APPENDIX D

KEMPER COUNTY IGCC PROJECT MINE STUDY AREA SURFACE WATER QUALITY MEASUREMENTS

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Table 1. Summary of Surface Water Quality: Surfacewater

		SW-1				SW-2			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Flow	cfs	5	9.66	43.88	0.69	5	7.92	35.55	0.72
Field Conductivity	umhos/com	5	61.41	88.91	33.82	5	32.55	41.32	27.92
Field pH	s.u.	5	6.12	6.50	5.67	5	6.59	7.01	5.45
Field Temperature	°F	5	71.18	75.51	61.48	5	67.77	72.72	54.37
Field Dissolved Oxygen	mg/L	5	8.87	11.02	8.21	5	10.06	13.70	8.49
Field Turbidity	NTU	5	56.6	142.0	25.9	5	70.0	238.2	16.6
Cl	mg/L	5	0.052	0.090	0.020	5	0.05	0.13	0.00
Acidity (as CaCO3)	mg/L	5	14	35	7	5	9	17	5
Alkalinity (as CaCO3)	mg/L	5	20	34	5	5	7	14	3
Ammonia Nitrogen	mg/L	4	<0.18	0.38	<0.1	4	<0.12	0.170	<0.1
Bicarbonate (as CaCO3)	mg/L	4	20	32	12	4	12	15	6
BOD (5 day)	mg/L	4	<5.5	<6	<5	4	<5.5	<6	<5
Carbonate	mg/L	4	<2	<2	<2	4	<2	<2	<2
Chloride	mg/L	4	<1.59	2.03	<1.0	4	2.42	3.11	1.27
COD	mg/L	4	31	68	16	4	<30	60	<15
Color	mg/L	4	225.0	300.0	200.0	4	127	200	57
Conductivity	umhos/cm	5	60	88	32	5	35	41	26
Dissolved Al	mg/L	4	1.187	3.200	0.279	4	1.21	2.73	0.192
Dissolved As	mg/L	4	0.0024	0.0041	0.0015	4	<0.001	<0.001	<0.001
Dissolved Barium	mg/L	4	0.099	0.121	0.078	4	0.045	0.059	0.026
Dissolved Beryllium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Chromium	mg/L	4	<.0016	0.002	<0.001	4	<.002	0.002	<0.001
Dissolved Chromium Hexavalent	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Chromium Hexavalent	mg/L	1	<0.01	<0.01	<0.01	1	<0.01	<0.01	<0.01
Dissolved Cobalt	mg/L	4	0.002	0.003	0.001	4	<0.002	0.002	<0.001
Dissolved Cu	mg/L	4	<0.002	0.003	<0.001	4	<0.002	0.002	<0.001
Dissolved Fe	mg/L	5	4.73	5.88	3.23	5	3.170	8.470	0.540
Dissolved Pb	mg/L	4	<0.002	0.00174	<0.001	4	<0.005	<0.005	<0.001
Dissolved Mn	mg/L	5	0.590	1.540	0.012	5	0.124	0.214	0.037
Dissolved Hg	mg/L	4	<0.0002	<0.0002	<0.0002	4	<0.0002	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Nickel	mg/L	4	0.0021	0.0032	0.0013	4	<0.002	0.0024	<0.001
Dissolved Oxygen	mg/L	5	8.77	9.64	7.08	5	10.03	11.00	9.61
Dissolved Selenium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Silver	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Strontium	mg/L	4	0.070	0.103	0.034	4	0.024	0.033	0.014
Dissolved Zinc	mg/L	4	<0.008	0.013	<0.005	4	<0.007	0.012	<.005
Fecal Coliform	cfu/100mL	4	643	1900	70	4	597	1500	50
Fluoride (w/o distillation)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Hardness as CaCO3(SM-2340B)	mg/L	4	16.1	19.7	10.2	4	12.7	20.1	6.0
Nitrate (NO3-N)	mg/L	4	<0.121	0.182	<0.1	4	0.498	0.283	<0.1
Nitrite (NO2-N)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Odor	DTU	4	<1	<1	0	4	<1	<1	0
Oil and Grease	mg/L	4	<1.9	<2	<1.8	1	<2.1	2.4	<1.9

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-1				SW-2			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Organic N	mg/L	4	2.65	4.37	1.08	4	1.69	3.66	0.665
Ortho Phosphate	mg/L	4	<0.029	0.038	<0.025	4	<0.025	<0.025	<0.025
pH	s.u.	5	6.3	7.1	5.6	5	6.7	7.3	5.5
Phenols (Total)	mg/L	4	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05
Resistivity	ohm/cm	5	19420	31300	11400	5	28700	38500	24400
Silicon as SiO2	mg/L	4	15.3	24.7	5.4	4	15.5	17.3	13.9
TOC (Total Organic Carbon)	mg/L	5	9.3	15.2	6.5	5	6.43	14.6	3.97
Total Boron	mg/L	4	0.011	0.017	0.008	4	0.013	0.020	0.008
Total Calcium	mg/L	4	3.63	4.37	2.50	4	1.91	2.31	1.22
Total Coliform	cfu/100mL	4	12625	28000	400	4	15200	31200	450
Total Cyanide	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	5	81	106	51	5	50	80	25
Total Iron	mg/L	5	6.77	7.79	5.52	5	2.47	4.54	0.89
Total Kjeldahl Nitrogen	mg/L	4	2.78	4.51	1.46	4	1.75	3.66	0.76
Total Magnesium	mg/L	4	1.71	2.37	0.96	4	1.069	1.530	0.725
Total Manganese	mg/L	5	0.394	0.773	0.178	5	0.137	0.261	0.037
Total Phosphorus	mg/L	4	0.123	0.161	0.071	4	0.084	0.126	0.033
Total Potassium	mg/L	4	2.22	2.74	1.42	4	1.39	1.89	0.88
Total Settleable Solids	mL/L	4	<0.2	<0.2	<0.1	4	<0.3	0.4	<0.1
Total Sodium	mg/L	4	3.06	4.11	1.40	4	2.28	2.94	1.51
Total Sulfate (SO4)	mg/L	4	2.38	5.33	1.24	4	2.63	3.60	1.49
Total Suspended Solids	mg/L	5	38	108	9	5	<48	144	<2
Total Thallium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Tri-Valent Chromium	mg/L	4	0.002	0.002	<0.001	4	<0.003	0.004	<0.001
Tri-Valent Chromium Dissolved	mg/L	1	<0.00102	<0.00102	<0.00102	1	<0.00102	<0.00102	<0.00102
Turbidity	NTU	4	39	50	30	4	37	50	17
PCBs	mg/L	2	* <	* <	* <	2	* <	* <	* <
VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Semi-VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Pesticides	mg/L	2	* <	* <	* <	2	* <	* <	* <
Dioxin	mg/L	2	* <	* <	* <	2	* <	* <	* <
Total Arsenic	mg/L	1	0.003	0.003	0.003	1	<0.001	<0.001	<0.001
Total Chromium	mg/L	1	0.002	0.002	0.002	1	0.004	0.004	0.004
Total Mercury	mg/L	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-3				SW-4			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Flow	cfs	5	34.44	160.59	1.68	4	1.64	6.72	0.00
Field Conductivity	umhos/com	5	46.86	67.07	35.30	4	34.39	40.92	26.33
Field pH	s.u.	5	6.59	7.09	5.88	4	6.27	6.91	5.15
Field Temperature	°F	5	69.81	75.49	58.49	4	66.50	72.44	54.82
Field Dissolved Oxygen	mg/L	5	8.27	12.07	3.98	4	10.17	13.5	8.46
Field Turbidity	NTU	5	65.2	217.1	10.3	4	78.2	213.1	16.2
Cl	mg/L	5	0.05	0.16	0.00	4	0.07	0.10	0.02
Acidity (as CaCO3)	mg/L	5	9	20	4	4	10	15	6
Alkalinity (as CaCO3)	mg/L	5	11	16	4	4	7	14	2
Ammonia Nitrogen	mg/L	4	<0.110	0.110	<0.01	4	<0.1	<0.1	<0.1
Bicarbonate (as CaCO3)	mg/L	4	15	27	10	4	12	15	7
BOD (5 day)	mg/L	4	<5.5	<6	<5	4	<5.5	<6	<5
Carbonate	mg/L	4	<2	<2	<2	4	<2	<2	<2
Chloride	mg/L	4	2.40	2.62	2.00	4	2.19	2.89	1.04
COD	mg/L	4	<25	54	<15	4	<28	67	<15
Color	mg/L	4	125	200	0	4	115	200	80
Conductivity	umhos/cm	5	46	60	38	4	35	43	30
Dissolved Al	mg/L	4	0.748	2.080	0.218	4	0.823	2.03	0.189
Dissolved As	mg/L	4	<0.0011	0.0011	<0.001	4	<0.001	<0.001	<0.001
Dissolved Barium	mg/L	4	0.039	0.048	0.031	4	0.0457	0.0566	0.0395
Dissolved Beryllium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Chromium	mg/L	5	<0.002	0.003	<0.002	4	<0.002	0.0027	<0.001
Dissolved Chromium Hexavalent	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Chromium Hexavalent	mg/L	1	<0.01	<0.01	<0.01	1	<0.01	<0.01	<0.01
Dissolved Cobalt	mg/L	4	<0.002	0.002	<0.001	4	<0.0015	0.0026	<0.001
Dissolved Cu	mg/L	4	<0.002	0.002	<0.001	4	<0.002	<0.004	<0.001
Dissolved Fe	mg/L	5	1.88	2.66	0.557	4	2.07	2.27	1.67
Dissolved Pb	mg/L	4	<0.001	0.00115	<0.001	4	<0.002	<0.005	<0.001
Dissolved Mn	mg/L	5	0.172	0.276	0.071	4	0.079	0.154	0.041
Dissolved Hg	mg/L	4	<0.0002	<0.0002	<0.0002	4	<0.0002	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Nickel	mg/L	4	<0.002	0.0027	<0.001	4	0.0018	0.0027	0.0010
Dissolved Oxygen	mg/L	5	10.6	11.5	9.82	4	10.9	12.3	9.4
Dissolved Selenium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Silver	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Strontium	mg/L	4	0.032	0.037	0.025	4	0.034	0.038	0.028
Dissolved Zinc	mg/L	4	<0.01	0.018	<0.005	4	<0.010	0.013	<0.005
Fecal Coliform	cfu/100mL	4	643	2000	120	4	485	1300	90
Fluoride (w/o distillation)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Hardness as CaCO3(SM-2340B)	mg/L	4	12.1	14.8	9.2	4	10.10	11.60	9.02
Nitrate (NO3-N)	mg/L	4	<0.123	0.193	<0.1	4	<0.2	0.237	<0.1
Nitrite (NO2-N)	mg/L	4	<0.1	<0.1	0	4	<0.1	<0.1	<0.1
Odor	DTU	4	<1	<1	<1	4	<1	<1	0
Oil and Grease	mg/L	4	<1.5	<2.1	<0.2	1	<1.9	<2	<1.8

