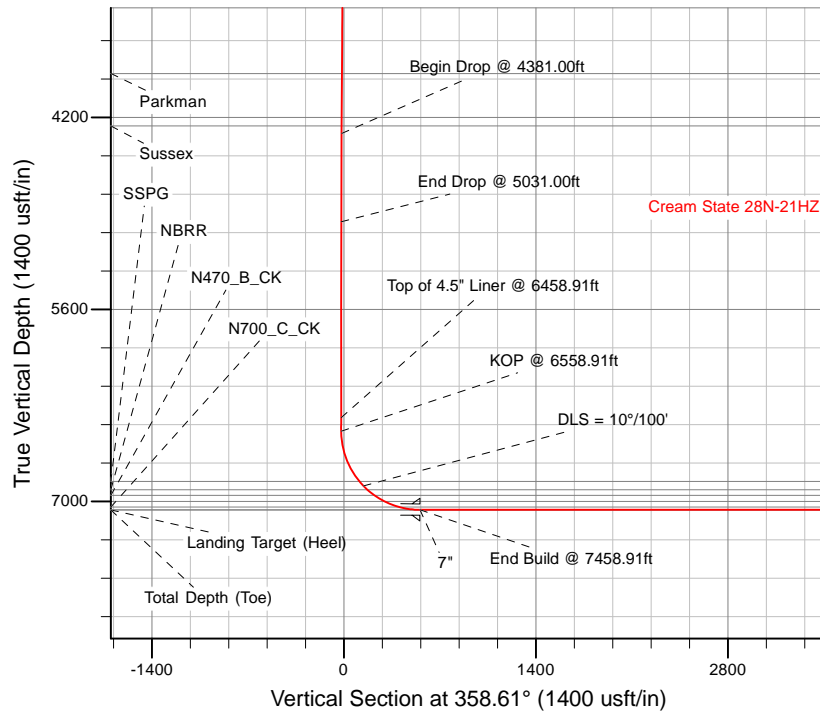
**HALLIBURTON**  
Sperry Drilling

## 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	1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00	
3	2050.00	13.00	267.00	2044.44	-3.84	-73.32	2.00	267.00	-2.06	
4	4381.00	13.00	267.00	4315.69	-31.29	-596.97	0.00	0.00	-16.80	
5	5031.00	0.00	0.00	4960.13	-35.13	-670.29	2.00	180.00	-18.86	
6	6558.91	0.00	0.00	6488.04	-35.13	-670.29	0.00	0.00	-18.86	
7	7458.91	90.00	358.61	7061.00	537.66	-684.19	10.00	358.61	554.10	
8	12569.03	90.00	358.61	7061.00	5646.27	-808.17	0.00	0.00	5664.21	Cream State 28N-21HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
Sec. 28 and 21-T3N-R65W	-19.00	1064.56	-2541.95	40.205452	-104.673609	
Cream State 28N-21HZ_SHL	0.00	0.00	0.00	40.202529	-104.664505	
Cream State 28N-21HZ_BHL	7061.00	5646.27	-808.17	40.218034	-104.667400	



TVD MD

6388.046458.91 Top of 4.5" Liner @ 6458.91ft  
6488.046558.91 KOP @ 6558.91ft

WELL DETAILS: Cream State 28N-21HZ

Ground Level: 4828.00

RKB = 17' @ 4845.00usft (D Rig)

Plan: Rev B0 Permit (Cream State 28N-21HZ/Plan B)

Created By: Clint Eshelman Date: 10/20/2014  
Reviewed: Date:

