

# US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Cream 27-28HZ Pad

Cream State 2C-21HZ

Plan A

Plan: Rev A0 Permit

## Sperry Drilling Services Proposal Report

14 October, 2014

Well Coordinates: 14,600,660.30 N, 1,734,154.32 E (40° 12' 09.10" N, 104° 39' 51.44" W)

Ground Level: 4,826.00 usft

Local Coordinate Origin:

Centered on Well Cream State 2C-21HZ

Viewing Datum:

RKB = 17' @ 4843.00usft (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: Cream 27-28HZ Pad  
Well: Cream State 2C-21HZ  
Wellbore: Plan A  
Design: Rev A0 Permit

# US ROCKIES WATTENBERG PLANNING

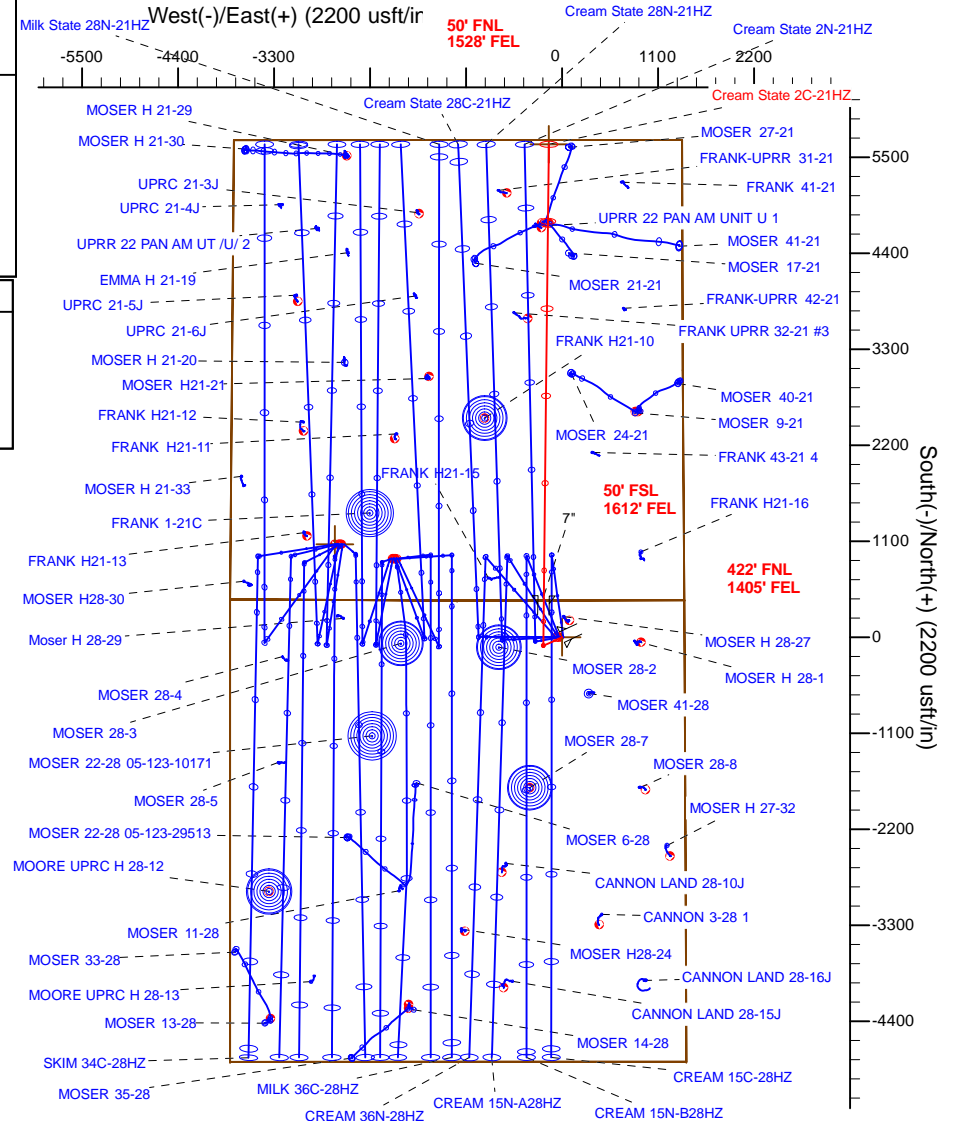
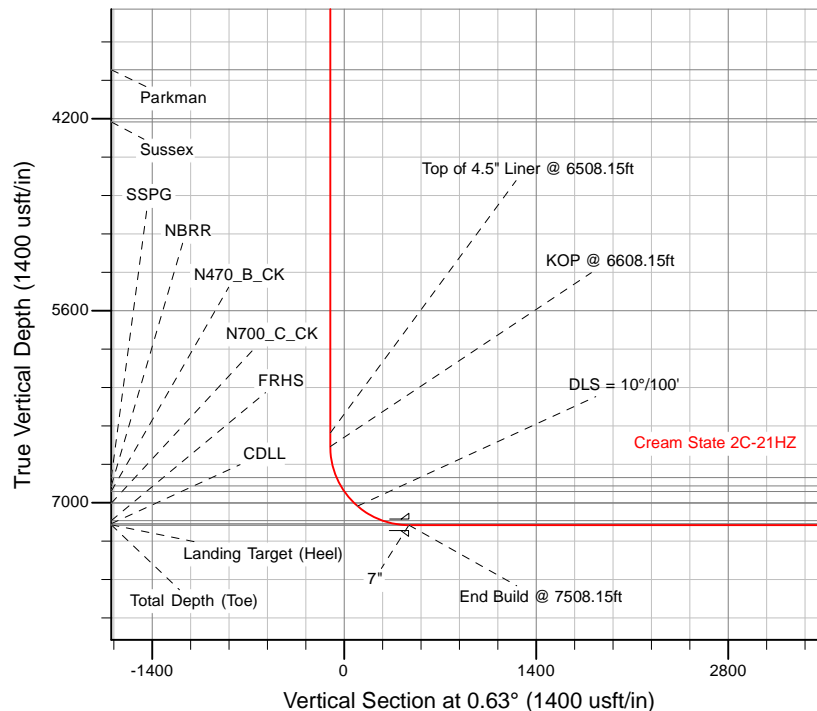
**HALLIBURTON**  
Sperry Drilling