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-3				SW-4			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Organic N	mg/L	4	1.91	3.24	0.76	4	0.84	1.21	0.64
Ortho Phosphate	mg/L	4	<0.035	0.063	<0.025	4	<0.029	0.029	<0.025
pH	s.u.	5	6.5	7.3	6.0	4	6.4	7.0	5.8
Phenols (Total)	mg/L	4	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05
Resistivity	ohm/cm	5	22240	26300	16700	4	29375	33300	23300
Silicon as SiO2	mg/L	4	13.1	15.2	10.9	4	16.1	18.2	14.5
TOC (Total Organic Carbon)	mg/L	5	6.02	10.70	3.56	4	8.28	15.00	5.29
Total Boron	mg/L	4	0.011	0.014	0.009	4	0.0126	0.0197	0.0085
Total Calcium	mg/L	4	2.53	3.10	2.06	4	1.96	1.99	1.92
Total Coliform	cfu/100mL	4	6080	16800	320	4	11800	25000	700
Total Cyanide	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	5	61	80	29	4	52	67	32
Total Iron	mg/L	5	3.59	5.91	2.37	4	3.56	5.12	2.94
Total Kjeldahl Nitrogen	mg/L	4	1.96	3.24	0.858	4	1.21	2.14	0.715
Total Magnesium	mg/L	4	1.41	1.85	0.976	4	1.26	1.62	0.986
Total Manganese	mg/L	5	0.227	0.466	0.084	4	0.094	0.195	0.045
Total Phosphorus	mg/L	4	0.216	0.557	0.071	4	<0.15	0.420	<0.025
Total Potassium	mg/L	4	1.79	2.52	1.38	4	1.58	2.06	1.23
Total Settleable Solids	mL/L	4	<0.15	<0.2	<0.1	4	<0.3	0.6	<0.1
Total Sodium	mg/L	4	2.45	2.88	1.94	4	2.14	2.55	1.25
Total Sulfate (SO4)	mg/L	4	<2.75	4.92	<1	4	3.17	4.00	2.68
Total Suspended Solids	mg/L	5	50	222	5	4	58	188	10
Total Thallium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Tri-Valent Chromium	mg/L	4	<0.003	0.004	<0.001	4	0.0021	0.0027	0.0011
Tri-Valent Chromium Dissolved	mg/L	1	<0.00102	<0.00102	<0.00102	1	<0.00102	<0.00102	<0.00102
Turbidity	NTU	4	35	80	20	4	30	60	10
PCBs	mg/L	2	* <	* <	* <	2	* <	* <	* <
VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Semi-VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Pesticides	mg/L	2	* <	* <	* <	2	* <	* <	* <
Dioxin	mg/L	2	* <	* <	* <	2	* <	* <	* <
Total Arsenic	mg/L	1	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001
Total Chromium	mg/L	1	0.004	0.004	0.004	1	0.003	0.003	0.003
Total Mercury	mg/L	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-5				SW-6			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Flow	cfs	3	3.39	16.50	0.00	2	0.57	2.38	0.00
Field Conductivity	umhos/com	3	37.76	44.97	26.37	2	48.56	52.51	44.68
Field pH	s.u.	3	6.33	6.88	5.65	2	6.01	6.05	5.97
Field Temperature	°F	3	65.53	72.04	55.42	2	73.21	74.23	72.18
Field Dissolved Oxygen	mg/L	3	10.33	13.25	8.57	2	8.14	8.26	8.02
Field Turbidity	NTU	3	90.0	217.6	25.8	2	97.8	175.2	20.3
Cl	mg/L	3	0.23	0.60	0.03	1	0.04	0.04	0.04
Acidity (as CaCO3)	mg/L	3	12	22	6	2	8	8	8
Alkalinity (as CaCO3)	mg/L	3	8	11	3	2	11	11	11
Ammonia Nitrogen	mg/L	3	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1
Bicarbonate (as CaCO3)	mg/L	3	10	11	10	2	14	17	10
BOD (5 day)	mg/L	3	<5.5	<6	<5	2	<5.5	<6	<5
Carbonate	mg/L	3	<2	<2	<2	2	<2	<2	<2
Chloride	mg/L	3	<2.0	2.73	<1.0	2	2.94	4.03	1.84
COD	mg/L	3	<29	51.0	<15	2	39	49	28
Color	mg/L	3	167	200	100	2	250	300	200
Conductivity	umhos/cm	3	34	39	26	2	43	43	42
Dissolved Al	mg/L	3	1.321	3.24	0.208	2	0.683	0.774	0.592
Dissolved As	mg/L	3	<0.001	<0.001	<0.001	2	0.0018	0.0024	0.0013
Dissolved Barium	mg/L	3	0.0355	0.0398	0.0328	2	0.026	0.035	0.017
Dissolved Beryllium	mg/L	3	<0.001	<0.001	<0.001	2	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	3	<0.001	<0.001	<0.001	2	<0.001	<0.001	<0.001
Dissolved Chromium	mg/L	3	<0.0025	0.0030	<0.001	2	<0.0017	0.0025	<0.001
Dissolved Chromium Hexavalent	mg/L	3	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01
Chromium Hexavalent	mg/L	1	<0.01	<0.01	<0.01	0	NT	NT	NT
Dissolved Cobalt	mg/L	3	<0.0015	0.0018	<0.001	2	<0.002	0.0028	<0.001
Dissolved Cu	mg/L	3	<0.0025	0.0031	<0.001	2	<0.003	<0.004	0.002
Dissolved Fe	mg/L	3	2.67	3.86	1.90	2	2.67	4.61	0.725
Dissolved Pb	mg/L	3	<0.0025	<0.005	<0.001	2	<0.003	<0.005	<0.001
Dissolved Mn	mg/L	3	0.068	0.094	0.034	2	0.225	0.440	0.0106
Dissolved Hg	mg/L	3	<0.0002	<0.0002	<0.0002	2	<0.0002	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	3	<0.0011	0.0013	<0.001	2	<0.0012	0.0013	<0.001
Dissolved Nickel	mg/L	3	0.0027	0.0037	0.002	2	0.00132	0.00134	0.00130
Dissolved Oxygen	mg/L	3	10.6	10.9	10.3	2	10.4	11.8	9.980
Dissolved Selenium	mg/L	3	<0.001	<0.001	<0.001	2	<0.001	<0.001	<0.001
Dissolved Silver	mg/L	3	<0.001	<0.001	<0.001	2	<0.001	<0.001	<0.001
Dissolved Strontium	mg/L	3	0.027	0.032	0.021	2	0.0160	0.0165	0.0155
Dissolved Zinc	mg/L	3	<0.010	0.012	<0.005	2	<0.008	0.011	<0.005
Fecal Coliform	cfu/100mL	3	553	1300	40	2	1765	2600	930
Fluoride (w/o distillation)	mg/L	3	<0.1	<0.1	<0.1	2	<0.1	<0.1	<0.1
Hardness as CaCO3(SM-2340B)	mg/L	3	12.3	14.6	9.4	2	14.0	14.0	13.9
Nitrate (NO3-N)	mg/L	3	<0.125	0.175	<0.1	2	<0.1	<0.1	<0.1
Nitrite (NO2-N)	mg/L	3	<0.1	<0.1	0.000	2	<0.1	<0.1	<0.1
Odor	DTU	3	<1	<1	<1	2	2	1	0
Oil and Grease	mg/L	3	<2.5	4.1	<1.8	2	<1.85	<1.9	<1.8