## Plan Report for Cream State 28N-21HZ - Rev B0 Permit

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>Cream State 28N-21HZ_SHL - Sec. 28 and 21-T3N-R65W</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
604.00	0.00	0.00	604.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Base Fox Hills</b>										
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
1,117.00	0.00	0.00	1,117.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Csg Setting Depth - 9 5/8"</b>										
1,200.00	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
<b>Begin Nudge @ 1400.00ft</b>										
1,500.00	2.00	267.00	1,499.98	-0.09	-1.74	-0.05	2.00	2.00	0.00	267.00
1,600.00	4.00	267.00	1,599.84	-0.37	-6.97	-0.20	2.00	2.00	0.00	0.00
1,700.00	6.00	267.00	1,699.45	-0.82	-15.67	-0.44	2.00	2.00	0.00	0.00
1,800.00	8.00	267.00	1,798.70	-1.46	-27.84	-0.78	2.00	2.00	0.00	0.00
1,900.00	10.00	267.00	1,897.47	-2.28	-43.46	-1.22	2.00	2.00	0.00	0.00
2,000.00	12.00	267.00	1,995.62	-3.28	-62.52	-1.76	2.00	2.00	0.00	0.00
2,050.00	13.00	267.00	2,044.44	-3.84	-73.32	-2.06	2.00	2.00	0.00	0.00
<b>End Nudge @ 2050.00ft</b>										
2,100.00	13.00	267.00	2,093.16	-4.43	-84.56	-2.38	0.00	0.00	0.00	0.00
2,200.00	13.00	267.00	2,190.59	-5.61	-107.02	-3.01	0.00	0.00	0.00	0.00
2,300.00	13.00	267.00	2,288.03	-6.79	-129.48	-3.64	0.00	0.00	0.00	0.00
2,400.00	13.00	267.00	2,385.47	-7.96	-151.95	-4.28	0.00	0.00	0.00	0.00
2,500.00	13.00	267.00	2,482.90	-9.14	-174.41	-4.91	0.00	0.00	0.00	0.00
2,600.00	13.00	267.00	2,580.34	-10.32	-196.88	-5.54	0.00	0.00	0.00	0.00
2,700.00	13.00	267.00	2,677.78	-11.50	-219.34	-6.17	0.00	0.00	0.00	0.00
2,800.00	13.00	267.00	2,775.21	-12.67	-241.81	-6.80	0.00	0.00	0.00	0.00
2,900.00	13.00	267.00	2,872.65	-13.85	-264.27	-7.44	0.00	0.00	0.00	0.00
3,000.00	13.00	267.00	2,970.09	-15.03	-286.73	-8.07	0.00	0.00	0.00	0.00
3,100.00	13.00	267.00	3,067.53	-16.20	-309.20	-8.70	0.00	0.00	0.00	0.00
3,200.00	13.00	267.00	3,164.96	-17.38	-331.66	-9.33	0.00	0.00	0.00	0.00
3,300.00	13.00	267.00	3,262.40	-18.56	-354.13	-9.96	0.00	0.00	0.00	0.00
3,400.00	13.00	267.00	3,359.84	-19.74	-376.59	-10.60	0.00	0.00	0.00	0.00
3,500.00	13.00	267.00	3,457.27	-20.91	-399.06	-11.23	0.00	0.00	0.00	0.00
3,600.00	13.00	267.00	3,554.71	-22.09	-421.52	-11.86	0.00	0.00	0.00	0.00
3,700.00	13.00	267.00	3,652.15	-23.27	-443.98	-12.49	0.00	0.00	0.00	0.00
3,800.00	13.00	267.00	3,749.58	-24.45	-466.45	-13.12	0.00	0.00	0.00	0.00
3,900.00	13.00	267.00	3,847.02	-25.62	-488.91	-13.76	0.00	0.00	0.00	0.00
3,934.87	13.00	267.00	3,881.00	-26.03	-496.75	-13.98	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,000.00	13.00	267.00	3,944.46	-26.80	-511.38	-14.39	0.00	0.00	0.00	0.00
4,100.00	13.00	267.00	4,041.90	-27.98	-533.84	-15.02	0.00	0.00	0.00	0.00
4,200.00	13.00	267.00	4,139.33	-29.15	-556.31	-15.65	0.00	0.00	0.00	0.00
4,300.00	13.00	267.00	4,236.77	-30.33	-578.77	-16.28	0.00	0.00	0.00	0.00
4,324.87	13.00	267.00	4,261.00	-30.62	-584.36	-16.44	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,381.00	13.00	267.00	4,315.69	-31.29	-596.97	-16.80	0.00	0.00	0.00	0.00
<b>Begin Drop @ 4381.00ft</b>										

