

# Minimum Radius of Curvature

**API: 05-123-51149**      **Well: Purcell 31U-20-01**      **WH Lat : 40.452306**  
**Operator: Highpoint Resources**      **Area: DJ**      **Long : -104.272433**  
**Rig: TD: 17,149'**      **Type: U-Lateral**      **Magnetic Declination: 7.31**  
**Plane of Proposal: 91.00**

Measured Depth Ft	Drift Angle Deg	Azimuth Direction Deg	Course Length Ft	TVD Ft	Vertical Section Ft	COORDINATES		CLOSURE		Dog Leg Severity Deg/100'	Build / Drop Deg/100'	Left / Right Deg/100'
						N-S Ft	E-W Ft	Distance FT	Direction Deg			
0.00	0.00	0.00		0.0	0.00	0.00	0.00	0.00	0.00			
208	1.30	105.20	208	208.0	2.29	-0.62	2.28	2.36	105.20	0.62	0.63	50.58
300	3.30	102.00	92	299.9	5.90	-1.44	5.87	6.05	103.80	2.18	2.17	-3.48
392	7.10	98.70	92	391.5	14.14	-2.85	14.09	14.37	101.45	4.14	4.13	-3.59
512	9.70	98.20	120	510.2	31.52	-5.42	31.43	31.89	99.78	2.17	2.17	-0.42
643	10.80	98.20	131	639.1	54.64	-8.74	54.50	55.20	99.11	0.84	0.84	0.00
731	12.60	96.60	88	725.3	72.38	-11.02	72.20	73.03	98.68	2.08	2.05	-1.82
818	14.50	95.40	87	809.9	92.68	-13.14	92.47	93.40	98.09	2.21	2.18	-1.38
906	15.60	102.00	88	894.8	115.28	-16.64	115.01	116.21	98.23	2.31	1.25	7.50
993	17.10	103.80	87	978.3	139.24	-22.12	138.88	140.63	99.05	1.82	1.72	2.07
1081	18.70	100.80	88	1062.1	165.76	-27.85	165.30	167.63	99.56	2.10	1.82	-3.41
1170	20.40	101.90	89	1145.9	195.05	-33.72	194.50	197.40	99.84	1.95	1.91	1.24
1260	22.40	101.10	90	1229.7	227.34	-40.26	226.68	230.22	100.07	2.25	2.22	-0.89
1349	23.80	103.00	89	1311.6	261.61	-47.56	260.82	265.12	100.33	1.78	1.57	2.13
1437	25.80	101.40	88	1391.5	297.81	-55.34	296.89	302.01	100.56	2.40	2.27	-1.82
1524	27.00	101.90	87	1469.4	335.83	-63.16	334.78	340.68	100.68	1.40	1.38	0.57
1612	27.50	101.60	88	1547.6	375.41	-71.36	374.23	380.97	100.80	0.00	0.57	-0.34
1699	26.70	100.70	87	1625.1	414.42	-79.03	413.11	420.60	100.83	0.00	-0.92	-1.03
1749	25.30	100.50	50	1670.0	436.04	-83.06	434.65	442.52	100.82	0.00	-2.80	-0.40
1849	24.37	101.39	100	1760.8	477.40	-91.03	475.89	484.52	100.83	0.00	-0.93	0.89
1944	25.50	101.98	95	1846.9	516.76	-99.15	515.11	524.56	100.89	0.00	1.19	0.62
2039	27.39	102.50	95	1932.0	558.25	-108.12	556.45	566.86	101.00	0.00	1.99	0.55
2134	30.31	102.06	95	2015.2	603.20	-117.86	601.24	612.68	101.09	0.00	3.07	-0.46
2229	33.27	102.64	95	2095.9	652.26	-128.58	650.12	662.71	101.19	0.00	3.12	0.61
2324	32.18	101.33	95	2175.8	702.67	-139.25	700.35	714.06	101.25	0.00	-1.15	-1.38