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-5				SW-6			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Organic N	mg/L	3	2.66	4.11	1.10	2	3.14	3.43	2.84
Ortho Phosphate	mg/L	3	<0.025	<0.025	<0.025	2	<0.25	0.512	<0.025
pH	s.u.	3	5.7	6.0	5.4	2	6.7	6.9	6.5
Phenols (Total)	mg/L	3	<0.05	<0.05	<0.05	2	<0.05	<0.05	<0.05
Resistivity	ohm/cm	3	30367	38500	25600	2	23550	23800	23300
Silicon as SiO2	mg/L	3	16.3	19.0	13.8	2	5.35	7.18	3.52
TOC (Total Organic Carbon)	mg/L	3	7.22	11.2	4.77	2	13.3	13.5	13.1
Total Boron	mg/L	3	0.0142	0.0179	0.0121	2	0.015	0.0184	0.0116
Total Calcium	mg/L	3	2.15	2.38	1.79	2	3.34	3.61	3.06
Total Coliform	cfu/100mL	3	6967	17600	500	2	16700	30000	3400
Total Cyanide	mg/L	3	<0.01	<0.01	<0.01	2	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	3	54	72	45	2	74.5	81	68
Total Iron	mg/L	3	5.16	6.72	3.43	2	3.59	6.02	1.16
Total Kjeldahl Nitrogen	mg/L	3	2.66	4.11	1.10	2	3.14	3.43	2.84
Total Magnesium	mg/L	3	1.68	2.10	1.20	2	1.38	1.55	1.20
Total Manganese	mg/L	3	0.093	0.138	0.045	2	0.254	0.481	0.028
Total Phosphorus	mg/L	3	0.055	0.074	0.042	2	1.130	1.990	0.269
Total Potassium	mg/L	3	1.52	1.87	1.22	2	3.69	4.29	3.09
Total Settleable Solids	mL/L	3	<0.2	<0.2	<0.1	2	<0.15	0.200	<0.1
Total Sodium	mg/L	3	2.19	2.89	1.20	2	1.94	2.70	1.17
Total Sulfate (SO4)	mg/L	3	3.08	4.19	2.45	2	2.18	2.18	2.17
Total Suspended Solids	mg/L	3	91	258	6	2	80	100	60
Total Thallium	mg/L	3	<0.001	<0.001	<0.001	2	<0.001	<0.001	<0.001
Tri-Valent Chromium	mg/L	3	0.0030	0.0031	0.0028	2	<0.002	0.00251	0.001
Tri-Valent Chromium Dissolved	mg/L	1	<0.00102	<0.00102	<0.00102	0	NT	NT	NT
Turbidity	NTU	3	34	60	20	2	55	100	10
PCBs	mg/L	2	* <	* <	* <	1	* <	* <	* <
VOCs	mg/L	2	* <	* <	* <	1	* <	* <	* <
Semi-VOCs	mg/L	2	* <	* <	* <	1	* <	* <	* <
Pesticides	mg/L	2	* <	* <	* <	1	* <	* <	* <
Dioxin	mg/L	2	* <	* <	* <	1	* <	* <	* <
Total Arsenic	mg/L	1	0.0014	0.0014	0.0014	0	NT	NT	NT
Total Chromium	mg/L	1	0.003	0.003	0.003	0	NT	NT	NT
Total Mercury	mg/L	1	<0.0002	<0.0002	<0.0002	0	NT	NT	NT

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-7				SW-8			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Flow	cfs	5	1.96	2.56	1.41	5	1.10	4.65	0.00
Field Conductivity	umhos/com	5	54.78	72.86	41.80	5	89.62	160.4	33.33
Field pH	s.u.	5	6.60	6.99	6.05	5	6.19	6.86	5.68
Field Temperature	°F	5	74.29	80.80	61.69	5	75.39	88.96	68.49
Field Dissolved Oxygen	mg/L	5	8.21	10.95	6.98	5	8.11	9.53	5.86
Field Turbidity	NTU	5	55.7	136.7	24.1	5	142.8	268	61.3
Cl	mg/L	5	0.02	0.06	0.00	5	0.02	0.04	0.00
Acidity (as CaCO3)	mg/L	5	8	15	4	5	15	21	10
Alkalinity (as CaCO3)	mg/L	5	12	16	5	5	28	54	6
Ammonia Nitrogen	mg/L	4	<0.125	0.180	<0.1	4	<0.23	0.560	<0.1
Bicarbonate (as CaCO3)	mg/L	4	16	22	10	4	40	99	15
BOD (5 day)	mg/L	4	<5.5	<6	<5	4	<5.5	<6	<5
Carbonate	mg/L	4	<2	<2	<2	4	<3	6	<2
Chloride	mg/L	4	2.99	3.34	2.74	4	2.11	2.48	1.40
COD	mg/L	4	<25	55.0	<15	4	35	58	22
Color	mg/L	4	125	200	100	4	200	300	100
Conductivity	umhos/cm	5	52	68	39	5	153	493	29
Dissolved Al	mg/L	4	0.835	2.300	0.258	4	0.842	1.81	0.273
Dissolved As	mg/L	4	<0.0012	0.0015	<0.001	4	0.0022	0.0038	0.0012
Dissolved Barium	mg/L	4	0.048	0.052	0.044	4	0.070	0.115	0.040
Dissolved Beryllium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Chromium	mg/L	4	<0.0015	0.0024	<0.001	4	<0.0015	0.0023	<0.001
Dissolved Chromium Hexavalent	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Chromium Hexavalent	mg/L	1	<0.01	<0.01	<0.01	1	<0.01	<0.01	<0.01
Dissolved Cobalt	mg/L	4	<0.0014	0.0020	<0.001	4	0.0037	0.0067	0.0017
Dissolved Cu	mg/L	4	<0.002	<0.004	<0.001	4	<0.003	0.0054	<0.001
Dissolved Fe	mg/L	5	<2.28	3.40	<0.25	5	5.05	9.56	1.21
Dissolved Pb	mg/L	4	<0.004	0.00121	<0.001	4	<0.002	<0.005	<0.001
Dissolved Mn	mg/L	4	0.702	2.360	0.188	5	1.13	1.97	0.201
Dissolved Hg	mg/L	4	<0.0002	<0.0002	<0.0002	4	<0.0002	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Nickel	mg/L	4	<0.0023	0.0045	<0.001	4	0.0022	0.0039	0.001
Dissolved Oxygen	mg/L	5	9.8	11.1	8.85	5	9.6	10.3	9.04
Dissolved Selenium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Silver	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Strontium	mg/L	4	0.0485	0.0633	0.0297	4	0.061	0.102	0.012
Dissolved Zinc	mg/L	4	<0.009	0.016	<0.005	4	0.0206	0.0487	<0.005
Fecal Coliform	cfu/100mL	4	425	1200	40	4	73	170	10
Fluoride (w/o distillation)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Hardness as CaCO3(SM-2340B)	mg/L	4	15.1	19.5	11.3	4	22.2	30.4	9.6
Nitrate (NO3-N)	mg/L	4	<0.17	0.361	<0.1	4	<0.1	<0.1	<0.1
Nitrite (NO2-N)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Odor	DTU	4	<1	<1	0.000	4	1	2	0
Oil and Grease	mg/L	3	<1.8	<1.9	<1.6	4	<1.8	<1.9	<1.7

