

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 28-T2N-R67W

HUNZIKER 28N-4HZ

Plan A

Plan: Rev A0 Permit

Sperry Drilling Services

Proposal Report

02 October, 2014

Well Coordinates: 1,281,033.44 N, 3,169,980.79 E (40° 06' 11.63" N, 104° 53' 32.40" W)

Ground Level: 5,051.00 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 28N-4HZ

RKB = 17' @ 5068.00usft (Drilling Rig)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Project: Weld County, CO (NAD 83)
Site: Sec. 28-T2N-R67W
Well: HUNZIKER 28N-4HZ
Wellbore: Plan A
Design: Rev A0 Permit

Anadarko Petroleum Corp.

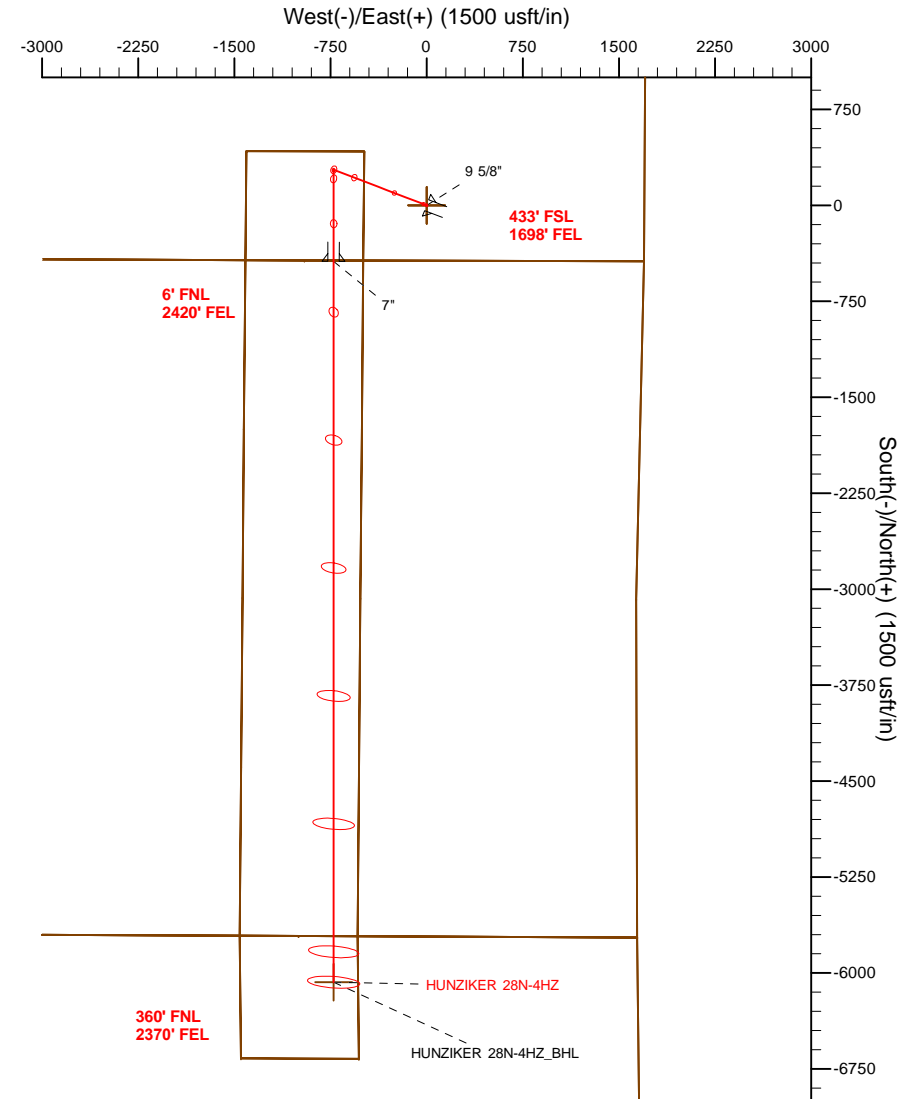
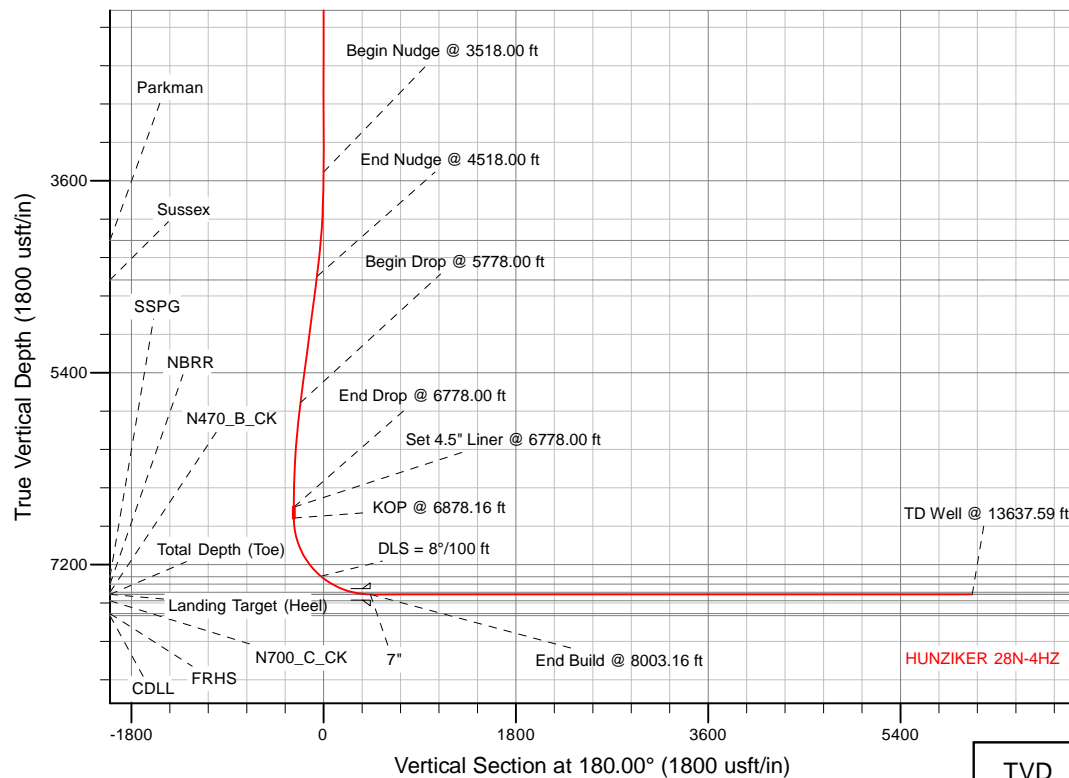
HALLIBURTON
Sperry Drilling

