

# US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-65W-29 Alvin 16-29HZ Pad

ALVIN 1N-29HZ

Plan A

Plan: Permit Rev-1

## Sperry Drilling Services Proposal Report

23 April, 2015

Well Coordinates: 14,564,481.59 N, 1,730,065.47 E (40° 06' 11.59" N, 104° 40' 45.84" W)

Ground Level: 4,908.00 usft

Local Coordinate Origin:

Centered on Well ALVIN 1N-29HZ

Viewing Datum:

RKB = 17' @ 4925.00usft (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-29 Alvin 16-29HZ Pad

Well: ALVIN 1N-29HZ

Wellbore: Plan A

Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

HALLIBURTON

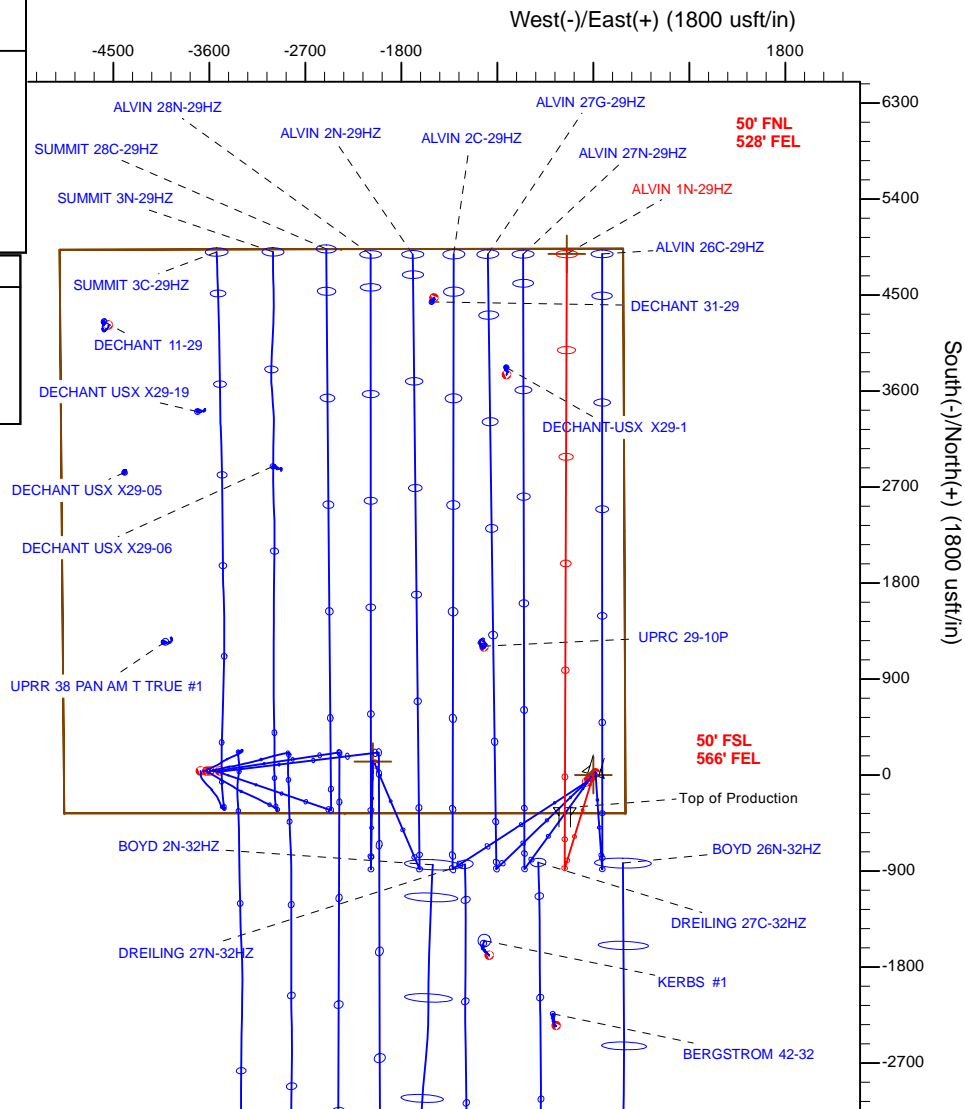
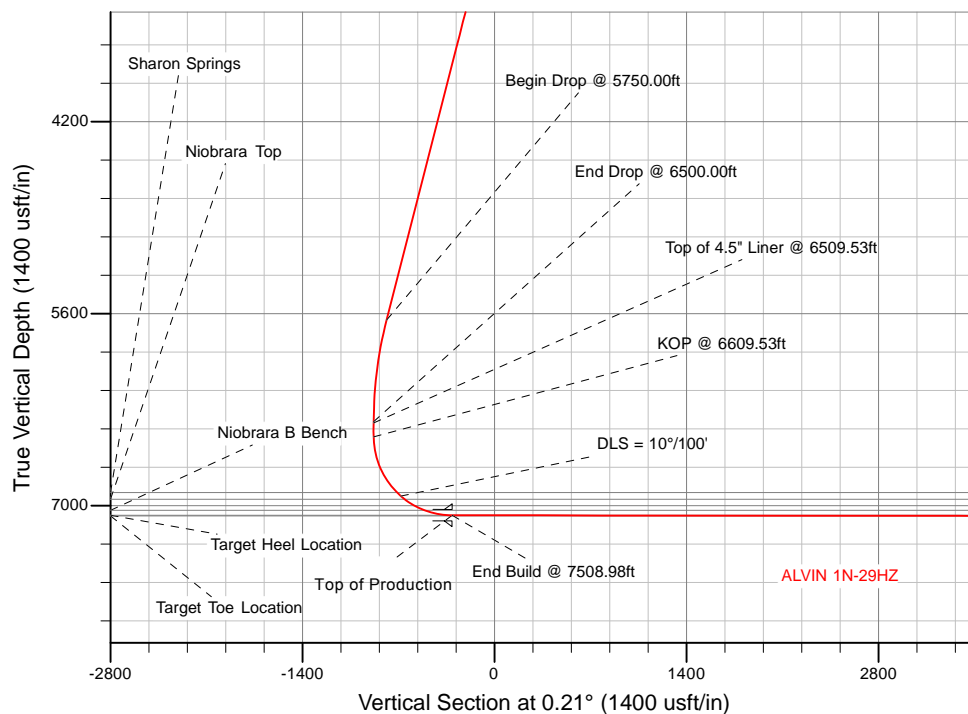
Sperry Drilling

