

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 28-T2N-R67W

HUNZIKER 1C-28HZ

Plan A

Plan: Rev A0 Permit

## Sperry Drilling Services

### Proposal Report

01 October, 2014

Well Coordinates: 1,281,033.44 N, 3,170,085.97 E (40° 06' 11.62" N, 104° 53' 31.05" W)

Ground Level: 5,049.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well HUNZIKER 1C-28HZ

RKB = 17' @ 5066.00usft (Drilling Rig)

N

True

API - US Survey Feet - Custom

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
Site: Sec. 28-T2N-R67W  
Well: HUNZIKER 1C-28HZ  
Wellbore: Plan A  
Design: Rev A0 Permit

# Anadarko Petroleum Corp.

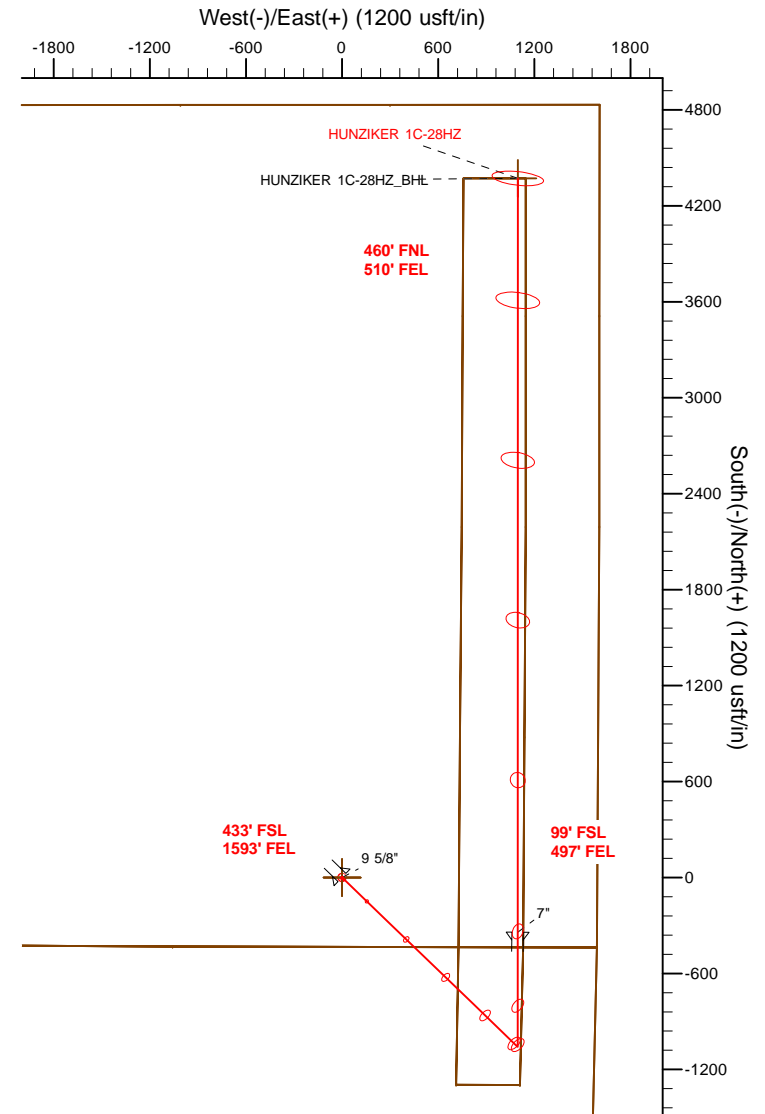
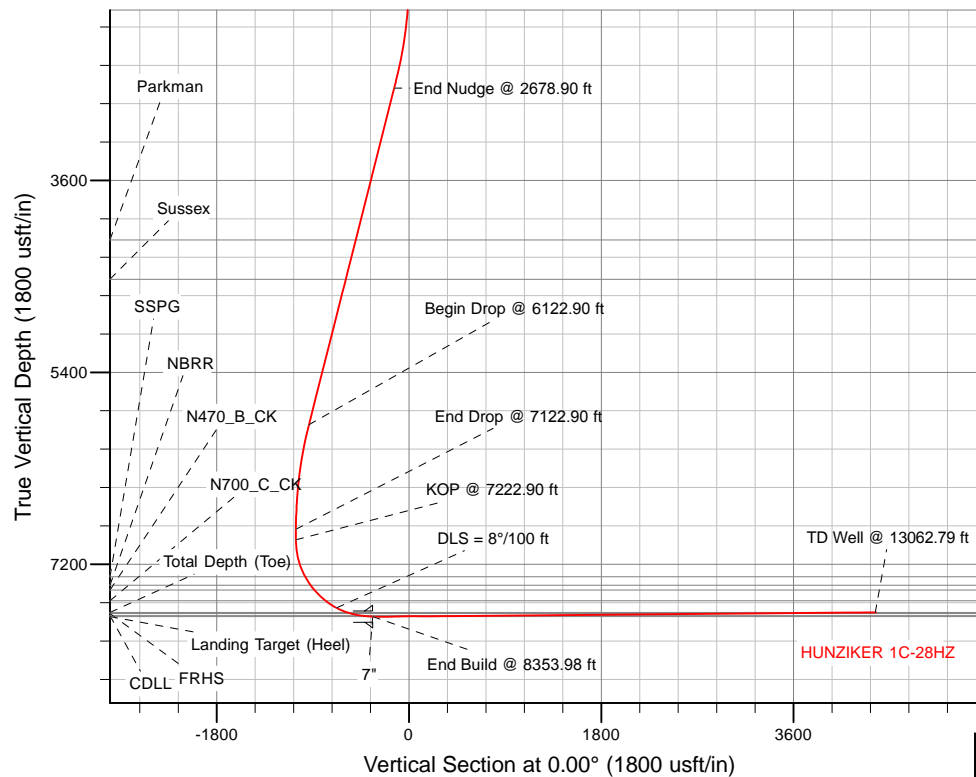
**HALLIBURTON**  
Sperry Drilling

