

APPENDIX C

MELIADINE LAKE WATER QUALITY – SUPPORTING INFORMATION

Appendix C1

Meliadine Lake Water Quality – 2023 Summary Statistics

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Federal Environmental Quality Guideline for Copper

Environment and Climate Change Canada (ECCC) published an updated aquatic life guideline for copper in 2021. The federal WQG (FWQG) was adopted as the AEMP Benchmark for copper instead of the CCME aquatic life guideline from 1987 for total (unfiltered) copper. The FWQG applies to dissolved rather than total fraction of copper for three reasons:

1. Bioavailability and toxicity of copper to aquatic life is related to concentration of the copper ion (Cu^{2+}) in water.
2. Concentrations of total copper in Canadian surface waters can be affected by non-bioavailable mineral forms; and
3. Toxicity data used for deriving the guideline are based on exposures to dissolved copper.

Copper toxicity depends on the concentration of the free copper ion and site-specific water quality parameters such as temperature, pH, dissolved organic carbon, hardness, alkalinity, chloride, and major cations (e.g., calcium, magnesium, etc.) can modify the bioavailability and toxicity of copper to aquatic organisms. The FWQG is calculated for each sample using the biotic ligand model (BLM) tool. The software calculates the FWQG for each sample from the normalized species sensitivity distribution (SSD) of chronic toxicity tests on primary producers (5 species), aquatic invertebrates (17 species), and fish (11 species). The 5th percentile of the SSD is equal to the sample-specific FWQG. A detailed overview of the BLM is provided in *Federal environmental quality guidelines – Copper* (ECCC, 2021).

An example of the SSD output is provided in **Figure C1-1** below for sample MEL-01-06 collected in April 2023. The FWQG for this sample was 2.89 $\mu\text{g/L}$ (5th percentile of the SSD). The two most sensitive species in the chronic toxicity dataset are the air-breathing snail (*Lymnea stagnalis*) and Rainbow mussel (*Villosa iris*). Neither of these species are found in northern Canada. In this regard, the FWQG has an added level of protection when evaluating risks to aquatic receptors in Meliadine Lake.

Figure C1-1. Copper BLM guideline for sample MEL-01-06 collected in April 2023

Note: The copper BLM guideline is indicated by the blue dashed line (log-normal 5% = 2.89 µg/L).

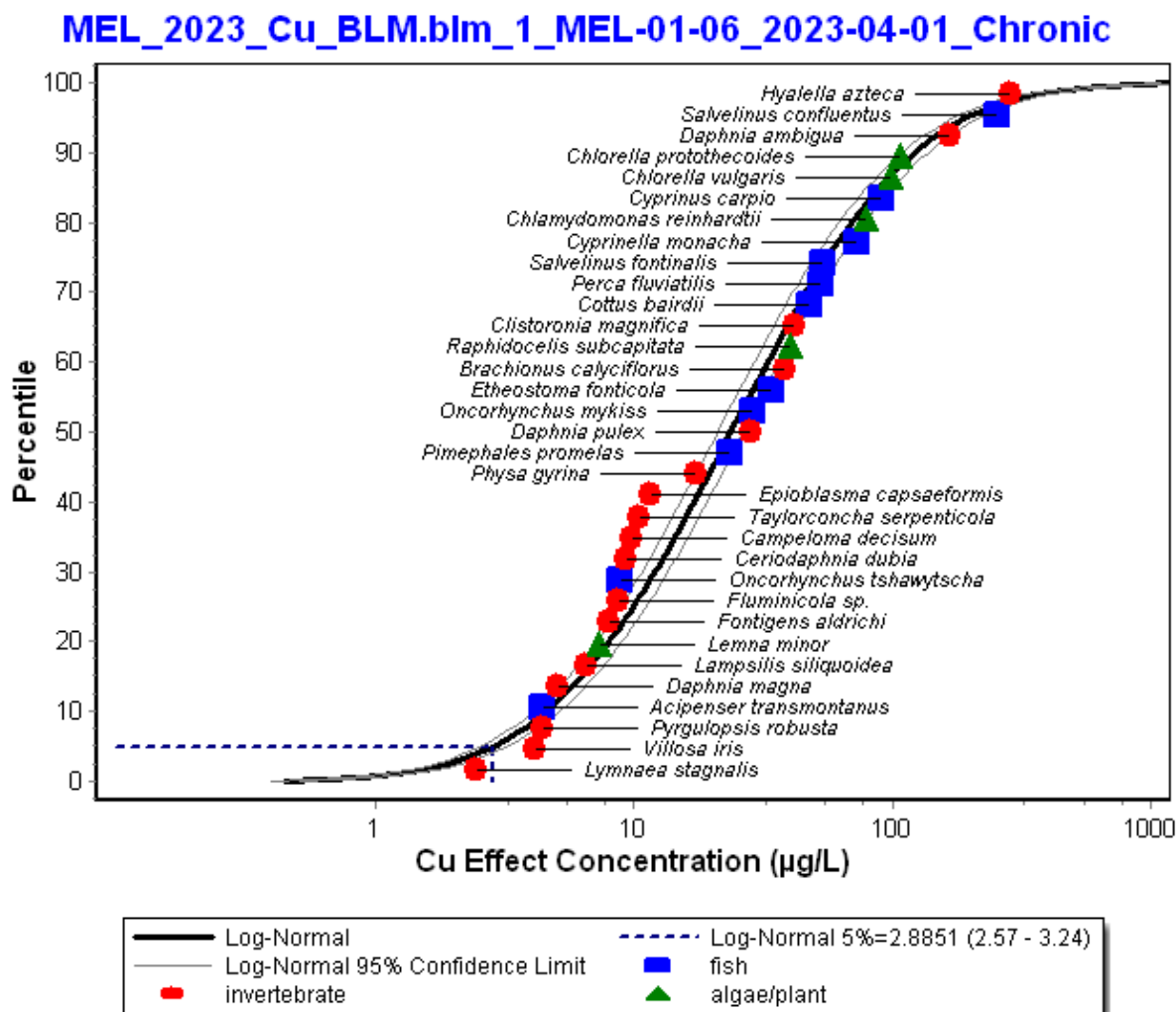


Table C1-1. Detection limits and screening values for the Meliadine Lake water quality program

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	FWAL ^[b] (min max)	HH DW ^[c]	SSWQO ^[d]	Action Level ^[e] (min max)	Benchmark ^[f] (min max)
Field Measurements									
pH (field)	pH units	-	7.1 7.95	-	6.5 9	-	-	6.5 9.0	6.5 9.0
Temperature	C	-	-	-	-	-	-	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	-	-	-
DO (mg/L)	mg/L	-	-	-	-	-	-	6.5	6.5
DO (%)	%	-	-	-	-	-	-	-	-
Conventional Parameters									
Conductivity (lab)	uS/cm	1	77.5	-	-	-	-	-	-
Hardness	mg/L	0.5	23.4	-	-	-	-	-	-
Total Dissolved Solids	mg/L	10	54	68	500	-	1000	375	500
TDS calculated	mg/L	1	39.6	68	500	-	1000	375	500
Total Suspended Solids	mg/L	1	1	3.1	-	-	-	-	-
Turbidity (lab)	NTU	0.1	-	-	-	-	-	-	-
pH (lab)	pH units	0.1	-	-	6.5 9	-	-	6.5 9.0	6.5 9.0
Major Ions									
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	-	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-
Alkalinity, Total	mg/L	1	20.5	-	-	-	-	-	-
Bromide	mg/L	0.1	-	-	-	-	-	-	-
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	-	-	-
Chloride	mg/L	0.1	9.56	14	120	-	-	90	120
Fluoride	mg/L	0.02	0.028	0.0084	0.12	1.5	2.8	2.1	2.8
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	-	-	-
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	-	-	-
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	-	-	-
Sulphate	mg/L	0.3	3.87	38	-	-	-	-	-
Nutrients									
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.41 12.5	-	-	0.308 9.38	0.41 12.5
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.9	10	-	2.17	2.9
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.06	1	-	0.045	0.06
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	-	-	-
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	-	-	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	-	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-
Total Phosphorus	mg/L	0.001	0.006	0.0049	-	-	-	0.0075	0.01
Organic/Inorganic Carbon									
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	-	-	-
Total Organic Carbon	mg/L	0.5	3	-	-	-	-	-	-
Total Metals									
Aluminum (T)	ug/L	1	5.32	9.1	100	-	-	75	100
Antimony (T)	ug/L	0.02	0.02	0.51	-	6	-	4.5	6
Arsenic (T)	ug/L	0.02	0.275	3.8	5	10	25	18.8	25
Barium (T)	ug/L	0.02	8.05	77	-	1000	-	750	1000
Beryllium (T)	ug/L	0.005	0.005	-	-	-	-	-	-
Bismuth (T)	ug/L	0.005	0.005	-	-	-	-	-	-
Boron (T)	ug/L	5	6.52	23	1500	5000	-	1120	1500
Cadmium (T)	ug/L	0.005	0.005	0.05	0.04 0.0708	5	-	0.03 0.0531	0.04 0.0708
Cesium (T)	ug/L	0.005	-	-	-	-	-	-	-
Chromium (T)	ug/L	0.1	0.103	1.1	5	50	-	3.75	5
Cobalt (T)	ug/L	0.005	0.016	-	0.78	-	-	0.585	0.78
Copper (T)	ug/L	0.05	0.86	2	-	2000	-	1500	2000
Gallium (T)	ug/L	0.05	-	-	-	-	-	-	-
Iron (T)	ug/L	1	15	42	300	-	1060	795	1060
Lanthanum (T)	ug/L	0.01	-	-	-	-	-	-	-
Lead (T)	ug/L	0.01	0.0222	0.15	-	5	-	3.75	5
Lithium (T)	ug/L	0.5	0.72	-	-	-	-	-	-
Manganese (T)	ug/L	0.05	3.06	5.5	-	120	-	90	120
Mercury (T)	ug/L	0.1 0.5	8.00E-04	0.02	0.026	1	-	0.0195	0.026
Molybdenum (T)	ug/L	0.05	0.107	5.2	73	-	-	54.8	73
Nickel (T)	ug/L	0.05	0.441	2.7	25	-	-	18.8	25
Niobium (T)	ug/L	0.1	-	-	-	-	-	-	-
Phosphorus (T)	ug/L	50	-	-	-	-	-	-	-
Rhenium (T)	ug/L	0.005	-	-	-	-	-	-	-
Rubidium (T)	ug/L	0.005	-	-	-	-	-	-	-
Selenium (T)	ug/L	0.04	0.049	0.16	1	50	-	0.75	1
Silicon (T)	ug/L	50	-	-	-	-	-	-	-
Silver (T)	ug/L	0.005	0.005	0.1	0.25	-	-	0.188	0.25

Table C1-1. Detection limits and screening values for the Meliadine Lake water quality program

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	FWAL ^[b] (min max)	HH DW ^[c]	SSWQO ^[d]	Action Level ^[e] (min max)	Benchmark ^[f] (min max)
Strontium (T)	ug/L	0.02	36.1	-	2500	7000	-	1880	2500
Sulfur (T)	ug/L	500	-	-	-	-	-	-	-
Tantalum (T)	ug/L	0.1	-	-	-	-	-	-	-
Tellurium (T)	ug/L	0.02	-	-	-	-	-	-	-
Thallium (T)	ug/L	0.005	0.005	0.1	0.8	-	-	0.6	0.8
Thorium (T)	ug/L	0.005	-	-	-	-	-	-	-
Tin (T)	ug/L	0.02	0.0384	-	-	-	-	-	-
Titanium (T)	ug/L	0.05	0.17	-	-	-	-	-	-
Tungsten (T)	ug/L	0.01	-	-	-	-	-	-	-
Uranium (T)	ug/L	0.001	0.0164	1.5	15	20	-	11.2	15
Vanadium (T)	ug/L	0.05	0.05	-	120	-	-	90	120
Yttrium (T)	ug/L	0.01	-	-	-	-	-	-	-
Zinc (T)	ug/L	0.5	1.7	6.7	-	-	-	-	-
Zirconium (T)	ug/L	0.01	-	-	-	-	-	-	-
Dissolved Metals									
Aluminum (D)	ug/L	1	-	-	-	-	-	-	-
Antimony (D)	ug/L	0.02	-	-	-	-	-	-	-
Arsenic (D)	ug/L	0.02	-	-	-	-	-	-	-
Barium (D)	ug/L	0.02	-	-	-	-	-	-	-
Beryllium (D)	ug/L	0.005	-	-	-	-	-	-	-
Bismuth (D)	ug/L	0.005	-	-	-	-	-	-	-
Boron (D)	ug/L	5	-	-	-	-	-	-	-
Cadmium (D)	ug/L	0.005	-	-	-	-	-	-	-
Cesium (D)	ug/L	0.005	-	-	-	-	-	-	-
Chromium (D)	ug/L	0.1	-	-	-	-	-	-	-
Cobalt (D)	ug/L	0.005	-	-	-	-	-	-	-
Copper (D)	ug/L	0.05	0.861	-	-	-	-	-	-
Gallium (D)	ug/L	0.05	-	-	-	-	-	-	-
Iron (D)	ug/L	1	-	-	-	-	-	-	-
Lanthanum (D)	ug/L	0.01	-	-	-	-	-	-	-
Lead (D)	ug/L	0.01	0.0125	-	4.48 7.4	-	-	3.36 5.55	4.48 7.4
Lithium (D)	ug/L	0.5	-	-	-	-	-	-	-
Manganese (D)	ug/L	0.05	1.2	-	210 330	-	-	158 248	210 330
Mercury (D)	ug/L	0.1 0.5	-	-	-	-	-	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	-	-	-	-
Nickel (D)	ug/L	0.05	-	-	-	-	-	-	-
Niobium (D)	ug/L	0.1	-	-	-	-	-	-	-
Phosphorus (D)	ug/L	50	-	-	-	-	-	-	-
Rhenium (D)	ug/L	0.005	-	-	-	-	-	-	-
Rubidium (D)	ug/L	0.005	-	-	-	-	-	-	-
Selenium (D)	ug/L	0.04	-	-	-	-	-	-	-
Silicon (D)	ug/L	50	-	-	-	-	-	-	-
Silver (D)	ug/L	0.005	-	-	-	-	-	-	-
Strontium (D)	ug/L	0.02	-	-	2500	-	-	1880	2500
Sulfur (D)	ug/L	500	-	-	-	-	-	-	-
Tantalum (D)	ug/L	0.1	-	-	-	-	-	-	-
Tellurium (D)	ug/L	0.02	-	-	-	-	-	-	-
Thallium (D)	ug/L	0.005	-	-	-	-	-	-	-
Thorium (D)	ug/L	0.005	-	-	-	-	-	-	-
Tin (D)	ug/L	0.02	-	-	-	-	-	-	-
Titanium (D)	ug/L	0.05	-	-	-	-	-	-	-
Tungsten (D)	ug/L	0.01	-	-	-	-	-	-	-
Uranium (D)	ug/L	0.001	-	-	-	-	-	-	-
Vanadium (D)	ug/L	0.05	-	-	-	-	-	-	-
Yttrium (D)	ug/L	0.01	-	-	-	-	-	-	-
Zinc (D)	ug/L	0.5	1.9	-	7.88 13.5	-	-	5.91 10.2	7.88 13.5
Zirconium (D)	ug/L	0.01	-	-	-	-	-	-	-
Cyanides									
Cyanide (Total)	mg/L	0.001	0.001	0.009	0.005	0.2	-	0.00375	0.005
Cyanide (WAD)	mg/L	0.001	-	-	-	-	-	-	-
Cyanide (free)	mg/L	0.001	-	0.00035	-	-	-	-	-

Notes

- [a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).
- [b] The freshwater aquatic life guidelines (FWAL) for cadmium (T), copper (D), lead (D), manganese (D), and zinc (D) are variable depending on modifying factors such as pH, hardness, and DOC. Values shown represent the range of FWAL guidelines calculated for MEL-01 open-water samples in 2023.
- [c] Health Canada drinking water guidelines (maximum acceptable concentrations)
- [d] Site-specific water quality objectives for fluoride, arsenic, and iron.
- [e] The AEMP Action Level is 75% of the AEMP Benchmark.

Table C1-2. MEL-01 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-01 (Near-field Exposure Area) Winter Sampling Event (April)										
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl
Field Measurements																
Temperature	C	-	-	-	-	6	0	0	1.5	1.44	0.167	0.0681	1.39	1.83	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	6	0	0	159	159	1.09	0.446	158	161	-	-
pH (field)	pH units	-	-	6.5 9.0	6.5 9.0	6	0	0	7	6.92	0.172	0.0704	6.88	7.33	-	0
DO (mg/L)	mg/L	-	-	6.5	6.5	6	0	0	13.1	13.5	1.22	0.496	10.8	14.2	-	0
DO (%)	%	-	-	-	-	6	0	0	96.3	98.6	8.47	3.46	80.4	104	-	-
Conventional Parameters																
Conductivity (lab)	uS/cm	1	-	-	-	6	0	0	178	178	2.88	1.18	174	183	-	-
Hardness	mg/L	0.5	-	-	-	6	0	0	51.9	52	0.906	0.37	50.3	53	-	-
pH (lab)	pH units	0.1	-	6.5 9.0	6.5 9.0	6	0	0	7.17	7.18	0.0204	0.00833	7.14	7.2	-	0
Total Dissolved Solids	mg/L	10	68	375	500	6	0	0	86.4	84.5	8.06	3.29	76	97	100	0
Total Dissolved Solids (Calculated)	mg/L	1	68	375	500	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	1	3.1	-	-	6	3	50	-	1.15	-	-	1	1.5	0	-
Turbidity (lab)	NTU	0.1	-	-	-	6	0	0	0.338	0.34	0.07	0.0286	0.26	0.46	-	-
Major Ions																
Alkalinity, Bicarbonate	mg/L	1	-	-	-	6	0	100	32.2	32.3	0.399	0.163	31.6	32.7	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	6	6	0	-	-	-	-	-	1	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	6	6	0	-	-	-	-	-	1	-	-
Alkalinity, Total	mg/L	1	-	-	-	6	0	0	32.2	32.3	0.399	0.163	31.6	32.7	-	-
Bromide	mg/L	0.1	-	-	-	6	6	100	-	-	-	-	-	0.1	-	-
Calcium (D)	mg/L	0.01	-	-	-	6	0	0	15.9	16	0.234	0.0955	15.5	16.2	-	-
Calcium (T)	mg/L	0.01 0.02	-	-	-	6	0	0	15.8	15.8	0.645	0.263	14.7	16.7	-	-
Chloride	mg/L	0.1	14	90	120	6	0	0	25.3	25.3	0.489	0.199	24.7	26.1	100	0
Fluoride	mg/L	0.02	0.0084	2.1	2.8	6	0	0	0.047	0.0465	0.00155	0.000632	0.046	0.05	100	0
Magnesium (D)	mg/L	0.004	-	-	-	6	0	0	2.94	2.94	0.0845	0.0345	2.82	3.04	-	-
Magnesium (T)	mg/L	0.004 0.01	-	-	-	6	0	0	2.93	2.95	0.0969	0.0396	2.76	3.05	-	-
Potassium (D)	mg/L	0.02	-	-	-	6	0	0	1.87	1.86	0.0434	0.0177	1.83	1.95	-	-
Potassium (T)	mg/L	0.02 0.03	-	-	-	6	0	0	1.87	1.87	0.0612	0.025	1.78	1.96	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	-	-	-	6	0	0	0.844	0.843	0.0289	0.0118	0.805	0.886	-	-
Sodium (D)	mg/L	0.02	-	-	-	6	0	0	12.7	12.7	0.367	0.15	12.1	13.2	-	-
Sodium (T)	mg/L	0.02	5.3	-	-	6	0	0	13	13	0.468	0.191	12.3	13.7	100	-
Sulphate	mg/L	0.3	38	-	-	6	0	0	10.9	10.9	0.175	0.0715	10.6	11.1	0	-
Nutrients																
Ammonia (as N)	mg/L	0.005	0.54	0.308 9.38	0.41 12.5	6	0	0	0.0304	0.032	0.00482	0.00197	0.023	0.0366	0	0
Nitrate (as N)	mg/L	0.005	0.25	2.17	2.9	6	0	0	0.0206	0.0205	0.00174	0.000709	0.0187	0.023	0	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	6	5	83	-	0.0224	-	-	0.0224	0.023	-	-
Nitrite (as N)	mg/L	0.001	0.051	0.045	0.06	6	6	100	-	-	-	-	-	0.001	0	0
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	-	-	-	6	6	100	-	-	-	-	-	0.001	-	-
Total Diss Phosphorus	mg/L	0.001	-	-	-	6	0	0	0.00353	0.0036	0.000308	0.000126	0.0031	0.0038	-	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	6	0	0	0.387	0.398	0.0359	0.0146	0.319	0.415	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	-	-	-	6	0	0	0.389	0.396	0.0424	0.0173	0.334	0.457	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	6	0	0	0.373	0.376	0.0325	0.0133	0.319	0.415	-	-
Total Phosphorus	mg/L	0.001	0.0049	0.0075	0.01	6	0	0	0.00737	0.0073	0.000644	0.000263	0.0067	0.0082	100	40

Table C1-2. MEL-01 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-01 (Near-field Exposure Area)											
						Winter Sampling Event (April)											
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl	
Organic/Inorganic Carbon																	
Dissolved Organic Carbon	mg/L	0.5	-	-	-	6	0	0	5.64	5.67	0.208	0.0848	5.38	5.85	-	-	
Total Organic Carbon	mg/L	0.5	-	-	-	6	0	0	5.9	5.86	0.151	0.0617	5.76	6.19	-	-	
Total Metals																	
Aluminum (T)	ug/L	1	9.1	75	100	6	1	17	2.1	1.7	1.11	0.453	1	4.1	0	0	
Antimony (T)	ug/L	0.02	0.51	4.5	6	6	0	0	0.0287	0.0255	0.00665	0.00272	0.023	0.039	0	0	
Arsenic (T)	ug/L	0.02	3.8	18.8	25	6	0	0	0.773	0.772	0.0333	0.0136	0.73	0.812	0	0	
Barium (T)	ug/L	0.02	77	750	1000	6	0	0	14.7	14.8	0.445	0.182	14.1	15.2	0	0	
Beryllium (T)	ug/L	0.005	-	-	-	6	6	100	-	-	-	-	-	0.005	-	-	
Boron (T)	ug/L	5	23	1120	1500	6	0	0	11.8	11.7	0.393	0.161	11.3	12.4	0	0	
Cadmium (T)	ug/L	0.005	0.05	0.03 0.0531	0.04 0.0708	5	5	100	-	-	-	-	-	0.005	0	0	
Chromium (T)	ug/L	0.1	1.1	3.75	5	6	1	17	0.167	0.15	0.0653	0.0267	0.1	0.28	0	0	
Cobalt (T)	ug/L	0.005	-	0.585	0.78	6	0	0	0.0266	0.0255	0.00281	0.00115	0.0238	0.0314	-	0	
Copper (T)	ug/L	0.05	2	1500	2000	5	0	0	1.45	1.37	0.171	0.0765	1.34	1.75	0	0	
Iron (T)	ug/L	1	42	795	1060	6	0	0	9.13	8.15	2.63	1.07	6.8	13.9	0	0	
Lead (T)	ug/L	0.01	0.15	3.75	5	6	0	0	0.172	0.148	0.151	0.0617	0.017	0.349	50	0	
Lithium (T)	ug/L	0.5	-	-	-	6	0	0	1.74	1.77	0.0547	0.0223	1.65	1.79	-	-	
Manganese (T)	ug/L	0.05	5.5	90	120	6	0	0	1.89	1.92	0.21	0.0858	1.58	2.19	0	0	
Mercury (T)	ug/L	0.1 0.5	0.02	0.0195	0.026	6	0	0	0.00793	0.0069	7.63E-03	3.12E-03	4.80E-04	0.0214	17	17	
Molybdenum (T)	ug/L	0.05	5.2	54.8	73	6	0	0	0.196	0.194	0.00555	0.00227	0.191	0.205	0	0	
Nickel (T)	ug/L	0.05	2.7	18.8	25	6	0	0	1.24	1.21	0.068	0.0278	1.19	1.37	0	0	
Selenium (T)	ug/L	0.04	0.16	0.75	1	6	0	0	0.0613	0.061	0.00197	0.000803	0.059	0.064	0	0	
Silver (T)	ug/L	0.005	0.1	0.188	0.25	6	6	100	-	-	-	-	-	0.005	0	0	
Strontium (T)	ug/L	0.02	-	1880	2500	6	0	0	91.4	91.2	2.55	1.04	87.6	94.5	-	0	
Thallium (T)	ug/L	0.005	0.1	0.6	0.8	6	6	100	-	-	-	-	-	0.005	0	0	
Tin (T)	ug/L	0.02	-	-	-	6	6	100	-	-	-	-	-	0.02	-	-	
Titanium (T)	ug/L	0.05	-	-	-	6	4	67	-	0.05	-	-	0.05	0.132	-	-	
Uranium (T)	ug/L	0.001	1.5	11.2	15	6	0	0	0.0285	0.0286	0.00158	0.000644	0.0264	0.0302	0	0	
Vanadium (T)	ug/L	0.05	-	90	120	6	6	100	-	-	-	-	-	0.05	-	0	
Zinc (T)	ug/L	0.5	6.7	-	-	6	0	0	5.44	4.88	4.12	1.68	1.38	12	50	-	
Dissolved Metals																	
Aluminum (D)	ug/L	1	-	-	-	6	5	83	-	1	-	-	1	1.5	-	-	
Antimony (D)	ug/L	0.02	-	-	-	6	0	0	0.0268	0.026	0.00337	0.00138	0.024	0.033	-	-	
Arsenic (D)	ug/L	0.02	-	-	-	6	0	0	0.721	0.719	0.0215	0.00877	0.697	0.755	-	-	
Barium (D)	ug/L	0.02	-	-	-	6	0	0	15	15	0.316	0.129	14.5	15.4	-	-	
Beryllium (D)	ug/L	0.005	-	-	-	6	6	100	-	-	-	-	-	0.005	-	-	
Boron (D)	ug/L	5	-	-	-	6	0	0	11.8	11.8	0.398	0.163	11.2	12.3	-	-	
Cadmium (D)	ug/L	0.005	-	-	-	5	4	80	-	0.005	-	-	0.005	0.0051	-	-	
Chromium (D)	ug/L	0.1	-	-	-	6	4	67	-	0.1	-	-	0.1	0.14	-	-	
Cobalt (D)	ug/L	0.005	-	-	-	6	0	0	0.0224	0.021	0.0029	0.00119	0.02	0.0266	-	-	
Copper (D)	ug/L	0.05	-	-	-	5	0	0	1.42	1.34	0.182	0.0813	1.31	1.74	-	0	
Iron (D)	ug/L	1	-	-	-	6	0	0	3.23	3.2	0.266	0.109	2.9	3.7	-	-	
Lead (D)	ug/L	0.01	-	3.36 5.55	4.48 7.4	6	1	17	0.0213	0.016	0.0124	0.00505	0.01	0.038	-	0	
Lithium (D)	ug/L	0.5	-	-	-	6	0	0	1.77	1.76	0.0388	0.0158	1.71	1.82	-	-	
Manganese (D)	ug/L	0.05	-	158 248	210 330	6	0	0	0.502	0.428	0.164	0.0668	0.361	0.77	-	0	

Table C1-2. MEL-01 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-01 (Near-field Exposure Area) Winter Sampling Event (April)										
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl
Mercury (D)	ug/L	0.1 0.5	-	-	-	6	0	0	0.00344	2.10E-03	0.00405	0.00165	3.00E-04	0.0112	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	6	0	0	0.196	0.192	0.00846	0.00345	0.189	0.21	-	-
Nickel (D)	ug/L	0.05	-	-	-	6	0	0	1.21	1.2	0.0385	0.0157	1.16	1.26	-	-
Selenium (D)	ug/L	0.04	-	-	-	6	0	0	0.0615	0.0615	0.00373	0.00152	0.056	0.066	-	-
Silver (D)	ug/L	0.005	-	-	-	6	6	100	-	-	-	-	-	0.005	-	-
Strontium (D)	ug/L	0.02	-	1880	2500	6	0	0	89.8	90.1	1.89	0.772	87.5	92.8	-	0
Thallium (D)	ug/L	0.005	-	-	-	6	6	100	-	-	-	-	-	0.005	-	-
Tin (D)	ug/L	0.02	-	-	-	5	5	100	-	-	-	-	-	0.02	-	-
Titanium (D)	ug/L	0.05	-	-	-	6	6	100	-	-	-	-	-	0.05	-	-
Uranium (D)	ug/L	0.001	-	-	-	6	0	0	0.0291	0.0294	0.00189	0.000771	0.0257	0.0311	-	-
Vanadium (D)	ug/L	0.05	-	-	-	6	6	100	-	-	-	-	-	0.05	-	-
Zinc (D)	ug/L	0.5	-	5.91 10.2	7.88 13.5	6	0	0	5.01	4.62	3.87	1.58	1.13	11.1	-	0
Other																
Cyanide (free)	mg/L	0.001	0.00035	-	-	6	6	100	-	-	-	-	-	0.001	100	-
Cyanide (Total)	mg/L	0.001	0.009	0.00375	0.005	6	6	100	-	-	-	-	-	0.001	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	6	6	100	-	-	-	-	-	0.001	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Table C1-3. MEL-02 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-02 (Mid-field Exposure Area) Winter Sampling Event (April)											
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl	
Field Measurements																	
Temperature	C	-	-	-	-	5	0	0	1.17	1.19	0.15	0.067	0.97	1.38	-	-	
Sp. Conductivity (field)	uS/cm	-	-	-	-	5	0	0	130	126	9.37	4.19	123	146	-	-	
pH (field)	pH units	-	-	6.5 9.0	6.5 9.0	5	0	0	7.22	7.22	0.139	0.0624	7.09	7.44	-	0	
DO (mg/L)	mg/L	-	-	6.5	6.5	5	0	0	16.3	16.6	0.67	0.3	15.2	16.9	-	0	
DO (%)	%	-	-	-	-	5	0	0	118	121	4.79	2.14	111	123	-	-	
Conventional Parameters																	
Conductivity (lab)	uS/cm	1	-	-	-	5	0	0	145	144	2.92	1.3	143	150	-	-	
Hardness	mg/L	0.5	-	-	-	5	0	0	38	38.7	0.999	0.447	36.9	38.9	-	-	
pH (lab)	pH units	0.1	-	6.5 9.0	6.5 9.0	5	0	0	7.43	7.41	0.0409	0.0183	7.4	7.5	-	0	
Total Dissolved Solids	mg/L	10	68	375	500	5	0	0	71.9	71	8.1	3.62	62.7	85	80	0	
Total Dissolved Solids (Calculated)	mg/L	1	68	375	500	-	-	-	-	-	-	-	-	-	-	-	
Total Suspended Solids	mg/L	1	3.1	-	-	5	5	100	-	-	-	-	-	1	0	-	
Turbidity (lab)	NTU	0.1	-	-	-	5	0	0	0.172	0.16	0.0432	0.0193	0.12	0.23	-	-	
Major Ions																	
Alkalinity, Bicarbonate	mg/L	1	-	-	-	5	0	0	28.9	28.7	0.812	0.363	28	30.2	-	-	
Alkalinity, Carbonate	mg/L	1	-	-	-	5	5	100	-	-	-	-	-	1	-	-	
Alkalinity, Hydroxide	mg/L	1	-	-	-	5	5	100	-	-	-	-	-	1	-	-	
Alkalinity, Total	mg/L	1	-	-	-	5	0	0	28.9	28.7	0.812	0.363	28	30.2	-	-	
Bromide	mg/L	0.1	-	-	-	5	5	100	-	-	-	-	-	0.1	-	-	
Calcium (D)	mg/L	0.01	-	-	-	5	0	0	12	12.1	0.336	0.15	11.6	12.3	-	-	
Calcium (T)	mg/L	0.01 0.02	-	-	-	5	0	0	13.4	13.5	0.259	0.116	13.1	13.7	-	-	
Chloride	mg/L	0.1	14	90	120	5	0	0	18.5	18.3	0.416	0.186	18.2	19.2	100	0	
Fluoride	mg/L	0.02	0.0084	2.1	2.8	5	0	0	0.043	0.043	0.001	0.000447	0.042	0.044	100	0	
Magnesium (D)	mg/L	0.004	-	-	-	5	0	0	1.98	1.99	0.055	0.0246	1.92	2.06	-	-	
Magnesium (T)	mg/L	0.004 0.01	-	-	-	5	0	0	2.32	2.32	0.0249	0.0111	2.3	2.36	-	-	
Potassium (D)	mg/L	0.02	-	-	-	5	0	0	1.47	1.47	0.0385	0.0172	1.42	1.52	-	-	
Potassium (T)	mg/L	0.02 0.03	-	-	-	5	0	0	1.63	1.64	0.0387	0.0173	1.58	1.67	-	-	
Reactive Silica (SiO2)	mg/L	0.01 0.1	-	-	-	5	0	0	0.64	0.631	0.0434	0.0194	0.604	0.713	-	-	
Sodium (D)	mg/L	0.02	-	-	-	5	0	0	8.26	8.26	0.251	0.112	8	8.6	-	-	
Sodium (T)	mg/L	0.02	5.3	-	-	5	0	0	9.63	9.5	0.331	0.148	9.35	10.1	100	-	
Sulphate	mg/L	0.3	38	-	-	5	0	0	7.68	7.62	0.147	0.066	7.56	7.93	0	-	
Nutrients																	
Ammonia (as N)	mg/L	0.005	0.54	0.308 9.38	0.41 12.5	5	0	0	0.0299	0.0288	0.00466	0.00208	0.0248	0.0362	0	0	
Nitrate (as N)	mg/L	0.005	0.25	2.17	2.9	5	0	0	0.0102	0.0089	0.00298	0.00133	0.0076	0.014	0	0	
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	5	5	100	-	-	-	-	-	0.0224	-	-	
Nitrite (as N)	mg/L	0.001	0.051	0.045	0.06	5	5	100	-	-	-	-	-	0.001	0	0	
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Orthophosphate (PO4-P)	mg/L	0.001	-	-	-	5	5	100	-	-	-	-	-	0.001	-	-	
Total Diss Phosphorus	mg/L	0.001	-	-	-	5	0	0	0.0027	0.0026	0.000616	0.000276	0.0022	0.0037	-	-	
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	5	0	0	0.277	0.289	0.0272	0.0122	0.238	0.307	-	-	
Total Kjeldahl Nitrogen	mg/L	0.05	-	-	-	5	0	0	0.295	0.291	0.0106	0.00474	0.284	0.309	-	-	
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	5	0	0	0.277	0.289	0.0272	0.0122	0.238	0.307	-	-	
Total Phosphorus	mg/L	0.001	0.0049	0.0075	0.01	5	0	0	0.00444	0.0044	0.000439	0.000196	0.004	0.0051	20	-	

Table C1-3. MEL-02 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-02 (Mid-field Exposure Area) Winter Sampling Event (April)										
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl
Organic/Inorganic Carbon																
Dissolved Organic Carbon	mg/L	0.5	-	-	-	5	0	0	4.16	4.15	0.168	0.0753	3.92	4.37	-	-
Total Organic Carbon	mg/L	0.5	-	-	-	5	0	0	4.66	4.45	0.324	0.145	4.43	5.13	-	-
Total Metals																
Aluminum (T)	ug/L	1	9.1	75	100	5	3	60	-	1	-	-	1	1.7	0	0
Antimony (T)	ug/L	0.02	0.51	4.5	6	5	4	80	-	0.02	-	-	0.02	0.026	0	0
Arsenic (T)	ug/L	0.02	3.8	18.8	25	5	0	0	0.682	0.65	0.0572	0.0256	0.636	0.757	0	0
Barium (T)	ug/L	0.02	77	750	1000	5	0	0	13.3	13.1	0.455	0.203	12.8	13.8	0	0
Beryllium (T)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Boron (T)	ug/L	5	23	1120	1500	5	0	0	8.54	8.4	0.397	0.178	8.2	9.2	0	0
Cadmium (T)	ug/L	0.005	0.05	0.03 0.0531	0.04 0.0708	5	5	100	-	-	-	-	-	0.005	0	0
Chromium (T)	ug/L	0.1	1.1	3.75	5	5	5	100	-	-	-	-	-	0.1	0	0
Cobalt (T)	ug/L	0.005	-	0.585	0.78	5	0	0	0.0139	0.0136	0.00135	0.000604	0.0123	0.0155	-	0
Copper (T)	ug/L	0.05	2	1500	2000	5	0	0	1.27	1.11	0.29	0.13	1.09	1.77	0	0
Iron (T)	ug/L	1	42	795	1060	5	0	0	3.68	3	1.76	0.786	2.4	6.6	0	0
Lead (T)	ug/L	0.01	0.15	3.75	5	5	2	40	0.0246	0.01	0.02	0.00894	0.01	0.047	0	0
Lithium (T)	ug/L	0.5	-	-	-	5	0	0	1.39	1.38	0.0421	0.0188	1.35	1.45	-	-
Manganese (T)	ug/L	0.05	5.5	90	120	5	0	0	0.845	0.8	0.131	0.0585	0.7	1.05	0	0
Mercury (T)	ug/L	0.1 0.5	0.02	0.0195	0.026	5	0	0	0.00224	0.00115	2.01E-03	8.97E-04	3.80E-04	0.00458	0	0
Molybdenum (T)	ug/L	0.05	5.2	54.8	73	5	0	0	0.178	0.152	0.0562	0.0251	0.147	0.278	0	0
Nickel (T)	ug/L	0.05	2.7	18.8	25	5	0	0	0.804	0.797	0.0297	0.0133	0.767	0.845	0	0
Selenium (T)	ug/L	0.04	0.16	0.75	1	5	0	0	0.057	0.056	0.00436	0.00195	0.053	0.064	0	0
Silver (T)	ug/L	0.005	0.1	0.188	0.25	4	4	100	-	-	-	-	-	0.005	0	0
Strontium (T)	ug/L	0.02	-	1880	2500	5	0	0	69.1	68.3	1.53	0.684	67.6	71.3	-	0
Thallium (T)	ug/L	0.005	0.1	0.6	0.8	5	5	100	-	-	-	-	-	0.005	0	0
Tin (T)	ug/L	0.02	-	-	-	5	5	100	-	-	-	-	-	0.02	-	-
Titanium (T)	ug/L	0.05	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-
Uranium (T)	ug/L	0.001	1.5	11.2	15	5	0	0	0.0201	0.0206	0.00172	0.000768	0.0178	0.022	0	0
Vanadium (T)	ug/L	0.05	-	90	120	5	5	100	-	-	-	-	-	0.05	-	0
Zinc (T)	ug/L	0.5	6.7	-	-	5	0	0	2.08	1.8	1.16	0.518	0.9	3.79	0	-
Dissolved Metals																
Aluminum (D)	ug/L	1	-	-	-	5	5	100	-	-	-	-	-	1	-	-
Antimony (D)	ug/L	0.02	-	-	-	5	4	80	-	0.02	-	-	0.02	0.021	-	-
Arsenic (D)	ug/L	0.02	-	-	-	5	0	0	0.646	0.638	0.0275	0.0123	0.617	0.683	-	-
Barium (D)	ug/L	0.02	-	-	-	5	0	0	12.8	12.8	0.23	0.103	12.6	13.2	-	-
Beryllium (D)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Boron (D)	ug/L	5	-	-	-	5	0	0	8.32	8.4	0.164	0.0735	8.1	8.5	-	-
Cadmium (D)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Chromium (D)	ug/L	0.1	-	-	-	5	5	100	-	-	-	-	-	0.1	-	-
Cobalt (D)	ug/L	0.005	-	-	-	5	0	0	0.0113	0.0114	0.000311	0.000139	0.0109	0.0116	-	-
Copper (D)	ug/L	0.05	-	-	-	5	0	0	1.05	1.06	0.0308	0.0138	0.998	1.08	-	0
Iron (D)	ug/L	1	-	-	-	5	0	0	1.8	1.7	0.474	0.212	1.4	2.6	-	-
Lead (D)	ug/L	0.01	-	3.36 5.55	4.48 7.4	5	3	60	-	0.01	-	-	0.01	0.016	-	0
Lithium (D)	ug/L	0.5	-	-	-	5	0	0	1.28	1.28	0.0207	0.00927	1.25	1.3	-	-
Manganese (D)	ug/L	0.05	-	158 248	210 330	5	0	0	0.176	0.159	0.0461	0.0206	0.133	0.24	-	0

Table C1-3. MEL-02 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-02 (Mid-field Exposure Area) Winter Sampling Event (April)										
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl
Mercury (D)	ug/L	0.1 0.5	-	-	-	5	0	0	0.00109	5.90E-04	0.0012	0.000535	3.20E-04	0.0032	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	4	0	0	0.171	0.136	0.0714	0.0357	0.133	0.278	-	-
Nickel (D)	ug/L	0.05	-	-	-	5	0	0	0.733	0.74	0.015	0.00669	0.713	0.748	-	-
Selenium (D)	ug/L	0.04	-	-	-	5	0	0	0.0612	0.06	0.00356	0.00159	0.058	0.067	-	-
Silver (D)	ug/L	0.005	-	-	-	4	4	100	-	-	-	-	-	0.005	-	-
Strontium (D)	ug/L	0.02	-	1880	2500	5	0	0	64.5	65.2	1.56	0.699	62.2	65.9	-	0
Thallium (D)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Tin (D)	ug/L	0.02	-	-	-	5	5	100	-	-	-	-	-	0.02	-	-
Titanium (D)	ug/L	0.05	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-
Uranium (D)	ug/L	0.001	-	-	-	5	0	0	0.02	0.0201	0.00119	0.000534	0.0183	0.0216	-	-
Vanadium (D)	ug/L	0.05	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-
Zinc (D)	ug/L	0.5	-	5.91 10.2	7.88 13.5	5	0	0	1.9	1.84	0.844	0.378	0.99	3.23	-	0
Other																
Cyanide (free)	mg/L	0.001	0.00035	-	-	5	5	100	-	-	-	-	-	0.001	100	-
Cyanide (Total)	mg/L	0.001	0.009	0.00375	0.005	5	5	100	-	-	-	-	-	0.001	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	5	5	100	-	-	-	-	-	0.001	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Table C1-4. MEL-03 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-03 (Reference Area 1) Winter Sampling Event (April)										
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl
Field Measurements																
Temperature	C	-	-	-	-	5	0	0	0.658	0.65	0.0303	0.0136	0.63	0.71	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	5	0	0	114	114	3.2	1.43	110	118	-	-
pH (field)	pH units	-	-	6.5 9.0	6.5 9.0	5	0	0	7.55	7.44	0.242	0.108	7.37	7.95	-	0
DO (mg/L)	mg/L	-	-	6.5	6.5	5	0	0	15.6	15.7	0.435	0.195	14.8	15.9	-	0
DO (%)	%	-	-	-	-	5	0	0	112	113	2.9	1.3	107	114	-	-
Conventional Parameters																
Conductivity (lab)	uS/cm	1	-	-	-	5	0	0	124	123	2.92	1.3	122	129	-	-
Hardness	mg/L	0.5	-	-	-	5	0	0	34.3	33.5	2.55	1.14	32.3	38.7	-	-
pH (lab)	pH units	0.1	-	6.5 9.0	6.5 9.0	5	0	0	7.2	7.21	0.0391	0.0175	7.15	7.24	-	0
Total Dissolved Solids	mg/L	10	68	375	500	5	0	0	60.9	66	10.8	4.81	46.3	70.7	40	0
Total Dissolved Solids (Calculated)	mg/L	1	68	375	500	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	1	3.1	-	-	5	5	100	-	-	-	-	-	1	0	-
Turbidity (lab)	NTU	0.1	-	-	-	5	0	0	0.144	0.14	0.0288	0.0129	0.12	0.19	-	-
Major Ions																
Alkalinity, Bicarbonate	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity, Total	mg/L	1	-	-	-	5	0	0	26.9	26.6	0.886	0.396	26.1	28.4	-	-
Bromide	mg/L	0.1	-	-	-	5	5	100	-	-	-	-	-	0.1	-	-
Calcium (D)	mg/L	0.01	-	-	-	5	0	0	10.8	10.6	0.75	0.335	10.2	12.1	-	-
Calcium (T)	mg/L	0.01 0.02	-	-	-	5	0	0	11.7	11.6	0.444	0.198	11.4	12.5	-	-
Chloride	mg/L	0.1	14	90	120	5	0	0	15.5	15.3	0.449	0.201	15.2	16.3	100	0
Fluoride	mg/L	0.02	0.0084	2.1	2.8	5	0	0	0.0408	0.041	0.000837	0.000374	0.04	0.042	100	0
Magnesium (D)	mg/L	0.004	-	-	-	5	0	0	1.78	1.7	0.166	0.0744	1.67	2.07	-	-
Magnesium (T)	mg/L	0.004 0.01	-	-	-	5	0	0	1.99	1.97	0.0611	0.0273	1.93	2.09	-	-
Potassium (D)	mg/L	0.02	-	-	-	5	0	0	1.37	1.34	0.0865	0.0387	1.3	1.52	-	-
Potassium (T)	mg/L	0.02 0.03	-	-	-	5	0	0	1.46	1.44	0.0614	0.0275	1.42	1.57	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	-	-	-	5	0	0	0.423	0.42	0.00953	0.00426	0.416	0.44	-	-
Sodium (D)	mg/L	0.02	-	-	-	5	0	0	7.21	6.92	0.63	0.282	6.84	8.33	-	-
Sodium (T)	mg/L	0.02	5.3	-	-	5	0	0	8.05	7.96	0.323	0.144	7.81	8.6	100	-
Sulphate	mg/L	0.3	38	-	-	5	0	0	6.3	6.21	0.173	0.0775	6.17	6.59	0	-
Nutrients																
Ammonia (as N)	mg/L	0.005	0.54	0.308 9.38	0.41 12.5	5	0	0	0.0257	0.0251	0.00728	0.00326	0.019	0.0379	0	0
Nitrate (as N)	mg/L	0.005	0.25	2.17	2.9	5	5	100	-	-	-	-	-	0.005	0	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	5	5	100	-	-	-	-	-	0.0224	-	-
Nitrite (as N)	mg/L	0.001	0.051	0.045	0.06	5	5	100	-	-	-	-	-	0.001	0	0
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	-	-	-	5	5	100	-	-	-	-	-	0.001	-	-
Total Diss Phosphorus	mg/L	0.001	-	-	-	5	0	0	0.00278	0.0027	0.000545	0.000244	0.0021	0.0036	-	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	5	0	0	0.234	0.217	0.0235	0.0105	0.216	0.264	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	-	-	-	5	0	0	0.252	0.247	0.0144	0.00645	0.237	0.271	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	5	0	0	0.234	0.217	0.0235	0.0105	0.216	0.264	-	-
Total Phosphorus	mg/L	0.001	0.0049	0.0075	0.01	5	0	0	0.00404	0.004	0.00059	0.000264	0.0034	0.005	20	-

Table C1-4. MEL-03 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-03 (Reference Area 1) Winter Sampling Event (April)										
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl
Organic/Inorganic Carbon																
Dissolved Organic Carbon	mg/L	0.5	-	-	-	5	0	0	3.95	3.93	0.0918	0.0411	3.87	4.09	-	-
Total Organic Carbon	mg/L	0.5	-	-	-	5	0	0	3.79	3.73	0.127	0.0568	3.7	4.01	-	-
Total Metals																
Aluminum (T)	ug/L	1	9.1	75	100	5	4	80	-	1	-	-	1	2.1	0	0
Antimony (T)	ug/L	0.02	0.51	4.5	6	5	5	100	-	-	-	-	-	0.02	0	0
Arsenic (T)	ug/L	0.02	3.8	18.8	25	5	0	0	0.417	0.414	0.0165	0.00738	0.399	0.435	0	0
Barium (T)	ug/L	0.02	77	750	1000	5	0	0	12	11.9	0.381	0.17	11.6	12.6	0	0
Beryllium (T)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Boron (T)	ug/L	5	23	1120	1500	5	0	0	7.2	7.3	0.2	0.0894	6.9	7.4	0	0
Cadmium (T)	ug/L	0.005	0.05	0.03 0.0531	0.04 0.0708	5	5	100	-	-	-	-	-	0.005	0	0
Chromium (T)	ug/L	0.1	1.1	3.75	5	5	4	80	-	0.1	-	-	0.1	0.12	0	0
Cobalt (T)	ug/L	0.005	-	0.585	0.78	5	0	0	0.00932	0.0092	0.000661	0.000296	0.0084	0.0101	-	0
Copper (T)	ug/L	0.05	2	1500	2000	5	0	0	0.987	0.984	0.0228	0.0102	0.964	1.02	0	0
Iron (T)	ug/L	1	42	795	1060	5	0	0	2.36	1.8	1.05	0.47	1.6	4.1	0	0
Lead (T)	ug/L	0.01	0.15	3.75	5	5	4	80	-	0.01	-	-	0.01	0.015	0	0
Lithium (T)	ug/L	0.5	-	-	-	5	0	0	1.2	1.2	0.0303	0.0136	1.16	1.24	-	-
Manganese (T)	ug/L	0.05	5.5	90	120	5	0	0	0.523	0.498	0.0531	0.0238	0.49	0.616	0	0
Mercury (T)	ug/L	0.1 0.5	0.02	0.0195	0.026	5	5	100	-	-	-	-	-	0.005	0	0
Molybdenum (T)	ug/L	0.05	5.2	54.8	73	5	0	0	0.126	0.127	0.00543	0.00243	0.12	0.134	0	0
Nickel (T)	ug/L	0.05	2.7	18.8	25	5	0	0	0.604	0.598	0.0197	0.00881	0.585	0.636	0	0
Selenium (T)	ug/L	0.04	0.16	0.75	1	5	0	0	0.048	0.048	0.00324	0.00145	0.044	0.053	0	0
Silver (T)	ug/L	0.005	0.1	0.188	0.25	5	5	100	-	-	-	-	-	0.005	0	0
Strontium (T)	ug/L	0.02	-	1880	2500	5	0	0	57.4	56.4	2.4	1.08	55.7	61.6	-	0
Thallium (T)	ug/L	0.005	0.1	0.6	0.8	5	5	100	-	-	-	-	-	0.005	0	0
Tin (T)	ug/L	0.02	-	-	-	5	5	100	-	-	-	-	-	0.02	-	-
Titanium (T)	ug/L	0.05	-	-	-	5	4	80	-	0.05	-	-	0.05	0.104	-	-
Uranium (T)	ug/L	0.001	1.5	11.2	15	5	0	0	0.0169	0.0177	0.00171	0.000764	0.0139	0.018	0	0
Vanadium (T)	ug/L	0.05	-	90	120	5	5	100	-	-	-	-	-	0.05	-	0
Zinc (T)	ug/L	0.5	6.7	-	-	5	0	0	1.23	0.99	0.538	0.241	0.58	1.83	0	-
Dissolved Metals																
Aluminum (D)	ug/L	1	-	-	-	5	5	100	-	-	-	-	-	1	-	-
Antimony (D)	ug/L	0.02	-	-	-	5	5	100	-	-	-	-	-	0.02	-	-
Arsenic (D)	ug/L	0.02	-	-	-	5	0	0	0.409	0.402	0.0171	0.00764	0.394	0.435	-	-
Barium (D)	ug/L	0.02	-	-	-	5	0	0	11.9	11.6	0.653	0.292	11.4	13	-	-
Beryllium (D)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Boron (D)	ug/L	5	-	-	-	5	0	0	7.04	7.1	0.182	0.0812	6.8	7.2	-	-
Cadmium (D)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Chromium (D)	ug/L	0.1	-	-	-	5	5	100	-	-	-	-	-	0.1	-	-
Cobalt (D)	ug/L	0.005	-	-	-	5	0	0	0.00766	0.0078	0.000744	0.000333	0.0065	0.0085	-	-
Copper (D)	ug/L	0.05	-	0.813 4.27	1.08 5.7	5	0	0	0.923	0.904	0.051	0.0228	0.888	1.01	-	0
Iron (D)	ug/L	1	-	-	-	5	0	0	1.1	1.1	0.1	0.0447	1	1.2	-	-
Lead (D)	ug/L	0.01	-	3.36 5.55	4.48 7.4	5	5	100	-	-	-	-	-	0.01	-	0
Lithium (D)	ug/L	0.5	-	-	-	5	0	0	1.16	1.13	0.063	0.0282	1.12	1.27	-	-
Manganese (D)	ug/L	0.05	-	158 248	210 330	5	0	0	0.165	0.155	0.0259	0.0116	0.142	0.201	-	0

Table C1-4. MEL-03 summary statistics for the 2023 winter water sampling event

Parameter	Units	DL (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-03 (Reference Area 1) Winter Sampling Event (April)										
						N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	%> FEIS	% > Act Lvl
Mercury (D)	ug/L	0.1 0.5	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	5	0	0	0.12	0.12	0.00731	0.00327	0.113	0.13	-	-
Nickel (D)	ug/L	0.05	-	-	-	5	0	0	0.565	0.56	0.0247	0.011	0.538	0.604	-	-
Selenium (D)	ug/L	0.04	-	-	-	5	0	0	0.0558	0.058	0.00559	0.0025	0.048	0.061	-	-
Silver (D)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Strontium (D)	ug/L	0.02	-	1880	2500	5	0	0	55.2	54	3.52	1.57	52.7	61.2	-	0
Thallium (D)	ug/L	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-
Tin (D)	ug/L	0.02	-	-	-	4	4	100	-	-	-	-	-	0.02	-	-
Titanium (D)	ug/L	0.05	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-
Uranium (D)	ug/L	0.001	-	-	-	5	0	0	0.0157	0.016	0.00141	0.00063	0.014	0.0174	-	-
Vanadium (D)	ug/L	0.05	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-
Zinc (D)	ug/L	0.5	-	5.91 10.2	7.88 13.5	5	0	0	1.68	1.5	0.788	0.353	1.01	2.92	-	0
Other																
Cyanide (free)	mg/L	0.001	0.00035	-	-	5	5	100	-	-	-	-	-	0.001	100	-
Cyanide (Total)	mg/L	0.001	0.009	0.00375	0.005	5	5	100	-	-	-	-	-	0.001	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	5	5	100	-	-	-	-	-	0.001	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Table C1-5. MEL-01 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-01 (Near-field Exposure Area) Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Field Measurements																		
Temperature	C	-	-	-	-	-	18	0	0	11.1	11.3	3.05	0.72	7.29	14.6	-	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	18	0	0	112	111	2.43	0.572	109	115	-	-	-
pH (field)	pH units	-	7.1 7.95	-	6.5 9.0	6.5 9.0	18	0	0	7.5	7.46	0.134	0.0316	7.33	7.85	0	-	0
DO (mg/L)	mg/L	-	-	-	6.5	6.5	18	0	0	10.3	10.2	0.736	0.174	9.45	11.3	-	-	0
DO (%)	%	-	-	-	-	-	18	0	0	95.9	95.9	0.677	0.159	93.8	97	-	-	-
Conventional Parameters																		
Conductivity (lab)	uS/cm	1	77.5	-	-	-	18	0	0	116	114	8.09	1.91	109	144	100	-	-
Hardness	mg/L	0.5	23.4	-	-	-	18	0	0	33.5	33.5	1.49	0.352	31	37.9	100	-	-
pH (lab)	pH units	0.1	-	-	6.5 9.0	6.5 9.0	18	0	0	7.45	7.45	0.0463	0.0109	7.35	7.51	-	-	0
Total Dissolved Solids	mg/L	10	54	68	375	500	18	0	0	64	64.8	7.74	1.82	47	83.1	94	17	0
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	375	500	18	0	0	75.6	73.8	5.26	1.24	70.8	93.6	100	100	0
Total Suspended Solids	mg/L	1	1	3.1	-	-	18	12	67	-	1	-	-	1	1.6	28	0	-
Turbidity (lab)	NTU	0.1	-	-	-	-	17	0	0	0.472	0.48	0.0578	0.014	0.37	0.58	-	-	-
Major Ions																		
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	18	0	0	21	20.7	1.41	0.333	19.1	23.2	0	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	-	18	18	100	-	-	-	-	-	1	-	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	18	18	100	-	-	-	-	-	1	-	-	-
Alkalinity, Total	mg/L	1	20.5	-	-	-	18	0	0	21	20.7	1.41	0.333	19.1	23.2	56	-	-
Bromide	mg/L	0.1	-	-	-	-	18	18	100	-	-	-	-	-	0.1	-	-	-
Calcium (D)	mg/L	0.01	-	-	-	-	18	0	0	10.3	10.2	0.426	0.1	9.53	11.4	-	-	-
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	18	0	0	10.2	10.1	0.344	0.081	9.68	11.2	100	-	-
Chloride	mg/L	0.1	9.56	14	90	120	18	0	0	16.6	16.2	1.72	0.406	15.3	22.9	100	100	0
Fluoride	mg/L	0.02	0.028	0.0084	2.1	2.8	18	0	0	0.0303	0.03	0.00146	0.000343	0.028	0.034	94	100	0
Magnesium (D)	mg/L	0.004	-	-	-	-	18	0	0	1.9	1.88	0.116	0.0274	1.76	2.3	-	-	-
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	18	0	0	1.88	1.88	0.109	0.0257	1.77	2.25	100	-	-
Potassium (D)	mg/L	0.02	-	-	-	-	18	0	0	1.22	1.21	0.0578	0.0136	1.11	1.37	-	-	-
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	18	0	0	1.19	1.19	0.0503	0.0119	1.14	1.37	100	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	18	0	0	0.544	0.556	0.0843	0.0199	0.3	0.654	100	-	-
Sodium (D)	mg/L	0.02	-	-	-	-	18	0	0	8.26	8.06	0.724	0.171	7.59	10.9	-	-	-
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	18	0	0	8.24	7.98	0.78	0.184	7.56	11.1	100	100	-
Sulphate	mg/L	0.3	3.87	38	-	-	18	0	0	7.21	7.07	0.7	0.165	6.7	9.81	100	0	-
Nutrients																		
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.308 9.38	0.41 12.5	18	4	22	0.00975	0.00975	0.00414	0.000976	0.005	0.0166	0	0	0
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.17	2.9	18	8	44	0.0172	0.00735	0.0216	0.0051	0.005	0.0938	33	0	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	18	8	44	0.0173	0.00735	0.0219	0.00515	0.0051	0.0951	-	-	-
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.045	0.06	18	17	94	-	0.001	-	-	0.001	0.0013	6	0	0
Nitrogen	mg/L	0.05	-	-	-	-	18	0	0	0.288	0.246	0.114	0.027	0.21	0.703	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	18	18	100	-	-	-	-	-	0.001	0	-	-
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	18	0	0	0.00238	0.00255	0.000528	0.000125	0.0014	0.0033	6	-	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	18	0	0	0.278	0.234	0.0765	0.018	0.195	0.403	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	18	0	0	0.273	0.232	0.112	0.0264	0.202	0.685	39	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	18	0	0	0.263	0.23	0.0728	0.0172	0.195	0.38	-	-	-
Total Phosphorus	mg/L	0.001	0.006	0.0049	0.0075	0.01	18	0	0	0.00597	0.00565	0.00155	0.000366	0.0042	0.0113	33	83	6

Table C1-5. MEL-01 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-01 (Near-field Exposure Area) Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Organic/Inorganic Carbon																		
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	18	0	0	4.28	4.24	0.274	0.0646	3.82	4.82	100	-	-
Total Organic Carbon	mg/L	0.5	3	-	-	-	18	0	0	4.2	4.18	0.252	0.0595	3.78	4.62	100	-	-
Total Metals																		
Aluminum (T)	ug/L	1	5.32	9.1	75	100	18	0	0	3.55	3.05	1.55	0.365	2.2	8.5	11	0	0
Antimony (T)	ug/L	0.02	0.02	0.51	4.5	6	18	16	89	-	0.02	-	-	0.02	0.03	11	0	0
Arsenic (T)	ug/L	0.02	0.275	3.8	18.8	25	18	0	0	0.642	0.648	0.0634	0.0149	0.53	0.724	100	0	0
Barium (T)	ug/L	0.02	8.05	77	750	1000	18	0	0	9.53	9.5	0.394	0.0929	9.06	10.5	100	0	0
Beryllium (T)	ug/L	0.005	0.005	-	-	-	18	18	100	-	-	-	-	-	0.005	0	-	-
Boron (T)	ug/L	5	6.52	23	1120	1500	18	0	0	7.67	7.45	0.697	0.164	7	10.1	100	0	0
Cadmium (T)	ug/L	0.005	0.005	0.05	0.03 0.0531	0.04 0.0708	18	18	100	-	-	-	-	-	0.005	0	0	0
Chromium (T)	ug/L	0.1	0.103	1.1	3.75	5	18	18	100	-	-	-	-	-	0.1	0	0	0
Cobalt (T)	ug/L	0.005	0.016	-	0.585	0.78	18	0	0	0.0295	0.0296	0.00603	0.00142	0.0227	0.0483	100	-	0
Copper (T)	ug/L	0.05	0.86	2	1500	2000	18	0	0	0.992	0.976	0.0771	0.0182	0.886	1.18	100	0	0
Iron (T)	ug/L	1	15	42	795	1060	18	0	0	24.6	24.8	6.39	1.51	15.3	33.6	100	0	0
Lead (T)	ug/L	0.01	0.0222	0.15	3.75	5	18	10	56	-	0.01	-	-	0.01	0.085	6	0	0
Lithium (T)	ug/L	0.5	0.72	-	-	-	18	0	0	1.11	1.06	0.122	0.0287	1	1.51	100	-	-
Manganese (T)	ug/L	0.05	3.06	5.5	90	120	18	0	0	9.5	6.54	4.68	1.1	5.76	16.6	100	100	0
Mercury (T)	ug/L	0.1 0.5	0.0008	0.02	0.0195	0.026	17	11	65	-	0.0005	-	-	0.0005	0.00235	6	0	0
Molybdenum (T)	ug/L	0.05	0.107	5.2	54.8	73	18	0	0	0.145	0.148	0.0164	0.00386	0.12	0.189	100	0	0
Nickel (T)	ug/L	0.05	0.441	2.7	18.8	25	18	0	0	0.829	0.835	0.0616	0.0145	0.746	0.981	100	0	0
Selenium (T)	ug/L	0.04	0.049	0.16	0.75	1	18	0	0	0.0499	0.0495	0.00453	0.00107	0.044	0.061	50	0	0
Silver (T)	ug/L	0.005	0.005	0.1	0.188	0.25	18	18	100	-	-	-	-	-	0.005	0	0	0
Strontium (T)	ug/L	0.02	36.1	-	1880	2500	18	0	0	59.2	58.3	3.81	0.899	56.4	73.1	100	-	0
Thallium (T)	ug/L	0.005	0.005	0.1	0.6	0.8	18	18	100	-	-	-	-	-	0.005	0	0	0
Tin (T)	ug/L	0.02	0.0384	-	-	-	18	4	22	0.034	0.0325	0.0142	0.00335	0.02	0.066	28	-	-
Titanium (T)	ug/L	0.05	0.17	-	-	-	18	0	0	0.208	0.101	0.353	0.0831	0.051	1.6	33	-	-
Uranium (T)	ug/L	0.001	0.0164	1.5	11.2	15	18	0	0	0.0284	0.0274	0.00418	0.000985	0.0255	0.0443	100	0	0
Vanadium (T)	ug/L	0.05	0.05	-	90	120	18	18	100	-	-	-	-	-	0.05	0	-	0
Zinc (T)	ug/L	0.5	1.7	6.7	-	-	18	12	67	-	0.5	-	-	0.5	2.67	6	0	-
Dissolved Metals																		
Aluminum (D)	ug/L	1	-	-	-	-	18	2	11	1.99	1.5	1.31	0.309	1	5.2	-	-	-
Antimony (D)	ug/L	0.02	-	-	-	-	18	14	78	-	0.02	-	-	0.02	0.03	-	-	-
Arsenic (D)	ug/L	0.02	-	-	-	-	18	0	0	0.606	0.618	0.0534	0.0126	0.521	0.665	-	-	-
Barium (D)	ug/L	0.02	-	-	-	-	18	0	0	9.3	9.28	0.474	0.112	8.41	10.3	-	-	-
Beryllium (D)	ug/L	0.005	-	-	-	-	18	18	100	-	-	-	-	-	0.005	-	-	-
Boron (D)	ug/L	5	-	-	-	-	18	0	0	7.52	7.3	0.751	0.177	7	10.2	-	-	-
Cadmium (D)	ug/L	0.005	-	-	-	-	18	18	100	-	-	-	-	-	0.005	-	-	-
Chromium (D)	ug/L	0.1	-	-	-	-	18	18	100	-	-	-	-	-	0.1	-	-	-
Cobalt (D)	ug/L	0.005	-	-	-	-	18	0	0	0.0168	0.0148	0.00513	0.00121	0.0127	0.0339	-	-	-
Copper (D)	ug/L	0.05	0.861	-	0.813 4.27	1.08 5.7	18	0	0	0.972	0.955	0.0931	0.0219	0.884	1.22	100	-	0
Iron (D)	ug/L	1	-	-	-	-	18	0	0	7.07	6.4	2.69	0.635	4.2	15.4	-	-	-
Lead (D)	ug/L	0.01	0.0125	-	3.36 5.55	4.48 7.4	18	12	67	-	0.01	-	-	0.01	0.084	22	-	0
Lithium (D)	ug/L	0.5	-	-	-	-	18	0	0	1.1	1.07	0.126	0.0298	1.01	1.58	-	-	-
Manganese (D)	ug/L	0.05	1.2	-	158 248	210 330	18	0	0	0.628	0.522	0.203	0.0478	0.43	0.977	0	-	0

Table C1-5. MEL-01 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-01 (Near-field Exposure Area) Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Mercury (D)	ug/L	0.1 0.5	-	-	-	-	18	17	94	-	5.00E-04	-	-	5.00E-04	0.00057	-	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	-	18	0	0	0.15	0.153	0.0188	0.00442	0.117	0.202	-	-	-
Nickel (D)	ug/L	0.05	-	-	-	-	18	0	0	0.833	0.807	0.119	0.0281	0.717	1.18	-	-	-
Selenium (D)	ug/L	0.04	-	-	-	-	18	0	0	0.0507	0.0505	0.00494	0.00117	0.043	0.058	-	-	-
Silver (D)	ug/L	0.005	-	-	-	-	18	18	100	-	-	-	-	-	0.005	-	-	-
Strontium (D)	ug/L	0.02	-	-	1880	2500	18	0	0	60.1	59.3	3.87	0.911	55.8	73.3	-	-	0
Thallium (D)	ug/L	0.005	-	-	-	-	18	18	100	-	-	-	-	-	0.005	-	-	-
Tin (D)	ug/L	0.02	-	-	-	-	17	3	18	0.0445	0.033	0.0297	0.00721	0.02	0.104	-	-	-
Titanium (D)	ug/L	0.05	-	-	-	-	18	15	83	-	0.05	-	-	0.05	0.195	-	-	-
Uranium (D)	ug/L	0.001	-	-	-	-	18	0	0	0.0265	0.0258	0.00394	0.000929	0.0222	0.0403	-	-	-
Vanadium (D)	ug/L	0.05	-	-	-	-	18	18	100	-	-	-	-	-	0.05	-	-	-
Zinc (D)	ug/L	0.5	1.9	-	5.91 10.2	7.88 13.5	18	9	50	-	0.53	-	-	0.5	13.8	22	-	6
Other																		
Cyanide (free)	mg/L	0.001	-	0.00035	-	-	18	18	100	-	-	-	-	-	0.001	-	100	-
Cyanide (Total)	mg/L	0.001	0.001	0.009	0.00375	0.005	18	18	100	-	-	-	-	-	0.001	0	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	-	18	18	100	-	-	-	-	-	0.001	-	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Orange shaded values indicate parameters where at least 1 sample > Normal Range.