## 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	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2950.00	15.00	197.00	2941.46	-93.35	-28.54	2.00	197.00	-93.45	
4	5750.00	15.00	197.00	5646.05	-786.38	-240.42	0.00	0.00	-787.25	
5	6500.00	0.00	0.00	6387.52	-879.73	-268.96	2.00	180.00	-880.71	
6	6609.53	0.00	0.00	6497.05	-879.73	-268.96	0.00	0.00	-880.71	
7	7508.98	89.94	0.21	7070.00	-307.32	-266.90	10.00	0.21	-308.30	
8	12701.06	89.94	0.21	7075.00	4884.72	-248.27	0.00	0.00	4883.78	ALVIN 1N-29HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
ALVIN 1N-29HZ_SHL	0.00	0.00	0.00	40.103219	-104.679401
ALVIN 1N-29HZ_BHL	7075.00	4884.72	-248.27	40.116633	-104.680289



## WELL DETAILS: ALVIN 1N-29HZ

Ground Level: 4908.00

RKB = 17' @ 4925.00usft (D Rig)

Plan: Permit Rev-1 (ALVIN 1N-29HZ/Plan A)

Created By: Clint Eshelman

Date: 1/29/2015

Reviewed:

Date:

## Plan Report for ALVIN 1N-29HZ - 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
<b>2N-R65W-Sec. 29_Section Lines - ALVIN 1N-29HZ_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
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
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,440.00	0.00	0.00	1,440.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
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
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 2200.00ft</b>										
2,300.00	2.00	197.00	2,299.98	-1.67	-0.51	-1.67	2.00	2.00	0.00	197.00
2,400.00	4.00	197.00	2,399.84	-6.67	-2.04	-6.68	2.00	2.00	0.00	0.00
2,500.00	6.00	197.00	2,499.45	-15.01	-4.59	-15.02	2.00	2.00	0.00	0.00
2,600.00	8.00	197.00	2,598.70	-26.66	-8.15	-26.69	2.00	2.00	0.00	0.00
2,700.00	10.00	197.00	2,697.47	-41.62	-12.72	-41.67	2.00	2.00	0.00	0.00
2,800.00	12.00	197.00	2,795.62	-59.87	-18.30	-59.93	2.00	2.00	0.00	0.00
2,900.00	14.00	197.00	2,893.06	-81.38	-24.88	-81.47	2.00	2.00	0.00	0.00
2,950.00	15.00	197.00	2,941.46	-93.35	-28.54	-93.45	2.00	2.00	0.00	0.00
<b>End Nudge @ 2950.00ft</b>										
3,000.00	15.00	197.00	2,989.76	-105.73	-32.32	-105.84	0.00	0.00	0.00	0.00
3,100.00	15.00	197.00	3,086.35	-130.48	-39.89	-130.62	0.00	0.00	0.00	0.00
3,200.00	15.00	197.00	3,182.94	-155.23	-47.46	-155.40	0.00	0.00	0.00	0.00
3,300.00	15.00	197.00	3,279.54	-179.98	-55.02	-180.18	0.00	0.00	0.00	0.00
3,400.00	15.00	197.00	3,376.13	-204.73	-62.59	-204.96	0.00	0.00	0.00	0.00
3,500.00	15.00	197.00	3,472.72	-229.48	-70.16	-229.74	0.00	0.00	0.00	0.00
3,600.00	15.00	197.00	3,569.31	-254.23	-77.73	-254.51	0.00	0.00	0.00	0.00
3,700.00	15.00	197.00	3,665.91	-278.98	-85.29	-279.29	0.00	0.00	0.00	0.00
3,800.00	15.00	197.00	3,762.50	-303.73	-92.86	-304.07	0.00	0.00	0.00	0.00
3,900.00	15.00	197.00	3,859.09	-328.48	-100.43	-328.85	0.00	0.00	0.00	0.00
4,000.00	15.00	197.00	3,955.68	-353.24	-107.99	-353.63	0.00	0.00	0.00	0.00
4,100.00	15.00	197.00	4,052.28	-377.99	-115.56	-378.41	0.00	0.00	0.00	0.00
4,200.00	15.00	197.00	4,148.87	-402.74	-123.13	-403.19	0.00	0.00	0.00	0.00
4,300.00	15.00	197.00	4,245.46	-427.49	-130.70	-427.96	0.00	0.00	0.00	0.00
4,400.00	15.00	197.00	4,342.05	-452.24	-138.26	-452.74	0.00	0.00	0.00	0.00
4,500.00	15.00	197.00	4,438.65	-476.99	-145.83	-477.52	0.00	0.00	0.00	0.00
4,600.00	15.00	197.00	4,535.24	-501.74	-153.40	-502.30	0.00	0.00	0.00	0.00
4,700.00	15.00	197.00	4,631.83	-526.49	-160.96	-527.08	0.00	0.00	0.00	0.00
4,800.00	15.00	197.00	4,728.42	-551.24	-168.53	-551.86	0.00	0.00	0.00	0.00
4,900.00	15.00	197.00	4,825.02	-575.99	-176.10	-576.64	0.00	0.00	0.00	0.00
5,000.00	15.00	197.00	4,921.61	-600.75	-183.67	-601.41	0.00	0.00	0.00	0.00
5,100.00	15.00	197.00	5,018.20	-625.50	-191.23	-626.19	0.00	0.00	0.00	0.00