2418	34.20	101.22	94	2254.5	753.30	-149.31	750.81	765.51	101.25	0.00	2.15	-0.12
2513	33.51	100.45	95	2333.4	805.45	-159.26	802.79	818.43	101.22	0.00	-0.73	-0.81
2798	34.64	101.56	285	2569.4	962.69	-189.76	959.52	978.10	101.19	0.00	0.40	0.39
3177	30.25	98.50	379	2889.2	1163.34	-225.48	1159.58	1181.30	101.00	0.00	-1.16	-0.81
3272	31.84	100.04	95	2970.6	1211.81	-233.38	1207.92	1230.26	100.94	0.00	1.67	1.62
3462	30.78	100.16	190	3132.9	1309.31	-250.70	1305.13	1328.99	100.87	0.00	-0.56	0.06
3556	31.97	102.01	94	3213.2	1357.48	-260.12	1353.15	1377.92	100.88	0.00	1.27	1.97
3651	31.49	102.13	95	3294.0	1406.51	-270.57	1402.00	1427.87	100.92	0.00	-0.51	0.13
3746	34.00	102.76	95	3373.9	1456.87	-281.65	1452.18	1479.24	100.98	0.00	2.64	0.66
3841	34.47	102.28	95	3452.4	1509.24	-293.23	1504.35	1532.66	101.03	0.57	0.49	-0.51
3957	34.87	102.18	116	3547.8	1573.96	-307.21	1568.84	1598.64	101.08	0.35	0.34	-0.09
4051	34.96	100.76	94	3624.9	1626.87	-317.91	1621.56	1652.43	101.09	0.87	0.10	-1.51
4146	34.24	100.74	95	3703.1	1680.03	-327.97	1674.56	1706.38	101.08	0.76	-0.76	-0.02
4336	33.39	102.86	190	3861.0	1783.88	-349.57	1778.05	1812.09	101.12	0.77	-0.45	1.12
4431	31.29	102.14	95	3941.2	1833.68	-360.58	1827.66	1862.89	101.16	2.25	0.00	-0.76
4525	29.94	106.65	94	4022.2	1880.22	-372.43	1874.01	1910.66	101.24	2.83	0.00	4.80
4620	30.69	103.55	95	4104.2	1926.72	-384.91	1920.30	1958.49	101.33	1.83	0.00	-3.26
4714	29.46	103.17	94	4185.5	1972.73	-395.79	1966.13	2005.57	101.38	1.32	0.00	-0.40
4809	31.20	103.08	95	4267.5	2019.64	-406.69	2012.84	2053.52	101.42	1.83	0.00	-0.09
4903	33.15	104.22	94	4347.1	2068.47	-418.51	2061.48	2103.53	101.48	2.17	0.00	1.21
4997	30.14	103.57	94	4427.1	2116.53	-430.36	2109.34	2152.80	101.53	3.22	0.00	-0.69
5092	32.99	102.45	95	4508.0	2165.17	-441.54	2157.79	2202.51	101.56	3.06	0.00	-1.18
5187	31.06	101.78	95	4588.6	2214.60	-452.12	2207.04	2252.88	101.58	2.07	0.00	-0.71
5281	33.26	105.60	94	4668.1	2263.38	-464.00	2255.62	2302.85	101.62	3.19	0.00	4.06
5376	31.16	105.51	95	4748.5	2312.38	-477.58	2304.40	2353.37	101.71	2.21	0.00	-0.09
5471	27.99	103.22	95	4831.1	2357.98	-489.26	2349.80	2400.19	101.76	3.54	0.00	-2.41
5849	33.37	102.48	378	5156.1	2546.69	-532.04	2537.79	2592.96	101.84	1.43	0.00	-0.20
5942	31.42	102.05	93	5234.6	2595.55	-542.63	2586.47	2642.78	101.85	2.11	0.00	-0.46
6037	31.89	103.27	95	5315.5	2644.37	-553.56	2635.11	2692.63	101.86	0.84	0.00	1.28
6132	34.50	102.67	95	5395.0	2695.25	-565.22	2685.80	2744.63	101.88	2.77	0.00	-0.63