Table C1-6. MEL-02 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-02 (Mid-field Exposure Area)											
							Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Field Measurements																		
Temperature	C	-	-	-	-	-	15	0	0	11.8	11.3	3.78	0.976	7.54	16.6	-	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	15	0	0	97.1	96.7	1.58	0.407	95.1	99.3	-	-	-
pH (field)	pH units	-	7.1 7.95	-	6.5 9.0	6.5 9.0	15	0	0	7.44	7.54	0.179	0.0462	7.09	7.6	7	-	0
DO (mg/L)	mg/L	-	-	-	6.5	6.5	15	0	0	10.3	10.3	0.695	0.179	9.46	11.2	-	-	0
DO (%)	%	-	-	-	-	-	15	0	0	97.7	96.9	1.9	0.491	95.7	101	-	-	-
Conventional Parameters																		
Conductivity (lab)	uS/cm	1	77.5	-	-	-	15	0	0	96.4	97.4	3.03	0.782	91.6	100	100	-	-
Hardness	mg/L	0.5	23.4	-	-	-	15	0	0	28.7	28.9	0.893	0.231	26	29.8	100	-	-
pH (lab)	pH units	0.1	-	-	6.5 9.0	6.5 9.0	15	0	0	7.42	7.45	0.0493	0.0127	7.33	7.47	-	-	0
Total Dissolved Solids	mg/L	10	54	68	375	500	15	0	0	55.2	54.9	3.54	0.914	47.5	61.1	60	0	0
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	375	500	15	0	0	62.7	63.3	1.97	0.508	59.5	65	100	0	0
Total Suspended Solids	mg/L	1	1	3.1	-	-	15	14	93	-	1	-	-	1	1.1	7	0	-
Turbidity (lab)	NTU	0.1	-	-	-	-	15	0	0	0.288	0.28	0.0457	0.0118	0.22	0.4	-	-	-
Major Ions																		
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	15	0	0	20.1	19.4	1.38	0.356	18.7	22	0	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	-	15	15	100	-	-	-	-	-	1	-	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	15	15	100	-	-	-	-	-	1	-	-	-
Alkalinity, Total	mg/L	1	20.5	-	-	-	15	0	0	20.1	19.4	1.38	0.356	18.7	22	33	-	-
Bromide	mg/L	0.1	-	-	-	-	15	15	100	-	-	-	-	-	0.1	-	-	-
Calcium (D)	mg/L	0.01	-	-	-	-	15	0	0	8.98	9.04	0.264	0.0682	8.17	9.27	-	-	-
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	15	0	0	8.9	8.96	0.377	0.0974	8.31	9.49	100	-	-
Chloride	mg/L	0.1	9.56	14	90	120	15	0	0	13.1	13.2	0.278	0.0718	12.7	13.6	100	0	0
Fluoride	mg/L	0.02	0.028	0.0084	2.1	2.8	15	0	0	0.0297	0.03	0.000724	0.000187	0.028	0.031	93	100	0
Magnesium (D)	mg/L	0.004	-	-	-	-	15	0	0	1.53	1.54	0.0592	0.0153	1.36	1.62	-	-	-
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	15	0	0	1.52	1.54	0.0653	0.0169	1.44	1.62	100	-	-
Potassium (D)	mg/L	0.02	-	-	-	-	15	0	0	1.08	1.08	0.0461	0.0119	0.96	1.18	-	-	-
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	15	0	0	1.06	1.06	0.0375	0.00969	1.01	1.12	100	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	15	0	0	0.435	0.452	0.0526	0.0136	0.305	0.486	100	-	-
Sodium (D)	mg/L	0.02	-	-	-	-	15	0	0	6.53	6.53	0.194	0.0501	6.09	6.89	-	-	-
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	15	0	0	6.39	6.51	0.309	0.0798	5.92	6.77	100	100	-
Sulphate	mg/L	0.3	3.87	38	-	-	15	0	0	5.55	5.57	0.241	0.0623	5.21	5.9	100	0	-
Nutrients																		
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.308 9.38	0.41 12.5	15	3	20	0.0117	0.0078	0.00853	0.0022	0.005	0.0328	20	0	0
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.17	2.9	15	9	60	-	0.005	-	-	0.005	0.0408	7	0	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	15	9	60	-	0.0051	-	-	0.0051	0.0408	-	-	-
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.045	0.06	15	15	100	-	-	-	-	-	0.001	0	0	0
Nitrogen	mg/L	0.05	-	-	-	-	15	0	0	0.258	0.246	0.0367	0.00946	0.209	0.347	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	15	15	100	-	-	-	-	-	0.001	0	-	-
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	15	0	0	0.00204	0.0021	0.000431	0.000111	0.0012	0.0026	0	-	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	15	0	0	0.254	0.228	0.0617	0.0159	0.188	0.371	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	15	0	0	0.252	0.243	0.0358	0.00924	0.209	0.34	40	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	15	0	0	0.248	0.228	0.0597	0.0154	0.184	0.364	-	-	-
Total Phosphorus	mg/L	0.001	0.006	0.0049	0.0075	0.01	15	0	0	0.00437	0.0042	0.000753	0.000194	0.0033	0.0066	7	13	-

Table C1-6. MEL-02 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-02 (Mid-field Exposure Area)											
							Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Organic/Inorganic Carbon																		
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	15	0	0	3.99	3.88	0.48	0.124	3.27	5.12	100	-	-
Total Organic Carbon	mg/L	0.5	3	-	-	-	15	0	0	3.83	3.82	0.156	0.0402	3.5	4.19	100	-	-
Total Metals																		
Aluminum (T)	ug/L	1	5.32	9.1	75	100	15	0	0	2.54	2	1.05	0.271	1.7	5.2	0	0	0
Antimony (T)	ug/L	0.02	0.02	0.51	4.5	6	15	14	93	-	0.02	-	-	0.02	0.021	7	0	0
Arsenic (T)	ug/L	0.02	0.275	3.8	18.8	25	15	0	0	0.749	0.736	0.089	0.023	0.64	0.904	100	0	0
Barium (T)	ug/L	0.02	8.05	77	750	1000	15	0	0	9.14	9.06	0.36	0.093	8.72	9.77	100	0	0
Beryllium (T)	ug/L	0.005	0.005	-	-	-	15	15	100	-	-	-	-	-	0.005	0	-	-
Boron (T)	ug/L	5	6.52	23	1120	1500	15	0	0	5.82	5.8	0.157	0.0405	5.6	6.1	0	0	0
Cadmium (T)	ug/L	0.005	0.005	0.05	0.03 0.0531	0.04 0.0708	15	15	100	-	-	-	-	-	0.005	0	0	0
Chromium (T)	ug/L	0.1	0.103	1.1	3.75	5	15	15	100	-	-	-	-	-	0.1	0	0	0
Cobalt (T)	ug/L	0.005	0.016	-	0.585	0.78	15	0	0	0.0188	0.0198	0.00361	0.000933	0.0137	0.0275	67	-	0
Copper (T)	ug/L	0.05	0.86	2	1500	2000	15	0	0	1.09	0.912	0.481	0.124	0.833	2.73	80	7	0
Iron (T)	ug/L	1	15	42	795	1060	15	0	0	16.1	16.7	3.77	0.972	10.9	21.8	67	0	0
Lead (T)	ug/L	0.01	0.0222	0.15	3.75	5	15	4	27	0.0509	0.018	0.0772	0.0199	0.01	0.308	33	7	0
Lithium (T)	ug/L	0.5	0.72	-	-	-	15	0	0	0.914	0.92	0.0338	0.00872	0.86	0.96	100	-	-
Manganese (T)	ug/L	0.05	3.06	5.5	90	120	15	0	0	5.33	4.66	1.78	0.46	3.57	8.19	100	33	0
Mercury (T)	ug/L	0.1 0.5	0.0008	0.02	0.0195	0.026	15	10	67	-	0.0005	-	-	0.0005	0.00083	7	0	0
Molybdenum (T)	ug/L	0.05	0.107	5.2	54.8	73	15	0	0	0.107	0.109	0.00925	0.00239	0.092	0.123	53	0	0
Nickel (T)	ug/L	0.05	0.441	2.7	18.8	25	15	0	0	0.699	0.71	0.13	0.0336	0.561	1.06	100	0	0
Selenium (T)	ug/L	0.04	0.049	0.16	0.75	1	15	2	13	0.0455	0.046	0.00277	0.000716	0.04	0.049	0	0	0
Silver (T)	ug/L	0.005	0.005	0.1	0.188	0.25	15	15	100	-	-	-	-	-	0.005	0	0	0
Strontium (T)	ug/L	0.02	36.1	-	1880	2500	15	0	0	48.5	48.8	1.26	0.326	46.2	50.2	100	-	0
Thallium (T)	ug/L	0.005	0.005	0.1	0.6	0.8	15	15	100	-	-	-	-	-	0.005	0	0	0
Tin (T)	ug/L	0.02	0.0384	-	-	-	14	6	43	0.0238	0.0215	0.00435	0.00116	0.02	0.031	0	-	-
Titanium (T)	ug/L	0.05	0.17	-	-	-	15	9	60	-	0.05	-	-	0.05	0.132	0	-	-
Uranium (T)	ug/L	0.001	0.0164	1.5	11.2	15	15	0	0	0.0216	0.0215	0.00135	0.000349	0.0196	0.0242	100	0	0
Vanadium (T)	ug/L	0.05	0.05	-	90	120	15	15	100	-	-	-	-	-	0.05	0	-	0
Zinc (T)	ug/L	0.5	1.7	6.7	-	-	15	9	60	-	0.5	-	-	0.5	6.97	40	7	-
Dissolved Metals																		
Aluminum (D)	ug/L	1	-	-	-	-	15	5	33	1.55	1.2	1.21	0.312	1	5.8	-	-	-
Antimony (D)	ug/L	0.02	-	-	-	-	15	14	93	-	0.02	-	-	0.02	0.023	-	-	-
Arsenic (D)	ug/L	0.02	-	-	-	-	15	0	0	0.712	0.701	0.0986	0.0255	0.583	0.852	-	-	-
Barium (D)	ug/L	0.02	-	-	-	-	15	0	0	8.96	8.95	0.337	0.0871	8.32	9.64	-	-	-
Beryllium (D)	ug/L	0.005	-	-	-	-	15	15	100	-	-	-	-	-	0.005	-	-	-
Boron (D)	ug/L	5	-	-	-	-	15	0	0	6.02	6	0.211	0.0545	5.6	6.6	-	-	-
Cadmium (D)	ug/L	0.005	-	-	-	-	15	15	100	-	-	-	-	-	0.005	-	-	-
Chromium (D)	ug/L	0.1	-	-	-	-	15	14	93	-	0.1	-	-	0.1	0.24	-	-	-
Cobalt (D)	ug/L	0.005	-	-	-	-	15	0	0	0.0121	0.0106	0.00664	0.00171	0.0078	0.0347	-	-	-
Copper (D)	ug/L	0.05	0.861	-	0.813 4.27	1.08 5.7	15	0	0	1.2	0.858	0.827	0.213	0.801	4.06	47	-	7
Iron (D)	ug/L	1	-	-	-	-	15	0	0	6.97	6.9	4.42	1.14	2.8	20.8	-	-	-
Lead (D)	ug/L	0.01	0.0125	-	3.36 5.55	4.48 7.4	15	9	60	-	0.01	-	-	0.01	0.098	40	-	0
Lithium (D)	ug/L	0.5	-	-	-	-	15	0	0	0.953	0.95	0.0379	0.00978	0.87	1.05	-	-	-
Manganese (D)	ug/L	0.05	1.2	-	158 248	210 330	15	0	0	0.745	0.5	0.542	0.14	0.307	2.34	13	-	0

Table C1-6. MEL-02 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-02 (Mid-field Exposure Area) Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Mercury (D)	ug/L	0.1 0.5	-	-	-	-	15	14	93	-	5.00E-04	-	-	5.00E-04	0.00055	-	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	-	15	0	0	0.115	0.107	0.0282	0.00727	0.093	0.202	-	-	-
Nickel (D)	ug/L	0.05	-	-	-	-	15	0	0	0.753	0.699	0.295	0.0763	0.529	1.71	-	-	-
Selenium (D)	ug/L	0.04	-	-	-	-	15	1	7	0.0456	0.045	0.00447	0.00115	0.04	0.054	-	-	-
Silver (D)	ug/L	0.005	-	-	-	-	15	15	100	-	-	-	-	-	0.005	-	-	-
Strontium (D)	ug/L	0.02	-	-	1880	2500	15	0	0	48.2	48.6	1.91	0.493	42	50.1	-	-	0
Thallium (D)	ug/L	0.005	-	-	-	-	15	15	100	-	-	-	-	-	0.005	-	-	-
Tin (D)	ug/L	0.02	-	-	-	-	15	6	40	0.04	0.024	0.0361	0.00933	0.02	0.138	-	-	-
Titanium (D)	ug/L	0.05	-	-	-	-	15	13	87	-	0.05	-	-	0.05	0.3	-	-	-
Uranium (D)	ug/L	0.001	-	-	-	-	15	0	0	0.02	0.02	0.00124	0.000319	0.0176	0.022	-	-	-
Vanadium (D)	ug/L	0.05	-	-	-	-	14	14	100	-	-	-	-	-	0.05	-	-	-
Zinc (D)	ug/L	0.5	1.9	-	5.91 10.2	7.88 13.5	15	9	60	-	0.5	-	-	0.5	8.65	40	-	13
Other																		
Cyanide (free)	mg/L	0.001	-	0.00035	-	-	15	15	100	-	-	-	-	-	0.001	-	100	-
Cyanide (Total)	mg/L	0.001	0.001	0.009	0.00375	0.005	15	15	100	-	-	-	-	-	0.001	0	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	-	15	15	100	-	-	-	-	-	0.001	-	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Orange shaded values indicate parameters where at least 1 sample > Normal Range.

Table C1-7. MEL-03 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-03 (Reference Area 1)											
							Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Field Measurements																		
Temperature	C	-	-	-	-	-	15	0	0	11.3	10	3.73	0.963	7.38	16.2	-	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	15	0	0	85.3	85.7	1.44	0.372	82.8	86.7	-	-	-
pH (field)	pH units	-	7.1 7.95	-	6.5 9.0	6.5 9.0	15	0	0	7.31	7.57	0.434	0.112	6.24	7.61	27	-	7
DO (mg/L)	mg/L	-	-	-	6.5	6.5	15	0	0	10.4	10.7	0.734	0.189	9.39	11.2	-	-	0
DO (%)	%	-	-	-	-	-	15	0	0	97.1	97.7	1.43	0.368	94.9	98.8	-	-	-
Conventional Parameters																		
Conductivity (lab)	uS/cm	1	77.5	-	-	-	15	0	0	85.4	86	2.6	0.672	81.5	89.1	100	-	-
Hardness	mg/L	0.5	23.4	-	-	-	15	0	0	25.9	26	0.289	0.0746	25.3	26.5	100	-	-
pH (lab)	pH units	0.1	-	-	6.5 9.0	6.5 9.0	15	0	0	7.47	7.47	0.0125	0.00322	7.45	7.49	-	-	0
Total Dissolved Solids	mg/L	10	54	68	375	500	15	0	0	48.1	47.2	3.7	0.956	42.6	54.2	7	0	0
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	375	500	15	0	0	55.5	55.9	1.7	0.438	53	57.9	100	0	0
Total Suspended Solids**	mg/L	1	1	3.1	-	-	13	10	77	-	1	-	-	1	8.7	23	8	-
Turbidity (lab)**	NTU	0.1	-	-	-	-	13	0	0	0.365	0.32	0.113	0.0312	0.26	0.62	-	-	-
Major Ions																		
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	15	0	0	19.4	18.8	1.48	0.381	17.9	22.3	0	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	-	15	15	100	-	-	-	-	-	1	-	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	15	15	100	-	-	-	-	-	1	-	-	-
Alkalinity, Total	mg/L	1	20.5	-	-	-	15	0	0	19.4	18.8	1.48	0.381	17.9	22.3	33	-	-
Bromide	mg/L	0.1	-	-	-	-	15	15	100	-	-	-	-	-	0.1	-	-	-
Calcium (D)	mg/L	0.01	-	-	-	-	15	0	0	8.16	8.17	0.0965	0.0249	7.95	8.37	-	-	-
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	15	0	0	8.27	8.08	0.448	0.116	7.67	9.09	100	-	-
Chloride	mg/L	0.1	9.56	14	90	120	15	0	0	11.1	11.2	0.171	0.0441	10.8	11.3	100	0	0
Fluoride	mg/L	0.02	0.028	0.0084	2.1	2.8	15	0	0	0.0287	0.029	0.000488	0.000126	0.028	0.029	67	100	0
Magnesium (D)	mg/L	0.004	-	-	-	-	15	0	0	1.35	1.35	0.0113	0.00293	1.33	1.37	-	-	-
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	15	0	0	1.4	1.33	0.195	0.0502	1.27	2.06	100	-	-
Potassium (D)	mg/L	0.02	-	-	-	-	15	0	0	1.02	1.01	0.0236	0.00609	0.981	1.06	-	-	-
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	15	0	0	1.03	0.999	0.0836	0.0216	0.953	1.3	93	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	15	0	0	0.342	0.344	0.0348	0.00898	0.284	0.405	100	-	-
Sodium (D)	mg/L	0.02	-	-	-	-	15	0	0	5.55	5.56	0.0679	0.0175	5.4	5.66	-	-	-
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	15	0	0	5.55	5.47	0.288	0.0743	5.09	5.97	100	80	-
Sulphate	mg/L	0.3	3.87	38	-	-	15	0	0	4.46	4.45	0.0488	0.0126	4.38	4.54	100	0	-
Nutrients																		
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.308 9.38	0.41 12.5	15	5	33	0.0114	0.0107	0.00803	0.00207	0.005	0.0307	20	0	0
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.17	2.9	15	8	53	-	0.005	-	-	0.005	0.0247	33	0	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	15	8	53	-	0.0051	-	-	0.0051	0.0247	-	-	-
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.045	0.06	15	15	100	-	-	-	-	-	0.001	0	0	0
Nitrogen	mg/L	0.05	-	-	-	-	15	0	0	0.234	0.216	0.0602	0.0155	0.153	0.38	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	15	15	100	-	-	-	-	-	0.001	0	-	-
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	15	3	20	0.00171	0.0017	0.000554	0.000143	0.001	0.0024	0	-	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	15	0	0	0.244	0.208	0.0774	0.02	0.168	0.37	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	15	0	0	0.225	0.216	0.0561	0.0145	0.153	0.356	40	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	15	0	0	0.235	0.208	0.0713	0.0184	0.165	0.346	-	-	-
Total Phosphorus	mg/L	0.001	0.006	0.0049	0.0075	0.01	13	0	0	0.00388	0.0042	0.000943	0.000262	0.0021	0.0051	0	8	-

Table C1-7. MEL-03 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-03 (Reference Area 1)											
							Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Organic/Inorganic Carbon																		
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	15	0	0	3.47	3.46	0.234	0.0604	3.04	3.83	100	-	-
Total Organic Carbon	mg/L	0.5	3	-	-	-	15	0	0	3.17	3.16	0.109	0.0282	2.92	3.35	93	-	-
Total Metals**																		
Aluminum (T)	ug/L	1	5.32	9.1	75	100	12	0	0	3.18	2.75	1.09	0.314	2.2	5.5	8	0	0
Antimony (T)	ug/L	0.02	0.02	0.51	4.5	6	14	14	100	-	-	-	-	-	0.02	0	0	0
Arsenic (T)	ug/L	0.02	0.275	3.8	18.8	25	14	0	0	0.406	0.39	0.0347	0.00927	0.373	0.484	100	0	0
Barium (T)	ug/L	0.02	8.05	77	750	1000	14	0	0	8.81	8.76	0.292	0.0781	8.48	9.6	100	0	0
Beryllium (T)	ug/L	0.005	0.005	-	-	-	14	14	100	-	-	-	-	-	0.005	0	-	-
Boron (T)	ug/L	5	6.52	23	1120	1500	14	11	79	-	5	-	-	5	5.1	0	0	0
Cadmium (T)	ug/L	0.005	0.005	0.05	0.03 0.0531	0.04 0.0708	14	14	100	-	-	-	-	-	0.005	0	0	0
Chromium (T)	ug/L	0.1	0.103	1.1	3.75	5	13	13	100	-	-	-	-	-	0.1	0	0	0
Cobalt (T)	ug/L	0.005	0.016	-	0.585	0.78	13	0	0	0.0151	0.0158	0.00197	0.000547	0.0119	0.018	38	-	0
Copper (T)	ug/L	0.05	0.86	2	1500	2000	14	0	0	0.907	0.832	0.146	0.0389	0.771	1.21	43	0	0
Iron (T)	ug/L	1	15	42	795	1060	13	0	0	13.8	13.6	2.52	0.698	10.1	18.4	23	0	0
Lead (T)	ug/L	0.01	0.0222	0.15	3.75	5	14	3	21	0.0437	0.019	0.0631	0.0169	0.01	0.248	43	7	0
Lithium (T)	ug/L	0.5	0.72	-	-	-	14	0	0	0.839	0.825	0.0346	0.00925	0.79	0.89	100	-	-
Manganese (T)	ug/L	0.05	3.06	5.5	90	120	14	0	0	3.96	4.14	0.988	0.264	2.72	6.24	64	7	0
Mercury (T)	ug/L	0.1 0.5	0.0008	0.02	0.0195	0.026	14	8	57	-	0.0005	-	-	0.00036	0.00218	7	0	0
Molybdenum (T)	ug/L	0.05	0.107	5.2	54.8	73	14	0	0	0.0929	0.094	0.00793	0.00212	0.081	0.106	0	0	0
Nickel (T)	ug/L	0.05	0.441	2.7	18.8	25	14	0	0	0.525	0.492	0.118	0.0316	0.441	0.912	93	0	0
Selenium (T)	ug/L	0.04	0.049	0.16	0.75	1	14	1	7	0.0436	0.0435	0.00241	0.000644	0.04	0.047	0	0	0
Silver (T)	ug/L	0.005	0.005	0.1	0.188	0.25	14	14	100	-	-	-	-	-	0.005	0	0	0
Strontium (T)	ug/L	0.02	36.1	-	1880	2500	14	0	0	42.4	42	1.37	0.367	40.6	44.6	100	-	0
Thallium (T)	ug/L	0.005	0.005	0.1	0.6	0.8	14	14	100	-	-	-	-	-	0.005	0	0	0
Tin (T)	ug/L	0.02	0.0384	-	-	-	13	6	46	0.0288	0.024	0.0121	0.00336	0.02	0.052	23	-	-
Titanium (T)	ug/L	0.05	0.17	-	-	-	13	2	15	0.136	0.119	0.101	0.0281	0.05	0.407	15	-	-
Uranium (T)	ug/L	0.001	0.0164	1.5	11.2	15	14	0	0	0.0204	0.0201	0.00466	0.00125	0.0154	0.0355	86	0	0
Vanadium (T)	ug/L	0.05	0.05	-	90	120	13	13	100	-	-	-	-	-	0.05	0	-	0
Zinc (T)	ug/L	0.5	1.7	6.7	-	-	14	5	36	1.31	0.715	1.08	0.29	0.5	3.76	36	0	-
Dissolved Metals**																		
Aluminum (D)	ug/L	1	-	-	-	-	13	5	38	1.52	1.1	0.637	0.177	1	2.6	-	-	-
Antimony (D)	ug/L	0.02	-	-	-	-	14	14	100	-	-	-	-	-	0.02	-	-	-
Arsenic (D)	ug/L	0.02	-	-	-	-	14	0	0	0.386	0.369	0.0391	0.0104	0.349	0.458	-	-	-
Barium (D)	ug/L	0.02	-	-	-	-	14	0	0	8.56	8.59	0.156	0.0416	8.33	8.82	-	-	-
Beryllium (D)	ug/L	0.005	-	-	-	-	14	14	100	-	-	-	-	-	0.005	-	-	-
Boron (D)	ug/L	5	-	-	-	-	14	5	36	5.18	5.2	0.148	0.0395	5	5.4	-	-	-
Cadmium (D)	ug/L	0.005	-	-	-	-	14	14	100	-	-	-	-	-	0.005	-	-	-
Chromium (D)	ug/L	0.1	-	-	-	-	14	14	100	-	-	-	-	-	0.1	-	-	-
Cobalt (D)	ug/L	0.005	-	-	-	-	14	0	0	0.00739	0.00675	0.00219	0.000585	0.0056	0.0144	-	-	-
Copper (D)	ug/L	0.05	0.861	-	0.813 4.27	1.08 5.7	14	0	0	0.845	0.772	0.134	0.0357	0.733	1.14	36	-	7
Iron (D)	ug/L	1	-	-	-	-	14	0	0	4.68	3.65	1.86	0.498	2.7	8.2	-	-	-
Lead (D)	ug/L	0.01	0.0125	-	3.36 5.55	4.48 7.4	14	9	64	-	0.01	-	-	0.01	0.135	29	-	0
Lithium (D)	ug/L	0.5	-	-	-	-	14	0	0	0.848	0.85	0.0286	0.00764	0.79	0.89	-	-	-
Manganese (D)	ug/L	0.05	1.2	-	158 248	210 330	14	0	0	0.53	0.474	0.383	0.102	0.281	1.79	7	-	0

Table C1-7. MEL-03 summary statistics for the 2023 open water sampling events

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-03 (Reference Area 1) Open Water Sampling Events (July, August, September)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Mercury (D)	ug/L	0.1 0.5	-	-	-	-	14	8	57	-	0.0005	-	-	0.00025	0.00059	-	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	-	14	0	0	0.0897	0.0905	0.00627	0.00168	0.08	0.098	-	-	-
Nickel (D)	ug/L	0.05	-	-	-	-	14	0	0	0.496	0.482	0.0763	0.0204	0.424	0.714	-	-	-
Selenium (D)	ug/L	0.04	-	-	-	-	14	4	29	0.0437	0.044	0.00317	0.000848	0.04	0.048	-	-	-
Silver (D)	ug/L	0.005	-	-	-	-	14	14	100	-	-	-	-	-	0.005	-	-	-
Strontium (D)	ug/L	0.02	-	-	1880	2500	14	0	0	42.1	42.3	0.582	0.155	41	42.8	-	-	0
Thallium (D)	ug/L	0.005	-	-	-	-	14	14	100	-	-	-	-	-	0.005	-	-	-
Tin (D)	ug/L	0.02	-	-	-	-	14	3	21	0.031	0.0265	0.0119	0.00319	0.02	0.059	-	-	-
Titanium (D)	ug/L	0.05	-	-	-	-	14	13	93	-	0.05	-	-	0.05	0.05	-	-	-
Uranium (D)	ug/L	0.001	-	-	-	-	14	0	0	0.0169	0.0166	0.00124	0.00033	0.0153	0.0194	-	-	-
Vanadium (D)	ug/L	0.05	-	-	-	-	14	14	100	-	-	-	-	-	0.05	-	-	-
Zinc (D)	ug/L	0.5	1.9	-	5.91 10.2	7.88 13.5	14	8	57	-	0.5	-	-	0.5	5.69	29	-	0
Other																		
Cyanide (free)	mg/L	0.001	-	0.00035	-	-	15	15	100	-	-	-	-	-	0.001	-	100	-
Cyanide (Total)	mg/L	0.001	0.001	0.009	0.00375	0.005	15	15	100	-	-	-	-	-	0.001	0	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	-	15	15	100	-	-	-	-	-	0.001	-	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Orange shaded values indicate parameters where at least 1 sample > Normal Range.

** Two results for TSS and turbidity were flagged as outliers in the August 2023 sampling event. based on high concentrations of TSS and turbidity. Metals with elevated DLs were also removed from the dataset.

Table C1-8. MEL-04 summary statistics for the August 2023 sampling event

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-04 Reference Area 2											
							Open Water Sampling Event (August)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Field Measurements																		
Temperature	C	-	-	-	-	-	5	0	0	16	16	0.0778	0.0348	15.9	16.1	-	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	5	0	0	84.8	84.8	0.0447	0.02	84.8	84.9	-	-	-
pH (field)	pH units	-	7.1 7.95	-	6.5 9.0	6.5 9.0	5	0	0	7.21	7.24	0.087	0.0389	7.08	7.31	20	-	0
DO (mg/L)	mg/L	-	-	-	6.5	6.5	5	0	0	9.46	9.47	0.0152	0.00678	9.44	9.48	-	-	0
DO (%)	%	-	-	-	-	-	5	0	0	98.6	98.7	0.23	0.103	98.4	98.9	-	-	-
Conventional Parameters																		
Conductivity (lab)	uS/cm	1	77.5	-	-	-	5	0	0	77.9	82	9.76	4.37	60.4	82.7	80	-	-
Hardness	mg/L	0.5	23.4	-	-	-	5	0	0	21.9	25.5	8.02	3.59	7.6	25.8	80	-	-
pH (lab)	pH units	0.1	-	-	6.5 9.0	6.5 9.0	5	0	0	7.4	7.42	0.065	0.0291	7.29	7.45	-	-	0
Total Dissolved Solids	mg/L	10	54	68	375	500	5	0	0	48.4	49.4	5.49	2.45	39.1	52.8	0	0	0
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	375	500	5	0	0	50.6	53.3	6.33	2.83	39.3	53.8	80	0	0
Total Suspended Solids	mg/L	1	1	3.1	-	-	5	3	60	-	1	-	-	1	2	40	0	-
Turbidity (lab)	NTU	0.1	-	-	-	-	5	0	0	0.334	0.31	0.0666	0.0298	0.27	0.41	-	-	-
Major Ions																		
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	5	0	0	19.2	20.7	3.4	1.52	13.1	20.8	0	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	-	5	5	100	-	-	-	-	-	1	-	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	5	5	100	-	-	-	-	-	1	-	-	-
Alkalinity, Total	mg/L	1	20.5	-	-	-	5	0	0	19.2	20.7	3.4	1.52	13.1	20.8	60	-	-
Bromide	mg/L	0.1	-	-	-	-	5	5	100	-	-	-	-	-	0.1	-	-	-
Calcium (D)	mg/L	0.01	-	-	-	-	5	0	0	6.9	8.01	2.53	1.13	2.38	8.11	-	-	-
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	5	0	0	7.82	7.8	0.113	0.0505	7.73	8.01	100	-	-
Chloride	mg/L	0.1	9.56	14	90	120	5	0	0	10.4	11	1.3	0.582	8.09	11	80	0	0
Fluoride	mg/L	0.02	0.028	0.0084	2.1	2.8	5	0	0	0.0278	0.029	0.00327	0.00146	0.022	0.03	80	100	0
Magnesium (D)	mg/L	0.004	-	-	-	-	5	0	0	1.15	1.33	0.416	0.186	0.403	1.35	-	-	-
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	5	0	0	1.29	1.28	0.0217	0.0097	1.26	1.31	100	-	-
Potassium (D)	mg/L	0.02	-	-	-	-	5	0	0	0.84	0.973	0.307	0.137	0.291	0.986	-	-	-
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	5	0	0	0.967	0.963	0.0138	0.00616	0.956	0.989	100	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	5	0	0	0.331	0.35	0.045	0.0201	0.252	0.364	80	-	-
Sodium (D)	mg/L	0.02	-	-	-	-	5	0	0	4.7	5.45	1.71	0.765	1.64	5.5	-	-	-
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	5	0	0	5.19	5.19	0.0537	0.024	5.14	5.28	100	0	-
Sulphate	mg/L	0.3	3.87	38	-	-	5	0	0	4.28	4.48	0.567	0.254	3.28	4.69	80	0	-
Nutrients																		
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.308 9.38	0.41 12.5	5	0	0	0.0124	0.0126	0.00315	0.00141	0.008	0.0163	0	0	0
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.17	2.9	5	5	100	-	-	-	-	-	0.005	0	0	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	5	5	100	-	-	-	-	-	0.0051	-	-	-
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.045	0.06	5	5	100	-	-	-	-	-	0.001	0	0	0
Nitrogen	mg/L	0.05	-	-	-	-	5	0	0	0.198	0.199	0.00977	0.00437	0.184	0.21	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	5	5	100	-	-	-	-	-	0.001	0	-	-
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	5	1	20	0.0015	0.0014	0.0004	0.000179	0.001	0.0021	0	-	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	5	0	0	0.183	0.191	0.0257	0.0115	0.139	0.205	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	5	0	0	0.198	0.199	0.00977	0.00437	0.184	0.21	0	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	5	0	0	0.183	0.191	0.0257	0.0115	0.139	0.205	-	-	-
Total Phosphorus	mg/L	0.001	0.006	0.0049	0.0075	0.01	5	0	0	0.00358	0.0034	0.000545	0.000244	0.0031	0.0043	0	0	-

Table C1-8. MEL-04 summary statistics for the August 2023 sampling event

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-04 Reference Area 2											
							Open Water Sampling Event (August)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Organic/Inorganic Carbon																		
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	5	0	0	4.27	4.26	0.466	0.208	3.54	4.71	100	-	-
Total Organic Carbon	mg/L	0.5	3	-	-	-	5	0	0	3.99	4	0.14	0.0626	3.78	4.16	100	-	-
Total Metals																		
Aluminum (T)	ug/L	1	5.32	9.1	75	100	5	0	0	1.98	1.6	0.572	0.256	1.5	2.7	0	0	0
Antimony (T)	ug/L	0.02	0.02	0.51	4.5	6	5	5	100	-	-	-	-	-	0.02	0	0	0
Arsenic (T)	ug/L	0.02	0.275	3.8	18.8	25	5	0	0	0.364	0.365	0.00554	0.00248	0.355	0.37	100	0	0
Barium (T)	ug/L	0.02	8.05	77	750	1000	5	0	0	8.66	8.61	0.0943	0.0422	8.59	8.82	100	0	0
Beryllium (T)	ug/L	0.005	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	0	-	-
Boron (T)	ug/L	5	6.52	23	1120	1500	5	4	80	-	5	-	-	5	5.1	0	0	0
Cadmium (T)	ug/L	0.005	0.005	0.05	0.03 0.0531	0.04 0.0708	5	5	100	-	-	-	-	-	0.005	0	0	0
Chromium (T)	ug/L	0.1	0.103	1.1	3.75	5	5	5	100	-	-	-	-	-	0.1	0	0	0
Cobalt (T)	ug/L	0.005	0.016	-	0.585	0.78	5	0	0	0.015	0.0144	0.00142	0.000635	0.0133	0.0168	40	-	0
Copper (T)	ug/L	0.05	0.86	2	1500	2000	5	0	0	1.08	0.953	0.311	0.139	0.893	1.63	100	0	0
Iron (T)	ug/L	1	15	42	795	1060	5	0	0	8.14	8	0.841	0.376	7.4	9.4	0	0	0
Lead (T)	ug/L	0.01	0.0222	0.15	3.75	5	5	0	0	0.0956	0.084	0.0307	0.0137	0.075	0.15	100	0	0
Lithium (T)	ug/L	0.5	0.72	-	-	-	5	0	0	0.816	0.8	0.0305	0.0136	0.8	0.87	100	-	-
Manganese (T)	ug/L	0.05	3.06	5.5	90	120	5	0	0	3.76	3.75	0.137	0.0614	3.6	3.92	100	0	0
Mercury (T)	ug/L	0.1 0.5	0.0008	0.02	0.0195	0.026	5	5	100	-	-	-	-	-	0.0005	0	0	0
Molybdenum (T)	ug/L	0.05	0.107	5.2	54.8	73	5	0	0	0.089	0.088	0.00235	0.00105	0.087	0.092	0	0	0
Nickel (T)	ug/L	0.05	0.441	2.7	18.8	25	5	0	0	0.64	0.596	0.159	0.0711	0.519	0.916	100	0	0
Selenium (T)	ug/L	0.04	0.049	0.16	0.75	1	5	0	0	0.0438	0.043	0.00277	0.00124	0.041	0.048	0	0	0
Silver (T)	ug/L	0.005	0.005	0.1	0.188	0.25	5	5	100	-	-	-	-	-	0.005	0	0	0
Strontium (T)	ug/L	0.02	36.1	-	1880	2500	5	0	0	40.8	40.7	0.378	0.169	40.6	41.5	100	-	0
Thallium (T)	ug/L	0.005	0.005	0.1	0.6	0.8	5	5	100	-	-	-	-	-	0.005	0	0	0
Tin (T)	ug/L	0.02	0.0384	-	-	-	5	2	40	0.0268	0.022	0.012	0.00535	0.02	0.048	20	-	-
Titanium (T)	ug/L	0.05	0.17	-	-	-	5	5	100	-	-	-	-	-	0.05	0	-	-
Uranium (T)	ug/L	0.001	0.0164	1.5	11.2	15	5	0	0	0.0178	0.0176	0.00124	0.000554	0.0166	0.0197	100	0	0
Vanadium (T)	ug/L	0.05	0.05	-	90	120	5	5	100	-	-	-	-	-	0.05	0	-	0
Zinc (T)	ug/L	0.5	1.7	6.7	-	-	5	0	0	3.23	2.84	1.18	0.529	2.31	5.3	100	0	-
Dissolved Metals																		
Aluminum (D)	ug/L	1	-	-	-	-	5	1	20	1.76	1.1	1.32	0.591	1	4.1	-	-	-
Antimony (D)	ug/L	0.02	-	-	-	-	5	5	100	-	-	-	-	-	0.02	-	-	-
Arsenic (D)	ug/L	0.02	-	-	-	-	5	0	0	0.331	0.363	0.0743	0.0332	0.198	0.367	-	-	-
Barium (D)	ug/L	0.02	-	-	-	-	5	0	0	7.52	8.65	2.55	1.14	2.95	8.69	-	-	-
Beryllium (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-
Boron (D)	ug/L	5	-	-	-	-	5	1	20	5.1	5.1	0.1	0.0447	5	5.2	-	-	-
Cadmium (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-
Chromium (D)	ug/L	0.1	-	-	-	-	4	4	100	-	-	-	-	-	0.1	-	-	-
Cobalt (D)	ug/L	0.005	-	-	-	-	4	0	0	0.0148	0.0144	0.00266	1.33E-03	0.0122	0.0181	-	-	-
Copper (D)	ug/L	0.05	0.861	-	0.813 4.27	1.08 5.7	5	0	0	1.44	1.26	0.417	0.187	1.17	2.16	100	-	20
Iron (D)	ug/L	1	-	-	-	-	5	0	0	9.06	4.4	10.8	4.81	3.8	28.3	-	-	-
Lead (D)	ug/L	0.01	0.0125	-	3.36 5.55	4.48 7.4	5	0	0	0.106	0.088	0.0364	0.0163	0.076	0.164	100	-	0
Lithium (D)	ug/L	0.5	-	-	-	-	5	1	20	0.774	0.84	0.153	0.0685	0.5	0.85	-	-	-
Manganese (D)	ug/L	0.05	1.2	-	158 248	210 330	5	0	0	1.58	0.843	1.62	0.722	0.756	4.46	20	-	0

Table C1-8. MEL-04 summary statistics for the August 2023 sampling event

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-04 Reference Area 2 Open Water Sampling Event (August)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Mercury (D)	ug/L	0.1 0.5	-	-	-	-	5	5	100	-	-	-	-	-	0.0005	-	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	-	5	1	20	0.086	0.091	0.0207	0.00924	0.05	0.101	-	-	-
Nickel (D)	ug/L	0.05	-	-	-	-	4	0	0	0.955	0.925	0.112	0.056	0.86	1.11	-	-	-
Selenium (D)	ug/L	0.04	-	-	-	-	5	3	60	-	0.04	-	-	0.04	0.041	-	-	-
Silver (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-
Strontium (D)	ug/L	0.02	-	-	1880	2500	5	0	0	34.9	40.2	12.4	5.55	12.7	41.1	-	-	0
Thallium (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-
Tin (D)	ug/L	0.02	-	-	-	-	5	1	20	0.032	0.026	0.0181	0.00809	0.02	0.064	-	-	-
Titanium (D)	ug/L	0.05	-	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-	-
Uranium (D)	ug/L	0.001	-	-	-	-	5	0	0	0.0139	0.0158	0.0046	0.00206	0.0057	0.0167	-	-	-
Vanadium (D)	ug/L	0.05	-	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-	-
Zinc (D)	ug/L	0.5	1.9	-	5.91 10.2	7.88 13.5	4	0	0	4.83	5.04	0.98	0.49	3.51	5.74	100	-	0
Other																		
Cyanide (free)	mg/L	0.001	-	0.00035	-	-	5	5	100	-	-	-	-	-	0.001	-	100	-
Cyanide (Total)	mg/L	0.001	0.001	0.009	0.00375	0.005	5	5	100	-	-	-	-	-	0.001	0	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	-	5	5	100	-	-	-	-	-	0.001	-	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Orange shaded values indicate parameters where at least 1 sample > Normal Range.

Table C1-9. MEL-05 summary statistics for the August 2023 sampling event

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-05 Reference Area 3											
							Open Water Sampling Event (August)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Field Measurements																		
Temperature	C	-	-	-	-	-	5	0	0	16.2	16.2	0.0152	0.00678	16.1	16.2	-	-	-
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	5	0	0	87.7	87.8	0.134	0.06	87.6	87.9	-	-	-
pH (field)	pH units	-	7.1 7.95	-	6.5 9.0	6.5 9.0	5	0	0	7.43	7.44	0.0497	0.0222	7.35	7.48	0	-	0
DO (mg/L)	mg/L	-	-	-	6.5	6.5	5	0	0	9.47	9.46	0.0152	0.00678	9.45	9.49	-	-	0
DO (%)	%	-	-	-	-	-	5	0	0	98.9	98.9	0.114	0.051	98.7	99	-	-	-
Conventional Parameters																		
Conductivity (lab)	uS/cm	1	77.5	-	-	-	5	0	0	83.5	85.2	3.78	1.69	76.7	85.2	80	-	-
Hardness	mg/L	0.5	23.4	-	-	-	5	0	0	26.9	27	0.164	0.0735	26.7	27.1	100	-	-
pH (lab)	pH units	0.1	-	-	6.5 9.0	6.5 9.0	5	0	0	7.48	7.47	0.0292	0.013	7.46	7.53	-	-	0
Total Dissolved Solids	mg/L	10	54	68	375	500	5	0	0	51.6	51.1	3.24	1.45	47.8	55.1	40	0	0
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	375	500	5	0	0	54.2	55.4	2.48	1.11	49.8	55.4	100	0	0
Total Suspended Solids	mg/L	1	1	3.1	-	-	5	5	100	-	-	-	-	-	1	0	0	-
Turbidity (lab)	NTU	0.1	-	-	-	-	5	0	0	0.298	0.3	0.00837	0.00374	0.29	0.31	-	-	-
Major Ions																		
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	5	0	0	22.4	22.2	0.526	0.235	22	23.3	0	-	-
Alkalinity, Carbonate	mg/L	1	-	-	-	-	5	5	100	-	-	-	-	-	1	-	-	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	5	5	100	-	-	-	-	-	1	-	-	-
Alkalinity, Total	mg/L	1	20.5	-	-	-	5	0	0	22.4	22.2	0.526	0.235	22	23.3	100	-	-
Bromide	mg/L	0.1	-	-	-	-	5	5	100	-	-	-	-	-	0.1	-	-	-
Calcium (D)	mg/L	0.01	-	-	-	-	5	0	0	8.52	8.53	0.0534	0.0239	8.46	8.58	-	-	-
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	5	0	0	8.17	8.17	0.0606	0.0271	8.08	8.25	100	-	-
Chloride	mg/L	0.1	9.56	14	90	120	5	0	0	11.1	11.1	0.0447	0.02	11.1	11.2	100	0	0
Fluoride	mg/L	0.02	0.028	0.0084	2.1	2.8	5	0	0	0.03	0.03	0	0	0.03	0.03	100	100	0
Magnesium (D)	mg/L	0.004	-	-	-	-	5	0	0	1.37	1.37	0.01	0.00447	1.36	1.38	-	-	-
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	5	0	0	1.31	1.31	0.0179	0.008	1.29	1.33	100	-	-
Potassium (D)	mg/L	0.02	-	-	-	-	5	0	0	1	0.998	0.0107	0.00477	0.996	1.02	-	-	-
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	5	0	0	0.983	0.982	0.00956	0.00427	0.973	0.999	100	-	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	5	0	0	0.409	0.41	0.00952	4.26E-03	0.399	0.419	100	-	-
Sodium (D)	mg/L	0.02	-	-	-	-	5	0	0	5.58	5.6	0.0462	0.0206	5.53	5.63	-	-	-
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	5	0	0	5.22	5.21	0.039	0.0174	5.18	5.28	100	0	-
Sulphate	mg/L	0.3	3.87	38	-	-	5	0	0	4.49	4.49	0.0207	0.00927	4.46	4.51	100	0	-
Nutrients																		
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.308 9.38	0.41 12.5	5	0	0	0.0086	0.0098	0.00219	0.00098	0.0053	0.0103	0	0	0
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.17	2.9	5	5	100	-	-	-	-	-	0.005	0	0	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	5	5	100	-	-	-	-	-	0.0051	-	-	-
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.045	0.06	5	5	100	-	-	-	-	-	0.001	0	0	0
Nitrogen	mg/L	0.05	-	-	-	-	5	0	0	0.204	0.202	0.0103	0.00461	0.195	0.222	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	5	5	100	-	-	-	-	-	0.001	0	-	-
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	5	0	0	0.0022	0.0021	0.000292	0.00013	0.0019	0.0026	0	-	-

Table C1-9. MEL-05 summary statistics for the August 2023 sampling event

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-05 Reference Area 3 Open Water Sampling Event (August)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	5	0	0	0.211	0.212	0.00537	0.0024	0.204	0.219	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	5	0	0	0.204	0.202	0.0103	0.00461	0.195	0.222	0	-	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	5	0	0	0.211	0.212	0.00537	0.0024	0.204	0.219	-	-	-
Total Phosphorus	mg/L	0.001	0.006	0.0049	0.0075	0.01	5	0	0	0.0036	0.0035	0.0004	0.000179	0.0033	0.0043	0	0	-
Organic/Inorganic Carbon																		
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	5	0	0	3.93	3.95	0.24	0.107	3.68	4.31	100	-	-
Total Organic Carbon	mg/L	0.5	3	-	-	-	5	0	0	3.93	3.88	0.252	0.113	3.6	4.25	100	-	-
Total Metals																		
Aluminum (T)	ug/L	1	5.32	9.1	75	100	5	0	0	1.88	1.8	0.249	0.111	1.7	2.3	0	0	0
Antimony (T)	ug/L	0.02	0.02	0.51	4.5	6	5	5	100	-	-	-	-	-	0.02	0	0	0
Arsenic (T)	ug/L	0.02	0.275	3.8	18.8	25	5	0	0	0.492	0.49	0.0063	0.00282	0.485	0.501	100	0	0
Barium (T)	ug/L	0.02	8.05	77	750	1000	5	0	0	8.99	8.98	0.131	0.0587	8.81	9.13	100	0	0
Beryllium (T)	ug/L	0.005	0.005	-	-	-	5	5	100	-	-	-	-	-	0.005	0	-	-
Boron (T)	ug/L	5	6.52	23	1120	1500	5	0	0	5.12	5.1	0.0837	0.0374	5	5.2	0	0	0
Cadmium (T)	ug/L	0.005	0.005	0.05	0.03 0.0531	0.04 0.0708	5	5	100	-	-	-	-	-	0.005	0	0	0
Chromium (T)	ug/L	0.1	0.103	1.1	3.75	5	5	5	100	-	-	-	-	-	0.1	0	0	0
Cobalt (T)	ug/L	0.005	0.016	-	0.585	0.78	5	0	0	0.0153	0.015	0.000907	4.06E-04	0.0146	0.0169	20	-	0
Copper (T)	ug/L	0.05	0.86	2	1500	2000	5	0	0	0.877	0.878	0.012	0.00538	0.86	0.889	80	0	0
Iron (T)	ug/L	1	15	42	795	1060	5	0	0	12.1	12.1	1.5	0.671	10.4	14.4	0	0	0
Lead (T)	ug/L	0.01	0.0222	0.15	3.75	5	5	0	0	0.0732	0.073	0.0039	0.00174	0.067	0.077	100	0	0
Lithium (T)	ug/L	0.5	0.72	-	-	-	5	0	0	0.818	0.81	0.0164	0.00735	0.8	0.84	100	-	-
Manganese (T)	ug/L	0.05	3.06	5.5	90	120	5	0	0	5	4.9	0.425	0.19	4.68	5.74	100	20	0
Mercury (T)	ug/L	0.1 0.5	0.0008	0.02	0.0195	0.026	5	3	60	-	0.0005	-	-	0.0005	0.00057	0	0	0
Molybdenum (T)	ug/L	0.05	0.107	5.2	54.8	73	5	0	0	0.0962	0.096	0.00148	0.000663	0.094	0.098	0	0	0
Nickel (T)	ug/L	0.05	0.441	2.7	18.8	25	5	0	0	0.503	0.508	0.0214	0.00958	0.479	0.528	100	0	0
Selenium (T)	ug/L	0.04	0.049	0.16	0.75	1	5	0	0	0.0442	0.045	0.00295	0.00132	0.04	0.048	0	0	0
Silver (T)	ug/L	0.005	0.005	0.1	0.188	0.25	5	5	100	-	-	-	-	-	0.005	0	0	0
Strontium (T)	ug/L	0.02	36.1	-	1880	2500	5	0	0	41.7	41.7	0.207	0.0927	41.4	41.9	100	-	0
Thallium (T)	ug/L	0.005	0.005	0.1	0.6	0.8	5	5	100	-	-	-	-	-	0.005	0	0	0
Tin (T)	ug/L	0.02	0.0384	-	-	-	5	3	60	-	0.02	-	-	0.02	0.032	0	-	-
Titanium (T)	ug/L	0.05	0.17	-	-	-	5	5	100	-	-	-	-	-	0.05	0	-	-
Uranium (T)	ug/L	0.001	0.0164	1.5	11.2	15	5	0	0	0.0188	0.0189	0.00192	0.000857	0.0156	0.0206	80	0	0
Vanadium (T)	ug/L	0.05	0.05	-	90	120	5	5	100	-	-	-	-	-	0.05	0	-	0
Zinc (T)	ug/L	0.5	1.7	6.7	-	-	5	0	0	2.3	2.34	0.178	0.0795	2	2.47	100	0	-
Dissolved Metals																		
Aluminum (D)	ug/L	1	-	-	-	-	5	0	0	1.7	1.5	0.4	0.179	1.3	2.3	-	-	-
Antimony (D)	ug/L	0.02	-	-	-	-	5	5	100	-	-	-	-	-	0.02	-	-	-
Arsenic (D)	ug/L	0.02	-	-	-	-	5	0	0	0.489	0.49	0.0129	0.00576	0.472	0.504	-	-	-
Barium (D)	ug/L	0.02	-	-	-	-	5	0	0	8.88	8.86	0.0789	0.0353	8.82	9.02	-	-	-
Beryllium (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-

Table C1-9. MEL-05 summary statistics for the August 2023 sampling event

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	AEMP Benchmark ^[f]	MEL-05 Reference Area 3 Open Water Sampling Event (August)											
							N	N<MDL	% <MDL	Mean	Median	SD	SE	Min	Max	% > NR	%> FEIS	% > Act Lvl
Boron (D)	ug/L	5	-	-	-	-	5	0	0	5.4	5.4	0	0	5.4	5.4	-	-	-
Cadmium (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-
Chromium (D)	ug/L	0.1	-	-	-	-	5	5	100	-	-	-	-	-	0.1	-	-	-
Cobalt (D)	ug/L	0.005	-	-	-	-	5	0	0	0.00946	0.0076	0.00341	0.00153	0.007	0.0152	-	-	-
Copper (D)	ug/L	0.05	0.861	-	0.813 4.27	1.08 5.7	5	0	0	1.02	0.998	0.15	0.0671	0.866	1.19	100	-	0
Iron (D)	ug/L	1	-	-	-	-	5	0	0	7.08	6.5	1.13	0.505	6	8.4	-	-	-
Lead (D)	ug/L	0.01	0.0125	-	3.36 5.55	4.48 7.4	5	0	0	0.0804	0.072	0.0221	0.00987	0.059	0.112	100	-	0
Lithium (D)	ug/L	0.5	-	-	-	-	5	0	0	0.882	0.88	0.011	0.0049	0.87	0.9	-	-	-
Manganese (D)	ug/L	0.05	1.2	-	158 248	210 330	5	0	0	0.664	0.608	0.168	0.0753	0.474	0.912	0	-	0
Mercury (D)	ug/L	0.1 0.5	-	-	-	-	5	5	100	-	-	-	-	-	0.0005	-	-	-
Molybdenum (D)	ug/L	0.05	-	-	-	-	5	0	0	0.0992	0.098	0.00239	0.00107	0.097	0.103	-	-	-
Nickel (D)	ug/L	0.05	-	-	-	-	5	0	0	0.589	0.515	0.175	0.078	0.483	0.895	-	-	-
Selenium (D)	ug/L	0.04	-	-	-	-	5	3	60	-	0.04	-	-	0.04	0.048	-	-	-
Silver (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-
Strontium (D)	ug/L	0.02	-	-	1880	2500	5	0	0	41.6	41.8	0.476	0.213	40.9	42.1	-	-	0
Thallium (D)	ug/L	0.005	-	-	-	-	5	5	100	-	-	-	-	-	0.005	-	-	-
Tin (D)	ug/L	0.02	-	-	-	-	5	1	20	0.032	0.031	0.00914	0.00409	0.02	0.042	-	-	-
Titanium (D)	ug/L	0.05	-	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-	-
Uranium (D)	ug/L	0.001	-	-	-	-	5	0	0	0.0187	0.0186	0.000889	0.000397	0.0176	0.0199	-	-	-
Vanadium (D)	ug/L	0.05	-	-	-	-	5	5	100	-	-	-	-	-	0.05	-	-	-
Zinc (D)	ug/L	0.5	1.9	-	5.91 10.2	7.88 13.5	5	0	0	3.15	2.89	1.06	0.475	2.12	4.55	100	-	0
Other																		
Cyanide (free)	mg/L	0.001	-	0.00035	-	-	5	5	100	-	-	-	-	-	0.001	-	100	-
Cyanide (Total)	mg/L	0.001	0.001	0.009	0.00375	0.005	5	5	100	-	-	-	-	-	0.001	0	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	-	5	5	100	-	-	-	-	-	0.001	-	-	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Orange shaded values indicate parameters where at least 1 sample > Normal Range.

Appendix C2

Meliadine Lake Water Quality – Supplemental Figures

APPENDIX C2 – FIGURES

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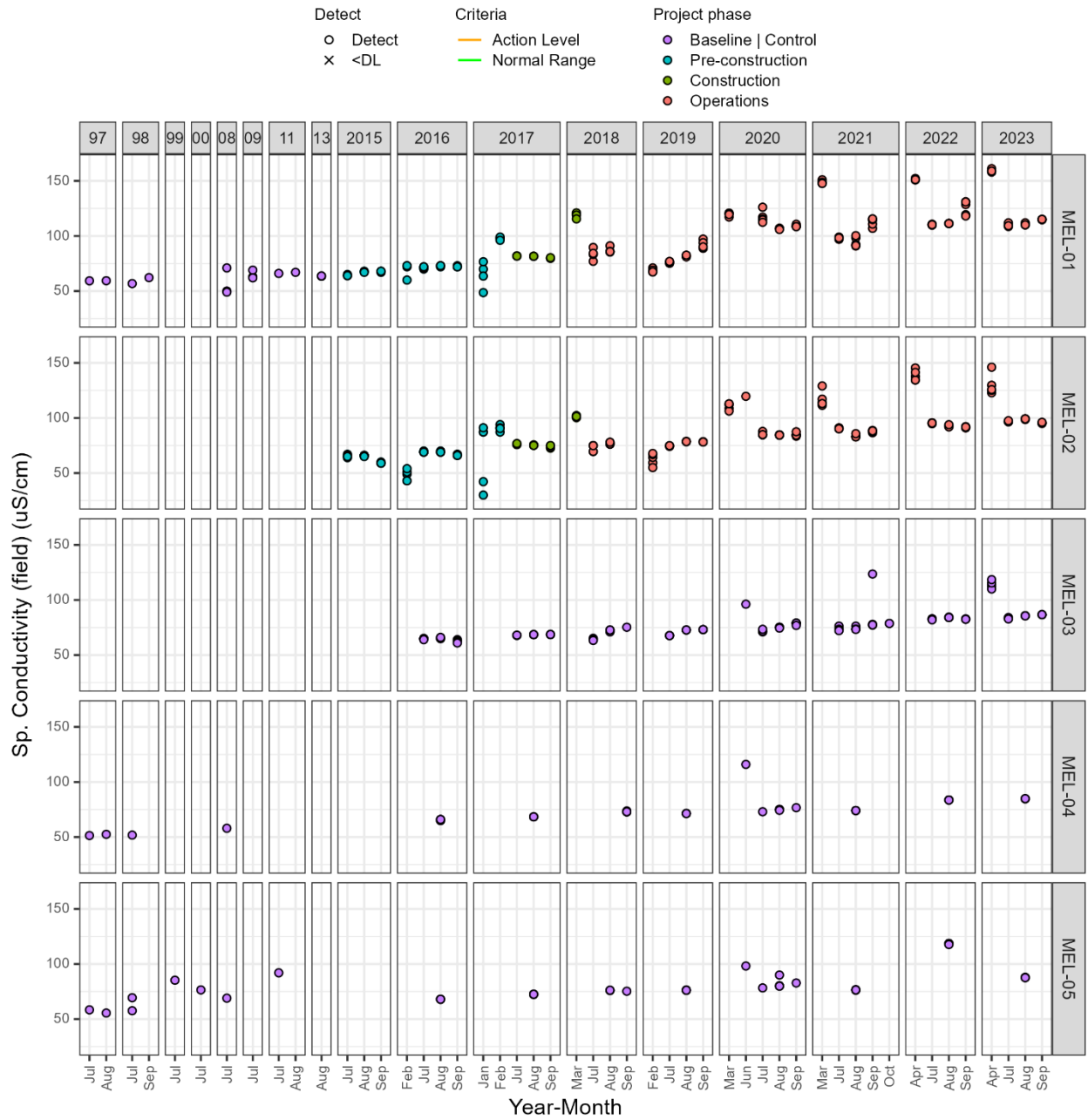
Figure C2-1. Specific conductivity ($\mu\text{S}/\text{cm}$)

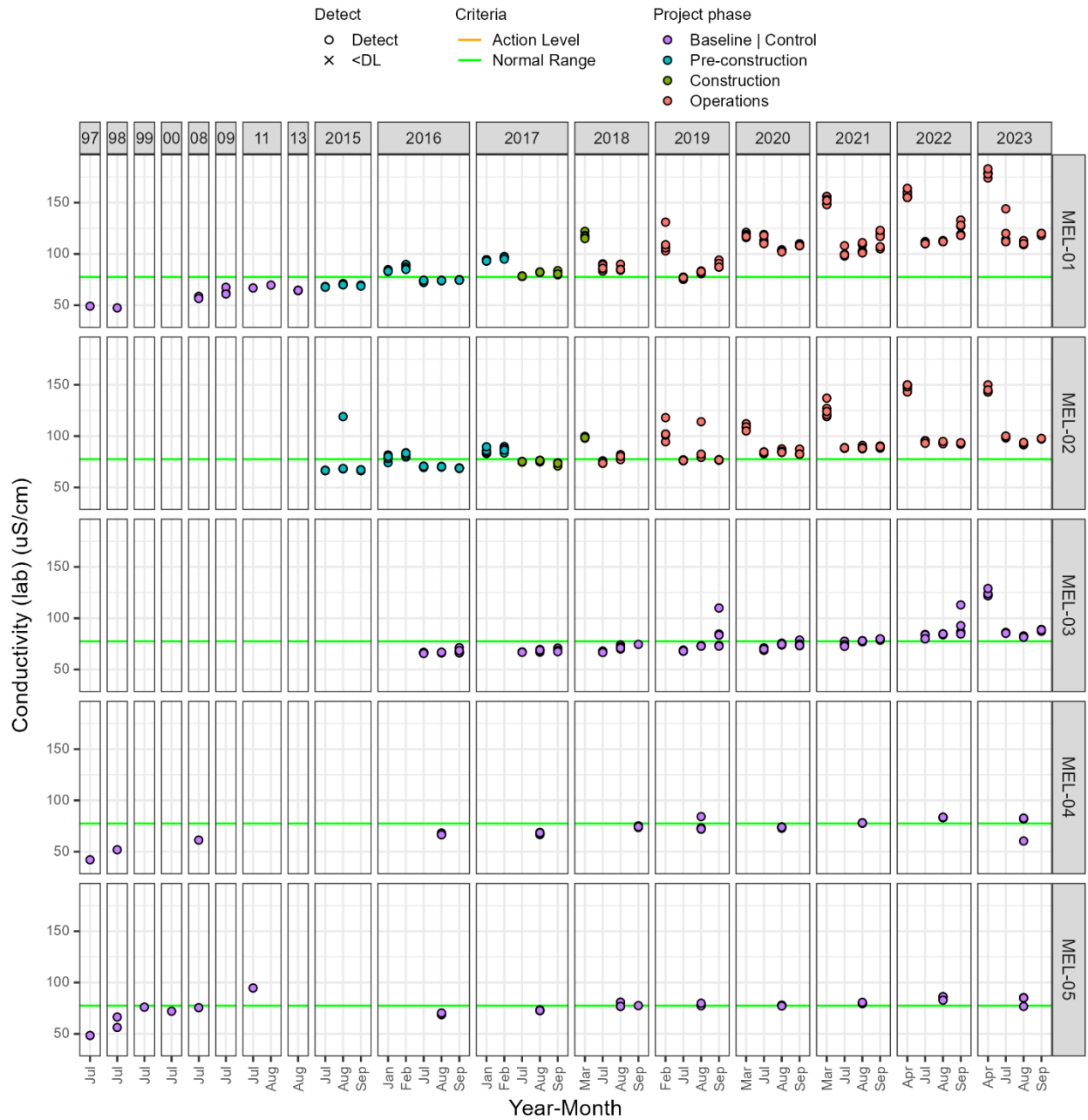
Figure C2-2. Lab-measured conductivity ($\mu\text{S}/\text{cm}$)

Figure C2-3. Field pH

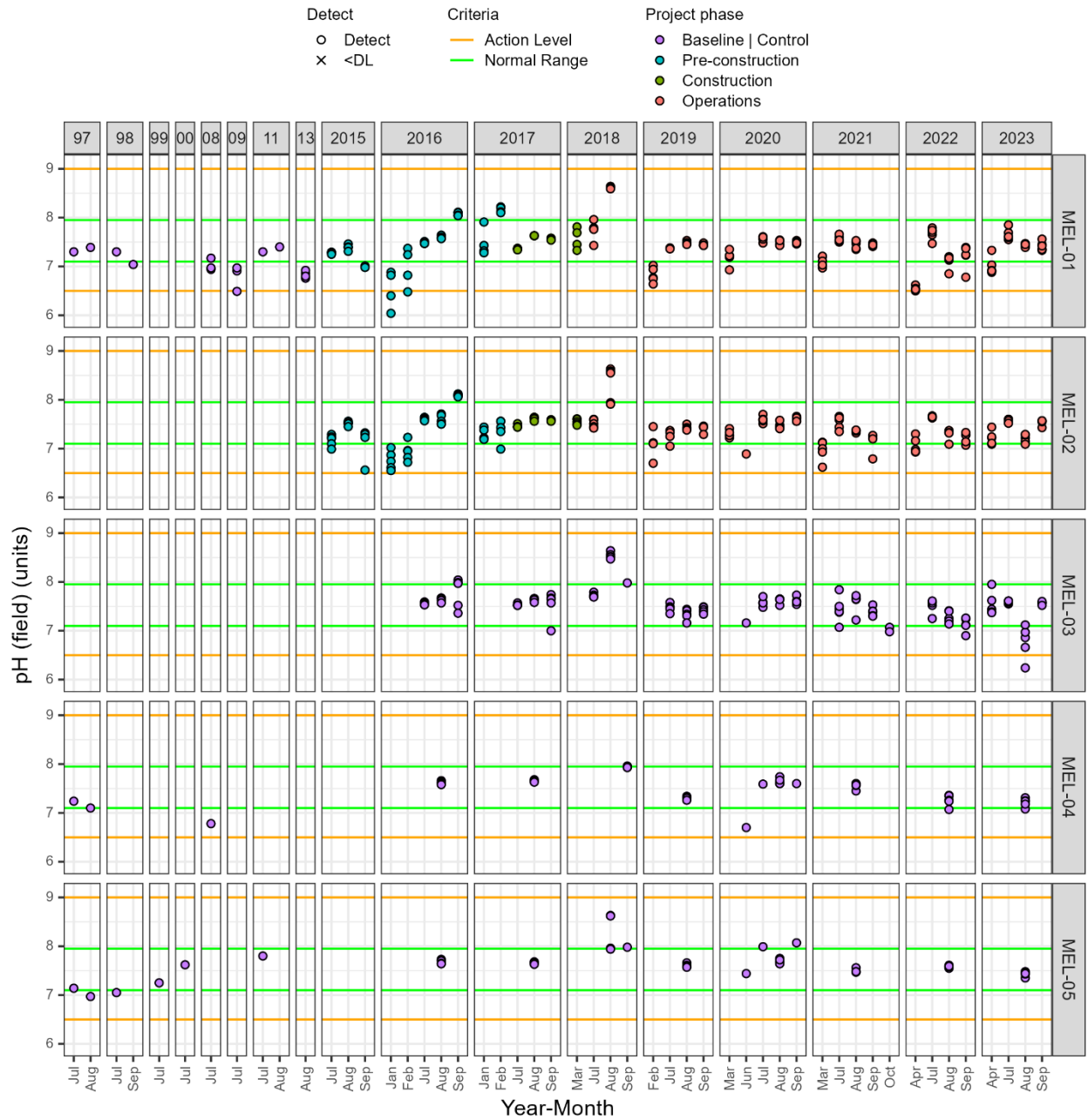


Figure C2-4. Lab measured pH

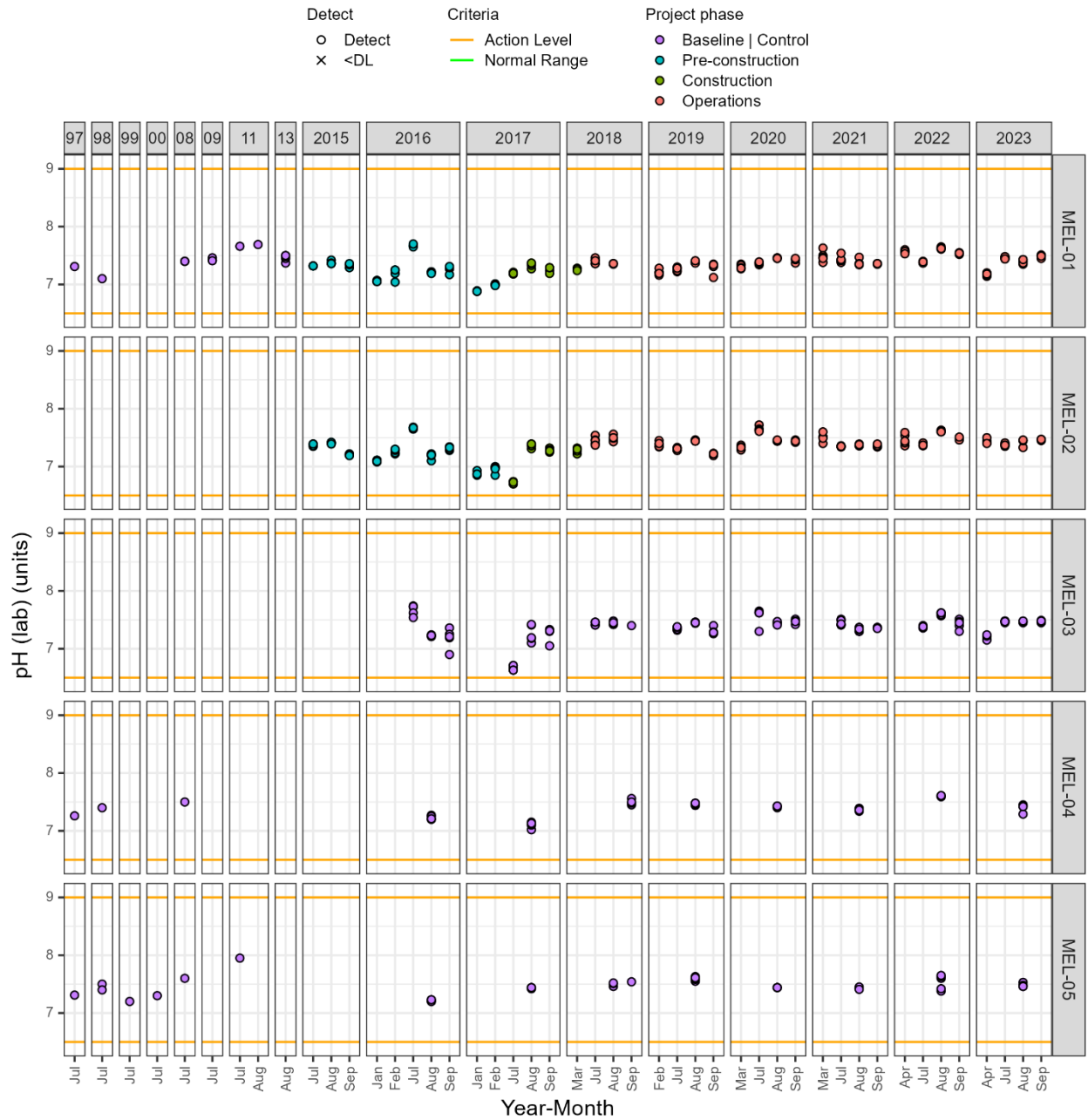


Figure C2-5. Hardness (mg/L)

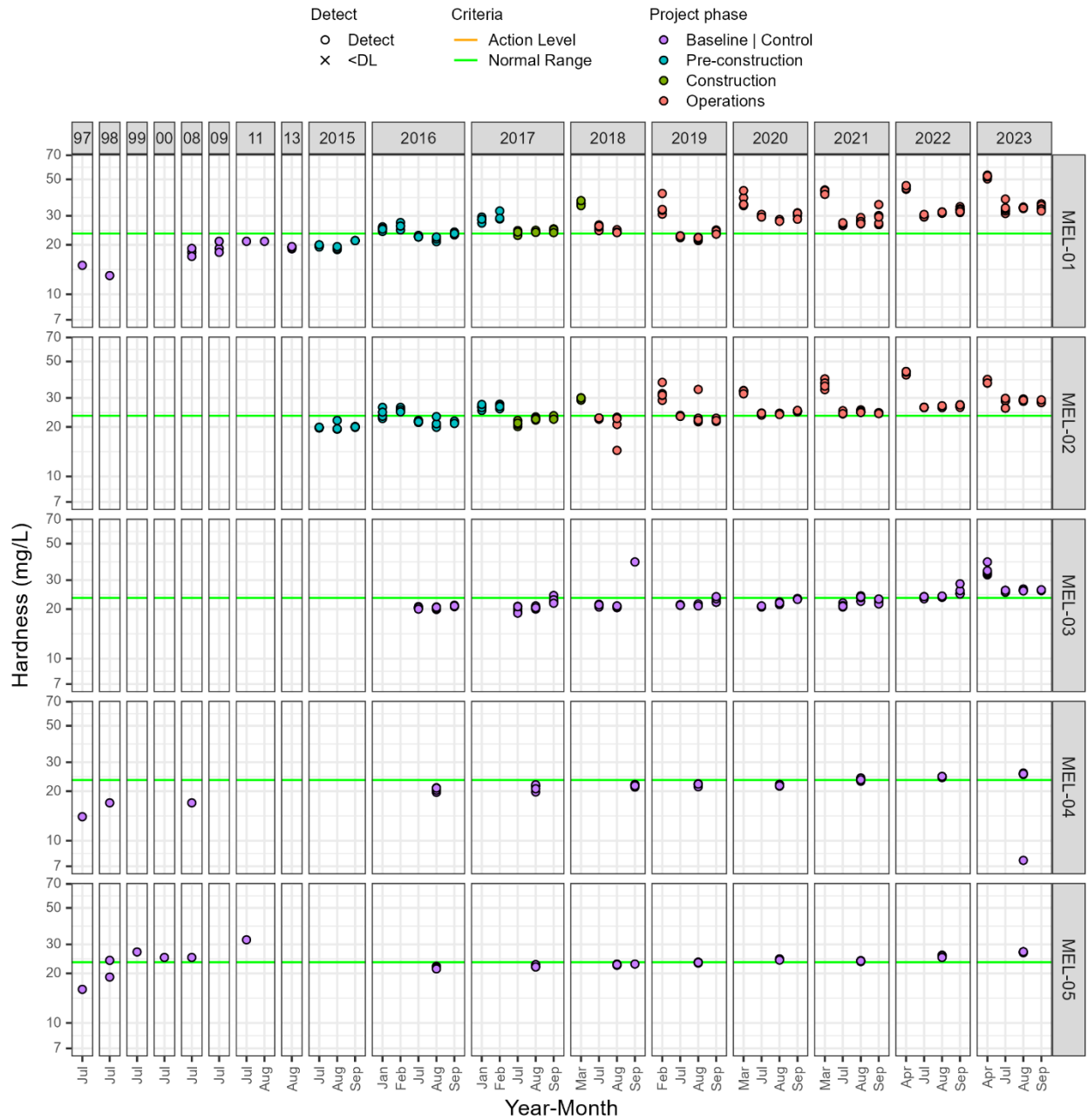


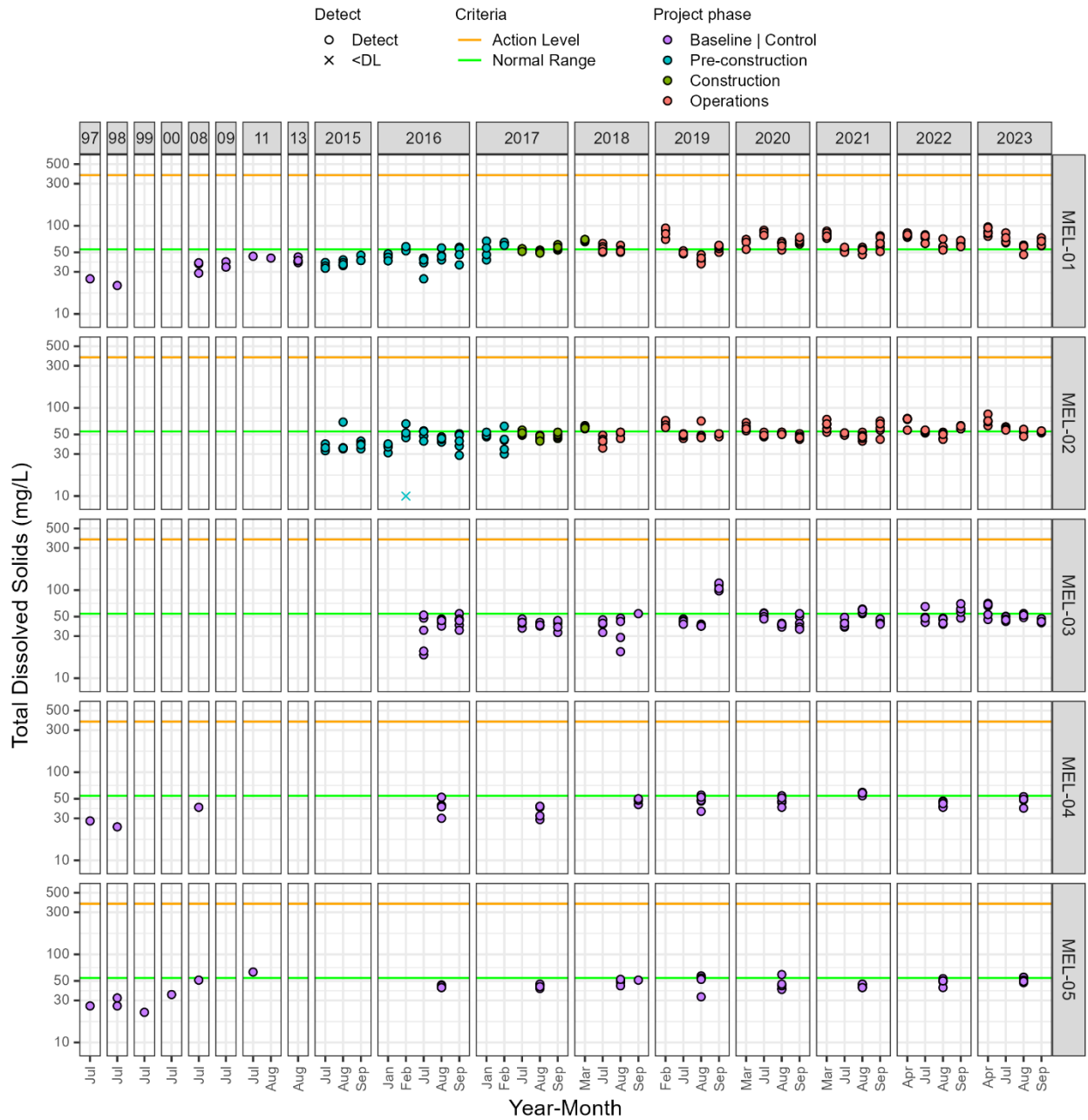
Figure C2-6. Total dissolved solids (measured; mg/L)