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1678.90	0.00	0.00	1678.90	0.00	0.00	0.00	0.00	0.00	
3	2678.90	20.00	134.00	2658.72	-120.01	124.28	2.00	134.00	-120.01	
4	6122.90	20.00	134.00	5895.02	-938.26	971.60	0.00	0.00	-938.26	
5	7122.90	0.00	0.00	6874.83	-1058.28	1095.88	2.00	180.00	-1058.28	
6	7222.90	0.00	0.00	6974.83	-1058.28	1095.88	0.00	0.00	-1058.28	
7	8353.98	90.49	0.00	7691.00	-336.00	1095.91	8.00	0.00	-336.00	
8	13062.79	90.49	0.00	7651.00	4372.64	1096.11	0.00	0.00	4372.64	HUNZIKER 1C-28HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HUNZIKER 1C-28HZ_LD	0.00	0.00	0.00	40° 6' 11.621 N	104° 53' 31.049 W	Polygon
HUNZIKER 1C-28HZ_SEC	0.00	0.00	0.00	40° 6' 11.621 N	104° 53' 31.049 W	Polygon
HUNZIKER 1C-28HZ_SHL	0.00	0.00	0.00	40° 6' 11.621 N	104° 53' 31.049 W	Point
HUNZIKER 1C-28HZ_BHL	7651.00	4372.64	1096.11	40° 6' 54.832 N	104° 53' 16.940 W	Point



## WELL DETAILS: HUNZIKER 1C-28HZ

Ground Level: 5049.00

RKB = 17' @ 5066.00usft (Drilling Rig)

Plan: Rev A0 Permit (HUNZIKER 1C-28HZ/Plan A)

Created By: Katie Benner Date: 10/8/2014  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