6227	34.81	106.07	95	5473.1	2747.79	-578.63	2738.11	2798.58	101.93	2.06	0.00	3.58
6321	34.56	107.93	94	5550.4	2799.20	-594.26	2789.26	2851.86	102.03	1.16	0.00	1.98
6416	33.95	107.05	95	5629.0	2850.48	-610.34	2840.26	2905.09	102.13	0.83	0.00	-0.93

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						N-S Ft	E-W Ft	Distance FT	Direction Deg			
6511	33.90	103.91	95	5707.8	2901.80	-624.48	2891.34	2958.01	102.19	1.85	0.00	-3.31
6605	34.91	103.08	94	5785.3	2953.65	-636.87	2942.98	3011.11	102.21	1.18	0.00	-0.88
6700	33.95	101.81	95	5863.7	3006.29	-648.46	2995.43	3064.82	102.22	1.26	0.00	-1.34
6795	39.25	97.70	95	5940.0	3062.24	-657.92	3051.23	3121.35	102.17	6.14	0.00	-4.33
6890	49.99	94.77	95	6007.5	3128.60	-664.99	3117.47	3187.60	102.04	11.51	0.00	-3.08
6984	59.67	92.16	94	6061.6	3205.27	-669.53	3194.07	3263.49	101.84	10.54	0.00	-2.78
7079	65.19	88.55	95	6105.5	3289.42	-669.98	3278.23	3345.99	101.55	6.72	0.00	-3.80
7174	67.77	85.26	95	6143.4	3376.28	-665.26	3365.18	3430.31	101.18	4.18	0.00	-3.46
7269	72.37	83.30	95	6175.8	3464.95	-656.34	3454.02	3515.82	100.76	5.22	0.00	-2.06
7363	85.91	83.23	94	6193.5	3556.21	-645.53	3545.48	3603.77	100.32	14.40	0.00	-0.07
7458	89.68	90.98	95	6197.2	3650.83	-640.75	3640.20	3696.17	99.98	9.07	0.00	8.16
7552	91.29	92.53	94	6196.4	3744.81	-643.63	3734.15	3789.21	99.78	2.38	0.00	1.65
7647	92.85	91.35	95	6192.9	3839.74	-646.84	3829.03	3883.28	99.59	2.06	0.00	-1.24
7836	89.11	95.65	189	6189.7	4028.45	-658.38	4017.57	4071.16	99.31	3.01	0.00	2.28
7930	87.57	91.60	94	6192.4	4122.29	-664.32	4111.32	4164.65	99.18	4.61	0.00	-4.31
8025	89.15	91.64	95	6195.1	4217.24	-667.00	4206.24	4258.80	99.01	1.66	0.00	0.04
8120	91.08	90.47	95	6194.9	4312.24	-668.75	4301.22	4352.90	98.84	2.38	0.00	-1.23
8214	91.41	89.03	94	6192.9	4406.19	-668.34	4395.19	4445.72	98.65	1.57	0.00	-1.53
8309	92.77	87.97	95	6189.4	4501.03	-665.86	4490.09	4539.20	98.44	1.81	0.00	-1.12
8404	92.24	88.98	95	6185.3	4595.85	-663.33	4584.97	4632.70	98.23	1.20	0.00	1.06
8498	91.62	93.95	94	6182.1	4689.76	-665.73	4678.85	4725.98	98.10	5.33	0.00	5.29
8593	89.27	95.92	95	6181.4	4784.52	-673.91	4773.49	4820.82	98.04	3.23	0.00	2.07
8687	87.26	93.22	94	6184.2	4878.28	-681.39	4867.13	4914.60	97.97	3.58	0.00	-2.87
8782	86.78	92.71	95	6189.2	4973.10	-686.30	4961.88	5009.11	97.87	0.74	0.00	-0.54
8876	88.59	91.57	94	6193.0	5067.00	-689.81	5055.73	5102.57	97.77	2.28	0.00	-1.21
8971	89.15	88.60	95	6194.8	5161.96	-689.95	5150.70	5196.70	97.63	3.18	0.00	-3.13