## 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	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1700.00	10.00	245.00	1697.47	-18.39	-39.44	2.00	245.00	-18.83	
4	2558.00	10.00	245.00	2542.43	-81.36	-174.48	0.00	0.00	-83.27	
5	3058.00	0.00	0.00	3039.90	-99.75	-213.92	2.00	180.00	-102.10	
6	6608.15	0.00	0.00	6590.05	-99.75	-213.92	0.00	0.00	-102.10	
7	7508.15	90.00	0.63	7163.00	473.17	-207.60	10.00	0.63	470.86	
8	12682.28	90.00	0.63	7163.00	5646.99	-150.51	0.00	0.00	5644.99	Cream State 2C-21HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
Sec. 28 and 21-T3N-R65W	-21.00	1065.30	-2601.98	40.205452	-104.673609	
Cream State 2C-21HZ_SHL	0.00	0.00	0.00	40.202527	-104.664290	
Cream State 2C-21HZ_BHL	7163.00	5646.99	-150.51	40.218034	-104.664829	



TVD MD

6490.05 6508.15 Top of 4.5" Liner @ 6508.15ft  
6590.05 6608.15 KOP @ 6608.15ft

WELL DETAILS: Cream State 2C-21HZ

Ground Level: 4826.00

RKB = 17" @ 4843.00usft (D Rig)

Plan: Rev A0 Permit (Cream State 2C-21HZ/Plan A)

Created By: Clint Eshelman

Date: 10/14/2014

Reviewed:

Date:

