Table B-1.2-1
Well-Development Volumes, Aquifer Pump Test Volumes,
and Associated Field Water-Quality Parameters for R-54

Date	pH	Temp (°C)	DO (mg/L)	ORP, Eh[a] (mV)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Purge Volume between Samples (gal.)	Cumulative Purge Volume (gal.)
Well Development Lower Screen								
1/31/10	n/r[b]; bailing						300	300
2/1/10	n/r, bailing						740	1040
2/2/10	n/r, bailing						550	1590
2/4/10	n/r, pumping sump						315	1905
2/4/10	n/r, pumping through screen						1925	3830
2/5/10	6.83	19.04	8.73	236.6, 440.5	213	1.0	832	4662
	7.78	21.12	7.82	166.6, 370.5	274	0.3	137	4799
	7.86	21.57	7.60	159.2, 363.1	271	0.1	138	4937
2/5/10	n/r, packer deflated, screens 1 and 2 not isolated						84	5021
Well Development Upper Screen								
2/5/10	n/r, pumping through screen						2079	7100
2/6/10	7.73	18.34	10.13	217.8, 421.7	3925	6.2	107	7207
	7.98	18.22	9.84	214.9, 418.8	4048	6.0	22	7229
	7.99	18.42	8.31	212.5, 416.4	4097	6.7	26	7255
	7.98	19.00	7.76	220.8, 424.7	4095	4.7	59	7314
	n/r, pumped before shutting off pump						28	7342
2/7/10	7.07	19.18	6.80	263.4, 467.3	147	42.8	202	7544
	7.64	19.62	7.24	225.8, 429.7	143	23.7	95	7639
	7.85	19.20	7.13	191.1, 395.0	142	13.2	222	7861
	7.82	19.32	5.94	176.1, 380.0	149	27.5	18	7879
	7.74	20.21	5.05	139.1, 343.0	156	51.4	35	7914
	7.67	20.91	4.39	90.5, 294.4	157	59.8	34	7948
	7.72	21.00	4.40	46.2, 250.1	158	54.9	33	7981
	7.66	22.13	4.53	25.3, 229.2	159	51.3	34	8015
	7.45	21.61	4.25	16.1, 220.0	83	43.6	52	8067
	7.65	20.92	4.76	-14.3, 189.6	158	38.1	52	8119
	7.72	20.22	4.12	-40.4, 163.5	159	35.2	52	8171
	n/r, pumped prior to shutting off pump						36	8207

Table B-1.2-1 (continued)

Date	pH	Temp (°C)	DO% (DO mg/L)[c]	ORP, Eh[a] (mV)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Purge Volume between Samples (gal.)	Cumulative Purge Volume (gal.)
Aquifer Pumping Test Upper Screen								
2/10/10	n/r, pumping, mini-test preparation						100	8307
2/11/10	n/r, pumping, mini-test						168	8475
2/14/10 to 2/15/10	7.72	17.77	15.2 (9.84)	261.4, 465.3	158	24.0	128	8603
	7.37	22.46	16.6 (8.89)	247.7, 451.6	173	12.6	54	8657
	7.24	21.90	13.4 (9.07)	224.8, 428.7	172	15.6	34	8691
	7.96	19.06	13.2 (9.41)	213.4, 417.3	171	14.5	213	8904
	7.13	19.45	7.2 (9.41)	189.0, 392.9	169	12.2	23	8927
	7.62	19.53	21.5 (9.41)	177.8, 381.7	162	28.4	22	8949
	6.71	18.79	31.2 (9.61)	184.2, 388.1	164	29.1	23	8972
	7.59	20.80	22.9 (9.23)	160.5, 364.4	163	23.7	22	8994
	7.46	22.70	11.5 (8.88)	150.1, 348.6	167	20.6	21	9015
	7.36	22.80	11.0 (8.88)	145.1, 343.6	167	20.4	21	9036
	7.43	22.57	12.0 (8.88)	141.9, 340.4	169	20.1	21	9057
	7.15	23.61	13.4 (8.73)	165.6, 364.0	166	17.4	67	9124
	7.41	24.62	12.0 (8.57)	168.4, 366.9	166	16.2	22	9146
	7.49	21.62	18.4 (9.08)	177.1, 225.5	165	15.2	41	9187
	n/r, durations of pumping due to pump cavitation						62	9249

Table B-1.2-1 (continued)