9065	91.01	87.54	94	6194.7	5255.83	-686.78	5244.64	5289.42	97.46	2.28	0.00	-1.13
9160	90.70	87.07	95	6193.3	5350.62	-682.32	5339.52	5382.94	97.28	0.59	0.00	-0.49
9255	90.63	87.74	95	6192.2	5445.43	-678.01	5434.42	5476.55	97.11	0.71	0.00	0.71
9349	90.17	88.06	94	6191.5	5539.29	-674.57	5528.35	5569.36	96.96	0.60	0.00	0.34
9444	89.32	87.66	95	6192.0	5634.14	-671.02	5623.29	5663.18	96.80	0.99	0.00	-0.42
9538	87.54	87.09	94	6194.5	5727.91	-666.72	5717.15	5755.89	96.65	1.99	0.00	-0.61
9633	89.20	88.19	95	6197.2	5822.71	-662.81	5812.02	5849.70	96.51	2.10	0.00	1.16
9728	91.71	90.53	95	6196.5	5917.65	-661.75	5907.00	5943.95	96.39	3.61	0.00	2.46
9823	92.02	89.98	95	6193.4	6012.59	-662.17	6001.95	6038.37	96.30	0.66	0.00	-0.58
9917	91.64	91.76	94	6190.4	6106.54	-663.60	6095.89	6131.90	96.21	1.94	0.00	1.89
10012	89.33	95.30	95	6189.6	6201.42	-669.45	6190.68	6226.77	96.17	4.45	0.00	3.73
10107	89.88	94.87	95	6190.2	6296.18	-677.87	6285.30	6321.75	96.16	0.73	0.58	279.08
10201	88.75	93.45	94	6191.4	6390.02	-684.68	6379.05	6415.69	96.13	1.93	-1.20	-1.51
10296	88.43	92.66	95	6193.7	6484.93	-689.75	6473.88	6510.52	96.08	0.90	-0.34	-0.83
10391	87.47	89.49	95	6197.1	6579.86	-691.53	6568.79	6605.09	96.01	3.48	-1.01	-3.34
10486	87.55	86.39	95	6201.2	6674.62	-688.12	6663.63	6699.06	95.90	3.26	0.08	-3.26
10580	89.88	86.12	94	6203.3	6768.27	-681.98	6757.40	6791.72	95.76	2.50	2.48	-0.29
10675	89.21	89.46	95	6204.1	6863.10	-678.32	6852.31	6885.80	95.65	3.59	-0.71	3.52
10770	89.61	89.00	95	6205.1	6958.05	-677.04	6947.30	6980.21	95.57	0.64	0.42	-0.48
10864	90.84	87.82	94	6204.7	7051.95	-674.43	7041.26	7073.48	95.47	1.81	1.31	-1.26
10959	91.06	87.89	95	6203.1	7146.80	-670.88	7136.18	7167.64	95.37	0.24	0.23	0.07
11053	91.34	94.93	94	6201.1	7240.71	-673.19	7230.07	7261.34	95.32	7.49	0.30	7.49
11148	89.10	102.47	95	6200.8	7334.78	-687.54	7323.90	7356.10	95.36	8.28	-2.36	7.94
11243	88.93	110.07	95	6202.4	7426.35	-714.14	7415.01	7449.32	95.50	8.00	-0.18	8.00
11338	89.88	118.94	95	6203.4	7513.37	-753.50	7501.37	7539.11	95.74	9.39	1.00	9.34
11432	88.79	128.24	94	6204.5	7592.48	-805.44	7579.58	7622.25	96.07	9.96	-1.16	9.89
11527	91.43	135.56	95	6204.3	7664.23	-868.84	7650.23	7699.41	96.48	8.19	2.78	7.71
11622	91.42	142.42	95	6201.9	7727.75	-940.46	7712.51	7769.64	96.95	7.22	-0.01	7.22
11717	93.10	150.07	95	6198.2	7781.83	-1019.32	7765.22	7831.84	97.48	8.24	1.77	8.05
11812	92.02	159.05	95	6193.9	7824.04	-1104.93	7805.94	7883.76	98.06	9.51	-1.14	9.45