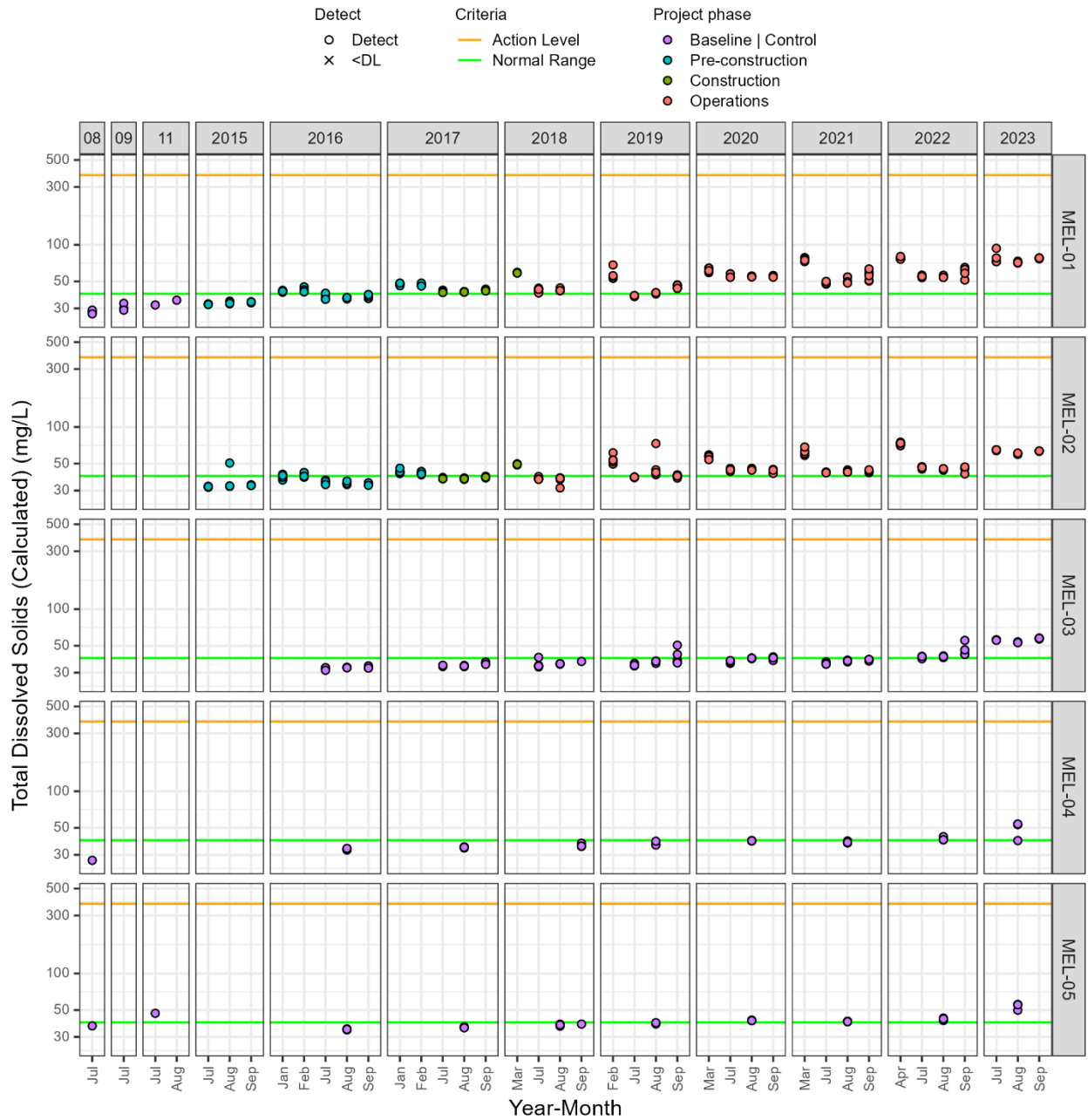
Figure C2-7. Total dissolved solids (calculated; mg/L)

Figure C2-8. Total suspended solids (mg/L)

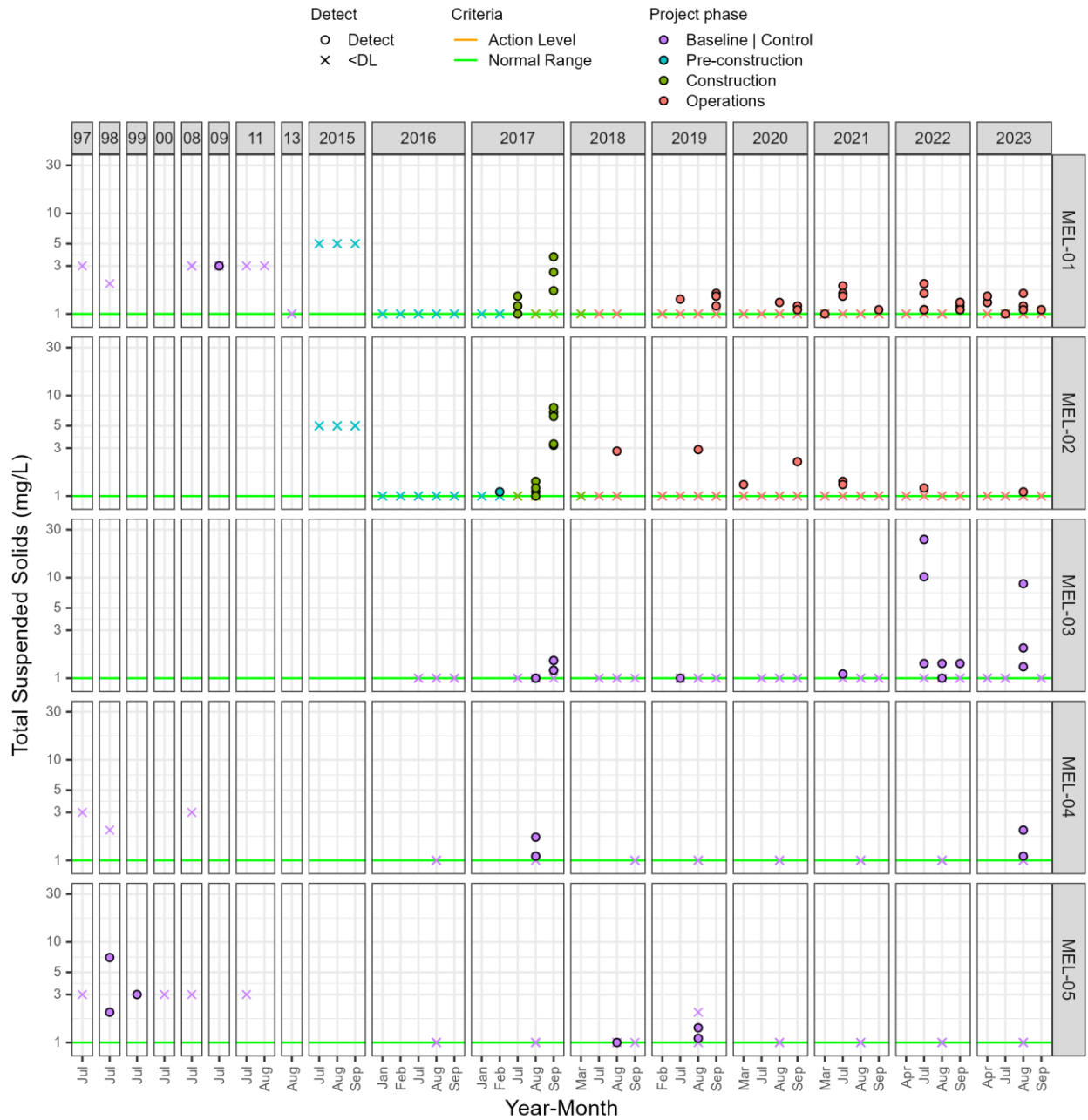


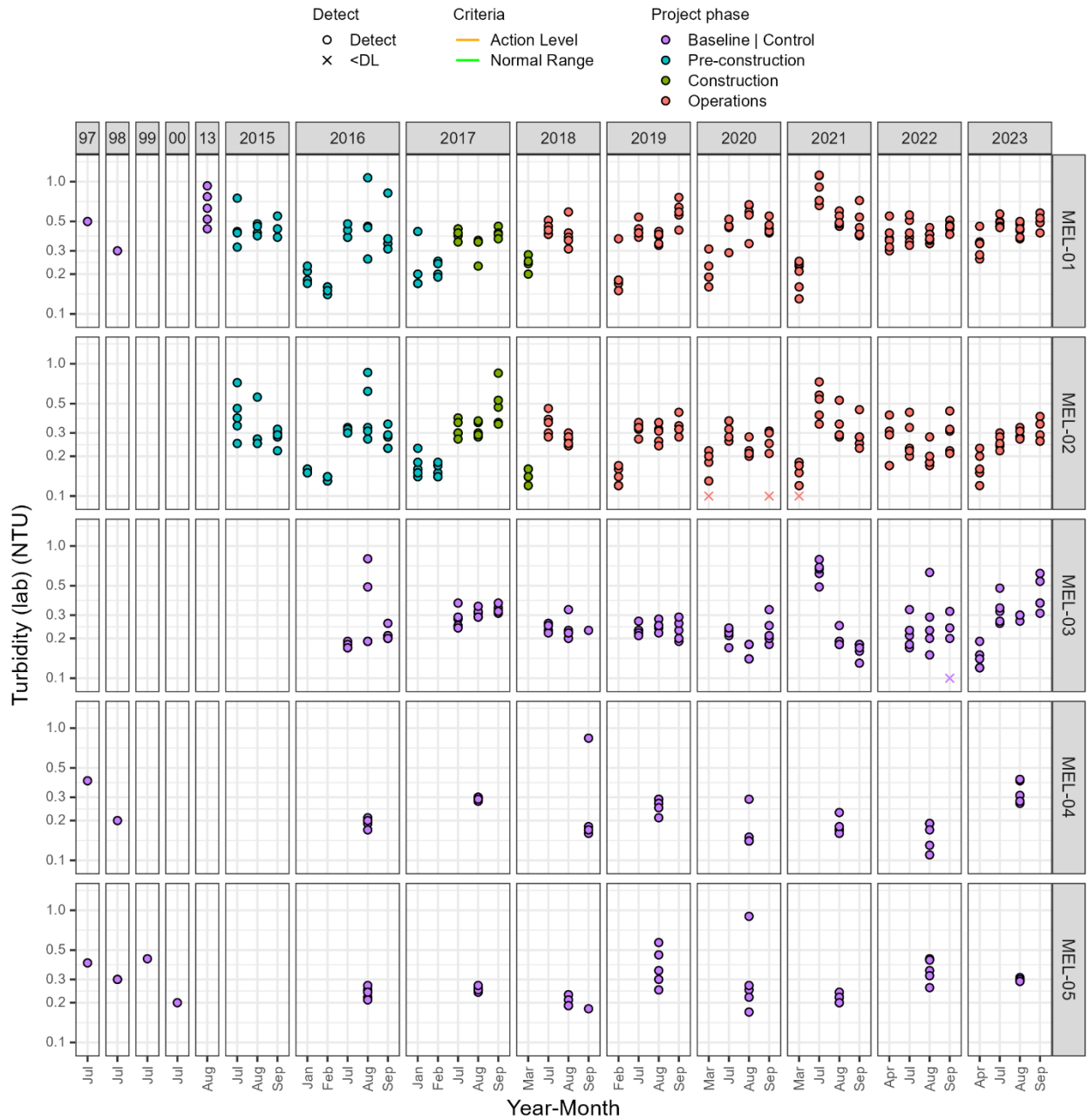
Figure C2-9. Lab measured turbidity (NTU)

Figure C2-10. Bicarbonate alkalinity (mg/L)

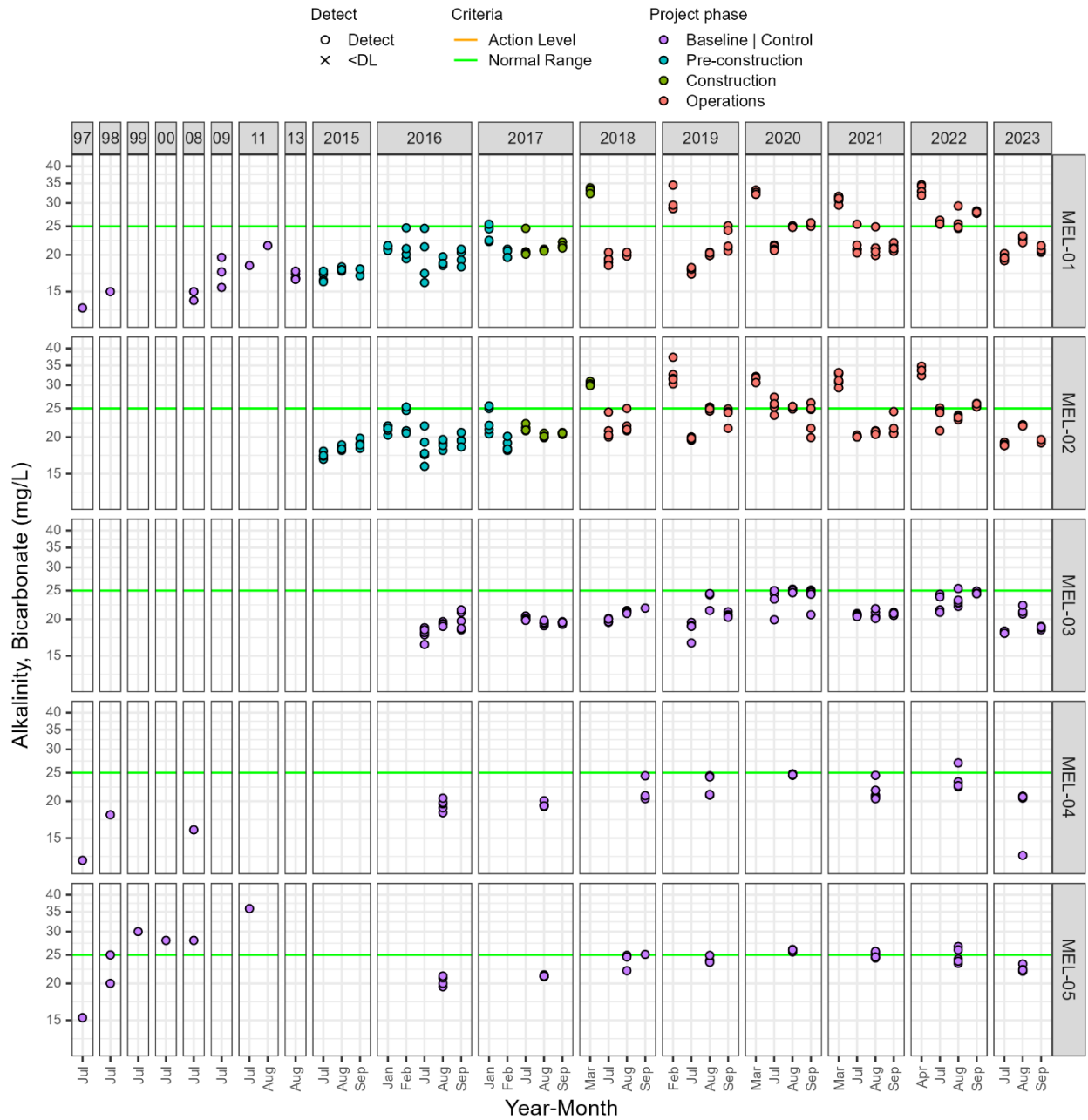


Figure C2-11. Total alkalinity (mg/L)

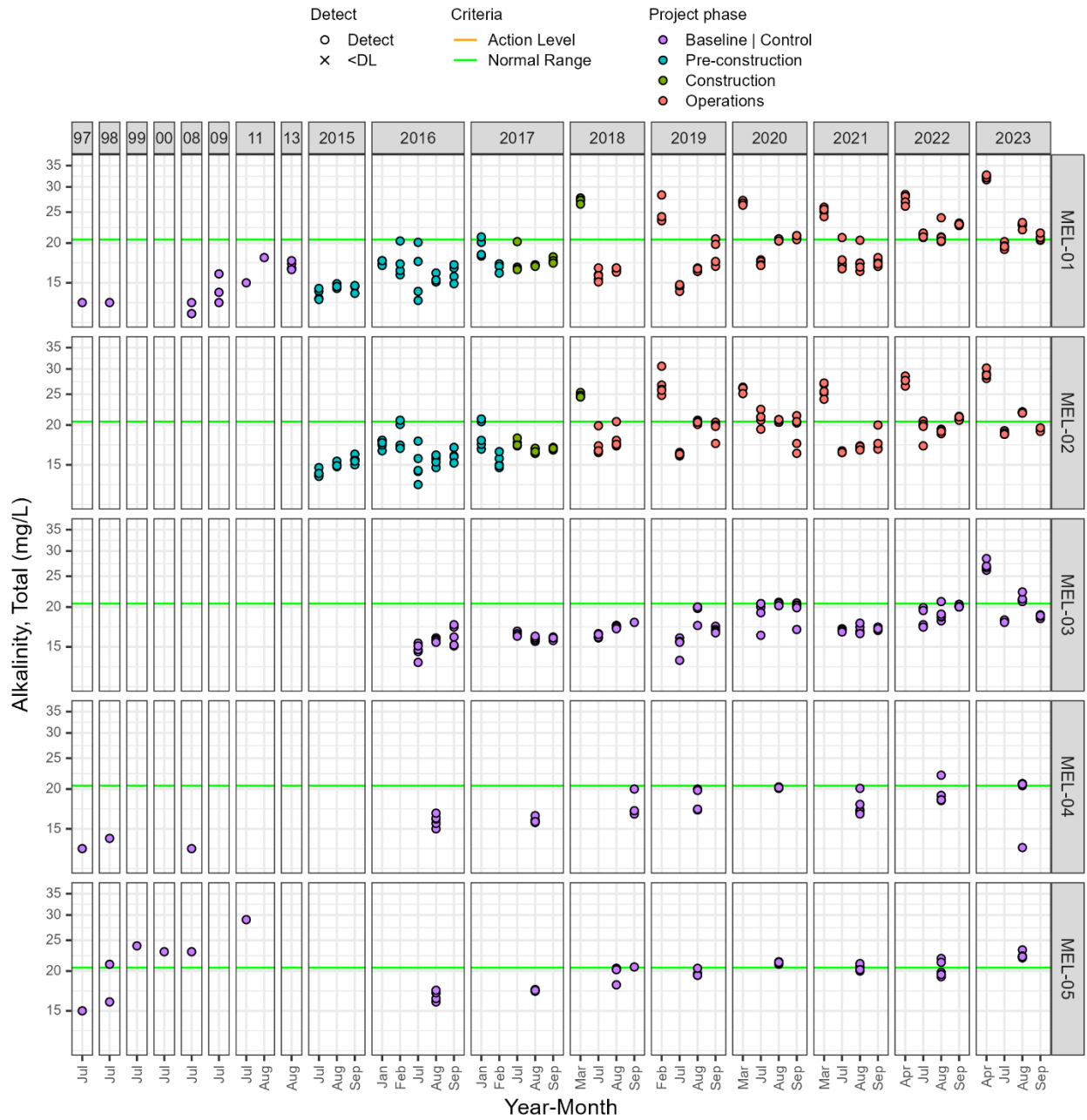


Figure C2-12. Total calcium (mg/L)

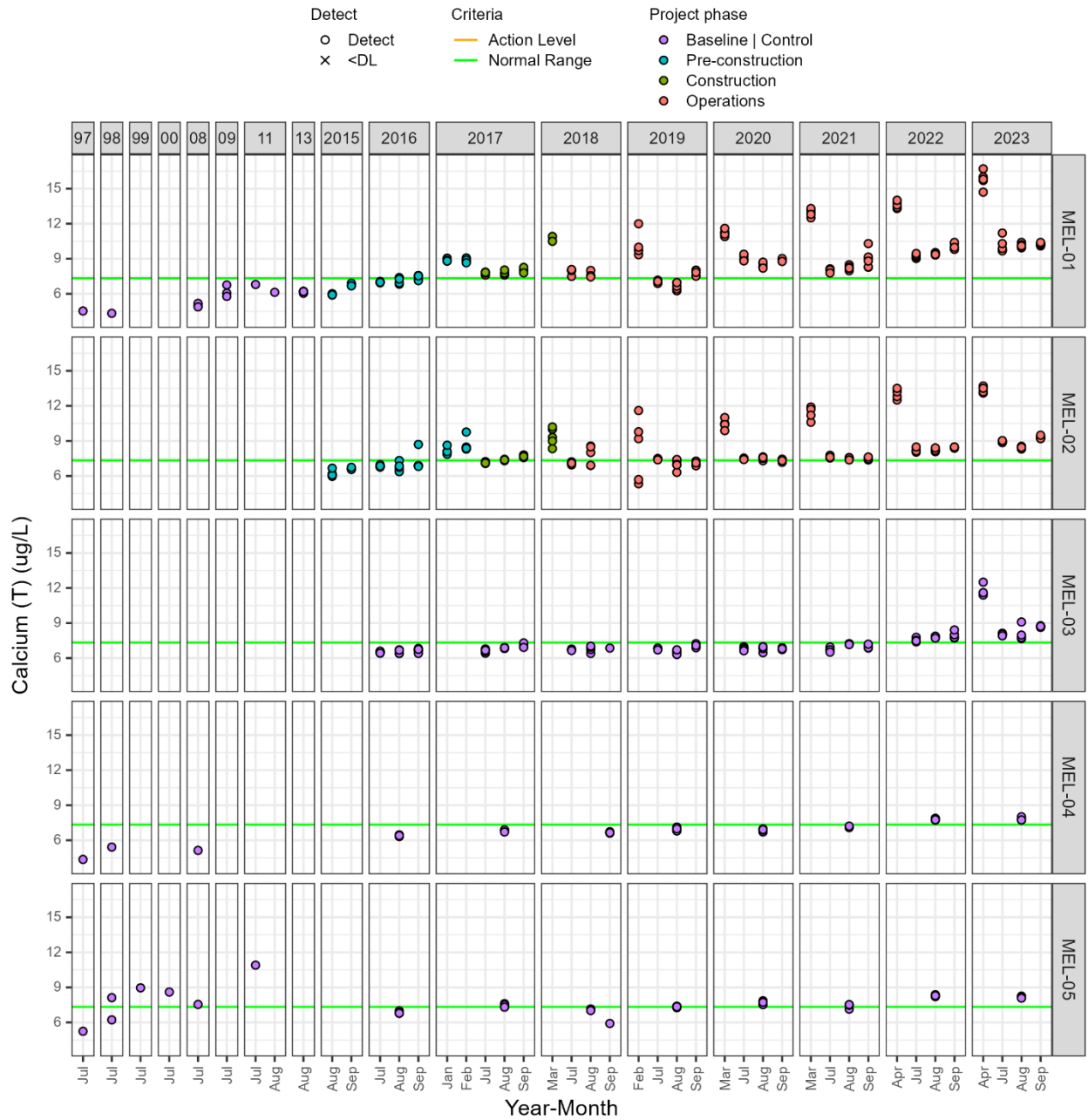


Figure C2-13. Total magnesium (mg/L)

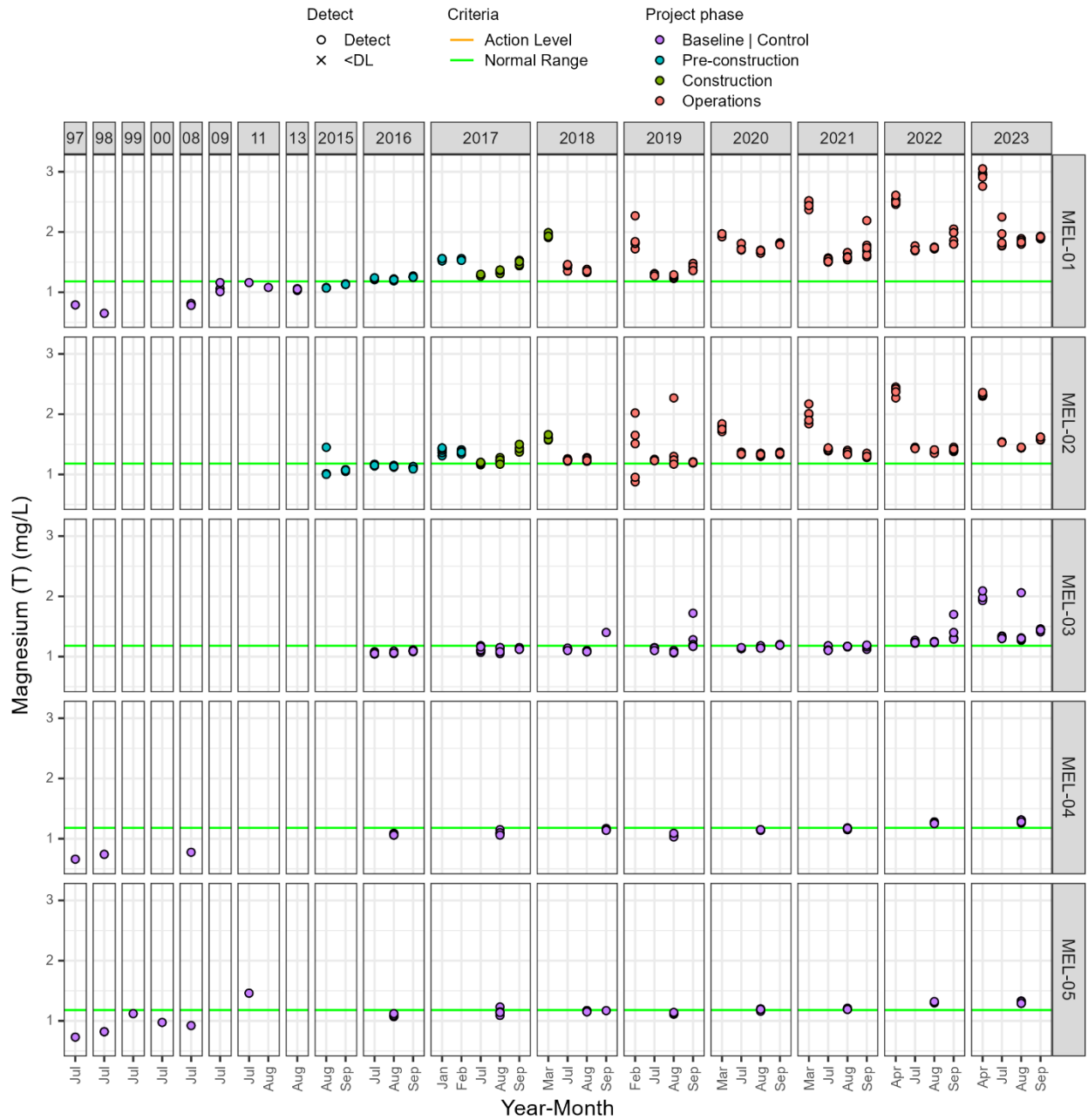


Figure C2-14. Total potassium (mg/L)

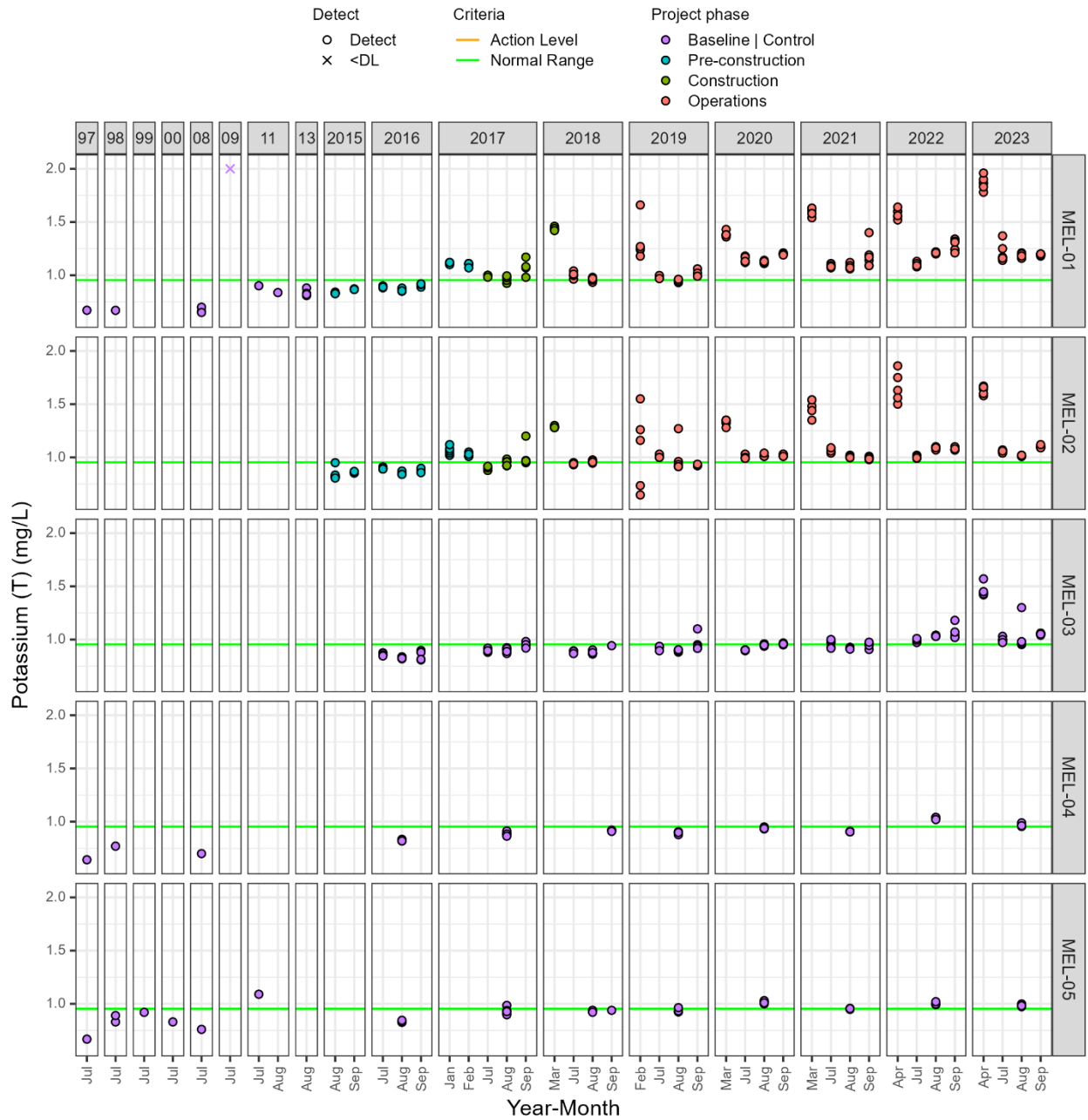


Figure C2-15. Total sodium (mg/L)

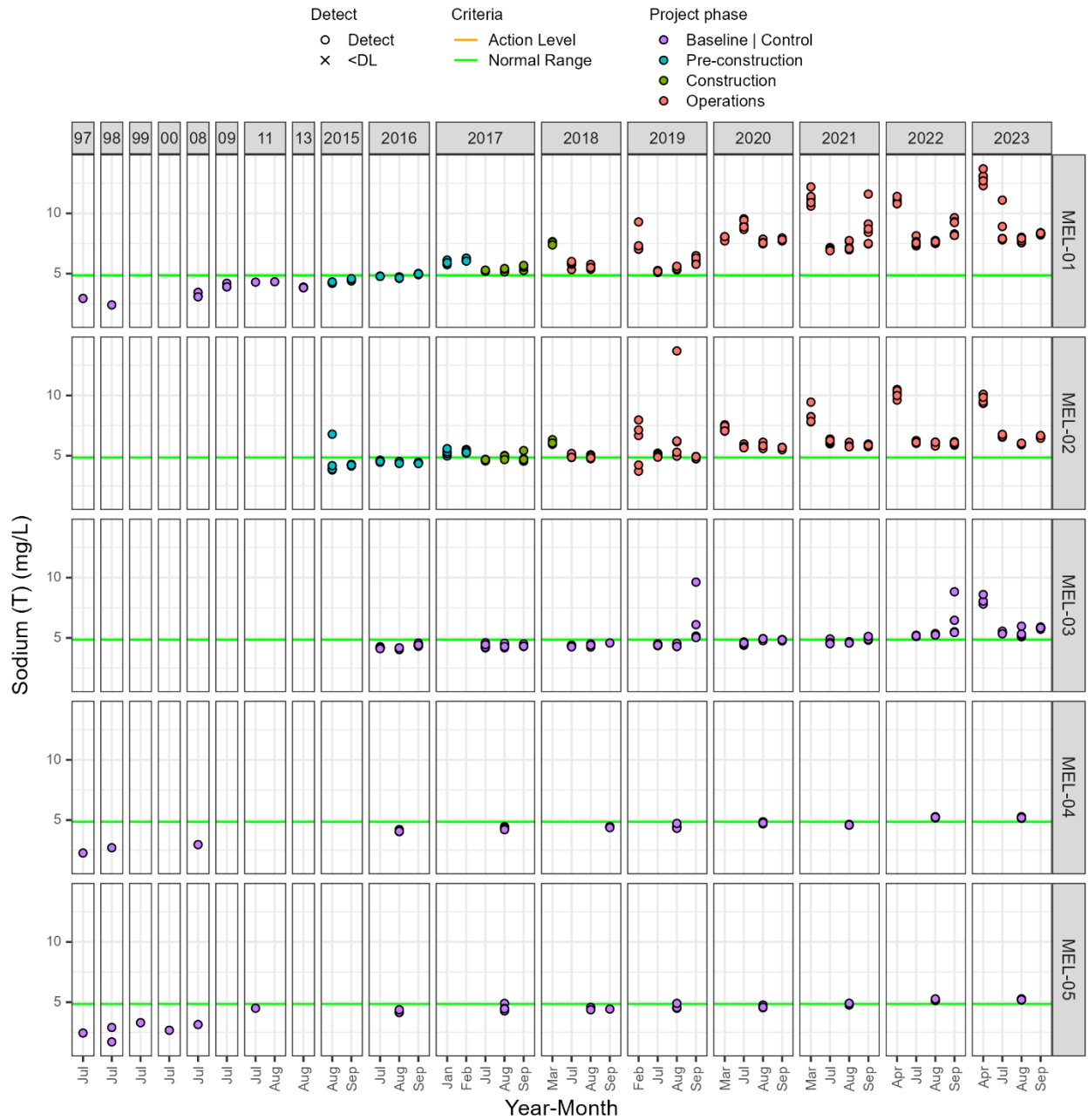


Figure C2-16. Chloride (mg/L)

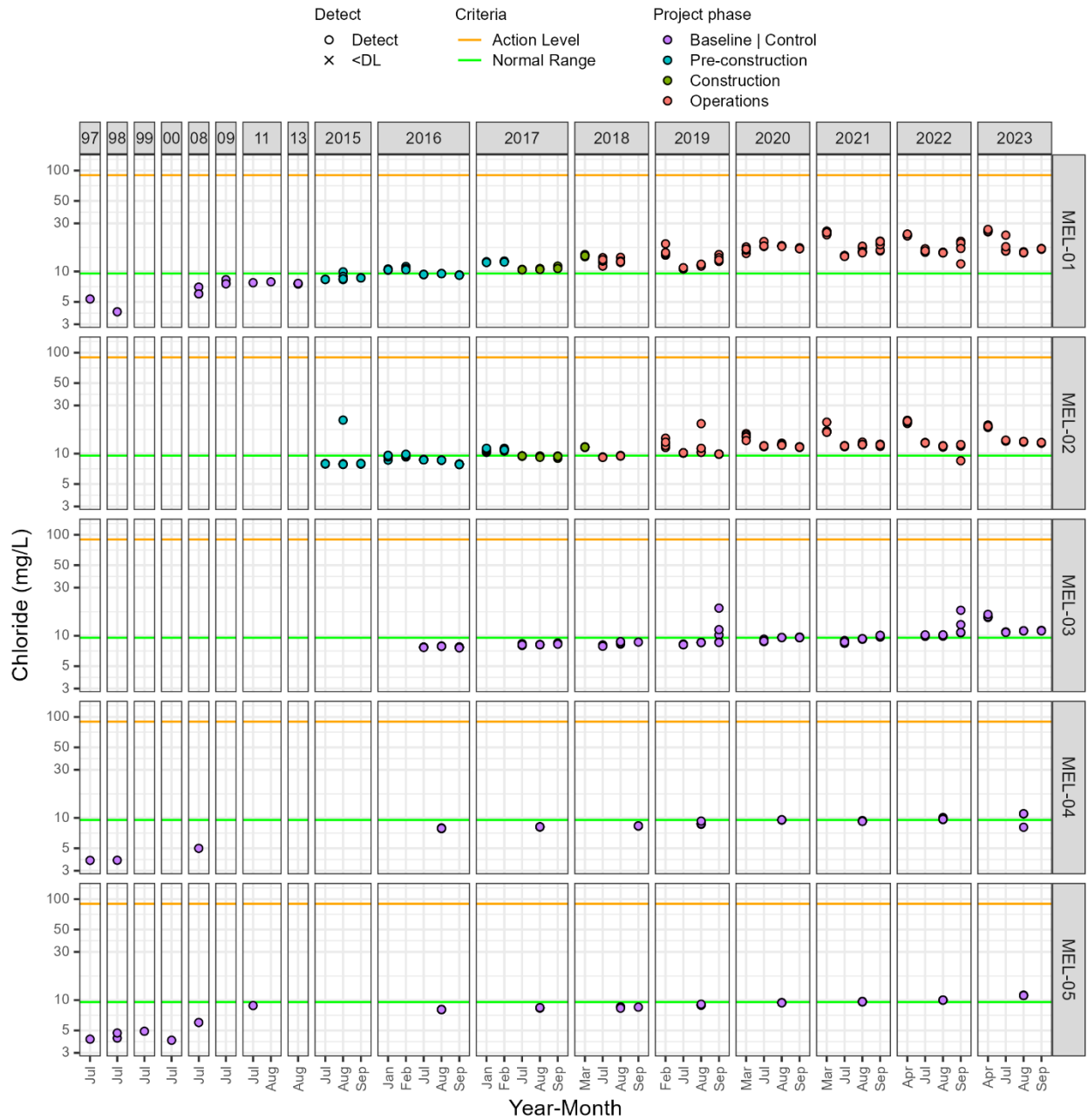


Figure C2-17. Fluoride (mg/L)

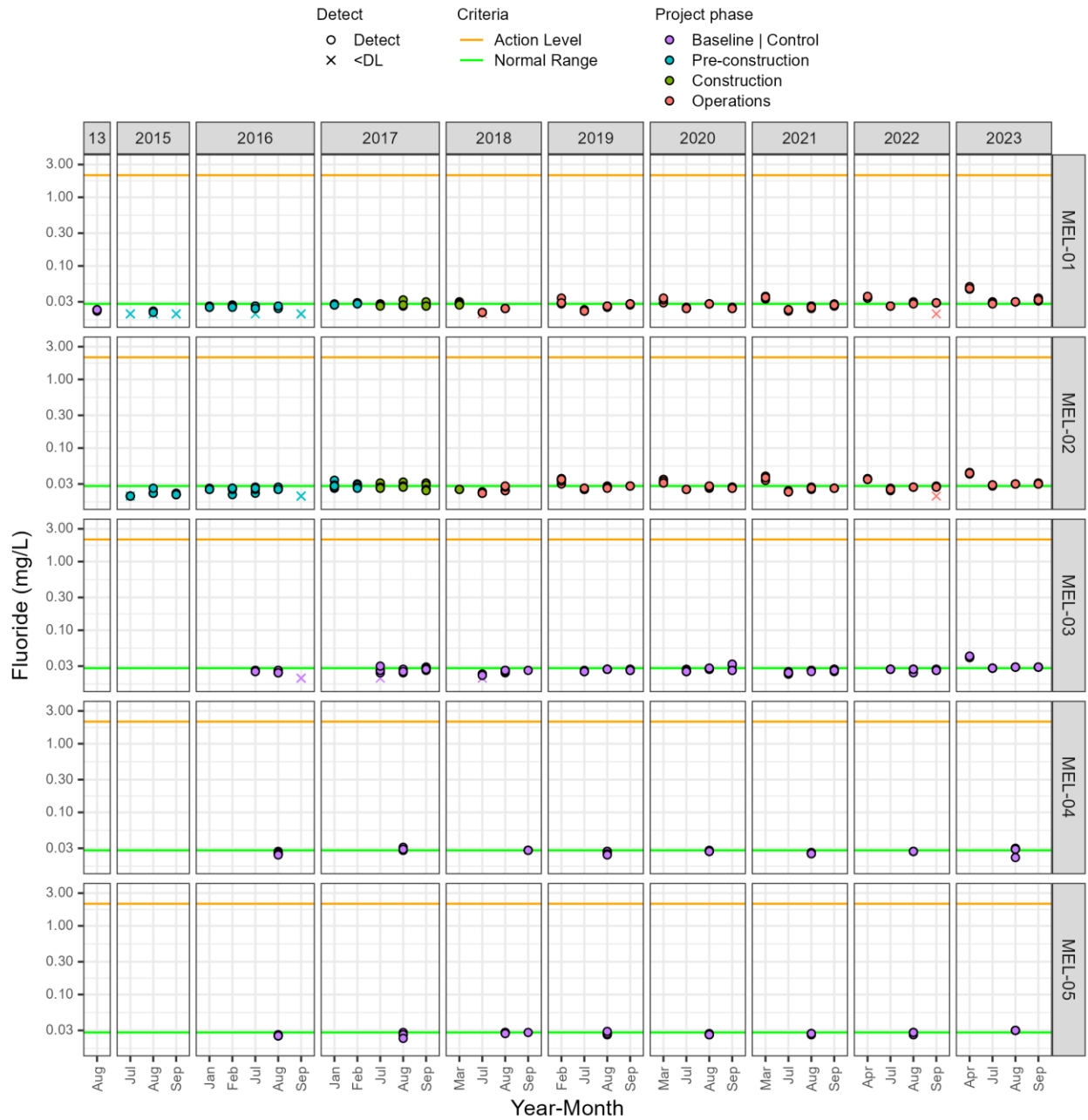


Figure C2-18. Ammonia (as nitrogen) (mg/L)

Notes: Ammonia data from August and September 2021 should be interpreted with caution because of higher detection limits reported by the laboratory.

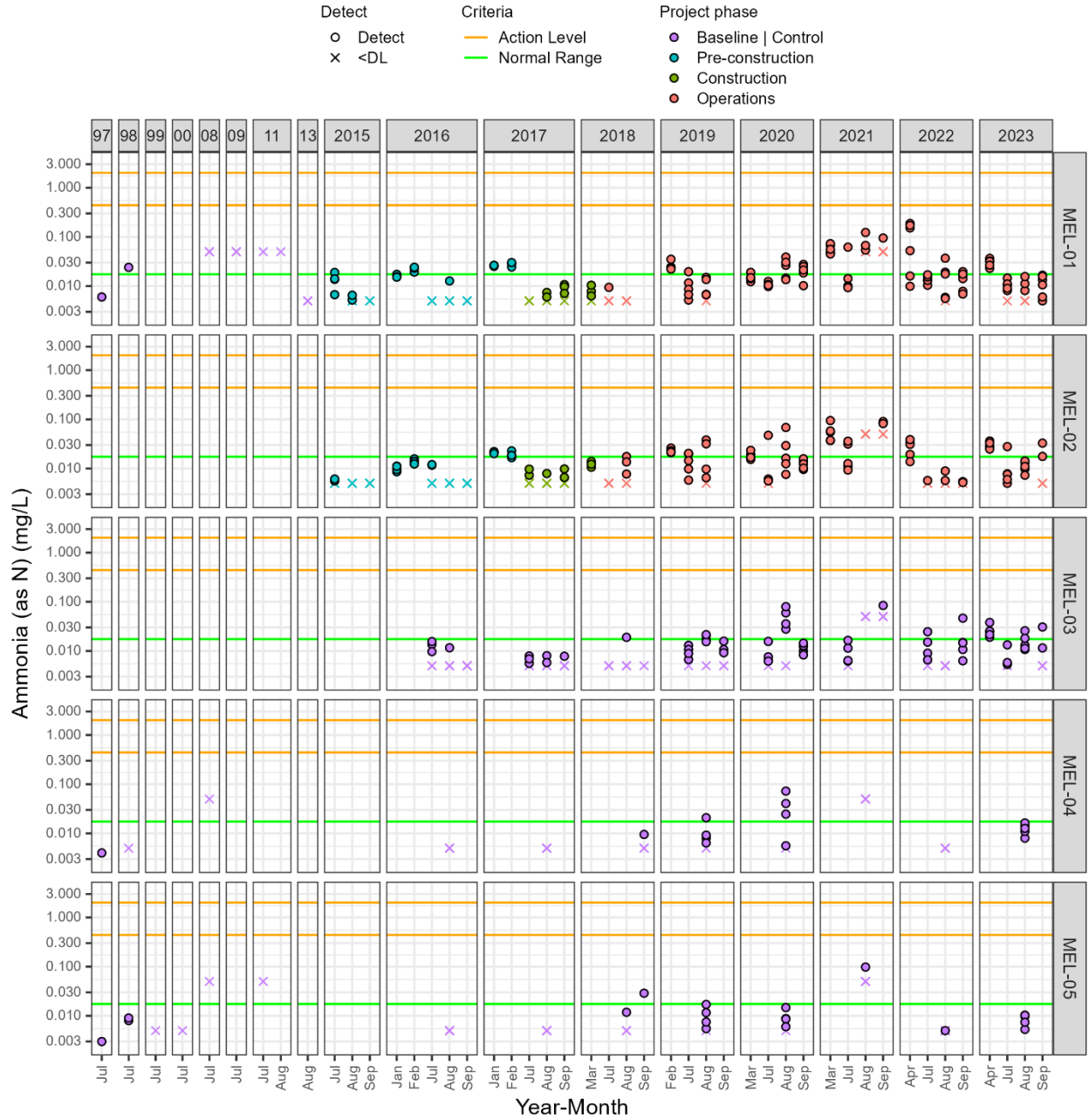


Figure C2-19. Nitrate (as N) (mg/L)

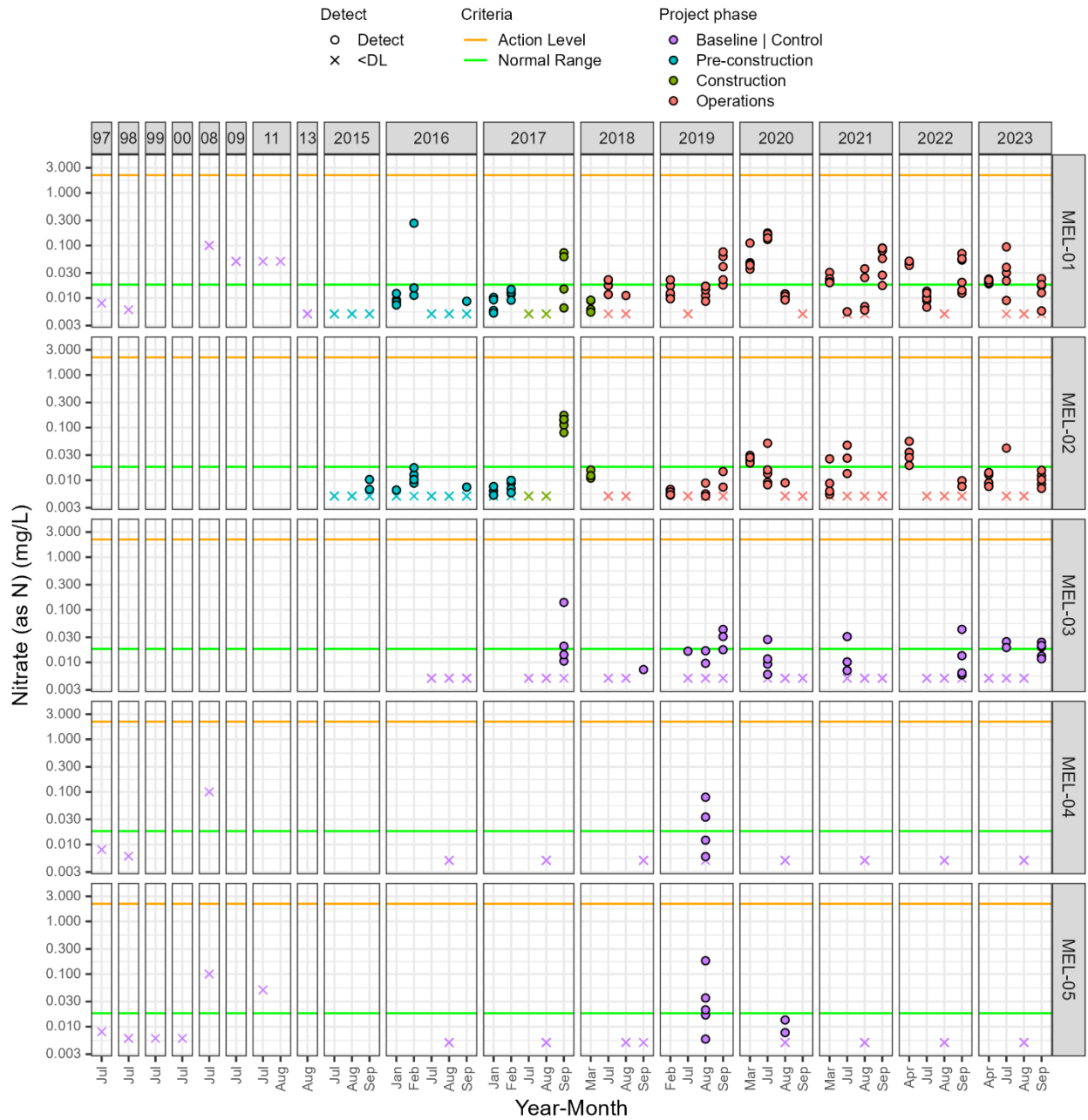


Figure C2-20. Nitrate and nitrite (as N) (mg/L)

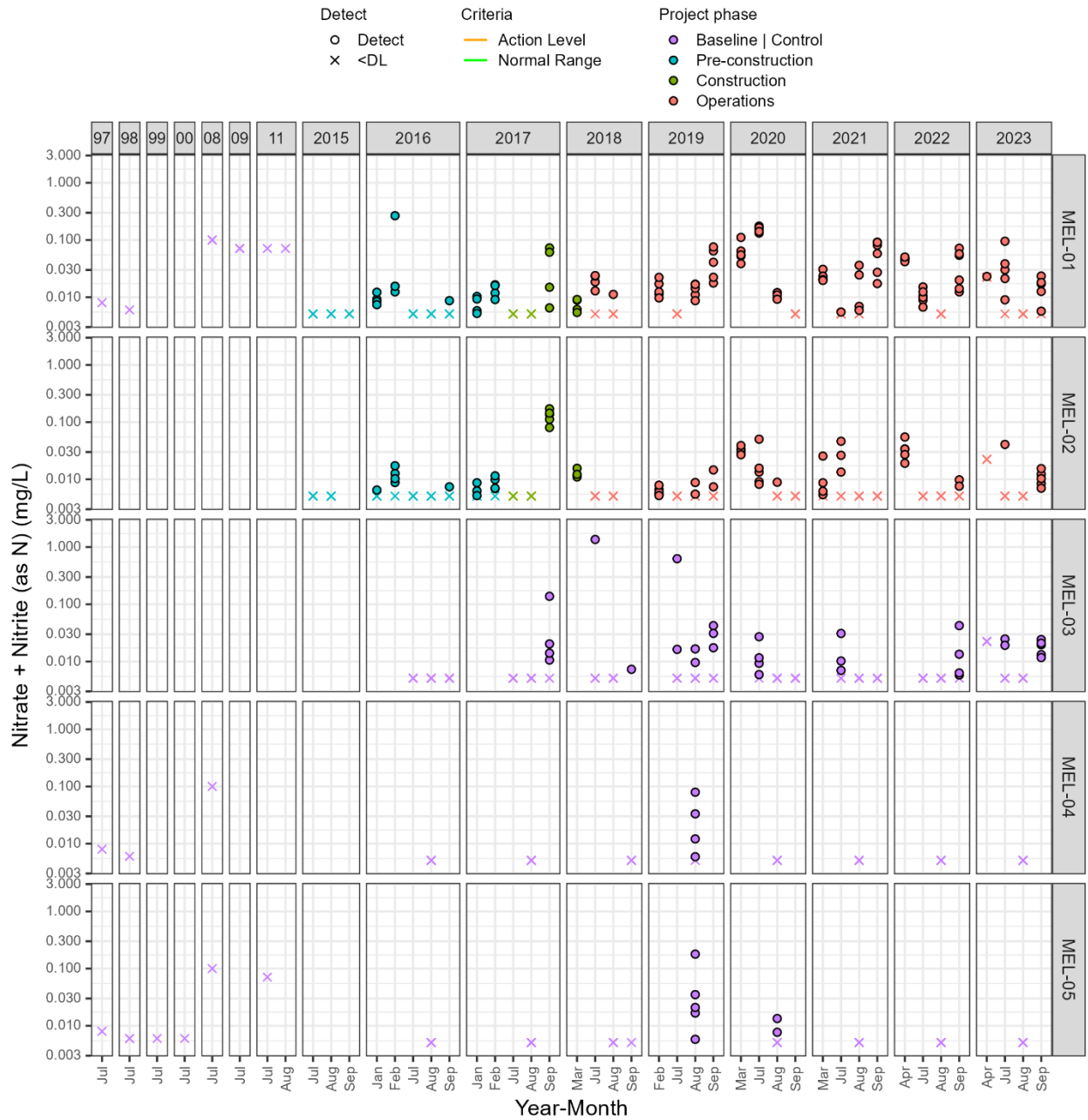


Figure C2-21. Total Kjeldahl nitrogen (TKN; mg/L)

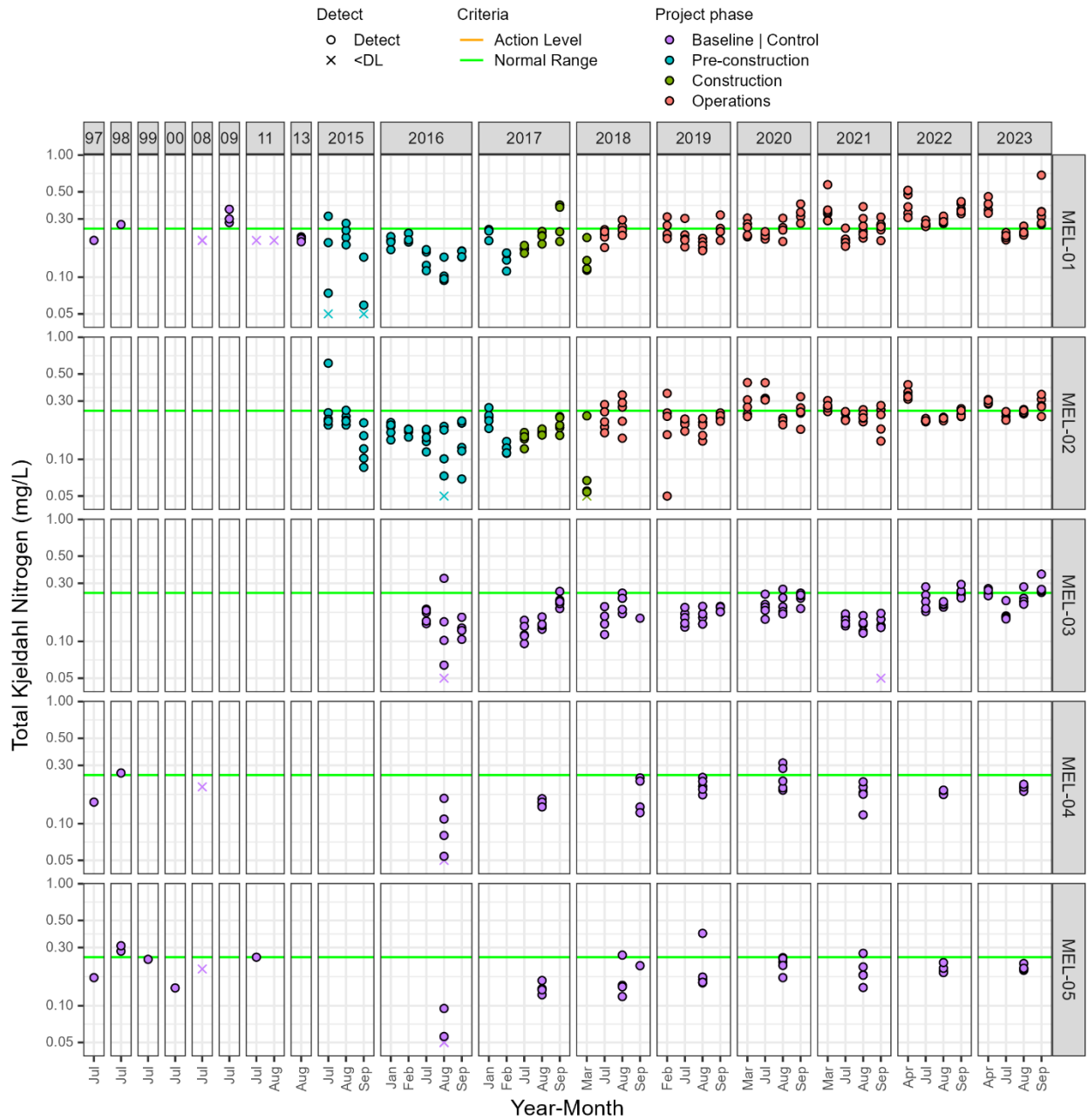


Figure C2-22. Sulphate (mg/L)

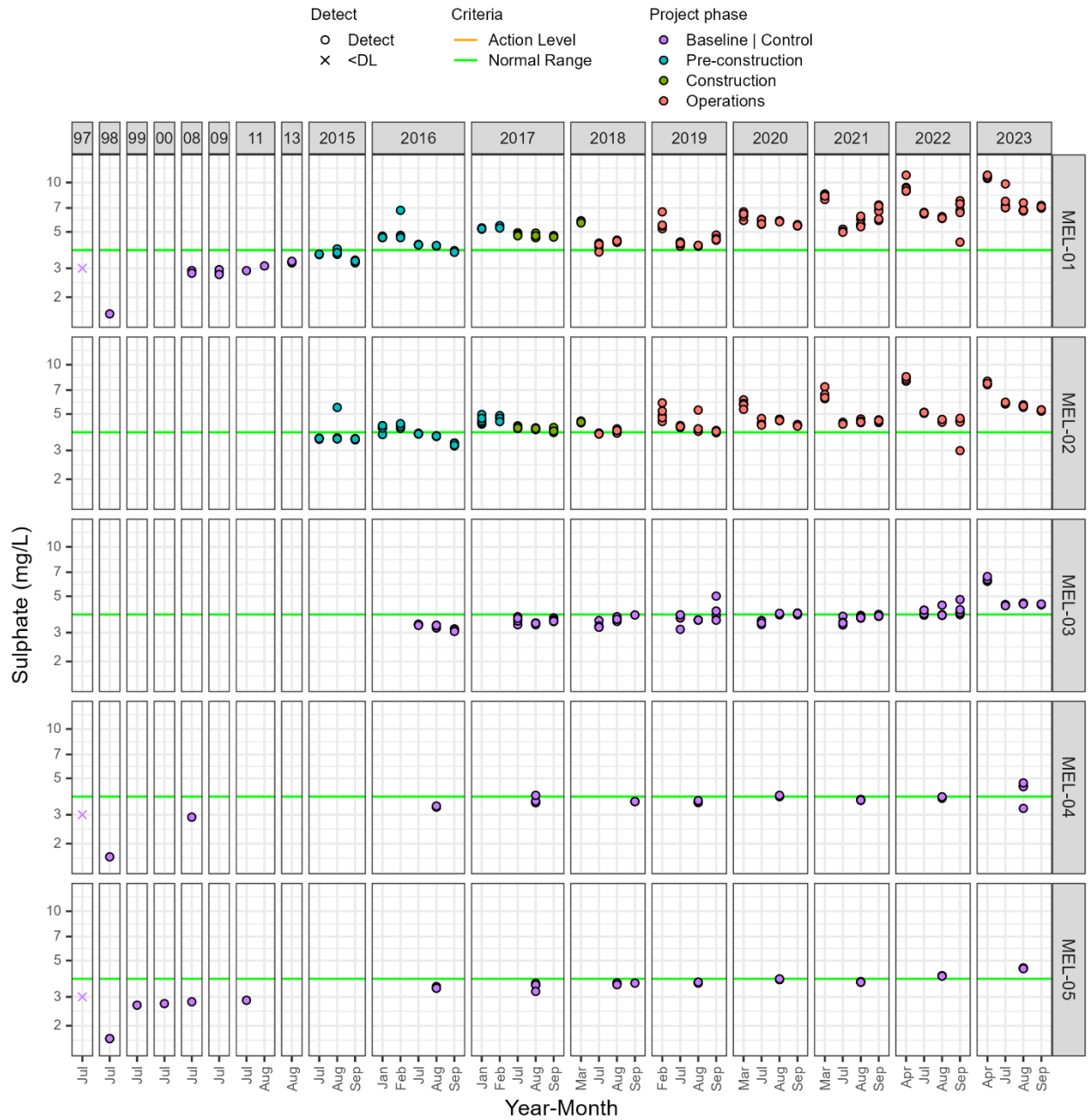


Figure C2-23. Total phosphorus (mg/L)

Notes: The AEMP Benchmark for total phosphorus of 0.01 mg/L is questionable given that baseline concentrations of total phosphorus exceeded this value on occasion. The Action Level (0.0075 mg/L) is not shown.

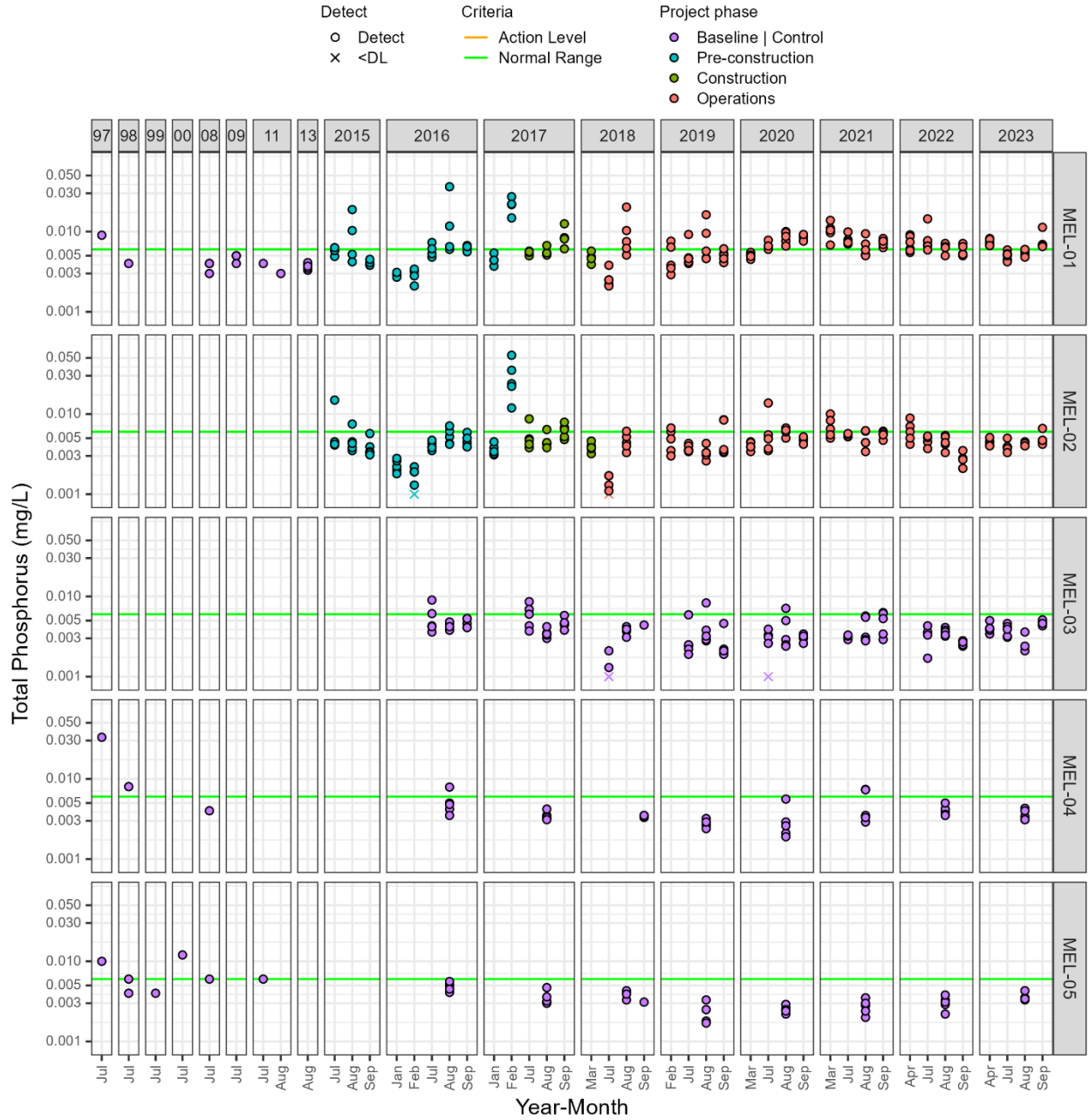


Figure C2-24. Dissolved organic carbon (mg/L)

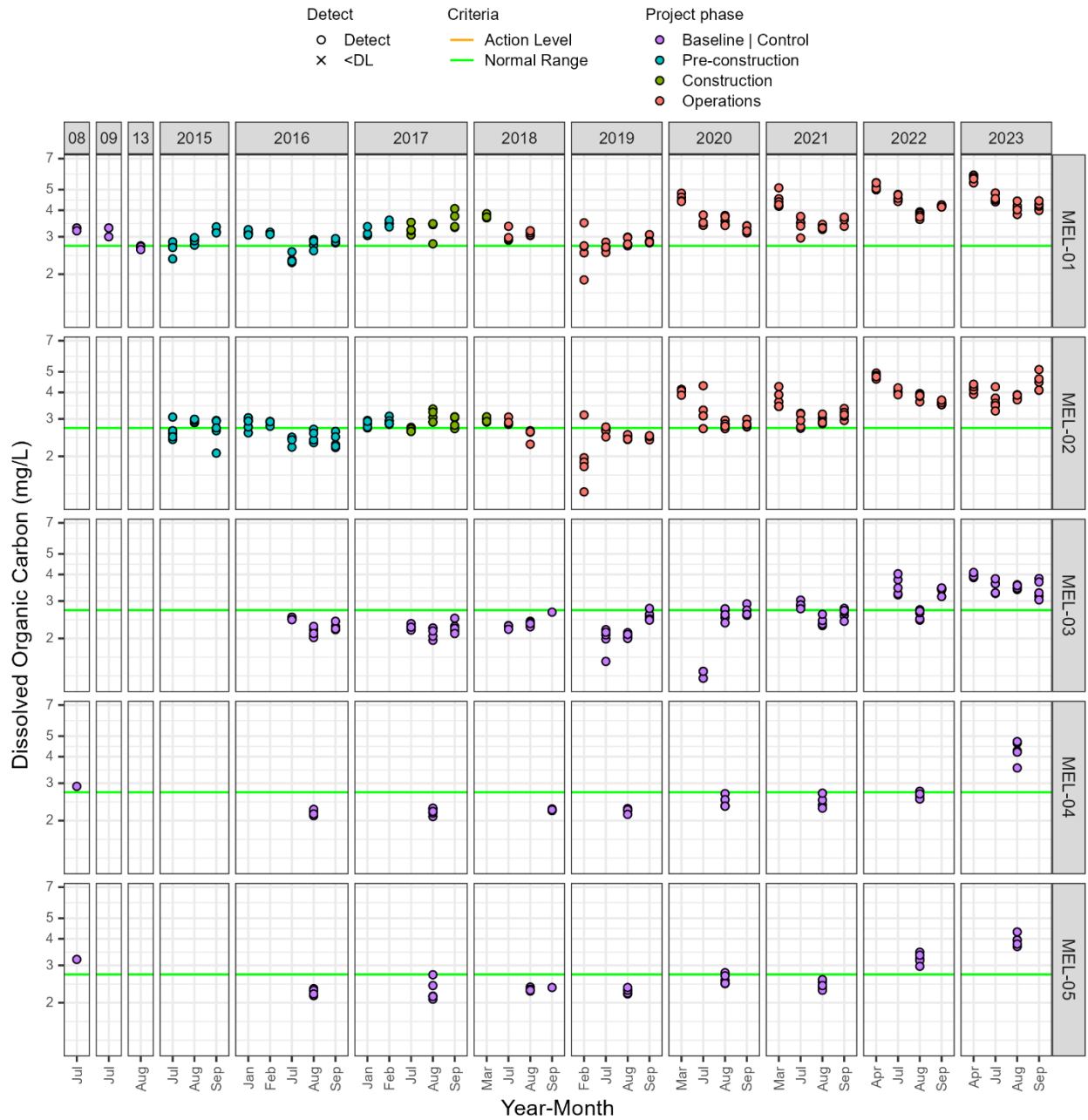


Figure C2-25. Total organic carbon (mg/L)

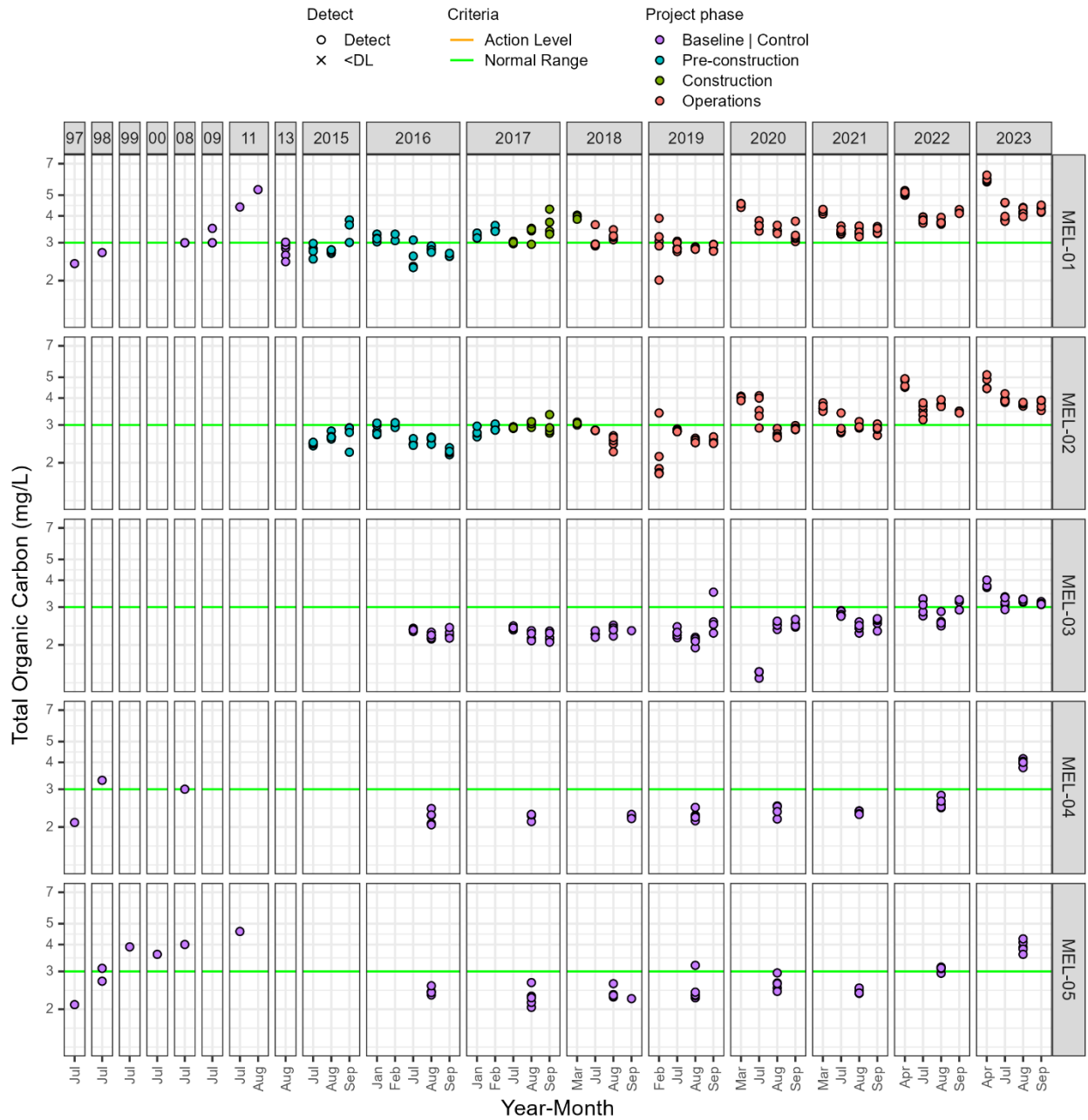


Figure C2-26. Total aluminum (µg/L)

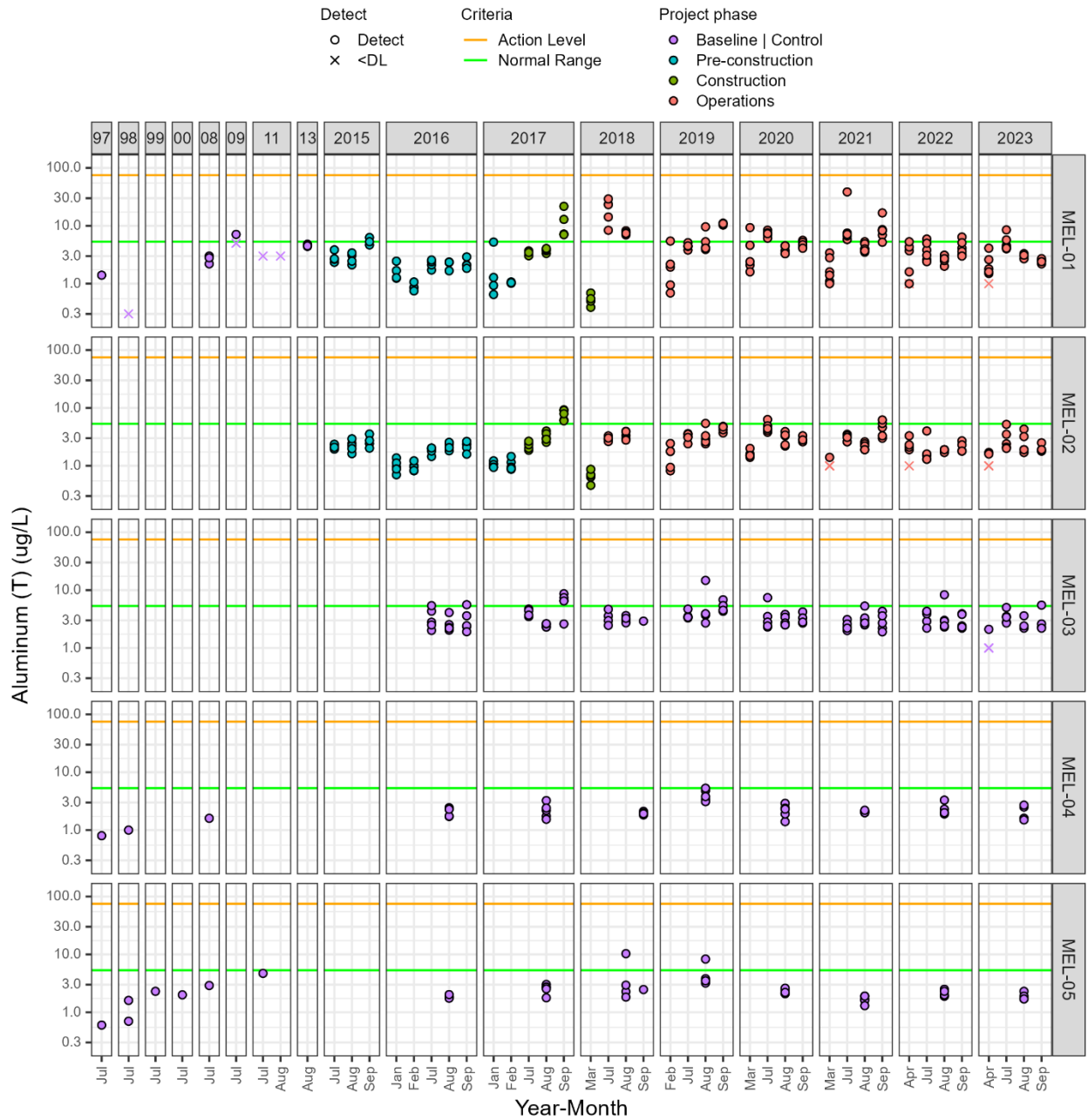


Figure C2-27. Total antimony ($\mu\text{g/L}$)

Notes: The normal range for antimony is equal to the current detection limit.