TVD MD Annotation

6974.83 7222.90 KOP @ 7217.77 ft

**Plan Report for HUNZIKER 1C-28HZ - 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>Tie-On to Surface @ 0.00 ft - HUNZIKER 1C-28HZ_SHL - HUNZIKER 1C-28HZ_SEC - HUNZIKER 1C-28HZ_LD</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
1,257.00	0.00	0.00	1,257.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
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
1,500.00	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
1,678.90	0.00	0.00	1,678.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 1678.90 ft</b>										
1,700.00	0.42	134.00	1,700.00	-0.05	0.06	-0.05	2.00	2.00	0.00	134.00
1,800.00	2.42	134.00	1,799.96	-1.78	1.84	-1.78	2.00	2.00	0.00	0.00
1,900.00	4.42	134.00	1,899.78	-5.92	6.13	-5.92	2.00	2.00	0.00	0.00
2,000.00	6.42	134.00	1,999.33	-12.49	12.93	-12.49	2.00	2.00	0.00	0.00
2,100.00	8.42	134.00	2,098.49	-21.46	22.22	-21.46	2.00	2.00	0.00	0.00
2,200.00	10.42	134.00	2,197.13	-32.83	34.00	-32.83	2.00	2.00	0.00	0.00
2,300.00	12.42	134.00	2,295.15	-46.59	48.24	-46.59	2.00	2.00	0.00	0.00
2,400.00	14.42	134.00	2,392.41	-62.71	64.94	-62.71	2.00	2.00	0.00	0.00
2,500.00	16.42	134.00	2,488.80	-81.18	84.07	-81.18	2.00	2.00	0.00	0.00
2,600.00	18.42	134.00	2,584.21	-101.98	105.60	-101.98	2.00	2.00	0.00	0.00
2,678.90	20.00	134.00	2,658.72	-120.01	124.28	-120.01	2.00	2.00	0.00	0.00
<b>End Nudge @ 2678.90 ft</b>										
2,700.00	20.00	134.00	2,678.54	-125.03	129.47	-125.03	0.00	0.00	0.00	0.00
2,800.00	20.00	134.00	2,772.51	-148.79	154.07	-148.79	0.00	0.00	0.00	0.00
2,900.00	20.00	134.00	2,866.48	-172.55	178.68	-172.55	0.00	0.00	0.00	0.00
3,000.00	20.00	134.00	2,960.45	-196.30	203.28	-196.30	0.00	0.00	0.00	0.00
3,100.00	20.00	134.00	3,054.42	-220.06	227.88	-220.06	0.00	0.00	0.00	0.00
3,200.00	20.00	134.00	3,148.39	-243.82	252.48	-243.82	0.00	0.00	0.00	0.00
3,300.00	20.00	134.00	3,242.36	-267.58	277.09	-267.58	0.00	0.00	0.00	0.00
3,400.00	20.00	134.00	3,336.33	-291.34	301.69	-291.34	0.00	0.00	0.00	0.00
3,500.00	20.00	134.00	3,430.30	-315.10	326.29	-315.10	0.00	0.00	0.00	0.00
3,600.00	20.00	134.00	3,524.27	-338.86	350.90	-338.86	0.00	0.00	0.00	0.00
3,700.00	20.00	134.00	3,618.24	-362.61	375.50	-362.61	0.00	0.00	0.00	0.00
3,800.00	20.00	134.00	3,712.20	-386.37	400.10	-386.37	0.00	0.00	0.00	0.00
3,900.00	20.00	134.00	3,806.17	-410.13	424.70	-410.13	0.00	0.00	0.00	0.00
4,000.00	20.00	134.00	3,900.14	-433.89	449.31	-433.89	0.00	0.00	0.00	0.00
4,100.00	20.00	134.00	3,994.11	-457.65	473.91	-457.65	0.00	0.00	0.00	0.00
4,200.00	20.00	134.00	4,088.08	-481.41	498.51	-481.41	0.00	0.00	0.00	0.00
4,273.34	20.00	134.00	4,157.00	-498.83	516.56	-498.83	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,300.00	20.00	134.00	4,182.05	-505.17	523.12	-505.17	0.00	0.00	0.00	0.00
4,400.00	20.00	134.00	4,276.02	-528.93	547.72	-528.93	0.00	0.00	0.00	0.00
4,500.00	20.00	134.00	4,369.99	-552.68	572.32	-552.68	0.00	0.00	0.00	0.00
4,600.00	20.00	134.00	4,463.96	-576.44	596.92	-576.44	0.00	0.00	0.00	0.00
4,667.09	20.00	134.00	4,527.00	-592.38	613.43	-592.38	0.00	0.00	0.00	0.00
<b>Sussex</b>										