## Plan Report for Cream State 2C-21HZ - Rev A0 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>Sec. 28 and 21-T3N-R65W - Cream State 2C-21HZ_SHL</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
602.00	0.00	0.00	602.00	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
1,115.00	0.00	0.00	1,115.00	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
<b>Begin Nudge @ 1200.00ft</b>										
1,300.00	2.00	245.00	1,299.98	-0.74	-1.58	-0.75	2.00	2.00	0.00	245.00
1,400.00	4.00	245.00	1,399.84	-2.95	-6.32	-3.02	2.00	2.00	0.00	0.00
1,500.00	6.00	245.00	1,499.45	-6.63	-14.22	-6.79	2.00	2.00	0.00	0.00
1,600.00	8.00	245.00	1,598.70	-11.78	-25.27	-12.06	2.00	2.00	0.00	0.00
1,700.00	10.00	245.00	1,697.47	-18.39	-39.44	-18.83	2.00	2.00	0.00	0.00
<b>End Nudge @ 1700.00ft</b>										
1,800.00	10.00	245.00	1,795.95	-25.73	-55.18	-26.34	0.00	0.00	0.00	0.00
1,900.00	10.00	245.00	1,894.43	-33.07	-70.92	-33.85	0.00	0.00	0.00	0.00
2,000.00	10.00	245.00	1,992.91	-40.41	-86.66	-41.36	0.00	0.00	0.00	0.00
2,100.00	10.00	245.00	2,091.39	-47.75	-102.40	-48.87	0.00	0.00	0.00	0.00
2,200.00	10.00	245.00	2,189.87	-55.09	-118.13	-56.38	0.00	0.00	0.00	0.00
2,300.00	10.00	245.00	2,288.35	-62.43	-133.87	-63.89	0.00	0.00	0.00	0.00
2,400.00	10.00	245.00	2,386.83	-69.76	-149.61	-71.41	0.00	0.00	0.00	0.00
2,500.00	10.00	245.00	2,485.31	-77.10	-165.35	-78.92	0.00	0.00	0.00	0.00
2,558.00	10.00	245.00	2,542.43	-81.36	-174.48	-83.27	0.00	0.00	0.00	0.00
<b>Begin Drop @ 2558.00ft</b>										
2,600.00	9.16	245.00	2,583.84	-84.31	-180.81	-86.30	2.00	-2.00	0.00	180.00
2,700.00	7.16	245.00	2,682.83	-90.31	-193.67	-92.44	2.00	-2.00	0.00	180.00
2,800.00	5.16	245.00	2,782.24	-94.85	-203.40	-97.08	2.00	-2.00	0.00	180.00
2,900.00	3.16	245.00	2,881.98	-97.91	-209.97	-100.21	2.00	-2.00	0.00	180.00
3,000.00	1.16	245.00	2,981.90	-99.50	-213.39	-101.84	2.00	-2.00	0.00	180.00
3,058.00	0.00	0.00	3,039.90	-99.75	-213.92	-102.10	2.00	-2.00	198.28	180.00
<b>End Drop @ 3058.00ft</b>										
3,100.00	0.00	0.00	3,081.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	180.00
3,200.00	0.00	0.00	3,181.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,281.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,381.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,481.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,581.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,681.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,781.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
3,861.10	0.00	0.00	3,843.00	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
<b>Parkman</b>										
3,900.00	0.00	0.00	3,881.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,981.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,081.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,181.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,241.10	0.00	0.00	4,223.00	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
<b>Sussex</b>										