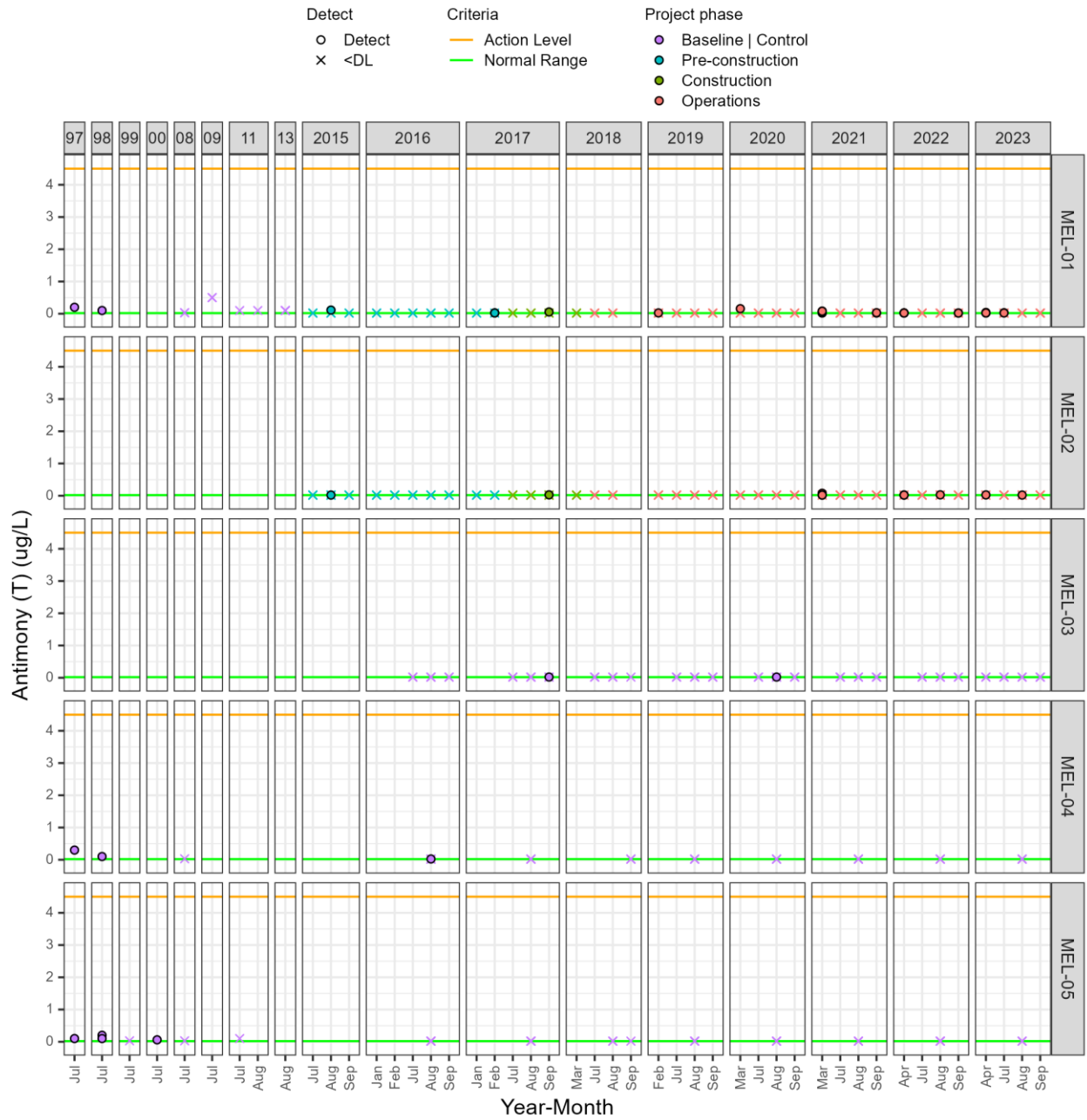


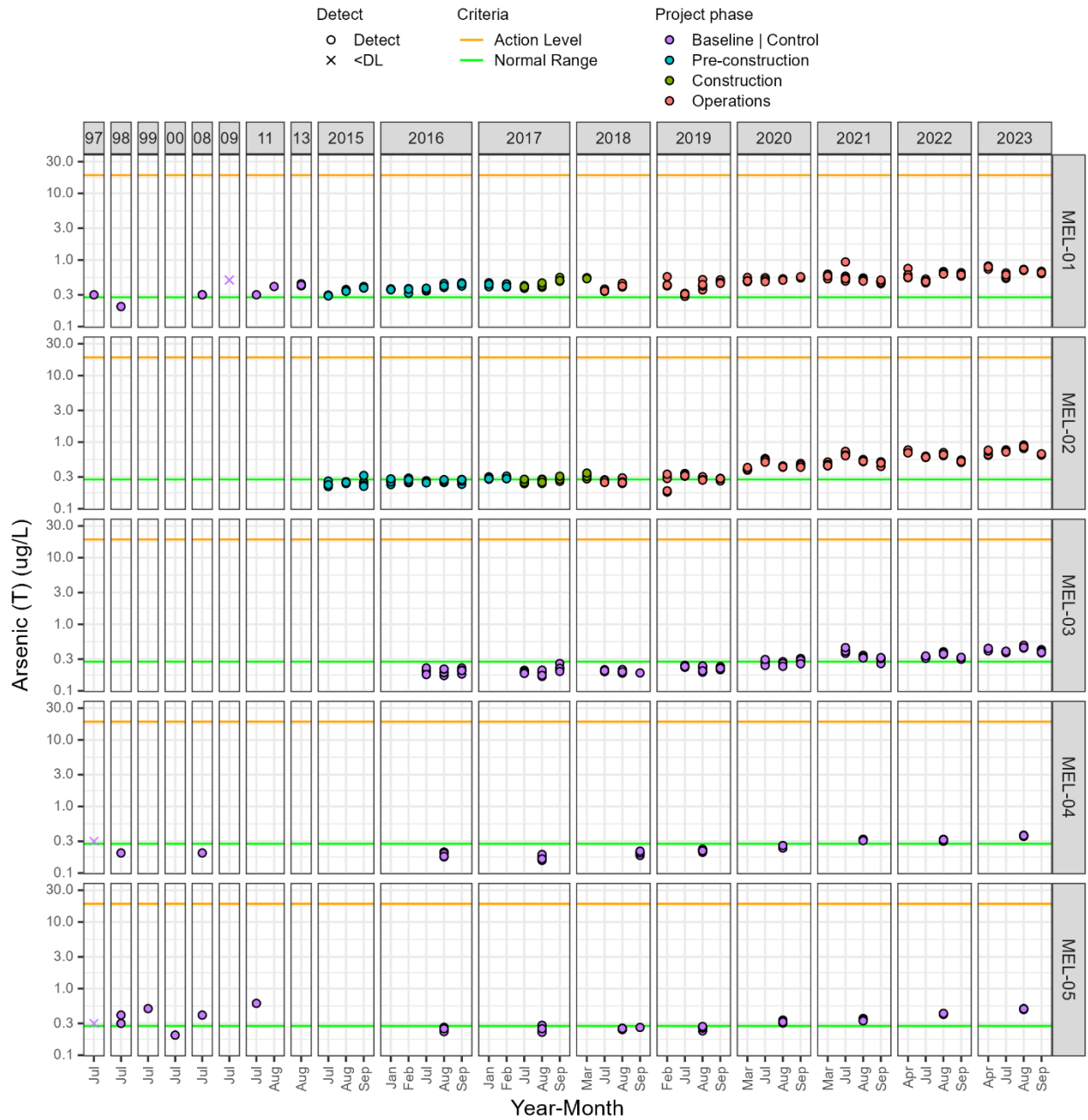
Figure C2-28. Total arsenic ($\mu\text{g/L}$)

Figure C2-29. Total barium (µg/L)

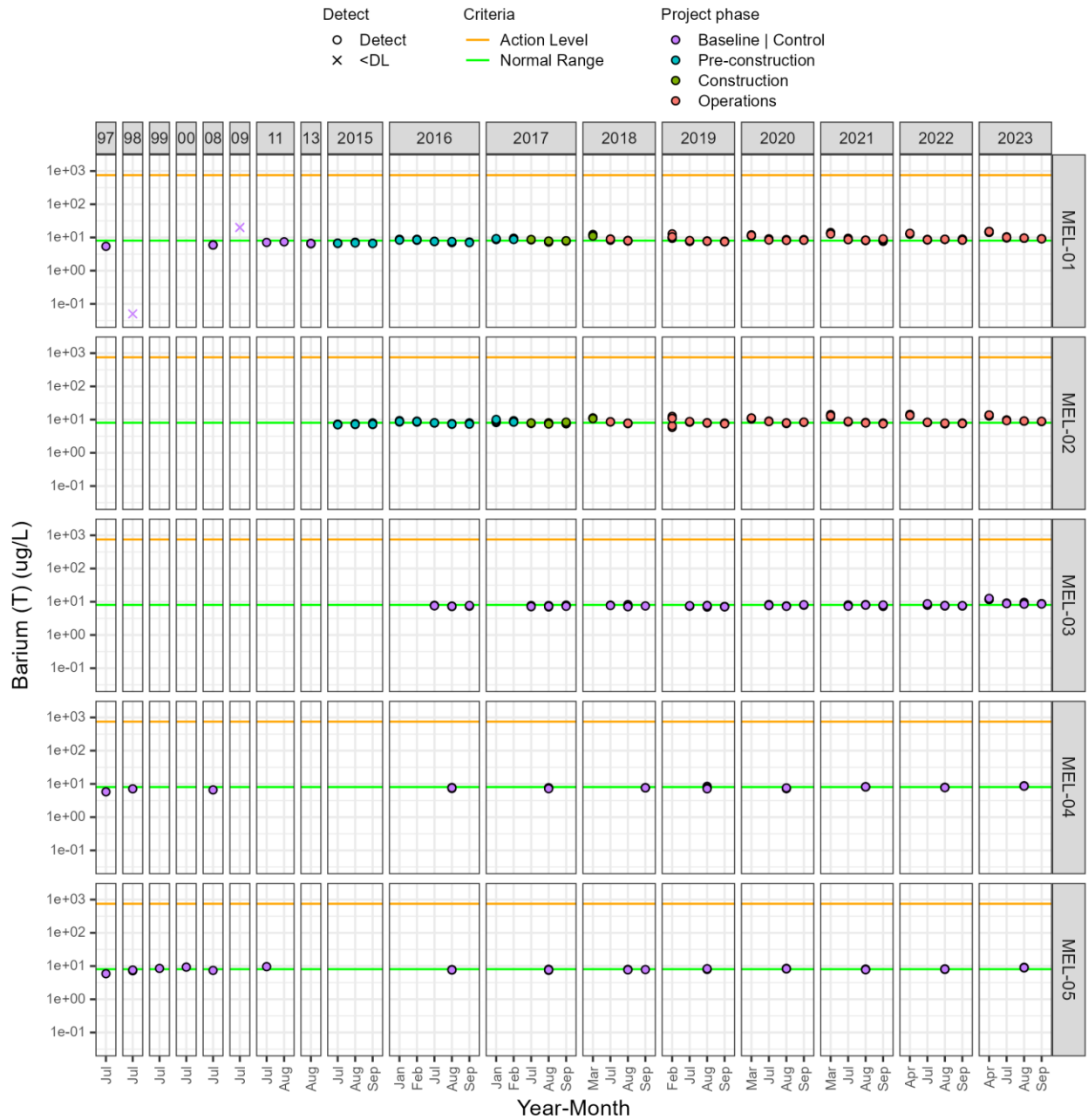


Figure C2-30. Total beryllium ($\mu\text{g/L}$)

Notes: The normal range for beryllium is equal to the current detection limit.



Figure C2-31. Total bismuth ($\mu\text{g/L}$)

Notes: The normal range for bismuth is equal to the current detection limit.

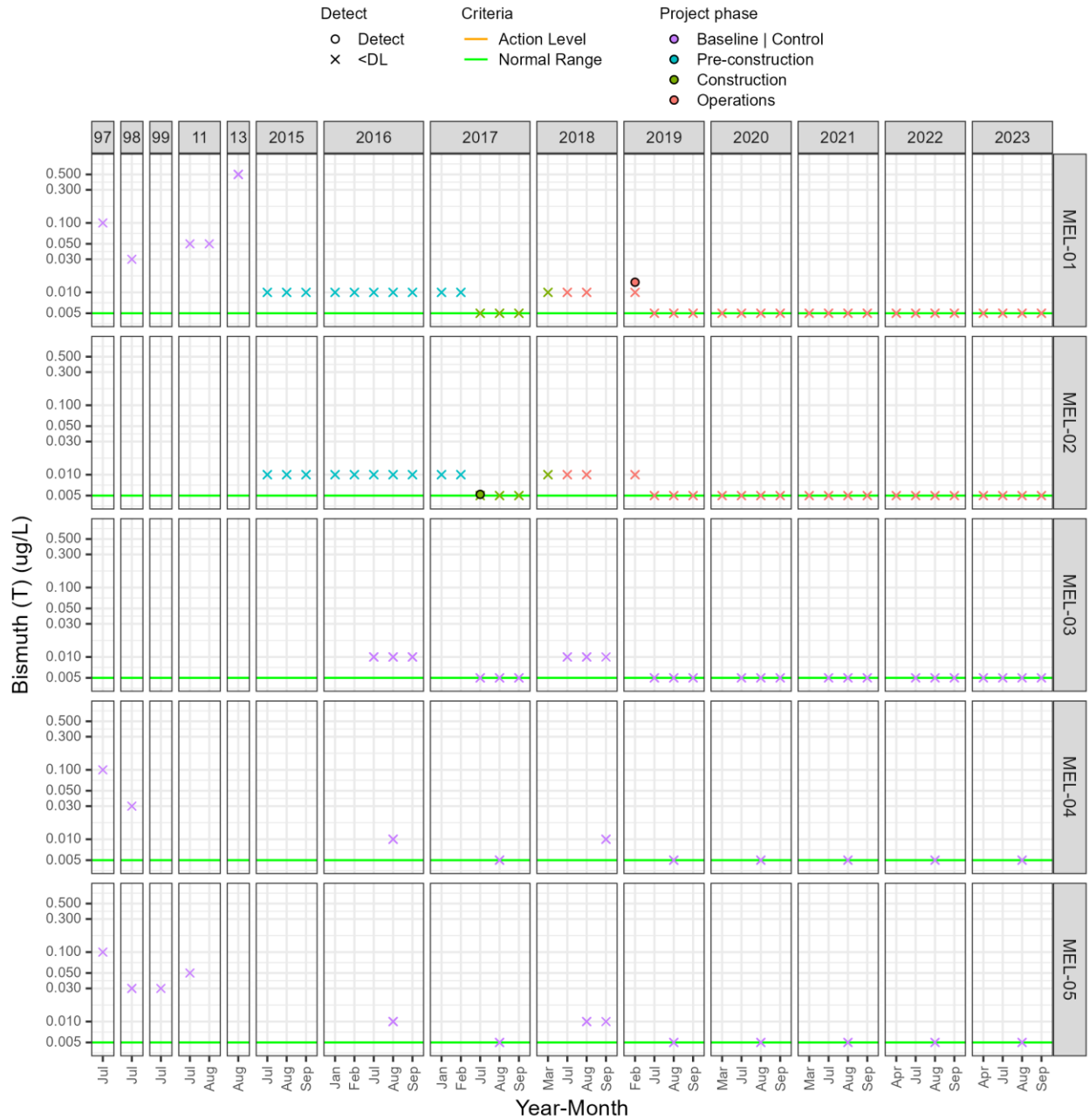


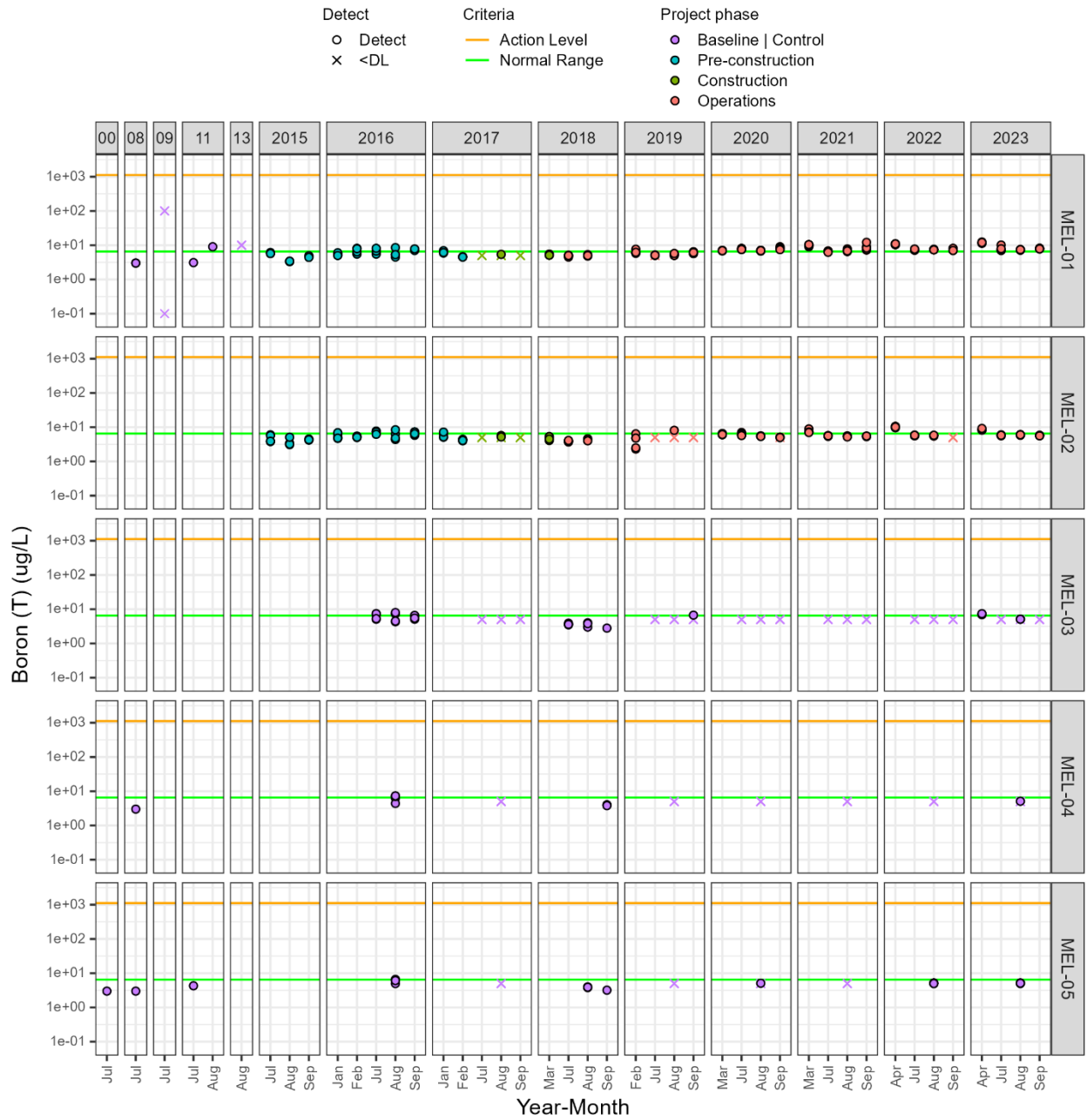
Figure C2-32. Total boron ($\mu\text{g/L}$)

Figure C2-33. Total cadmium (µg/L)

Notes: The normal range for cadmium is equal to the current detection limit. The two lines for the Action Level represent the range in site-specific guidelines for protection of aquatic life for MEL-01 samples in 2023.

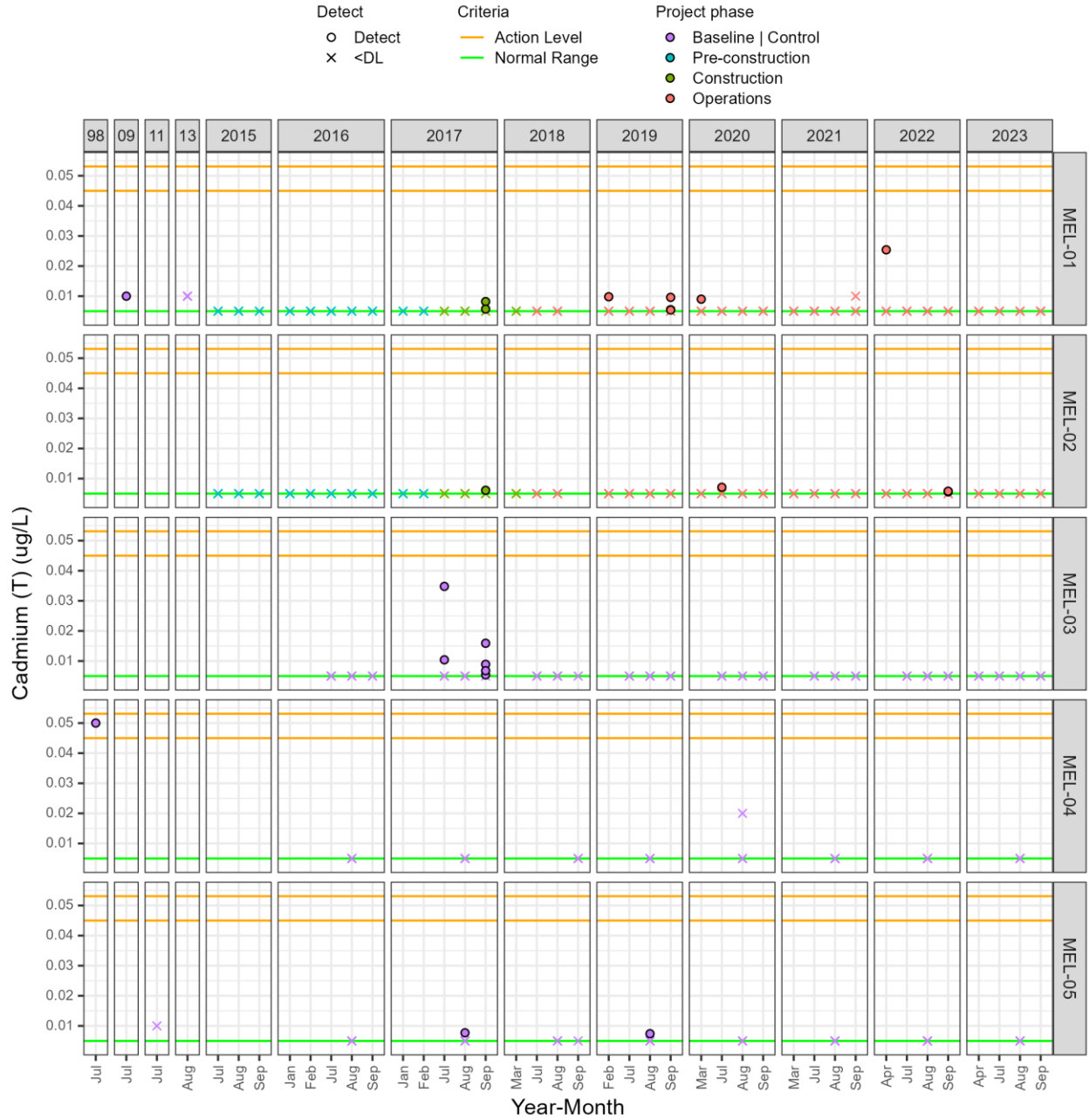


Figure C2-34. Total chromium ($\mu\text{g/L}$)

Notes: The normal range for chromium is equal to the current detection limit.

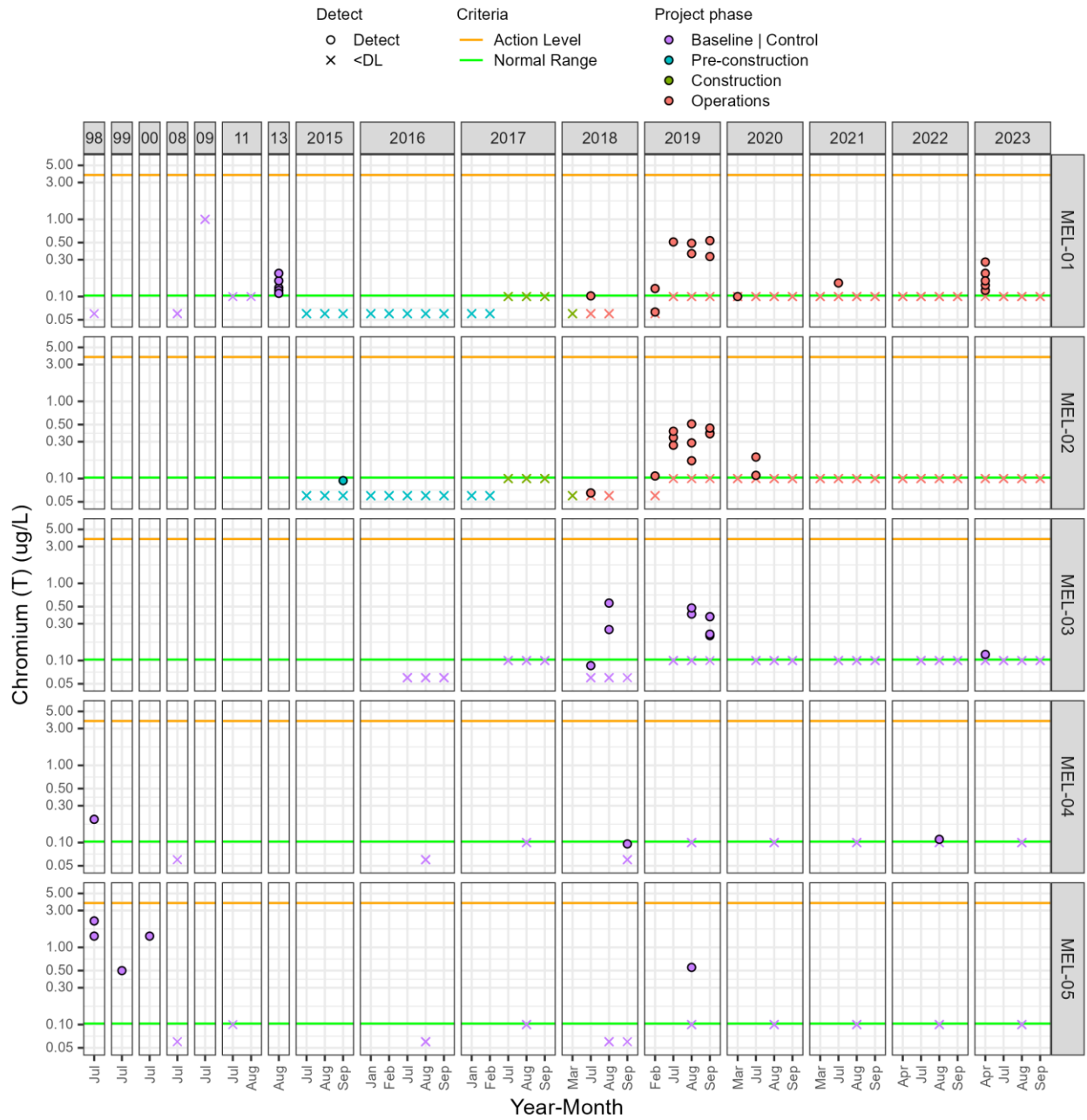


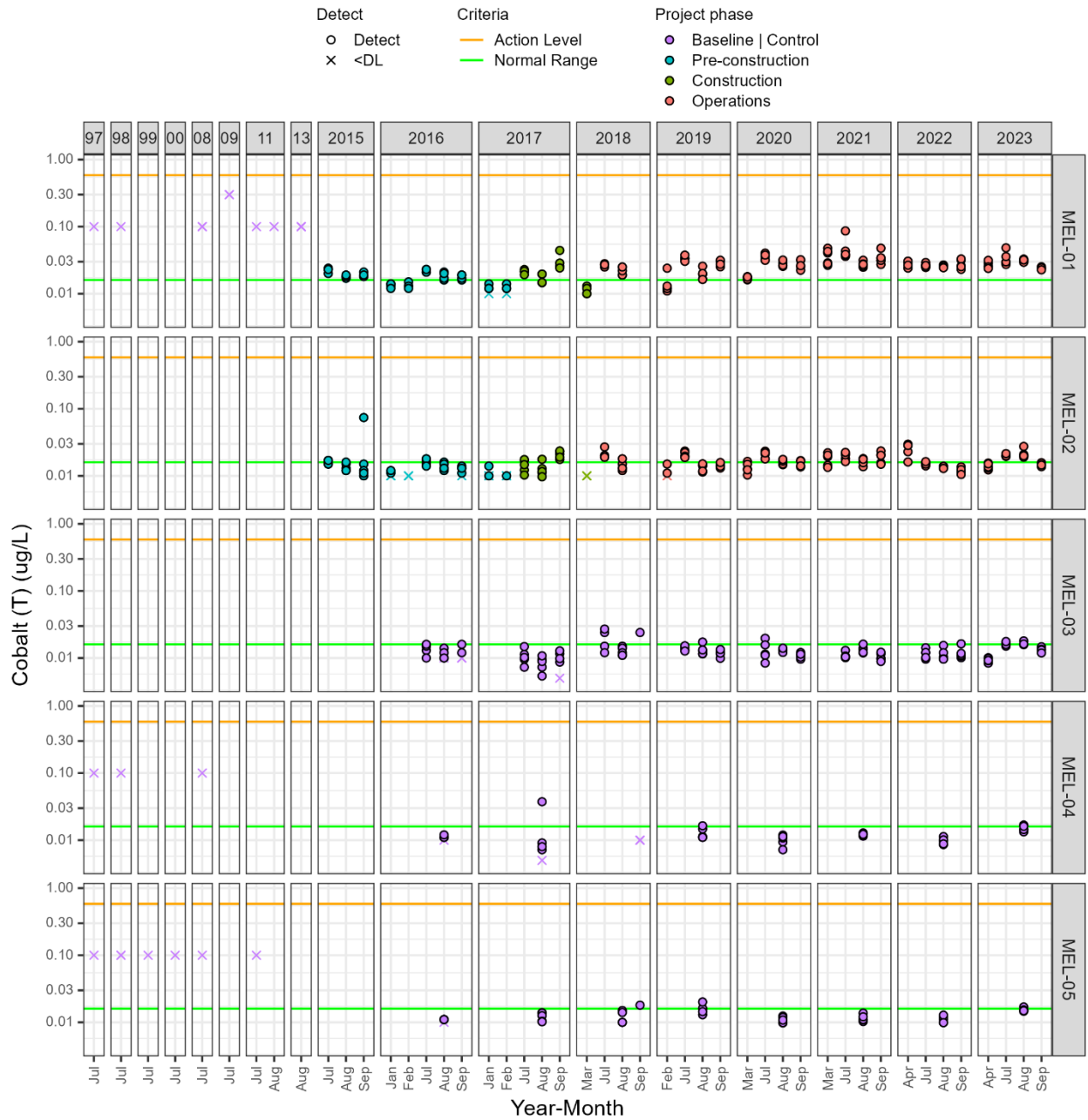
Figure C2-35. Total cobalt ($\mu\text{g/L}$)

Figure C2-36. Total copper ($\mu\text{g/L}$)

Notes: The AEMP Benchmark for total copper is equal to 2 $\mu\text{g/L}$ (CCME, 1987). As of 2021, the AEMP Action Level assessment for copper is based on the dissolved concentration. The new FEQG for dissolved copper is based on the biotic ligand model (ECCC, 2021). Refer to [Appendix C1](#) for information on the copper BLM.

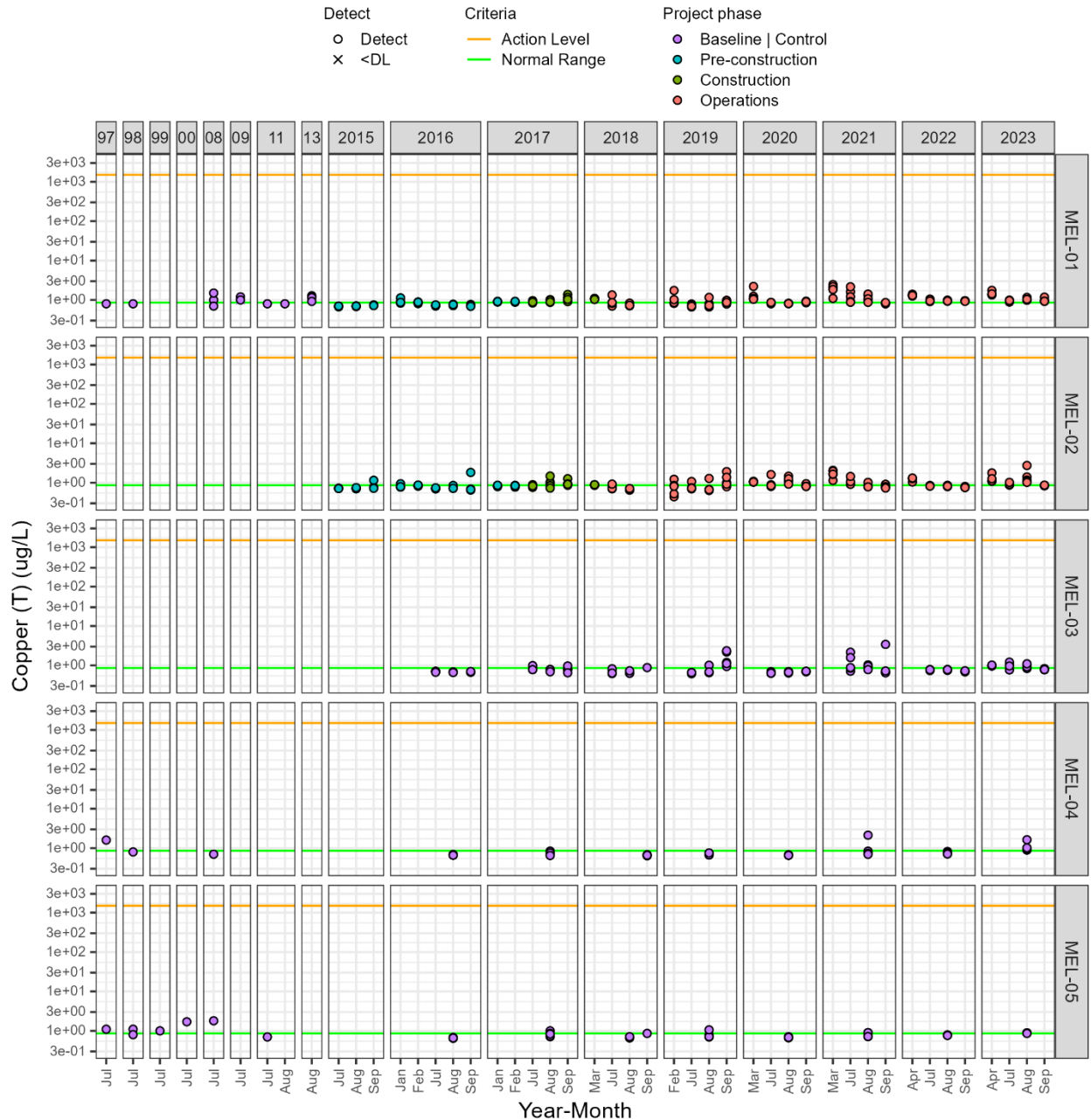


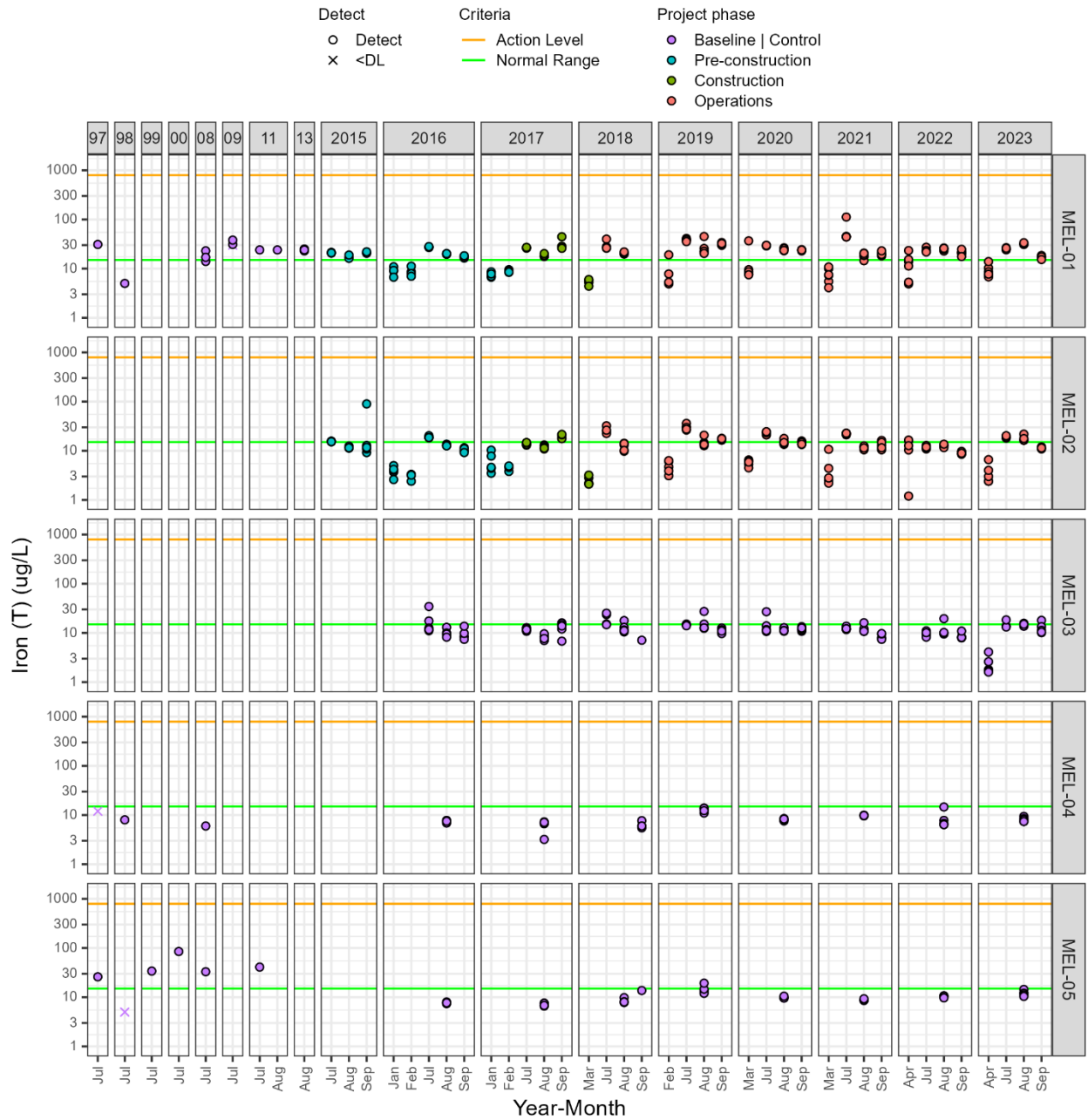
Figure C2-37. Total iron ($\mu\text{g/L}$)

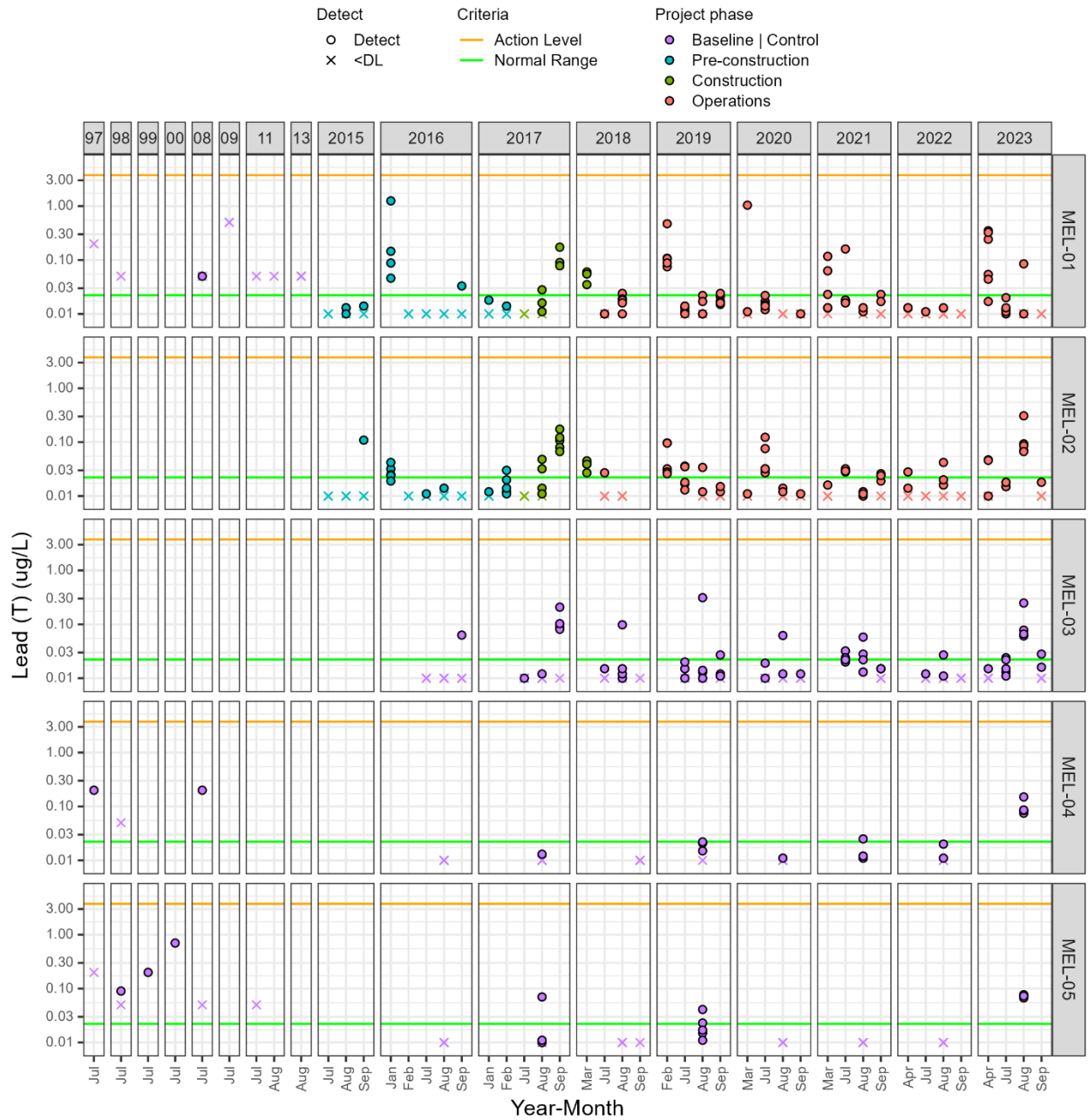
Figure C2-38. Total lead ($\mu\text{g/L}$)

Figure C2-39. Total lithium (µg/L)

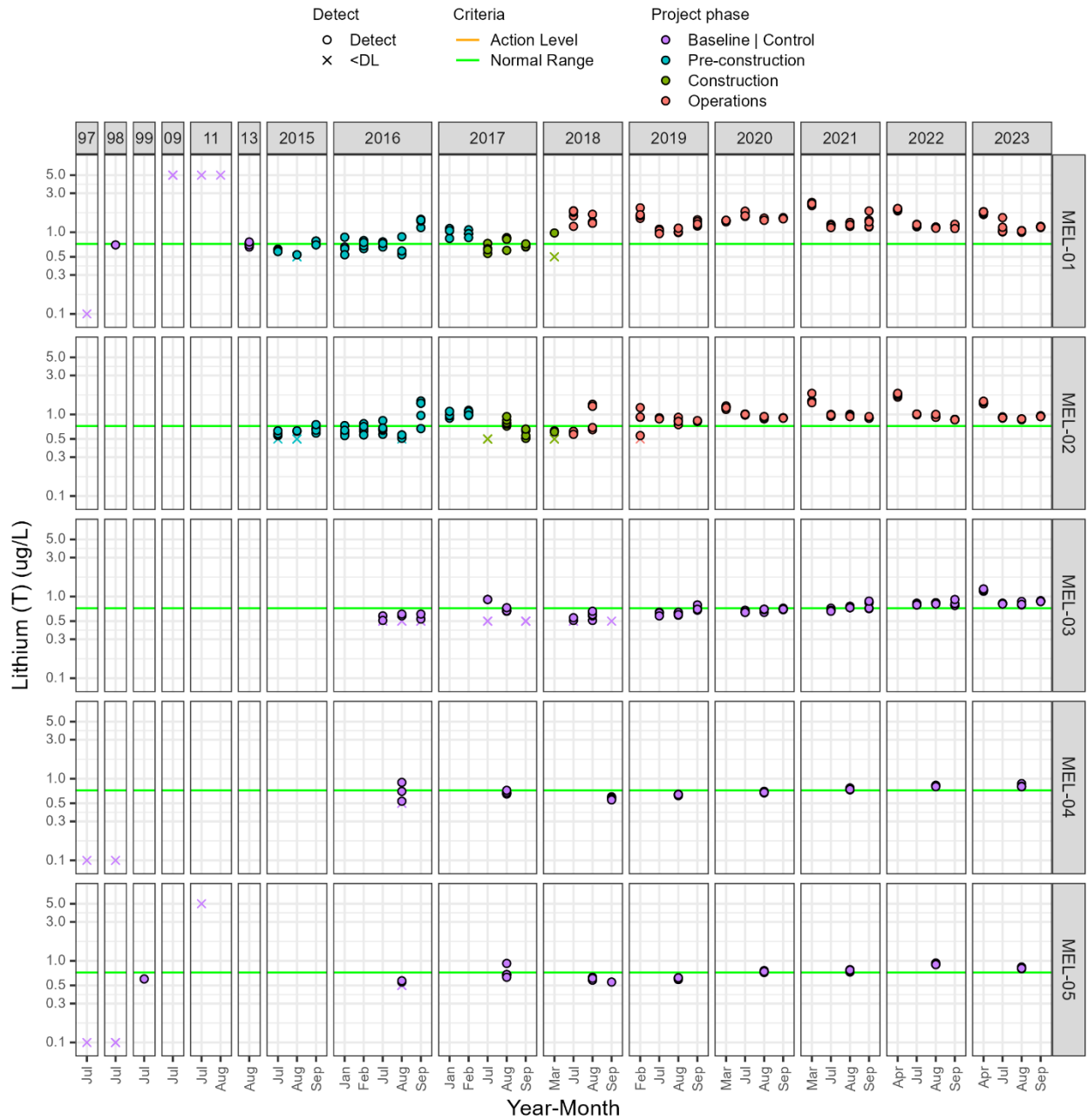


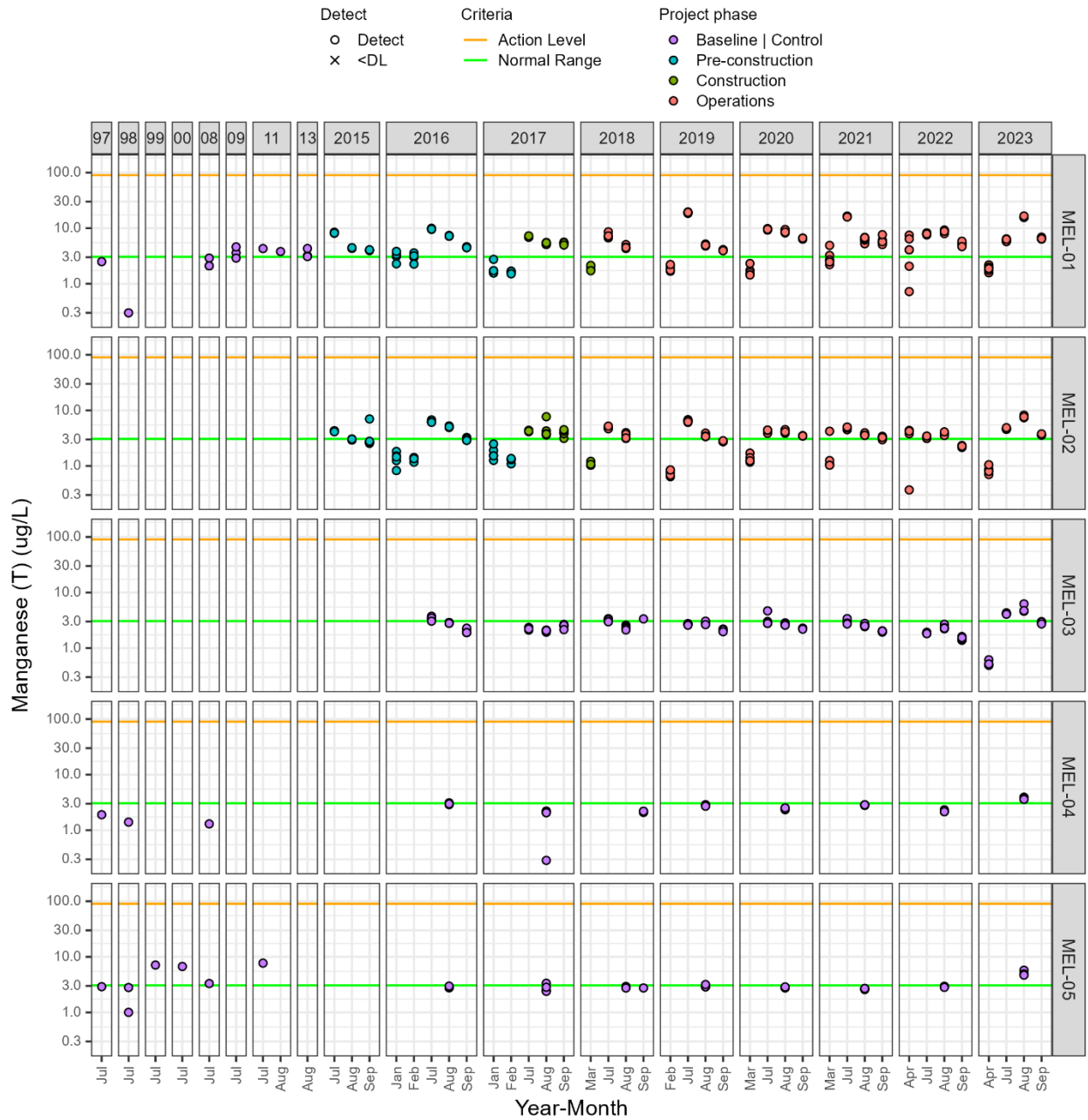
Figure C2-40. Total manganese ($\mu\text{g/L}$)

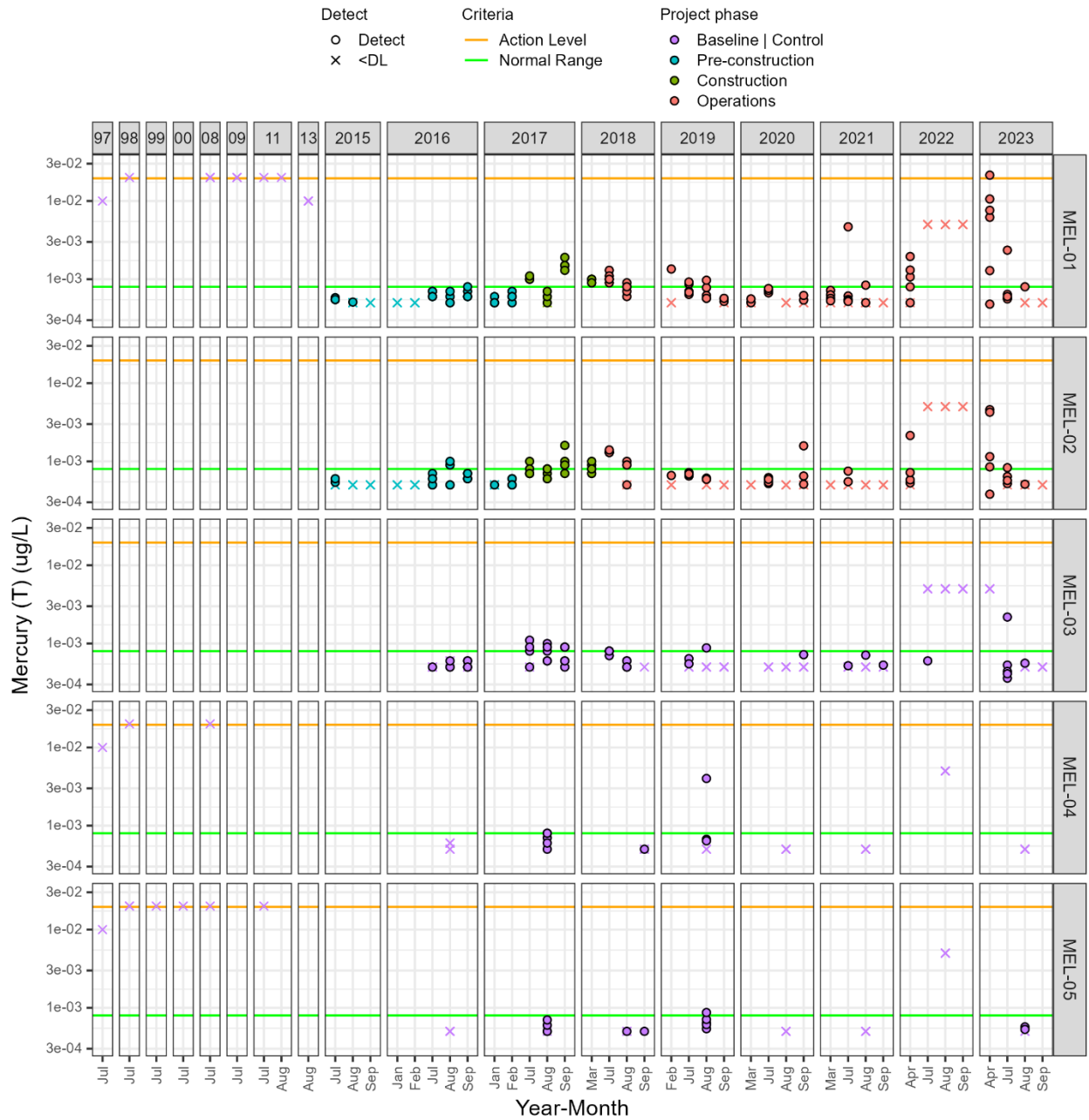
Figure C2-41. Total mercury ($\mu\text{g/L}$)

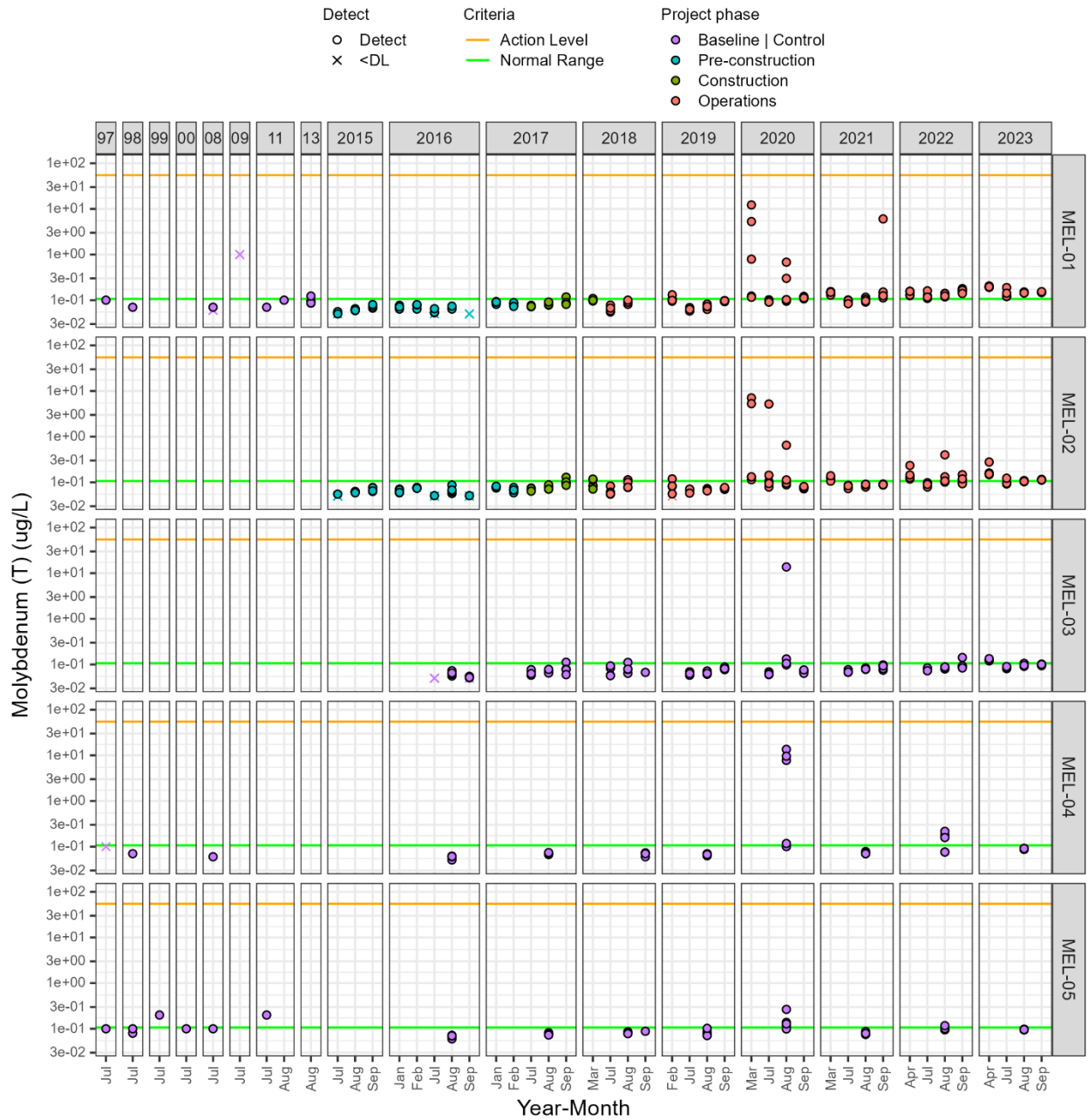
Figure C2-42. Total molybdenum ($\mu\text{g/L}$)

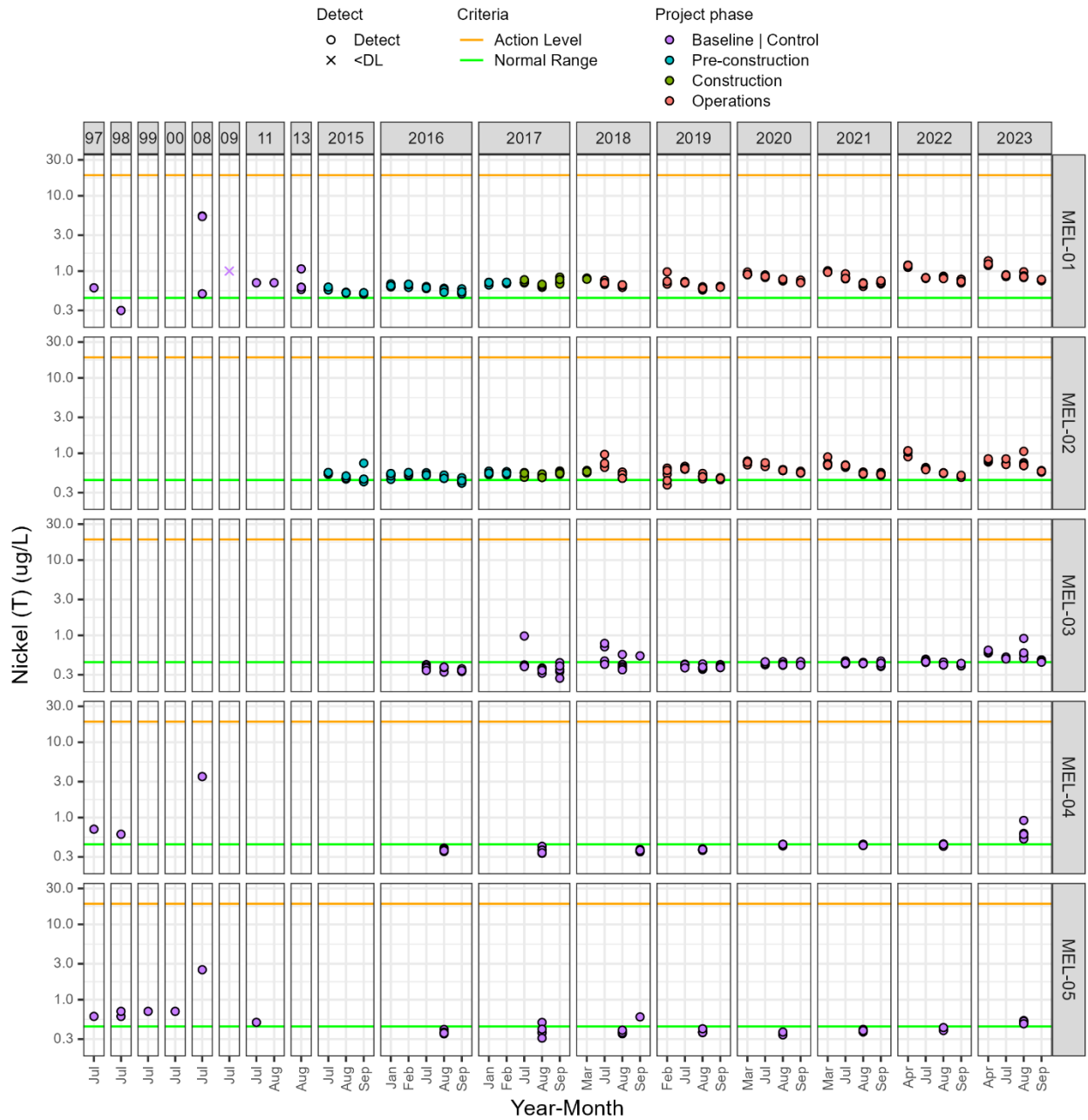
Figure C2-43. Total nickel ($\mu\text{g/L}$)

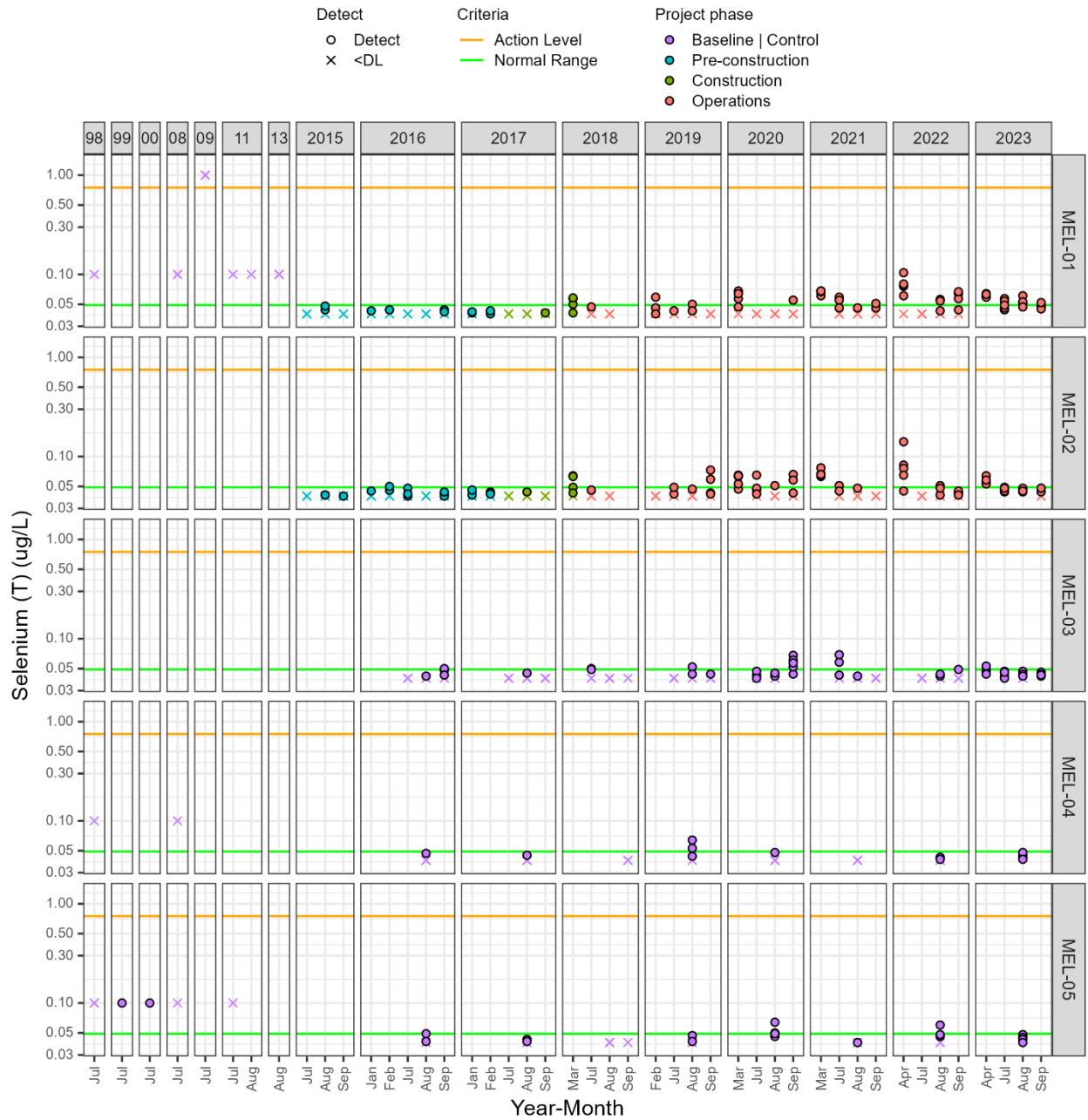
Figure C2-44. Total selenium ($\mu\text{g/L}$)

Figure C2-45. Total silver ($\mu\text{g/L}$)

Notes: The normal range for silver is equal to the current detection limit.