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	3518.00	0.00	0.00	3518.00	0.00	0.00	0.00	0.00	0.00	
3	4518.00	20.00	291.00	4497.82	61.91	-161.29	2.00	291.00	-61.91	
4	5778.00	20.00	291.00	5681.83	216.35	-563.61	0.00	0.00	-216.35	
5	6778.00	0.00	0.00	6661.64	278.27	-724.91	2.00	180.00	-278.27	
6	6878.16	0.00	0.00	6761.80	278.27	-724.91	0.00	0.00	-278.27	
7	8003.16	90.00	180.00	7478.00	-437.93	-724.95	8.00	180.00	437.93	
8	13637.60	90.00	180.00	7478.00	-6072.37	-725.27	0.00	0.00	6072.37	HUNZIKER 28N-4HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HUNZIKER 28N-4HZ_LD	0.00	0.00	0.00	40° 6' 11.628 N	104° 53' 32.402 W	Polygon
HUNZIKER 28N-4HZ_SEC	0.00	0.00	0.00	40° 6' 11.628 N	104° 53' 32.402 W	Polygon
HUNZIKER 28N-4HZ_SHL	0.00	0.00	0.00	40° 6' 11.628 N	104° 53' 32.402 W	Point
HUNZIKER 28N-4HZ_BHL	7478.00	-6072.37	-725.27	40° 5' 11.620 N	104° 53' 41.734 W	Point