## Plan Report for ALVIN 1N-29HZ - 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 (°)
5,200.00	15.00	197.00	5,114.80	-650.25	-198.80	-650.97	0.00	0.00	0.00	0.00
5,300.00	15.00	197.00	5,211.39	-675.00	-206.37	-675.75	0.00	0.00	0.00	0.00
5,400.00	15.00	197.00	5,307.98	-699.75	-213.93	-700.53	0.00	0.00	0.00	0.00
5,500.00	15.00	197.00	5,404.57	-724.50	-221.50	-725.31	0.00	0.00	0.00	0.00
5,600.00	15.00	197.00	5,501.17	-749.25	-229.07	-750.09	0.00	0.00	0.00	0.00
5,700.00	15.00	197.00	5,597.76	-774.00	-236.64	-774.86	0.00	0.00	0.00	0.00
5,750.00	15.00	197.00	5,646.05	-786.38	-240.42	-787.25	0.00	0.00	0.00	0.00
<b>Begin Drop @ 5750.00ft</b>										
5,800.00	14.00	197.00	5,694.46	-798.35	-244.08	-799.24	2.00	-2.00	0.00	-180.00
5,900.00	12.00	197.00	5,791.89	-819.86	-250.66	-820.77	2.00	-2.00	0.00	180.00
6,000.00	10.00	197.00	5,890.05	-838.11	-256.23	-839.04	2.00	-2.00	0.00	180.00
6,100.00	8.00	197.00	5,988.81	-853.07	-260.81	-854.02	2.00	-2.00	0.00	180.00
6,200.00	6.00	197.00	6,088.06	-864.72	-264.37	-865.68	2.00	-2.00	0.00	180.00
6,300.00	4.00	197.00	6,187.68	-873.05	-266.92	-874.03	2.00	-2.00	0.00	180.00
6,400.00	2.00	197.00	6,287.54	-878.06	-268.45	-879.04	2.00	-2.00	0.00	180.00
6,500.00	0.00	0.00	6,387.52	-879.73	-268.96	-880.71	2.00	-2.00	0.00	180.00
<b>End Drop @ 6500.00ft</b>										
6,509.53	0.00	0.00	6,397.05	-879.73	-268.96	-880.71	0.00	0.00	0.00	0.00
<b>Top of 4.5" Liner @ 6509.53ft</b>										
6,600.00	0.00	0.00	6,487.52	-879.73	-268.96	-880.71	0.00	0.00	0.00	0.00
6,609.53	0.00	0.00	6,497.05	-879.73	-268.96	-880.71	0.00	0.00	0.00	0.00
<b>KOP @ 6609.53ft</b>										
6,700.00	9.05	0.21	6,587.14	-872.60	-268.93	-873.58	10.00	10.00	0.00	0.21
6,800.00	19.05	0.21	6,684.03	-848.36	-268.85	-849.34	10.00	10.00	0.00	0.00
6,900.00	29.05	0.21	6,775.23	-807.66	-268.70	-808.64	10.00	10.00	0.00	0.00
7,000.00	39.05	0.21	6,857.99	-751.75	-268.50	-752.73	10.00	10.00	0.00	0.00
7,060.68	45.11	0.21	6,903.00	-711.10	-268.35	-712.08	10.00	10.00	0.00	0.00
<b>Sharon Springs</b>										