Date	pH	Temp (°C)	DO% (DO mg/L)[c]	ORP, Eh[a] (mV)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Purge Volume between Samples (gal.)	Cumulative Purge Volume (gal.)
Aquifer Pumping Test Lower Screen								
2/17/10	n/r, pumping, mini-test preparation						520	9769
2/18/10	n/r, pumping, mini-test						1652	11421
2/20/10 to 2/21/10	7.80	21.06	96.93 (9.29)	131.1, 335.0	121	101.3	555	11976
	6.59	20.69	97.8 (9.47)	146.7, 350.2	162	0.3	553	12529
	7.58	21.60	100.6 (9.28)	125.9, 329.8	148	0.9	551	13080
	7.70	21.40	83.3 (9.28)	123.7, 327.6	148	1.0	550	13630
	7.71	21.38	80.4 (9.28)	124.9, 328.8	150	0.0	550	14180
	7.63	21.25	79.5 (9.28)	127.8, 331.7	149	1.2	550	14730
	7.71	20.96	79.9 (9.46)	125.5, 329.4	152	0.8	586	15316
	7.69	20.83	80.2 (9.45)	127.4, 331.3	149	1.3	513	15829
	7.71	21.25	95.6 (9.26)	126.4, 330.3	148	0.3	549	16378
	7.65	21.24	84.1 (9.26)	132.0, 335.9	148	0.0	551	16929
	7.77	21.83	88.7 (9.26)	127.3, 331.2	149	0.2	551	17480
	7.70	21.80	87.7 (9.25)	128.5, 332.4	149	0.3	551	18031
	7.83	20.26	97.6 (9.44)	142.3, 346.2	149	0.4	3866	21897
	7.71	21.19	99.1 (9.26)	131.4, 335.3	149	0.7	574	22471
	7.69	21.43	89.6 (9.26)	132.4, 336.3	149	0.1	533	23004
	7.72	21.41	88.2 (9.26)	131.7, 335.6	148	0.2	553	23557
	7.70	21.66	87.6 (9.26)	132.8, 336.7	148	0.1	1106	24663
	7.64	21.57	99.4 (9.26)	136.3, 340.2	148	0.2	1108	25771
	7.69	21.75	93.0 (9.26)	134.5, 338.4	148	0.0	1107	26878
	7.63	20.93	93.5 (9.44)	140.0, 343.9	147	0.3	1107	27985
	7.70	21.31	83.1 (9.26)	138.5, 342.4	148	0.0	1110	29095
	7.76	21.34	89.9 (9.26)	138.7, 342.6	148	0.0	2230	31325
	6.04	19.80	82.8 (9.65)	180.3, 384.2	179	0.3	3906	35231
	7.76	21.39	95.7 (9.28)	141.3, 345.2	147	0.7	558	35789
	7.76	20.20	89.6 (9.46)	145.2, 349.1	148	0.3	551	36340
	7.82	21.13	94.6 (9.28)	142.6, 346.5	147	0.3	558	36898
	n/r, pumped before shutting off pump						1087	37985

Table B-1.2-1 (continued)

Date	pH	Temp (°C)	DO% (DO mg/L)[c]	ORP, Eh[a] (mV)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Purge Volume between Samples (gal.)	Cumulative Purge Volume (gal.)
Redevelopment of Upper Screen								
2/23/10	n/r						2384	40369
2/24/10	n/r						2554	42923
2/25/10	n/r						3287	46210
2/26/10 and 2/27/10	6.86	20.31	52.6 (9.59)	156.1, 360.0	151	5.4	2305	48515
	7.79	20.92	45.6 (9.59)	135.8, 339.7	151	4.7	50	48565
	7.87	20.42	56.8 (9.59)	133.4, 337.3	150	4.7	68	48633
	7.89	20.19	40.1 (9.59)	127.7, 331.6	150	4.9	68	48701
	7.88	20.10	40.9 (9.59)	122.4, 326.3	148	4.7	68	48769
	8.00	19.03	37.3 (9.78)	114.9, 318.8	080	4.8	68	48837
	n/r						719	49556
	n/r						3350	52906

[a] Eh (mV) is calculated from a Ag/AgCl saturated KCl electrode filling solution at 20.0°C and 25.0°C by adding temperature-sensitive correction factors of 203.9 and 198.5 mV, respectively.

[b] n/r = Not recorded.

[c] DO percentages recorded during aquifer testing were converted to concentrations using the U.S. Geological Survey conversion table at http://water.usgs.gov/software/DOTABLES/, and historical barometric pressure data from the Laboratory's weather machine provided by Greg Stanton. It appears that the DO measurements are inaccurate because of a malfunctioning YSI multimeter. DO levels at R-54 will be further monitored during routine sampling events.