TVD	MD	Annotation
6761.80	6878.16	KOP @ 6878.16 ft

WELL DETAILS: HUNZIKER 28N-4HZ

Ground Level: 5051.00
RKB = 17' @ 5068.00usft (Drilling Rig)

Plan: Rev A0 Permit (HUNZIKER 28N-4HZ/Plan A)

Created By: Katie Benner Date: 9/29/2014
Reviewed: Date:

Plan Report for HUNZIKER 28N-4HZ - 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
Tie-On to Surface @ 0.00 ft - HUNZIKER 28N-4HZ_SEC - HUNZIKER 28N-4HZ_SHL - HUNZIKER 28N-4HZ_LD										
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
1,259.00	0.00	0.00	1,259.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
1,700.00	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
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,518.00	0.00	0.00	3,518.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 3518.00 ft										
3,600.00	1.64	291.00	3,599.99	0.42	-1.10	-0.42	2.00	2.00	0.00	291.00
3,700.00	3.64	291.00	3,699.88	2.07	-5.40	-2.07	2.00	2.00	0.00	0.00
3,800.00	5.64	291.00	3,799.54	4.97	-12.95	-4.97	2.00	2.00	0.00	0.00
3,900.00	7.64	291.00	3,898.87	9.11	-23.74	-9.11	2.00	2.00	0.00	0.00
4,000.00	9.64	291.00	3,997.73	14.50	-37.77	-14.50	2.00	2.00	0.00	0.00
4,100.00	11.64	291.00	4,096.00	21.11	-55.00	-21.11	2.00	2.00	0.00	0.00
4,164.47	12.93	291.00	4,159.00	26.03	-67.81	-26.03	2.00	2.00	0.00	0.00
Parkman										
4,200.00	13.64	291.00	4,193.58	28.95	-75.43	-28.95	2.00	2.00	0.00	0.00
4,300.00	15.64	291.00	4,290.32	38.01	-99.02	-38.01	2.00	2.00	0.00	0.00
4,400.00	17.64	291.00	4,386.13	48.27	-125.76	-48.27	2.00	2.00	0.00	0.00
4,500.00	19.64	291.00	4,480.88	59.73	-155.59	-59.73	2.00	2.00	0.00	0.00
4,518.00	20.00	291.00	4,497.82	61.91	-161.29	-61.91	2.00	2.00	0.00	0.00
End Nudge @ 4518.00 ft										
4,551.19	20.00	291.00	4,529.00	65.98	-171.89	-65.98	0.00	0.00	0.00	0.00
Sussex										
4,600.00	20.00	291.00	4,574.87	71.97	-187.48	-71.97	0.00	0.00	0.00	0.00

