



K. P. Kauffman Company, Inc.

Koester #18-33-5

SWNW section 33-T4N-R67W

Weld Co., Colorado

Directional plan

# Well Plan

Well Name	Vertical Section Azimuth	Units
Koester #18-33-5	201.08	ft,°/100ft

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MD*	INC*	AZI*	TVD*	N*	E*	DLS*	Vert. Sec.*	Description	Reference Note
0.00	0.00	0.0	0.00	0.00	0.00		0.00	tie point RKB	
100.00	0.00	0.0	100.00	0.00	0.00	0.00	0.00	vertical	
200.00	0.00	0.0	200.00	0.00	0.00	0.00	0.00	vertical	
300.00	0.00	0.0	300.00	0.00	0.00	0.00	0.00	vertical	
400.00	0.00	0.0	400.00	0.00	0.00	0.00	0.00	vertical	
500.00	0.00	0.0	500.00	0.00	0.00	0.00	0.00	vertical	
600.00	0.00	0.0	600.00	0.00	0.00	0.00	0.00	vertical	
700.00	0.00	0.0	700.00	0.00	0.00	0.00	0.00	vertical	
800.00	0.00	0.0	800.00	0.00	0.00	0.00	0.00	vertical	
900.00	0.00	0.0	900.00	0.00	0.00	0.00	0.00	vertical	
1000.00	0.00	0.0	1000.00	0.00	0.00	0.00	0.00	vertical	
1100.00	0.00	0.0	1100.00	0.00	0.00	0.00	0.00	vertical	
1200.00	0.00	0.0	1200.00	0.00	0.00	0.00	0.00	End vertical KOP	
1300.00	6.50	201.1	1299.79	-5.29	-2.04	6.50	5.67	build	
1400.00	13.00	201.1	1398.29	-21.08	-8.13	6.50	22.59	build	
1500.00	19.50	201.1	1494.24	-47.18	-18.18	6.50	50.56	build	
1565.38	23.75	201.1	1555.01	-69.66	-26.85	6.50	74.65	End build TOP OF BUILD	
1600.00	23.36	201.1	1586.74	-82.56	-31.82	1.14	88.48	drop	
1700.00	22.22	201.1	1678.94	-118.70	-45.75	1.14	127.21	drop	
1800.00	21.08	201.1	1771.88	-153.12	-59.02	1.14	164.10	drop	
1900.00	19.94	201.1	1865.54	-185.81	-71.62	1.14	199.14	drop	
2000.00	18.80	201.1	1959.88	-216.76	-83.55	1.14	232.30	drop	
2100.00	17.66	201.1	2054.86	-245.95	-94.80	1.14	263.59	drop	
2200.00	16.52	201.1	2150.44	-273.37	-105.37	1.14	292.98	drop	
2300.00	15.38	201.1	2246.59	-299.02	-115.25	1.14	320.46	drop	
2400.00	14.25	201.1	2343.26	-322.88	-124.45	1.14	346.03	drop	
2500.00	13.11	201.1	2440.43	-344.94	-132.95	1.14	369.67	drop	
2600.00	11.97	201.1	2538.04	-365.19	-140.76	1.14	391.38	drop	
2700.00	10.83	201.1	2636.07	-383.63	-147.87	1.14	411.14	drop	