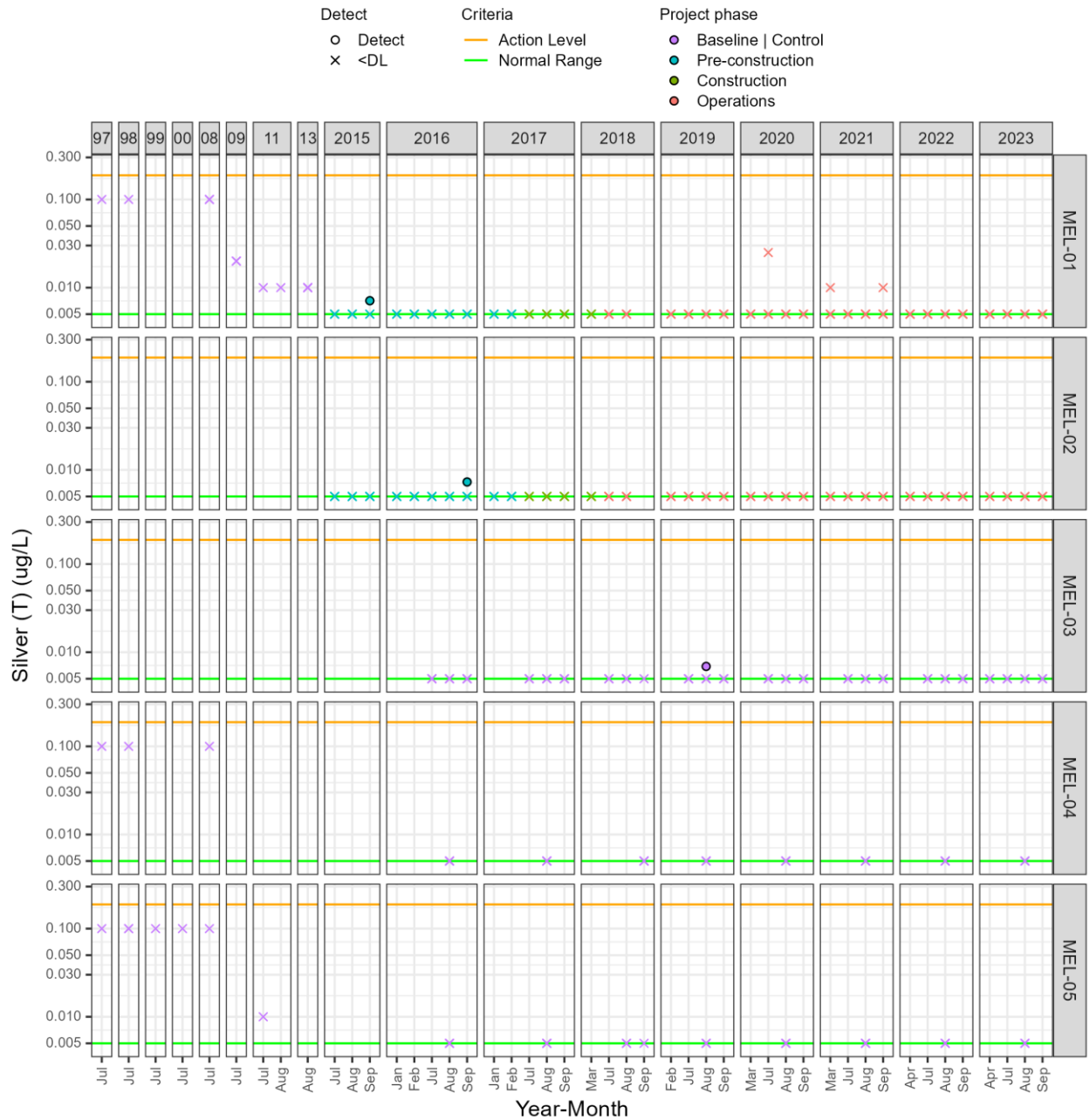


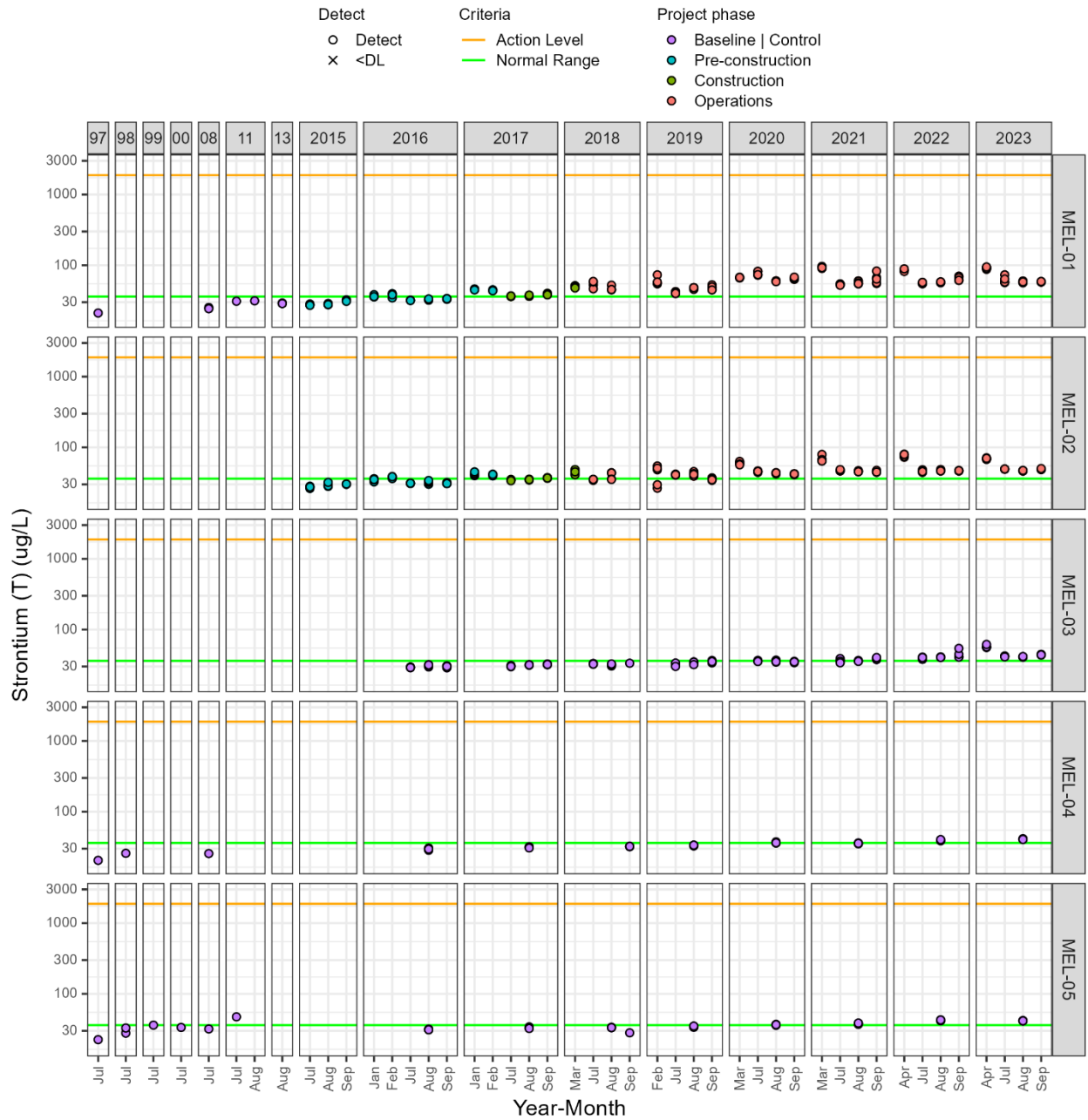
Figure C2-46. Total strontium ($\mu\text{g/L}$)

Figure C2-47. Total thallium ($\mu\text{g/L}$)

Notes: The normal range for thallium is equal to the current detection limit.

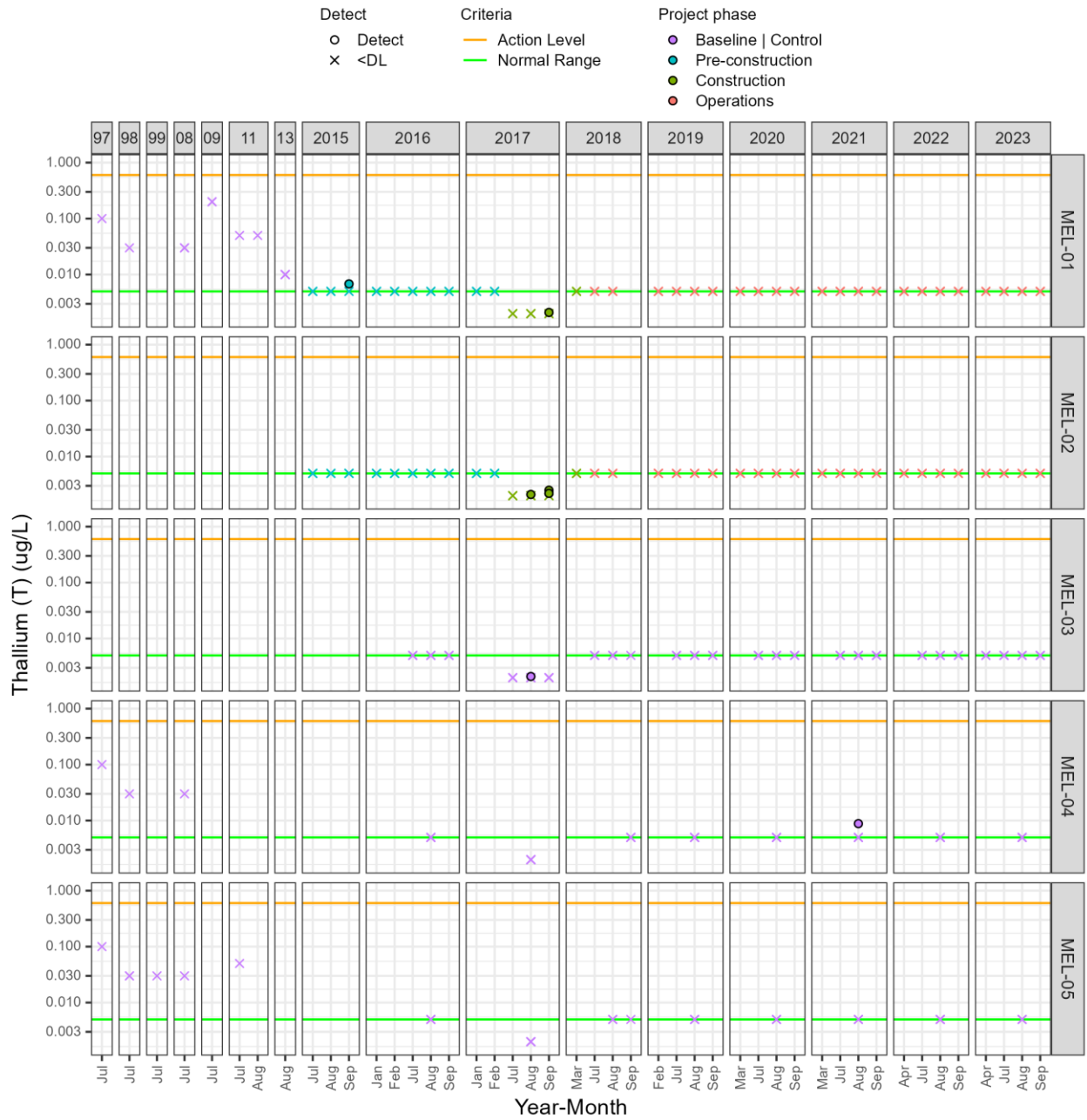


Figure C2-48. Total tin ($\mu\text{g/L}$)

Notes: The normal range for tin is equal to the current detection limit.

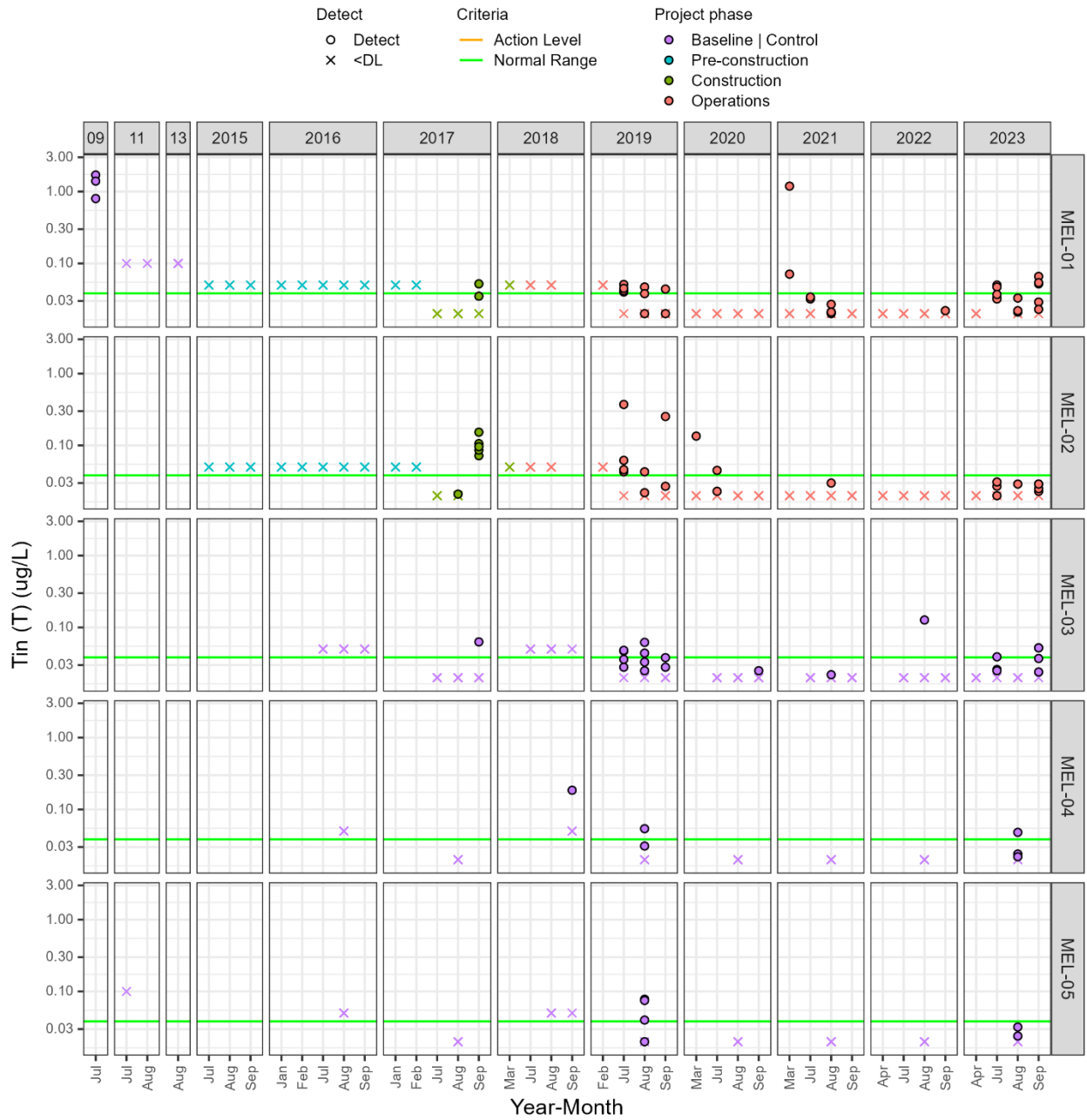


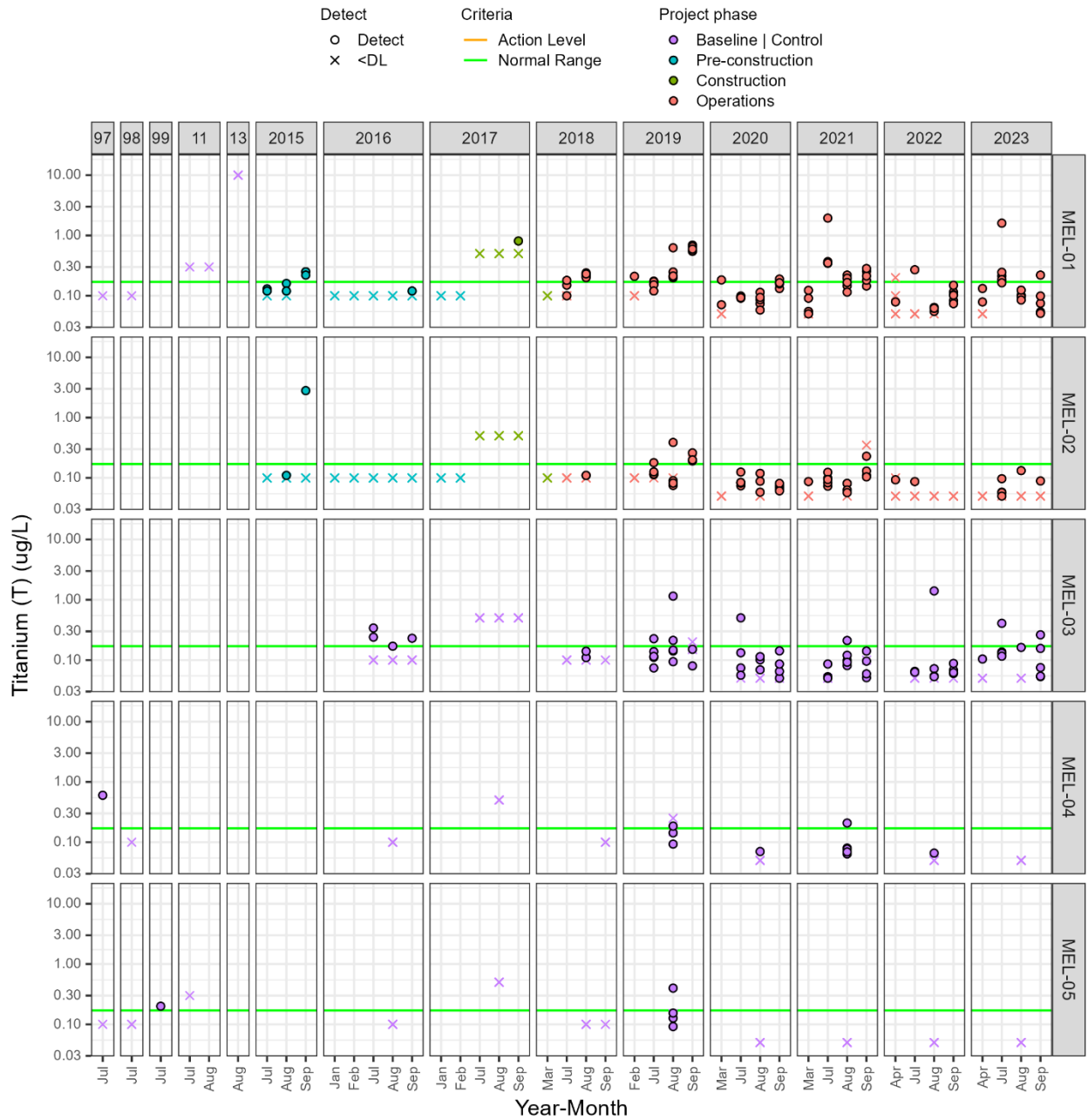
Figure C2-49. Total titanium ($\mu\text{g/L}$)

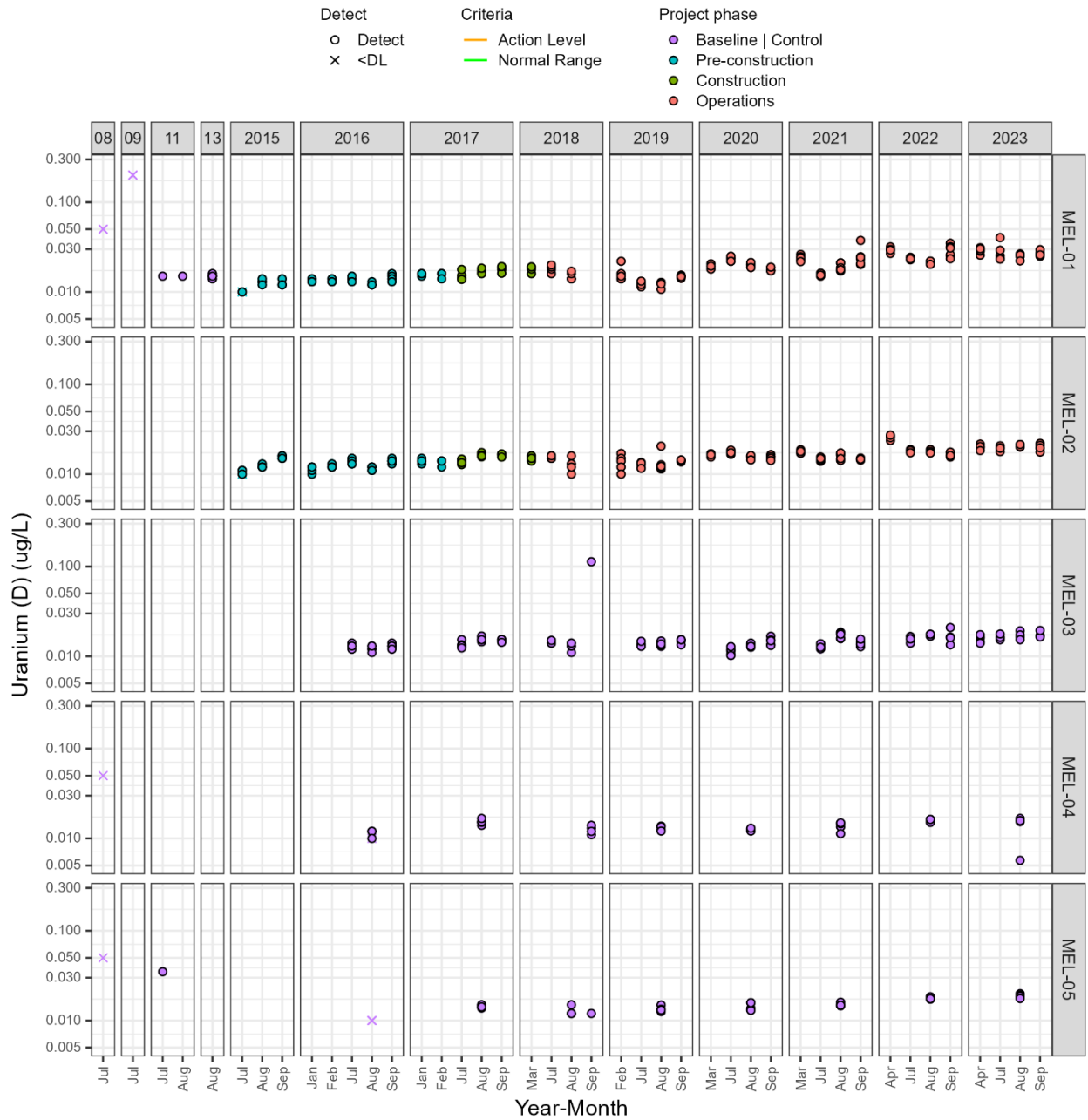
Figure C2-50. Total uranium ($\mu\text{g/L}$)

Figure C2-51. Total vanadium (µg/L)

Notes: The normal range for vanadium is equal to the current detection limit.

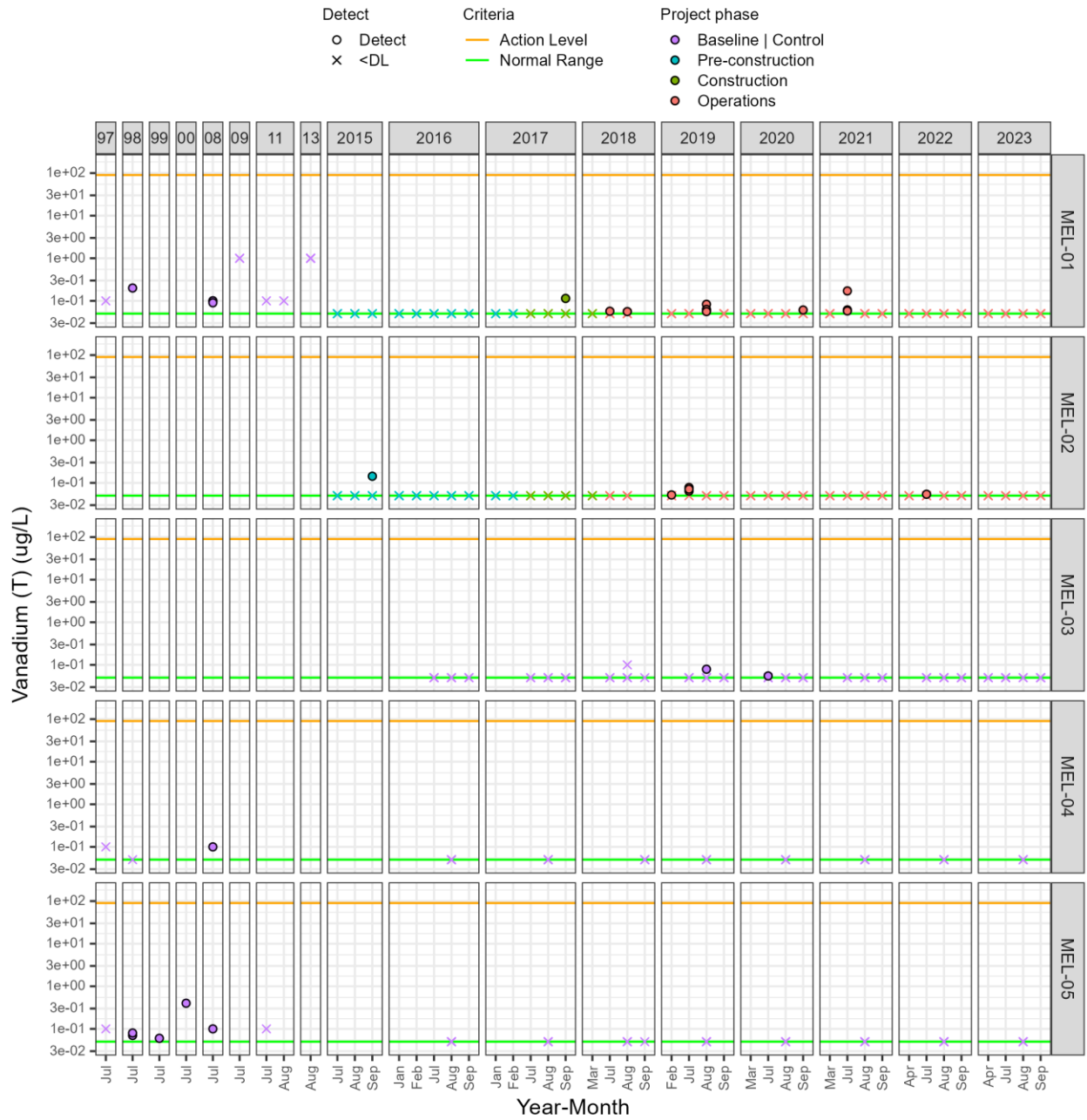


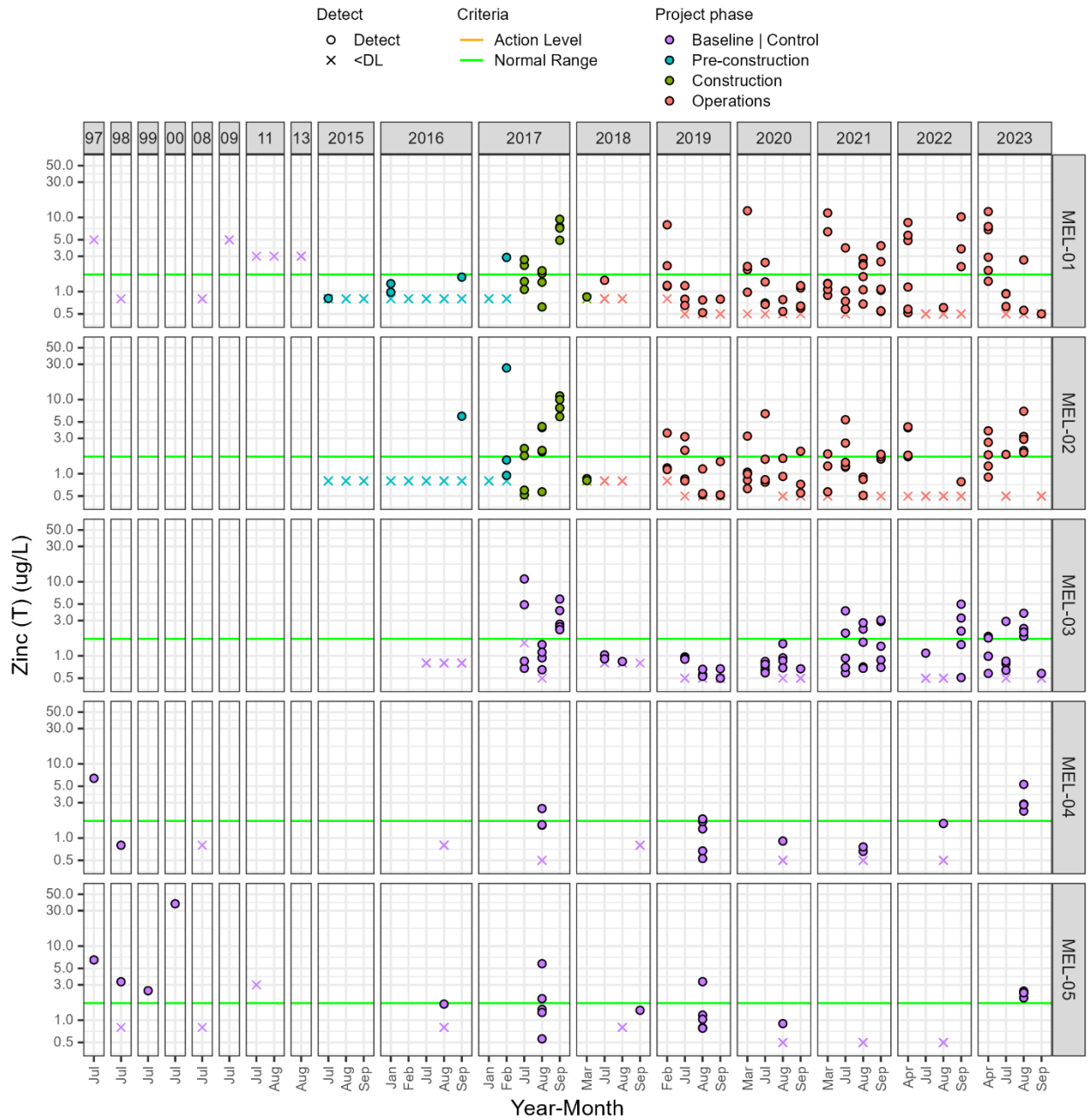
Figure C2-52. Total zinc ($\mu\text{g/L}$)

Figure C2-53. Dissolved copper ($\mu\text{g/L}$)

Notes: The AEMP Benchmark for dissolved copper is based on the copper BLM (ECCC, 2021). The two lines for the Action Level represent the range in site-specific guidelines for protection of aquatic life for open water samples at MEL-01 in 2023. Refer to [Figure 3-5](#) in the main report for sample-by-sample screening results for dissolved copper.

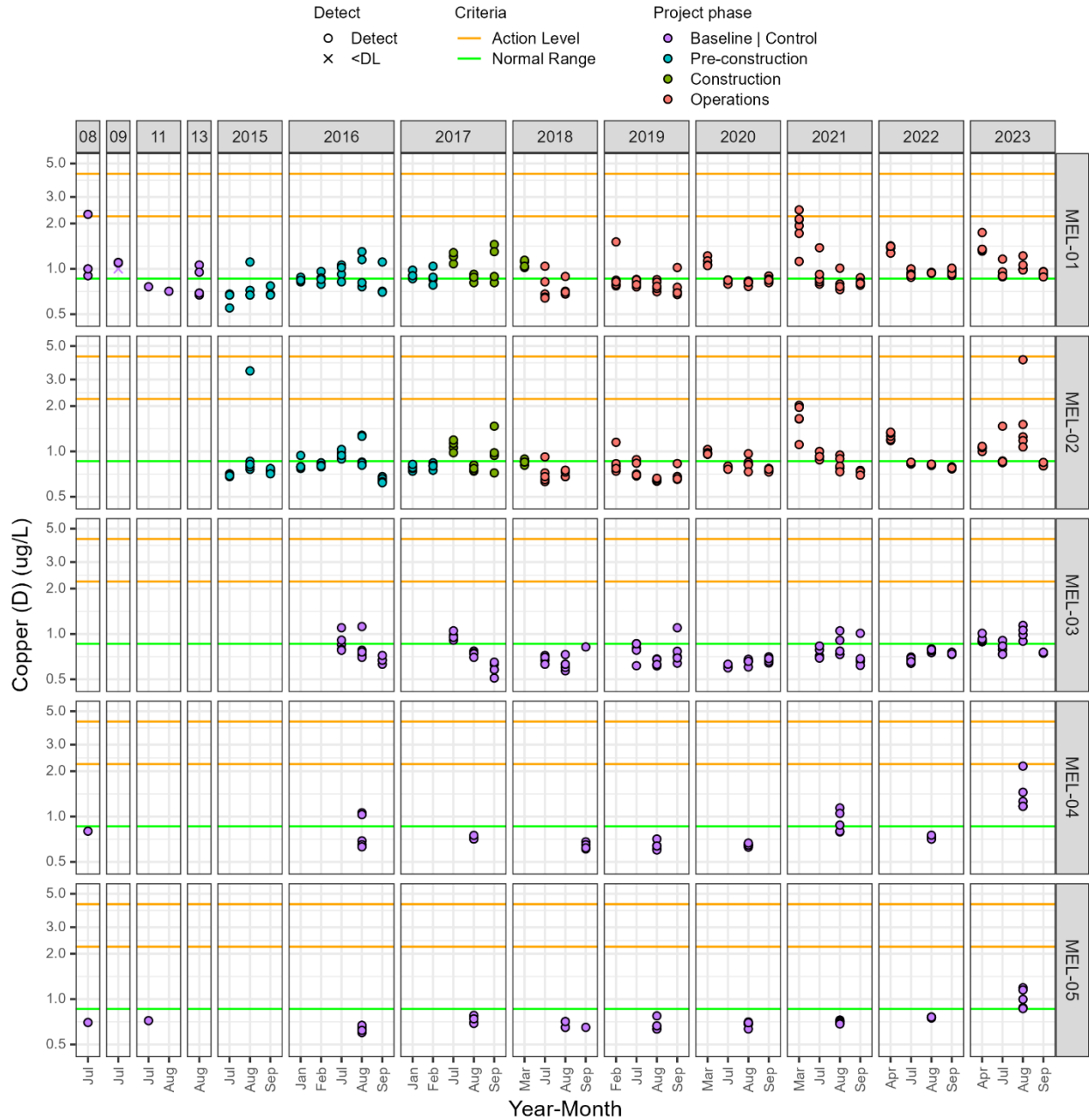


Figure C2-54. Dissolved lead ($\mu\text{g/L}$)

Notes: The two lines for the Action Level represent the range in site-specific guidelines for protection of aquatic life for open water samples at MEL-01 in 2023.

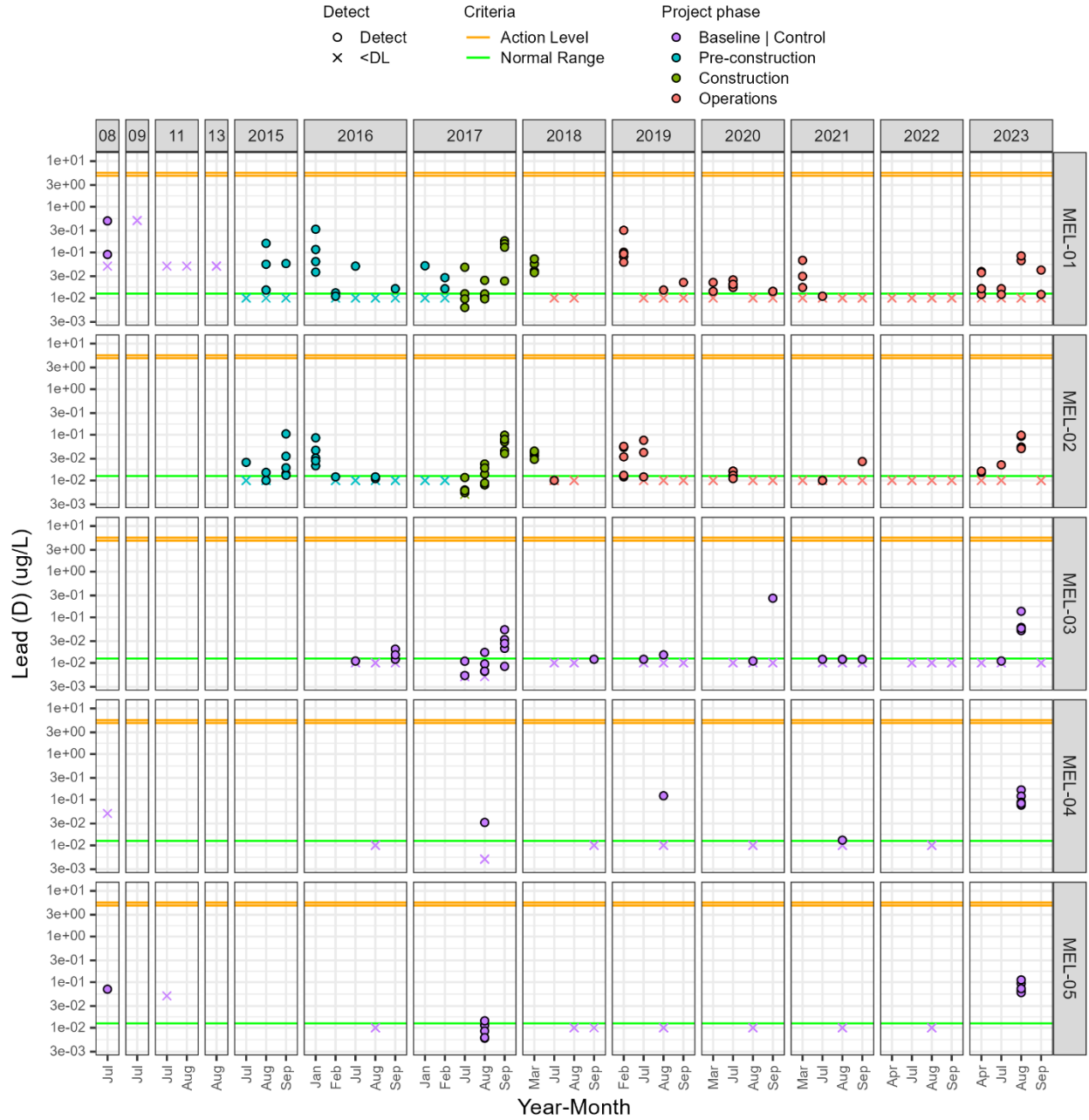


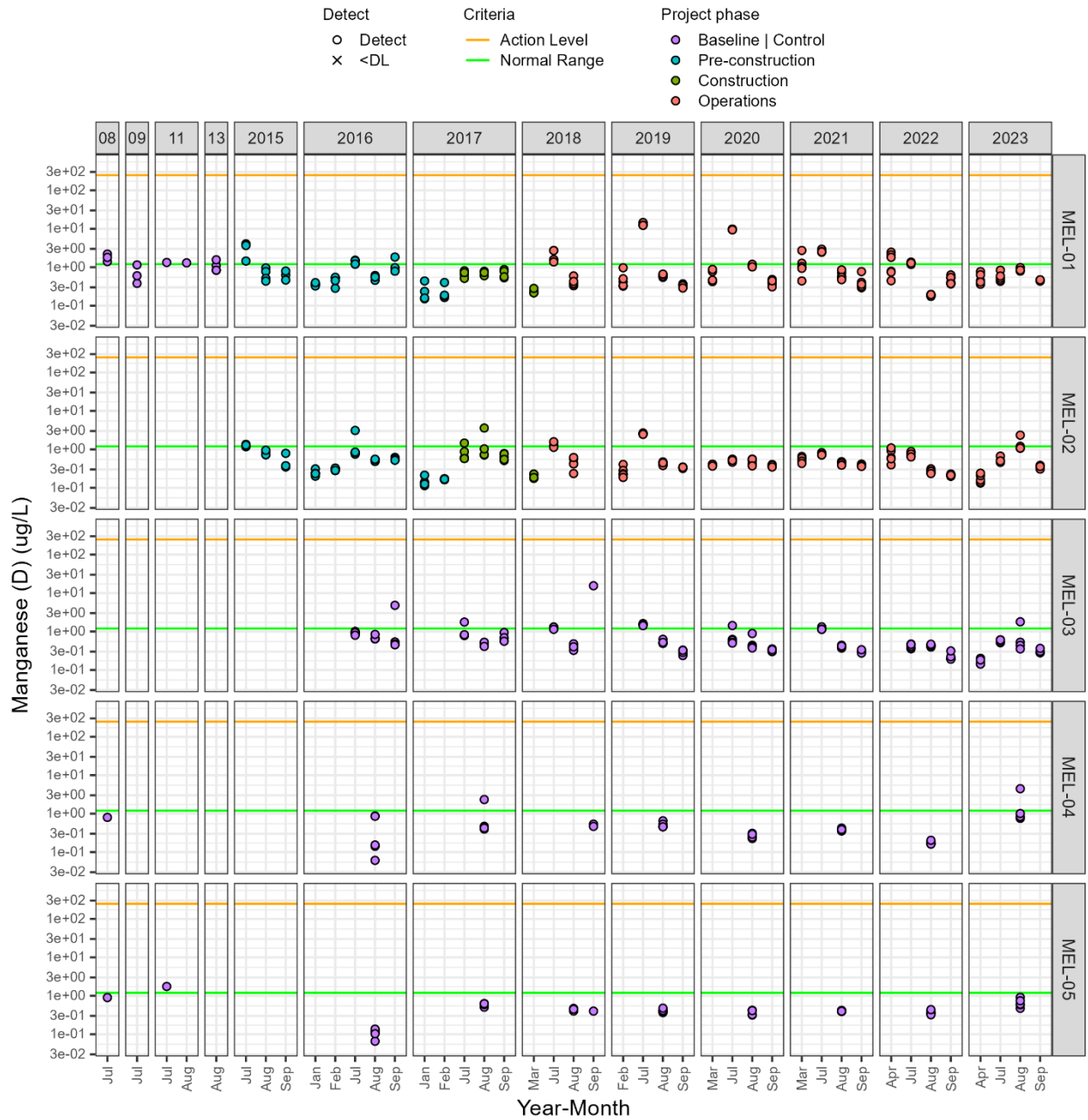
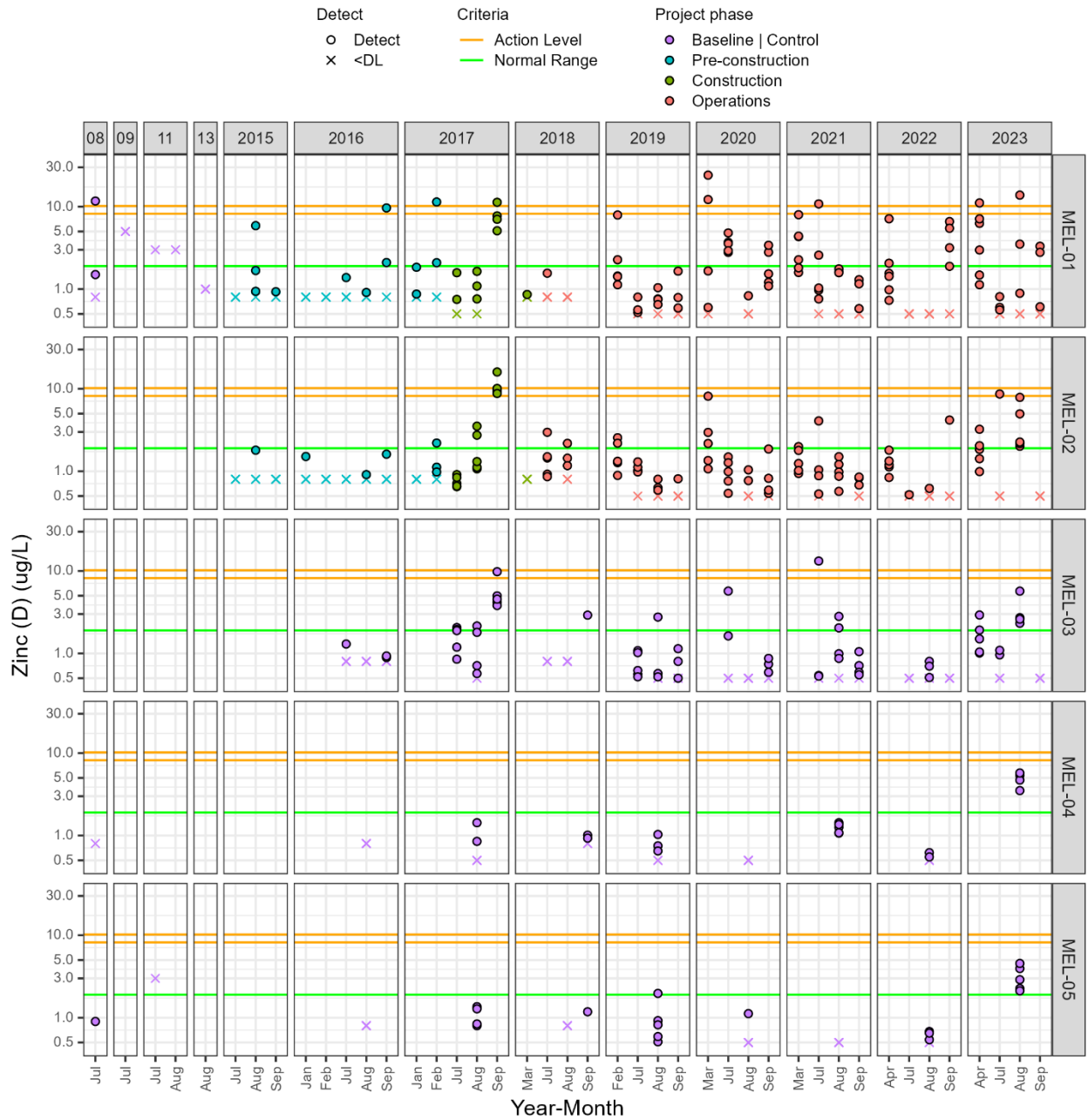
Figure C2-55. Dissolved manganese ($\mu\text{g/L}$)

Figure C2-56. Dissolved zinc ($\mu\text{g/L}$)

Notes: The CCME guideline for dissolved zinc is hardness-dependent. The two lines for the Action Level represent the range in site-specific guidelines for protection of aquatic life for open water samples at MEL-01 in 2023. The data point above the Action Level at MEL-01 in August 2023 was flagged as an outlier (dissolved concentration > total).



Appendix C3

Meliadine Lake Water Quality – 2023 Samples

Table C3-1. Water chemistry results from Meliadine Lake in 2023

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^(a)	FWAL ^(b) (min max)	HH DW ^(d)	SSWQO ^(e)	AEMP Action Level ^(e) (min max)	AEMP Benchmark ^(f) (min max)	April MEL-01-01 2023-04-01	April MEL-01-06 2023-04-01	April MEL-01-07 2023-04-01	April MEL-01-08 2023-04-01	April MEL-01-09 2023-04-01	April MEL-01-10 2023-04-01	April MEL-02-02 2023-04-02	April MEL-02-03 2023-04-02	April MEL-02-05 2023-04-02	April MEL-02-06 2023-04-02	April MEL-02-08 2023-04-02	April MEL-03-01 2023-04-03	April MEL-03-02 2023-04-03
Field Measurements																						
pH (field)	pH units	-	7.1 7.95	-	6.5 9	-	-	6.5 9.0	6.5 9.0	6.88	7.03	6.92	7.33	6.9	6.91	7.22	7.24	7.09	7.11	7.44	7.44	7.39
Temperature	C	-	-	-	-	-	-	-	-	1.42	1.47	1.39	1.83	1.4	1.47	0.97	1.38	1.19	1.11	1.21	0.65	0.65
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	-	-	-	159.8	158.5	159.2	158	161.1	158.9	129.7	122.9	125.1	125.8	146.1	113.9	112.4
DO (mg/L)	mg/L	-	-	-	-	-	-	6.5	6.5	13.63	13.3	12.88	10.83	13.93	14.19	16.78	16.59	16.89	16.17	15.24	15.92	15.73
DO (%)	%	-	-	-	-	-	-	-	-	99.7	97.4	94.3	80.4	102	103.8	121	120.9	122.6	117	110.7	114	112.6
Conventional Parameters																						
Conductivity (lab)	uS/cm	1	77.5	-	-	-	-	-	-	179	174	179	178	178	183	144	143	143	150	145	123	122
Hardness	mg/L	0.5	23.4	-	-	-	-	-	-	52.1	50.3	51.8	53	51.7	52.4	38.7	38.7	36.9	38.9	37	32.3	32.9
Total Dissolved Solids	mg/L	10	54	68	500	-	1000	375	500	76	97	81.7	86.3	82.7	94.7	62.7	71	69.7	85	71.3	66	46.3
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	500	-	1000	375	500	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	1	1	3.1	-	-	-	-	-	<1	<1	<1	1.3	1.3	1.5	<1	<1	<1	<1	<1	<1	<1
Turbidity (lab)	NTU	0.1	-	-	-	-	-	-	-	0.35	0.34	0.26	0.46	0.28	0.34	0.12	0.15	0.16	0.2	0.23	0.15	0.12
pH (lab)	pH units	0.1	-	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.14	7.16	7.17	7.2	7.18	7.18	7.44	7.41	7.41	7.5	7.4	7.16	7.21
Major Ions																						
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	-	-	-	32.5	31.6	32.5	32.1	32.1	32.7	29	28	28.6	30.2	28.7	26.5	26.1
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, Total	mg/L	1	20.5	-	-	-	-	-	-	32.5	31.6	32.5	32.1	32.1	32.7	29	28	28.6	30.2	28.7	26.5	26.1
Bromide	mg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	16	15.5	16	16.2	15.9	16	12.2	12.1	11.6	12.3	11.6	10.2	10.4
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	-	-	-	14.7	15.9	16	15.7	15.8	16.7	13.6	13.1	13.2	13.7	13.5	11.6	11.5
Chloride	mg/L	0.1	9.56	14	120	-	-	90	120	25.6	24.7	25.4	25.2	25	26.1	18.2	18.3	18.3	19.2	18.7	15.3	15.2
Fluoride	mg/L	0.02	0.028	0.0084	0.12	1.5	2.8	2.1	2.8	0.047	0.046	0.046	0.05	0.046	0.047	0.044	0.042	0.042	0.044	0.043	0.041	0.04
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	2.96	2.82	2.88	3.04	2.91	3.02	2	2.06	1.92	1.99	1.94	1.67	1.69
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	-	-	-	2.76	2.95	2.98	2.95	2.91	3.05	2.3	2.3	2.32	2.33	2.36	1.96	1.97
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	1.87	1.83	1.85	1.95	1.84	1.88	1.5	1.47	1.42	1.52	1.46	1.3	1.33
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	-	-	-	1.78	1.86	1.87	1.9	1.83	1.96	1.64	1.58	1.6	1.67	1.66	1.44	1.42
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	-	-	-	0.853	0.825	0.805	0.833	0.862	0.886	0.604	0.611	0.639	0.713	0.631	0.42	0.419
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	12.6	12.1	12.8	13.2	12.5	12.8	8.4	8.6	8	8.26	8.04	6.92	6.84
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	-	-	-	12.3	12.9	13.1	13.1	12.7	13.7	9.36	9.35	9.5	10.1	9.85	7.96	7.83
Sulphate	mg/L	0.3	3.87	38	-	-	-	-	-	11	10.6	10.9	10.8	10.8	11.1	7.56	7.62	7.6	7.93	7.69	6.21	6.17
Nutrients																						
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.41 12.5	-	-	0.308 9.38	0.41 12.5	0.0366	0.0321	0.0323	0.0319	0.023	0.0266	0.0268	0.0288	0.0248	0.0362	0.0331	0.0251	0.019
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.9	10	-	2.17	2.9	0.023	0.0187	0.0188	0.021	0.02	0.022	0.0078	0.0089	0.0076	0.0128	0.014	<0.005	<0.005
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	0.023	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224	<0.0224
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.06	1	-	0.045	0.06	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	-	-	-	0.0033	0.0038	0.0034	0.0031	0.0038	0.0038	0.0037	0.0026	0.0028	0.0022	0.0022	0.0021	0.0029
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.399	0.415	0.319	0.413	0.378	0.398	0.29	0.262	0.238	0.307	0.289	0.217	0.254
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	-	-	-	0.397	0.355	0.334	0.457	0.395	0.398	0.284	0.291	0.289	0.309	0.304	0.271	0.242
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.376	0.415	0.319	0.392	0.358	0.376	0.29	0.262	0.238	0.307	0.289	0.217	0.254
Total Phosphorus	mg/L	0.001	0.006	0.0049	-	-	-	0.0075	0.01	0.0071	0.0067	0.0075	0.0082	0.008	0.0067	0.0046	0.0044	0.0041	0.004	0.0051	0.005	0.004
Organic/Inorganic Carbon																						
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	-	-	-	5.85	5.4	5.84	5.72	5.38	5.62	4.15	3.92	4.1	4.25	4.37	3.88	3.87
Total Organic Carbon	mg/L	0.5	3	-	-	-	-	-	-	5.89	5.83	5.76	5.83	5.93	6.19	4.45	4.88	4.43	4.43	5.13	3.73	3.7
Total Metals																						
Aluminum	ug/L	1	5.32	9.1	100	2900	-	75	100	2.6	1.8	1.5	4.1	<1	1.6	<1	<1	<1	1.7	1.6	<1	<1
Antimony	ug/L	0.02	0.02	0.51	-	6	-	4.5	6	0.035	0.026	0.024	0.039	0.023	0.025	<0.02	<0.02	<0.02	<0.02	0.026	<0.02	<0.02
Arsenic	ug/L	0.02	0.275	3.8	5	10	25	18.8	25	0.805	0.746	0.758	0.812	0.73	0.787	0.6						

Table C3-1. Water chemistry results from Meliadine Lake in 2023

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	FWAL ^[b] (min max)	HH DW ^[d]	SSWQO ^[e]	AEMP Action Level ^[e] (min max)	AEMP Benchmark ^[f] (min max)	April MEL-03-03 2023-04-03	April MEL-03-04 2023-04-03	April MEL-03-05 2023-04-03	July MEL-01-01 2023-07-16	July MEL-01-06 2023-07-16	July MEL-01-07 2023-07-16	July MEL-01-08 2023-07-16	July MEL-01-09 2023-07-16	July MEL-01-10 2023-07-16	July MEL-02-02 2023-07-15	July MEL-02-03 2023-07-15	July MEL-02-05 2023-07-15	July MEL-02-06 2023-07-15
Field Measurements																						
pH (field)	pH units	-	7.1 7.95	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.37	7.62	7.95	7.69	7.61	7.55	7.59	7.85	7.61	7.6	7.54	7.6	7.57
Temperature	C	-	-	-	-	-	-	-	-	0.71	0.63	0.65	11.29	11.52	11.24	11.42	11.26	11.37	11.31	11.45	11.17	11.2
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	-	-	-	110	115.5	118.5	110.7	108.6	109.4	109.5	111.9	109.3	96.6	96.8	96.7	96.5
DO (mg/L)	mg/L	-	-	-	-	-	-	6.5	6.5	14.82	15.75	15.69	10.2	10.27	10.21	10.16	10	10.3	10.37	10.34	10.32	10.34
DO (%)	%	-	-	-	-	-	-	-	-	106.6	112.7	112.4	95.7	97	95.8	95.8	93.8	96.9	97.4	97.5	96.5	96.9
Conventional Parameters																						
Conductivity (lab)	uS/cm	1	77.5	-	-	-	-	-	-	122	124	129	114	112	144	112	112	120	98.2	100	99.4	99.1
Hardness	mg/L	0.5	23.4	-	-	-	-	-	-	33.5	34.2	38.7	32.1	31	37.9	32.1	32.9	33.5	29.3	28.9	28.8	26
Total Dissolved Solids	mg/L	10	54	68	500	-	1000	375	500	52.7	70.7	68.7	66.1	64.1	83.1	66.1	65.4	73.1	61.1	60.8	58.1	57.8
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	500	-	1000	375	500	-	-	-	74.1	72.8	93.6	72.8	72.8	78	63.8	65	64.6	64.4
Total Suspended Solids	mg/L	1	1	3.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
Turbidity (lab)	NTU	0.1	-	-	-	-	-	-	-	0.12	0.19	0.14	0.5	0.49	0.57	0.46	0.46	0.45	0.3	0.24	0.28	0.25
pH (lab)	pH units	0.1	-	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.15	7.22	7.24	7.48	7.45	7.47	7.44	7.48	7.44	7.39	7.41	7.35	7.37
Major Ions																						
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	-	-	-	26.6	26.9	28.4	19.4	19.4	20.2	19.6	19.1	19.5	18.8	19.2	18.7	18.9
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	20.5	-	-	-	-	-	-	26.6	26.9	28.4	19.4	19.4	20.2	19.6	19.1	19.5	18.8	19.2	18.7	18.9
Bromide	mg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	10.6	10.8	12.1	9.84	9.53	11.4	9.89	10.1	10.2	9.12	9.04	8.95	8.17
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	-	-	-	11.4	11.6	12.5	9.76	9.72	11.2	9.68	9.88	10.3	8.86	8.97	8.86	8.96
Chloride	mg/L	0.1	9.56	14	120	-	-	90	120	15.3	15.5	16.3	16.5	15.9	22.9	16	16	17.6	13.4	13.4	13.3	13.4
Fluoride	mg/L	0.02	0.028	0.0084	0.12	1.5	2.8	2.1	2.8	0.04	0.041	0.042	0.029	0.029	0.03	0.029	0.029	0.028	0.029	0.029	0.028	0.029
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	1.7	1.77	2.07	1.82	1.76	2.3	1.81	1.87	1.95	1.58	1.54	1.57	1.36
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	-	-	-	1.93	1.98	2.09	1.8	1.77	2.25	1.78	1.82	1.97	1.54	1.54	1.53	1.54
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	1.34	1.38	1.52	1.17	1.11	1.37	1.22	1.21	1.26	1.18	1.05	1.06	0.96
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	-	-	-	1.43	1.45	1.57	1.17	1.16	1.37	1.14	1.16	1.25	1.05	1.06	1.04	1.07
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	-	-	-	0.416	0.422	0.44	0.488	0.492	0.482	0.489	0.48	0.495	0.391	0.393	0.381	0.305
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	6.91	7.06	8.33	8.02	7.59	10.9	7.87	8.24	8.89	6.78	6.67	6.53	6.09
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	-	-	-	7.81	8.05	8.6	7.93	7.84	11.1	7.8	7.9	8.91	6.54	6.64	6.61	6.6
Sulphate	mg/L	0.3	3.87	38	-	-	-	-	-	6.2	6.33	6.59	7.26	7.02	9.81	7.07	7.03	7.69	5.8	5.8	5.76	5.79
Nutrients																						
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.41 12.5	-	-	0.308 9.38	0.41 12.5	0.0252	0.0215	0.0379	0.0105	<0.005	0.0145	0.0081	0.0111	0.009	0.0078	0.0279	0.005	0.0076
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.9	10	-	2.17	2.9	<0.005	<0.005	<0.005	0.009	<0.005	0.0938	0.0301	0.0212	0.0384	0.0408	<0.005	<0.005	<0.005
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	<0.0224	<0.0224	<0.0224	0.009	<0.0051	0.0951	0.0301	0.0212	0.0384	0.0408	<0.0051	<0.0051	<0.0051
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.06	1	-	0.045	0.06	<0.001	<0.001	<0.001	<0.001	<0.001	0.0013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	-	-	-	0.216	0.21	0.327	0.232	0.232	0.257	0.251	0.224	0.209	0.241
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	-	-	-	0.0026	0.0036	0.0027	0.0018	0.0016	0.0014	0.0017	0.0018	0.0024	0.0013	0.0018	0.0012	0.0016
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.217	0.216	0.264	0.231	0.231	0.323	0.238	0.225	0.272	0.225	0.214	0.188	0.191
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	-	-	-	0.247	0.237	0.263	0.207	0.21	0.232	0.202	0.211	0.219	0.21	0.224	0.209	0.241
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.217	0.216	0.264	0.222	0.231	0.228	0.208	0.204	0.234	0.184	0.214	0.188	0.191
Total Phosphorus	mg/L	0.001	0.006	0.0049	-	-	-	0.0075	0.01	0.0034	0.0038	0.004	0.0045	0.0059	0.0042	0.005	0.0053	0.0052	0.0039	0.0039	0.0037	0.0033
Organic/Inorganic Carbon																						
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	-	-	-	4	3.93	4.09	4.8	4.42	4.82	4.38	4.47	4.54	3.76	3.56	3.47	3.27
Total Organic Carbon	mg/L	0.5	3	-	-	-	-	-	-	3.73	3.76	4.01	4.6	3.88	4.62	3.81	3.78	3.98	3.82	3.96	3.91	3.87
Total Metals																						
Aluminum	ug/L	1	5.32	9.1	100	2900	-	75	100	<1	2.1	<1	4.6	4.3	8.5	4	4.1	5.7	2.4	2.1	2	5.2
Antimony	ug/L	0.02	0.02	0.51	-	6	-	4.5	6	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.023	<0.02	<0.02	<0.02	<0.02
Arsenic	ug/L	0.02	0.275	3.8	5	10	25	18.8	25	0.3												

Table C3-1. Water chemistry results from Meliadine Lake in 2023

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	FWAL ^[b] (min max)	HH DW ^[d]	SSWQO ^[d]	AEMP Action Level ^[e] (min max)	AEMP Benchmark ^[f] (min max)	July MEL-02-08 2023-07-15	July MEL-03-01 2023-07-15	July MEL-03-02 2023-07-15	July MEL-03-03 2023-07-15	July MEL-03-04 2023-07-15	July MEL-03-05 2023-07-15	August MEL-01-01 2023-08-22	August MEL-01-06 2023-08-22	August MEL-01-07 2023-08-22	August MEL-01-08 2023-08-22	August MEL-01-09 2023-08-22	August MEL-01-10 2023-08-22
Field Measurements																					
pH (field)	pH units	-	7.1 7.95	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.52	7.55	7.61	7.57	7.6	7.61	7.47	7.42	7.46	7.39	7.46	7.45
Temperature	C	-	-	-	-	-	-	-	-	11.33	10.02	10.03	10.06	9.97	10.33	14.6	14.6	14.59	14.53	14.65	14.6
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	-	-	-	97.5	83.3	83.4	84.1	82.8	110.5	110	111.3	110.3	111.9	110.1	110.1
DO (mg/L)	mg/L	-	-	-	-	-	-	6.5	6.5	10.32	10.46	10.75	10.67	10.74	10.65	9.5	9.46	9.51	9.45	9.52	9.51
DO (%)	%	-	-	-	-	-	-	-	-	96.9	95.9	97.9	97.3	97.7	97.7	96.1	95.6	96.1	95.3	96.3	96
Conventional Parameters																					
Conductivity (lab)	uS/cm	1	77.5	-	-	-	-	-	-	100	85.5	86	86.1	86	85.3	110	109	111	110	113	110
Hardness	mg/L	0.5	23.4	-	-	-	-	-	-	29.8	26	25.8	25.3	25.4	26	33.2	33.6	33.6	33.8	33.9	33.5
Total Dissolved Solids	mg/L	10	54	68	500	-	1000	375	500	56.1	50.4	49.8	44.1	46.8	45.8	60.3	58.7	57.7	47	60.3	58.3
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	500	-	1000	375	500	65	55.6	55.9	56	55.9	55.4	71.5	70.8	72.2	71.5	73.4	71.5
Total Suspended Solids	mg/L	1	1	3.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	1.2	<1	1.1	<1	<1	1.6
Turbidity (lab)	NTU	0.1	-	-	-	-	-	-	-	0.22	0.48	0.32	0.26	0.27	0.34	0.48	0.43	0.5	0.37	0.44	0.38
pH (lab)	pH units	0.1	-	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.37	7.45	7.48	7.47	7.48	7.47	7.35	7.4	7.43	7.4	7.37	7.43
Major Ions																					
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	-	-	-	18.7	18	18.2	18	18.2	17.9	22.8	22.7	23	22.8	22	23.2
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	20.5	-	-	-	-	-	-	18.7	18	18.2	18	18.2	17.9	22.8	22.7	23	22.8	22	23.2
Bromide	mg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	9.27	8.16	8.13	7.95	8	8.19	10.2	10.3	10.3	10.4	10.4	10.3
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	-	-	-	9.03	8.13	8	8.08	8.05	7.91	9.94	10.4	10.1	10	10.2	10.1
Chloride	mg/L	0.1	9.56	14	120	-	-	90	120	13.6	10.9	10.9	10.9	10.9	10.8	15.4	15.3	15.5	15.3	15.7	15.4
Fluoride	mg/L	0.02	0.028	0.0084	0.12	1.5	2.8	2.1	2.8	0.029	0.028	0.028	0.028	0.028	0.028	0.03	0.03	0.03	0.03	0.03	0.03
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	1.62	1.36	1.35	1.33	1.33	1.34	1.88	1.91	1.92	1.9	1.93	1.89
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	-	-	-	1.53	1.34	1.3	1.32	1.33	1.3	1.8	1.89	1.83	1.8	1.86	1.83
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	1.09	1.01	1	0.981	1.06	1.01	1.18	1.2	1.21	1.19	1.2	1.18
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	-	-	-	1.06	0.994	1.03	0.992	0.999	0.972	1.16	1.21	1.19	1.16	1.2	1.18
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	-	-	-	0.383	0.308	0.302	0.301	0.308	0.284	0.607	0.619	0.608	0.609	0.606	0.627
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	6.89	5.56	5.63	5.43	5.4	5.58	7.96	7.89	8.12	7.99	8.17	7.98
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	-	-	-	6.77	5.47	5.38	5.47	5.55	5.34	7.56	8.02	7.89	7.72	7.95	7.92
Sulphate	mg/L	0.3	3.87	38	-	-	-	-	-	5.9	4.44	4.4	4.39	4.44	4.38	6.76	6.71	6.82	6.7	7.52	6.78
Nutrients																					
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.41 12.5	-	-	0.308 9.38	0.41 12.5	0.006	<0.005	0.0133	<0.005	0.0053	0.0058	<0.005	<0.005	0.0081	0.0112	<0.005	0.0156
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.9	10	-	2.17	2.9	<0.005	<0.005	<0.005	0.0247	0.0192	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	<0.0051	<0.0051	<0.0051	0.0247	0.0192	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.06	1	-	0.045	0.06	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.246	0.162	0.216	0.184	0.176	0.153	0.224	0.262	0.235	0.226	0.221	0.232
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	-	-	-	0.002	0.0024	0.0017	0.0013	0.0017	0.0015	0.0033	0.0023	0.0022	0.0029	0.0025	0.0026
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.197	0.168	0.174	0.19	0.188	0.169	0.201	0.231	0.197	0.198	0.224	0.195
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	-	-	-	0.246	0.162	0.216	0.159	0.157	0.153	0.224	0.262	0.235	0.226	0.221	0.232
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.197	0.168	0.174	0.165	0.169	0.169	0.201	0.231	0.197	0.198	0.224	0.195
Total Phosphorus	mg/L	0.001	0.006	0.0049	-	-	-	0.0075	0.01	0.005	0.0031	0.0046	0.0042	0.0032	0.0039	0.0052	0.0057	0.0053	0.0056	0.006	0.0048
Organic/Inorganic Carbon																					
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	-	-	-	4.25	3.26	3.28	3.62	3.62	3.82	4.02	3.82	4.08	4.19	4.42	4.02
Total Organic Carbon	mg/L	0.5	3	-	-	-	-	-	-	4.19	3.08	3.16	3.35	3.32	2.92	4.38	4.18	4.14	4.35	4.1	3.97
Total Metals																					
Aluminum	ug/L	1	5.32	9.1	100	2900	-	75	100	3.5	2.8	3.5	2.7	3.4	5	2.7	3	3.1	2.7	3.3	3.1
Antimony	ug/L	0.02	0.02	0.51	-	6	-	4.5	6	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	ug/L	0.02	0.275	3.8	5	10	25	18.8	25	0.711	0.381	0.385	0.375	0.386	0.394	0.706	0.696	0.703	0.706	0.724	0.71
Barium	ug/L	0.02	8.05	77	-	2000	-	750	1000	9.28	8.84	8.93	8.96	9.17	8.79	9.6	9.53	9.46	9.47	9.44	9.64
Beryllium	ug/L	0.005	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth	ug/L	0.005	0.005																		

Table C3-1. Water chemistry results from Meliadine Lake in 2023

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	FWAI ^[b] (min max)	HH DW ^[d]	SSWQO ^[d]	AEMP Action Level ^[e] (min max)	AEMP Benchmark ^[f] (min max)	August MEL-02-02 2023-08-17	August MEL-02-03 2023-08-17	August MEL-02-05 2023-08-17	August MEL-02-06 2023-08-17	August MEL-02-08 2023-08-17	August MEL-03-01 2023-08-18	August MEL-03-02 2023-08-18	August MEL-03-03 2023-08-18	August MEL-03-04 2023-08-18	August MEL-03-05 2023-08-18	August MEL-04-01 2023-08-18	August MEL-04-02 2023-08-18
Field Measurements																					
pH (field)	pH units	-	7.1 7.95	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.22	7.15	7.28	7.09	7.29	6.86	6.97	7.12	6.66	6.24	7.08	7.31
Temperature	C	-	-	-	-	-	-	-	-	16.52	16.51	16.56	16.54	16.46	16.19	16.2	16.24	16.13	16.02	16.03	15.91
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	-	-	-	99.2	99.2	98.6	99.3	99.2	85.7	85.7	85.7	85.6	84.8	84.8	84.8
DO (mg/L)	mg/L	-	-	-	-	-	-	6.5	6.5	9.49	9.51	9.54	9.46	9.59	9.45	9.45	9.39	9.46	9.47	9.44	9.46
DO (%)	%	-	-	-	-	-	-	-	-	99.9	100.1	100.5	99.7	100.8	98.8	98.7	98.3	98.7	98.6	98.4	98.4
Conventional Parameters																					
Conductivity (lab)	uS/cm	1	77.5	-	-	-	-	-	-	91.6	92.4	91.7	93.3	93.8	82.2	82.8	82.2	82.5	81.5	60.4	82
Hardness	mg/L	0.5	23.4	-	-	-	-	-	-	28.9	28.6	29.3	29.6	29.1	26	26	26.5	25.9	25.8	7.6	25.3
Total Dissolved Solids	mg/L	10	54	68	500	-	1000	375	500	55.8	53.5	52.8	57.2	47.5	50.8	48.8	54.2	53.8	51.8	39.1	48.4
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	500	-	1000	375	500	59.5	60.1	59.6	60.6	61	53.4	53.8	53.4	53.6	53	39.3	53.3
Total Suspended Solids	mg/L	1	1	3.1	-	-	-	-	-	<1	<1	<1	1.1	<1	x	x	8.7	2	1.3	2	1.1
Turbidity (lab)	NTU	0.1	-	-	-	-	-	-	-	0.28	0.28	0.27	0.33	0.31	x	x	0.3	0.27	0.3	0.4	0.27
pH (lab)	pH units	0.1	-	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.33	7.45	7.45	7.45	7.46	7.47	7.45	7.46	7.47	7.48	7.29	7.45
Major Ions																					
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	-	-	-	21.8	22	21.9	22	21.8	21.1	21	20.8	21.2	22.3	13.1	20.5
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	20.5	-	-	-	-	-	-	21.8	22	21.9	22	21.8	21.1	21	20.8	21.2	22.3	13.1	20.5
Bromide	mg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	9.04	8.91	9.17	9.25	9.09	8.17	8.19	8.37	8.15	8.13	2.38	7.95
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	-	-	-	8.31	8.44	8.48	8.54	8.45	9.09	7.84	7.67	7.76	7.97	7.82	7.73
Chloride	mg/L	0.1	9.56	14	120	-	-	90	120	13.2	13.1	13	13.2	13.2	11.2	11.2	11.2	11.2	11.2	8.09	11
Fluoride	mg/L	0.02	0.028	0.0084	0.12	1.5	2.8	2.1	2.8	0.03	0.03	0.03	0.03	0.03	0.029	0.029	0.029	0.029	0.029	0.022	0.03
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	1.54	1.54	1.56	1.58	1.55	1.36	1.34	1.37	1.35	1.35	0.403	1.32
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	-	-	-	1.44	1.44	1.44	1.45	1.45	2.06	1.31	1.27	1.28	1.3	1.31	1.26
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	1.07	1.06	1.08	1.1	1.07	1.04	0.992	1.01	0.994	1	0.291	0.969
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	-	-	-	1.01	1.01	1.01	1.02	1.02	1.3	0.977	0.953	0.967	0.98	0.971	0.956
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	-	-	-	0.486	0.484	0.473	0.481	0.476	0.405	0.376	0.369	0.372	0.376	0.252	0.35
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	6.49	6.53	6.56	6.66	6.58	5.56	5.61	5.66	5.58	5.56	1.64	5.41
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	-	-	-	5.92	5.95	6.03	5.98	6.04	5.97	5.25	5.09	5.19	5.32	5.2	5.14
Sulphate	mg/L	0.3	3.87	38	-	-	-	-	-	5.69	5.54	5.5	5.57	5.59	4.54	4.53	4.49	4.52	4.48	3.28	4.48
Nutrients																					
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.41 12.5	-	-	0.308 9.38	0.41 12.5	0.0133	0.0098	0.0073	0.0142	0.011	0.0257	0.013	0.0181	0.0107	0.0113	0.0142	0.008
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.9	10	-	2.17	2.9	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.06	1	-	0.045	0.06	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.256	0.236	0.237	0.243	0.252	0.226	0.28	0.212	0.213	0.202	0.194	0.184
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	-	-	-	0.0023	0.0023	0.0021	0.0021	0.0022	0.0015	<0.001	<0.001	<0.001	0.0011	<0.001	0.0014
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.214	0.232	0.235	0.226	0.228	0.198	0.213	0.21	0.208	0.205	0.139	0.195
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	-	-	-	0.256	0.236	0.237	0.243	0.252	0.226	0.28	0.212	0.213	0.202	0.194	0.184
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.214	0.232	0.235	0.226	0.228	0.198	0.213	0.21	0.208	0.205	0.139	0.195
Total Phosphorus	mg/L	0.001	0.006	0.0049	-	-	-	0.0075	0.01	0.0045	0.0041	0.0042	0.0043	0.004	x	x	0.0021	0.0024	0.0036	0.0043	0.0034
Organic/Inorganic Carbon																					
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	-	-	-	3.86	3.74	3.69	3.9	3.88	3.4	3.44	3.58	3.46	3.55	3.54	4.64
Total Organic Carbon	mg/L	0.5	3	-	-	-	-	-	-	3.76	3.8	3.67	3.76	3.82	3.27	3.22	3.16	3.19	3.26	3.95	4.16
Total Metals																					
Aluminum	ug/L	1	5.32	9.1	100	2900	-	75	100	4.3	1.9	1.7	3.2	1.9	x	x	3.6	2.2	2.4	2.5	1.6
Antimony	ug/L	0.02	0.02	0.51	-	6	-	4.5	6	<0.02	<0.02	<0.02	0.021	<0.02	x	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	ug/L	0.02	0.275	3.8	5	10	25	18.8	25	0.854	0.904	0.804	0.866	0.852	x	0.484	0.441	0.443	0.448	0.37	0.355
Barium	ug/L	0.02	8.05	77	-	2000	-	750	1000	8.98	9.06	8.98	9.08	9.08	x	9.6	8.55	8.7	8.48	8.59	8.82
Beryllium	ug/L	0.005	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	x	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth</																					