## Plan Report for Cream State 28N-21HZ - Rev B0 Permit

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	12.62	267.00	4,334.22	-31.51	-601.17	-16.91	2.00	-2.00	0.00	180.00
4,500.00	10.62	267.00	4,432.17	-32.56	-621.29	-17.48	2.00	-2.00	0.00	180.00
4,600.00	8.62	267.00	4,530.76	-33.43	-637.97	-17.95	2.00	-2.00	0.00	180.00
4,700.00	6.62	267.00	4,629.87	-34.13	-651.22	-18.32	2.00	-2.00	0.00	180.00
4,800.00	4.62	267.00	4,729.38	-34.64	-660.99	-18.60	2.00	-2.00	0.00	180.00
4,900.00	2.62	267.00	4,829.18	-34.97	-667.30	-18.77	2.00	-2.00	0.00	180.00
5,000.00	0.62	267.00	4,929.13	-35.12	-670.12	-18.85	2.00	-2.00	0.00	180.00
5,031.00	0.00	0.00	4,960.13	-35.13	-670.29	-18.86	2.00	-2.00	300.00	180.00
End Drop @ 5031.00ft										
5,100.00	0.00	0.00	5,029.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	180.00
5,200.00	0.00	0.00	5,129.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,229.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,329.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,429.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,529.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,629.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,729.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,829.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,929.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,029.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,129.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,229.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,329.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
6,458.91	0.00	0.00	6,388.04	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6458.91ft										
6,500.00	0.00	0.00	6,429.13	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
6,558.91	0.00	0.00	6,488.04	-35.13	-670.29	-18.86	0.00	0.00	0.00	0.00
KOP @ 6558.91ft										
6,600.00	4.11	358.61	6,529.10	-33.66	-670.33	-17.39	10.00	10.00	0.00	358.61
6,700.00	14.11	358.61	6,627.71	-17.85	-670.71	-1.57	10.00	10.00	0.00	0.00
6,800.00	24.11	358.61	6,722.08	14.84	-671.50	31.12	10.00	10.00	0.00	0.00
6,900.00	34.11	358.61	6,809.34	63.41	-672.68	79.71	10.00	10.00	0.00	0.00
6,957.17	39.83	358.61	6,855.00	97.77	-673.51	114.07	10.00	10.00	0.00	0.00
SSPG										
7,000.00	44.11	358.61	6,886.83	126.39	-674.21	142.71	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,040.66	48.17	358.61	6,915.00	155.69	-674.92	172.02	10.00	10.00	0.00	0.00
NBRR										
7,100.00	54.11	358.61	6,952.21	201.87	-676.04	218.21	10.00	10.00	0.00	0.00
7,104.78	54.59	358.61	6,955.00	205.75	-676.14	222.09	10.00	10.00	0.00	0.00
N470_B_CK										
7,200.00	64.11	358.61	7,003.49	287.55	-678.12	303.91	10.00	10.00	0.00	0.00
7,300.00	74.11	358.61	7,039.10	380.83	-680.38	397.22	10.00	10.00	0.00	0.00
7,307.08	74.82	358.61	7,041.00	387.65	-680.55	404.04	10.00	10.00	0.00	0.00
N700_C_CK										
7,400.00	84.11	358.61	7,057.97	478.87	-682.76	495.29	10.00	10.00	0.00	0.00
7,458.91	90.00	358.61	7,061.00	537.66	-684.19	554.10	10.00	10.00	0.00	0.00
End Build @ 7458.91ft - Landing Target (Heel) - 7"										
7,500.00	90.00	358.61	7,061.00	578.74	-685.19	595.19	0.00	0.00	0.00	0.00
7,600.00	90.00	358.61	7,061.00	678.71	-687.61	695.19	0.00	0.00	0.00	0.00
7,700.00	90.00	358.61	7,061.00	778.68	-690.04	795.19	0.00	0.00	0.00	0.00
7,800.00	90.00	358.61	7,061.00	878.65	-692.47	895.19	0.00	0.00	0.00	0.00
7,900.00	90.00	358.61	7,061.00	978.62	-694.89	995.19	0.00	0.00	0.00	0.00
8,000.00	90.00	358.61	7,061.00	1,078.59	-697.32	1,095.19	0.00	0.00	0.00	0.00
8,100.00	90.00	358.61	7,061.00	1,178.56	-699.75	1,195.19	0.00	0.00	0.00	0.00
8,200.00	90.00	358.61	7,061.00	1,278.53	-702.17	1,295.19	0.00	0.00	0.00	0.00
8,300.00	90.00	358.61	7,061.00	1,378.50	-704.60	1,395.19	0.00	0.00	0.00	0.00
8,400.00	90.00	358.61	7,061.00	1,478.47	-707.02	1,495.19	0.00	0.00	0.00	0.00