**Plan Report for HUNZIKER 1C-28HZ - 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 (°)
4,700.00	20.00	134.00	4,557.93	-600.20	621.53	-600.20	0.00	0.00	0.00	0.00
4,800.00	20.00	134.00	4,651.90	-623.96	646.13	-623.96	0.00	0.00	0.00	0.00
4,900.00	20.00	134.00	4,745.87	-647.72	670.73	-647.72	0.00	0.00	0.00	0.00
5,000.00	20.00	134.00	4,839.84	-671.48	695.34	-671.48	0.00	0.00	0.00	0.00
5,100.00	20.00	134.00	4,933.81	-695.24	719.94	-695.24	0.00	0.00	0.00	0.00
5,200.00	20.00	134.00	5,027.77	-719.00	744.54	-719.00	0.00	0.00	0.00	0.00
5,300.00	20.00	134.00	5,121.74	-742.75	769.14	-742.75	0.00	0.00	0.00	0.00
5,400.00	20.00	134.00	5,215.71	-766.51	793.75	-766.51	0.00	0.00	0.00	0.00
5,500.00	20.00	134.00	5,309.68	-790.27	818.35	-790.27	0.00	0.00	0.00	0.00
5,600.00	20.00	134.00	5,403.65	-814.03	842.95	-814.03	0.00	0.00	0.00	0.00
5,700.00	20.00	134.00	5,497.62	-837.79	867.56	-837.79	0.00	0.00	0.00	0.00
5,800.00	20.00	134.00	5,591.59	-861.55	892.16	-861.55	0.00	0.00	0.00	0.00
5,900.00	20.00	134.00	5,685.56	-885.31	916.76	-885.31	0.00	0.00	0.00	0.00
6,000.00	20.00	134.00	5,779.53	-909.07	941.36	-909.07	0.00	0.00	0.00	0.00
6,100.00	20.00	134.00	5,873.50	-932.82	965.97	-932.82	0.00	0.00	0.00	0.00
6,122.90	20.00	134.00	5,895.02	-938.26	971.60	-938.26	0.00	0.00	0.00	0.00
<b>Begin Drop @ 6122.90 ft</b>										
6,200.00	18.46	134.00	5,967.81	-955.90	989.87	-955.90	2.00	-2.00	0.00	180.00
6,300.00	16.46	134.00	6,063.20	-976.74	1,011.45	-976.74	2.00	-2.00	0.00	180.00
6,400.00	14.46	134.00	6,159.58	-995.26	1,030.62	-995.26	2.00	-2.00	0.00	180.00
6,500.00	12.46	134.00	6,256.83	-1,011.42	1,047.36	-1,011.42	2.00	-2.00	0.00	-180.00
6,600.00	10.46	134.00	6,354.83	-1,025.22	1,061.65	-1,025.22	2.00	-2.00	0.00	180.00
6,700.00	8.46	134.00	6,453.47	-1,036.64	1,073.47	-1,036.64	2.00	-2.00	0.00	180.00
6,800.00	6.46	134.00	6,552.62	-1,045.65	1,082.80	-1,045.65	2.00	-2.00	0.00	180.00
6,900.00	4.46	134.00	6,652.16	-1,052.26	1,089.65	-1,052.26	2.00	-2.00	0.00	180.00
7,000.00	2.46	134.00	6,751.97	-1,056.45	1,093.98	-1,056.45	2.00	-2.00	0.00	180.00