Plan Report for HUNZIKER 28N-4HZ - 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	291.00	4,668.84	84.22	-219.41	-84.22	0.00	0.00	0.00	0.00
4,800.00	20.00	291.00	4,762.81	96.48	-251.34	-96.48	0.00	0.00	0.00	0.00
4,900.00	20.00	291.00	4,856.78	108.74	-283.27	-108.74	0.00	0.00	0.00	0.00
5,000.00	20.00	291.00	4,950.75	120.99	-315.20	-120.99	0.00	0.00	0.00	0.00
5,100.00	20.00	291.00	5,044.72	133.25	-347.13	-133.25	0.00	0.00	0.00	0.00
5,200.00	20.00	291.00	5,138.69	145.51	-379.06	-145.51	0.00	0.00	0.00	0.00
5,300.00	20.00	291.00	5,232.66	157.76	-410.99	-157.76	0.00	0.00	0.00	0.00
5,400.00	20.00	291.00	5,326.62	170.02	-442.92	-170.02	0.00	0.00	0.00	0.00
5,500.00	20.00	291.00	5,420.59	182.28	-474.85	-182.28	0.00	0.00	0.00	0.00
5,600.00	20.00	291.00	5,514.56	194.53	-506.78	-194.53	0.00	0.00	0.00	0.00
5,700.00	20.00	291.00	5,608.53	206.79	-538.71	-206.79	0.00	0.00	0.00	0.00
5,778.00	20.00	291.00	5,681.83	216.35	-563.61	-216.35	0.00	0.00	0.00	0.00
Begin Drop @ 5778.00 ft										
5,800.00	19.56	291.00	5,702.53	219.02	-570.57	-219.02	2.00	-2.00	0.00	180.00
5,900.00	17.56	291.00	5,797.32	230.43	-600.28	-230.43	2.00	-2.00	0.00	180.00
6,000.00	15.56	291.00	5,893.17	240.64	-626.89	-240.64	2.00	-2.00	0.00	180.00
6,100.00	13.56	291.00	5,989.96	249.65	-650.36	-249.65	2.00	-2.00	0.00	180.00
6,200.00	11.56	291.00	6,087.56	257.44	-670.66	-257.44	2.00	-2.00	0.00	180.00
6,300.00	9.56	291.00	6,185.86	264.01	-687.76	-264.01	2.00	-2.00	0.00	180.00
6,400.00	7.56	291.00	6,284.74	269.34	-701.66	-269.34	2.00	-2.00	0.00	180.00
6,500.00	5.56	291.00	6,384.08	273.44	-712.32	-273.44	2.00	-2.00	0.00	180.00
6,600.00	3.56	291.00	6,483.76	276.28	-719.75	-276.28	2.00	-2.00	0.00	180.00
6,700.00	1.56	291.00	6,583.65	277.89	-723.92	-277.89	2.00	-2.00	0.00	180.00
6,778.00	0.00	0.00	6,661.64	278.27	-724.91	-278.27	2.00	-2.00	0.00	180.00
End Drop @ 6778.00 ft - Set 4.5" Liner @ 6778.00 ft										
6,800.00	0.00	0.00	6,683.64	278.27	-724.91	-278.27	0.00	0.00	0.00	0.00
6,878.16	0.00	0.00	6,761.80	278.27	-724.91	-278.27	0.00	0.00	0.00	0.00
KOP @ 6878.16 ft										