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-7				SW-8			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Organic N	mg/L	4	3.07	5.18	1.06	4	2.18	3.58	0.97
Ortho Phosphate	mg/L	4	<0.030	0.044	<0.025	4	<0.10	0.361	<0.025
pH	s.u.	5	6.3	7.0	5.5	5	5.7	6.1	5.5
Phenols (Total)	mg/L	4	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05
Resistivity	ohm/cm	5	16316	25600	1980	5	15824	34500	2030
Silicon as SiO2	mg/L	4	12.87	14.7	9.58	4	13.1	14.9	9.77
TOC (Total Organic Carbon)	mg/L	5	6.60	12.3	2.76	5	8.02	9.97	5.94
Total Boron	mg/L	4	0.0161	0.0257	0.0109	4	0.0132	0.0179	0.0099
Total Calcium	mg/L	4	3.42	4.77	2.69	4	4.61	6.68	1.97
Total Coliform	cfu/100mL	4	28825	96000	900	4	8575	18400	600
Total Cyanide	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	5	119	325	44	5	80	119	49
Total Iron	mg/L	5	3.55	4.62	2.08	5	10.6	18.8	6.74
Total Kjeldahl Nitrogen	mg/L	4	3.15	5.18	1.18	4	2.39	4.14	1.09
Total Magnesium	mg/L	4	1.60	2.01	1.11	4	2.60	3.33	1.15
Total Manganese	mg/L	5	0.861	3.09	0.194	5	1.498	2.620	0.246
Total Phosphorus	mg/L	4	0.112	0.138	0.071	4	<0.05	0.073	<0.025
Total Potassium	mg/L	4	2.07	2.47	1.73	4	2.05	2.61	1.47
Total Settleable Solids	mL/L	4	<0.3	0.600	<0.1	4	<0.3	0.8	<0.1
Total Sodium	mg/L	4	2.97	3.27	2.27	4	2.70	3.35	1.78
Total Sulfate (SO4)	mg/L	4	2.67	3.91	1.96	4	2.21	4.06	1.33
Total Suspended Solids	mg/L	5	52	134	8	5	77	222	36
Total Thallium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Tri-Valent Chromium	mg/L	4	<0.0017	0.0024	<0.001	4	<0.002	0.0031	<0.001
Tri-Valent Chromium Dissolved	mg/L	1	<0.00102	<0.00102	<0.00102	1	<0.00102	<0.00102	<0.00102
Turbidity	NTU	4	33	40	20	4	49	60	40
PCBs	mg/L	2	* <	* <	* <	2	* <	* <	* <
VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Semi-VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Pesticides	mg/L	2	* <	* <	* <	2	* <	* <	* <
Dioxin	mg/L	2	* <	* <	* <	2	* <	* <	* <
Total Arsenic	mg/L	1	0.00115	0.00115	0.00115	1	0.00261	0.00261	0.00261
Total Chromium	mg/L	1	0.002	0.002	0.002	1	0.003	0.003	0.003
Total Mercury	mg/L	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-9				SW-10			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Flow	cfs	5	20.53	102.31	0.00	8	125.77	532.38	0.80
Field Conductivity	umhos/com	5	61.51	93.91	32.71	6	65.93	90.10	38.60
Field pH	s.u.	5	6.63	7.01	6.04	6	6.84	7.23	5.9
Field Temperature	°F	5	73.77	83.41	63.05	6	72.37	82.78	60.59
Field Dissolved Oxygen	mg/L	5	8.63	10.57	6.50	6	8.62	11.33	6.48
Field Turbidity	NTU	5	78.9	252.9	23.2	6	35.3	111.2	4.0
Cl	mg/L	5	0.04	0.11	0.00	5	0.05	0.12	0.01
Acidity (as CaCO3)	mg/L	5	9	14	4	5	8	15	4
Alkalinity (as CaCO3)	mg/L	5	21	36	5	5	17	29	6
Ammonia Nitrogen	mg/L	4	<0.12	0.18	<0.1	4	<0.18	0.43	<0.1
Bicarbonate (as CaCO3)	mg/L	4	19	32	10	4	14	18	10
BOD (5 day)	mg/L	4	<5.5	<6	<5	4	<5.5	<6	<5
Carbonate	mg/L	4	<2	<2	<2	4	<2	<2	<2
Chloride	mg/L	4	2.23	3.06	1.13	5	3.016	3.7	1.790
COD	mg/L	4	<24	50	<15	4	<25	53	<1
Color	mg/L	4	150	200	100	5	100	200	20
Conductivity	umhos/cm	5	62	97	32	5	63	95	35
Dissolved Al	mg/L	4	0.719	2.17	0.152	4	0.677	2.01	0.105
Dissolved As	mg/L	4	<0.002	0.0050	<0.001	4	<0.001	0.0011	<0.001
Dissolved Barium	mg/L	4	0.046	0.060	0.036	4	0.0459	0.0470	0.0439
Dissolved Beryllium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Chromium	mg/L	4	<0.0013	0.0020	<0.001	4	<0.0011	0.0017	<0.001
Dissolved Chromium Hexavalent	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Chromium Hexavalent	mg/L	1	<0.01	<0.01	<0.01	1	<0.01	<0.01	<0.01
Dissolved Cobalt	mg/L	4	<0.0016	0.0027	<0.001	4	<0.0011	0.0016	<0.001
Dissolved Cu	mg/L	4	<0.0015	0.0028	<0.001	4	<0.0014	0.0027	<0.001
Dissolved Fe	mg/L	5	2.80	4.89	1.64	6	1.82	2.91	0.78
Dissolved Pb	mg/L	4	<0.0011	0.0012	<0.001	4	<0.001	0.00106	<0.001
Dissolved Mn	mg/L	5	0.208	0.600	0.026	6	0.198	0.283	0.095
Dissolved Hg	mg/L	4	<0.0002	<0.0002	<0.0002	4	<0.0002	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	4	<0.0011	0.0013	<0.001	4	<0.001	<0.001	<0.001
Dissolved Nickel	mg/L	4	0.0017	0.0024	0.001	4	0.0018	0.0031	0.001
Dissolved Oxygen	mg/L	5	10.6	12.1	9.49	6	9.8	11.2	6.5
Dissolved Selenium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Silver	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Strontium	mg/L	4	0.0448	0.0625	0.0238	4	0.064	0.106	0.031
Dissolved Zinc	mg/L	4	<0.0104	0.0152	<0.005	4	<0.010	0.0133	<0.005
Fecal Coliform	cfu/100mL	4	378	1100	60	4	325	1040	30
Fluoride (w/o distillation)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Hardness as CaCO3(SM-2340B)	mg/L	4	17.4	23.3	10.8	5	17.3	19.6	10.1
Nitrate (NO3-N)	mg/L	4	<0.112	0.176	<0.1	5	<0.1	0.120	<0.1
Nitrite (NO2-N)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Odor	DTU	4	<1	2	0	4	<1	<1	0
Oil and Grease	mg/L	4	<1.8	<2	<1.7	4	<1.8	<1.9	<1.7