7,100.00	0.46	134.00	6,851.93	-1,058.22	1,095.81	-1,058.22	2.00	-2.00	0.00	180.00
7,122.90	0.00	0.00	6,874.83	-1,058.28	1,095.88	-1,058.28	2.00	-2.00	0.00	-180.00
<b>End Drop @ 7122.90 ft - Set 4.5" Liner @ 7122.90 ft</b>										
7,200.00	0.00	0.00	6,951.93	-1,058.28	1,095.88	-1,058.28	0.00	0.00	0.00	0.00
7,222.90	0.00	0.00	6,974.83	-1,058.28	1,095.88	-1,058.28	0.00	0.00	0.00	0.00
<b>KOP @ 7222.90 ft</b>										
7,300.00	6.17	0.00	7,051.78	-1,054.13	1,095.88	-1,054.13	8.00	8.00	0.00	0.00
7,400.00	14.17	0.00	7,150.13	-1,036.49	1,095.88	-1,036.49	8.00	8.00	0.00	0.00
7,500.00	22.17	0.00	7,245.07	-1,005.34	1,095.88	-1,005.34	8.00	8.00	0.00	0.00
7,578.50	28.45	0.00	7,316.00	-971.80	1,095.88	-971.80	8.00	8.00	0.00	0.00
<b>SSPG</b>										
7,600.00	30.17	0.00	7,334.75	-961.27	1,095.88	-961.27	8.00	8.00	0.00	0.00
7,673.14	36.02	0.00	7,396.00	-921.35	1,095.89	-921.35	8.00	8.00	0.00	0.00
<b>NBRR</b>										
7,700.00	38.17	0.00	7,417.42	-905.16	1,095.89	-905.16	8.00	8.00	0.00	0.00
7,730.51	40.61	0.00	7,441.00	-885.80	1,095.89	-885.80	8.00	8.00	0.00	0.00
<b>N470_B_CK</b>										
7,800.00	46.17	0.00	7,491.48	-838.08	1,095.89	-838.08	8.00	8.00	0.00	0.00
7,875.83	52.23	0.00	7,541.00	-780.71	1,095.89	-780.71	8.00	8.00	0.00	0.00
<b>N700_C_CK</b>										
7,900.00	54.17	0.00	7,555.48	-761.35	1,095.89	-761.35	8.00	8.00	0.00	0.00
8,000.00	62.17	0.00	7,608.18	-676.46	1,095.90	-676.46	8.00	8.00	0.00	0.00
<b>DLS = 8°/ 100 ft</b>										
8,100.00	70.17	0.00	7,648.55	-585.06	1,095.90	-585.06	8.00	8.00	0.00	0.00
8,139.77	73.35	0.00	7,661.00	-547.30	1,095.90	-547.30	8.00	8.00	0.00	0.00
<b>FRHS</b>										
8,200.00	78.17	0.00	7,675.81	-488.93	1,095.90	-488.93	8.00	8.00	0.00	0.00
8,227.90	80.40	0.00	7,681.00	-461.52	1,095.91	-461.52	8.00	8.00	0.00	0.00
<b>CDLL</b>										
8,300.00	86.17	0.00	7,689.43	-389.95	1,095.91	-389.95	8.00	8.00	0.00	0.00
8,353.98	90.49	0.00	7,691.00	-336.00	1,095.91	-336.00	8.00	8.00	0.00	0.00
<b>End Build @ 8353.98 ft - Landing Target (Heel) - 7"</b>										