6,900.00	1.75	180.00	6,783.64	277.93	-724.91	-277.93	8.00	8.00	0.00	180.00
7,000.00	9.75	180.00	6,883.06	267.93	-724.91	-267.93	8.00	8.00	0.00	0.00
7,100.00	17.75	180.00	6,980.11	244.18	-724.91	-244.18	8.00	8.00	0.00	0.00
7,200.00	25.75	180.00	7,072.92	207.16	-724.91	-207.16	8.00	8.00	0.00	0.00
7,300.00	33.75	180.00	7,159.67	157.58	-724.91	-157.58	8.00	8.00	0.00	0.00
7,400.00	41.75	180.00	7,238.68	96.42	-724.92	-96.42	8.00	8.00	0.00	0.00
7,500.00	49.75	180.00	7,308.41	24.85	-724.92	-24.85	8.00	8.00	0.00	0.00
DLS = 8°/100 ft										
7,507.15	50.32	180.00	7,313.00	19.37	-724.92	-19.37	8.00	8.00	0.00	0.00
SSPG										
7,600.00	57.75	180.00	7,367.49	-55.73	-724.93	55.73	8.00	8.00	0.00	0.00
7,630.07	60.15	180.00	7,383.00	-81.49	-724.93	81.49	8.00	8.00	0.00	0.00
NBRR										
7,700.00	65.75	180.00	7,414.79	-143.74	-724.93	143.74	8.00	8.00	0.00	0.00
7,800.00	73.75	180.00	7,449.38	-237.48	-724.94	237.48	8.00	8.00	0.00	0.00
7,833.50	76.43	180.00	7,458.00	-269.86	-724.94	269.86	8.00	8.00	0.00	0.00
N470_B_CK										
7,900.00	81.75	180.00	7,470.58	-335.13	-724.94	335.13	8.00	8.00	0.00	0.00
8,000.00	89.75	180.00	7,477.99	-434.77	-724.95	434.77	8.00	8.00	0.00	0.00
8,003.16	90.00	180.00	7,478.00	-437.93	-724.95	437.93	8.00	8.00	0.00	0.00
End Build @ 8003.16 ft - Landing Target (Heel) - 7"										
8,100.00	90.00	180.00	7,478.00	-534.77	-724.95	534.77	0.00	0.00	0.00	0.00
8,200.00	90.00	180.00	7,478.00	-634.77	-724.96	634.77	0.00	0.00	0.00	0.00
8,300.00	90.00	180.00	7,478.00	-734.77	-724.96	734.77	0.00	0.00	0.00	0.00
8,400.00	90.00	180.00	7,478.00	-834.77	-724.97	834.77	0.00	0.00	0.00	0.00
8,500.00	90.00	180.00	7,478.00	-934.77	-724.98	934.77	0.00	0.00	0.00	0.00
8,600.00	90.00	180.00	7,478.00	-1,034.77	-724.98	1,034.77	0.00	0.00	0.00	0.00
8,700.00	90.00	180.00	7,478.00	-1,134.77	-724.99	1,134.77	0.00	0.00	0.00	0.00
8,800.00	90.00	180.00	7,478.00	-1,234.77	-724.99	1,234.77	0.00	0.00	0.00	0.00
8,900.00	90.00	180.00	7,478.00	-1,334.77	-725.00	1,334.77	0.00	0.00	0.00	0.00
9,000.00	90.00	180.00	7,478.00	-1,434.77	-725.00	1,434.77	0.00	0.00	0.00	0.00