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-9				SW-10			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Organic N	mg/L	4	2.47	5.73	0.994	4	3.08	6.28	0.578
Ortho Phosphate	mg/L	4	<0.101	0.329	<0.025	4	<0.034	0.054	<0.025
pH	s.u.	5	6.5	7.2	6.0	5	6.5	7.1	6.1
Phenols (Total)	mg/L	4	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05
Resistivity	ohm/cm	5	18660	31300	10300	5	17720	28600	10500
Silicon as SiO2	mg/L	4	13.6	17.6	7.21	4	17.0	22.5	13.0
TOC (Total Organic Carbon)	mg/L	4	7.76	12.90	4.54	6	6.56	13.9	3.8
Total Boron	mg/L	4	0.0137	0.0171	0.0104	4	0.013	0.019	0.010
Total Calcium	mg/L	4	3.69	5.61	2.32	5	3.63	4.30	2.33
Total Coliform	cfu/100mL	4	13763	50000	250	4	6720	16000	200
Total Cyanide	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	5	68	97	23	6	70	84	50
Total Iron	mg/L	5	5.24	7.29	3.70	5	3.22	3.70	2.76
Total Kjeldahl Nitrogen	mg/L	4	2.51	5.73	0.994	4	3.19	6.28	0.578
Total Magnesium	mg/L	4	1.99	2.55	1.22	5	2.01	2.41	1.04
Total Manganese	mg/L	5	0.675	2.27	0.126	5	0.265	0.423	0.101
Total Phosphorus	mg/L	4	0.093	0.158	0.068	4	0.100	0.146	0.059
Total Potassium	mg/L	4	2.33	3.33	1.49	5	2.06	2.36	1.41
Total Settleable Solids	mL/L	4	<0.17	<0.2	<0.1	4	<0.2	<0.2	<0.1
Total Sodium	mg/L	4	2.26	3.17	1.30	5	3.62	5.17	1.98
Total Sulfate (SO4)	mg/L	4	4.74	8.29	2.54	5	4.79	11.40	2.70
Total Suspended Solids	mg/L	5	42	120	3	6	42	100	3
Total Thallium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Tri-Valent Chromium	mg/L	4	<0.0015	0.0020	<0.001	4	<0.0014	0.0017	<0.001
Tri-Valent Chromium Dissolved	mg/L	1	<0.00102	<0.00102	<0.00102	1	<0.00102	<0.00102	<0.00102
Turbidity	NTU	4	23	30	20	4	23	30	10
PCBs	mg/L	2	* <	* <	* <	2	* <	* <	* <
VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Semi-VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Pesticides	mg/L	2	* <	* <	* <	2	* <	* <	* <
Dioxin	mg/L	2	* <	* <	* <	2	* <	* <	* <
Total Arsenic	mg/L	1	0.00119	0.00119	0.00119	1	<0.001	<0.001	<0.001
Total Chromium	mg/L	1	0.002	0.002	0.002	1	0.002	0.002	0.002
Total Mercury	mg/L	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-11				SW-12			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Flow	cfs	7	54.26	210.37	0.46	6	116.26	376.95	5.03
Field Conductivity	umhos/com	6	45.51	54.42	36.69	5	51.38	64.31	37.56
Field pH	s.u.	6	6.78	7.21	5.89	5	6.63	7.21	5.93
Field Temperature	°F	6	70.04	77.83	55.45	5	69.90	76.9	57.09
Field Dissolved Oxygen	mg/L	6	9.51	13.25	7.60	5	9.70	12.59	7.81
Field Turbidity	NTU	6	52.7	173.3	9	5	56.8	179.9	14.0
Cl	mg/L	5	0.05	0.19	0.01	5	0.03	0.06	0.01
Acidity (as CaCO3)	mg/L	5	7	17	3	5	7	13	4
Alkalinity (as CaCO3)	mg/L	5	11	14	4	5	11	18	5
Ammonia Nitrogen	mg/L	3	<0.1	<0.1	<0.1	3	<0.12	0.170	<0.1
Bicarbonate (as CaCO3)	mg/L	4	12	15	7	4	17	27	10
BOD (5 day)	mg/L	4	<5.5	<6	<5	4	<5.5	<6	<5
Carbonate	mg/L	4	<2	<2	<2	4	<2	<2	<2
Chloride	mg/L	5	2.69	3.81	1.71	4	2.46	2.95	1.50
COD	mg/L	4	22	38	<15	4	<25	47	<15
Color	mg/L	5	71	100	<1	4	123	200	90
Conductivity	umhos/cm	5	45	54	35	5	51	71	36
Dissolved Al	mg/L	4	0.716	2.090	0.116	4	0.691	2.050	0.128
Dissolved As	mg/L	4	<0.001	0.0012	<0.001	4	<0.0011	0.0013	<0.001
Dissolved Barium	mg/L	4	0.0391	0.0438	0.0316	4	0.0408	0.0449	0.0360
Dissolved Beryllium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Chromium	mg/L	4	<0.0012	0.0019	<0.001	4	<0.0012	0.0018	<0.001
Dissolved Chromium Hexavalent	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Chromium Hexavalent	mg/L	1	<0.01	<0.01	<0.01	1	<0.01	<0.01	<0.01
Dissolved Cobalt	mg/L	4	<0.0012	0.0017	<0.001	4	<0.0014	0.0024	<0.01
Dissolved Cu	mg/L	4	<0.0012	0.0020	<0.001	4	<0.0014	0.0024	<0.01
Dissolved Fe	mg/L	6	1.72	2.37	0.54	5	2.15	2.68	0.634
Dissolved Pb	mg/L	4	<0.001	0.00104	<0.001	4	<0.0011	0.00118	<0.001
Dissolved Mn	mg/L	6	0.124	0.278	0.029	5	0.164	0.331	0.060
Dissolved Hg	mg/L	4	<0.0002	<0.0002	<0.0002	4	<0.0002	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	4	<0.0013	0.002	<0.001	4	<0.001	<0.001	<0.001
Dissolved Nickel	mg/L	4	<0.0017	0.0029	<0.001	4	0.0020	0.0029	0.001
Dissolved Oxygen	mg/L	5	9.73	10.4	9.25	5	10.15	11.40	9.64
Dissolved Selenium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Silver	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Strontium	mg/L	4	0.0315	0.0370	0.0237	4	0.0376	0.0469	0.0256
Dissolved Zinc	mg/L	4	<0.007	0.0123	<0.005	4	<0.009	0.0115	<0.005
Fecal Coliform	cfu/100mL	4	340	630	90	4	258	720	90
Fluoride (w/o distillation)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Hardness as CaCO3(SM-2340B)	mg/L	5	12.6	14.6	10.6	4	14.0	16.1	10.4
Nitrate (NO3-N)	mg/L	5	<0.15	0.291	<0.1	4	<0.122	0.188	<0.1
Nitrite (NO2-N)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Odor	DTU	4	<1	<1	0	4	<1	<1	0
Oil and Grease	mg/L	4	<1.9	2.6	<1.7	4	<2	2.4	<1.7