**Plan Report for HUNZIKER 1C-28HZ - 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 (°)
8,400.00	90.49	0.00	7,690.61	-289.98	1,095.91	-289.98	0.00	0.00	0.00	0.00
8,500.00	90.49	0.00	7,689.76	-189.99	1,095.92	-189.99	0.00	0.00	0.00	0.00
8,600.00	90.49	0.00	7,688.91	-89.99	1,095.92	-89.99	0.00	0.00	0.00	0.00
8,700.00	90.49	0.00	7,688.06	10.01	1,095.93	10.01	0.00	0.00	0.00	0.00
8,800.00	90.49	0.00	7,687.21	110.00	1,095.93	110.00	0.00	0.00	0.00	0.00
8,900.00	90.49	0.00	7,686.37	210.00	1,095.93	210.00	0.00	0.00	0.00	0.00
9,000.00	90.49	0.00	7,685.52	309.99	1,095.94	309.99	0.00	0.00	0.00	0.00
9,100.00	90.49	0.00	7,684.67	409.99	1,095.94	409.99	0.00	0.00	0.00	0.00
9,200.00	90.49	0.00	7,683.82	509.99	1,095.95	509.99	0.00	0.00	0.00	0.00
9,300.00	90.49	0.00	7,682.97	609.98	1,095.95	609.98	0.00	0.00	0.00	0.00
9,400.00	90.49	0.00	7,682.12	709.98	1,095.96	709.98	0.00	0.00	0.00	0.00
9,500.00	90.49	0.00	7,681.27	809.98	1,095.96	809.98	0.00	0.00	0.00	0.00
9,600.00	90.49	0.00	7,680.42	909.97	1,095.96	909.97	0.00	0.00	0.00	0.00
9,700.00	90.49	0.00	7,679.57	1,009.97	1,095.97	1,009.97	0.00	0.00	0.00	0.00
9,800.00	90.49	0.00	7,678.72	1,109.97	1,095.97	1,109.97	0.00	0.00	0.00	0.00
9,900.00	90.49	0.00	7,677.87	1,209.96	1,095.98	1,209.96	0.00	0.00	0.00	0.00
10,000.00	90.49	0.00	7,677.02	1,309.96	1,095.98	1,309.96	0.00	0.00	0.00	0.00
10,100.00	90.49	0.00	7,676.17	1,409.95	1,095.99	1,409.95	0.00	0.00	0.00	0.00
10,200.00	90.49	0.00	7,675.32	1,509.95	1,095.99	1,509.95	0.00	0.00	0.00	0.00
10,300.00	90.49	0.00	7,674.47	1,609.95	1,095.99	1,609.95	0.00	0.00	0.00	0.00
10,400.00	90.49	0.00	7,673.62	1,709.94	1,096.00	1,709.94	0.00	0.00	0.00	0.00
10,500.00	90.49	0.00	7,672.77	1,809.94	1,096.00	1,809.94	0.00	0.00	0.00	0.00
10,600.00	90.49	0.00	7,671.92	1,909.94	1,096.01	1,909.94	0.00	0.00	0.00	0.00
10,700.00	90.49	0.00	7,671.07	2,009.93	1,096.01	2,009.93	0.00	0.00	0.00	0.00
10,800.00	90.49	0.00	7,670.22	2,109.93	1,096.01	2,109.93	0.00	0.00	0.00	0.00
10,900.00	90.49	0.00	7,669.37	2,209.93	1,096.02	2,209.93	0.00	0.00	0.00	0.00
11,000.00	90.49	0.00	7,668.52	2,309.92	1,096.02	2,309.92	0.00	0.00	0.00	0.00
11,100.00	90.49	0.00	7,667.67	2,409.92	1,096.03	2,409.92	0.00	0.00	0.00	0.00
11,200.00	90.49	0.00	7,666.83	2,509.91	1,096.03	2,509.91	0.00	0.00	0.00	0.00
11,300.00	90.49	0.00	7,665.98	2,609.91	1,096.04	2,609.91	0.00	0.00	0.00	0.00
11,400.00	90.49	0.00	7,665.13	2,709.91	1,096.04	2,709.91	0.00	0.00	0.00	0.00
11,500.00	90.49	0.00	7,664.28	2,809.90	1,096.04	2,809.90	0.00	0.00	0.00	0.00
11,600.00	90.49	0.00	7,663.43	2,909.90	1,096.05	2,909.90	0.00	0.00	0.00	0.00
11,700.00	90.49	0.00	7,662.58	3,009.90	1,096.05	3,009.90	0.00	0.00	0.00	0.00
11,800.00	90.49	0.00	7,661.73	3,109.89	1,096.06	3,109.89	0.00	0.00	0.00	0.00
11,900.00	90.49	0.00	7,660.88	3,209.89	1,096.06	3,209.89	0.00	0.00	0.00	0.00
12,000.00	90.49	0.00	7,660.03	3,309.89	1,096.07	3,309.89	0.00	0.00	0.00	0.00
12,100.00	90.49	0.00	7,659.18	3,409.88	1,096.07	3,409.88	0.00	0.00	0.00	0.00
12,200.00	90.49	0.00	7,658.33	3,509.88	1,096.07	3,509.88	0.00	0.00	0.00	0.00
12,300.00	90.49	0.00	7,657.48	3,609.88	1,096.08	3,609.88	0.00	0.00	0.00	0.00
12,400.00	90.49	0.00	7,656.63	3,709.87	1,096.08	3,709.87	0.00	0.00	0.00	0.00
12,500.00	90.49	0.00	7,655.78	3,809.87	1,096.09	3,809.87	0.00	0.00	0.00	0.00
12,600.00	90.49	0.00	7,654.93	3,909.86	1,096.09	3,909.86	0.00	0.00	0.00	0.00
12,700.00	90.49	0.00	7,654.08	4,009.86	1,096.10	4,009.86	0.00	0.00	0.00	0.00
12,800.00	90.49	0.00	7,653.23	4,109.86	1,096.10	4,109.86	0.00	0.00	0.00	0.00
12,900.00	90.49	0.00	7,652.38	4,209.85	1,096.10	4,209.85	0.00	0.00	0.00	0.00
13,000.00	90.49	0.00	7,651.53	4,309.85	1,096.11	4,309.85	0.00	0.00	0.00	0.00
13,062.79	90.49	0.00	7,651.00	4,372.64	1,096.11	4,372.64	0.00	0.00	0.00	0.00