## Plan Report for Cream State 28N-21HZ - Rev B0 Permit

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 (°)
8,500.00	90.00	358.61	7,061.00	1,578.44	-709.45	1,595.19	0.00	0.00	0.00	0.00
8,600.00	90.00	358.61	7,061.00	1,678.41	-711.88	1,695.19	0.00	0.00	0.00	0.00
8,700.00	90.00	358.61	7,061.00	1,778.39	-714.30	1,795.19	0.00	0.00	0.00	0.00
8,800.00	90.00	358.61	7,061.00	1,878.36	-716.73	1,895.19	0.00	0.00	0.00	0.00
8,900.00	90.00	358.61	7,061.00	1,978.33	-719.15	1,995.19	0.00	0.00	0.00	0.00
9,000.00	90.00	358.61	7,061.00	2,078.30	-721.58	2,095.19	0.00	0.00	0.00	0.00
9,100.00	90.00	358.61	7,061.00	2,178.27	-724.01	2,195.19	0.00	0.00	0.00	0.00
9,200.00	90.00	358.61	7,061.00	2,278.24	-726.43	2,295.19	0.00	0.00	0.00	0.00
9,300.00	90.00	358.61	7,061.00	2,378.21	-728.86	2,395.19	0.00	0.00	0.00	0.00
9,400.00	90.00	358.61	7,061.00	2,478.18	-731.29	2,495.19	0.00	0.00	0.00	0.00
9,500.00	90.00	358.61	7,061.00	2,578.15	-733.71	2,595.19	0.00	0.00	0.00	0.00
9,600.00	90.00	358.61	7,061.00	2,678.12	-736.14	2,695.19	0.00	0.00	0.00	0.00
9,700.00	90.00	358.61	7,061.00	2,778.09	-738.56	2,795.19	0.00	0.00	0.00	0.00
9,800.00	90.00	358.61	7,061.00	2,878.06	-740.99	2,895.19	0.00	0.00	0.00	0.00
9,900.00	90.00	358.61	7,061.00	2,978.03	-743.42	2,995.19	0.00	0.00	0.00	0.00
10,000.00	90.00	358.61	7,061.00	3,078.00	-745.84	3,095.19	0.00	0.00	0.00	0.00
10,100.00	90.00	358.61	7,061.00	3,177.97	-748.27	3,195.19	0.00	0.00	0.00	0.00
10,200.00	90.00	358.61	7,061.00	3,277.94	-750.70	3,295.19	0.00	0.00	0.00	0.00
10,300.00	90.00	358.61	7,061.00	3,377.91	-753.12	3,395.19	0.00	0.00	0.00	0.00
10,400.00	90.00	358.61	7,061.00	3,477.88	-755.55	3,495.19	0.00	0.00	0.00	0.00
10,500.00	90.00	358.61	7,061.00	3,577.86	-757.97	3,595.19	0.00	0.00	0.00	0.00
10,600.00	90.00	358.61	7,061.00	3,677.83	-760.40	3,695.19	0.00	0.00	0.00	0.00
10,700.00	90.00	358.61	7,061.00	3,777.80	-762.83	3,795.19	0.00	0.00	0.00	0.00
10,800.00	90.00	358.61	7,061.00	3,877.77	-765.25	3,895.19	0.00	0.00	0.00	0.00
10,900.00	90.00	358.61	7,061.00	3,977.74	-767.68	3,995.19	0.00	0.00	0.00	0.00
11,000.00	90.00	358.61	7,061.00	4,077.71	-770.11	4,095.19	0.00	0.00	0.00	0.00
11,100.00	90.00	358.61	7,061.00	4,177.68	-772.53	4,195.19	0.00	0.00	0.00	0.00
11,200.00	90.00	358.61	7,061.00	4,277.65	-774.96	4,295.19	0.00	0.00	0.00	0.00
11,300.00	90.00	358.61	7,061.00	4,377.62	-777.38	4,395.19	0.00	0.00	0.00	0.00
11,400.00	90.00	358.61	7,061.00	4,477.59	-779.81	4,495.19	0.00	0.00	0.00	0.00
11,500.00	90.00	358.61	7,061.00	4,577.56	-782.24	4,595.19	0.00	0.00	0.00	0.00
11,600.00	90.00	358.61	7,061.00	4,677.53	-784.66	4,695.19	0.00	0.00	0.00	0.00
11,700.00	90.00	358.61	7,061.00	4,777.50	-787.09	4,795.19	0.00	0.00	0.00	0.00
11,800.00	90.00	358.61	7,061.00	4,877.47	-789.51	4,895.19	0.00	0.00	0.00	0.00
11,900.00	90.00	358.61	7,061.00	4,977.44	-791.94	4,995.19	0.00	0.00	0.00	0.00
12,000.00	90.00	358.61	7,061.00	5,077.41	-794.37	5,095.19	0.00	0.00	0.00	0.00
12,100.00	90.00	358.61	7,061.00	5,177.38	-796.79	5,195.19	0.00	0.00	0.00	0.00
12,200.00	90.00	358.61	7,061.00	5,277.36	-799.22	5,295.19	0.00	0.00	0.00	0.00
12,300.00	90.00	358.61	7,061.00	5,377.33	-801.65	5,395.19	0.00	0.00	0.00	0.00
12,400.00	90.00	358.61	7,061.00	5,477.30	-804.07	5,495.19	0.00	0.00	0.00	0.00
12,500.00	90.00	358.61	7,061.00	5,577.27	-806.50	5,595.19	0.00	0.00	0.00	0.00
12,569.03	90.00	358.61	7,061.00	5,646.27	-808.17	5,664.21	0.00	0.00	0.00	0.00