## Plan Report for Cream State 2C-21HZ - Rev A0 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 (°)
4,300.00	0.00	0.00	4,281.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,381.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,481.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,581.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,681.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,781.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,881.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,981.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,081.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,181.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,281.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,381.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,481.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,581.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,681.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,781.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,881.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,981.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,081.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,181.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,281.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,381.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,481.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,508.15	0.00	0.00	6,490.05	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
<b>Top of 4.5" Liner @ 6508.15ft</b>										
6,600.00	0.00	0.00	6,581.90	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
6,608.15	0.00	0.00	6,590.05	-99.75	-213.92	-102.10	0.00	0.00	0.00	0.00
<b>KOP @ 6608.15ft</b>										
6,700.00	9.18	0.63	6,681.50	-92.41	-213.84	-94.75	10.00	10.00	0.00	0.63
6,800.00	19.18	0.63	6,778.33	-67.93	-213.57	-70.28	10.00	10.00	0.00	0.00
6,841.50	23.34	0.63	6,817.00	-52.89	-213.40	-55.23	10.00	10.00	0.00	0.00
<b>SSPG</b>										
6,900.00	29.18	0.63	6,869.44	-27.02	-213.12	-29.36	10.00	10.00	0.00	0.00
6,908.70	30.05	0.63	6,877.00	-22.72	-213.07	-25.06	10.00	10.00	0.00	0.00
<b>NBRR</b>										
6,956.10	34.80	0.63	6,917.00	2.69	-212.79	0.35	10.00	10.00	0.00	0.00
<b>N470_B_CK</b>										
7,000.00	39.18	0.63	6,952.06	29.09	-212.50	26.75	10.00	10.00	0.00	0.00
7,069.31	46.12	0.63	7,003.00	76.02	-211.98	73.68	10.00	10.00	0.00	0.00
<b>N700_C_CK</b>										
7,100.00	49.18	0.63	7,023.67	98.70	-211.73	96.36	10.00	10.00	0.00	0.00
<b>DLS = 10°/100'</b>										
7,200.00	59.18	0.63	7,082.12	179.68	-210.84	177.35	10.00	10.00	0.00	0.00
7,300.00	69.18	0.63	7,125.61	269.58	-209.85	267.26	10.00	10.00	0.00	0.00
7,312.73	70.46	0.63	7,130.00	281.53	-209.71	279.21	10.00	10.00	0.00	0.00
<b>FRHS</b>										
7,400.00	79.18	0.63	7,152.83	365.67	-208.79	363.35	10.00	10.00	0.00	0.00
7,400.93	79.28	0.63	7,153.00	366.58	-208.78	364.26	10.00	10.00	0.00	0.00
<b>CDLL</b>										
7,500.00	89.18	0.63	7,162.95	465.02	-207.69	462.71	10.00	10.00	0.00	0.00
7,508.15	90.00	0.63	7,163.00	473.17	-207.60	470.86	10.00	10.00	0.00	0.00
<b>End Build @ 7508.15ft - Landing Target (Heel) - 7"</b>										
7,600.00	90.00	0.63	7,163.00	565.01	-206.59	562.71	0.00	0.00	0.00	0.00
7,700.00	90.00	0.63	7,163.00	665.01	-205.48	662.71	0.00	0.00	0.00	0.00
7,800.00	90.00	0.63	7,163.00	765.00	-204.38	762.71	0.00	0.00	0.00	0.00
7,900.00	90.00	0.63	7,163.00	865.00	-203.28	862.71	0.00	0.00	0.00	0.00
8,000.00	90.00	0.63	7,163.00	964.99	-202.17	962.71	0.00	0.00	0.00	0.00
8,100.00	90.00	0.63	7,163.00	1,064.98	-201.07	1,062.71	0.00	0.00	0.00	0.00