7,100.00	49.05	0.21	6,929.77	-682.31	-268.25	-683.29	10.00	10.00	0.00	0.00
<b>DLS = 10°/100'</b>										
7,135.18	52.57	0.21	6,952.00	-655.05	-268.15	-656.03	10.00	10.00	0.00	0.00
<b>Niobrara Top</b>										
7,200.00	59.05	0.21	6,988.41	-601.46	-267.96	-602.44	10.00	10.00	0.00	0.00
7,300.00	69.05	0.21	7,032.12	-511.66	-267.64	-512.64	10.00	10.00	0.00	0.00
7,302.48	69.30	0.21	7,033.00	-509.34	-267.63	-510.32	10.00	10.00	0.00	0.00
<b>Niobrara B Bench</b>										
7,400.00	79.05	0.21	7,059.57	-415.64	-267.29	-416.61	10.00	10.00	0.00	0.00
7,500.00	89.05	0.21	7,069.92	-316.30	-266.94	-317.28	10.00	10.00	0.00	0.00
7,508.98	89.94	0.21	7,070.00	-307.32	-266.90	-308.30	10.00	10.00	0.00	0.00
<b>End Build @ 7508.98ft - Target Heel Location - Top of Production</b>										
7,600.00	89.94	0.21	7,070.09	-216.30	-266.58	-217.28	0.00	0.00	0.00	0.00
7,700.00	89.94	0.21	7,070.19	-116.30	-266.22	-117.28	0.00	0.00	0.00	0.00
7,800.00	89.94	0.21	7,070.28	-16.31	-265.86	-17.28	0.00	0.00	0.00	0.00
7,900.00	89.94	0.21	7,070.38	83.69	-265.50	82.72	0.00	0.00	0.00	0.00
8,000.00	89.94	0.21	7,070.48	183.69	-265.14	182.72	0.00	0.00	0.00	0.00
8,100.00	89.94	0.21	7,070.57	283.69	-264.78	282.72	0.00	0.00	0.00	0.00
8,200.00	89.94	0.21	7,070.67	383.69	-264.42	382.72	0.00	0.00	0.00	0.00
8,300.00	89.94	0.21	7,070.76	483.69	-264.07	482.72	0.00	0.00	0.00	0.00
8,400.00	89.94	0.21	7,070.86	583.69	-263.71	582.72	0.00	0.00	0.00	0.00
8,500.00	89.94	0.21	7,070.96	683.69	-263.35	682.72	0.00	0.00	0.00	0.00
8,600.00	89.94	0.21	7,071.05	783.69	-262.99	782.72	0.00	0.00	0.00	0.00
8,700.00	89.94	0.21	7,071.15	883.69	-262.63	882.72	0.00	0.00	0.00	0.00
8,800.00	89.94	0.21	7,071.25	983.69	-262.27	982.72	0.00	0.00	0.00	0.00
8,900.00	89.94	0.21	7,071.34	1,083.69	-261.91	1,082.72	0.00	0.00	0.00	0.00
9,000.00	89.94	0.21	7,071.44	1,183.69	-261.55	1,182.72	0.00	0.00	0.00	0.00
9,100.00	89.94	0.21	7,071.53	1,283.69	-261.19	1,282.72	0.00	0.00	0.00	0.00
9,200.00	89.94	0.21	7,071.63	1,383.68	-260.83	1,382.72	0.00	0.00	0.00	0.00
9,300.00	89.94	0.21	7,071.73	1,483.68	-260.48	1,482.72	0.00	0.00	0.00	0.00