11906	89.49	169.36	94	6192.7	7851.16	-1195.25	7831.49	7922.17	98.68	11.29	-2.69	10.97
12001	89.21	178.56	95	6193.8	7862.79	-1289.61	7841.47	7946.81	99.34	9.69	-0.29	9.68

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12096	89.86	179.17	95	6194.6	7866.33	-1384.59	7843.36	7964.63	100.01	0.94	0.68	0.64
12190	90.79	182.17	94	6194.0	7866.87	-1478.57	7842.26	7980.42	100.68	3.34	0.99	3.19
12285	91.73	181.77	95	6191.9	7865.26	-1573.49	7838.99	7995.35	101.35	1.08	0.99	-0.42
12379	93.10	181.38	94	6188.0	7864.32	-1667.37	7836.41	8011.83	102.01	1.52	1.46	-0.41
12474	92.73	186.60	95	6183.1	7859.37	-1761.98	7829.81	8025.62	102.68	5.50	-0.39	5.49
12569	90.98	192.80	95	6180.1	7845.01	-1855.53	7813.82	8031.11	103.36	6.78	-1.84	6.53
12663	90.27	202.52	94	6179.0	7818.10	-1944.98	7785.34	8024.61	104.03	10.37	-0.76	10.34
12757	88.13	211.78	94	6180.3	7776.72	-2028.52	7742.50	8003.82	104.68	10.11	-2.28	9.85
12852	88.39	216.43	95	6183.2	7724.87	-2107.12	7689.27	7972.76	105.32	4.90	0.27	4.89
12946	88.20	223.45	94	6186.0	7665.86	-2179.12	7628.99	7934.10	105.94	7.47	-0.20	7.47
13041	89.73	233.59	95	6187.8	7595.90	-2241.95	7557.92	7883.43	106.52	10.79	1.61	10.67
13135	92.16	239.87	94	6186.2	7518.27	-2293.48	7479.38	7823.12	107.05	7.16	2.59	6.68
13230	91.80	248.36	95	6182.9	7433.67	-2334.89	7394.04	7753.94	107.53	8.94	-0.38	8.94
13324	91.29	260.32	94	6180.4	7343.81	-2360.21	7303.73	7675.61	107.91	12.73	-0.54	12.72
13419	92.74	268.19	95	6177.0	7249.60	-2369.70	7209.34	7588.82	108.20	8.42	1.53	8.28
13514	91.21	269.78	95	6173.8	7154.72	-2371.39	7114.42	7499.23	108.43	2.32	-1.61	1.67
13608	89.30	270.50	94	6173.3	7060.74	-2371.16	7020.43	7410.05	108.66	2.17	-2.03	0.77
13702	89.75	268.28	94	6174.1	6966.79	-2372.16	6926.44	7321.39	108.91	2.41	0.48	-2.36
13797	88.90	269.60	95	6175.2	6871.86	-2373.91	6831.47	7232.18	109.16	1.65	-0.89	1.39
13891	89.01	268.80	94	6176.9	6777.92	-2375.23	6737.49	7143.91	109.42	0.86	0.12	-0.85
13986	89.99	270.38	95	6177.8	6682.96	-2375.91	6642.50	7054.63	109.68	1.96	1.03	1.66
14081	88.31	270.00	95	6179.2	6587.98	-2375.59	6547.52	6965.16	109.94	1.81	-1.77	-0.40
14176	88.20	270.62	95	6182.1	6493.03	-2375.08	6452.56	6875.80	110.21	0.66	-0.12	0.65
14270	89.83	270.57	94	6183.7	6399.05	-2374.10	6358.59	6787.34	110.47	1.73	1.73	-0.05
14365	89.31	269.12	95	6184.4	6304.08	-2374.36	6263.59	6698.52	110.76	1.62	-0.55	-1.53
14459	90.00	269.59	94	6185.0	6210.12	-2375.42	6169.60	6611.09	111.06	0.89	0.73	0.50