Plan Report for HUNZIKER 28N-4HZ - 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 (°)
9,100.00	90.00	180.00	7,478.00	-1,534.77	-725.01	1,534.77	0.00	0.00	0.00	0.00
9,200.00	90.00	180.00	7,478.00	-1,634.77	-725.02	1,634.77	0.00	0.00	0.00	0.00
9,300.00	90.00	180.00	7,478.00	-1,734.77	-725.02	1,734.77	0.00	0.00	0.00	0.00
9,400.00	90.00	180.00	7,478.00	-1,834.77	-725.03	1,834.77	0.00	0.00	0.00	0.00
9,500.00	90.00	180.00	7,478.00	-1,934.77	-725.03	1,934.77	0.00	0.00	0.00	0.00
9,600.00	90.00	180.00	7,478.00	-2,034.77	-725.04	2,034.77	0.00	0.00	0.00	0.00
9,700.00	90.00	180.00	7,478.00	-2,134.77	-725.04	2,134.77	0.00	0.00	0.00	0.00
9,800.00	90.00	180.00	7,478.00	-2,234.77	-725.05	2,234.77	0.00	0.00	0.00	0.00
9,900.00	90.00	180.00	7,478.00	-2,334.77	-725.05	2,334.77	0.00	0.00	0.00	0.00
10,000.00	90.00	180.00	7,478.00	-2,434.77	-725.06	2,434.77	0.00	0.00	0.00	0.00
10,100.00	90.00	180.00	7,478.00	-2,534.77	-725.07	2,534.77	0.00	0.00	0.00	0.00
10,200.00	90.00	180.00	7,478.00	-2,634.77	-725.07	2,634.77	0.00	0.00	0.00	0.00
10,300.00	90.00	180.00	7,478.00	-2,734.77	-725.08	2,734.77	0.00	0.00	0.00	0.00
10,400.00	90.00	180.00	7,478.00	-2,834.77	-725.08	2,834.77	0.00	0.00	0.00	0.00
10,500.00	90.00	180.00	7,478.00	-2,934.77	-725.09	2,934.77	0.00	0.00	0.00	0.00
10,600.00	90.00	180.00	7,478.00	-3,034.77	-725.09	3,034.77	0.00	0.00	0.00	0.00
10,700.00	90.00	180.00	7,478.00	-3,134.77	-725.10	3,134.77	0.00	0.00	0.00	0.00
10,800.00	90.00	180.00	7,478.00	-3,234.77	-725.11	3,234.77	0.00	0.00	0.00	0.00
10,900.00	90.00	180.00	7,478.00	-3,334.77	-725.11	3,334.77	0.00	0.00	0.00	0.00
11,000.00	90.00	180.00	7,478.00	-3,434.77	-725.12	3,434.77	0.00	0.00	0.00	0.00
11,100.00	90.00	180.00	7,478.00	-3,534.77	-725.12	3,534.77	0.00	0.00	0.00	0.00
11,200.00	90.00	180.00	7,478.00	-3,634.77	-725.13	3,634.77	0.00	0.00	0.00	0.00
11,300.00	90.00	180.00	7,478.00	-3,734.77	-725.13	3,734.77	0.00	0.00	0.00	0.00
11,400.00	90.00	180.00	7,478.00	-3,834.77	-725.14	3,834.77	0.00	0.00	0.00	0.00
11,500.00	90.00	180.00	7,478.00	-3,934.77	-725.14	3,934.77	0.00	0.00	0.00	0.00
11,600.00	90.00	180.00	7,478.00	-4,034.77	-725.15	4,034.77	0.00	0.00	0.00	0.00
11,700.00	90.00	180.00	7,478.00	-4,134.77	-725.16	4,134.77	0.00	0.00	0.00	0.00
11,800.00	90.00	180.00	7,478.00	-4,234.77	-725.16	4,234.77	0.00	0.00	0.00	0.00
11,900.00	90.00	180.00	7,478.00	-4,334.77	-725.17	4,334.77	0.00	0.00	0.00	0.00
12,000.00	90.00	180.00	7,478.00	-4,434.77	-725.17	4,434.77	0.00	0.00	0.00	0.00
12,100.00	90.00	180.00	7,478.00	-4,534.77	-725.18	4,534.77	0.00	0.00	0.00	0.00
12,200.00	90.00	180.00	7,478.00	-4,634.77	-725.18	4,634.77	0.00	0.00	0.00	0.00
12,300.00	90.00	180.00	7,478.00	-4,734.77	-725.19	4,734.77	0.00	0.00	0.00	0.00
12,400.00	90.00	180.00	7,478.00	-4,834.77	-725.20	4,834.77	0.00	0.00	0.00	0.00
12,500.00	90.00	180.00	7,478.00	-4,934.77	-725.20	4,934.77	0.00	0.00	0.00	0.00
12,600.00	90.00	180.00	7,478.00	-5,034.77	-725.21	5,034.77	0.00	0.00	0.00	0.00
12,700.00	90.00	180.00	7,478.00	-5,134.77	-725.21	5,134.77	0.00	0.00	0.00	0.00
12,800.00	90.00	180.00	7,478.00	-5,234.77	-725.22	5,234.77	0.00	0.00	0.00	0.00
12,900.00	90.00	180.00	7,478.00	-5,334.77	-725.22	5,334.77	0.00	0.00	0.00	0.00
13,000.00	90.00	180.00	7,478.00	-5,434.77	-725.23	5,434.77	0.00	0.00	0.00	0.00
13,100.00	90.00	180.00	7,478.00	-5,534.77	-725.24	5,534.77	0.00	0.00	0.00	0.00
13,200.00	90.00	180.00	7,478.00	-5,634.77	-725.24	5,634.77	0.00	0.00	0.00	0.00
13,300.00	90.00	180.00	7,478.00	-5,734.77	-725.25	5,734.77	0.00	0.00	0.00	0.00
13,400.00	90.00	180.00	7,478.00	-5,834.77	-725.25	5,834.77	0.00	0.00	0.00	0.00
13,500.00	90.00	180.00	7,478.00	-5,934.77	-725.26	5,934.77	0.00	0.00	0.00	0.00
13,600.00	90.00	180.00	7,478.00	-6,034.77	-725.26	6,034.77	0.00	0.00	0.00	0.00
13,637.59	90.00	180.00	7,478.00	-6,072.36	-725.27	6,072.36	0.00	0.00	0.00	0.00