Table C3-1. Water chemistry results from Meliadine Lake in 2023

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	FWAL ^[b] (min max)	HH DW ^[c]	SSWQO ^[d]	AEMP Action Level ^[e] (min max)	AEMP Benchmark ^[f] (min max)	August MEL-04-03 2023-08-18	August MEL-04-04 2023-08-18	August MEL-04-05 2023-08-18	August MEL-05-01 2023-08-18	August MEL-05-02 2023-08-18	August MEL-05-03 2023-08-18	August MEL-05-04 2023-08-18	August MEL-05-05 2023-08-18	September MEL-01-01 2023-09-15	September MEL-01-06 2023-09-15	September MEL-01-07 2023-09-15	September MEL-01-08 2023-09-15	September MEL-01-09 2023-09-15
Field Measurements																						
pH (field)	pH units	-	7.1 7.95	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.25	7.24	7.18	7.35	7.43	7.48	7.46	7.44	7.35	7.45	7.33	7.56	7.35
Temperature	C	-	-	-	-	-	-	-	-	16.07	16.02	16.12	16.13	16.16	16.15	16.17	16.16	7.34	7.36	7.32	7.36	7.29
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	-	-	-	84.8	84.8	84.9	87.9	87.8	87.8	87.6	87.6	114.9	115.1	114.9	115.2	114.7
DO (mg/L)	mg/L	-	-	-	-	-	-	6.5	6.5	9.47	9.47	9.48	9.49	9.46	9.47	9.46	9.45	11.24	11.2	11.26	11.17	11.24
DO (%)	%	-	-	-	-	-	-	-	-	98.8	98.7	98.9	99	98.8	98.9	98.9	98.7	96	95.6	96.1	95.4	95.8
Conventional Parameters																						
Conductivity (lab)	uS/cm	1	77.5	-	-	-	-	-	-	82	82.2	82.7	76.7	85.2	85.2	85.2	85	120	119	119	120	118
Hardness	mg/L	0.5	23.4	-	-	-	-	-	-	25.5	25.8	25.5	27	26.8	27	26.7	27.1	33.6	35.5	34.6	33	33
Total Dissolved Solids	mg/L	10	54	68	500	-	1000	375	500	52.1	52.8	49.4	55.1	54.8	47.8	51.1	49.4	59.2	67.2	66.2	72.9	59.9
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	500	-	1000	375	500	53.3	53.4	53.8	49.8	55.4	55.4	55.4	55.2	78	77.4	77.4	78	76.7
Total Suspended Solids	mg/L	1	1	3.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1	1.1
Turbidity (lab)	NTU	0.1	-	-	-	-	-	-	-	0.31	0.28	0.41	0.29	0.3	0.31	0.3	0.29	0.49	0.41	-	0.49	0.58
pH (lab)	pH (lab)	0.1	-	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.42	7.44	7.42	7.53	7.48	7.46	7.47	7.46	7.45	7.5	7.49	7.5	7.51
Major Ions																						
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	-	-	-	20.8	20.8	20.7	23.3	22.1	22	22.3	22.2	20.4	20.8	20.6	20.5	20.8
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	20.5	-	-	-	-	20.8	20.8	20.7	23.3	22.1	22	22.3	22.2	22.3	20.4	20.8	20.6	20.5	20.8	
Bromide	mg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	8.01	8.11	8.03	8.56	8.47	8.53	8.46	8.58	10.4	11	10.7	10.2	10.2
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	-	-	-	7.8	8.01	7.74	8.25	8.17	8.16	8.18	8.08	10.3	10.2	10.1	10.2	10.3
Chloride	mg/L	0.1	9.56	14	120	-	90	120	120	11	11	11	11.1	11.2	11.1	11.1	11.1	16.8	16.8	16.6	16.9	16.8
Fluoride	mg/L	0.02	0.028	0.0084	0.12	1.5	2.8	2.1	2.8	0.029	0.029	0.029	0.03	0.03	0.03	0.03	0.03	0.034	0.032	0.031	0.032	0.031
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	1.33	1.35	1.33	1.37	1.36	1.38	1.36	1.38	1.85	1.96	1.92	1.83	1.83
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	-	-	-	1.28	1.31	1.28	1.33	1.31	1.29	1.32	1.29	1.93	1.92	1.89	1.89	1.91
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	0.973	0.986	0.983	1.01	0.996	0.998	0.996	1.02	1.27	1.3	1.28	1.2	1.23
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	-	-	-	0.956	0.989	0.963	0.996	0.983	0.973	0.98	0.982	1.2	1.19	1.18	1.19	1.2
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	-	-	-	0.364	0.336	0.351	0.419	0.418	0.4	0.399	0.41	0.575	0.3	0.559	0.654	0.55
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	5.49	5.5	5.45	5.62	5.54	5.6	5.53	5.63	8.3	8.57	8.39	8.1	7.92
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	-	-	-	5.16	5.28	5.19	5.28	5.2	5.18	5.24	5.21	8.4	8.34	8.22	8.21	8.32
Sulphate	mg/L	0.3	3.87	38	-	-	-	-	-	4.5	4.45	4.69	4.5	4.47	4.51	4.49	4.46	7.25	7.07	6.99	7.07	7.13
Nutrients																						
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.41 12.5	-	-	0.308 9.38	0.41 12.5	0.011	0.0163	0.0126	0.0098	0.0103	0.0102	0.0053	0.0074	0.005	0.0134	0.0106	0.0166	0.0158
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.9	10	-	2.17	2.9	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0171	<0.005	0.0126	0.0057	0.0234
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	0.0171	<0.0051	0.0126	0.0057	0.0234
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.06	1	-	0.045	0.06	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.203	0.199	0.21	0.202	0.222	0.195	0.2	0.203	0.331	0.345	0.283	0.284	0.366
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	-	-	-	0.0016	0.0014	0.0021	0.002	0.0026	0.0019	0.0021	0.0024	0.0026	0.0026	0.0028	0.0027	0.0029
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.191	0.185	0.205	0.212	0.204	0.21	0.219	0.212	0.394	0.354	0.369	0.367	0.403
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	-	-	-	0.203	0.199	0.21	0.202	0.222	0.195	0.2	0.203	0.314	0.345	0.27	0.278	0.343
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.191	0.185	0.205	0.212	0.204	0.21	0.219	0.212	0.377	0.354	0.356	0.361	0.38
Total Phosphorus	mg/L	0.006	0.006	0.0049	-	-	-	0.0075	0.01	0.0031	0.0031	0.004	0.0035	0.0035	0.0033	0.0043	0.0034	0.0068	0.0067	0.0113	0.0069	0.0066
Organic/Inorganic Carbon																						
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	-	-	-	4.71	4.26	4.2	3.95	3.95	4.31	3.68	3.78	4.06	3.99	4.23	4.18	4.26
Total Organic Carbon	mg/L	0.5	3	-	-	-	-	-	-	4.05	3.78	4	3.88	4.09	4.25	3.81	3.6	4.36	4.38	4.18	4.16	4.19
Total Metals																						
Aluminum	ug/L	1	5.32	9.1	100	2900	-	75	100	2.7	1.6	1.5	2.3	1.8	1.7	1.9	1.7	2.5	2.2	2.5	2.5	2.7
Antimony	ug/L	0.02	0.02	0.51	-	6	-	4.5	6	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	ug/L	0.02	0.275	3.8	5	10	25	18.8	25	0.366	0.363	0.365	0.49	0.501	0.485	0.489	0.496	0.624	0.676	0.65	0.657	0.645
Barium	ug/L	0.02	8.05	77	-	2000	-	750	1000	8.61	8.67	8.61	8.81	8.98	9.11	9.13	8.94	9.12	9.11	9.06	9.18	9.11
Beryllium	ug/L	0.005	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth	ug/L	0.005	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron	ug/L	5	6.52	23	1500	5000	-	1120	1500	<5	5.1	<5	5.2	5.2	5.1	5	5.1	7.8	7.8	8.2	8	7.8
Cadmium	ug/L	0.005	0.005	0.05	0.04 0.0708	7	-	0.03 0.0531	0.04 0.0708	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium	ug/L	0.005	-	-	-	-	-	-	-	0.0089	0.0093	0.0093	0.0091	0.0093	0.0096	0.0101	0.0094	0.0082	0.0081	0.0081	0.0082	0.008
Chromium	ug/L	0.1	0.103	1.1	5	50	-	3.75	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt	ug/L	0.005	0.016	-	0.78	-	-	0.585	0.78	0.0133	0.0144	0.0161	0.0146	0.0169	0.015	0.0153	0.0149	0.0237	0.0234	0.0252	0.0242	0.0242
Copper	ug/L	0.05	0.86	2	-	2000	-	1500	2000	0.893	0.953	1.02	0.889	0.878	0.888	0.872	0.86	0.983	0.921	0.944	1.18	0.935
Gallium	ug/L	0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	ug/L	1	15	42	300	-	1060	795	1060	7.4	8	7.4	12.2	14.4	12.1	11.2	10.4	15.6	17.2	17.2	18.5	17.3
Lanthanum	ug/L	0.01	-	-	-	-	-	-	-	0.013	0.024	0.014	0.012	0.013	0.012	0.012	0.012	0.02	0.019	0.02	0.021	0.02
Lead	ug/L	0.01	0.0222	0.15	-	5	-	3.75	5	0.075	0.084	0.086	0.077	0.073	0.067	0.076	0.073	<0.01	<0.01	<0.01	<0.01	<0.01
Lithium	ug/L	0.5	0.72	-	-	-	-	-	-	0.8	0.81	0.8	0.84	0.83	0.81	0.8	0.81	1.18	1.16	1.17	1.18	1.14
Manganese	ug/L	0.05	3.06	5.5	-	120	-	90	120	3.65	3.75	3.6	4.77	5.74	4.							

DL = 2023 detection limits

x = results were flagged as outliers (refer to Table A-7 for the list of samples flagged as outliers in 2023).

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

b) The freshwater aquatic life guidelines (FWAL) for cadmium, copper, lead, manganese, and zinc are variable depending on modifying factors such as pH, hardness, and DOC. Values shown represent the range of FWAL guidelines calculated for MEL-01 open-water samples in 2023.

[c] Health Canada drinking water guidelines (maximum acceptable concentrations)

[d] Site-specific water quality objectives for fluoride, arsenic, and iron.

[f] The AEMP Benchmark is the lowest of the FWAL or HH DW guidelines.

Table C3-1. Water chemistry results from Meliadine Lake in 2023

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	FWAL ^[b] (min max)	HH DW ^[d]	SSWQO ^[d]	AEMP Action Level ^[e] (min max)	AEMP Benchmark ^[f] (min max)	September MEL-01-10 2023-09-15	September MEL-02-02 2023-09-15	September MEL-02-03 2023-09-15	September MEL-02-05 2023-09-15	September MEL-02-06 2023-09-15	September MEL-02-08 2023-09-15	September MEL-03-01 2023-09-15	September MEL-03-02 2023-09-15	September MEL-03-03 2023-09-15	September MEL-03-04 2023-09-15	September MEL-03-05 2023-09-15
Field Measurements																				
pH (field)	pH units	-	7.1 7.95	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.42	7.43	7.56	7.57	7.55	7.57	7.57	7.57	7.57	7.6	7.52
Temperature	C	-	-	-	-	-	-	-	-	7.38	7.58	7.67	7.54	7.7	7.6	7.59	7.62	7.73	7.57	7.38
Sp. Conductivity (field)	uS/cm	-	-	-	-	-	-	-	-	115.1	95.6	95.6	95.1	95.1	96.1	86.7	86.6	86.7	86.7	86.7
DO (mg/L)	mg/L	-	-	-	-	-	-	6.5	6.5	11.25	11.14	11.18	11.21	11.13	11.14	11.11	11.12	11.07	11.05	11.23
DO (%)	%	-	-	-	-	-	-	-	-	96.1	95.7	96.2	96.1	96	95.7	95.5	95.6	95.4	94.9	95.9
Conventional Parameters																				
Conductivity (lab)	uS/cm	1	77.5	-	-	-	-	-	-	120	97.3	97.4	97.6	97.2	97.7	88.3	89.1	87.3	88	88.6
Hardness	mg/L	0.5	23.4	-	-	-	-	-	-	32.1	28.1	28.5	28.7	28.2	29.2	26	26.1	26	25.9	26.2
Total Dissolved Solids	mg/L	10	54	68	500	-	1000	375	500	66.9	54.2	52.2	52.6	53.2	54.9	42.6	47.2	47.2	43.6	43.9
Total Dissolved Solids (Calculated)	mg/L	1	39.6	68	500	-	1000	375	500	78	63.2	63.3	63.4	63.2	63.5	57.4	57.9	56.7	57.2	57.6
Total Suspended Solids	mg/L	1	1	3.1	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity (lab)	NTU	0.1	-	-	-	-	-	-	-	0.53	0.29	0.26	0.26	0.4	0.35	0.37	0.62	0.31	0.37	0.54
pH (lab)	pH units	0.1	-	-	6.5 9	-	-	6.5 9.0	6.5 9.0	7.49	7.47	7.47	7.47	7.45	7.47	7.46	7.49	7.45	7.47	7.48
Major Ions																				
Alkalinity, Bicarbonate	mg/L	1	25	-	-	-	-	-	-	21.5	19.4	19.5	19.4	19.1	19.6	18.8	18.9	18.4	18.7	18.8
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	20.5	-	-	-	-	-	-	21.5	19.4	19.5	19.4	19.1	19.6	18.8	18.9	18.4	18.7	18.8
Bromide	mg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	9.93	8.8	8.91	9.02	8.86	9.15	8.18	8.22	8.19	8.16	8.25
Calcium (T)	mg/L	0.01 0.02	7.33	-	-	-	-	-	-	10.4	9.27	9.38	9.19	9.21	9.49	8.64	8.73	8.63	8.77	8.72
Chloride	mg/L	0.1	9.56	14	120	-	-	90	120	16.8	12.7	12.9	12.8	12.7	12.9	11.2	11.2	11.3	11.3	11.2
Fluoride	mg/L	0.02	0.028	0.0084	0.12	1.5	2.8	2.1	2.8	0.032	0.031	0.03	0.03	0.03	0.03	0.029	0.029	0.029	0.029	0.029
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	1.78	1.49	1.52	1.51	1.49	1.55	1.36	1.35	1.35	1.35	1.36
Magnesium (T)	mg/L	0.004 0.01	1.18	-	-	-	-	-	-	1.92	1.57	1.62	1.58	1.58	1.62	1.45	1.46	1.41	1.45	1.44
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	1.23	1.09	1.08	1.12	1.06	1.11	1.02	1.01	1.02	1.05	1.05
Potassium (T)	mg/L	0.02 0.03	0.954	-	-	-	-	-	-	1.2	1.1	1.1	1.09	1.09	1.12	1.05	1.06	1.04	1.06	1.05
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.268	-	-	-	-	-	-	0.553	0.452	0.471	0.448	0.448	0.455	0.343	0.348	0.344	0.345	0.344
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	7.78	6.39	6.39	6.44	6.31	6.6	5.51	5.57	5.53	5.54	5.52
Sodium (T)	mg/L	0.02	4.85	5.3	-	-	-	-	-	8.36	6.49	6.65	6.51	6.45	6.68	5.8	5.89	5.72	5.9	5.84
Sulphate	mg/L	0.3	3.87	38	-	-	-	-	-	7.12	5.24	5.31	5.22	5.21	5.3	4.45	4.45	4.43	4.46	4.48
Nutrients																				
Ammonia (as N)	mg/L	0.005	0.0174	0.54	0.41 12.5	-	-	0.308 9.38	0.41 12.5	0.006	0.0176	0.0328	<0.005	<0.005	<0.005	<0.005	0.0307	<0.005	0.0115	<0.005
Nitrate (as N)	mg/L	0.005	0.018	0.25	2.9	10	-	2.17	2.9	0.0181	0.0084	0.007	0.0123	0.0154	0.0103	0.0196	0.0242	0.0132	0.0117	0.0209
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	0.0181	0.0084	0.007	0.0123	0.0154	0.0103	0.0196	0.0242	0.0132	0.0117	0.0209
Nitrite (as N)	mg/L	0.001	0.001	0.051	0.06	1	-	0.045	0.06	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.703	0.318	0.347	0.236	0.291	0.28	0.279	0.38	0.265	0.272	0.288
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.00314	-	-	-	-	-	-	0.0028	0.0025	0.0018	0.0026	0.0026	0.0022	0.0021	0.0023	0.0024	0.0023	0.0023
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.359	0.348	0.371	0.286	0.321	0.34	0.329	0.37	0.343	0.341	0.354
Total Kjeldahl Nitrogen	mg/L	0.05	0.25	-	-	-	-	-	-	0.685	0.31	0.34	0.224	0.276	0.27	0.259	0.356	0.252	0.26	0.267
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.341	0.34	0.364	0.274	0.306	0.33	0.309	0.346	0.33	0.329	0.333
Total Phosphorus	mg/L	0.001	0.006	0.0049	-	-	-	0.0075	0.01	0.0065	0.0045	0.0042	0.0066	0.0047	0.0047	0.0043	0.0048	0.0051	0.0046	0.0046
Organic/Inorganic Carbon																				
Dissolved Organic Carbon	mg/L	0.5	2.72	-	-	-	-	-	-	4.43	4.47	4.09	4.63	4.1	5.12	3.16	3.83	3.69	3.28	3.04
Total Organic Carbon	mg/L	0.5	3	-	-	-	-	-	-	4.49	3.91	3.5	3.85	3.66	3.9	3.08	3.18	3.12	3.11	3.09
Total Metals																				
Aluminum	ug/L	1	5.32	9.1	100	2900	-	75	100	2.4	1.8	2.5	1.9	1.8	1.9	5.5	-	2.3	2.6	2.2
Antimony	ug/L	0.02	0.02	0.51	-	6	-	4.5	6	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	ug/L	0.02	0.275	3.8	5	10	25	18.8	25	0.646	0.662	0.646	0.64	0.65	0.668	0.416	0.399	0.373	0.38	0.379
Barium	ug/L	0.02	8.05	77	-	2000	-	750	1000	9.08	8.72	8.78	8.82	8.79	8.89	8.64	8.64	8.76	8.76	8.55
Beryllium	ug/L	0.005	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth	ug/L	0.005	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron	ug/L	5	6.52	23	1500	5000	-	1120	1500	7.8	5.8	5.8	5.7	5.6	5.6	<5	<5	<5	<5	<5
Cadmium	ug/L	0.005	0.005	0.05	0.04 0.0708	7	-	0.03 0.0531	0.04 0.0708	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium	ug/L</																			

APPENDIX D

PENINSULA LAKES WATER QUALITY – SUPPORTING INFORMATION

Appendix D1

Peninsula Lakes Water Quality – 2023 Summary Statistics

APPENDIX D1 – TABLES

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Peninsula Lakes Normal Range Derivation

The approach to calculating the normal range in the Peninsula Lakes followed the methods in Barrett et al. (2015). The approach takes into consideration underlying distribution of the baseline/reference data (i.e., are the baseline data normally distributed) when determining which method to use to estimate the limits of the normal range. Three methods were proposed in the *AEMP Design Document* (Golder 2016) for calculating the normal range for a given variable (e.g., water quality parameters). A brief description of each method is provided below as per the methods described in the 2018 Interpretive report (Golder 2019):

- **Prediction Interval (PI)** – If the baseline/reference data are normally distributed, the normal range is calculated using the 80% prediction interval. Normality [of the raw data] is assessed using the Shapiro-Wilk test, using $\alpha = 0.05$ to indicate a significant departure from normality.
- **PI Method (Box-Cox Transformation; PI [λ])** – When the baseline/reference data are not normally distributed, but normality could be achieved after Box-Cox transformation (Box and Cox 1964), the normal range is calculated on the Box-Cox transformed data and the upper and lower bound of the normal ranges are back-transformed.
- **Percentile** – If neither the untransformed data nor Box-Cox transformed datasets are normally distributed, the normal range boundaries are defined as the 10th and 90th percentile of the baseline data. In cases where the percentile method is used, a dataset of 1,000 samples is randomly generated from the normal range dataset and the 10th and 90th percentile are calculated from the distribution of 1,000 samples to estimate the normal range.

Normal range estimates were calculated separately for Lake A8, Lake B7, and Lake D7 using samples collected during the open-water sampling events¹. The baseline period for the Peninsula Lakes ended in 2017; meaning no new data are included in normal range calculations for Lake A8, Lake B7, and Lake D7.

Normal range values derived for each of the three Peninsula Lakes are provided in [Table D1-1](#).

¹ Normal ranges were not derived for the ice-covered sampling events due to insufficient reference and baseline data for the winter months.

Table D1-1. Normal range values for the Peninsula Lakes water quality program

Parameter	Units	Detection Limit	Lake A8					Lake B7					Lake D7				
			N	Outliers	Method	Normal Range		N	Outliers	Method	Normal Range		N	Outliers	Method	Normal Range	
						Lower	Upper				Lower	Upper				Lower	Upper
Conventional Parameters																	
pH (field)	pH units	0.1	21	1	PI	7.7	8.3	25	0	PI(λ)	7	8.2	21	0	PI(λ)	7.6	8.3
Sp. Conductivity (field)	μS/cm	1	20	0	Percentile	100	334	24	1	Percentile	101	302	20	1	Percentile	111	159
Hardness	mg/L	0.2	20	0	Percentile	37	123	24	1	Percentile	42	118	20	1	Percentile	41	56
Alkalinity, Total	mg/L	1	15	0	PI(λ)	29	83.6	24	0	Percentile	29	110	20	1	Percentile	38	55
Total Dissolved Solids	mg/L		17	0	Percentile	57	152	19	0	Percentile	77	171	19	1	Percentile	57	81
Total Suspended Solids	mg/L	1	19	1	Percentile	0	4	24	0	PI(λ)	0	3	20	0	Percentile	0	2
Turbidity (lab)	NTU	0.1	17	0	PI(λ)	0.37	0.87	21	0	PI(λ)	0.34	0.69	18	0	PI	0.51	1.1
Alkalinity, Bicarbonate	mg/L	1.2	20	0	PI(λ)	36	91	24	0	Percentile	32	135	19	1	Percentile	46	68
Major Ions																	
Calcium (T)	mg/L	0.02	20	0	Percentile	12	40	24	1	Percentile	14	39	20	1	Percentile	13	17
Chloride	mg/L	0.1	20	0	Percentile	7	61	24	1	Percentile	5	25	20	0	Percentile	8	25
Fluoride	mg/L	0.02	13	0	PI	0.03	0.04	16	0	PI(λ)	0.02	0.04	16	0	Percentile	0.03	0.05
Magnesium (T)	mg/L	0.004	20	0	Percentile	1.7	5.6	24	0	Percentile	1.4	5.3	20	1	Percentile	2.2	3.3
Potassium (T)	mg/L	0.02	20	0	Percentile	0.7	2.5	24	0	Percentile	0.9	2.8	20	1	PI(λ)	1	1.8
Reactive Silica (SiO2)	mg/L	0.01	17	1	PI	0.18	1.3	21	0	Percentile	0.34	2.3	17	1	Percentile	0.14	0.28
Sodium (T)	mg/L	0.005	20	0	Percentile	1.9	8.4	24	0	Percentile	2.1	7.5	20	0	Percentile	5.2	17
Sulphate	mg/L	0.3	20	0	PI	2.7	9.3	24	0	Percentile	3.8	6	20	0	Percentile	2.5	10
Nutrients																	
Nitrate (as N)	mg/L	0.005	13	0	Percentile	0	0.015	16	1	Percentile	0	0.005	15	0	DL	0	0.005
Nitrite (as N)	mg/L	0.005	13	0	DL	0	0.0005	16	0	DL	0	0.005	15	0	DL	0	0.0005
Ammonia (as N)	mg/L	0.005	13	0	Percentile	0	0.011	16	0	Percentile	0	0.025	15	0	PI	0	0.009
Total Kjeldahl Nitrogen	mg/L	0.05	19	0	PI(λ)	0.22	0.63	23	0	PI(λ)	0.27	0.73	19	1	PI(λ)	0.26	0.52
Total Nitrogen	mg/L	0.05	10	0	PI	0.25	0.37	12	0	PI	0.28	0.42	12	0	PI	0.25	0.43
Total Phosphorus	mg/L	0.001	19	0	PI	0.004	0.009	23	1	PI(λ)	0.006	0.01	20	1	Percentile	0.01	0.02
Total Diss Phosphorus	mg/L	0.001	19	0	PI(λ)	0.002	0.006	24	0	PI(λ)	0.002	0.008	19	1	PI(λ)	0.003	0.008
Orthophosphate (PO4-P)	mg/L	0.001	19	0	Percentile	0	0.0023	24	1	DL	0	0.001	19	0	Percentile	0	0.003
Organic/Inorganic Carbon																	
Total Organic Carbon	mg/L	0.5	17	1	PI	3.5	4.7	23	1	PI(λ)	4.6	7.6	19	0	Percentile	3.5	14
Dissolved Organic Carbon	mg/L	0.5	14	1	PI	3.5	4.9	17	1	PI	4.8	5.5	15	0	PI(λ)	3.4	5.1
Metals																	
Aluminum (T)	μg/L	0.3	13	0	PI(λ)	1.1	3	16	0	PI(λ)	1.4	6.6	15	0	PI	3.8	6.7
Antimony (T)	μg/L	0.02	13	0	Percentile	0	0.4	16	0	DL	0	0.02	15	0	Percentile	0	0.03
Arsenic (T)	μg/L	0.02	13	0	PI	1.7	2.4	16	0	PI(λ)	1.3	1.8	15	0	PI	0.9	1.2
Barium (T)	μg/L	0.05	13	0	PI	23	32	16	0	Percentile	18	20	15	0	PI	15	17
Beryllium (T)	μg/L	0.01	13	0	DL	0	0.01	16	0	DL	0	0.01	15	0	DL	0	0.01

Table D1-1. Normal range values for the Peninsula Lakes water quality program

Parameter	Units	Detection Limit	Lake A8					Lake B7					Lake D7				
			N	Outliers	Method	Normal Range		N	Outliers	Method	Normal Range		N	Outliers	Method	Normal Range	
						Lower	Upper				Lower	Upper				Lower	Upper
Bismuth (T)	µg/L	0.01	13	0	DL	0	0.01	16	0	DL	0	0.01	15	0	DL	0	0.01
Boron (T)	µg/L	1	13	0	Percentile	2.5	5	16	0	Percentile	2.5	8	15	0	PI	9.4	17
Cadmium (T)	µg/L	0.005	13	0	DL	0	0.005	16	1	Percentile	0	0.007	15	1	DL	0	0.005
Chromium (T)	µg/L	0.06	13	0	DL	0	0.06	16	0	DL	0	0.06	15	0	DL	0	0.06
Cobalt (T)	µg/L	0.01	13	0	PI	0.02	0.05	16	1	PI	0.03	0.05	15	0	Percentile	0.04	0.05
Copper (T)	µg/L	0.1	13	0	PI	0.54	0.89	16	0	Percentile	0.6	1.13	15	0	PI	0.55	1
Iron (T)	µg/L	1	13	0	PI	18	67	16	0	PI	51	103	15	0	PI(λ)	41	112
Lead (T)	µg/L	0.01	13	0	Percentile	0.01	0.03	16	0	Percentile	0.01	0.08	15	0	Percentile	0.01	0.02
Lithium (T)	µg/L	0.5	13	0	Percentile	7.5	10	16	0	PI(λ)	4.1	7.5	15	0	PI	1.2	1.9
Manganese (T)	µg/L	0.05	13	0	PI	3	13	16	0	Percentile	4.2	8.6	15	0	PI	8.6	13
Mercury (T)	µg/L	0.0005	13	0	PI	0	0.0012	16	0	PI(λ)	0	0.004	15	0	PI	0	0.001
Molybdenum (T)	µg/L	0.05	13	0	Percentile	0.17	0.22	16	0	PI(λ)	0.14	0.24	15	0	PI(λ)	0.28	0.48
Nickel (T)	µg/L	0.06	13	0	PI	0.75	0.92	16	0	PI(λ)	0.81	1.4	15	0	PI	0.55	0.75
Selenium (T)	µg/L	0.02	13	0	DL	0	0.02	16	0	Percentile	0.02	0.04	15	0	Percentile	0.02	0.06
Silver (T)	µg/L	0.005	13	0	DL	0	0.005	16	1	DL	0	0.005	15	0	DL	0	0.005
Strontium (T)	µg/L	0.05	13	0	PI(λ)	203	273	16	0	PI	136	155	15	0	PI(λ)	63	83
Thallium (T)	µg/L	0.005	13	0	DL	0	0.005	16	0	Percentile	0	0.005	15	0	DL	0	0.005
Tin (T)	µg/L	0.05	13	0	DL	0	0.05	16	0	DL	0	0.05	15	0	DL	0	0.05
Titanium (T)	µg/L	0.1	13	0	Percentile	0.05	0.25	16	0	Percentile	0	0.25	15	0	PI(λ)	0.16	0.34
Uranium (T)	µg/L	0.01	13	0	PI(λ)	0.027	0.054	16	0	PI	0.023	0.03	15	0	PI	0.06	0.1
Vanadium (T)	µg/L	0.01	13	0	DL	0	0.01	16	1	DL	0	0.01	15	0	PI(λ)	0.04	0.07
Zinc (T)	µg/L	0.8	13	0	Percentile	0.4	1.2	16	1	Percentile	0	1.9	15	0	Percentile	0	2
Zinc (D)	µg/L	0.8	13	0	Percentile	0	8.5	16	0	Percentile	0	2.2	15	0	Percentile	0	1.4
Cyanides																	
Cyanide (Total)	mg/L	0.001	17	0	DL	0	0.001	23	0	DL	0	0.001	18	0	DL	0	0.001

Table D1-2. Lake A8 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake A8 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Field Measurements																
Temperature	C	-	-	-	-	6	0	0	14.2	14.1	0.546	0.223	13.5	15.1	-	-
Sp. Conductivity (field)	µS/cm	-	334	-	-	6	0	0	294	297	21.6	8.81	255	313	-	-
pH (field)	pH units	-	7.7 8.3	-	6.5 9	6	0	0	8	8.06	0.195	0.0798	7.61	8.16	-	0
DO (mg/L)	mg/L	-	-	-	6.5	6	0	0	9.91	9.9	0.226	0.0924	9.66	10.2	-	0
DO (%)	%	-	-	-	-	6	0	0	99.4	99.4	3.16	1.29	96.3	102	-	-
Conventional Parameters																
Conductivity (lab)	µS/cm	1	-	-	-	6	0	0	289	291	18.8	7.67	256	307	-	-
Hardness	mg/L	0.5	-	-	-	6	0	0	114	115	8.07	3.29	105	123	-	-
pH (lab)	pH units	0.1	-	-	6.5 9	6	0	0	7.94	7.94	0.0726	0.0296	7.84	8.01	-	0
Total Dissolved Solids	mg/L	15	-	162	375	6	0	0	212	210	27.5	11.2	180	244	-	0
Total Dissolved Solids (Calculated)	mg/L	1	152	-	375	6	0	0	188	189	12.5	5.09	166	200	6	0
Total Suspended Solids	mg/L	1	4	2.9	-	6	2	33	1.22	1.3	0.611	0.25	1	1.9	0	-
Turbidity (lab)	NTU	0.1	0.87	-	-	6	0	0	0.458	0.485	0.11	0.0448	0.31	0.6	0	-
Major Ions																
Alkalinity, Bicarbonate	mg/L	1	91	-	-	6	0	0	58.9	58.5	5.65	2.31	52.7	66.4	0	-
Alkalinity, Carbonate	mg/L	1	-	-	-	6	6	100	-	1	-	-	1	1	0	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	6	6	100	-	1	-	-	1	1	0	-
Alkalinity, Total	mg/L	1	83.6	51	-	6	0	0	58.9	58.5	5.65	2.31	52.7	66.4	0	-
Bromide	mg/L	0.1	-	-	-	6	0	0	0.23	0.245	0.029	0.0118	0.18	0.25	-	-
Calcium (D)	mg/L	0.01	-	-	-	6	0	0	37.3	37.6	2.65	1.08	34.1	40.3	-	-
Calcium (T)	mg/L	0.01	40	47	-	6	0	0	37.2	36.9	2.8	1.14	33	41.2	1	-
Chloride	mg/L	0.1	61	74	90	6	0	0	46.1	48.1	4.9	2	38.1	50.2	0	0
Fluoride	mg/L	0.02	0.04	0.038	2.1	6	0	0	0.0418	0.041	0.00325	0.00133	0.039	0.046	3	0
Magnesium (D)	mg/L	0.004	-	-	-	6	0	0	5.17	5.2	0.355	0.145	4.75	5.55	-	-
Magnesium (T)	mg/L	0.004	5.6	6.9	-	6	0	0	5.08	5.06	0.42	0.172	4.45	5.65	1	-
Potassium (D)	mg/L	0.02	-	-	-	6	0	0	2.24	2.28	0.209	0.0852	1.98	2.46	-	-
Potassium (T)	mg/L	0.02	2.5	2.3	-	6	0	0	2.23	2.2	0.255	0.104	1.83	2.56	1	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	1.3	-	-	6	0	0	0.845	0.78	0.662	0.27	0.226	1.81	1	-
Sodium (D)	mg/L	0.02	-	-	-	6	0	0	11.6	12.2	1.49	0.609	9.59	12.8	-	-
Sodium (T)	mg/L	0.02	8.4	8.3	-	6	0	0	11.6	11.9	1.5	0.612	9.14	13.2	6	-
Sulphate	mg/L	0.3	9.3	11.6	164	6	0	0	13.7	14.2	1.65	0.674	11.2	15.2	6	0
Nutrients																
Ammonia (as N)	mg/L	0.005	0.011	0.118	0.106	6	0	0	0.0122	0.0119	0.00231	0.000941	0.0094	0.0154	4	0
Nitrate (as N)	mg/L	0.005	0.015	0.2	2.17	6	3	50	-	0.00605	-	-	0.005	0.0178	1	0
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	6	3	50	-	0.0061	-	-	0.0051	0.0178	-	-
Nitrite (as N)	mg/L	0.001	0.0005	-	0.045	6	6	100	-	0.001	-	-	0.001	0.001	0	0
Nitrogen	mg/L	0.05	-	-	-	6	0	0	0.342	0.347	0.0503	0.0205	0.286	0.415	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.0023	0.00215	-	6	6	100	-	0.001	-	-	0.001	0.001	0	-

Table D1-2. Lake A8 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake A8 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Total Diss Phosphorus	mg/L	0.001	0.006	0.006	-	6	0	0	0.00293	0.0029	0.000807	0.000329	0.002	0.0042	0	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	6	0	0	0.304	0.308	0.0302	0.0123	0.267	0.34	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.63	0.58	-	6	0	0	0.336	0.336	0.0485	0.0198	0.286	0.415	0	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	6	0	0	0.298	0.292	0.0292	0.0119	0.267	0.34	-	-
Total Phosphorus	mg/L	0.001	0.009	-	0.0075	6	0	0	0.00568	0.0051	0.00123	0.000504	0.0046	0.0074	0	0
Organic/Inorganic Carbon																
Dissolved Organic Carbon	mg/L	0.5	4.9	-	-	6	0	0	5.92	5.84	1.21	0.495	4.62	7.57	4	-
Total Organic Carbon	mg/L	0.5	4.7	-	-	6	0	0	5.3	5.1	1.2	0.489	4.12	7.33	3	-
Total Metals																
Aluminum	µg/L	1	3	4.6	75	6	0	0	3.63	3.45	0.944	0.385	2.5	5	4	0
Antimony	µg/L	0.02	0.4	0.2	4.5	6	0	0	0.0518	0.0545	0.0143	0.00584	0.036	0.074	0	0
Arsenic	µg/L	0.02	2.4	1.7	18.8	6	0	0	9.75	8.75	4.19	1.71	4.74	14.8	6	0
Barium	µg/L	0.02	32	23	750	6	0	0	28.2	27.9	1.67	0.682	26	30.9	0	0
Beryllium	µg/L	0.005	0.01	0.47	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Bismuth	µg/L	0.005	0.01	0.076	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Boron	µg/L	5	5	27	1120	6	1	17	6.98	7.9	2.7	1.1	5	9.4	4	0
Cadmium	µg/L	0.005	0.005	0.083	0.124	6	6	100	-	0.005	-	-	0.005	0.005	0	0
Cesium	µg/L	0.005	-	-	-	6	0	0	0.0228	0.0222	0.00566	0.00231	0.0147	0.0294	-	-
Chromium	µg/L	0.1	0.06	1.87	3.75	6	6	100	-	0.1	-	-	0.1	0.1	0	0
Cobalt	µg/L	0.005	0.05	0.24	0.78	6	0	0	0.0454	0.0445	0.00508	0.00207	0.0397	0.0533	1	0
Copper	µg/L	0.05	0.89	2.7	1.85	6	0	0	0.906	0.891	0.0505	0.0206	0.854	1	3	0
Gallium	µg/L	0.05	-	-	-	6	6	100	-	0.05	-	-	0.05	0.05	0	-
Iron	µg/L	1	67	96	795	6	0	0	67.3	69.8	21.3	8.68	41.9	88.9	3	0
Lanthanum	µg/L	0.01	-	-	-	6	2	33	0.0103	0.0105	0.0055	0.00225	0.01	0.02	-	-
Lead	µg/L	0.01	0.03	2	3.75	6	0	0	0.0433	0.046	0.0104	0.00424	0.029	0.056	5	0
Lithium	µg/L	0.5	10	5.3	-	6	0	0	9.12	9.68	1.23	0.5	7.03	10.1	1	-
Manganese	µg/L	0.05	13	30	90	6	0	0	11.5	12.2	3.25	1.32	7.67	15.6	2	0
Mercury	µg/L	0.5	0.0012	0.04	0.0195	6	1	17	0.000603	0.000535	0.000305	0.000124	0.0005	0.00117	0	0
Molybdenum	µg/L	0.05	0.22	0.59	54.8	6	0	0	0.405	0.404	0.0617	0.0252	0.308	0.478	6	0
Nickel	µg/L	0.05	0.92	2.3	74.4	6	0	0	0.821	0.802	0.0928	0.0379	0.728	0.966	1	0
Niobium	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Phosphorus	µg/L	50	-	-	-	6	6	100	-	50	-	-	50	50	0	-
Rhenium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Rubidium	µg/L	0.005	-	-	-	6	0	0	2.22	2.18	0.241	0.0982	1.84	2.54	-	-
Selenium	µg/L	0.04	0.02	0.16	0.75	6	1	17	0.0383	0.042	0.00907	0.0037	0.04	0.043	6	0
Silicon	µg/L	50	-	-	-	6	0	0	424	388	335	137	116	940	-	-
Silver	µg/L	0.005	0.005	0.068	0.188	6	6	100	-	0.005	-	-	0.005	0.005	0	0
Strontium	µg/L	0.02	273	101	1880	6	0	0	243	246	25.9	10.6	202	276	1	0
Sulfur	µg/L	500	-	-	-	6	0	0	4990	5090	537	219	4070	5500	-	-
Tantalum	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-

Table D1-2. Lake A8 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake A8 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Tellurium	µg/L	0.02	-	-	-	6	6	100	-	0.02	-	-	0.02	0.02	0	-
Thallium	µg/L	0.005	0.005	0.047	0.6	6	6	100	-	0.005	-	-	0.005	0.005	0	0
Thorium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Tin	µg/L	0.02	0.05	0.26	-	6	1	17	0.0327	0.0335	0.0151	0.00615	0.02	0.049	0	-
Titanium	µg/L	0.05	0.25	1.25	-	6	2	33	0.0863	0.0855	0.0556	0.0227	0.05	0.15	0	-
Tungsten	µg/L	0.01	-	29	-	6	0	0	0.0945	0.124	0.0489	0.02	0.029	0.13	-	-
Uranium	µg/L	0.001	0.054	0.061	11.2	6	0	0	0.0831	0.0852	0.0113	0.00461	0.0696	0.096	6	0
Vanadium	µg/L	0.05	0.01	0.35	90	6	6	100	-	0.05	-	-	0.05	0.05	0	0
Yttrium	µg/L	0.01	-	-	-	6	5	83	-	0.01	-	-	0.01	0.01	0	-
Zinc	µg/L	0.5	1.2	5.1	-	6	4	67	-	0.5	-	-	0.5	0.58	0	-
Zirconium	µg/L	0.01	-	-	-	6	6	100	-	0.01	-	-	0.01	0.01	0	-
Dissolved Metals																
Aluminum	µg/L	1	-	-	-	6	0	0	3.5	3.6	0.97	0.396	2.3	5	-	-
Antimony	µg/L	0.02	-	-	-	6	0	0	0.0485	0.0535	0.0102	0.00417	0.035	0.057	-	-
Arsenic	µg/L	0.02	-	-	-	6	0	0	8.81	8.09	3.74	1.53	3.83	13.3	-	-
Barium	µg/L	0.02	-	-	-	6	0	0	27.7	27.5	2.19	0.896	24.6	30.2	-	-
Beryllium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Bismuth	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Boron	µg/L	5	-	-	-	6	1	17	7.25	8.15	2.42	0.99	5	8.9	-	-
Cadmium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Cesium	µg/L	0.005	-	-	-	6	0	0	0.0221	0.0215	0.00533	0.00218	0.0138	0.0281	-	-
Chromium	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Cobalt	µg/L	0.005	-	-	-	6	0	0	0.0261	0.0254	0.00303	0.00123	0.0236	0.0319	-	-
Copper	µg/L	0.05	-	-	-	6	0	0	0.922	0.928	0.0592	0.0242	0.834	1.01	-	-
Gallium	µg/L	0.05	-	-	-	6	6	100	-	0.05	-	-	0.05	0.05	0	-
Iron	µg/L	1	-	-	-	6	0	0	37.8	35.4	17.1	6.97	21.7	66.6	-	-
Lanthanum	µg/L	0.01	-	-	-	6	6	100	-	0.01	-	-	0.01	0.01	0	-
Lead	µg/L	0.01	-	-	6.88	6	0	0	0.0227	0.022	0.00665	0.00272	0.014	0.034	-	0
Lithium	µg/L	0.5	-	-	-	6	0	0	9.14	9.58	1.24	0.506	6.97	10.2	-	-
Manganese	µg/L	0.05	-	-	278	6	0	0	1.35	1.25	0.567	0.232	0.795	2.14	-	0
Mercury	µg/L	0.5	-	-	-	6	3	50	-	5.10E-04	-	-	5.00E-04	0.00343	0	-
Molybdenum	µg/L	0.05	-	-	-	6	0	0	0.42	0.43	0.0686	0.028	0.316	0.488	-	-
Nickel	µg/L	0.05	-	-	-	6	0	0	0.789	0.772	0.0595	0.0243	0.726	0.878	-	-
Niobium	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Phosphorus	µg/L	50	-	-	-	6	6	100	-	50	-	-	50	50	0	-
Rhenium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Rubidium	µg/L	0.005	-	-	-	6	0	0	2.14	2.12	0.244	0.0997	1.77	2.41	-	-
Selenium	µg/L	0.04	-	-	-	6	6	100	-	0.04	-	-	0.04	0.04	0	-
Silicon	µg/L	50	-	-	-	6	0	0	428	391	336	137	124	952	-	-
Silver	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-

Table D1-2. Lake A8 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake A8 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Strontium	µg/L	0.02	-	-	1880	6	0	0	240	244	28.6	11.7	201	270	-	0
Sulfur	µg/L	500	-	-	-	6	0	0	4990	5080	562	230	4170	5630	-	-
Tantalum	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Tellurium	µg/L	0.02	-	-	-	6	6	100	-	0.02	-	-	0.02	0.02	0	-
Thallium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Thorium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Tin	µg/L	0.02	-	-	-	6	1	17	0.0307	0.0295	0.0142	0.00579	0.02	0.053	-	-
Titanium	µg/L	0.05	-	-	-	6	4	67	-	0.05	-	-	0.05	0.057	-	-
Tungsten	µg/L	0.01	-	-	-	6	0	0	0.0913	0.118	0.0465	0.019	0.031	0.128	-	-
Uranium	µg/L	0.001	-	-	-	6	0	0	0.0855	0.0854	0.0119	0.00487	0.0709	0.0989	-	-
Vanadium	µg/L	0.05	-	-	-	6	6	100	-	0.05	-	-	0.05	0.05	0	-
Yttrium	µg/L	0.01	-	-	-	6	5	83	-	0.01	-	-	0.01	0.01	0	-
Zinc	µg/L	0.5	8.5	-	20.2	6	2	33	0.968	0.71	0.788	0.322	0.5	2.06	0	0
Zirconium	µg/L	0.01	-	-	-	6	6	100	-	0.01	-	-	0.01	0.01	0	-
Cyanides																
Cyanide (free)	mg/L	0.001	-	-	-	6	6	100	-	0.001	-	-	0.001	0.001	0	-
Cyanide (Total)	mg/L	0.001	0.001	-	0.00375	6	6	100	-	0.001	-	-	0.001	0.001	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	6	6	100	-	0.001	-	-	0.001	0.001	0	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Grey shading indicates an exceedance of normal range or action level thresholds.

Abbreviations: DL = detection limit, NR = normal range, Act Lvl = action level.

Table D1-3. Lake B7 – Summary statistics and screening results for 2023 sampling events (July, August, and October)

Parameter	Units	DL (min max)	Normal Range (min max)	Action Level ^[b] (min max)	Lake B7 July, August, and October 2023 Sampling											
					N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl	
Field Measurements																
Temperature	C	-	-	-	9	0	0	10.6	13.8	5.43	1.81	3.24	15.4	-	-	
Sp. Conductivity (field)	µS/cm	-	302	-	9	0	0	284	287	12.5	4.15	266	297	-	-	
pH (field)	pH units	-	7.7 8.3	6.5 9	9	0	0	7.91	8.08	0.314	0.105	7.44	8.21	-	0	
DO (mg/L)	mg/L	-	-	6.5	9	0	0	11	10.2	1.35	0.449	9.84	12.8	-	0	
DO (%)	%	-	-	-	9	0	0	100	98.9	2.85	0.949	96.5	105	-	-	
Conventional Parameters																
Conductivity (lab)	µS/cm	1	-	-	9	0	0	282	282	15.9	5.29	262	303	-	-	
Hardness	mg/L	0.5	-	-	9	0	0	112	114	5.71	1.9	100	118	-	-	
pH (lab)	pH units	0.1	-	6.5 9	9	0	0	7.91	7.87	0.0566	0.0189	7.86	7.99	-	0	
Total Dissolved Solids	mg/L	15	-	375	9	0	0	195	196	25	8.33	145	226	-	0	
Total Dissolved Solids (Calculated)	mg/L	1	171	375	9	0	0	183	183	10.5	3.5	170	197	8	0	
Total Suspended Solids	mg/L	1	3	-	9	6	67	-	1	-	-	1	2	0	-	
Turbidity (lab)	NTU	0.1	0.69	-	9	0	0	0.563	0.47	0.16	0.0533	0.4	0.87	1	-	
Major Ions																
Alkalinity, Bicarbonate	mg/L	1	135	-	9	0	0	58.6	60.2	3.5	1.17	53.5	62	0	-	
Alkalinity, Carbonate	mg/L	1	-	-	9	9	100	-	1	-	-	1	1	0	-	
Alkalinity, Hydroxide	mg/L	1	-	-	9	9	100	-	1	-	-	1	1	0	-	
Alkalinity, Total	mg/L	1	110	-	9	0	0	58.6	60.2	3.5	1.17	53.5	62	0	-	
Bromide	mg/L	0.1	-	-	9	0	0	0.177	0.17	0.01	0.00333	0.17	0.19	-	-	
Calcium (D)	mg/L	0.01	-	-	9	0	0	38.1	38.9	1.87	0.624	34.4	40.1	-	-	
Calcium (T)	mg/L	0.01	39	-	9	0	0	37.8	38.3	1.01	0.337	36.4	39.2	1	-	
Chloride	mg/L	0.1	25	90	9	0	0	44.4	44	2.16	0.719	41.8	47.2	9	0	
Fluoride	mg/L	0.02	0.04	2.1	9	0	0	0.0403	0.041	0.00206	0.000687	0.038	0.043	5	0	
Magnesium (D)	mg/L	0.004	-	-	9	0	0	4.12	4.17	0.252	0.084	3.52	4.36	-	-	
Magnesium (T)	mg/L	0.004	5.3	-	9	0	0	4.03	4.12	0.212	0.0708	3.74	4.31	0	-	
Potassium (D)	mg/L	0.02	-	-	9	0	0	2.22	2.25	0.117	0.0389	1.96	2.32	-	-	
Potassium (T)	mg/L	0.02	2.8	-	9	0	0	2.21	2.21	0.0991	0.033	2.09	2.35	0	-	
Reactive Silica (SiO2)	mg/L	0.02 0.1	2.3	-	9	0	0	1.01	0.782	0.403	0.134	0.704	1.58	0	-	
Sodium (D)	mg/L	0.02	-	-	9	0	0	10.2	10.3	0.406	0.135	9.25	10.6	-	-	
Sodium (T)	mg/L	0.02	7.5	-	9	0	0	10.1	10.1	0.301	0.1	9.64	10.5	9	-	
Sulphate	mg/L	0.3	6	164	9	0	0	12.3	12.2	0.801	0.267	11.4	13.4	9	0	
Nutrients																
Ammonia (as N)	mg/L	0.005	0.025	0.148	9	0	0	0.0239	0.0204	0.0112	0.00374	0.0141	0.0481	2	0	
Nitrate (as N)	mg/L	0.005	0.005	2.17	9	5	56	-	0.005	-	-	0.005	0.0116	4	0	
Nitrate + Nitrite (as N)	mg/L	0.0051 0.0224	-	-	9	8	89	-	0.0051	-	-	0.0051	0.0224	-	-	
Nitrite (as N)	mg/L	0.001	0.005	0.045	9	9	100	-	0.001	-	-	0.001	0.001	0	0	
Nitrogen	mg/L	0.05	-	-	6	0	0	0.392	0.38	0.0463	0.0189	0.337	0.46	-	-	
Orthophosphate (PO4-P)	mg/L	0.001	0.001	-	9	9	100	-	0.001	-	-	0.001	0.001	0	-	

Table D1-3. Lake B7 – Summary statistics and screening results for 2023 sampling events (July, August, and October)

Parameter	Units	DL (min max)	Normal Range (min max)	Action Level ^[b] (min max)	Lake B7 July, August, and October 2023 Sampling										
					N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Total Diss Phosphorus	mg/L	0.001	0.008	-	9	0	0	0.00313	0.0029	0.000436	0.000145	0.0026	0.0038	0	-
Total Dissolved Nitrogen	mg/L	0.05 0.055	-	-	9	0	0	0.376	0.377	0.0287	0.00955	0.335	0.423	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.73	-	9	0	0	0.41	0.422	0.0488	0.0163	0.337	0.48	0	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	9	0	0	0.375	0.377	0.0269	0.00897	0.335	0.414	-	-
Total Phosphorus	mg/L	0.001	0.01	0.0075	9	0	0	0.00671	0.0066	0.000966	0.000322	0.0056	0.0087	0	1
Organic/Inorganic Carbon															
Dissolved Organic Carbon	mg/L	0.5	5.5	-	9	0	0	6.43	6.27	1.04	0.345	5.13	7.81	7	-
Total Organic Carbon	mg/L	0.5	7.6	-	9	0	0	6.28	6.51	0.863	0.288	5.16	7.34	0	-
Total Metals															
Aluminum	µg/L	1	6.6	75	9	0	0	2.44	2.5	0.654	0.218	1.2	3.3	0	0
Antimony	µg/L	0.02	0.02	4.5	9	0	0	0.0437	0.045	0.00278	0.000928	0.038	0.046	9	0
Arsenic	µg/L	0.02	1.8	18.8	9	0	0	14.9	13.8	4.94	1.65	9.64	23.4	9	3
Barium	µg/L	0.02	20	750	9	0	0	29.1	28.7	1.11	0.369	28.1	31.5	9	0
Beryllium	µg/L	0.005	0.01	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Bismuth	µg/L	0.005	0.01	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Boron	µg/L	5	8	1120	9	0	0	16	15.4	1.44	0.479	14.6	17.9	0	0
Cadmium	µg/L	0.005	0.007	0.118	9	9	100	-	0.005	-	-	0.005	0.005	0	0
Cesium	µg/L	0.005	-	-	9	0	0	0.025	0.0237	0.00429	0.00143	0.0204	0.0307	-	-
Chromium	µg/L	0.1	0.06	3.75	9	9	100	-	0.1	-	-	0.1	0.1	0	0
Cobalt	µg/L	0.005	0.05	0.765	9	0	0	0.0645	0.0666	0.0208	0.00692	0.0381	0.0882	6	0
Copper	µg/L	0.05	1.13	1.77	9	0	0	0.891	0.863	0.106	0.0354	0.766	1.06	0	0
Gallium	µg/L	0.05	-	-	9	9	100	-	0.05	-	-	0.05	0.05	0	-
Iron	µg/L	1	103	795	9	0	0	68.7	66.6	30.1	10	37.8	132	1	0
Lanthanum	µg/L	0.01	-	-	9	0	0	0.0154	0.015	0.00194	0.000648	0.013	0.019	-	-
Lead	µg/L	0.01	0.08	3.75	9	0	0	0.0696	0.069	0.0193	0.00644	0.04	0.104	2	0
Lithium	µg/L	0.5	7.5	-	9	0	0	17.1	17.4	0.671	0.224	16.2	18	9	-
Manganese	µg/L	0.05	8.6	90	9	0	0	10.1	10.7	6.06	2.02	3.28	22.4	6	0
Mercury	µg/L	0.5	0.004	0.0195	9	6	67	-	0.0005	-	-	0.0005	0.00057	0	0
Molybdenum	µg/L	0.05	0.24	54.8	9	0	0	0.372	0.365	0.0279	0.0093	0.342	0.414	9	0
Nickel	µg/L	0.05	1.4	71.7	9	0	0	0.902	0.899	0.0392	0.0131	0.872	1	0	0
Niobium	µg/L	0.1	-	-	9	9	100	-	0.1	-	-	0.1	0.1	0	-
Phosphorus	µg/L	50	-	-	9	9	100	-	50	-	-	50	50	0	-
Rhenium	µg/L	0.005	-	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Rubidium	µg/L	0.005	-	-	9	0	0	2.22	2.24	0.13	0.0434	2.05	2.43	-	-
Selenium	µg/L	0.04	0.04	0.75	9	0	0	0.0501	0.049	0.00486	0.00162	0.044	0.058	9	0
Silicon	µg/L	50	-	-	9	0	0	503	378	202	67.3	352	797	-	-
Silver	µg/L	0.005	0.005	0.188	9	9	100	-	0.005	-	-	0.005	0.005	0	0
Strontium	µg/L	0.02	155	1880	9	0	0	313	312	9.75	3.25	301	326	9	0
Sulfur	µg/L	500	-	-	9	0	0	4480	4510	326	109	4060	4980	0	-
Tantalum	µg/L	0.1	-	-	9	9	100	-	0.1	-	-	0.1	0.1	0	-

Table D1-3. Lake B7 – Summary statistics and screening results for 2023 sampling events (July, August, and October)

Parameter	Units	DL (min max)	Normal Range (min max)	Action Level ^[b] (min max)	Lake B7 July, August, and October 2023 Sampling										
					N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Tellurium	µg/L	0.02	-	-	9	9	100	-	0.02	-	-	0.02	0.02	0	-
Thallium	µg/L	0.005	0.005	0.6	9	5	56	-	0.005	-	-	0.005	0.0068	4	0
Thorium	µg/L	0.005	-	-	9	8	89	-	0.005	-	-	0.005	0.0102	-	-
Tin	µg/L	0.02	0.05	-	9	1	11	0.033	0.033	0.014	0.00467	0.02	0.062	1	-
Titanium	µg/L	0.05	0.25	-	9	4	44	0.0452	0.055	0.0196	0.00652	0.05	0.069	0	-
Tungsten	µg/L	0.01	-	-	9	0	0	0.0352	0.033	0.00913	0.00304	0.025	0.047	-	-
Uranium	µg/L	0.001	0.03	11.2	9	0	0	0.0812	0.0819	0.00279	0.000931	0.0752	0.0844	9	0
Vanadium	µg/L	0.05	0.01	90	9	3	33	0.0517	0.058	0.0215	0.00717	0.05	0.081	9	0
Yttrium	µg/L	0.01	-	-	9	8	89	-	0.01	-	-	0.01	0.01	0	-
Zinc	µg/L	0.5	1.9	-	9	6	67	-	0.5	-	-	0.5	1.27	0	-
Zirconium	µg/L	0.01	-	-	9	9	100	-	0.01	-	-	0.01	0.01	0	-
Dissolved Metals															
Aluminum	µg/L	1	-	-	9	1	11	2.76	2.5	1.99	0.664	1	7.2	-	-
Antimony	µg/L	0.02 0.03	-	-	9	0	0	0.0453	0.046	0.00442	0.00147	0.04	0.055	-	-
Arsenic	µg/L	0.02	-	-	9	0	0	13.2	12.1	4.21	1.4	8.61	20.3	-	-
Barium	µg/L	0.02	-	-	9	0	0	28.9	28.8	1.9	0.633	26	32.5	-	-
Beryllium	µg/L	0.005	-	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Bismuth	µg/L	0.005	-	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Boron	µg/L	5	-	-	9	0	0	16.4	16.4	0.539	0.18	15.2	16.9	0	-
Cadmium	µg/L	0.005	-	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Cesium	µg/L	0.005	-	-	9	0	0	0.025	0.023	0.00391	0.0013	0.0211	0.0304	-	-
Chromium	µg/L	0.1 0.5	-	-	9	9	100	-	0.1	-	-	0.1	0.5	-	-
Cobalt	µg/L	0.005 0.05	-	-	9	1	11	0.0428	0.0483	0.0127	0.00422	0.0298	0.0611	-	-
Copper	µg/L	0.05 0.2	-	-	9	0	0	1.24	0.972	0.926	0.309	0.786	3.7	-	-
Gallium	µg/L	0.05	-	-	9	9	100	-	0.05	-	-	0.05	0.05	0	-
Iron	µg/L	1 10	-	-	9	1	11	33.1	30.4	20.2	6.72	10	65.1	-	-
Lanthanum	µg/L	0.01	-	-	9	8	89	-	0.01	-	-	0.01	0.012	-	-
Lead	µg/L	0.01 0.05	-	7.18	9	1	11	0.0409	0.046	0.0163	0.00542	0.021	0.069	-	0
Lithium	µg/L	0.5	-	-	9	0	0	16.9	16.8	0.593	0.198	16.3	18	-	-
Manganese	µg/L	0.05 0.2	-	278	9	1	11	1.99	1.03	2.78	0.927	0.2	9.16	-	0
Mercury	µg/L	0.5	-	-	9	6	67	-	5.00E-04	-	-	5.00E-04	0.00055	0	-
Molybdenum	µg/L	0.05	-	-	9	0	0	0.397	0.405	0.0528	0.0176	0.321	0.466	-	-
Nickel	µg/L	0.05 0.2	-	-	9	0	0	0.91	0.92	0.0737	0.0246	0.803	1.02	-	-
Niobium	µg/L	0.1	-	-	9	9	100	-	0.1	-	-	0.1	0.1	0	-
Phosphorus	µg/L	50	-	-	9	9	100	-	50	-	-	50	50	0	-
Rhenium	µg/L	0.005	-	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Rubidium	µg/L	0.005	-	-	9	0	0	2.18	2.24	0.146	0.0488	1.98	2.34	-	-
Selenium	µg/L	0.04	-	-	9	1	11	0.0444	0.048	0.0093	0.0031	0.04	0.05	-	-
Silicon	µg/L	50	-	-	9	0	0	513	387	199	66.2	359	807	-	-
Silver	µg/L	0.005	-	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-

Table D1-3. Lake B7 – Summary statistics and screening results for 2023 sampling events (July, August, and October)

Parameter	Units	DL (min max)	Normal Range (min max)	Action Level ^[b] (min max)	Lake B7 July, August, and October 2023 Sampling										
					N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Strontium	µg/L	0.02	-	1880	9	0	0	315	317	20.3	6.76	283	340	-	0
Sulfur	µg/L	500	-	-	9	0	0	4500	4550	343	114	4060	5100	-	-
Tantalum	µg/L	0.1	-	-	9	9	100	-	0.1	-	-	0.1	0.1	0	-
Tellurium	µg/L	0.02	-	-	9	9	100	-	0.02	-	-	0.02	0.02	0	-
Thallium	µg/L	0.005	-	-	9	6	67	-	0.005	-	-	0.005	0.007	-	-
Thorium	µg/L	0.005	-	-	9	9	100	-	0.005	-	-	0.005	0.005	0	-
Tin	µg/L	0.02	-	-	9	0	0	0.422	0.036	1.12	0.374	0.024	3.41	-	-
Titanium	µg/L	0.05	-	-	9	5	56	-	0.05	-	-	0.05	0.127	-	-
Tungsten	µg/L	0.01	-	-	9	0	0	0.0346	0.031	0.00873	0.00291	0.025	0.047	-	-
Uranium	µg/L	0.001	-	-	9	0	0	0.0801	0.0812	0.00667	0.00222	0.0694	0.0892	-	-
Vanadium	µg/L	0.05	-	-	9	6	67	-	0.05	-	-	0.05	0.074	-	-
Yttrium	µg/L	0.01	-	-	9	7	78	-	0.01	-	-	0.01	0.011	-	-
Zinc	µg/L	0.5 1	2.2	19.4	9	4	44	0.501	0.51	0.336	0.112	0.5	1.3	0	0
Zirconium	µg/L	0.01	-	-	9	8	89	-	0.01	-	-	0.01	0.019	-	-
Cyanides															
Cyanide (free)	mg/L	0.001	-	-	9	9	100	-	0.001	-	-	0.001	0.001	0	-
Cyanide (Total)	mg/L	0.001	0.001	0.00375	9	9	100	-	0.001	-	-	0.001	0.001	0	0
Cyanide (WAD)	mg/L	0.001	-	-	9	8	89	-	0.001	-	-	0.001	0.001	0	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Grey shading indicates an exceedance of normal range or action level thresholds.

Abbreviations: DL = detection limit, NR = normal range, Act Lvl = action level.