## Plan Report for ALVIN 1N-29HZ - 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 (°)
9,400.00	89.94	0.21	7,071.82	1,583.68	-260.12	1,582.72	0.00	0.00	0.00	0.00
9,500.00	89.94	0.21	7,071.92	1,683.68	-259.76	1,682.72	0.00	0.00	0.00	0.00
9,600.00	89.94	0.21	7,072.02	1,783.68	-259.40	1,782.72	0.00	0.00	0.00	0.00
9,700.00	89.94	0.21	7,072.11	1,883.68	-259.04	1,882.72	0.00	0.00	0.00	0.00
9,800.00	89.94	0.21	7,072.21	1,983.68	-258.68	1,982.72	0.00	0.00	0.00	0.00
9,900.00	89.94	0.21	7,072.30	2,083.68	-258.32	2,082.72	0.00	0.00	0.00	0.00
10,000.00	89.94	0.21	7,072.40	2,183.68	-257.96	2,182.72	0.00	0.00	0.00	0.00
10,100.00	89.94	0.21	7,072.50	2,283.68	-257.60	2,282.72	0.00	0.00	0.00	0.00
10,200.00	89.94	0.21	7,072.59	2,383.68	-257.24	2,382.72	0.00	0.00	0.00	0.00
10,300.00	89.94	0.21	7,072.69	2,483.68	-256.89	2,482.72	0.00	0.00	0.00	0.00
10,400.00	89.94	0.21	7,072.79	2,583.68	-256.53	2,582.72	0.00	0.00	0.00	0.00
10,500.00	89.94	0.21	7,072.88	2,683.68	-256.17	2,682.72	0.00	0.00	0.00	0.00
10,600.00	89.94	0.21	7,072.98	2,783.68	-255.81	2,782.72	0.00	0.00	0.00	0.00
10,700.00	89.94	0.21	7,073.07	2,883.67	-255.45	2,882.72	0.00	0.00	0.00	0.00
10,800.00	89.94	0.21	7,073.17	2,983.67	-255.09	2,982.72	0.00	0.00	0.00	0.00
10,900.00	89.94	0.21	7,073.27	3,083.67	-254.73	3,082.72	0.00	0.00	0.00	0.00
11,000.00	89.94	0.21	7,073.36	3,183.67	-254.37	3,182.72	0.00	0.00	0.00	0.00
11,100.00	89.94	0.21	7,073.46	3,283.67	-254.01	3,282.72	0.00	0.00	0.00	0.00
11,200.00	89.94	0.21	7,073.56	3,383.67	-253.65	3,382.72	0.00	0.00	0.00	0.00
11,300.00	89.94	0.21	7,073.65	3,483.67	-253.30	3,482.72	0.00	0.00	0.00	0.00
11,400.00	89.94	0.21	7,073.75	3,583.67	-252.94	3,582.72	0.00	0.00	0.00	0.00
11,500.00	89.94	0.21	7,073.84	3,683.67	-252.58	3,682.72	0.00	0.00	0.00	0.00
11,600.00	89.94	0.21	7,073.94	3,783.67	-252.22	3,782.72	0.00	0.00	0.00	0.00
11,700.00	89.94	0.21	7,074.04	3,883.67	-251.86	3,882.72	0.00	0.00	0.00	0.00
11,800.00	89.94	0.21	7,074.13	3,983.67	-251.50	3,982.72	0.00	0.00	0.00	0.00
11,900.00	89.94	0.21	7,074.23	4,083.67	-251.14	4,082.72	0.00	0.00	0.00	0.00
12,000.00	89.94	0.21	7,074.33	4,183.67	-250.78	4,182.72	0.00	0.00	0.00	0.00
12,100.00	89.94	0.21	7,074.42	4,283.66	-250.42	4,282.72	0.00	0.00	0.00	0.00
12,200.00	89.94	0.21	7,074.52	4,383.66	-250.06	4,382.72	0.00	0.00	0.00	0.00
12,300.00	89.94	0.21	7,074.61	4,483.66	-249.71	4,482.72	0.00	0.00	0.00	0.00
12,400.00	89.94	0.21	7,074.71	4,583.66	-249.35	4,582.72	0.00	0.00	0.00	0.00
12,500.00	89.94	0.21	7,074.81	4,683.66	-248.99	4,682.72	0.00	0.00	0.00	0.00
12,600.00	89.94	0.21	7,074.90	4,783.66	-248.63	4,782.72	0.00	0.00	0.00	0.00
12,700.00	89.94	0.21	7,075.00	4,883.66	-248.27	4,882.72	0.00	0.00	0.00	0.00
12,701.05	89.94	0.21	7,075.00	4,884.71	-248.27	4,883.77	0.00	0.00	0.00	0.00
<b>Target Toe Location</b>										
12,701.06	89.94	0.21	7,075.00	4,884.72	-248.27	4,883.78	0.00	0.00	0.00	0.00
<b>TD Well @ 12701.06ft - ALVIN 1N-29HZ_BHL</b>										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,200.00	2,200.00	0.00	0.00	Begin Nudge @ 2200.00ft
2,950.00	2,941.46	-93.35	-28.54	End Nudge @ 2950.00ft
5,750.00	5,646.05	-786.38	-240.42	Begin Drop @ 5750.00ft
6,500.00	6,387.52	-879.73	-268.96	End Drop @ 6500.00ft
6,509.53	6,397.05	-879.73	-268.96	Top of 4.5" Liner @ 6509.53ft
6,609.53	6,497.05	-879.73	-268.96	KOP @ 6609.53ft
7,100.00	6,929.77	-682.31	-268.25	DLS = 10°/100'
7,508.98	7,070.00	-307.32	-266.90	End Build @ 7508.98ft
12,701.06	7,075.00	4,884.72	-248.27	TD Well @ 12701.06ft