## Plan Report for Cream State 2C-21HZ - Rev A0 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 (°)
8,200.00	90.00	0.63	7,163.00	1,164.98	-199.97	1,162.71	0.00	0.00	0.00	0.00
8,300.00	90.00	0.63	7,163.00	1,264.97	-198.86	1,262.71	0.00	0.00	0.00	0.00
8,400.00	90.00	0.63	7,163.00	1,364.97	-197.76	1,362.71	0.00	0.00	0.00	0.00
8,500.00	90.00	0.63	7,163.00	1,464.96	-196.66	1,462.71	0.00	0.00	0.00	0.00
8,600.00	90.00	0.63	7,163.00	1,564.95	-195.55	1,562.71	0.00	0.00	0.00	0.00
8,700.00	90.00	0.63	7,163.00	1,664.95	-194.45	1,662.71	0.00	0.00	0.00	0.00
8,800.00	90.00	0.63	7,163.00	1,764.94	-193.35	1,762.71	0.00	0.00	0.00	0.00
8,900.00	90.00	0.63	7,163.00	1,864.94	-192.24	1,862.71	0.00	0.00	0.00	0.00
9,000.00	90.00	0.63	7,163.00	1,964.93	-191.14	1,962.71	0.00	0.00	0.00	0.00
9,100.00	90.00	0.63	7,163.00	2,064.92	-190.04	2,062.71	0.00	0.00	0.00	0.00
9,200.00	90.00	0.63	7,163.00	2,164.92	-188.93	2,162.71	0.00	0.00	0.00	0.00
9,300.00	90.00	0.63	7,163.00	2,264.91	-187.83	2,262.71	0.00	0.00	0.00	0.00
9,400.00	90.00	0.63	7,163.00	2,364.90	-186.73	2,362.71	0.00	0.00	0.00	0.00
9,500.00	90.00	0.63	7,163.00	2,464.90	-185.62	2,462.71	0.00	0.00	0.00	0.00
9,600.00	90.00	0.63	7,163.00	2,564.89	-184.52	2,562.71	0.00	0.00	0.00	0.00
9,700.00	90.00	0.63	7,163.00	2,664.89	-183.42	2,662.71	0.00	0.00	0.00	0.00
9,800.00	90.00	0.63	7,163.00	2,764.88	-182.31	2,762.71	0.00	0.00	0.00	0.00
9,900.00	90.00	0.63	7,163.00	2,864.87	-181.21	2,862.71	0.00	0.00	0.00	0.00
10,000.00	90.00	0.63	7,163.00	2,964.87	-180.11	2,962.71	0.00	0.00	0.00	0.00
10,100.00	90.00	0.63	7,163.00	3,064.86	-179.00	3,062.71	0.00	0.00	0.00	0.00
10,200.00	90.00	0.63	7,163.00	3,164.86	-177.90	3,162.71	0.00	0.00	0.00	0.00
10,300.00	90.00	0.63	7,163.00	3,264.85	-176.79	3,262.71	0.00	0.00	0.00	0.00
10,400.00	90.00	0.63	7,163.00	3,364.84	-175.69	3,362.71	0.00	0.00	0.00	0.00
10,500.00	90.00	0.63	7,163.00	3,464.84	-174.59	3,462.71	0.00	0.00	0.00	0.00
10,600.00	90.00	0.63	7,163.00	3,564.83	-173.48	3,562.71	0.00	0.00	0.00	0.00
10,700.00	90.00	0.63	7,163.00	3,664.83	-172.38	3,662.71	0.00	0.00	0.00	0.00
10,800.00	90.00	0.63	7,163.00	3,764.82	-171.28	3,762.71	0.00	0.00	0.00	0.00
10,900.00	90.00	0.63	7,163.00	3,864.81	-170.17	3,862.71	0.00	0.00	0.00	0.00
11,000.00	90.00	0.63	7,163.00	3,964.81	-169.07	3,962.71	0.00	0.00	0.00	0.00
11,100.00	90.00	0.63	7,163.00	4,064.80	-167.97	4,062.71	0.00	0.00	0.00	0.00
11,200.00	90.00	0.63	7,163.00	4,164.80	-166.86	4,162.71	0.00	0.00	0.00	0.00
11,300.00	90.00	0.63	7,163.00	4,264.79	-165.76	4,262.71	0.00	0.00	0.00	0.00
11,400.00	90.00	0.63	7,163.00	4,364.78	-164.66	4,362.71	0.00	0.00	0.00	0.00
11,500.00	90.00	0.63	7,163.00	4,464.78	-163.55	4,462.71	0.00	0.00	0.00	0.00
11,600.00	90.00	0.63	7,163.00	4,564.77	-162.45	4,562.71	0.00	0.00	0.00	0.00
11,700.00	90.00	0.63	7,163.00	4,664.76	-161.35	4,662.71	0.00	0.00	0.00	0.00
11,800.00	90.00	0.63	7,163.00	4,764.76	-160.24	4,762.71	0.00	0.00	0.00	0.00
11,900.00	90.00	0.63	7,163.00	4,864.75	-159.14	4,862.71	0.00	0.00	0.00	0.00
12,000.00	90.00	0.63	7,163.00	4,964.75	-158.04	4,962.71	0.00	0.00	0.00	0.00
12,100.00	90.00	0.63	7,163.00	5,064.74	-156.93	5,062.71	0.00	0.00	0.00	0.00
12,200.00	90.00	0.63	7,163.00	5,164.73	-155.83	5,162.71	0.00	0.00	0.00	0.00
12,300.00	90.00	0.63	7,163.00	5,264.73	-154.73	5,262.71	0.00	0.00	0.00	0.00
12,400.00	90.00	0.63	7,163.00	5,364.72	-153.62	5,362.71	0.00	0.00	0.00	0.00
12,500.00	90.00	0.63	7,163.00	5,464.72	-152.52	5,462.71	0.00	0.00	0.00	0.00
12,600.00	90.00	0.63	7,163.00	5,564.71	-151.42	5,562.71	0.00	0.00	0.00	0.00
12,682.28	90.00	0.63	7,163.00	5,646.99	-150.51	5,644.99	0.00	0.00	0.00	0.00