TD Well @ 12569.03ft - Cream State 28N-21HZ\_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,400.00	1,400.00	0.00	0.00	Begin Nudge @ 1400.00ft
2,050.00	2,044.44	-3.84	-73.32	End Nudge @ 2050.00ft
4,381.00	4,315.69	-31.29	-596.97	Begin Drop @ 4381.00ft
5,031.00	4,960.13	-35.13	-670.29	End Drop @ 5031.00ft
6,458.91	6,388.04	-35.13	-670.29	Top of 4.5" Liner @ 6458.91ft
6,558.91	6,488.04	-35.13	-670.29	KOP @ 6558.91ft
7,000.00	6,886.83	126.39	-674.21	DLS = 10°/100'
7,458.91	7,061.00	537.66	-684.19	End Build @ 7458.91ft
12,569.03	7,061.00	5,646.27	-808.17	TD Well @ 12569.03ft

## Plan Report for Cream State 28N-21HZ - Rev B0 Permit

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	358.61	Slot	0.00	0.00	0.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,458.91	Rev B0 Permit	MWD+IFR1
7,458.91	12,569.03	Rev B0 Permit	MWD+IFR1

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,117.00	1,117.00	9 5/8"	9-5/8	13-1/2
7,458.91	7,061.00	7"	7	8-3/4

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
604.00	604.00	Base Fox Hills		0.00	
1,117.00	1,117.00	Surface Csg Setting Depth		0.00	
3,934.87	3,881.00	Parkman		0.00	
4,324.87	4,261.00	Sussex		0.00	
6,957.17	6,855.00	SSPG		0.00	
7,040.66	6,915.00	NBRR		0.00	
7,104.78	6,955.00	N470_B_CK		0.00	
7,307.08	7,041.00	N700_C_CK		0.00	
7,458.91	7,061.00	Landing Target (Heel)		0.00	
12,569.03	7,061.00	Total Depth (Toe)		0.00	

**Targets associated with this wellbore**

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Cream State 28N-21HZ_SHL	0.00	0.00	0.00	Point
Cream State 28N-21HZ_BHL	7,061.00	5,646.27	-808.17	Point
Sec. 28 and 21-T3N-R65W	-19.00	1,064.56	-2,541.95	Polygon

**North Reference Sheet for Cream 27-28HZ Pad - Cream State 28N-21HZ - Plan B**

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' @ 4845.00usft (D Rig). Northing and Easting are relative to Cream State 28N-21HZ

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: 0.99961004

Grid Coordinates of Well: 14,600,660.80 usft N, 1,734,094.28 usft E

Geographical Coordinates of Well: 40° 12' 09.10" N, 104° 39' 52.22" W

Grid Convergence at Surface is: 0.22°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,569.03usft  
the Bottom Hole Displacement is 5,703.82usft in the Direction of 351.85° ( True).

Magnetic Convergence at surface is: -8.13° (13 October 2014, , IGRF2010)