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-11				SW-12			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Organic N	mg/L	4	1.81	2.59	1.11	4	4.61	14.0	0.92
Ortho Phosphate	mg/L	4	<0.03	0.044	<0.025	4	<0.03	0.049	<0.025
pH	s.u.	5	6.3	7.1	5.9	5	6.5	7.2	6.0
Phenols (Total)	mg/L	4	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05
Resistivity	ohm/cm	5	22660	28600	18500	5	20880	27800	14100
Silicon as SiO2	mg/L	4	15.2	17.6	12.7	4	16.2	17.4	14.8
TOC (Total Organic Carbon)	mg/L	6	5.21	8.85	3.7	5	6.30	11.2	3.82
Total Boron	mg/L	4	0.0101	0.0141	0.0087	4	0.0102	0.0147	0.0083
Total Calcium	mg/L	5	2.60	2.99	2.30	4	2.84	3.12	2.22
Total Coliform	cfu/100mL	4	7225	15000	300	4	5500	15000	200
Total Cyanide	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	6	59	71	48	5	58	70	41
Total Iron	mg/L	5	3.78	5.20	2.61	5	3.89	6.67	2.96
Total Kjeldahl Nitrogen	mg/L	4	1.81	2.59	1.11	4	4.68	14.0	1.09
Total Magnesium	mg/L	5	1.54	1.85	1.12	4	1.68	2.06	1.18
Total Manganese	mg/L	5	0.196	0.370	0.072	5	0.218	0.438	0.075
Total Phosphorus	mg/L	4	0.091	0.105	0.079	4	<0.076	0.131	<0.025
Total Potassium	mg/L	5	1.77	2.28	1.3	4	1.96	2.28	1.39
Total Settleable Solids	mL/L	4	<0.2	<0.2	<0.1	4	<0.33	0.8	<0.1
Total Sodium	mg/L	5	2.18	2.58	1.61	4	2.43	2.82	1.72
Total Sulfate (SO4)	mg/L	5	2.88	4.68	1.7	4	3.70	4.74	2.54
Total Suspended Solids	mg/L	6	35	128	<2	5	37	150	5
Total Thallium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Tri-Valent Chromium	mg/L	4	<0.0012	0.0019	<0.001	4	<0.0012	0.0018	<0.001
Tri-Valent Chromium Dissolved	mg/L	1	<0.00102	<0.00102	<0.00102	1	<0.00102	<0.00102	<0.00102
Turbidity	NTU	4	28	40	10	4	20	30	10
PCBs	mg/L	2	* <	* <	* <	2	* <	* <	* <
VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Semi-VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Pesticides	mg/L	2	* <	* <	* <	2	* <	* <	* <
Dioxin	mg/L	2	* <	* <	* <	2	* <	* <	* <
Total Arsenic	mg/L	1	<0.001	<0.001	<0.001	1	0.00154	0.00154	0.00154
Total Chromium	mg/L	1	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001
Total Mercury	mg/L	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-13				SW-14			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Flow	cfs	5	34.25	169.78	0	5	43.350	215.849	0.904
Field Conductivity	umhos/com	5	62.60	75.59	29.36	5	56.50	71.15	30.14
Field pH	s.u.	5	6.36	7.07	5.63	5	6.48	6.96	5.59
Field Temperature	°F	5	70.69	76.13	57.41	5	70.95	79.17	58.10
Field Dissolved Oxygen	mg/L	5	9.22	12.48	7.97	5	9.06	12.18	7.37
Field Turbidity	NTU	5	48.1	112.8	21.6	5	36.6	85.3	17.6
Cl	mg/L	5	0.03	0.04	0.01	5	0.08	0.15	0.02
Acidity (as CaCO3)	mg/L	5	8	15	3	5	8	14	5
Alkalinity (as CaCO3)	mg/L	5	16	21	6	5	16	22	5
Ammonia Nitrogen	mg/L	4	<0.133	0.220	<0.1	4	<0.11	0.15	<0.1
Bicarbonate (as CaCO3)	mg/L	4	20	27	12	4	22	32	12
BOD (5 day)	mg/L	4	<5.5	<6	<5	4	<5.5	<6	<5
Carbonate	mg/L	4	<2	<2	<2	4	<2	<2	<2
Chloride	mg/L	4	3.12	4.63	1.65	4	2.42	3.47	1.13
COD	mg/L	4	<38	56	<15	4	26	49	<15
Color	mg/L	4	200	200	200	4	175	200	100
Conductivity	umhos/cm	5	59	79	28	5	53	66	30
Dissolved Al	mg/L	4	1.066	2.420	0.185	4	0.773	2.32	0.136
Dissolved As	mg/L	4	<0.0025	0.0051	<0.001	4	<0.0016	0.0021	<0.001
Dissolved Barium	mg/L	4	0.0402	0.0520	0.0221	4	0.0466	0.0540	0.0405
Dissolved Beryllium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Chromium	mg/L	4	<0.0015	0.0021	<0.001	4	<0.0018	0.0033	<0.001
Dissolved Chromium Hexavalent	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Chromium Hexavalent	mg/L	1	<0.01	<0.01	<0.01	1	<0.01	<0.01	<0.01
Dissolved Cobalt	mg/L	4	<0.0018	0.0032	<0.001	4	<0.0012	0.0014	<0.01
Dissolved Cu	mg/L	4	<0.003	0.0033	<0.001	4	<0.002	<0.004	<0.001
Dissolved Fe	mg/L	5	2.31	3.60	1.12	5	3.04	4.51	1.69
Dissolved Pb	mg/L	4	<0.002	<0.005	<0.001	4	<0.002	<0.005	<0.001
Dissolved Mn	mg/L	5	0.375	0.802	0.023	5	0.180	0.315	0.010
Dissolved Hg	mg/L	4	<0.0002	<0.0002	<0.0002	4	<0.0002	<0.0002	<0.0002
Dissolved Molybdenum	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Nickel	mg/L	4	0.0022	0.0024	0.0020	4	<0.0018	0.0028	<0.001
Dissolved Oxygen	mg/L	5	10.4	11.8	9.31	5	10.0	10.9	8.58
Dissolved Selenium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Silver	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Dissolved Strontium	mg/L	4	0.0269	0.0380	0.0175	4	0.0392	0.0480	0.0201
Dissolved Zinc	mg/L	4	0.0159	0.0198	<0.005	4	<0.007	0.00991	<0.005
Fecal Coliform	cfu/100mL	4	8125	30000	40	4	230	640	70
Fluoride (w/o distillation)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Hardness as CaCO3(SM-2340B)	mg/L	4	17.70	23.3	8.78	4	15.2	18.6	10.4
Nitrate (NO3-N)	mg/L	4	<0.14	0.229	<0.1	4	<0.1	<0.1	<0.1
Nitrite (NO2-N)	mg/L	4	<0.1	<0.1	<0.1	4	<0.1	<0.1	<0.1
Odor	DTU	4	1.5	2	0	4	<0.1	<0.1	0
Oil and Grease	mg/L	4	<1.8	<1.9	<1.6	4	<1.8	2.0	<1.6