TD Well @ 12682.28ft - Total Depth (Toe) - Cream State 2C-21HZ\_BHL

## Plan Report for Cream State 2C-21HZ - Rev A0 Permit

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,200.00	1,200.00	0.00	0.00	Begin Nudge @ 1200.00ft
1,700.00	1,697.47	-18.39	-39.44	End Nudge @ 1700.00ft
2,558.00	2,542.43	-81.36	-174.48	Begin Drop @ 2558.00ft
3,058.00	3,039.90	-99.75	-213.92	End Drop @ 3058.00ft
6,508.15	6,490.05	-99.75	-213.92	Top of 4.5" Liner @ 6508.15ft
6,608.15	6,590.05	-99.75	-213.92	KOP @ 6608.15ft
7,100.00	7,023.67	98.70	-211.73	DLS = 10°/100'
7,508.15	7,163.00	473.17	-207.60	End Build @ 7508.15ft
12,682.28	7,163.00	5,646.99	-150.51	TD Well @ 12682.28ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
User	No Target (Freehand)	0.63	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,508.15	Rev A0 Permit	MWD+IFR1
7,508.15	12,682.28	Rev A0 Permit	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,115.00	1,115.00	9 5/8"	9-5/8	13-1/2
7,508.15	7,163.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
602.00	602.00	Base Fox Hills		0.00	
1,115.00	1,115.00	Surface Csg Setting Depth		0.00	
3,861.10	3,843.00	Parkman		0.00	
4,241.10	4,223.00	Sussex		0.00	
6,841.50	6,817.00	SSPG		0.00	
6,908.70	6,877.00	NBRR		0.00	
6,956.10	6,917.00	N470_B_CK		0.00	
7,069.31	7,003.00	N700_C_CK		0.00	
7,312.73	7,130.00	FRHS		0.00	
7,400.93	7,153.00	CDLL		0.00	
7,508.15	7,163.00	Landing Target (Heel)		0.00	
12,682.28	7,163.00	Total Depth (Toe)		0.00	

**Plan Report for Cream State 2C-21HZ - Rev A0 Permit**

*Targets associated with this wellbore*

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Sec. 28 and 21-T3N-R65W	-21.00	1,065.30	-2,601.98	Polygon
Cream State 2C-21HZ_SHL	0.00	0.00	0.00	Point
Cream State 2C-21HZ_BHL	7,163.00	5,646.99	-150.51	Point

**North Reference Sheet for Cream 27-28HZ Pad - Cream State 2C-21HZ - 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' @ 4843.00usft (D Rig). Northing and Easting are relative to Cream State 2C-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: 0.99961005

Grid Coordinates of Well: 14,600,660.30 usft N, 1,734,154.32 usft E

Geographical Coordinates of Well: 40° 12' 09.10" N, 104° 39' 51.44" W

Grid Convergence at Surface is: 0.22°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,682.28usft  
the Bottom Hole Displacement is 5,648.99usft in the Direction of 358.47° ( True).

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