TD Well @ 13637.59 ft - Total Depth (Toe)

13,637.60	90.00	180.00	7,478.00	-6,072.37	-725.27	6,072.37	0.00	0.00	0.00	0.00
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HUNZIKER 28N-4HZ_BHL

Plan Report for HUNZIKER 28N-4HZ - 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
3,518.00	3,518.00	0.00	0.00	Begin Nudge @ 3518.00 ft
4,518.00	4,497.82	61.91	-161.29	End Nudge @ 4518.00 ft
5,778.00	5,681.83	216.35	-563.61	Begin Drop @ 5778.00 ft
6,778.00	6,661.64	278.27	-724.91	End Drop @ 6778.00 ft
6,778.00	6,661.64	278.27	-724.91	Set 4.5" Liner @ 6778.00 ft
6,878.16	6,761.80	278.27	-724.91	KOP @ 6878.16 ft
7,500.00	7,308.41	24.85	-724.92	DLS = 8°/100 ft
8,003.16	7,478.00	-437.93	-724.95	End Build @ 8003.16 ft
13,637.59	7,478.00	-6,072.36	-725.27	TD Well @ 13637.59 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	180.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	8,003.16	Rev A0 Permit	MWD
8,003.16	13,637.60	Rev A0 Permit	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,259.00	1,259.00	9 5/8"	9-5/8	13-1/2
8,003.16	7,478.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,164.47	4,159.00	Parkman		0.00	
4,551.19	4,529.00	Sussex		0.00	
7,507.15	7,313.00	SSPG		0.00	
7,630.07	7,383.00	NBRR		0.00	
7,833.50	7,458.00	N470_B_CK		0.00	
8,003.16	7,478.00	Landing Target (Heel)		0.00	
13,637.59	7,478.00	Total Depth (Toe)		0.00	

Plan Report for HUNZIKER 28N-4HZ - Rev A0 Permit

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
HUNZIKER 28N-4HZ_SEC	0.00	0.00	0.00	Polygon
HUNZIKER 28N-4HZ_SHL	0.00	0.00	0.00	Point
HUNZIKER 28N-4HZ_LD	0.00	0.00	0.00	Polygon
HUNZIKER 28N-4HZ_BHL	7,478.00	-6,072.37	-725.27	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.95 °/100usft	Maximum Dogleg over Survey:	8.00 °/100usft at 8,003.16 usft
Net Tortousity applicable to Plans:	0.95 °/100usft	Directional Difficulty Index:	6.375

Audit Info

North Reference Sheet for Sec. 28-T2N-R67W - HUNZIKER 28N-4HZ - 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' @ 5068.00usft (Drilling Rig). Northing and Easting are relative to HUNZIKER 28N-4HZ
 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, 3,169,980.79 usft E
 Geographical Coordinates of Well: 40° 06' 11.63" N, 104° 53' 32.40" W
 Grid Convergence at Surface is: 0.39°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,637.60usft
 the Bottom Hole Displacement is 6,115.53usft in the Direction of 186.81° (True).
 Magnetic Convergence at surface is: -8.17° (24 September 2014, , BGGM2014)