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

		SW-13				SW-14			
Parameter	Units	#	Avg	Max	Min	#	Avg	Max	Min
Organic N	mg/L	4	1.82	2.82	1.13	4	1.530	3.250	0.816
Ortho Phosphate	mg/L	4	<0.13	0.406	<0.025	4	<0.025	<0.025	<0.025
pH	s.u.	5	6.3	6.8	5.2	5	6.5	7.7	5.4
Phenols (Total)	mg/L	4	<0.05	<0.05	<0.05	4	<0.05	<0.05	<0.05
Resistivity	ohm/cm	5	19260	16900	12700	5	20460	33300	15200
Silicon as SiO2	mg/L	4	12.8	14.6	11.1	4	13.1	15.5	10.5
TOC (Total Organic Carbon)	mg/L	5	10.08	16.3	5.74	5	7.76	11.5	5.75
Total Boron	mg/L	4	0.0146	0.0196	0.0112	4	0.0125	0.0145	0.0109
Total Calcium	mg/L	4	4.20	6.48	2.22	4	3.43	3.80	2.75
Total Coliform	cfu/100mL	4	12825	40000	2400	4	12775	30000	1600
Total Cyanide	mg/L	4	<0.01	<0.01	<0.01	4	<0.01	<0.01	<0.01
Total Dissolved Solids	mg/L	5	98	143	47	5	76	72	54
Total Iron	mg/L	5	3.40	4.22	2.22	5	4.49	4.90	3.47
Total Kjeldahl Nitrogen	mg/L	4	1.91	2.93	1.13	4	1.59	3.4	0.893
Total Magnesium	mg/L	4	1.75	2.53	0.789	4	1.62	2.21	0.863
Total Manganese	mg/L	5	0.549	0.940	0.078	5	0.501	0.923	0.145
Total Phosphorus	mg/L	4	0.301	0.574	0.053	4	0.209	0.609	0.048
Total Potassium	mg/L	4	3.13	5.08	1.99	4	2.21	2.89	1.90
Total Settleable Solids	mL/L	4	<0.175	0.200	<0.1	4	<0.2	<0.2	<0.1
Total Sodium	mg/L	4	2.18	3.22	0.982	4	2.34	3.07	1.10
Total Sulfate (SO4)	mg/L	4	2.12	3.06	1.20	4	1.84	2.35	1.07
Total Suspended Solids	mg/L	5	31	35	6	4	21	55	8
Total Thallium	mg/L	4	<0.001	<0.001	<0.001	4	<0.001	<0.001	<0.001
Tri-Valent Chromium	mg/L	4	<0.0016	0.0021	<0.001	4	<0.0018	0.0033	<0.001
Tri-Valent Chromium Dissolved	mg/L	1	<0.00102	<0.00102	<0.00102	1	<0.00102	<0.00102	<0.00102
Turbidity	NTU	4	30	40	20	4	24	30	20
PCBs	mg/L	2	* <	* <	* <	2	* <	* <EXCEPT	* <
VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Semi-VOCs	mg/L	2	* <	* <	* <	2	* <	* <	* <
Pesticides	mg/L	2	* <	* <	* <	2	* <	* <	* <
Dioxin	mg/L	2	* <	* <	* <	2	* <	* <	* <
Total Arsenic	mg/L	1	0.00303	0.00303	0.00303	1	0.00237	0.00237	0.00237
Total Chromium	mg/L	1	<0.001	<0.001	<0.001	1	<0.001	<0.001	<0.001
Total Mercury	mg/L	1	<0.0002	<0.0002	<0.0002	1	<0.0002	<0.0002	<0.0002

* <EXCEPT - chloroform of 0.00114 on Oct.20, 2008

(* <) The analyte was found to have a nondectable limit. For additional information see (C-14.1.2) Surogate Summary.

Table 2. Summary of Surface Water Quality: Surfacewater

Surogates Summary

Surogate	Dilution Factor	Detection Limit	Units	Method
1,1,1,2-Tetrachloroethane	1	1.00	µg/L	624
1,1,1-Trichloroethane	1	1.00	µg/L	624
1,1,2,2-Tetrachloroethane	1	1.00	µg/L	624
1,1,2-Trichloroethane	1	1.00	µg/L	624
1,1-Dichloroethane	1	1.00	µg/L	624
1,1-Dichloroethene	1	1.00	µg/L	624
1,2-Dichlorobenzene	1	1.00	µg/L	624
1,2-Dichloroethane	1	1.00	µg/L	624
1,2-Dichloropropane	1	1.00	µg/L	624
1,3-Dichlorobenzene	1	1.00	µg/L	624
1,4-Dichlorobenzene	1	1.00	µg/L	624
2-Chloroethyl vinyl ether	1	5.00	µg/L	624
Acrolein	1	20.0	µg/L	624
Acrylonitrile	1	20.0	µg/L	624
Benzene	1	1.00	µg/L	624
Bromodichloromethane	1	1.00	µg/L	624
Bromoform	1	1.00	µg/L	624
Bromomethane	1	1.00	µg/L	624
Carbon tetrachloride	1	1.00	µg/L	624
Chlorobenzene	1	1.00	µg/L	624
Chlorodibromomethane	1	1.00	µg/L	624
Chloroethane	1	1.00	µg/L	624
Chloroform	1	1.00	µg/L	624
Chloromethane	1	1.00	µg/L	624
cis-1,3-Dichloropropene	1	1.00	µg/L	624
Ethylbenzene	1	1.00	µg/L	624
Methylene chloride	1	10.0	µg/L	624
Styrene	1	1.00	µg/L	624
Tetrachloroethene	1	1.00	µg/L	624
Toluene	1	5.00	µg/L	624
trans-1,2-Dichloroethene	1	1.00	µg/L	624
trans-1,3-Dichloropropene	1	1.00	µg/L	624
Trichloroethene	1	1.00	µg/L	624
Trichlorofluoromethane	1	1.00	µg/L	624
Vinyl chloride	1	1.00	µg/L	624
Aroclor 1016	1	0.526	µg/L	608
Aroclor 1221	1	0.526	µg/L	608
Aroclor 1232	1	0.526	µg/L	608
Aroclor 1242	1	0.526	µg/L	608
Aroclor 1248	1	0.526	µg/L	608
Aroclor 1254	1	0.526	µg/L	608

Surogate	Dilution Factor	Detection Limit	Units	Method
Aroclor 1260	1	0.526	µg/L	608
4,4´-DDD	10	0.0421	µg/L	608
4,4´-DDE	10	0.0421	µg/L	608
4,4´-DDT	10	0.0421	µg/L	608
Aldrin	10	0.0421	µg/L	608
alpha-BHC	10	0.0421	µg/L	608
beta-BHC	10	0.0421	µg/L	608
Chlordane	10	0.211	µg/L	608
delta-BHC	10	0.0421	µg/L	608
Dieldrin	10	0.0421	µg/L	608
Endosulfan I	10	0.0421	µg/L	608
Endosulfan II	10	0.0421	µg/L	608
Endosulfan sulfate	10	0.0421	µg/L	608
Endrin	10	0.0421	µg/L	608
Endrin aldehyde	10	0.0421	µg/L	608
Endrin Ketone	10	0.0421	µg/L	608
gamma-BHC	10	0.0421	µg/L	608
Heptachlor	10	0.0421	µg/L	608
Heptachlor epoxide	10	0.0421	µg/L	608
Toxaphene	10	0.316	µg/L	608
Dioxin (2,3,7,8-TCDD) - Screen	1	1.00	µg/L	625
1,2,4-Trichlorobenzene	1	5.52	µg/L	625
1,2-Dichlorobenzene	1	5.52	µg/L	625
,2-Diphenylhydrazine/Azobenzen	1	5.52	µg/L	625
1,3-Dichlorobenzene	1	5.52	µg/L	625
1,4-Dichlorobenzene	1	5.52	µg/L	625
2,4,6-Trichlorophenol	1	5.52	µg/L	625
2,4-Dichlorophenol	1	5.52	µg/L	625
2,4-Dimethylphenol	1	5.52	µg/L	625
2,4-Dinitrophenol	1	5.52	µg/L	625
2,4-Dinitrotoluene	1	5.52	µg/L	625
2,6-Dinitrotoluene	1	5.52	µg/L	625
2-Chloronaphthalene	1	5.52	µg/L	625
2-Chlorophenol	1	5.52	µg/L	625
2-Nitrophenol	1	5.52	µg/L	625
3,3´-Dichlorobenzidine	1	5.52	µg/L	625
4,6-Dinitro-2-methylphenol	1	11.0	µg/L	625
4-Bromophenyl phenyl ether	1	5.52	µg/L	625
4-Chloro-3-methylphenol	1	5.52	µg/L	625
4-Chlorophenyl phenyl ether	1	5.52	µg/L	625
4-Nitrophenol	1	22.1	µg/L	625
Acenaphthene	1	2.21	µg/L	625
Acenaphthylene	1	2.21	µg/L	625
Anthracene	1	2.21	µg/L	625
Benzidine	1	22.1	µg/L	625
Benzo(a)anthracene	1	2.21	µg/L	625
Benzo(a)pyrene	1	2.21	µg/L	625
Benzo(b)fluoranthene	1	2.21	µg/L	625
Benzo(g,h,i)perylene	1	2.21	µg/L	625
Benzo(k)fluoranthene	1	2.21	µg/L	625
Bis(2-chloroethoxy)methane	1	5.52	µg/L	625