TD Well @ 13062.79 ft - Total Depth (Toe) - HUNZIKER 1C-28HZ\_BHL

## Plan Report for HUNZIKER 1C-28HZ - Rev A0 Permit

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	Tie-On to Surface @ 0.00 ft
1,678.90	1,678.90	0.00	0.00	Begin Nudge @ 1678.90 ft
2,678.90	2,658.72	-120.01	124.28	End Nudge @ 2678.90 ft
6,122.90	5,895.02	-938.26	971.60	Begin Drop @ 6122.90 ft
7,122.90	6,874.83	-1,058.28	1,095.88	End Drop @ 7122.90 ft
7,122.90	6,874.83	-1,058.28	1,095.88	Set 4.5" Liner @ 7122.90 ft
7,222.90	6,974.83	-1,058.28	1,095.88	KOP @ 7222.90 ft
8,000.00	7,608.18	-676.46	1,095.90	DLS = 8°/ 100 ft
8,353.98	7,691.00	-336.00	1,095.91	End Build @ 8353.98 ft
13,062.79	7,651.00	4,372.64	1,096.11	TD Well @ 13062.79 ft

Vertical Section Information

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

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	8,353.98	Rev A0 Permit	MWD
8,353.98	13,061.89	Rev A0 Permit	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,257.00	1,257.00	9 5/8"	9-5/8	13-1/2
8,353.98	7,691.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,273.34	4,157.00	Parkman		0.00	
4,667.09	4,527.00	Sussex		0.00	
7,578.50	7,316.00	SSPG		0.00	
7,673.14	7,396.00	NBRR		0.00	
7,730.51	7,441.00	N470_B_CK		0.00	
7,875.83	7,541.00	N700_C_CK		0.00	
8,139.77	7,661.00	FRHS		0.00	
8,227.90	7,681.00	CDLL		0.00	
8,353.98	7,691.00	Landing Target (Heel)		0.00	
13,062.79	7,651.00	Total Depth (Toe)		0.00	

## Plan Report for HUNZIKER 1C-28HZ - Rev A0 Permit

### Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
HUNZIKER 1C-28HZ_SHL	0.00	0.00	0.00	Point
HUNZIKER 1C-28HZ_SEC	0.00	0.00	0.00	Polygon
HUNZIKER 1C-28HZ_LD	0.00	0.00	0.00	Polygon
HUNZIKER 1C-28HZ_BHL	7,651.00	4,372.64	1,096.11	Point

### Directional Difficulty Index

Average Dogleg over Survey:	1.00 °/100usft	Maximum Dogleg over Survey:	8.00 °/100usft at 8,353.98 usft
Net Tortousity applicable to Plans:	1.00 °/100usft	Directional Difficulty Index:	6.328

### Audit Info

**North Reference Sheet for Sec. 28-T2N-R67W - HUNZIKER 1C-28HZ - 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' @ 5066.00usft (Drilling Rig). Northing and Easting are relative to HUNZIKER 1C-28HZ  
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980  
 Projection method is Lambert Conformal Conic (2 parallel)  
 Central Meridian is -105.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°  
 False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996014

Grid Coordinates of Well: 1,281,033.44 usft N, 3,170,085.97 usft E  
 Geographical Coordinates of Well: 40° 06' 11.62" N, 104° 53' 31.05" W  
 Grid Convergence at Surface is: 0.39°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,062.79usft  
 the Bottom Hole Displacement is 4,507.93usft in the Direction of 14.07° ( True).  
 Magnetic Convergence at surface is: -8.17° (24 September 2014, , BGGM2014)