14554	89.65	267.73	95	6185.3	6115.20	-2377.64	6074.63	6523.37	111.38	1.99	-0.37	-1.96
14648	88.91	268.68	94	6186.4	6021.32	-2380.58	5980.69	6437.06	111.70	1.28	-0.79	1.01
14743	91.38	271.67	95	6186.2	5926.35	-2380.29	5885.71	6348.80	112.02	4.08	2.60	3.15
14838	90.99	271.27	95	6184.2	5831.37	-2377.86	5790.76	6259.96	112.32	0.59	-0.41	-0.42
14932	89.87	269.67	94	6183.5	5737.39	-2377.08	5696.77	6172.82	112.65	2.08	-1.19	-1.70
15027	90.32	271.44	95	6183.4	5642.39	-2376.16	5601.78	6084.90	112.99	1.92	0.47	190.64
15121	91.21	269.20	94	6182.1	5548.41	-2375.64	5507.79	5998.29	113.33	2.56	0.95	-2.38
15216	92.17	269.72	95	6179.3	5453.49	-2376.53	5412.84	5911.58	113.70	1.15	1.01	0.55
15311	90.74	269.45	95	6176.9	5358.55	-2377.22	5317.88	5825.03	114.09	1.53	-1.51	-0.28
15405	92.09	269.49	94	6174.6	5264.62	-2378.09	5223.91	5739.74	114.48	1.44	1.44	0.04
15500	88.94	270.89	95	6173.7	5169.65	-2377.78	5128.93	5653.29	114.87	3.63	-3.32	1.47
15594	89.72	271.11	94	6174.8	5075.65	-2376.14	5034.95	5567.47	115.26	0.86	0.83	0.23
15689	89.36	274.01	95	6175.6	4980.70	-2371.89	4940.06	5479.97	115.65	3.08	-0.38	3.05
15783	89.11	272.59	94	6176.8	4886.79	-2366.48	4846.23	5393.16	116.03	1.53	-0.27	-1.51
15878	89.24	274.46	95	6178.2	4791.89	-2360.64	4751.42	5305.53	116.42	1.97	0.14	1.97
15972	89.35	270.89	94	6179.4	4697.96	-2356.26	4657.54	5219.64	116.83	3.80	0.12	-3.80
16067	89.40	272.31	95	6180.4	4602.97	-2353.60	4562.59	5133.88	117.29	1.50	0.05	1.49
16161	88.91	269.38	94	6181.8	4508.99	-2352.22	4468.62	5049.90	117.76	3.16	-0.52	-3.12
16256	89.16	267.98	95	6183.4	4414.09	-2354.41	4373.66	4967.11	118.29	1.50	0.26	-1.47
16351	90.83	267.42	95	6183.4	4319.25	-2358.22	4278.74	4885.57	118.86	1.85	1.76	-0.59
16446	92.24	267.29	95	6180.9	4224.48	-2362.60	4183.88	4804.87	119.45	1.49	1.48	-0.14
16541	89.78	266.92	95	6179.2	4129.72	-2367.40	4089.02	4724.90	120.07	2.62	-2.59	-0.39
16635	88.38	270.08	94	6180.7	4035.83	-2369.86	3995.08	4645.09	120.68	3.68	-1.49	3.36
16730	88.02	269.05	95	6183.7	3940.91	-2370.58	3900.13	4564.06	121.29	1.15	-0.38	-1.08
16824	89.47	268.41	94	6185.7	3847.01	-2372.66	3806.18	4485.15	121.94	1.69	1.54	-0.68
16919	88.41	270.88	95	6187.5	3752.06	-2373.25	3711.21	4405.15	122.60	2.83	-1.12	2.60
17013	88.68	270.06	94	6189.9	3658.10	-2372.48	3617.24	4325.86	123.26	0.92	0.29	-0.87
17086	89.38	271.79	73	6191.1	3585.11	-2371.30	3544.27	4264.37	123.78	2.56	0.96	2.37
17149	89.38	271.79	63	6191.8	3522.12	-2369.33	3481.30	4211.08	124.24	0.00	0.00	0.00