Surogate	Dilution Factor	Detection Limit	Units	Method
Bis(2-chloroethyl)ether	1	5.52	µg/L	625
Bis(2-chloroisopropyl)ether	1	5.52	µg/L	625
Bis(2-ethylhexyl)phthalate	1	11.0	µg/L	625
Butyl benzyl phthalate	1	5.52	µg/L	625
Chrysene	1	2.21	µg/L	625
Di-n-butyl phthalate	1	5.52	µg/L	625
Di-n-octyl phthalate	1	5.52	µg/L	625
Dibenz(a,h)anthracene	1	2.21	µg/L	625
Diethyl phthalate	1	5.52	µg/L	625
Dimethyl phthalate	1	5.52	µg/L	625
Fluoranthene	1	2.21	µg/L	625
Fluorene	1	2.21	µg/L	625
Hexachlorobenzene	1	5.52	µg/L	625
Hexachlorobutadiene	1	5.52	µg/L	625
Hexachlorocyclopentadiene	1	5.52	µg/L	625
Hexachloroethane	1	5.52	µg/L	625
Indeno(1,2,3-cd)pyrene	1	2.21	µg/L	625
Isophorone	1	5.52	µg/L	625
N-Nitrosodi-n-propylamine	1	5.52	µg/L	625
N-Nitrosodimethylamine	1	5.52	µg/L	625
N-Nitrosodiphenylamine	1	11.0	µg/L	625
Naphthalene	1	2.21	µg/L	625
Nitrobenzene	1	5.52	µg/L	625
Pentachlorophenol	1	5.52	µg/L	625
Phenanthrene	1	2.21	µg/L	625
Phenol	1	5.52	µg/L	625
Pyrene	1	2.21	µg/L	625

Table 3. Summary of Surface Impoundment Water Quality:				
Parameter	# Samples	Average	Maximum	Minimal
pH Field (s.u.)	188	7.54	10.26	5.48
Temp. Field (°F)	188	89.05	102.06	70.45
Conductivity Field (umhos/cm)	188	58.83	239.6	22.40
D.O. (mg/L)	188	5.85	16.70	3.64
Turbidity (NTU)	188	28.30	278.4	1.3
Color (PCU)	164	77	>100	12
Acidity (mg/L)	188	6	126	<1
Alk. (as $CaCO_3$) (mg/L)	188	12	82	<2
Bicarbonate (as $CaCO_3$) (mg/L)	188	16	74	<2
Carbonate (as CO_3) (mg/L)	188	2	13	0
Chloride (mg/L)	188	3.32	19.5	1
Total Calcium (mg/L)	188	2.83	15	0.331
TDS (mg/L)	188	71	308	19
Total Fe (mg/L)	188	3.35	23.1	0.202
Total Mg (mg/L)	188	1.30	5.98	0.352
Total Mn (mg/L)	188	0.15	1.03	0.011
Total K (mg/L)	188	3.93	26.8	0.407
Total Na (mg/L)	188	2.33	11.6	0.549
Total SO_4 (mg/L)	188	1.88	11.2	<1.0

Table 4. State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters Minimum Standards Applicable to All Waters, Fish and Wildlife (Source: MDEQ, 2007) NA = Not Applicable

Parameter	**Minimum**	**Maximum**	**Monthly Average/Mean**
Dissolved Oxygen Daily Average Instantaneous	 5.0 mg/L 4.0 mg/L	 NA	 NA
pH change	6.0 s.u. 1.0 s.u.	9.0 s.u. 1.0 s.u.	NA
Temperature Rise	NA	90°F 5°F	NA
Fecal Coliform May - Oct. Nov. - Apr.	NA	 400/100ml more than 10% of 30-day period 4,000/100ml more than 10% of 30-day period	 200/100 mL 2,000/100 mL
Specific Conductivity	NA	1,000 µmhos/cm	NA
Total Dissolved Solids	NA	1,500 mg/L	750 mg/L

Table 5. State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters Numeric Criteria Applicable to All Waters Upstream of Public Water Supply Intake (Source: MDEQ, 2007) NA = Not Applicable

Parameter	Fresh Water		Human Health
	Acute (µg/L)	Chronic (µg/L)	Water & Organisms (µg/L)
Aldrin	3	NA	0.00013
Ammonia	NA [g]	NA [g]	NA
Arsenic (III), Total Dissolved	340 [f]	150 [f]	NA
Arsenic, Total Dissolved	NA	NA	0.078 [i]
Cadmium, Total Dissolved	1.03 [b,f]	0.15 [b,f]	5
Chlordane	2.4	0.0043	0.0021
Chlorine	19	11	NA
Chromium (Hex), Total Dissolved	16 [f]	11 [f]	98
Chromium (III), Total Dissolved	323 [b,f]	42 [b,f]	100
Copper, Total Dissolved	7.0 [b,f]	5.0 [b,f]	1000
Cyanide	22.0	5.2	200
4,4 DDT	1.1	0.001	0.00059
Dieldrin	0.24	0.056	0.000135
2,3,7,8 TCDD (Dioxin)	NA	NA	1.0 ppq [d]
alpha-Endolsulfan	0.22 [j]	0.056 [j]	110 [k]
beta-Endosulfan	0.22 [j]	0.056 [j]	110 [k]
Endosulfan Sulfate	0.22 [j]	0.056 [j]	110 [k]
Endrin	0.086	0.036	0.76
Heptachlor	0.52	0.0038	0.000208
gamma-BHC (Lindane)	0.95	0.08	0.0186
Lead, Total Dissolved	30 [b,f]	1.18 [b,f]	15
Mercury (II), Total Dissolved	2.1 [f]	0.012	NA
Mercury	NA	NA	0.151
Nickel, Total Dissolved	260 [b,f]	29 [b,f]	607
Phenol	300	102	300
Pentachlorophenol	8.7	6.7	0.28
PCB 1242	0.2	0.014	NA
PCB 1254	0.2	0.014	NA
PCB 1221	0.2	0.014	NA
PCB 1232	0.2	0.014	NA
PCB 1248	0.2	0.014	NA
PCB 1260	0.2	0.014	NA

Table 5. State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters Numeric Criteria Applicable to All Waters Upstream of Public Water Supply Intake (Source: MDEQ, 2007) NA = Not Applicable

Parameter	Fresh Water		Human Health
	Acute (µg/L)	Chronic (µg/L)	Water & Organisms (µg/L)
PCB 1016	0.2	0.014	NA
Total PCB	NA	NA	0.00035
Selenium, Total Dissolved	11.8 a,[f]	4.6 [f]	50
Silver, Total Dissolved	0.98 [b,f]	NA	100
Toxaphene	0.73	0.0002	0.00073
Zinc, Total Dissolved	65 [b,f]	65 [b,f]	5000

[b] Hardness dependent parameter. Criteria are indicated at hardness of 50 mg/l as CaCO3. Equations for criteria calculation of hardness dependent parameters can be found in *Quality Criteria for Water.* The equation is applicable for instream hardness ranges from 25 mg/l to 400 mg/l. If instream hardness is less than 25 mg/l, then a hardness value of 25 mg/l should be used to calculate the criteria. If instream hardness is greater than 400 mg/l, then a hardness of 400 mg/l should be used to calculate the criteria.

[d] Criteria for 2,3,7,8 TCDD based on a risk factor of one in one hundred thousand (10-5).

[f] Parameter subject to water effects ratio equations where:
CMC = WER * Acute
CCC = WER * Chronic

[g] Ammonia criteria are dependent on pH, temperature, and/or salinity

[i] Refers to the inorganic form only.

[j] Applies to the sum of α and β isomers.

[k] Applies to individual isomers of Endosulfan including α, β, and Endosulfan Sulfate.

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