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	Vert. Sec.*	Description	Reference Note
2800.00	9.69	201.1	2734.47	-400.25	-154.27	1.14	428.95	drop	
2900.00	8.55	201.1	2833.20	-415.04	-159.97	1.14	444.80	drop	
3000.00	7.41	201.1	2932.23	-427.99	-164.97	1.14	458.69	drop	
3100.00	6.27	201.1	3031.52	-439.11	-169.25	1.14	470.60	drop	
3200.00	5.13	201.1	3131.02	-448.38	-172.82	1.14	480.54	drop	
3300.00	4.00	201.1	3230.70	-455.81	-175.69	1.14	488.50	drop	
3400.00	2.86	201.1	3330.52	-461.39	-177.84	1.14	494.47	drop	
3500.00	1.72	201.1	3430.44	-465.11	-179.27	1.14	498.46	drop	
3600.00	0.58	201.1	3530.42	-466.98	-179.99	1.14	500.47	drop	
3699.59	0.00	0.0	3630.00	-467.00	-180.00	1.14	500.49	End drop	TOP OF DROP
3700.00	0.00	0.0	3630.41	-467.00	-180.00	0.00	500.49	vertical	
3800.00	0.00	0.0	3730.41	-467.00	-180.00	0.00	500.49	vertical	
3900.00	0.00	0.0	3830.41	-467.00	-180.00	0.00	500.49	vertical	
4000.00	0.00	0.0	3930.41	-467.00	-180.00	0.00	500.49	vertical	
4100.00	0.00	0.0	4030.41	-467.00	-180.00	0.00	500.49	vertical	
4200.00	0.00	0.0	4130.41	-467.00	-180.00	0.00	500.49	vertical	
4219.59	0.00	0.0	4150.00	-467.00	-180.00	0.00	500.49	End vertical	TOP OF SUSSEX
4300.00	0.00	0.0	4230.41	-467.00	-180.00	0.00	500.49	vertical	
4400.00	0.00	0.0	4330.41	-467.00	-180.00	0.00	500.49	vertical	
4500.00	0.00	0.0	4430.41	-467.00	-180.00	0.00	500.49	vertical	
4600.00	0.00	0.0	4530.41	-467.00	-180.00	0.00	500.49	vertical	
4700.00	0.00	0.0	4630.41	-467.00	-180.00	0.00	500.49	vertical	
4739.59	0.00	0.0	4670.00	-467.00	-180.00	0.00	500.49	End vertical	TOP OF SHANNON
4800.00	0.00	0.0	4730.41	-467.00	-180.00	0.00	500.49	vertical	
4900.00	0.00	0.0	4830.41	-467.00	-180.00	0.00	500.49	vertical	
5000.00	0.00	0.0	4930.41	-467.00	-180.00	0.00	500.49	vertical	
5100.00	0.00	0.0	5030.41	-467.00	-180.00	0.00	500.49	vertical	
5200.00	0.00	0.0	5130.41	-467.00	-180.00	0.00	500.49	vertical	
5300.00	0.00	0.0	5230.41	-467.00	-180.00	0.00	500.49	vertical	
5400.00	0.00	0.0	5330.41	-467.00	-180.00	0.00	500.49	vertical	
5500.00	0.00	0.0	5430.41	-467.00	-180.00	0.00	500.49	vertical	

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	Vert. Sec.*	Description	Reference Note
5600.00	0.00	0.0	5530.41	-467.00	-180.00	0.00	500.49	vertical	
5700.00	0.00	0.0	5630.41	-467.00	-180.00	0.00	500.49	vertical	
5800.00	0.00	0.0	5730.41	-467.00	-180.00	0.00	500.49	vertical	
5900.00	0.00	0.0	5830.41	-467.00	-180.00	0.00	500.49	vertical	
6000.00	0.00	0.0	5930.41	-467.00	-180.00	0.00	500.49	vertical	
6100.00	0.00	0.0	6030.41	-467.00	-180.00	0.00	500.49	vertical	
6200.00	0.00	0.0	6130.41	-467.00	-180.00	0.00	500.49	vertical	
6300.00	0.00	0.0	6230.41	-467.00	-180.00	0.00	500.49	vertical	
6400.00	0.00	0.0	6330.41	-467.00	-180.00	0.00	500.49	vertical	
6500.00	0.00	0.0	6430.41	-467.00	-180.00	0.00	500.49	vertical	
6600.00	0.00	0.0	6530.41	-467.00	-180.00	0.00	500.49	vertical	
6700.00	0.00	0.0	6630.41	-467.00	-180.00	0.00	500.49	vertical	
6800.00	0.00	0.0	6730.41	-467.00	-180.00	0.00	500.49	vertical	
6900.00	0.00	0.0	6830.41	-467.00	-180.00	0.00	500.49	vertical	
7000.00	0.00	0.0	6930.41	-467.00	-180.00	0.00	500.49	vertical	
7044.59	0.00	0.0	6975.00	-467.00	-180.00	0.00	500.49	End vertical	TOP OF NIOBRARA
7100.00	0.00	0.0	7030.41	-467.00	-180.00	0.00	500.49	vertical	
7200.00	0.00	0.0	7130.41	-467.00	-180.00	0.00	500.49	vertical	
7300.00	0.00	0.0	7230.41	-467.00	-180.00	0.00	500.49	vertical	
7354.59	0.00	0.0	7285.00	-467.00	-180.00	0.00	500.49	End vertical	TOP OF FT HAYES
7374.59	0.00	0.0	7305.00	-467.00	-180.00	0.00	500.49	End vertical	TOP OF CODELL
7400.00	0.00	0.0	7330.41	-467.00	-180.00	0.00	500.49	vertical	
7500.00	0.00	0.0	7430.41	-467.00	-180.00	0.00	500.49	vertical	
7600.00	0.00	0.0	7530.41	-467.00	-180.00	0.00	500.49	vertical	
7700.00	0.00	0.0	7630.41	-467.00	-180.00	0.00	500.49	vertical	
7789.59	0.00	0.0	7720.00	-467.00	-180.00	0.00	500.49	End vertical	TOP J-SAND
7800.00	0.00	0.0	7730.41	-467.00	-180.00	0.00	500.49	vertical	
7900.00	0.00	0.0	7830.41	-467.00	-180.00	0.00	500.49	vertical	
7969.59	0.00	0.0	7900.00	-467.00	-180.00	0.00	500.49	End vertical	TD