Table D1-4. Lake D7 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake D7 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Field Measurements																
Temperature	C	-	-	-	-	6	0	0	13.8	13.7	1.95	0.798	12	15.9	-	-
Sp. Conductivity (field)	µS/cm	-	159	-	-	6	0	0	140	140	9.24	3.77	131	148	-	-
pH (field)	pH units	-	7.7 8.3	-	6.5 9	6	0	0	7.94	8.03	0.375	0.153	7.37	8.29	-	0
DO (mg/L)	mg/L	-	-	-	6.5	6	0	0	10.3	10.4	0.33	0.135	9.64	10.5	-	0
DO (%)	%	-	-	-	-	6	0	0	102	100	3.39	1.38	100	108	-	-
Conventional Parameters																
Conductivity (lab)	µS/cm	1	-	-	-	6	0	0	141	142	7.69	3.14	134	149	-	-
Hardness	mg/L	0.5	-	-	-	6	0	0	54.8	54.4	2.49	1.02	52.5	57.7	-	-
pH (lab)	pH units	0.1	-	-	6.5 9	6	0	0	7.85	7.86	0.0957	0.0391	7.74	7.96	-	0
Total Dissolved Solids	mg/L	10	-	136	375	6	0	0	78.3	78.9	8.11	3.31	66.1	86.8	-	0
Total Dissolved Solids (Calculated)	mg/L	1	81	-	375	6	0	0	91.9	92	4.98	2.03	87.1	96.8	6	0
Total Suspended Solids	mg/L	1	2	5.1	-	6	1	17	1.77	2.05	0.659	0.269	1	2.2	3	-
Turbidity (lab)	NTU	0.1	1.1	-	-	6	0	0	0.638	0.675	0.095	0.0388	0.49	0.75	0	-
Major Ions																
Alkalinity, Bicarbonate	mg/L	1	68	-	-	6	0	0	50.9	50.8	5.54	2.26	45.5	57	0	-
Alkalinity, Carbonate	mg/L	1	-	-	-	6	6	100	-	1	-	-	1	1	0	-
Alkalinity, Hydroxide	mg/L	1	-	-	-	6	6	100	-	1	-	-	1	1	0	-
Alkalinity, Total	mg/L	1	55	83	-	6	0	0	50.9	50.8	5.54	2.26	45.5	57	3	-
Bromide	mg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Calcium (D)	mg/L	0.01	-	-	-	6	0	0	16.8	16.7	0.768	0.313	16.1	17.7	-	-
Calcium (T)	mg/L	0.01	17	36	-	6	0	0	16.5	16.4	1.09	0.443	15.4	17.6	3	-
Chloride	mg/L	0.1	25	15	90	6	0	0	9.88	9.9	0.501	0.205	9.36	10.4	0	0
Fluoride	mg/L	0.02	0.05	0.036	2.1	6	0	0	0.0485	0.0485	0.00383	0.00157	0.045	0.052	3	0
Magnesium (D)	mg/L	0.004	-	-	-	6	0	0	3.12	3.1	0.138	0.0561	2.98	3.28	-	-
Magnesium (T)	mg/L	0.004	3.3	5.2	-	6	0	0	3.03	3.03	0.264	0.108	2.76	3.29	0	-
Potassium (D)	mg/L	0.02	-	-	-	6	0	0	1.45	1.46	0.0712	0.0291	1.37	1.52	-	-
Potassium (T)	mg/L	0.02	1.8	2.3	-	6	0	0	1.4	1.4	0.123	0.0502	1.28	1.53	0	-
Reactive Silica (SiO2)	mg/L	0.01 0.1	0.28	-	-	6	0	0	0.394	0.394	0.185	0.0755	0.217	0.57	3	-
Sodium (D)	mg/L	0.02	-	-	-	6	0	0	8	7.92	0.296	0.121	7.73	8.37	-	-
Sodium (T)	mg/L	0.02	17	8.1	-	6	0	0	7.78	7.78	0.528	0.216	7.25	8.28	0	-
Sulphate	mg/L	0.3	10	5.5	164	6	0	0	5.22	5.22	0.111	0.0454	5.1	5.34	0	0
Nutrients																
Ammonia (as N)	mg/L	0.005	0.009	0.086	0.106	6	0	0	0.0174	0.0156	0.00804	0.00328	0.0092	0.0324	6	0
Nitrate (as N)	mg/L	0.005	0.005	1.2	2.17	6	3	50	-	0.00605	-	-	0.005	0.0208	3	0

Table D1-4. Lake D7 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake D7 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	6	3	50	-	0.0061	-	-	0.0051	0.0208	-	-
Nitrite (as N)	mg/L	0.001	0.0005	-	0.045	6	6	100	-	0.001	-	-	0.001	0.001	0	0
Nitrogen	mg/L	0.05	-	-	-	6	0	0	0.32	0.313	0.0376	0.0153	0.27	0.378	-	-
Orthophosphate (PO4-P)	mg/L	0.001	0.003	0.00072	-	6	6	100	-	0.001	-	-	0.001	0.001	0	-
Total Diss Phosphorus	mg/L	0.001	0.008	0.0071	-	6	0	0	0.00335	0.00315	0.000653	0.000267	0.0027	0.0044	0	-
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	6	0	0	0.262	0.257	0.0146	0.00596	0.248	0.282	-	-
Total Kjeldahl Nitrogen	mg/L	0.05	0.52	0.88	-	6	0	0	0.313	0.308	0.0393	0.016	0.263	0.378	0	-
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	6	0	0	0.254	0.252	0.0103	0.0042	0.242	0.27	-	-
Total Phosphorus	mg/L	0.001	0.02	-	0.0075	6	0	0	0.00865	0.0085	0.00144	0.000588	0.0068	0.011	0	5
Organic/Inorganic Carbon																
Dissolved Organic Carbon	mg/L	0.5	5.1	-	-	6	0	0	5.49	5.5	1.05	0.428	4.01	6.65	3	-
Total Organic Carbon	mg/L	0.5	14	-	-	6	0	0	5.13	5.18	1.04	0.424	3.96	6.15	0	-
Total Metals																
Aluminum	µg/L	1	6.7	37	75	6	0	0	7.57	6.75	2.88	1.17	4.7	12.9	3	0
Antimony	µg/L	0.02	0.03	0.13	4.5	6	5	83	-	0.02	-	-	0.02	0.023	0	0
Arsenic	µg/L	0.02	1.2	1.3	18.8	6	0	0	1.57	1.63	0.122	0.0499	1.41	1.68	6	0
Barium	µg/L	0.02	17	34	750	6	0	0	17.2	17.2	0.366	0.149	16.7	17.6	3	0
Beryllium	µg/L	0.005	0.01	0.26	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Bismuth	µg/L	0.005	0.01	0.037	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Boron	µg/L	5	17	10	1120	6	0	0	14	14	1.49	0.61	12.4	15.5	0	0
Cadmium	µg/L	0.005	0.005	0.071	0.0696	6	5	83	-	0.005	-	-	0.005	0.0069	1	0
Cesium	µg/L	0.005	-	-	-	6	0	0	0.0085	0.00855	0.000867	0.000354	0.0075	0.0096	-	-
Chromium	µg/L	0.1	0.06	1.6	3.75	6	6	100	-	0.1	-	-	0.1	0.1	0	0
Cobalt	µg/L	0.005	0.05	0.33	0.586	6	0	0	0.051	0.0509	0.00552	0.00225	0.0443	0.0573	3	0
Copper	µg/L	0.05	1	2.1	1.5	6	0	0	1.05	1.07	0.0574	0.0235	0.953	1.11	5	0
Gallium	µg/L	0.05	-	-	-	6	6	100	-	0.05	-	-	0.05	0.05	0	-
Iron	µg/L	1	112	175	795	6	0	0	68.8	66.2	14	5.72	53.9	91.2	0	0
Lanthanum	µg/L	0.01	-	-	-	6	0	0	0.0282	0.0265	0.00975	0.00398	0.018	0.044	-	-
Lead	µg/L	0.01	0.02	0.14	3.75	6	0	0	0.0393	0.0225	0.045	0.0184	0.012	0.129	3	0
Lithium	µg/L	0.5	1.9	4.9	-	6	0	0	1.55	1.55	0.0983	0.0401	1.45	1.66	0	-
Manganese	µg/L	0.05	13	67	90	6	0	0	10.5	10.4	2.76	1.13	7.47	14.4	1	0
Mercury	µg/L	0.5	0.001	0.012	0.0195	6	2	33	0.000505	0.00052	0.000254	0.000104	0.0005	0.00094	0	0
Molybdenum	µg/L	0.05	0.48	0.61	54.8	6	0	0	0.631	0.629	0.123	0.0501	0.516	0.75	6	0
Nickel	µg/L	0.05	0.75	2.3	18.8	6	0	0	0.76	0.767	0.0452	0.0184	0.705	0.805	3	0
Niobium	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Phosphorus	µg/L	50	-	-	-	6	6	100	-	50	-	-	50	50	0	-

Table D1-4. Lake D7 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake D7 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Rhenium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Rubidium	µg/L	0.005	-	-	-	6	0	0	1.25	1.25	0.134	0.0547	1.12	1.39	-	-
Selenium	µg/L	0.04	0.06	0.48	0.75	6	0	0	0.0498	0.05	0.00402	0.00164	0.045	0.054	0	0
Silicon	µg/L	50	-	-	-	6	0	0	211	213	98.1	40.1	117	303	0	-
Silver	µg/L	0.005	0.005	0.025	0.188	6	6	100	-	0.005	-	-	0.005	0.005	0	0
Strontium	µg/L	0.02	83	162	1880	6	0	0	81.1	81	5.96	2.43	75.1	87	3	0
Sulfur	µg/L	500	-	-	-	6	0	0	1990	1990	38.2	15.6	1950	2050	0	-
Tantalum	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Tellurium	µg/L	0.02	-	-	-	6	6	100	-	0.02	-	-	0.02	0.02	0	-
Thallium	µg/L	0.005	0.005	0.039	0.6	6	6	100	-	0.005	-	-	0.005	0.005	0	0
Thorium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Tin	µg/L	0.02	0.05	0.21	-	6	0	0	0.045	0.0365	0.0197	0.00804	0.029	0.082	2	-
Titanium	µg/L	0.05	0.34	2.38	-	6	0	0	0.358	0.296	0.184	0.0749	0.191	0.703	2	-
Tungsten	µg/L	0.01	-	13	-	6	6	100	-	0.01	-	-	0.01	0.01	0	-
Uranium	µg/L	0.001	0.1	0.13	11.2	6	0	0	0.094	0.0946	0.00426	0.00174	0.0869	0.0991	0	0
Vanadium	µg/L	0.05	0.07	0.71	90	6	0	0	0.086	0.085	0.00972	0.00397	0.074	0.102	6	0
Yttrium	µg/L	0.01	-	-	-	6	4	67	-	0.01	-	-	0.01	0.012	-	-
Zinc	µg/L	0.5	2	5.8	-	6	3	50	-	0.795	-	-	0.5	5.5	1	-
Zirconium	µg/L	0.01	-	-	-	6	3	50	-	0.01	-	-	0.01	0.012	-	-
Dissolved Metals																
Aluminum	µg/L	1	-	-	-	6	0	0	3.12	3.35	0.773	0.316	2.2	3.9	-	-
Antimony	µg/L	0.02	-	-	-	6	5	83	-	0.02	-	-	0.02	0.021	-	-
Arsenic	µg/L	0.02	-	-	-	6	0	0	1.36	1.37	0.175	0.0714	1.16	1.54	-	-
Barium	µg/L	0.02	-	-	-	6	0	0	16.6	16.5	0.44	0.18	16	17.2	-	-
Beryllium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Bismuth	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Boron	µg/L	5	-	-	-	6	0	0	14.3	14.2	0.816	0.333	13.3	15.2	0	-
Cadmium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Cesium	µg/L	0.005	-	-	-	6	0	0	0.00768	0.00765	0.0017	0.000694	0.0061	0.0094	-	-
Chromium	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Cobalt	µg/L	0.005	-	-	-	6	0	0	0.0225	0.0224	0.0013	0.00053	0.0205	0.0243	-	-
Copper	µg/L	0.05	-	-	-	6	0	0	0.99	0.971	0.0685	0.028	0.928	1.1	-	-
Gallium	µg/L	0.05	-	-	-	6	6	100	-	0.05	-	-	0.05	0.05	0	-
Iron	µg/L	1	-	-	-	6	0	0	29	28.9	7.81	3.19	21.2	39.2	-	-
Lanthanum	µg/L	0.01	-	-	-	6	3	50	-	0.011	-	-	0.01	0.016	-	-
Lead	µg/L	0.01	-	-	5.42	6	3	50	-	0.011	-	-	0.01	0.014	-	0

Table D1-4. Lake D7 – Summary statistics and screening results for the 2023 sampling events (July and August)

Parameter	Units	DL (min max)	Normal Range (min max)	FEIS ^[a]	Action Level ^[b] (min max)	Lake D7 July and August 2023 Sampling										
						N	N<DL	% <DL	Mean	Median	SD	SE	Min	Max	N>NR	N>ActLvl
Lithium	µg/L	0.5	-	-	-	6	0	0	1.56	1.54	0.101	0.0411	1.46	1.69	-	-
Manganese	µg/L	0.05	-	-	240	6	0	0	0.866	0.886	0.401	0.164	0.373	1.44	-	0
Mercury	µg/L	0.5	-	-	-	6	5	83	-	5.00E-04	-	-	5.00E-04	0.00061	0	-
Molybdenum	µg/L	0.05	-	-	-	6	0	0	0.636	0.63	0.12	0.0488	0.521	0.773	-	-
Nickel	µg/L	0.05	-	-	-	6	0	0	0.725	0.724	0.0542	0.0221	0.67	0.786	-	-
Niobium	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Phosphorus	µg/L	50	-	-	-	6	6	100	-	50	-	-	50	50	0	-
Rhenium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Rubidium	µg/L	0.005	-	-	-	6	0	0	1.23	1.22	0.143	0.0585	1.1	1.39	-	-
Selenium	µg/L	0.04	-	-	-	6	0	0	0.0488	0.05	0.00462	0.00189	0.042	0.053	-	-
Silicon	µg/L	50	-	-	-	6	0	0	206	205	89.8	36.6	121	294	0	-
Silver	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Strontium	µg/L	0.02	-	-	1880	6	0	0	81.3	80.4	5.94	2.42	75.8	88.4	-	0
Sulfur	µg/L	500	-	-	-	6	0	0	2000	2010	28.6	11.7	1950	2020	0	-
Tantalum	µg/L	0.1	-	-	-	6	6	100	-	0.1	-	-	0.1	0.1	0	-
Tellurium	µg/L	0.02	-	-	-	6	6	100	-	0.02	-	-	0.02	0.02	0	-
Thallium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Thorium	µg/L	0.005	-	-	-	6	6	100	-	0.005	-	-	0.005	0.005	0	-
Tin	µg/L	0.02	-	-	-	6	1	17	0.0288	0.0275	0.0139	0.00567	0.02	0.053	-	-
Titanium	µg/L	0.05	-	-	-	6	4	67	-	0.05	-	-	0.05	0.056	-	-
Tungsten	µg/L	0.01	-	-	-	6	6	100	-	0.01	-	-	0.01	0.01	0	-
Uranium	µg/L	0.001	-	-	-	6	0	0	0.0928	0.0926	0.00192	0.000782	0.0908	0.0959	-	-
Vanadium	µg/L	0.05	-	-	-	6	1	17	0.0525	0.0585	0.0138	0.00561	0.05	0.06	-	-
Yttrium	µg/L	0.01	-	-	-	6	6	100	-	0.01	-	-	0.01	0.01	0	-
Zinc	µg/L	0.5	1.4	-	9.75	6	3	50	-	0.61	-	-	0.5	0.93	0	0
Zirconium	µg/L	0.01	-	-	-	6	3	50	-	0.0105	-	-	0.01	0.111	-	-
Cyanides																
Cyanide (free)	mg/L	0.001	-	-	-	6	6	100	-	0.001	-	-	0.001	0.001	0	-
Cyanide (Total)	mg/L	0.001	0.001	-	0.00375	6	6	100	-	0.001	-	-	0.001	0.001	0	0
Cyanide (WAD)	mg/L	0.001	-	-	-	6	6	100	-	0.001	-	-	0.001	0.001	0	-

Notes

[a] FEIS predictions for the edge of the mixing zone as presented in Agnico Eagle (2014).

[b] The AEMP Action Level is 75% of the AEMP Benchmark.

Grey shading indicates an exceedance of normal range or action level thresholds.

Abbreviations: DL = detection limit, NR = normal range, Act Lvl = action level.

Appendix D2

Peninsula Lakes Water Quality – 2023 Samples

Table D3-1. Lake D7 water chemistry results

Parameter	Units	DL (min max)	Normal Range	FEIS	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August		
										2023-07-17			2023-08-21		
										D7-01	D7-02	D7-03	D7-01	D7-02	D7-03
Conventional Parameters															
Conductivity (lab)	µS/cm	1	-	-	-	-	-	-	-	135	134	134	149	148	148
Hardness	mg/L	0.5	-	-	-	-	-	-	-	52.6	52.8	52.5	57.4	57.7	56.1
pH (lab)	pH units	0.1	-	-	6.5 9.0	-	-	6.5 9	6.5 9	7.75	7.74	7.81	7.91	7.96	7.93
Total Dissolved Solids	mg/L	15	-	136	500	-	-	500	375	66.1	72.4	77.1	86.8	86.4	80.8
TDS (Calculated)	mg/L	1	81	-	500	-	-	500	375	87.8	87.1	87.1	96.8	96.2	96.2
Total Suspended Solids	mg/L	1	2	5.1	-	-	-	-	-	1.6	2.2	<1	2.1	2.2	2
Turbidity (lab)	NTU	0.1	1.1	-	-	-	-	-	-	0.67	0.49	0.56	0.75	0.68	0.68
Major Ions															
Alkalinity, Bicarbonate	mg/L	1	68	-	-	-	-	-	-	46.5	45.7	45.5	57	55.2	55.6
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	55	83	-	-	-	-	-	46.5	45.7	45.5	57	55.2	55.6
Bromide	mg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	16.1	16.2	16.1	17.6	17.7	17.2
Calcium (T)	mg/L	0.01	17	36	-	-	-	-	-	15.4	15.6	15.6	17.6	17.6	17.3
Chloride	mg/L	0.1	25	15	120	-	-	120	90	9.49	9.36	9.42	10.4	10.3	10.3
Fluoride	mg/L	0.02	0.05	0.036	0.12	1.5	2.8	2.8	2.1	0.045	0.045	0.045	0.052	0.052	0.052
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	3.02	3.01	2.98	3.28	3.27	3.19
Magnesium (T)	mg/L	0.004	3.3	5.2	-	-	-	-	-	2.76	2.82	2.78	3.27	3.29	3.24
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	1.37	1.41	1.37	1.51	1.52	1.5
Potassium (T)	mg/L	0.02	1.8	2.3	-	-	-	-	-	1.31	1.28	1.29	1.53	1.52	1.5
Reactive Silica (SiO ₂)	mg/L	0.01 0.1	0.28	-	-	-	-	-	-	0.217	0.22	0.239	0.55	0.568	0.57
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	7.75	7.73	7.75	8.31	8.37	8.08
Sodium (T)	mg/L	0.02	17	8.1	-	-	-	-	-	7.25	7.33	7.3	8.28	8.23	8.26
Sulphate	mg/L	0.3	10	5.5	218	-	-	218	164	5.1	5.11	5.14	5.3	5.31	5.34
Nutrients															
Ammonia (as N)	mg/L	0.005	0.009	0.086	0.141 1.83	-	-	0.141	0.106	0.0092	0.0324	0.0134	0.0176	0.0179	0.0136
Nitrate (as N)	mg/L	0.005	0.005	1.2	2.9	10	-	2.9	2.17	0.0071	0.0148	0.0208	<0.005	<0.005	<0.005
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	0.0071	0.0148	0.0208	<0.0051	<0.0051	<0.0051
Nitrite (as N)	mg/L	0.001	0.0005	-	0.06	1	-	0.06	0.045	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.27	0.347	0.312	0.314	0.301	0.378
Orthophosphate (PO ₄ -P)	mg/L	0.001	0.003	0.00072	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.008	0.0071	-	-	-	-	-	0.0029	0.0029	0.0027	0.0038	0.0044	0.0034
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.277	0.257	0.282	0.248	0.248	0.257
Total Kjeldahl Nitrogen	mg/L	0.05	0.52	0.88	-	-	-	-	-	0.263	0.332	0.291	0.314	0.301	0.378
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.27	0.242	0.261	0.248	0.248	0.257
Total Phosphorus	mg/L	0.001	0.02	-	0.01	-	-	0.01	0.0075	0.0079	0.009	0.0068	0.0092	0.011	0.008
Organic/Inorganic Carbon															
Dissolved Organic Carbon	mg/L	0.5	5.1	-	-	-	-	-	-	4.9	4.86	4.01	6.65	6.09	6.41
Total Organic Carbon	mg/L	0.5	14	-	-	-	-	-	-	4.32	4.3	3.96	6.03	6.15	6.04
Total Metals															
Aluminum (T)	µg/L	1	6.7	37	100	-	-	100	75	12.9	7.2	6.3	6	8.3	4.7
Antimony (T)	µg/L	0.02	0.03	0.13	9	6	-	6	4.5	0.023	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic (T)	µg/L	0.02	1.2	1.3	5	10	25	25	18.8	1.65	1.41	1.42	1.68	1.65	1.61
Barium (T)	µg/L	0.02	17	34	1000	2000	-	1000	750	17.5	17.4	17.6	16.9	17	16.7
Beryllium (T)	µg/L	0.005	0.01	0.26	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table D3-1. Lake D7 water chemistry results

Parameter	Units	DL (min max)	Normal Range	FEIS	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August		
										2023-07-17			2023-08-21		
										D7-01	D7-02	D7-03	D7-01	D7-02	D7-03
Bismuth (T)	µg/L	0.005	0.01	0.037	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron (T)	µg/L	5	17	10	1500	5000	-	1500	1120	12.4	12.6	12.9	15.1	15.5	15.4
Cadmium (T)	µg/L	0.005	0.005	0.071	0.0928 0.1	7	-	0.0928	0.0696	0.0069	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium (T)	µg/L	0.005	-	-	-	-	-	-	-	0.0082	0.0075	0.0076	0.0096	0.0092	0.0089
Chromium (T)	µg/L	0.1	0.06	1.6	5	50	-	5	3.75	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt (T)	µg/L	0.005	0.05	0.33	0.781 0.812	-	-	0.781	0.586	0.057	0.0457	0.0443	0.0573	0.0523	0.0496
Copper (T)	µg/L	0.05	1	2.1	2	2000	-	2	1.5	1.11	1.01	0.953	1.06	1.08	1.08
Gallium (T)	µg/L	0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron (T)	µg/L	1	112	175	300	-	1060	1060	795	91.2	78	69.8	62.6	57.2	53.9
Lanthanum (T)	µg/L	0.01	-	-	-	-	-	-	-	0.044	0.033	0.031	0.022	0.021	0.018
Lead (T)	µg/L	0.01	0.02	0.14	-	5	-	5	3.75	0.129	0.036	0.03	0.014	0.015	0.012
Lithium (T)	µg/L	0.5	1.9	4.9	-	-	-	-	-	1.45	1.45	1.48	1.63	1.66	1.62
Manganese (T)	µg/L	0.05	13	67	-	120	-	120	90	9.54	7.79	7.47	14.4	12.7	11.2
Mercury (T)	µg/L	0.5	0.001	0.012	0.026	1	-	0.026	0.0195	<5e-04	0.00094	0.00055	0.00051	0.00053	<5e-04
Molybdenum (T)	µg/L	0.05	0.48	0.61	73	-	-	73	54.8	0.516	0.524	0.516	0.744	0.75	0.734
Nickel (T)	µg/L	0.05	0.75	2.3	25	-	-	25	18.8	0.748	0.711	0.705	0.805	0.804	0.786
Niobium (T)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phosphorus (T)	µg/L	50	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<50
Rhenium (T)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium (T)	µg/L	0.005	-	-	-	-	-	-	-	1.15	1.13	1.12	1.39	1.38	1.36
Selenium (T)	µg/L	0.04	0.06	0.48	1	50	-	1	0.75	0.048	0.046	0.045	0.054	0.054	0.052
Silicon (T)	µg/L	50	-	-	-	-	-	-	-	119	117	128	298	300	303
Silver (T)	µg/L	0.005	0.005	0.025	0.25	-	-	0.25	0.188	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Strontium (T)	µg/L	0.02	83	162	2500	7000	-	2500	1880	75.1	76.5	75.5	87	87	85.5
Sulfur (T)	µg/L	500	-	-	-	-	-	-	-	1960	1970	1950	2010	2050	2010
Tantalum (T)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium (T)	µg/L	0.02	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium (T)	µg/L	0.005	0.005	0.039	0.8	-	-	0.8	0.6	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thorium (T)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin (T)	µg/L	0.02	0.05	0.21	-	-	-	-	-	0.037	0.052	0.029	0.082	0.034	0.036
Titanium (T)	µg/L	0.05	0.34	2.38	-	-	-	-	-	0.703	0.3	0.411	0.291	0.254	0.191
Tungsten (T)	µg/L	0.01	-	13	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium (T)	µg/L	0.001	0.1	0.13	15	20	-	15	11.2	0.0869	0.0968	0.0936	0.0991	0.0921	0.0957
Vanadium (T)	µg/L	0.05	0.07	0.71	120	-	-	120	90	0.102	0.09	0.088	0.082	0.08	0.074
Yttrium (T)	µg/L	0.01	-	-	-	-	-	-	-	0.012	0.01	<0.01	<0.01	<0.01	<0.01
Zinc (T)	µg/L	0.5	2	5.8	-	-	-	-	-	5.5	1.28	1.09	<0.5	<0.5	<0.5
Zirconium (T)	µg/L	0.01	-	-	-	-	-	-	-	0.012	0.011	0.01	<0.01	<0.01	<0.01
Dissolved Metals															
Aluminum (D)	µg/L	1	-	-	-	-	-	-	-	3.9	3.7	3	3.7	2.2	2.2
Antimony (D)	µg/L	0.02	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	0.021	<0.02	<0.02
Arsenic (D)	µg/L	0.02	-	-	-	-	-	-	-	1.25	1.19	1.16	1.54	1.51	1.49
Barium (D)	µg/L	0.02	-	-	-	-	-	-	-	16	16.4	16.4	17.2	17	16.7
Beryllium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron (D)	µg/L	5	-	-	-	-	-	-	-	13.5	13.3	13.9	14.6	15.1	15.2
Cadmium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium (D)	µg/L	0.005	-	-	-	-	-	-	-	0.0062	0.0061	0.0061	0.0091	0.0094	0.0092

Table D3-1. Lake D7 water chemistry results

Parameter	Units	DL (min max)	Normal Range	FEIS	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August		
										2023-07-17			2023-08-21		
										D7-01	D7-02	D7-03	D7-01	D7-02	D7-03
Chromium (D)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt (D)	µg/L	0.005	-	-	-	-	-	-	-	0.0234	0.0224	0.0225	0.0243	0.0205	0.0219
Copper (D)	µg/L	0.05	-	-	-	-	-	-	-	0.928	0.952	0.93	1.1	1.04	0.99
Gallium (D)	µg/L	0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron (D)	µg/L	1	-	-	-	-	-	-	-	39.2	34.9	33.6	24.2	21.2	21.2
Lanthanum (D)	µg/L	0.01	-	-	-	-	-	-	-	0.014	0.016	0.012	<0.01	<0.01	<0.01
Lead (D)	µg/L	0.01	-	-	7.22 9.54	-	-	7.22	5.42	0.014	0.012	0.012	<0.01	<0.01	<0.01
Lithium (D)	µg/L	0.5	-	-	-	-	-	-	-	1.48	1.46	1.48	1.59	1.69	1.66
Manganese (D)	µg/L	0.05	-	-	320 390	-	-	320	240	1.44	1.11	1.03	0.741	0.373	0.504
Mercury (D)	µg/L	0.5	-	-	-	-	-	-	-	0.00061	<5e-04	<5e-04	<5e-04	<5e-04	<5e-04
Molybdenum (D)	µg/L	0.05	-	-	-	-	-	-	-	0.521	0.53	0.532	0.773	0.732	0.727
Nickel (D)	µg/L	0.05	-	-	-	-	-	-	-	0.689	0.671	0.67	0.786	0.775	0.76
Niobium (D)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phosphorus (D)	µg/L	50	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<50
Rhenium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium (D)	µg/L	0.005	-	-	-	-	-	-	-	1.1	1.1	1.1	1.35	1.39	1.34
Selenium (D)	µg/L	0.04	-	-	-	-	-	-	-	0.042	0.045	0.048	0.052	0.053	0.053
Silicon (D)	µg/L	50	-	-	-	-	-	-	-	128	121	124	288	282	294
Silver (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Strontium (D)	µg/L	0.02	-	-	2500	-	-	2500	1880	76.6	75.8	75.8	88.4	87.2	84.2
Sulfur (D)	µg/L	500	-	-	-	-	-	-	-	2020	2020	1950	2020	1980	2000
Tantalum (D)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium (D)	µg/L	0.02	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thorium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin (D)	µg/L	0.02	-	-	-	-	-	-	-	0.026	0.025	<0.02	0.053	0.03	0.029
Titanium (D)	µg/L	0.05	-	-	-	-	-	-	-	0.056	<0.05	<0.05	0.05	<0.05	<0.05
Tungsten (D)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium (D)	µg/L	0.001	-	-	-	-	-	-	-	0.0908	0.0937	0.0959	0.0912	0.0918	0.0934
Vanadium (D)	µg/L	0.05	-	-	-	-	-	-	-	0.06	0.06	0.06	0.057	0.053	<0.05
Yttrium (D)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (D)	µg/L	0.5	1.4	-	13 15.9	-	-	13	9.75	0.72	0.9	<0.5	0.93	<0.5	<0.5
Zirconium (D)	µg/L	0.01	-	-	-	-	-	-	-	0.011	0.011	<0.01	0.111	<0.01	<0.01
Cyanides															
Cyanide (free)	mg/L	0.001	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide (Total)	mg/L	0.001	0.001	-	0.005	0.2	-	0.005	0.00375	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide (WAD)	mg/L	0.001	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Notes

DL = 2023 detection limits

Normal Range = upper limit of baseline concentrations (see Table D1-1)

FEIS = predicted concentrations for Lake D7 (Agnico Eagle, 2014). Median predicted concentration during operations.

FWAL = chronic freshwater aquatic life guideline

HH DW = Health Canada drinking water quality guideline

SSWQO = site-specific water quality objective

AEMP Benchmark = lowest of the aquatic life or Health Canada guidelines for each parameter

AEMP Action Level = 75 % of the AEMP Benchmark

Table D3-2. Lake A8 water chemistry results

Parameter	Units	DL (min max)	Normal Range	FEIS	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August		
										2023-07-17			2023-08-19		
										A8-01	A8-02	A8-03	A8-01	A8-02	A8-03
Conventional Parameters															
Conductivity (lab)	µS/cm	1	-	-	-	-	-	-	-	289	293	256	307	306	282
Hardness	mg/L	0.5	-	-	-	-	-	-	-	115	115	105	123	123	105
pH (lab)	pH units	0.1	-	-	6.5 9.0	-	-	6.5 9	6.5 9	7.89	7.89	7.84	8.01	7.98	8.01
Total Dissolved Solids	mg/L	15	-	162	500	-	-	500	375	206	214	180	242	244	184
TDS (Calculated)	mg/L	1	152	-	500	-	-	500	375	188	190	166	200	199	183
Total Suspended Solids	mg/L	1	4	2.9	-	-	-	-	-	<1	1.4	1.9	1.8	1.2	<1
Turbidity (lab)	NTU	0.1	0.87	-	-	-	-	-	-	0.31	0.35	0.46	0.51	0.52	0.6
Major Ions															
Alkalinity, Bicarbonate	mg/L	1	91	-	-	-	-	-	-	52.7	54.4	54.8	62.2	63	66.4
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	83.6	51	-	-	-	-	-	52.7	54.4	54.8	62.2	63	66.4
Bromide	mg/L	0.1	-	-	-	-	-	-	-	0.24	0.25	0.18	0.25	0.25	0.21
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	-	37.6	37.5	34.1	40	40.3	34.4
Calcium (T)	mg/L	0.01	40	47	-	-	-	-	-	36.3	37.4	33	41.2	39.2	36.4
Chloride	mg/L	0.1	61	74	120	-	-	120	90	48	48.2	38.1	50.1	50.2	42.2
Fluoride	mg/L	0.02	0.04	0.038	0.12	1.5	2.8	2.8	2.1	0.039	0.039	0.039	0.046	0.043	0.045
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	-	5.17	5.23	4.75	5.55	5.54	4.76
Magnesium (T)	mg/L	0.004	5.6	6.9	-	-	-	-	-	4.88	5.01	4.45	5.65	5.42	5.1
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	-	2.28	2.29	2	2.44	2.46	1.98
Potassium (T)	mg/L	0.02	2.5	2.3	-	-	-	-	-	2.18	2.22	1.83	2.56	2.44	2.13
Reactive Silica (SiO₂)	mg/L	0.01 0.1	1.3	-	-	-	-	-	-	0.226	0.232	0.371	1.24	1.19	1.81
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	-	12.1	12.4	9.59	12.8	12.7	9.71
Sodium (T)	mg/L	0.02	8.4	8.3	-	-	-	-	-	11.8	12	9.14	13.2	12.7	10.5
Sulphate	mg/L	0.3	9.3	11.6	218	-	-	218	164	15.1	15.2	12.1	14.3	14.2	11.2
Nutrients															
Ammonia (as N)	mg/L	0.005	0.011	0.118	0.141 0.588	-	-	0.141	0.106	0.0094	0.0102	0.0123	0.0142	0.0154	0.0115
Nitrate (as N)	mg/L	0.005	0.015	0.2	2.9	10	-	2.9	2.17	<0.005	<0.005	0.0178	0.0071	0.0136	<0.005
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	-	<0.0051	<0.0051	0.0178	0.0071	0.0136	<0.0051
Nitrite (as N)	mg/L	0.001	0.0005	-	0.06	1	-	0.06	0.045	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.286	0.286	0.373	0.352	0.342	0.415
Orthophosphate (PO₄-P)	mg/L	0.001	0.0023	0.00215	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.006	0.006	-	-	-	-	-	0.002	0.0022	0.003	0.0028	0.0034	0.0042
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	-	0.271	0.267	0.304	0.331	0.313	0.34
Total Kjeldahl Nitrogen	mg/L	0.05	0.63	0.58	-	-	-	-	-	0.286	0.286	0.355	0.345	0.328	0.415
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	-	0.271	0.267	0.286	0.324	0.299	0.34
Total Phosphorus	mg/L	0.001	0.009	-	0.01	-	-	0.01	0.0075	0.0046	0.005	0.0071	0.0052	0.0048	0.0074
Organic/Inorganic Carbon															
Dissolved Organic Carbon	mg/L	0.5	4.9	-	-	-	-	-	-	4.7	4.62	5.41	6.96	6.26	7.57
Total Organic Carbon	mg/L	0.5	4.7	-	-	-	-	-	-	4.41	4.12	4.54	5.71	5.66	7.33
Total Metals															
Aluminum (T)	µg/L	1	3	4.6	100	-	-	100	75	3.1	4.4	5	3.8	2.5	3
Antimony (T)	µg/L	0.02	0.4	0.2	9	6	-	6	4.5	0.056	0.055	0.036	0.074	0.054	0.036
Arsenic (T)	µg/L	0.02	2.4	1.7	5	10	25	25	18.8	8.83	8.67	4.74	14.8	14.8	6.64
Barium (T)	µg/L	0.02	32	23	1000	2000	-	1000	750	27.6	27.4	26	30.9	29.1	28.2
Beryllium (T)	µg/L	0.005	0.01	0.47	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table D3-2. Lake A8 water chemistry results

Parameter	Units	DL (min max)	Normal Range	FEIS	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August		
										2023-07-17			2023-08-19		
										A8-01	A8-02	A8-03	A8-01	A8-02	A8-03
Bismuth (T)	µg/L	0.005	0.01	0.076	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron (T)	µg/L	5	5	27	1500	5000	-	1500	1120	7.8	8	<5	9.2	9.4	5
Cadmium (T)	µg/L	0.005	0.005	0.083	0.165 0.188	7	-	0.165	0.124	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium (T)	µg/L	0.005	-	-	-	-	-	-	-	0.0223	0.0222	0.0147	0.0294	0.0289	0.0192
Chromium (T)	µg/L	0.1	0.06	1.87	5	50	-	5	3.75	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt (T)	µg/L	0.005	0.05	0.24	1.04 1.11	-	-	1.04	0.78	0.0397	0.0426	0.0533	0.0464	0.0417	0.0488
Copper (T)	µg/L	0.05	0.89	2.7	2.47 2.82	2000	-	2.47	1.85	0.854	0.898	0.916	1	0.883	0.883
Gallium (T)	µg/L	0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron (T)	µg/L	1	67	96	300	-	1060	1060	795	41.9	45.3	59.5	88.9	80.1	88.3
Lanthanum (T)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	0.011	0.02	0.011	<0.01	0.01
Lead (T)	µg/L	0.01	0.03	2	-	5	-	5	3.75	0.044	0.05	0.056	0.048	0.033	0.029
Lithium (T)	µg/L	0.5	10	5.3	-	-	-	-	-	9.59	9.76	7.03	10	10.1	8.24
Manganese (T)	µg/L	0.05	13	30	-	120	-	120	90	7.68	7.67	12.6	13.8	11.8	15.6
Mercury (T)	µg/L	0.5	0.0012	0.04	0.026	1	-	0.026	0.0195	0.00051	0.00117	0.00062	0.00052	<5e-04	0.00055
Molybdenum (T)	µg/L	0.05	0.22	0.59	73	-	-	73	54.8	0.376	0.392	0.308	0.478	0.461	0.416
Nickel (T)	µg/L	0.05	0.92	2.3	99.2 112	-	-	99.2	74.4	0.728	0.745	0.883	0.84	0.763	0.966
Niobium (T)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phosphorus (T)	µg/L	50	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<50
Rhenium (T)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium (T)	µg/L	0.005	-	-	-	-	-	-	-	2.17	2.2	1.84	2.54	2.41	2.16
Selenium (T)	µg/L	0.04	0.02	0.16	1	50	-	1	0.75	0.043	0.043	0.04	<0.04	0.041	0.043
Silicon (T)	µg/L	50	-	-	-	-	-	-	-	116	117	195	582	597	940
Silver (T)	µg/L	0.005	0.005	0.068	0.25	-	-	0.25	0.188	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Strontium (T)	µg/L	0.02	273	101	2500	7000	-	2500	1880	243	250	202	276	259	226
Sulfur (T)	µg/L	500	-	-	-	-	-	-	-	5480	5500	4720	5070	5110	4070
Tantalum (T)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium (T)	µg/L	0.02	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium (T)	µg/L	0.005	0.005	0.047	0.8	-	-	0.8	0.6	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thorium (T)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin (T)	µg/L	0.02	0.05	0.26	-	-	-	-	-	0.022	0.035	0.032	0.048	0.049	<0.02
Titanium (T)	µg/L	0.05	0.25	1.25	-	-	-	-	-	<0.05	0.096	0.147	0.15	<0.05	0.075
Tungsten (T)	µg/L	0.01	-	29	-	-	-	-	-	0.126	0.13	0.034	0.124	0.124	0.029
Uranium (T)	µg/L	0.001	0.054	0.061	15	20	-	15	11.2	0.096	0.0924	0.0696	0.0815	0.0888	0.0702
Vanadium (T)	µg/L	0.05	0.01	0.35	120	-	-	120	90	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Yttrium (T)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Zinc (T)	µg/L	0.5	1.2	5.1	-	-	-	-	-	<0.5	0.58	0.5	<0.5	<0.5	<0.5
Zirconium (T)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Metals															
Aluminum (D)	µg/L	1	-	-	-	-	-	-	-	3.5	3.9	2.6	2.3	3.7	5
Antimony (D)	µg/L	0.02	-	-	-	-	-	-	-	0.052	0.056	0.035	0.057	0.055	0.036
Arsenic (D)	µg/L	0.02	-	-	-	-	-	-	-	8.05	8.13	3.83	13.3	13.1	6.44
Barium (D)	µg/L	0.02	-	-	-	-	-	-	-	26.4	26.6	24.6	30.2	29.9	28.4
Beryllium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron (D)	µg/L	5	-	-	-	-	-	-	-	8.1	8.2	<5	8.9	8.8	7
Cadmium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium (D)	µg/L	0.005	-	-	-	-	-	-	-	0.0218	0.0212	0.0138	0.0278	0.0281	0.0201

Table D3-2. Lake A8 water chemistry results

Parameter	Units	DL (min max)	Normal Range	FEIS	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August		
										2023-07-17			2023-08-19		
										A8-01	A8-02	A8-03	A8-01	A8-02	A8-03
Chromium (D)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt (D)	µg/L	0.005	-	-	-	-	-	-	-	0.024	0.0236	0.025	0.0265	0.0258	0.0319
Copper (D)	µg/L	0.05	-	-	-	-	-	-	-	0.834	1.01	0.946	0.937	0.919	0.887
Gallium (D)	µg/L	0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron (D)	µg/L	1	-	-	-	-	-	-	-	23.2	21.7	28.2	44.2	42.6	66.6
Lanthanum (D)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead (D)	µg/L	0.01	-	-	9.18 11.6	-	-	9.18	6.88	0.02	0.034	0.014	0.02	0.024	0.024
Lithium (D)	µg/L	0.5	-	-	-	-	-	-	-	9.52	9.64	6.97	10.1	10.2	8.41
Manganese (D)	µg/L	0.05	-	-	370	-	-	370	278	0.837	0.795	0.954	2.14	1.54	1.82
Mercury (D)	µg/L	0.5	-	-	-	-	-	-	-	<5e-04	0.00088	0.00343	<5e-04	<5e-04	0.00052
Molybdenum (D)	µg/L	0.05	-	-	-	-	-	-	-	0.384	0.488	0.316	0.473	0.474	0.387
Nickel (D)	µg/L	0.05	-	-	-	-	-	-	-	0.742	0.726	0.843	0.78	0.764	0.878
Niobium (D)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phosphorus (D)	µg/L	50	-	-	-	-	-	-	-	<50	<50	<50	<50	<50	<50
Rhenium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium (D)	µg/L	0.005	-	-	-	-	-	-	-	2.14	2.11	1.77	2.41	2.41	2.02
Selenium (D)	µg/L	0.04	-	-	-	-	-	-	-	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Silicon (D)	µg/L	50	-	-	-	-	-	-	-	124	124	195	587	587	952
Silver (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Strontium (D)	µg/L	0.02	-	-	2500	-	-	2500	1880	244	244	201	270	270	213
Sulfur (D)	µg/L	500	-	-	-	-	-	-	-	5490	5630	4510	5110	5050	4170
Tantalum (D)	µg/L	0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium (D)	µg/L	0.02	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thorium (D)	µg/L	0.005	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin (D)	µg/L	0.02	-	-	-	-	-	-	-	<0.02	0.037	0.053	0.025	0.031	0.028
Titanium (D)	µg/L	0.05	-	-	-	-	-	-	-	<0.05	0.057	0.053	<0.05	<0.05	<0.05
Tungsten (D)	µg/L	0.01	-	-	-	-	-	-	-	0.116	0.128	0.031	0.12	0.121	0.032
Uranium (D)	µg/L	0.001	-	-	-	-	-	-	-	0.0986	0.0989	0.0709	0.0874	0.0833	0.0737
Vanadium (D)	µg/L	0.05	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Yttrium (D)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Zinc (D)	µg/L	0.5	8.5	-	27 30.8	-	-	27	20.2	0.67	0.75	1.83	2.06	<0.5	<0.5
Zirconium (D)	µg/L	0.01	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cyanides															
Cyanide (free)	mg/L	0.001	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide (Total)	mg/L	0.001	0.001	-	0.005	0.2	-	0.005	0.00375	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide (WAD)	mg/L	0.001	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Notes

DL = 2023 detection limits

Normal Range = upper limit of baseline concentrations (see Table D1-1)

FEIS = predicted concentrations for Lake A8 (Agnico Eagle, 2014). Median concentrations at post-closure; no predictions were developed for operations because Lake A8 was scheduled to be dewatered.

FWAL = freshwater aquatic life guideline

HH DW = Health Canada drinking water quality guideline

SSWQO = site-specific water quality objective

AEMP Benchmark = lowest of the aquatic life or Health Canada guidelines for each parameter

AEMP Action Level = 75 % of the AEMP Benchmark

Table D3-3. Lake B7 water chemistry results																	
Parameter	Units	DL (min max)	Normal Range	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August			October		
									2023-07-16			2023-08-19			2023-10-14		
									B7-01	B7-02	B7-03	B7-01	B7-02	B7-03	B7-01	B7-02	B7-03
Conventional Parameters																	
Conductivity (lab)	µS/cm	1	-	-	-	-	-	-	268	265	262	282	282	279	303	301	300
Hardness	mg/L	0.5	-	-	-	-	-	-	109	109	100	117	116	114	118	115	109
pH (lab)	pH units	0.1	-	6.5 9.0	-	-	6.5 9	6.5 9	7.87	7.87	7.87	7.99	7.96	7.99	7.87	7.87	7.86
Total Dissolved Solids	mg/L	15	-	500	-	-	500	375	199	194	171	226	216	217	196	191	145
TDS (Calculated)	mg/L	1	171	500	-	-	500	375	174	172	170	183	183	181	197	196	195
Total Suspended Solids	mg/L	1	3	-	-	-	-	-	<1	<1	<1	1.8	2	1.8	<1	<1	<1
Turbidity (lab)	NTU	0.1	0.69	-	-	-	-	-	0.69	0.47	0.45	0.87	0.61	0.69	0.44	0.45	0.4
Major Ions																	
Alkalinity, Bicarbonate	mg/L	1	135	-	-	-	-	-	54.9	53.8	53.5	61.2	62	59.7	61.6	60.6	60.2
Alkalinity, Carbonate	mg/L	1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Hydroxide	mg/L	1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Alkalinity, Total	mg/L	1	110	-	-	-	-	-	54.9	53.8	53.5	61.2	62	59.7	61.6	60.6	60.2
Bromide	mg/L	0.1	-	-	-	-	-	-	0.17	0.17	0.17	0.19	0.19	0.19	0.17	0.17	0.17
Calcium (D)	mg/L	0.01	-	-	-	-	-	-	37	37.1	34.4	39.9	39.5	38.9	40.1	38.9	36.8
Calcium (T)	mg/L	0.01	39	-	-	-	-	-	36.6	36.8	36.4	38.7	39.2	38.3	38.3	37.7	38.5
Chloride	mg/L	0.1	25	120	-	-	120	90	42.3	41.9	41.8	44.5	44	44	46.6	47.2	47
Fluoride	mg/L	0.02	0.04	0.12	1.5	2.8	2.8	2.1	0.039	0.038	0.038	0.043	0.042	0.042	0.042	0.038	0.041
Magnesium (D)	mg/L	0.004	-	-	-	-	-	-	4.06	4.04	3.52	4.31	4.26	4.17	4.36	4.26	4.07
Magnesium (T)	mg/L	0.004	5.3	-	-	-	-	-	3.74	3.79	3.76	4.15	4.2	4.12	4.15	4.08	4.31
Potassium (D)	mg/L	0.02	-	-	-	-	-	-	2.19	2.17	1.96	2.32	2.32	2.3	2.32	2.25	2.19
Potassium (T)	mg/L	0.02	2.8	-	-	-	-	-	2.1	2.11	2.09	2.3	2.35	2.31	2.21	2.18	2.27
Reactive Silica (SiO ₂)	mg/L	0.01 0.1	2.3	-	-	-	-	-	0.704	0.715	0.71	1.58	1.51	1.54	0.729	0.782	0.799
Sodium (D)	mg/L	0.02	-	-	-	-	-	-	10.3	10.2	9.25	10.6	10.4	10.3	10.6	10.4	10.1
Sodium (T)	mg/L	0.02	7.5	-	-	-	-	-	9.75	9.82	9.64	10.3	10.4	10.2	10.1	9.96	10.5
Sulphate	mg/L	0.3	6	218	-	-	218	164	12.2	12.2	12.3	11.4	11.4	11.5	13.1	13.4	13.3
Nutrients																	
Ammonia (as N)	mg/L	0.005	0.025	0.197 3.98	-	-	0.197	0.148	0.0225	0.0152	0.017	0.0229	0.0204	0.0141	0.0481	0.0187	0.0366
Nitrate (as N)	mg/L	0.005	0.005	2.9	10	-	2.9	2.17	<0.005	<0.005	<0.005	0.0091	<0.005	<0.005	0.0116	0.0107	0.0069
Nitrate + Nitrite (as N)	mg/L	0.0051	-	-	-	-	-	-	<0.0051	<0.0051	<0.0051	0.0091	<0.0051	<0.0051	<0.0224	<0.0224	<0.0224
Nitrite (as N)	mg/L	0.001	0.005	0.06	1	-	0.06	0.045	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen	mg/L	0.05	-	-	-	-	-	-	0.359	0.378	0.337	0.433	0.46	0.382	-	-	-
Orthophosphate (PO ₄ -P)	mg/L	0.001	0.001	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Diss Phosphorus	mg/L	0.001	0.008	-	-	-	-	-	0.0028	0.0026	0.0028	0.0035	0.0035	0.0035	0.0038	0.0028	0.0029
Total Dissolved Nitrogen	mg/L	0.05	-	-	-	-	-	-	0.379	0.356	0.365	0.423	0.335	0.349	0.412	0.387	0.377
Total Kjeldahl Nitrogen	mg/L	0.05	0.73	-	-	-	-	-	0.359	0.378	0.337	0.424	0.46	0.382	0.45	0.422	0.48
Total Kjeldahl Nitrogen (diss)	mg/L	0.05	-	-	-	-	-	-	0.379	0.356	0.365	0.414	0.335	0.349	0.412	0.387	0.377
Total Phosphorus	mg/L	0.001	0.01	0.01	-	-	0.01	0.0075	0.0057	0.0066	0.0087	0.0074	0.0072	0.0066	0.0056	0.006	0.0066
Organic/Inorganic Carbon																	
Dissolved Organic Carbon	mg/L	0.5	5.5	-	-	-	-	-	5.52	5.13	5.5	7.71	7.61	7.81	6.27	5.93	6.43
Total Organic Carbon	mg/L	0.5	7.6	-	-	-	-	-	5.16	5.27	5.18	7.34	7.24	6.79	6.54	6.51	6.51
Total Metals																	
Aluminum (T)	µg/L	1	6.6	100	-	-	100	75	2.9	3.1	3.3	2.6	2.2	2.5	1.2	1.8	2.4
Antimony (T)	µg/L	0.02	0.02	9	6	-	6	4.5	0.045	0.045	0.044	0.046	0.046	0.046	0.042	0.038	0.041
Arsenic (T)	µg/L	0.02	1.8	5	10	25	25	18.8	15.6	13.8	12.9	23.4	20	19	10.2	9.64	9.91
Barium (T)	µg/L	0.02	20	1000	2000	-	1000	750	28.7	28.4	28.1	31.5	30.1	29.6	28.5	28.2	29.1
Beryllium (T)	µg/L	0.005	0.01	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table D3-3. Lake B7 water chemistry results																	
Parameter	Units	DL (min max)	Normal Range	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August			October		
									2023-07-16			2023-08-19			2023-10-14		
									B7-01	B7-02	B7-03	B7-01	B7-02	B7-03	B7-01	B7-02	B7-03
Bismuth (T)	µg/L	0.005	0.01	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron (T)	µg/L	5	8	1500	5000	-	1500	1120	14.8	14.9	14.6	17.9	17.9	17.9	15.4	15.5	15.3
Cadmium (T)	µg/L	0.005	0.007	0.158 0.182	7	-	0.158	0.118	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium (T)	µg/L	0.005	-	-	-	-	-	-	0.0242	0.0237	0.023	0.0305	0.0303	0.0307	0.0205	0.0204	0.0221
Chromium (T)	µg/L	0.1	0.06	5	50	-	5	3.75	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt (T)	µg/L	0.005	0.05	1.02 1.09	-	-	1.02	0.765	0.0882	0.0852	0.083	0.0781	0.0666	0.0618	0.04	0.0381	0.0395
Copper (T)	µg/L	0.05	1.13	2.36 2.72	2000	-	2.36	1.77	1.06	1.01	0.998	0.877	0.863	0.85	0.817	0.781	0.766
Gallium (T)	µg/L	0.05	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron (T)	µg/L	1	103	300	-	1060	1060	795	78.2	66.6	61	132	88.1	75.8	39.1	37.8	39.9
Lanthanum (T)	µg/L	0.01	-	-	-	-	-	-	0.017	0.014	0.015	0.014	0.013	0.014	0.016	0.017	0.019
Lead (T)	µg/L	0.01	0.08	-	5	-	5	3.75	0.089	0.075	0.076	0.104	0.052	0.04	0.062	0.069	0.059
Lithium (T)	µg/L	0.5	7.5	-	-	-	-	-	16.2	16.5	16.2	17.6	17.3	17.4	17.7	17.4	18
Manganese (T)	µg/L	0.05	8.6	-	120	-	120	90	13.4	11.4	10.2	22.4	12	10.7	4.06	3.28	3.53
Mercury (T)	µg/L	0.5	0.004	0.026	1	-	0.026	0.0195	0.00057	<5e-04	0.00051	<5e-04	<5e-04	0.00052	<5e-04	<5e-04	<5e-04
Molybdenum (T)	µg/L	0.05	0.24	73	-	-	73	54.8	0.344	0.342	0.344	0.414	0.408	0.396	0.364	0.365	0.375
Nickel (T)	µg/L	0.05	1.4	95.6 108	-	-	95.6	71.7	0.904	0.905	0.875	1	0.905	0.877	0.899	0.872	0.882
Niobium (T)	µg/L	0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phosphorus (T)	µg/L	50	-	-	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50
Rhenium (T)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium (T)	µg/L	0.005	-	-	-	-	-	-	2.1	2.08	2.05	2.3	2.33	2.31	2.24	2.18	2.43
Selenium (T)	µg/L	0.04	0.04	1	50	-	1	0.75	0.05	0.058	0.056	0.049	0.054	0.046	0.048	0.046	0.044
Silicon (T)	µg/L	50	-	-	-	-	-	-	360	369	364	797	767	750	352	378	391
Silver (T)	µg/L	0.005	0.005	0.25	-	-	0.25	0.188	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Strontium (T)	µg/L	0.02	155	2500	7000	-	2500	1880	301	305	301	324	326	323	316	310	312
Sulfur (T)	µg/L	500	-	-	-	-	-	-	4510	4530	4480	4110	4130	4060	4770	4760	4980
Tantalum (T)	µg/L	0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium (T)	µg/L	0.02	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium (T)	µg/L	0.005	0.005	0.8	-	-	0.8	0.6	<0.005	0.0051	<0.005	0.0068	0.0063	0.0064	<0.005	<0.005	<0.005
Thorium (T)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0102	<0.005
Tin (T)	µg/L	0.02	0.05	-	-	-	-	-	0.033	0.062	0.031	0.035	0.04	0.032	0.033	0.021	<0.02
Titanium (T)	µg/L	0.05	0.25	-	-	-	-	-	0.061	0.069	<0.05	0.055	<0.05	0.058	<0.05	<0.05	0.064
Tungsten (T)	µg/L	0.01	-	-	-	-	-	-	0.032	0.034	0.033	0.046	0.047	0.047	0.026	0.027	0.025
Uranium (T)	µg/L	0.001	0.03	15	20	-	15	11.2	0.0828	0.0799	0.0819	0.0752	0.0808	0.0793	0.0824	0.0844	0.0837
Vanadium (T)	µg/L	0.05	0.01	120	-	-	120	90	0.057	0.06	0.06	0.058	0.074	0.081	<0.05	<0.05	<0.05
Yttrium (T)	µg/L	0.01	-	-	-	-	-	-	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (T)	µg/L	0.5	1.9	-	-	-	-	-	0.81	0.51	1.27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zirconium (T)	µg/L	0.01	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Metals																	
Aluminum (D)	µg/L	1	-	-	-	-	-	-	3	2.5	3.6	3.5	7.2	2.2	<1	1.1	1.2
Antimony (D)	µg/L	0.02	-	-	-	-	-	-	0.043	0.042	0.046	0.047	0.046	0.047	0.04	0.042	0.055
Arsenic (D)	µg/L	0.02	-	-	-	-	-	-	13.8	12.1	11.3	20.3	17.3	17.2	9.81	8.66	8.61
Barium (D)	µg/L	0.02	-	-	-	-	-	-	26.9	26	28.1	32.5	29.9	30.2	28.8	28.8	28.5
Beryllium (D)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Bismuth (D)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron (D)	µg/L	5	-	-	-	-	-	-	16.4	16.2	15.2	16.8	16.6	16.4	16.9	15.9	16.8
Cadmium (D)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cesium (D)	µg/L	0.005	-	-	-	-	-	-	0.0226	0.0211	0.0232	0.0304	0.0295	0.0304	0.023	0.0222	0.0222

Table D3-3. Lake B7 water chemistry results																	
Parameter	Units	DL (min max)	Normal Range	FWAL (min max)	HH DW	SSWQO	AEMP Benchmark (min max)	AEMP Action Level (min max)	July			August			October		
									2023-07-16			2023-08-19			2023-10-14		
									B7-01	B7-02	B7-03	B7-01	B7-02	B7-03	B7-01	B7-02	B7-03
Chromium (D)	µg/L	0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
Cobalt (D)	µg/L	0.005	-	-	-	-	-	-	0.0556	0.0502	0.0478	0.0611	0.0483	0.0373	0.0298	0.0303	<0.05
Copper (D)	µg/L	0.05	-	-	-	-	-	-	1.01	0.992	0.923	0.972	1.01	0.941	3.7	0.786	0.82
Gallium (D)	µg/L	0.05	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron (D)	µg/L	1	-	-	-	-	-	-	38.4	30.9	26.6	65.1	63.9	30.4	19.7	18	<10
Lanthanum (D)	µg/L	0.01	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01
Lead (D)	µg/L	0.01	-	9.58 12	-	-	9.58	7.18	0.058	0.035	0.052	0.069	0.046	0.021	0.029	0.033	<0.05
Lithium (D)	µg/L	0.5	-	-	-	-	-	-	16.8	16.3	16.8	17.1	16.3	16.6	16.6	17.7	18
Manganese (D)	µg/L	0.05	-	370	-	-	370	278	2.44	1.03	0.621	9.16	1.88	0.671	1.24	0.74	<0.2
Mercury (D)	µg/L	0.5	-	-	-	-	-	-	0.00055	<5e-04	0.00055	<5e-04	0.00053	<5e-04	<5e-04	<5e-04	<5e-04
Molybdenum (D)	µg/L	0.05	-	-	-	-	-	-	0.338	0.339	0.321	0.425	0.431	0.405	0.451	0.393	0.466
Nickel (D)	µg/L	0.05	-	-	-	-	-	-	0.934	0.838	0.803	1.01	0.926	0.856	0.92	0.881	1.02
Niobium (D)	µg/L	0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phosphorus (D)	µg/L	50	-	-	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50
Rhenium (D)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Rubidium (D)	µg/L	0.005	-	-	-	-	-	-	2.03	2	1.98	2.34	2.31	2.32	2.28	2.24	2.15
Selenium (D)	µg/L	0.04	-	-	-	-	-	-	0.049	0.046	0.048	0.046	0.045	0.048	0.048	0.05	<0.04
Silicon (D)	µg/L	50	-	-	-	-	-	-	386	393	359	807	767	758	379	387	384
Silver (D)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Strontium (D)	µg/L	0.02	-	2500	-	-	2500	1880	303	299	283	340	337	335	323	317	298
Sulfur (D)	µg/L	500	-	-	-	-	-	-	4640	4550	4380	4210	4060	4100	5100	4810	4610
Tantalum (D)	µg/L	0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tellurium (D)	µg/L	0.02	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium (D)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	0.007	0.0055	0.0059	<0.005	<0.005	<0.005
Thorium (D)	µg/L	0.005	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin (D)	µg/L	0.02	-	-	-	-	-	-	0.027	0.037	0.024	0.036	0.165	0.028	0.024	0.045	3.41
Titanium (D)	µg/L	0.05	-	-	-	-	-	-	0.056	<0.05	0.127	0.064	0.06	<0.05	<0.05	<0.05	<0.05
Tungsten (D)	µg/L	0.01	-	-	-	-	-	-	0.031	0.031	0.033	0.044	0.046	0.047	0.028	0.025	0.026
Uranium (D)	µg/L	0.001	-	-	-	-	-	-	0.0812	0.0748	0.0844	0.0737	0.0694	0.0831	0.0892	0.0876	0.0779
Vanadium (D)	µg/L	0.05	-	-	-	-	-	-	<0.05	<0.05	0.05	<0.05	0.074	0.067	<0.05	<0.05	<0.05
Yttrium (D)	µg/L	0.01	-	-	-	-	-	-	0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (D)	µg/L	0.5	2.2	25.8 31.8	-	-	25.8	19.4	0.57	<0.5	0.56	0.51	<0.5	<0.5	0.57	<0.5	1.3
Zirconium (D)	µg/L	0.01	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019
Cyanides																	
Cyanide (free)	mg/L	0.001	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide (Total)	mg/L	0.001	0.001	0.005	0.2	-	0.005	0.00375	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cyanide (WAD)	mg/L	0.001	-	-	-	-	-	-	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Notes

DL = 2023 detection limits

Normal Range = upper limit of baseline concentrations (see Table D1-1)

FWAL = freshwater aquatic life guideline

HH DW = Health Canada drinking water quality guideline

SSWQO = site-specific water quality objective

AEMP Benchmark = lowest of the aquatic life or Health Canada guidelines for each parameter

AEMP Action Level = 75 % of the AEMP Benchmark

APPENDIX E

PHYTOPLANKTON – SUPPORTING INFORMATION

Appendix E1

Phytoplankton Community – 2023 Summary Statistics

APPENDIX E1 – TABLES

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Table E1-2. Phytoplankton biomass (mg/m ³) for the top 5 taxa in 2023	6

Table E1-1. Phytoplankton richness, biomass, and density by major taxa group for individual samples, 2013 to 2023

Year	Area	Sample ID	Date	Designation	Richness (taxa per sample)							Biomass (mg/m³)							Density (cells/L)						
					Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno
2013	MEL-01	MEL-01-1D	2013-08-14	Control	7	2	9	4	14	2	0	16.34	4.73	6.79	31.14	78.2	27.45	0	121576	7800	256040	310328	1365760	2000	0
2013	MEL-01	MEL-01-1S	2013-08-14	Control	6	4	9	5	11	2	0	15.99	7.93	6.53	21.42	78.53	15.04	0	103608	153864	404104	199768	1524208	1200	0
2013	MEL-01	MEL-01-2D	2013-08-14	Control	5	3	5	5	13	3	0	13.26	2.47	7.68	24.97	74.29	23.02	0	133544	24152	316896	266224	834544	2200	0
2013	MEL-01	MEL-01-2S	2013-08-14	Control	5	3	11	5	12	3	0	18.09	4.18	5.28	38.58	72.84	9.51	0	88640	89408	289360	387352	1415248	800	0
2013	MEL-01	MEL-01-3S	2013-08-14	Control	5	2	11	5	12	2	0	16	2.91	5.43	22.91	104.94	5.01	0	153680	17768	302928	249456	1654920	400	0
2013	MEL-01	MEL-01-4S	2013-08-14	Control	6	2	7	3	13	2	0	21.54	2.31	7.61	28.22	70.62	34.75	0	125776	3600	346032	252456	1022728	2200	0
2013	MEL-01	MEL-01-5S	2013-08-14	Control	5	3	7	5	12	2	0	15.37	2.29	4.22	27.44	85.7	13.98	0	96624	10984	316896	327880	1459352	1200	0
2015	MEL-01	MEL-01-01	2015-08-18	Impact	6	0	12	6	14	4	0	18.57	0	9.23	13.89	182.21	65.41	0	271624	0	166832	68056	1890792	5800	0
2015	MEL-01	MEL-01-02	2015-08-18	Impact	9	1	13	5	18	2	1	30.91	1.6	31.74	19.6	239.12	27.4	1.68	345480	28736	331264	86424	2425608	5600	200
2015	MEL-01	MEL-01-03	2015-08-18	Impact	9	1	10	5	20	3	0	78.59	1.11	16.8	19.6	206.31	41.11	0	317528	28736	216720	126128	2088560	6600	0
2015	MEL-01	MEL-01-04	2015-08-18	Impact	8	0	8	5	21	3	0	22.6	0	34.18	18.42	240.69	33.95	0	175864	0	287960	85824	2337200	5000	0
2015	MEL-01	MEL-01-05	2015-08-18	Impact	8	0	10	5	18	4	0	17.29	0	24.93	16.3	184.54	83.52	0	191600	0	152864	64672	1726160	9200	0
2015	MEL-02	MEL-02-01	2015-08-18	Impact	9	0	11	4	16	3	0	14.87	0	19.26	16.52	116.79	33.06	0	125944	0	155264	76840	1236048	9784	0
2015	MEL-02	MEL-02-02	2015-08-18	Impact	8	1	9	5	18	4	0	26.18	0.14	15	40.07	151.8	28.47	0	156880	200	232888	236688	1639152	9584	0
2015	MEL-02	MEL-02-03	2015-08-18	Impact	9	0	9	4	19	3	0	18.33	0	18.13	42.46	149.53	22.57	0	194600	0	202552	220336	1638952	5400	0
2015	MEL-02	MEL-02-04	2015-08-18	Impact	7	1	13	4	16	3	0	14.94	0.4	14.7	35.15	101.74	10.71	0	69488	400	168432	250456	1244432	1800	0
2015	MEL-02	MEL-02-05	2015-08-18	Impact	8	2	13	5	15	4	0	27.79	2.05	21.95	30.24	110.61	14.92	0	217568	1600	221720	184400	1308488	2600	0
2016	MEL-01	MEL-01-01	2016-08-16	Impact	6	1	9	5	19	2	0	14.5	0.15	22.54	24.17	228.74	24.62	0	95824	200	246856	150880	2122280	5800	0
2016	MEL-01	MEL-01-02	2016-08-16	Impact	6	1	10	5	19	3	0	12.59	13	17.86	24.94	230.97	28.54	0	140112	114944	245856	163048	2746688	11384	0
2016	MEL-01	MEL-01-03	2016-08-16	Impact	4	2	10	5	18	3	0	5.8	0.64	25.74	27.51	227.05	51.92	0	93208	3000	325080	150480	1987484	12984	0
2016	MEL-01	MEL-01-04	2016-08-16	Impact	7	1	11	4	18	3	0	27.65	0.2	23.65	35.76	300.89	57.88	0	136344	400	239472	201568	2452344	15184	0
2016	MEL-01	MEL-01-05	2016-08-16	Impact	6	0	11	4	21	3	0	12.72	0	16.28	18.11	226.78	50.31	0	130944	0	231088	85624	2430592	7400	0
2016	MEL-02	MEL-02-01	2016-08-16	Impact	9	0	8	5	17	3	0	30.69	0	16.02	28.87	102.2	14	0	81456	0	238472	172232	1530792	9584	0
2016	MEL-02	MEL-02-02	2016-08-16	Impact	8	2	8	5	16	3	0	54.15	0.28	11.17	31.21	126.9	19.32	0	101208	7384	152464	185400	1537976	4600	0
2016	MEL-02	MEL-02-03	2016-08-16	Impact	6	2	11	5	20	3	0	21.82	1.03	11.22	31.51	172.5	65.96	0	41136	14968	174016	181816	1855672	18800	0
2016	MEL-02	MEL-02-04	2016-08-16	Impact	7	0	10	5	19	2	0	23.74	0	16.78	47.87	120.65	27.98	0	69472	0	239872	288976	1596048	6000	0
2016	MEL-02	MEL-02-05	2016-08-16	Impact	7	0	10	5	16	3	0	29.03	0	12.51	42.23	170.68	29.97	0	125344	0	187784	235904	1847688	18368	0
2016	MEL-03	MEL-03-01	2016-08-16	Control	5	0	7	4	17	3	0	13.38	0	7.65	16.59	160.03	9.77	0	15384	0	100976	110160	1632168	1000	0
2016	MEL-03	MEL-03-02	2016-08-16	Control	6	1	8	4	18	2	0	15.83	0.36	10.53	16.36	165.68	9.25	0	86024	7184	191184	103776	1575696	2000	0
2016	MEL-03	MEL-03-03	2016-08-16	Control	7	0	8	4	18	2	0	8.71	0	12.88	39.19	175.45	12.48	0	105176	0	213736	296544	1625584	2600	0
2016	MEL-03	MEL-03-04	2016-08-16	Control	6	1	11	4	18	3	0	5.84	0.28	14.36	24.85	163.24	27.73	0	53288	7184	303128	191184	1525008	4600	0
2016	MEL-03	MEL-03-05	2016-08-16	Control	4	0	10	4	19	3	0	7.6	0	12.9	32.04	157.19	31.57	0	96592	0	181000	187600	1798800	20968	0
2016	MEL-04	MEL-04-01	2016-08-16	Control	4	2	10	3	17	3	0	6.44	0.88	8.68	28.43	101.06	13.55	0	32336	14568	216920	181200	949488	2400	0
2016	MEL-04	MEL-04-02	2016-08-16	Control	5	1	13	4	17	2	0	11.83	0.25	13.63	31.98	124.17	10.31	0	91608	7184	288760	213736	1438800	8184	0
2016	MEL-04	MEL-04-03	2016-08-16	Control	5	0	7	2	11	0	0	9.37	0	4.58	1.25	27.14	0	0	96052.5	0	188143.3	24922.7	634951.9	0	0
2016	MEL-04	MEL-04-04	2016-08-16	Control																					

Table E1-1. Phytoplankton richness, biomass, and density by major taxa group for individual samples, 2013 to 2023

Year	Area	Sample ID	Date	Designation	Richness (taxa per sample)							Biomass (mg/m ³)							Density (cells/L)						
					Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno
2017	MEL-02	MEL-02-05	2017-08-15	Impact	7	0	12	4	17	2	0	7.97	0	13.6	36.49	100.59	21.9	0	61872	0	153064	219520	1394496	5200	0
2017	MEL-03	MEL-03-01	2017-08-15	Control	5	0	9	5	17	2	0	4.15	0	5.24	28.46	137.12	27.49	0	26352	0	137696	189184	1310288	18768	0
2017	MEL-03	MEL-03-02	2017-08-15	Control	6	0	13	4	17	2	0	6.44	0	9.12	36.21	120.15	30.3	0	54088	0	131312	252640	1396296	4600	0
2017	MEL-03	MEL-03-03	2017-08-15	Control	6	0	8	4	18	2	1	5.24	0	8.13	22.83	122.39	20.61	2.07	66656	0	166032	146080	1480504	3600	200
2017	MEL-03	MEL-03-04	2017-08-15	Control	6	1	10	4	20	2	0	7.22	0.1	5.21	19.64	150.58	12.02	0	54688	200	102176	124128	1684056	10984	0
2017	MEL-03	MEL-03-05	2017-08-15	Control	8	1	7	4	18	3	0	13.41	0.92	13.07	34.03	149.76	36.88	0	67072	200	109360	217920	1950464	5400	0
2017	MEL-04	MEL-04-01	2017-08-15	Control	8	0	12	3	17	2	0	8.08	0	7.26	48.86	102.35	5.87	0	47504	0	146280	318696	1351392	1000	0
2017	MEL-04	MEL-04-02	2017-08-15	Control	6	1	9	3	17	2	0	11.34	19.25	8.14	37.33	119.28	6.38	0	53888	57472	131112	231688	1523408	1000	0
2017	MEL-04	MEL-04-03	2017-08-15	Control	6	0	9	5	16	3	0	10.38	0	5.19	55.06	110.79	10.32	0	76040	0	116344	368984	1523608	2000	0
2017	MEL-04	MEL-04-04	2017-08-15	Control	6	1	11	3	16	2	0	10.18	38.51	10.43	32.05	129.91	12.04	0	69456	114944	231688	210136	1667888	7784	0
2017	MEL-04	MEL-04-05	2017-08-15	Control	5	1	8	4	18	2	0	3.92	0.43	8.59	35.41	141.59	14.12	0	38720	200	181000	231888	1761680	2200	0
2017	MEL-05	MEL-05-01	2017-08-15	Control	6	1	13	5	18	2	0	12.98	0.2	9.44	57.06	155.71	19.34	0	119944	400	196368	364200	2012720	10384	0
2017	MEL-05	MEL-05-02	2017-08-15	Control	5	0	12	5	20	2	0	14.76	0	13.8	28.13	155.79	13.1	0	126128	0	319096	183600	1776048	2200	0
2017	MEL-05	MEL-05-03	2017-08-15	Control	7	0	13	5	19	2	0	9.68	0	10.71	37.76	127.74	10.7	0	46104	0	102776	240872	1444584	3200	0
2017	MEL-05	MEL-05-04	2017-08-15	Control	7	0	11	5	17	2	0	10.28	0	8.19	35.01	124.24	19.01	0	48904	0	159448	225904	1660304	9984	0
2017	MEL-05	MEL-05-05	2017-08-15	Control	5	0	7	4	18	2	0	7.31	0	4.3	51.91	129.84	10.12	0	67456	0	108760	321496	1329840	1800	0
2018	MEL-01	MEL-01-01	2018-08-31	Impact	9	2	14	5	14	2	0	60.66	1.48	28.38	42.36	165.36	40.63	0	448784	29336	683680	179032	2321032	4800	0
2018	MEL-01	MEL-01-06	2018-08-31	Impact	8	1	10	5	16	3	0	55.55	0.6	23.47	58.79	179.5	38.26	0	343792	800	690864	267640	2450744	4400	0
2018	MEL-01	MEL-01-07	2018-08-31	Impact	8	2	16	5	16	4	0	60.86	7.29	25.05	46.33	138.64	57.95	0	367712	1000	698848	147312	2227440	5800	0
2018	MEL-01	MEL-01-08	2018-08-31	Impact	6	1	11	5	17	3	0	69.98	0.45	21.17	45.17	141.14	18.82	0	319904	600	339448	168064	2163384	2600	0
2018	MEL-01	MEL-01-09	2018-08-31	Impact	9	1	11	5	17	3	0	63.04	0.75	40.22	58.12	166.06	38.32	0	424448	1000	620424	213568	2385488	4200	0
2018	MEL-02	MEL-02-02	2018-08-31	Impact	6	0	9	1	9	3	0	35.06	0	8.3	5.47	35.73	20.62	0	366032	0	252240	3200	538800	2600	0
2018	MEL-02	MEL-02-03	2018-08-31	Impact	10	0	11	4	18	4	0	29.07	0	33.62	50.62	155.77	59.58	0	215352	0	598272	229320	1998352	7200	0
2018	MEL-02	MEL-02-05	2018-08-31	Impact	7	1	8	4	16	3	0	31.07	0.15	26.58	31.51	119.94	37.57	0	272024	200	367584	164248	2004336	11384	0
2018	MEL-02	MEL-02-06	2018-08-31	Impact	8	1	8	3	12	2	0	39.99	1.28	17.44	15.13	56.89	11.74	0	279456	28736	260624	88008	820576	1800	0
2018	MEL-02	MEL-02-08	2018-08-31	Impact	8	0	11	3	14	2	0	37.77	0	12.83	27.24	108.75	21.91	0	261088	0	196168	134712	1401480	3600	0
2018	MEL-03	MEL-03-01	2018-08-31	Control	9	0	7	3	17	4	0	17.94	0	28.44	32.9	192.87	33.2	0	153080	0	195368	184800	2746488	3400	0
2018	MEL-03	MEL-03-02	2018-08-31	Control	9	1	9	5	17	2	0	17.11	0.15	16.41	44.35	144.25	31.61	0	139912	200	239272	251656	1933696	4000	0
2018	MEL-03	MEL-03-03	2018-08-31	Control	8	0	10	5	17	4	0	17.86	0	9.53	31.73	186.65	54.71	0	118760	0	138696	191384	3313424	5600	0
2018	MEL-03	MEL-03-04	2018-08-31	Control	7	1	8	5	15	1	0	15.13	0.89	13.54	59.96	172.9	5.83	0	73856	28736	159648	359416	2150416	1600	0
2018	MEL-03	MEL-03-05	2018-08-31	Control	9	1	10	4	18	2	0	21.15	0.43	22.28	35.43	157.49	14.64	0	129128	200	175616	205952	2364536	2600	0
2018	MEL-04	MEL-04-01	2018-08-31	Control	8	0	10	3	18	3	0	20.82	0	31.76	31.58	119.49	24.58	0	130328	0	143096	203552	1904960	2000	0
2018	MEL-04	MEL-04-02	2018-08-31	Control	8	0	7	5	16	3	0	26.58	0	30.88	48.54	130.49	13.45	0	81640	0	260424	326080	1811168	1200	0
2018	MEL-04	MEL-04-03	2018-08-31	Control	5	1	7	4	17	3	0	14.81	4.92	7.73	63.02	124.96	11.69	0	162648	1400	181400	426456	1810768	800	0
2018	MEL-04	MEL-04-05	2018-08-31	Control	7	0	9	5	16	3	0	18.17	0	20.66	57.2	132.21	27.93	0	135312	0	296144	390336	2054824	2600	0
2018	MEL-05	MEL-05-01	2018-08-31	Control	7	0	8	3	18	2	0	16.22	0	16.64	26.67	130.77	18.84	0	108376	0	145280	174016	2400056	1200	0
2018	MEL-05	MEL-05-02	2018-08-31	Control	7	0	6	2	11	1	0	35.85	0	11.08	15.75	69.84	22.57	0	206768	0	118744	75240	1078800	1200	0
2018	MEL-05	MEL-05-03	2018-08-31	Control	5	0	8	2	14	2	0	21.95	0	18.49	29.42	84.45	7.9	0	229704	0	176216	182200	1056248	800	0
2018	MEL-05	MEL-05-04	2018-08-31	Control	9	1	6	2	13	1	0	24.8	0.6	24.82	13.62	67.72	8.48	0	167448	800	232088	74040	1070816	600	0
2018	MEL-05	MEL-05-05	2018-08-31	Control	6	2	6	2	13	1	0	25.37	2.3	9.1	16.17	72.39	6.23	0	232504	15168	159848	88608	1020128	400	0
2019	MEL-01	MEL-01-01	2019-08-16	Impact	8	1	12	4	20	4	0	28.39	0.3	29.76	28.19	294.92	63.2	0	149712	600	304528	38952	2363952	7800	0
2019	MEL-01	MEL-01-06	2019-08-16	Impact	7	1	8	4	19	4	0	20.59	0.3	14.02	35.29	254.3	61.83	0	110592	600	144680	40952	2181752	8400	0
2019	MEL-01	MEL-01-07	2019-08-16	Impact	9	1	9	4	19	5	0	35.09	0.4	26.38	37.85	241.88	79.16	0	164864	800	231488	91040	2334416	10200	0
2019	MEL-01	MEL-01-08	2019-08-16	Impact	8	1	8	4	20	4	0	30.07	0.3	19.26	27.67	319.65	40.16	0	176464	600	239472	69672	2715368	5600	0
2019	MEL-01	MEL-01-09	2019-08-16	Impact	8	1	8	4	18	3	0	42.51	0.3	24.36	42.89	279.27	49.15	0	268256	600	339248	145312	2267160	8000	0
2019	MEL-02	MEL-02-01	2019-08-16	Impact	8	0	8	3	16	4	0	30.79	0	12.03	6.74	195.56	21.23	0	129328	0	117144	52288	1553944	2600	0
2019	MEL-02	MEL-02-02	2019-08-16	Impact	9	0	9	5	16	2	0	19.52	0	10.26	7.41	124.02	20.12	0	108576	0	173816	67256	1286936	2600	0
2019	MEL-02	MEL-02-03	2019-08-16	Impact	10	0	11	5	16	2	0	35.17	0	8.87	10.63	173.52	16.73	0	111192	0	140096	68056	1683256	2400	0
2019	MEL-02	MEL-02-04	2019-08-16	Impact	9	0	9	5	16	3	0	19.9	0	19.2	118.73	168.38	17.32	0	75056	0	166632	1331240	1535192	2200	0
2019	MEL-02	MEL-02-05	2019-08-16	Impact	9	1	11	4	17	3	0	29.12	0.1	13.75	10.29	187.06	23.34	0	117960	200	155064	75240	1935896	9384	0
2019	MEL-03	MEL-03-01	2019-08-16	Control	9	0	6	4	16	3	0	19.88	0	3.21	6.65	154.08	25.3	0	105176	0	122728	37720	1281952	3000	0

