

Table 27. Summary of field measurement, nutrient, carbon, major ion, trace element, and biological component (table 3) data for the spring 2005 Boulder Creek, Colorado (BC) and Fourmile Creek, Iowa (FC) Lagrangian samplings. [Site identifier defined in table 2; U, upstream from wastewater treatment plant (WWTP); E, WWTP effluent; BC-D3.6, BC-D7.4, FC-D2.9, and FC-D8.4 are sites downstream from the WWTP indicating distance in kilometers; R, unfiltered; F, filtered; --, not determined; m³/s, cubic meter per second; mg/L, milligram per liter; Std units, standard pH units; μS/cm, microsiemen per centimeter; deg C, degree Celsius; NTU, nephelometric turbidity units; mg/L N, milligram per liter nitrogen; mg/L P, milligram per liter phosphorus; mg/L C, milligram per liter carbon; mg/L CaCO₃, milligram per liter as calcium carbonate; UV254, ultraviolet light absorbance at 254 nanometers; UV280, ultraviolet light absorbance at 280 nanometers; cm, centimeter; μg/L, microgram per liter; pla/100 mL, plaque forming units per 100 milliliters; col/100 mL, colonies per 100 milliliters; <, less than method detection limit; E, estimated value.]

Constituent	Unit	Boulder Creek					Fourmile Creek				
		BC-U	BC-E	BC-D3.6	BC-D7.4	Blank	FC-U	FC-E	FC-D2.9	FC-D8.4	Blank
Date		4/19/2005	4/19/2005	4/19/2005	4/19/2005	4/19/2005	3/8/2005	3/8/2005	3/8/2005	3/8/2005	03/08/05
Time		855	900	1145	1630	1430	740	745	1120	1540	1200
Field Measurements											
Discharge	m ³ /s	1.69	1.11	2.60	1.29	--	0.62	0.24	0.92	0.90	--
Dissolved oxygen R	mg/L	8.7	7.9	12.7	8.1	--	15.4	12.5	12.7	13.4	--
pH R field	Std unit	8.20	7.60	7.90	8.20	--	8.36	8.10	8.24	7.96	--
pH R lab	Std unit	7.80	7.50	7.60	7.80	7.20	7.99	7.59	7.88	7.99	E6.4
Specific conductance R field	uS/cm	310	830	500	490	--	840	850	890	870	--
Specific conductance R lab	uS/cm	290	790	480	440	5	800	980	850	830	5.42
Temperature air	deg C	13.5	13.5	23.1	20.8	--	--	--	2.5	--	--
Temperature water	deg C	11.9	15.3	14.7	16.5	--	0.7	2.7	3.9	6.0	--
Turbidity R	NTU	6.1	2.7	5.2	3.4	<2	2.9	<2	11.3	10.5	<2
Nutrients											
Ammonia F	mg/L N	<0.04	8.6	2.8	1.3	<0.04	<0.04	0.12	E0.031	E0.031	<0.04
Ammonia + organic nitrogen R	mg/L N	0.4	11	4.0	2.3	<0.1	0.44	1.5	0.72	0.61	<0.10
Ammonia + organic nitrogen F	mg/L N	0.2	10	4.1	2.2	<0.1	0.36	1.1	0.54	0.47	<0.10
Organic nitrogen F	mg/L N	--	1.4	1.3	0.9	--	--	1.0	--	--	--
Nitrate + nitrite F	mg/L N	<0.06	9.4	3.5	3.7	<0.06	17	11	15	15	<0.60
Nitrate F	mg/L N	<0.06	9.0	3.3	3.3	<0.06	17	11	15	15	--
Nitrite F	mg/L N	<0.008	0.35	0.23	0.33	<0.008	0.023	0.18	0.056	0.052	<0.008
Orthophosphate F	mg/L P	<0.006	3.4	1.2	0.92	<0.006	0.017	4.7	0.84	0.60	<0.006
Particulate nitrogen	mg/L N	0.20	0.48	0.22	0.14	0.03	0.086	0.52	0.33	0.23	<0.022
Phosphorus R	mg/L P	0.042	3.4	1.2	0.98	E0.002	0.035	5.1	1.0	0.68	<0.004
Phosphorus F	mg/L P	0.008	3.5	1.2	0.95	<0.004	0.025	4.9	1.0	0.63	<0.004
Carbon											
Absorbance UV254 F	cm	0.15	0.14	0.14	0.13	<0.004	0.062	0.11	0.070	0.068	<0.0035
Absorbance UV280 F	cm	0.11	0.11	0.11	0.098	<0.004	0.046	0.088	0.052	0.050	<0.0036
Bicarbonate, F	mg/L C	--	--	--	--	--	--	--	--	--	--
Carbonate, F	mg/L C	--	--	--	--	--	--	--	--	--	--
Organic carbon F	mg/L C	4.4	--	5.5	5.1	E0.2	3.2	6.0	3.1	2.7	0.64
Particulate carbon inorganic + organic	mg/L C	1.6	3.1	1.7	1.0	<0.1	0.61	2.3	2.5	1.6	0.14
Particulate carbon inorganic	mg/L C	<0.1	<0.1	<0.1	<0.1	<0.1	<0.12	<0.12	<0.12	<0.12	<0.12
Particulate carbon organic	mg/L C	1.6	3.0	1.7	1.0	<0.1	0.58	2.3	2.5	1.6	0.14
Major Ions											
Alkalinity F lab	mg/L CaCO ₃	69	140	91	92	2.0	280	180	270	280	<2
Alkalinity F, field	mg/L CaCO ₃	--	--	--	--	--	--	--	--	--	--
Calcium F	mg/L	24	56	38	38	0.04	110	110	110	110	0.051
Chloride F	mg/L	32	75	47	43	<0.2	49	120	64	59	E0.11
Fluoride F	mg/L	0.3	1.0	0.5	0.5	<0.1	0.37	1.3	0.57	0.47	<0.10
Magnesium F	mg/L	10	19	14	15	<0.008	33	32	32	33	<0.008
Potassium F	mg/L	1.9	13	5.9	5.0	<0.16	2.3	3.0	3.0	2.4	<0.16
Residue on evaporation F	mg/L	182	482	289	291	<10	470	590	510	510	<10
Silica F	mg/L	6.7	10	7.9	6.8	0.5	17	17	18	17	0.12
Sodium F	mg/L	22	70	39	37	E0.12	25	30	31	25	<0.20
Sulfate F	mg/L	28	110	59	65	<0.2	29	89	43	38	<0.18
Suspended sediment, R	mg/L	11	4.0	13	5.0	--	110	5.0	34	21	--
Trace Elements											
Arsenic F	μg/L	0.5	0.7	0.6	0.7	<0.2	1.4	0.82	0.93	1.3	<0.2
Boron F	μg/L	33	250	110	90	<8	42	310	91	75	E5.3
Iron F	μg/L	40	81	56	51	<6	6.4	10	10	8.9	E3.4