## Plan Report for ALVIN 1N-29HZ - 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)	0.21	Slot	0.00	0.00	0.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,508.98	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1
7,508.98	12,701.06	Permit Rev-1	APC_ISCWSA REV 2 MWD+IFR1

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,440.00	1,440.00	9 5/8"	9-5/8	13-1/2
7,508.98	7,070.00	Top of Production	5-1/2	7-7/8

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,060.68	6,903.00	Sharon Springs		0.00	
7,135.18	6,952.00	Niobrara Top		0.00	
7,302.48	7,033.00	Niobrara B Bench		0.00	
7,508.98	7,070.00	Target Heel Location		0.00	
12,701.05	7,075.00	Target Toe Location		0.00	

**Targets associated with this wellbore**

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
2N-R65W-Sec. 29_Section Lines	-18.00	126.08	-2,067.02	Polygon
ALVIN 1N-29HZ_BHL	7,075.00	4,884.72	-248.27	Point
ALVIN 1N-29HZ_SHL	0.00	0.00	0.00	Point

**North Reference Sheet for 2N-65W-29 Alvin 16-29HZ Pad - ALVIN 1N-29HZ - 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' @ 4925.00usft (D Rig). Northing and Easting are relative to ALVIN 1N-29HZ

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: 0.99960919

Grid Coordinates of Well: 14,564,481.59 usft N, 1,730,065.47 usft E

Geographical Coordinates of Well: 40° 06' 11.59" N, 104° 40' 45.84" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,701.06usft  
the Bottom Hole Displacement is 4,891.02usft in the Direction of 357.09° ( True).

Magnetic Convergence at surface is: -8.10° (28 January 2015, , IGRF2010)