Constituent	Unit	BC-U	BC-E	BC-D3.6	BC-D7.4	Blank	FC-U	FC-E	FC-D2.9	FC-D8.4	Blank
Lithium F	µg/L	8.2	12	9.8	9.7	<0.6	10	15	11	11	<0.6
Selenium F	µg/L	<0.4	1.2	0.7	0.4	<0.4	4.1	2.4	3.3	3.5	<0.4
Strontium F	µg/L	250	450	320	360	<0.4	270	200	250	260	<0.4
Vanadium F	µg/L	0.80	0.80	1.1	1.3	0.70	2.7	1.0	2.2	2.4	E0.08
Biological Components											
Pheophytin <i>a</i>	µg/L	4.1	0.50	5.5	<0.1	--	1.6	0.63	2.2	2.4	<0.32
Chlorophyll <i>a</i>	µg/L	6.2	0.50	8.1	0.40	--	2.2	0.92	3.9	4.0	<0.32
Coliphage (<i>E. coli</i> CN-13 host)	pla/100mL	--	--	--	--	--	--	--	--	--	--
Coliphage (<i>E. coli</i> HS(pFamp)R host)	col/100mL	--	--	--	--	--	--	--	--	--	--
<i>E. coli</i>	col/100mL	26	6	31	99	--	25	250	320	43	--
Enterococci	col/100mL	37	3	14	13	--	33	1100	120	34	--