Table E1-1. Phytoplankton richness, biomass, and density by major taxa group for individual samples, 2013 to 2023

Year	Area	Sample ID	Date	Designation	Richness (taxa per sample)							Biomass (mg/m³)							Density (cells/L)						
					Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno
2019	MEL-03	MEL-03-02	2019-08-16	Control	6	0	7	5	19	4	0	13.25	0	7.9	5.43	201.84	14.83	0	159248	0	65456	24352	1749312	2000	0
2019	MEL-03	MEL-03-03	2019-08-16	Control	7	1	8	3	18	3	0	11.33	0.1	12.98	3.93	205.53	10.99	0	138496	200	102176	29736	1455568	1600	0
2019	MEL-03	MEL-03-04	2019-08-16	Control	6	1	9	3	16	1	0	4.96	0.14	12.42	7.67	184.88	1.37	0	53688	200	74040	53088	1705208	200	0
2019	MEL-03	MEL-03-05	2019-08-16	Control	8	1	7	5	16	3	0	27.1	1.46	7.56	8.17	181.26	11.62	0	154264	28736	87408	32936	1719976	1400	0
2019	MEL-04	MEL-04-01	2019-08-16	Control	6	1	7	5	18	3	0	11.06	0.1	11.28	15.65	199.51	6.53	0	89408	200	137296	152664	1626384	1000	0
2019	MEL-04	MEL-04-02	2019-08-16	Control	8	0	8	4	19	2	0	13.14	0	4.98	11.38	182.82	4.73	0	67872	0	166232	82024	1906960	800	0
2019	MEL-04	MEL-04-03	2019-08-16	Control	8	0	6	4	15	2	0	15.12	0	2.17	9.62	176.65	11.97	0	70256	0	52288	88408	1804984	600	0
2019	MEL-04	MEL-04-04	2019-08-16	Control	7	1	8	4	16	1	0	9.06	0.57	4.92	6.48	143.56	3.64	0	110360	57472	67056	65856	1337424	1000	0
2019	MEL-04	MEL-04-05	2019-08-16	Control	8	0	6	4	17	2	0	13.51	0	10.66	7.78	187.24	6.55	0	98992	0	88008	80024	1661904	800	0
2019	MEL-05	MEL-05-01	2019-08-16	Control	8	0	8	4	17	3	0	10	0	6.47	7.91	133.36	24.36	0	61072	0	123528	80424	1101152	3400	0
2019	MEL-05	MEL-05-02	2019-08-16	Control	10	0	9	3	16	3	0	18.8	0	5.37	20.87	171.5	32.65	0	93008	0	87608	197368	1676872	2400	0
2019	MEL-05	MEL-05-03	2019-08-16	Control	6	1	11	4	17	2	0	19.92	3.54	6.27	8.28	114.19	6.16	0	132512	57472	104176	80024	921752	600	0
2019	MEL-05	MEL-05-04	2019-08-16	Control	6	1	6	4	15	2	0	14.59	0.6	21.43	13.49	163.87	11.87	0	48104	1200	109760	117344	1352392	1800	0
2019	MEL-05	MEL-05-05	2019-08-16	Control	9	2	5	4	18	3	0	17.49	1.87	1.58	8.82	162.69	13.56	0	107176	28936	29936	87408	1676472	2400	0
2020	MEL-01	MEL-01-01	2020-08-23	Impact	7	1	9	5	10	2	0	51.08	1.3	7.07	84.3	50.49	11.73	0	328904	2600	100192	187296	714416	2400	0
2020	MEL-01	MEL-01-06	2020-08-23	Impact	6	1	6	5	11	2	0	26.93	1.5	23.26	79.01	68.62	17.69	0	341160	3000	970840	206848	1066432	23952	0
2020	MEL-01	MEL-01-07	2020-08-23	Impact	7	3	11	5	11	3	0	35.51	8.61	14.18	66.89	102.24	18.41	0	425816	75440	444624	301808	1970616	3200	0
2020	MEL-01	MEL-01-08	2020-08-23	Impact	6	1	8	4	12	3	0	34.09	1.5	15.48	72.05	34.9	16.63	0	330024	3000	460976	229784	441224	10384	0
2020	MEL-01	MEL-01-09	2020-08-23	Impact	6	1	9	4	11	1	0	24.74	1.5	18.8	80.02	78.91	8.12	0	252952	3000	540000	413568	1094168	2000	0
2020	MEL-02	MEL-02-01	2020-08-23	Impact	7	1	8	4	13	1	0	35	0.4	27.44	37.28	78.01	3.25	0	258088	800	500296	368600	1078400	800	0
2020	MEL-02	MEL-02-02	2020-08-23	Impact	7	1	7	4	12	2	0	79.12	0.4	4.57	36.19	60.5	7.74	0	275000	800	348232	278008	1200128	1400	0
2020	MEL-02	MEL-02-03	2020-08-23	Impact	7	1	6	5	13	1	0	22.06	0.5	3.6	25.45	66.25	4.87	0	230920	1000	65456	147696	977824	1200	0
2020	MEL-02	MEL-02-04	2020-08-23	Impact	8	1	7	4	8	2	0	31.93	0.5	5.69	43.37	100.54	6.52	0	158512	1000	130712	352048	1487088	600	0
2020	MEL-02	MEL-02-05	2020-08-23	Impact	7	1	4	5	9	2	0	20.8	0.1	27.45	34.76	77.77	7.53	0	261856	200	567736	265240	1221880	1600	0
2020	MEL-03	MEL-03-01	2020-08-23	Control	5	1	9	4	13	3	0	9.59	0.1	5.71	19.7	151.54	14.01	0	51888	200	135512	233488	2040656	2400	0
2020	MEL-03	MEL-03-02	2020-08-23	Control	4	0	4	3	9	2	0	10.15	0	8.19	24.57	176.38	7.32	0	145680	0	97392	305528	1559128	1400	0
2020	MEL-03	MEL-03-03	2020-08-23	Control	5	0	11	3	14	2	0	5.77	0	22.71	26.52	195.77	4.02	0	108760	0	604656	348032	1883608	800	0
2020	MEL-03	MEL-03-04	2020-08-23	Control	5	0	8	4	11	3	0	11.26	0	6.11	18.04	126.37	18.45	0	132312	0	131712	224704	1817752	2400	0
2020	MEL-03	MEL-03-05	2020-08-23	Control	7	1	4	4	12	1	0	23.43	0.1	1.69	18.67	103.15	8.02	0	95592	200	14968	232088	1587664	2200	0
2020	MEL-04	MEL-04-01	2020-08-23	Control	5	1	4	4	14	1	0	8.56	0.2	2.06	21.4	103.38	1.84	0	88208	400	8784	192784	1107336	200	0
2020	MEL-04	MEL-04-02	2020-08-23	Control	5	0	3	5	11	1	0	6.66	0	0.75	14.22	141.25	0.81	0	182600	0	29136	98392	1731744	200	0
2020	MEL-04	MEL-04-03	2020-08-23	Control	7	1	7	4	13	3	0	11.86	0.4	11.05	18.06	101.83	8.34	0	80040	800	132712	184000	1351192	600	0
2020	MEL-04	MEL-04-04	2020-08-23	Control	5	0	7	4	14	1	0	10.7	0	7.13	19.81	115.43	2.43	0	158648	0	59272	178016	1228864	600	0
2020	MEL-04	MEL-04-05	2020-08-23	Control	6	1	6	4	11	1	0	6.9	0.1	3.36	17.57	61.95	1.62	0	66056	200	152464	183400	1106736	400	0
2020	MEL-05	MEL-05-01	2020-08-23	Control	6	2	5	4	10	3	0	14.14	2.8	3.63	15.44	128.89	4.36	0	69656	29336	31536	140896	1501856	600	0
2020	MEL-05	MEL-05-02	2020-08-23	Control	5	1	9	3	11	3	0	8.62	0.3	4.67	15.94	93.2	12.03	0	103376	600	123528	189184	1221880	1600	0
2020	MEL-05	MEL-05-03	2020-08-23	Control	5	1	5	5	14	3	0	11.57	3.58	2.53	13.46	103.46	15.18	0	175216	28736	252440	146480	1243432	1000	0
2020	MEL-05	MEL-05-04	2020-08-23	Control	5	0	9	4	10	2	0	16.95	0	5.38	16.74	101.82	16.14	0	103776	0	138296	175616	1544560	2600	0
2020	MEL-05	MEL-05-05	2020-08-23	Control	5	1	3	3	11	2	0	10.36	0.5	1.91	9.05	90.46	11.7	0	68856	1000	29936	75440	1623584	2600	0
2021	MEL-01	MEL-01-01	2021-08-16	Impact	9	2	14	5	14	5	0	41.19	4.55	21.9	9.43	219.32	77.06	0	394968	64656	456792	33336	1994368	10400	0
2021	MEL-01	MEL-01-06	2021-08-16	Impact	10	1	12	6	15	3	0	39.45	0.8	22.09	21.27	227.11	75.12	0	437088	1600	325680	79840	1999352	12000	0
2021	MEL-01	MEL-01-07	2021-08-16	Impact	11	1	9	4	18	3	0	93.42	0.6	29.12	16.94	223.48	66.14	0	951984	1200	256040	16784	1972016	10400	0
2021	MEL-01	MEL-01-08	2021-08-16	Impact	9	1	8	4	13	5	0	52.92	0.3	13.54	17.52	209.57	60.22	0	382400	600	234288	15584	1814168	9000	0
2021	MEL-01	MEL-01-09	2021-08-16	Impact	11	1	12	4	18	3	0	45.8	0.4	42.45	16.21	200.95	50.85	0	449872	800	714416	63872	1885208	7200	0
2021	MEL-01	MEL-01-10	2021-08-16	Impact	10	1	11	6	15	5	0	84.02	0.5	51.08	12.67	268.68	52.55	0	880712	1000	1029912	20568	2460328	7000	0
2021	MEL-02	MEL-02-02	2021-08-16	Impact	10	2	10	4	14	3	0	37.95	0.48	10.95	6.74	77.6	13.61	0	176448	800	268208	24952	1006560	2200	0
2021	MEL-02	MEL-02-03	2021-08-16	Impact	9	2	14	5	17	3	0	31.16	0.61	18.72	8.87	93.39	15.26	0	212768	7384	397720	46904	1230064	3200	0
2021	MEL-02	MEL-02-05	2021-08-16	Impact	10	2	10	4	14	4	1	54.61	1.13	23.43	13.72	148.42	22.42	0.95	221784	28936	210736	63672	1459352	3200	200
2021	MEL-02	MEL-02-06	2021-08-16	Impact	11	1	10	5	17	3	0	64.97	0.18	10.89	12.2	111.77	13.67	0	344480	200	181400	90008	1300904	2200	0
2021	MEL-02	MEL-02-08	2021-08-16	Impact	10	0	11	6	13	5	0	69.58	0	11.89	13.05	95.93	38.11	0	475608	0	367984	69456	1050264	4600	0
2021	MEL-03	MEL-03-01	2021-08-16	Control	9	0	8	3	18	4	0	14.16	0	26.91	4.18	106.88	52.63	0	184000	0	195368	2600	1294520	3000	0

Table E1-1. Phytoplankton richness, biomass, and density by major taxa group for individual samples, 2013 to 2023

Year	Area	Sample ID	Date	Designation	Richness (taxa per sample)							Biomass (mg/m ³)							Density (cells/L)						
					Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno
2021	MEL-03	MEL-03-02	2021-08-16	Control	8	1	10	5	12	3	0	42.29	2.83	16.52	18.83	174.35	6.98	0	278408	35920	208936	203552	1991368	1000	0
2021	MEL-03	MEL-03-03	2021-08-16	Control	7	0	7	5	12	4	0	15	0	2.71	7.61	66.92	23.48	0	136712	0	73840	52688	886432	2600	0
2021	MEL-03	MEL-03-04	2021-08-16	Control	7	0	8	3	11	4	0	11.39	0	6.84	12.79	87.74	23.48	0	119744	0	31536	130912	971840	2600	0
2021	MEL-03	MEL-03-05	2021-08-16	Control	9	0	10	3	10	4	0	30.06	0	8.8	7.65	109.9	45.61	0	184016	0	68056	59472	960272	2000	0
2021	MEL-04	MEL-04-01	2021-08-16	Control	6	1	6	4	9	3	0	14.72	0.2	4.25	7.28	116.1	13.25	0	100592	400	116744	23952	1028912	1800	0
2021	MEL-04	MEL-04-02	2021-08-16	Control	9	0	5	6	15	2	0	16.18	0	4.28	7.63	92.98	12.81	0	201968	0	324880	38520	814592	1400	0
2021	MEL-04	MEL-04-03	2021-08-16	Control	9	1	11	3	14	3	0	26.14	2.3	7.53	3.16	105.74	21.7	0	182616	200	203752	8584	1662904	2600	0
2021	MEL-04	MEL-04-04	2021-08-16	Control	7	1	12	3	16	4	0	12.61	0.51	29.26	7.53	124.02	15.34	0	177616	7184	311112	24552	1340824	1600	0
2021	MEL-04	MEL-04-05	2021-08-16	Control	5	1	7	4	14	3	0	15.26	0.1	6.66	9.82	86.35	19.83	0	127728	200	267608	33536	993592	2400	0
2021	MEL-05	MEL-05-01	2021-08-16	Control	9	0	7	4	17	3	0	55.11	0	7.26	4.43	90.31	24.69	0	187000	0	316696	23952	822176	3200	0
2021	MEL-05	MEL-05-02	2021-08-16	Control	6	1	8	4	13	3	0	32.56	0.51	5.89	5.08	83.89	22.38	0	300744	7184	152664	10584	864080	2600	0
2021	MEL-05	MEL-05-03	2021-08-16	Control	8	1	9	5	13	2	0	18.14	0.1	6.31	16.61	94.64	11.79	0	96408	200	226104	78840	935920	1400	0
2021	MEL-05	MEL-05-04	2021-08-16	Control	6	1	8	3	12	3	0	14.06	0.51	11.87	8.47	89.87	7.4	0	118144	7184	173616	54288	713216	1400	0
2021	MEL-05	MEL-05-05	2021-08-16	Control	10	3	5	4	11	4	0	17.82	5.28	6.36	13.37	106.96	14.98	0	131528	57872	231888	83624	1309688	1800	0
2022	MEL-01	MEL-01-01	2022-08-20	Impact	8	2	10	2	13	3	0	32.54	0.56	7.62	19.85	50.02	47.99	0	197776	14968	313112	77240	908784	7600	0
2022	MEL-01	MEL-01-06	2022-08-20	Impact	8	1	6	3	14	4	0	43.29	0.3	10.77	9.03	82.92	53.69	0	271648	400	108560	18568	1067232	9400	0
2022	MEL-01	MEL-01-07	2022-08-20	Impact	8	1	9	2	14	3	0	51.52	0.45	7.14	14.66	109.48	78.77	0	318552	600	145480	54488	1707408	12800	0
2022	MEL-01	MEL-01-08	2022-08-20	Impact	8	1	8	2	13	4	0	51.7	0.75	13.46	24.71	98.99	72.91	0	306736	1000	169032	119744	1492288	10000	0
2022	MEL-01	MEL-01-09	2022-08-20	Impact	10	1	10	3	12	4	1	79.31	0.15	15.11	30.54	128.11	87.32	0.4	388344	200	418472	129528	1993768	12600	200
2022	MEL-01	MEL-01-10	2022-08-20	Impact	8	1	9	3	12	4	0	58.83	0.6	10.15	8.08	91.3	94.77	0	280800	800	253240	10984	1468336	12800	0
2022	MEL-02	MEL-02-02	2022-08-20	Impact	7	1	3	2	11	3	0	14.52	0.15	0.65	8.44	159.84	21.51	0	77472	200	7584	73240	1143872	4200	0
2022	MEL-02	MEL-02-03	2022-08-20	Impact	5	1	6	2	15	2	0	9.04	0.15	5.38	8.32	190.47	21.95	0	74272	200	173416	80024	1438432	4400	0
2022	MEL-02	MEL-02-05	2022-08-20	Impact	6	1	9	2	11	3	0	14.09	0.15	7.26	4.15	126.85	35.3	0	101008	200	84624	29736	866896	6600	0
2022	MEL-02	MEL-02-06	2022-08-20	Impact	6	1	9	2	11	3	0	10.1	0.15	7.4	4.14	86.33	42.92	0	143896	200	195368	9184	613256	8200	0
2022	MEL-02	MEL-02-08	2022-08-20	Impact	6	1	9	3	10	3	0	11.97	0.2	15.41	8.51	103.77	39.13	0	28968	400	510864	52888	910000	8000	0
2022	MEL-03	MEL-03-01	2022-08-20	Control	4	0	11	2	11	4	0	2.84	0	4.2	7.37	94.67	23.62	0	45104	0	75440	72640	1008360	4000	0
2022	MEL-03	MEL-03-02	2022-08-20	Control	6	0	5	1	10	3	0	9.19	0	1.53	3.57	104.06	23.94	0	112360	0	50688	43104	944304	4400	0
2022	MEL-03	MEL-03-03	2022-08-20	Control	4	1	7	2	14	3	0	5.74	0.1	6.69	4.74	86.19	28.18	0	10984	200	93592	36920	1038696	5000	0
2022	MEL-03	MEL-03-04	2022-08-20	Control	4	0	5	2	9	3	0	11.09	0	4.11	9.04	103.3	19.91	0	51688	0	79424	80424	1017144	3600	0
2022	MEL-03	MEL-03-05	2022-08-20	Control	3	1	4	1	11	4	0	3.19	0.1	1.24	1.06	66.16	30.4	0	8984	200	29136	600	756120	5200	0
2022	MEL-04	MEL-04-01	2022-08-20	Control	5	1	8	2	10	4	0	4.18	1.46	5.15	3.57	52.53	14.35	0	67056	28736	158648	22552	662328	2000	0
2022	MEL-04	MEL-04-02	2022-08-20	Control	4	0	9	2	9	4	0	3.08	0	10.74	4.78	82.55	14.56	0	31136	0	317296	36920	944104	1600	0
2022	MEL-04	MEL-04-03	2022-08-20	Control	4	0	7	2	10	3	0	3.26	0	5.14	6.56	64.85	42.98	0	75840	0	72640	37920	705632	6800	0
2022	MEL-04	MEL-04-04	2022-08-20	Control	5	1	11	2	10	3	0	9.33	5.28	14.39	10.26	82.81	16.61	0	126328	57472	176016	88008	1037096	2800	0
2022	MEL-04	MEL-04-05	2022-08-20	Control	5	1	7	1	7	2	1	3.57	0.1	4.44	1.42	27.62	15.7	1.5	39720	200	130712	800	511264	2600	200
2022	MEL-05	MEL-05-01	2022-08-20	Control	6	0	7	2	12	3	0	10.69	0	4.78	8.42	80.32	17.49	0	87424	0	145080	87008	727184	3400	0
2022	MEL-05	MEL-05-02	2022-08-20	Control	5	0	5	2	8	4	0	3.14	0	2.04	4.49	98.44	24.67	0	52688	0	23152	9384	634992	4200	0
2022	MEL-05	MEL-05-03	2022-08-20	Control	4	0	5	2	9	3	0	2.81	0	1.59	4.29	42.41	16.24	0	66856	0	94192	22952	319896	3400	0
2022	MEL-05	MEL-05-04	2022-08-20	Control	6	0	4	2	8	4	0	6.83	0	1.01	3.88	84.83	30.7	0	37136	0	7984	22752	585704	5000	0
2022	MEL-05	MEL-05-05	2022-08-20	Control	4	0	5	2	7	2	0	5.48	0	3.14	2.35	63.4	12.79	0	52688	0	100976	8184	428656	2800	0
2023	MEL-01	MEL-01-01	2023-08-22	Impact	8	2	10	4	15	3	0	40.64	1.16	10.89	25.69	256.14	37.23	0	175880	29136	288760	99792	3117488	6400	0
2023	MEL-01	MEL-01-06	2023-08-22	Impact	8	2	6	4	16	3	0	15.53	0.33	8.74	33.82	181.56	55.86	0	166496	800	324280	157264	2983176	10000	0
2023	MEL-01	MEL-01-07	2023-08-22	Impact	8	2	8	2	16	5	0	21.14	2.5	5.3	9.14	189.83	40	0	179096	87008	188784	37920	2183368	6000	0
2023	MEL-01	MEL-01-08	2023-08-22	Impact	8	1	6	4	18	3	0	50.54	0.5	4.15	35.54	118.7	51.52	0	1381976	1000	138296	184400	1740944	10600	0
2023	MEL-01	MEL-01-09	2023-08-22	Impact	8	2	9	5	15	4	0	16.69	1.35	7.08	19.32	146.4	50.54	0	221384	43704	245456	84024	1943896	9400	0
2023	MEL-01	MEL-01-10	2023-08-22	Impact	7	2	10	3	16	4	1	12.76	0.19	8.95	39.7	183.41	59.9	1.88	99824	800	195368	179616	2772840	10600	200
2023	MEL-02	MEL-02-02	2023-08-22	Impact	7	1	9	2	9	4	0	17.17	0.1	14.63	25.75	28	27.18	0	189032	200	577120	139296	518248	4400	0
2023	MEL-02	MEL-02-03	2023-08-22	Impact	6	1	9	4	8	3	0	13.35	0.3	15.82	22	32.47	18.11	0	112408	600	561352	92008	611040	3600	0
2023	MEL-02	MEL-02-05	2023-08-22	Impact	5	2	7	4	12	3	0	14.42	1.64	13.89	10.9	46.99	30.95	0	199400	30936	732768	52288	840928	5600	0
2023	MEL-02	MEL-02-06	2023-08-22	Impact	7	1	10	4	11	3	0	15.76	0.2	16.73	32.43	39.75	20.35	0	113008	400	1157824	176816	978224	3800	0
2023	MEL-02	MEL-02-08	2023-08-22	Impact	7	1	9	4	10	3	0	17.56	0.8	15.23	30.97	22.19	34.59	0	122176	1600	826760	155864	338848	6400	0

Table E1-1. Phytoplankton richness, biomass, and density by major taxa group for individual samples, 2013 to 2023

Year	Area	Sample ID	Date	Designation	Richness (taxa per sample)							Biomass (mg/m³)							Density (cells/L)						
					Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno	Chloro	Chryso	Diatoms	Crypto	Dinoflag	Cyano	Eugleno
2023	MEL-03	MEL-03-02	2023-08-22	Control	7	0	8	4	10	4	0	10.76	0	9.67	23.59	60.59	47.45	0	22368	0	618024	105576	783256	9800	0
2023	MEL-03	MEL-03-03	2023-08-22	Control	6	0	5	3	15	2	0	9.3	0	11.92	30.94	56.87	16.91	0	99192	0	380952	188784	985208	3800	0
2023	MEL-03	MEL-03-04	2023-08-22	Control	7	0	9	5	10	2	0	16.91	0	9.47	27.66	99.48	22.92	0	202568	0	403704	160648	1056248	5200	0
2023	MEL-03	MEL-03-05	2023-08-22	Control	6	1	8	3	10	2	0	13.78	0.1	10.14	13.13	49.14	22.43	0	105376	200	482128	40720	797624	5200	0
2023	MEL-03	MEL-03-01	2023-08-22	Control	8	0	10	4	12	2	0	5.85	0	9.45	25.49	90.69	28.92	0	31152	0	331864	146280	1107136	6600	0
2023	MEL-04	MEL-04-01	2023-08-22	Control	7	0	9	5	11	4	0	14.14	0	10.52	24.4	65.34	30.81	0	148880	0	496496	126728	862080	6400	0
2023	MEL-04	MEL-04-02	2023-08-22	Control	6	0	5	4	8	2	0	7.95	0	5.82	24.87	43.45	15.94	0	127528	0	438624	120544	926736	3800	0
2023	MEL-04	MEL-04-03	2023-08-22	Control	7	0	7	4	8	2	0	14.9	0	11.44	23.9	81.13	7.57	0	139112	0	719200	119544	775872	1800	0
2023	MEL-04	MEL-04-04	2023-08-22	Control	6	0	6	4	8	2	0	13.17	0	5.38	53.16	112.4	15.04	0	99192	0	330864	261440	1602232	3200	0
2023	MEL-04	MEL-04-05	2023-08-22	Control	4	1	7	5	10	2	0	8.06	0.2	5.94	64	61.15	14.85	0	33536	400	331264	365600	1107136	3400	0
2023	MEL-05	MEL-05-01	2023-08-22	Control	7	0	10	5	9	2	0	15.53	0	22.05	50.83	39.93	24.01	0	128728	0	1236248	293760	711216	5600	0
2023	MEL-05	MEL-05-02	2023-08-22	Control	8	2	11	4	8	2	0	10.74	0.19	35.41	46.86	21.95	24.38	0	104176	600	776872	232704	431040	5200	0
2023	MEL-05	MEL-05-03	2023-08-22	Control	6	2	10	4	10	3	0	27.5	5.38	27.52	26.9	27.13	29.39	0	60104	57672	1387112	101992	452792	5600	0
2023	MEL-05	MEL-05-04	2023-08-22	Control	7	0	9	4	9	2	0	11.06	0	12.3	55.58	52.27	28.51	0	97992	0	532616	304144	933920	6000	0
2023	MEL-05	MEL-05-05	2023-08-22	Control	7	1	10	4	9	2	0	25.96	0.1	14.33	37.37	61.74	17.28	0	98392	200	705032	175232	625008	3400	0

Table E1-2. Phytoplankton biomass (mg/m³) for the top 5 taxa in 2023

Area	Station	Date	Biomass Results			Dominant Taxa No. 1			Dominant Taxa No. 2			Dominant Taxa No. 3			Dominant Taxa No. 4			Dominant Taxa No. 5		
			Total (mg/m³)	Top 5 taxa (mg/m³)	% biomass from top 5 taxa	Species	MTG	Biomass	Species	MTG	Biomass	Species	MTG	Biomass	Species	MTG	Biomass	Species	MTG	Biomass
MEL-01	MEL-01-01	2023-08-22	372	189	51%	Dinobryon sertularia Ehrenberg	CHRYSO	48.89	Chrysochromulina parva Lackey	CHRYSO	43.69	Dinobryon bavaricum Imhof	CHRYSO	38.62	Chrysococcus sp.	CHRYSO	29.59	Chrysochromulina laurentiana Kling	CHRYSO	28.34
	MEL-01-06	2023-08-22	296	139	47%	Chrysococcus sp.	CHRYSO	41.34	Chrysochromulina parva Lackey	CHRYSO	28.19	Dinobryon bavaricum Imhof	CHRYSO	24.37	Rhodomonas minuta Skuja	CRYPTO	22.75	Peridinium pusillum (Penard) Lemmermann	DINOFLG	22.28
	MEL-01-07	2023-08-22	268	173	65%	Tabellaria fenestrata (Lyngbye) Kutzing	DIATOMS	60.94	Dinobryon sociale Ehrenberg	CHRYSO	30.87	Chrysochromulina laurentiana Kling	CHRYSO	28.34	Dinobryon sertularia Ehrenberg	CHRYSO	27	Chrysochromulina parva Lackey	CHRYSO	26.31
	MEL-01-08	2023-08-22	261	132	51%	Peridinium pusillum (Penard) Lemmermann	DINOFLG	31.35	Cyclotella michiganiana Skvortzow	DIATOMS	28.21	Chrysococcus sp.	CHRYSO	28.19	Rhodomonas minuta Skuja	CRYPTO	27.08	Dinobryon sertularia Ehrenberg	CHRYSO	17.64
	MEL-01-09	2023-08-22	241	104	43%	Peridinium pusillum (Penard) Lemmermann	DINOFLG	26.4	Chrysococcus sp.	CHRYSO	26.31	Chrysochromulina parva Lackey	CHRYSO	19.26	Chrysochromulina laurentiana Kling	CHRYSO	17	Dinobryon bavaricum Imhof	CHRYSO	14.87
	MEL-01-10	2023-08-22	307	158	52%	Chrysococcus sp.	CHRYSO	45.57	Gymnodinium sp.	DINOFLG	29.3	Chrysochromulina parva Lackey	CHRYSO	29.12	Chrysochromulina laurentiana Kling	CHRYSO	28.34	Rhodomonas minuta Skuja	CRYPTO	26
MEL-02	MEL-02-02	2023-08-22	113	61	54%	Rhodomonas minuta Skuja	CRYPTO	20.58	Chrysococcus sp.	CHRYSO	14.09	Gymnodinium sp.	DINOFLG	10.19	Peridinium pusillum (Penard) Lemmermann	DINOFLG	8.67	Oocystis lacustris Chodat	CHLORO	7.72
	MEL-02-03	2023-08-22	102	58	56%	Oocystis lacustris Chodat	CHLORO	13.82	Rhodomonas minuta Skuja	CRYPTO	13	Chrysochromulina laurentiana Kling	CHRYSO	11.33	Chrysococcus sp.	CHRYSO	10.8	Peridinium pusillum (Penard) Lemmermann	DINOFLG	8.67
	MEL-02-05	2023-08-22	119	59	49%	Gymnodinium sp.	DINOFLG	15.28	Chrysococcus sp.	CHRYSO	14.09	Peridinium pusillum (Penard) Lemmermann	DINOFLG	10.25	Dinobryon sociale Ehrenberg	CHRYSO	9.75	Oocystis lacustris Chodat	CHLORO	9.35
	MEL-02-06	2023-08-22	125	71	57%	Rhodomonas minuta Skuja	CRYPTO	26	Chrysococcus sp.	CHRYSO	17.38	Gymnodinium sp.	DINOFLG	11.46	Chrysochromulina laurentiana Kling	CHRYSO	8.5	Sphaerocystis Schroeteri Chodat	CHLORO	8
	MEL-02-08	2023-08-22	121	67	55%	Rhodomonas minuta Skuja	CRYPTO	22.75	Gymnodinium sp.	DINOFLG	16.56	Peridinium pusillum (Penard) Lemmermann	DINOFLG	12.61	Oocystis lacustris Chodat	CHLORO	8.13	Stichogloea sp.	CHRYSO	7.22
	MEL-03-01	2023-08-22	160	150	94%	Chrysococcus sp.	CHRYSO	34.76	Dinobryon sociale Ehrenberg	CHRYSO	34.12	Chrysococcus sp.	CHRYSO	31.94	Dinobryon sociale Ehrenberg	CHRYSO	27.62	Rhodomonas minuta Skuja	CRYPTO	21.66
MEL-03	MEL-03-02	2023-08-22	152	91	60%	Peridinium pusillum (Penard) Lemmermann	DINOFLG	30.75	Chrysococcus sp.	CHRYSO	19.26	Rhodomonas minuta Skuja	CRYPTO	15.16	Dinobryon sociale Ehrenberg	CHRYSO	14.62	Chrysosphaera globulifera Scherffel	CHRYSO	11.12
	MEL-03-03	2023-08-22	126	84	67%	Rhodomonas minuta Skuja	CRYPTO	28.16	Chrysococcus sp.	CHRYSO	21.61	Dinobryon sociale Ehrenberg	CHRYSO	14.62	Peridinium pusillum (Penard) Lemmermann	DINOFLG	11.82	Planctonema lauterbornii Schmidle	CHLORO	7.61
	MEL-03-04	2023-08-22	176	128	72%	Chrysochromulina laurentiana Kling	CHRYSO	39.68	Chrysococcus sp.	CHRYSO	28.19	Rhodomonas minuta Skuja	CRYPTO	23.83	Dinobryon sociale Ehrenberg	CHRYSO	19.5	Peridinium pusillum (Penard) Lemmermann	DINOFLG	16.55
	MEL-03-05	2023-08-22	109	75	69%	Chrysococcus sp.	CHRYSO	31.94	Peridinium pusillum (Penard) Lemmermann	DINOFLG	17.34	Dinobryon sociale Ehrenberg	CHRYSO	9.75	Cyclotella stelligera Cleve and Grunow	DIATOMS	9.07	Cryptomonas erosa Ehrenberg	CRYPTO	6.99
	MEL-04-01	2023-08-22	145	92	63%	Dinobryon sociale Ehrenberg	CHRYSO	29.25	Peridinium pusillum (Penard) Lemmermann	DINOFLG	22.86	Rhodomonas minuta Skuja	CRYPTO	17.33	Chrysococcus sp.	CHRYSO	13.62	Chrysochromulina laurentiana Kling	CHRYSO	8.5
	MEL-04-02	2023-08-22	98	84	85%	Chrysococcus sp.	CHRYSO	22.55	Chrysococcus sp.	CHRYSO	18.32	Rhodomonas minuta Skuja	CRYPTO	17.33	Peridinium pusillum (Penard) Lemmermann	DINOFLG	13.4	Rhodomonas minuta Skuja	CRYPTO	11.91
MEL-04	MEL-04-03	2023-08-22	139	103	74%	Chrysochromulina laurentiana Kling	CHRYSO	34.01	Dinobryon sociale Ehrenberg	CHRYSO	27.62	Rhodomonas minuta Skuja	CRYPTO	17.33	Chrysococcus sp.	CHRYSO	15.03	Cyclotella stelligera Cleve and Grunow	DIATOMS	9.07
	MEL-04-04	2023-08-22	199	151	76%	Chrysococcus sp.	CHRYSO	43.22	Rhodomonas minuta Skuja	CRYPTO	37.91	Chrysochromulina laurentiana Kling	CHRYSO	34.01	Dinobryon sociale Ehrenberg	CHRYSO	22.75	Cryptomonas erosa Ehrenberg	CRYPTO	12.96
	MEL-04-05	2023-08-22	154	117	76%	Rhodomonas minuta Skuja	CRYPTO	54.16	Chrysococcus sp.	CHRYSO	28.19	Dinobryon sociale Ehrenberg	CHRYSO	16.5	Peridinium pusillum (Penard) Lemmermann	DINOFLG	11.03	Cyclotella stelligera Cleve and Grunow	DIATOMS	6.68
	MEL-05-01	2023-08-22	152	98	65%	Rhodomonas minuta Skuja	CRYPTO	41.16	Chrysococcus sp.	CHRYSO	20.67	Peridinium pusillum (Penard) Lemmermann	DINOFLG	18.92	Oocystis lacustris Chodat	CHLORO	9.55	Dinobryon sociale Ehrenberg	CHRYSO	8.12
	MEL-05-02	2023-08-22	140	86	61%	Rhodomonas minuta Skuja	CRYPTO	33.58	Peridinium pusillum (Penard) Lemmermann	DINOFLG	14.19	Botryococcus braunii Kutzing	CHLORO	13	Chrysococcus sp.	CHRYSO	12.68	Oocystis lacustris Chodat	CHLORO	12.19
	MEL-05-03	2023-08-22	144	68	48%	Peridinium pusillum (Penard) Lemmermann	DINOFLG	15.77	Cyclotella stelligera Cleve and Grunow	DIATOMS	14.81	Rhodomonas minuta Skuja	CRYPTO	14.08	Oocystis lacustris Chodat	CHLORO	12.19	Sphaerocystis Schroeteri Chodat	CHLORO	11.54
MEL-05	MEL-05-04	2023-08-22	160	108	68%	Rhodomonas minuta Skuja	CRYPTO	44.41	Chrysococcus sp.	CHRYSO	22.55	Peridinium pusillum (Penard) Lemmermann	DINOFLG	15.77	Dinobryon sociale Ehrenberg	CHRYSO	13	Gymnodinium sp.	DINOFLG	12.74
	MEL-05-05	2023-08-22	156.78	87	55%	Chrysochromulina laurentiana Kling	CHRYSO	28.34	Rhodomonas minuta Skuja	CRYPTO	24.91	Cyclotella pseudostelligera	DIATOMS	11.86	Dinobryon sociale Ehrenberg	CHRYSO	11.37	Chrysococcus sp.	CHRYSO	10.33

Notes
MTG = major taxa group

Appendix E2

2023 Chlorophyll-a Results



UNIVERSITY OF ALBERTA

Biogeochemical Analytical
Service Laboratory

Analytical Report

Date Reported On: November 16, 2023

ATTN: Randy Schwandt

Reported To: Agnico Eagle

Date Received: August 24, 2023

Project Name: AEM Meliadine 2022

Client Name: Agnico Eagle

Supervisor: Randy Schwandt

Billing Address or Speed Code:

Rankin Inlet, NU, X0C 0G0

Other Information: Not available.

Comments: Not available.

Reviewed by:



Alvin Kwan, BSc.
Quality Assurance Officer

Approved by:



Mingsheng Ma, Ph. D
Laboratory Manager

RESULTS RELAY TO SAMPLE AS RECEIVED. THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY.



Algae Parameters

UA-BASL Sample ID	Received Date	Site Info	Sampling Date	Analyzed Date	Chlorophyll-a (µg/L)
261044	08/24/2023	MEL-01-01-PC	08/22/2023	10/24/2023	3.68
261045	08/24/2023	MEL-01-01-PC	08/22/2023	10/24/2023	3.33
261046	08/24/2023	MEL-01-01-PC	08/22/2023	10/24/2023	4.37
261047	08/24/2023	MEL-01-06-PC	08/22/2023	10/24/2023	3.40
261048	08/24/2023	MEL-01-06-PC	08/22/2023	10/24/2023	4.65
261049	08/24/2023	MEL-01-06-PC	08/22/2023	10/24/2023	4.18
261050	08/24/2023	MEL-01-07-PC	08/22/2023	10/24/2023	4.65
261051	08/24/2023	MEL-01-07-PC	08/22/2023	10/24/2023	3.84
261052	08/24/2023	MEL-01-07-PC	08/22/2023	10/24/2023	3.88
261053	08/24/2023	MEL-01-08-PC	08/22/2023	10/24/2023	4.80
261054	08/24/2023	MEL-01-08-PC	08/22/2023	10/24/2023	3.96
261055	08/24/2023	MEL-01-08-PC	08/22/2023	10/24/2023	4.17
261056	08/24/2023	MEL-01-09-PC	08/22/2023	10/24/2023	3.38
261057	08/24/2023	MEL-01-09-PC	08/22/2023	10/24/2023	3.91
261058	08/24/2023	MEL-01-09-PC	08/22/2023	10/24/2023	3.89
261059	08/24/2023	MEL-01-10-PC	08/22/2023	10/24/2023	3.90
261060	08/24/2023	MEL-01-10-PC	08/22/2023	10/24/2023	4.38
261061	08/24/2023	MEL-01-10-PC	08/22/2023	10/24/2023	3.63
261062	08/24/2023	MEL-02-02-PC	08/17/2023	10/24/2023	1.33
261063	08/24/2023	MEL-02-02-PC	08/17/2023	10/24/2023	1.51
261064	08/24/2023	MEL-02-02-PC	08/17/2023	10/24/2023	1.31
261065	08/24/2023	MEL-02-03-PC	08/17/2023	10/24/2023	1.62
261066	08/24/2023	MEL-02-03-PC	08/17/2023	10/24/2023	1.66
261067	08/24/2023	MEL-02-03-PC	08/17/2023	10/24/2023	1.05
261068	08/24/2023	MEL-02-05-PC	08/17/2023	10/24/2023	1.35
261069	08/24/2023	MEL-02-05-PC	08/17/2023	10/24/2023	1.95
261070	08/24/2023	MEL-02-05-PC	08/17/2023	10/24/2023	1.39
261071	08/24/2023	MEL-02-06-PC	08/17/2023	10/24/2023	2.06
261072	08/24/2023	MEL-02-06-PC	08/17/2023	10/24/2023	1.32
261073	08/24/2023	MEL-02-06-PC	08/17/2023	10/24/2023	1.38
261074	08/24/2023	MEL-02-08-PC	08/17/2023	10/24/2023	1.38
261075	08/24/2023	MEL-02-08-PC	08/17/2023	10/24/2023	1.13
261076	08/24/2023	MEL-02-08-PC	08/17/2023	10/24/2023	1.86
261077	08/24/2023	MEL-03-01-PC	08/18/2023	10/24/2023	0.75
261078	08/24/2023	MEL-03-01-PC	08/18/2023	10/24/2023	0.55
261079	08/24/2023	MEL-03-01-PC	08/18/2023	10/24/2023	0.43



UA-BASL Sample ID	Received Date	Site Info	Sampling Date	Analyzed Date	Chlorophyll-a (µg/L)
261080	08/24/2023	MEL-03-02-PC	08/18/2023	10/24/2023	<0.04
261081	08/24/2023	MEL-03-02-PC	08/18/2023	10/24/2023	0.86
261082	08/24/2023	MEL-03-02-PC	08/18/2023	10/24/2023	0.59
261083	08/24/2023	MEL-03-03-PC	08/18/2023	10/24/2023	0.39
261084	08/24/2023	MEL-03-03-PC	08/18/2023	10/24/2023	0.69
261085	08/24/2023	MEL-03-03-PC	08/18/2023	10/24/2023	0.51
261086	08/24/2023	MEL-03-04-PC	08/18/2023	10/24/2023	0.42
261087	08/24/2023	MEL-03-04-PC	08/18/2023	10/24/2023	0.68
261088	08/24/2023	MEL-03-04-PC	08/18/2023	10/24/2023	0.48
261089	08/24/2023	MEL-03-05-PC	08/18/2023	10/24/2023	0.61
261090	08/24/2023	MEL-03-05-PC	08/18/2023	10/24/2023	0.51
261091	08/24/2023	MEL-03-05-PC	08/18/2023	10/24/2023	0.65
261092	08/24/2023	MEL-04-01-PC	08/18/2023	10/24/2023	0.98
261093	08/24/2023	MEL-04-01-PC	08/18/2023	10/24/2023	1.11
261094	08/24/2023	MEL-04-01-PC	08/18/2023	10/24/2023	0.94
261095	08/24/2023	MEL-04-02-PC	08/18/2023	10/24/2023	1.30
261096	08/24/2023	MEL-04-02-PC	08/18/2023	10/24/2023	0.84
261097	08/24/2023	MEL-04-02-PC	08/18/2023	10/26/2023	1.01
261098	08/24/2023	MEL-04-03-PC	08/18/2023	10/26/2023	0.89
261099	08/24/2023	MEL-04-03-PC	08/18/2023	10/26/2023	0.62
261100	08/24/2023	MEL-04-03-PC	08/18/2023	10/26/2023	0.58
261101	08/24/2023	MEL-04-04-PC	08/18/2023	10/26/2023	0.54
261102	08/24/2023	MEL-04-04-PC	08/18/2023	10/26/2023	0.72
261103	08/24/2023	MEL-04-04-PC	08/18/2023	10/26/2023	0.94
261104	08/24/2023	MEL-04-05-PC	08/18/2023	10/26/2023	0.78
261105	08/24/2023	MEL-04-05-PC	08/18/2023	10/26/2023	0.99
261106	08/24/2023	MEL-04-05-PC	08/18/2023	10/26/2023	0.97
261107	08/24/2023	MEL-05-01-PC	08/18/2023	10/26/2023	0.93
261108	08/24/2023	MEL-05-01-PC	08/18/2023	10/26/2023	0.79
261109	08/24/2023	MEL-05-01-PC	08/18/2023	10/26/2023	0.68
261110	08/24/2023	MEL-05-02-PC	08/18/2023	10/26/2023	0.67
261111	08/24/2023	MEL-05-02-PC	08/18/2023	10/26/2023	0.87
261112	08/24/2023	MEL-05-02-PC	08/18/2023	10/26/2023	0.83
261113	08/24/2023	MEL-05-03-PC	08/18/2023	10/26/2023	0.66
261114	08/24/2023	MEL-05-03-PC	08/18/2023	10/26/2023	0.59
261115	08/24/2023	MEL-05-03-PC	08/18/2023	10/26/2023	0.75
261116	08/24/2023	MEL-05-04-PC	08/18/2023	10/26/2023	0.52
261117	08/24/2023	MEL-05-04-PC	08/18/2023	10/26/2023	0.75



UA-BASL Sample ID	Received Date	Site Info	Sampling Date	Analyzed Date	Chlorophyll-a (µg/L)
261118	08/24/2023	MEL-05-04-PC	08/18/2023	10/26/2023	0.83
261119	08/24/2023	MEL-05-05-PC	08/18/2023	10/26/2023	0.69
261120	08/24/2023	MEL-05-05-PC	08/18/2023	10/26/2023	1.24
261121	08/24/2023	MEL-05-05-PC	08/18/2023	10/26/2023	0.99
261122	08/24/2023	DUP-MEL-AUG-01-PC	08/18/2023	10/26/2023	0.66
261123	08/24/2023	DUP-MEL-AUG-02-PC	08/22/2023	10/26/2023	3.99
261124	08/24/2023	DUP-MEL-AUG-03-PC	08/18/2023	10/26/2023	0.81
261125	08/24/2023	MEL-BLANK-01	08/24/2023	10/26/2023	<0.04
261126	08/24/2023	MEL-BLANK-02	08/24/2023	10/26/2023	<0.04
261127	08/24/2023	MEL-BLANK-03	08/24/2023	10/26/2023	<0.04
261229	08/24/2023	DUP-MEL-AUG-01-PC	08/30/2023	10/26/2023	0.90
261230	08/24/2023	DUP-MEL-AUG-01-PC	08/30/2023	10/26/2023	0.45
261231	08/24/2023	DUP-MEL-AUG-02-PC	08/30/2023	10/26/2023	3.11
261232	08/24/2023	DUP-MEL-AUG-02-PC	08/30/2023	10/26/2023	3.44
261233	08/24/2023	DUP-MEL-AUG-03-PC	08/30/2023	10/26/2023	0.87
261234	08/24/2023	DUP-MEL-AUG-03-PC	08/30/2023	10/26/2023	0.83
Reportable Detection Limit (µg/L)					0.04



Method of Analysis

Laboratory Method	Reference	Method	Instrument
Determination of Chlorophyll a in Water by Fluorometry	*Welschmeyer, N.A. 1994. Fluorometric Analysis of chlorophyll a in the presence of chlorophyll b and pheopigments. <i>Limnol. Oceanogr.</i> , 39(8), 1994, 1985-1992. (Modified)		Agilent Eclipse fluorescence spectrophotometer

* REFERENCE METHOD MODIFIED.

Appendix E3

2023 Phytoplankton Taxonomy Results

Phytoplankton species data for Meliadine 2023 (Azimuth Consulting Group)

** 1st number in **species code** = group
1=cyanophyte 2=chlorophyte 3= Euglenophyte 4=chrysophyte 5=diatoms 6=Cryptophyte 7=Dinoflagellates

***RECOUNT = QA\QC sample

** total daily biomass is sum of all species on a date.

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0101	22-Aug-23	1014	Chroococcus limneticus Lemmermann	28736	0.96266	4	4	33.5
MEL -0101	22-Aug-23	1073	Snowella sp	400	0.2	0	0	500
MEL -0101	22-Aug-23	2101	Carteria spp.	7184	3.76154	10	10	523.6
MEL -0101	22-Aug-23	2112	Sphaerocystis schroeteri Chodat	64656	0.91165	3	3	14.1
MEL -0101	22-Aug-23	2121	Oocystis lacustris Chodat	35920	1.38292	6	3.5	38.5
MEL -0101	22-Aug-23	2145	Crucigenia quadrata Morr.	28736	0.04023	2	2	1.4
MEL -0101	22-Aug-23	2167	Elakatothrix gelatinosa Willen	100576	1.73996	11	2	17.3
MEL -0101	22-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15496	13.6	12	387.4
MEL -0101	22-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	21552	0.81251	6	6	37.7
MEL -0101	22-Aug-23	2206	Botryococcus braunii Kutzing	1000	0.9048	12	12	904.8
MEL -0101	22-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	7184	0.03376	3	3	4.7
MEL -0101	22-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	21552	1.18536	35	2	55
MEL -0101	22-Aug-23	4351	Small chrysophyceae	955472	6.11502	2.3	2.3	6.4
MEL -0101	22-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0101	22-Aug-23	4355	Chrysochromulina parva Lackey	668112	43.69452	5	5	65.4
MEL -0101	22-Aug-23	4357	Chrysococcus sp.	452592	29.59952	5	5	65.4
MEL -0101	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	64656	21.53045	8.6	8.6	333
MEL -0101	22-Aug-23	4361	Kephyrion boreale Skuja	21552	2.56038	6.1	6.1	118.8
MEL -0101	22-Aug-23	4362	Kephyrion sp.	172416	2.20692	2.9	2.9	12.8
MEL -0101	22-Aug-23	4378	Dinobryon borgei Lemmermann	79024	3.35062	9	3	42.4
MEL -0101	22-Aug-23	4383	Dinobryon bavaricum Imhof	150864	34.12544	12	6	226.2
MEL -0101	22-Aug-23	4383	Dinobryon bavaricum Imhof	3600	4.5	0	0	1250
MEL -0101	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	158048	35.75046	12	6	226.2
MEL -0101	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	6600	13.1406	0	0	1991
MEL -0101	22-Aug-23	4390	Dinobryon sociale Ehrenberg	21552	4.87506	12	6	226.2
MEL -0101	22-Aug-23	4390	Dinobryon sociale Ehrenberg	200	0.19	0	0	950
MEL -0101	22-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	7184	0.19612	5.8	3	27.3
MEL -0101	22-Aug-23	4413	Chrysochromulina laurentiana Kling	71840	28.34806	9.1	9.1	394.6
MEL -0101	22-Aug-23	4418	Salpingoecca frequentissima (Zach.) Lemmermann	272992	13.7315	6	4	50.3
MEL -0101	22-Aug-23	4448	Rhizochrysis scherffellii Pascher	3600	10.99296	18	18	3053.6
MEL -0101	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1000	2.4203	11.55	23.1	2420.3
MEL -0101	22-Aug-23	5509	Cyclotella ocellata Pant.	57472	5.99433	4.05	8.1	104.3
MEL -0101	22-Aug-23	5511	Rhizosolenia erienne H.L. Smith	21552	1.67675	11	3	77.8
MEL -0101	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	2400	1.69656	75	6	706.9
MEL -0101	22-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	4200	24.7842	115	14	5901
MEL -0101	22-Aug-23	5524	Asterionella formosa Hassall	23400	2.44998	100	2	104.7
MEL -0101	22-Aug-23	5528	Large diatoms	1200	0.25632	51	4	213.6
MEL -0101	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	64656	1.40304	2.4	4.8	21.7
MEL -0101	22-Aug-23	6554	Rhodomonas minuta Skuja	93392	14.08351	12	6	150.8
MEL -0101	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	5600	10.45968	27.3	14	1867.8
MEL -0101	22-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	400	0.2932	21	10	733
MEL -0101	22-Aug-23	6565	Cryptomonas rostratiformis Skuja	400	0.87572	32	14	2189.3
MEL -0101	22-Aug-23	7632	Gymnodinium sp.	2200	14.01532	23	23	6370.6
MEL -0101	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	3000	12.3789	19.9	19.9	4126.3
MEL -0101	22-Aug-23	7641	Peridinium aciculiferum Lemmermann	1200	10.85736	30	24	9047.8
MEL -0106	22-Aug-23	1054	Planktolyngbya limnetica	200	0.03392	150	1.2	169.6
MEL -0106	22-Aug-23	1073	Snowella sp	600	0.3	0	0	500
MEL -0106	22-Aug-23	2112	Sphaerocystis schroeteri Chodat	201152	2.83624	3	3	14.1
MEL -0106	22-Aug-23	2121	Oocystis lacustris Chodat	79024	3.04242	6	3.5	38.5
MEL -0106	22-Aug-23	2167	Elakatothrix gelatinosa Willen	7184	0.12428	11	2	17.3
MEL -0106	22-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -0106	22-Aug-23	2206	Botryococcus braunii Kutzing	1000	0.9048	12	12	904.8
MEL -0106	22-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	28736	1.58048	35	2	55
MEL -0106	22-Aug-23	4351	Small chrysophyceae	1084784	6.94262	2.3	2.3	6.4
MEL -0106	22-Aug-23	4352	Large chrysophyceae	71840	12.90246	7	7	179.6
MEL -0106	22-Aug-23	4355	Chrysochromulina parva Lackey	431040	28.19002	5	5	65.4
MEL -0106	22-Aug-23	4357	Chrysococcus sp.	632192	41.34536	5	5	65.4
MEL -0106	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	57472	15.99446	8.1	8.1	278.3
MEL -0106	22-Aug-23	4361	Kephyrion boreale Skuja	43104	5.12076	6.1	6.1	118.8
MEL -0106	22-Aug-23	4362	Kephyrion sp.	222704	2.85061	2.9	2.9	12.8
MEL -0106	22-Aug-23	4363	Spiniferomonas serrata	14368	1.67962	6	6.1	116.9
MEL -0106	22-Aug-23	4364	Mallomonas caudata Ivanov	200	1.07234	40	16	5361.7
MEL -0106	22-Aug-23	4378	Dinobryon borgei Lemmermann	35920	1.52301	9	3	42.4
MEL -0106	22-Aug-23	4383	Dinobryon bavaricum Imhof	93392	21.12527	12	6	226.2
MEL -0106	22-Aug-23	4383	Dinobryon bavaricum Imhof	2600	3.25	0	0	1250
MEL -0106	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	7184	1.62502	12	6	226.2
MEL -0106	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	4000	7.964	0	0	1991
MEL -0106	22-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	28736	0.78449	5.8	3	27.3
MEL -0106	22-Aug-23	4413	Chrysochromulina laurentiana Kling	28736	11.33923	9.1	9.1	394.6
MEL -0106	22-Aug-23	4418	Salpingoecca frequentissima (Zach.) Lemmermann	222704	11.20201	6	4	50.3
MEL -0106	22-Aug-23	4448	Rhizochrysis scherffellii Pascher	2200	6.71792	18	18	3053.6
MEL -0106	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1200	2.90436	11.55	23.1	2420.3

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0106	22-Aug-23	5509	Cyclotella ocellata Pant.	35920	3.74646	4.05	8.1	104.3
MEL -0106	22-Aug-23	5511	Rhizosolenia erienne H.L. Smith	21552	1.67675	11	3	77.8
MEL -0106	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	2600	1.83794	75	6	706.9
MEL -0106	22-Aug-23	5518	Synedra acus Kutzing	6000	0.7224	115	2	120.4
MEL -0106	22-Aug-23	5523	Synedra ulna (Nitzsch) Ehrenberg	200	0.87126	260	8	4356.3
MEL -0106	22-Aug-23	5524	Asterionella formosa Hassall	20000	2.094	100	2	104.7
MEL -0106	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	79024	1.71482	2.4	4.8	21.7
MEL -0106	22-Aug-23	6554	Rhodomonas minuta Skuja	150864	22.75029	12	6	150.8
MEL -0106	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	4600	8.59188	27.3	14	1867.8
MEL -0106	22-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1000	0.733	21	10	733
MEL -0106	22-Aug-23	6565	Cryptomonas rostratiformis Skuja	800	1.75144	32	14	2189.3
MEL -0106	22-Aug-23	7632	Gymnodinium sp.	3000	19.1118	23	23	6370.6
MEL -0106	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	5400	22.28202	19.9	19.9	4126.3
MEL -0106	22-Aug-23	7641	Peridinium aciculiferum Lemmermann	1600	14.47648	30	24	9047.8
MEL -0107	22-Aug-23	1014	Chroococcus limneticus Lemmermann	86208	2.10348	3.6	3.6	24.4
MEL -0107	22-Aug-23	1073	Snowella sp	800	0.4	0	0	500
MEL -0107	22-Aug-23	2112	Sphaerocystis schroeteri Chodat	114944	1.62071	3	3	14.1
MEL -0107	22-Aug-23	2121	Oocystis lacustris Chodat	50288	0.98564	6	2.5	19.6
MEL -0107	22-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0107	22-Aug-23	2191	Staurodesmus cuspidatus (Brebisson and Ralfs) Teiling	200	0.18096	18	16	904.8
MEL -0107	22-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -0107	22-Aug-23	2205	Mougeotia sp.	7184	0.1523	3	3	21.2
MEL -0107	22-Aug-23	2206	Botryococcus braunii Kutzing	1600	1.44768	12	12	904.8
MEL -0107	22-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	7184	0.39512	35	2	55
MEL -0107	22-Aug-23	4351	Small chrysophyceae	689664	4.41385	2.3	2.3	6.4
MEL -0107	22-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0107	22-Aug-23	4355	Chrysochromulina parva Lackey	301728	19.73301	5	5	65.4
MEL -0107	22-Aug-23	4357	Chrysococcus sp.	380752	24.90118	5	5	65.4
MEL -0107	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	28736	7.99723	8.1	8.1	278.3
MEL -0107	22-Aug-23	4361	Kephyrion boreale Skuja	14368	1.70692	6.1	6.1	118.8
MEL -0107	22-Aug-23	4362	Kephyrion sp.	186784	2.39084	2.9	2.9	12.8
MEL -0107	22-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	200	0.20944	20	10	1047.2
MEL -0107	22-Aug-23	4378	Dinobryon borgei Lemmermann	136496	5.78743	9	3	42.4
MEL -0107	22-Aug-23	4383	Dinobryon bavaricum Imhof	71840	16.25021	12	6	226.2
MEL -0107	22-Aug-23	4383	Dinobryon bavaricum Imhof	1600	2	0	0	1250
MEL -0107	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	43104	9.75012	12	6	226.2
MEL -0107	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	7000	13.937	0	0	1991
MEL -0107	22-Aug-23	4390	Dinobryon sociale Ehrenberg	136496	30.8754	12	6	226.2
MEL -0107	22-Aug-23	4413	Chrysochromulina laurentiana Kling	71840	28.34806	9.1	9.1	394.6
MEL -0107	22-Aug-23	4414	Stichogloea spp.	50288	2.52949	6	4	50.3
MEL -0107	22-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	50288	2.52949	6	4	50.3
MEL -0107	22-Aug-23	4448	Rhizochrysis scherffellii Pascher	5000	15.268	18	18	3053.6
MEL -0107	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2400	5.80872	11.55	23.1	2420.3
MEL -0107	22-Aug-23	5509	Cyclotella ocellata Pant.	43104	4.49575	4.05	8.1	104.3
MEL -0107	22-Aug-23	5511	Rhizosolenia erienne H.L. Smith	21552	1.67675	11	3	77.8
MEL -0107	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	4400	3.11036	75	6	706.9
MEL -0107	22-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	600	0.80046	26	14	1334.1
MEL -0107	22-Aug-23	5518	Synedra acus Kutzing	2600	0.31304	115	2	120.4
MEL -0107	22-Aug-23	5524	Asterionella formosa Hassall	32600	3.41322	100	2	104.7
MEL -0107	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	71840	1.55893	2.4	4.8	21.7
MEL -0107	22-Aug-23	6554	Rhodomonas minuta Skuja	35920	5.41674	12	6	150.8
MEL -0107	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	2000	3.7356	27.3	14	1867.8
MEL -0107	22-Aug-23	7631	Gymnodinium helveticum Penard	200	4.71238	50	30	23561.9
MEL -0107	22-Aug-23	7632	Gymnodinium sp.	2200	14.01532	23	23	6370.6
MEL -0107	22-Aug-23	7635	Peridinium willei Huitfeldt-Kaas	200	5.30436	37	37	26521.8
MEL -0107	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	3000	12.3789	19.9	19.9	4126.3
MEL -0107	22-Aug-23	7641	Peridinium aciculiferum Lemmermann	400	3.61912	30	24	9047.8
MEL -0107R	22-Aug-23	1014	Chroococcus limneticus Lemmermann	172416	4.20695	3.6	3.6	24.4
MEL -0107R	22-Aug-23	1073	Snowella sp	400	0.2	0	0	500
MEL -0107R	22-Aug-23	2112	Sphaerocystis schroeteri Chodat	57472	0.81036	3	3	14.1
MEL -0107R	22-Aug-23	2121	Oocystis lacustris Chodat	28736	0.92243	5	3.5	32.1
MEL -0107R	22-Aug-23	2145	Crucigenia quadrata Morr.	28736	0.04023	2	2	1.4
MEL -0107R	22-Aug-23	2167	Elakatothrix gelatinosa Willen	21552	0.37285	11	2	17.3
MEL -0107R	22-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0107R	22-Aug-23	2206	Botryococcus braunii Kutzing	800	0.41888	10	10	523.6
MEL -0107R	22-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	7184	0.03376	3	3	4.7
MEL -0107R	22-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	7184	0.39512	35	2	55
MEL -0107R	22-Aug-23	4351	Small chrysophyceae	826160	5.28742	2.3	2.3	6.4
MEL -0107R	22-Aug-23	4352	Large chrysophyceae	21552	3.87074	7	7	179.6
MEL -0107R	22-Aug-23	4355	Chrysochromulina parva Lackey	402304	26.31068	5	5	65.4
MEL -0107R	22-Aug-23	4357	Chrysococcus sp.	337648	22.08218	5	5	65.4
MEL -0107R	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	14368	3.99861	8.1	8.1	278.3
MEL -0107R	22-Aug-23	4361	Kephyrion boreale Skuja	21552	2.56038	6.1	6.1	118.8
MEL -0107R	22-Aug-23	4362	Kephyrion sp.	136496	1.74715	2.9	2.9	12.8
MEL -0107R	22-Aug-23	4378	Dinobryon borgei Lemmermann	43104	1.82761	9	3	42.4
MEL -0107R	22-Aug-23	4383	Dinobryon bavaricum Imhof	79024	17.87523	12	6	226.2
MEL -0107R	22-Aug-23	4383	Dinobryon bavaricum Imhof	600	0.75	0	0	1250
MEL -0107R	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	71840	16.25021	12	6	226.2
MEL -0107R	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	5400	10.7514	0	0	1991
MEL -0107R	22-Aug-23	4390	Dinobryon sociale Ehrenberg	107760	24.37531	12	6	226.2
MEL -0107R	22-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	21552	0.58837	5.8	3	27.3
MEL -0107R	22-Aug-23	4411	Bitrichia chodatii (Reverdin) Chodat	14368	0.72271	6	4	50.3
MEL -0107R	22-Aug-23	4413	Chrysochromulina laurentiana Kling	43104	17.00884	9.1	9.1	394.6

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0107R	22-Aug-23	4414	Stichogloea spp.	21552	1.08407	6	4	50.3
MEL -0107R	22-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	100576	5.05897	6	4	50.3
MEL -0107R	22-Aug-23	4448	Rhizochrysis scherffellii Pascher	4200	12.82512	18	18	3053.6
MEL -0107R	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3200	7.74496	11.55	23.1	2420.3
MEL -0107R	22-Aug-23	5509	Cyclotella ocellata Pant.	28736	2.99716	4.05	8.1	104.3
MEL -0107R	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	86208	60.94044	75	6	706.9
MEL -0107R	22-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	1200	1.60092	26	14	1334.1
MEL -0107R	22-Aug-23	5518	Synedra acus Kutzing	1800	0.21672	115	2	120.4
MEL -0107R	22-Aug-23	5524	Asterionella formosa Hassall	28200	2.95254	100	2	104.7
MEL -0107R	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	122128	2.65018	2.4	4.8	21.7
MEL -0107R	22-Aug-23	6554	Rhodomonas minuta Skuja	64656	9.75012	12	6	150.8
MEL -0107R	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	3200	5.97696	27.3	14	1867.8
MEL -0107R	22-Aug-23	6565	Cryptomonas rostratiformis Skuja	400	0.87572	32	14	2189.3
MEL -0107R	22-Aug-23	7631	Gymnodinium helveticum Penard	400	9.42476	50	30	23561.9
MEL -0107R	22-Aug-23	7632	Gymnodinium sp.	2200	14.01532	23	23	6370.6
MEL -0107R	22-Aug-23	7635	Peridinium willei Huitfeldt-Kaas	200	5.30436	37	37	26521.8
MEL -0107R	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2200	9.07786	19.9	19.9	4126.3
MEL -0107R	22-Aug-23	7641	Peridinium aciculiferum Lemmermann	200	1.80956	30	24	9047.8
MEL -0108	22-Aug-23	1073	Snowella sp	1000	0.5	0	0	500
MEL -0108	22-Aug-23	2112	Sphaerocystis Schroeteri Chodat	122128	1.722	3	3	14.1
MEL -0108	22-Aug-23	2121	Oocystis lacustris Chodat	7184	0.27658	6	3.5	38.5
MEL -0108	22-Aug-23	2126	Chodatella sp.	7184	0.36136	6	4	50.3
MEL -0108	22-Aug-23	2178	Cosmarium sp.	600	0.83778	20	20	1396.3
MEL -0108	22-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07634	13.5	12	381.7
MEL -0108	22-Aug-23	2206	Botryococcus braunii Kutzing	1000	0.9048	12	12	904.8
MEL -0108	22-Aug-23	4351	Small chrysophyceae	617824	3.95407	2.3	2.3	6.4
MEL -0108	22-Aug-23	4352	Large chrysophyceae	21552	3.87074	7	7	179.6
MEL -0108	22-Aug-23	4355	Chrysochromulina parva Lackey	114944	7.51734	5	5	65.4
MEL -0108	22-Aug-23	4357	Chrysococcus sp.	431040	28.19002	5	5	65.4
MEL -0108	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	28736	7.99723	8.1	8.1	278.3
MEL -0108	22-Aug-23	4361	Kephyrion boreale Skuja	14368	1.70692	6.1	6.1	118.8
MEL -0108	22-Aug-23	4362	Kephyrion sp.	143680	1.8391	2.9	2.9	12.8
MEL -0108	22-Aug-23	4378	Dinobryon borgei Lemmermann	57472	2.43681	9	3	42.4
MEL -0108	22-Aug-23	4383	Dinobryon bavaricum Imhof	14368	3.25004	12	6	226.2
MEL -0108	22-Aug-23	4383	Dinobryon bavaricum Imhof	2600	3.25	0	0	1250
MEL -0108	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	28736	6.50008	12	6	226.2
MEL -0108	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	5600	11.1496	0	0	1991
MEL -0108	22-Aug-23	4390	Dinobryon sociale Ehrenberg	57472	13.00017	12	6	226.2
MEL -0108	22-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	7184	0.19612	5.8	3	27.3
MEL -0108	22-Aug-23	4411	Bitrichia chodatii (Reverdin) Chodat	7184	0.36136	6	4	50.3
MEL -0108	22-Aug-23	4413	Chrysochromulina laurentiana Kling	28736	11.33923	9.1	9.1	394.6
MEL -0108	22-Aug-23	4414	Stichogloea spp.	28736	1.44542	6	4	50.3
MEL -0108	22-Aug-23	4415	Bicosoeca lacustris Clark	7184	0.36638	4.6	4.6	51
MEL -0108	22-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	122128	6.14304	6	4	50.3
MEL -0108	22-Aug-23	4448	Rhizochrysis scherffellii Pascher	1400	4.27504	18	18	3053.6
MEL -0108	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1800	4.35654	11.55	23.1	2420.3
MEL -0108	22-Aug-23	5508	Cyclotella pseudostelligera	14368	7.90815	7.05	14.1	550.4
MEL -0108	22-Aug-23	5509	Cyclotella ocellata Pant.	21552	2.24787	4.05	8.1	104.3
MEL -0108	22-Aug-23	5511	Rhizosolenia eriensis H.L. Smith	21552	1.82761	12	3	84.8
MEL -0108	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	6000	4.2414	75	6	706.9
MEL -0108	22-Aug-23	5518	Synedra acus Kutzing	4400	0.5302	115.1	2	120.5
MEL -0108	22-Aug-23	5524	Asterionella formosa Hassall	12000	1.2564	100	2	104.7
MEL -0108	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	1300304	28.2166	2.4	4.8	21.7
MEL -0108	22-Aug-23	6554	Rhodomonas minuta Skuja	179600	27.08368	12	6	150.8
MEL -0108	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	3600	6.72408	27.3	14	1867.8
MEL -0108	22-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	600	0.4398	21	10	733
MEL -0108	22-Aug-23	6565	Cryptomonas rostratiformis Skuja	600	1.31358	32	14	2189.3
MEL -0108	22-Aug-23	7632	Gymnodinium sp.	2600	16.56356	23	23	6370.6
MEL -0108	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	7600	31.35988	19.9	19.9	4126.3
MEL -0108	22-Aug-23	7641	Peridinium aciculiferum Lemmermann	400	3.61912	30	24	9047.8
MEL -0109	22-Aug-23	1014	Chroococcus limneticus Lemmermann	43104	1.05174	3.6	3.6	24.4
MEL -0109	22-Aug-23	1073	Snowella sp	600	0.3	0	0	500
MEL -0109	22-Aug-23	2105	Chlamydomonas spp.	28736	1.44542	6	4	50.3
MEL -0109	22-Aug-23	2112	Sphaerocystis Schroeteri Chodat	86208	1.21553	3	3	14.1
MEL -0109	22-Aug-23	2121	Oocystis lacustris Chodat	21552	0.82975	6	3.5	38.5
MEL -0109	22-Aug-23	2130	Scenedesmus quadricauda (Turp.) Brebisson	28736	1.29887	8.1	4	45.2
MEL -0109	22-Aug-23	2145	Crucigenia quadrata Morr.	57472	0.08046	2	2	1.4
MEL -0109	22-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0109	22-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07748	13.6	12	387.4
MEL -0109	22-Aug-23	2206	Botryococcus braunii Kutzing	800	0.72384	12	12	904.8
MEL -0109	22-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	21552	1.18536	35	2	55
MEL -0109	22-Aug-23	4351	Small chrysophyceae	689664	4.41385	2.3	2.3	6.4
MEL -0109	22-Aug-23	4352	Large chrysophyceae	14368	2.58049	7	7	179.6
MEL -0109	22-Aug-23	4355	Chrysochromulina parva Lackey	294544	19.26318	5	5	65.4
MEL -0109	22-Aug-23	4357	Chrysococcus sp.	402304	26.31068	5	5	65.4
MEL -0109	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	43104	11.99584	8.1	8.1	278.3
MEL -0109	22-Aug-23	4362	Kephyrion sp.	100576	1.28737	2.9	2.9	12.8
MEL -0109	22-Aug-23	4378	Dinobryon borgei Lemmermann	50288	2.13221	9	3	42.4
MEL -0109	22-Aug-23	4383	Dinobryon bavaricum Imhof	50288	11.37515	12	6	226.2
MEL -0109	22-Aug-23	4383	Dinobryon bavaricum Imhof	2800	3.5	0	0	1250
MEL -0109	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	21552	4.87506	12	6	226.2
MEL -0109	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	4200	8.3622	0	0	1991
MEL -0109	22-Aug-23	4390	Dinobryon sociale Ehrenberg	64656	14.62519	12	6	226.2

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0109	22-Aug-23	4411	Bitrichia chodatii (Reverdin) Chodat	14368	0.72271	6	4	50.3
MEL -0109	22-Aug-23	4413	Chrysochromulina laurentiana Kling	43104	17.00884	9.1	9.1	394.6
MEL -0109	22-Aug-23	4414	Stichogloea spp.	28736	1.44542	6	4	50.3
MEL -0109	22-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	114944	3.13797	5.8	3	27.3
MEL -0109	22-Aug-23	4448	Rhizochrysis scherffellii Pascher	4400	13.43584	18	18	3053.6
MEL -0109	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3000	7.2609	11.55	23.1	2420.3
MEL -0109	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	1200	0.84828	75	6	706.9
MEL -0109	22-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	200	0.26682	26	14	1334.1
MEL -0109	22-Aug-23	5515	Fragilaria crotonensis Kitton	3000	0.8922	71	4	297.4
MEL -0109	22-Aug-23	5518	Synedra acus Kutzing	3800	0.45752	115	2	120.4
MEL -0109	22-Aug-23	5523	Synedra ulna (Nitzsch) Ehrenberg	200	0.52778	280	6	2638.9
MEL -0109	22-Aug-23	5524	Asterionella formosa Hassall	23200	2.42904	100	2	104.7
MEL -0109	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	186784	4.05321	2.4	4.8	21.7
MEL -0109	22-Aug-23	6554	Rhodomonas minuta Skuja	64656	9.75012	12	6	150.8
MEL -0109	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	4200	7.84476	27.3	14	1867.8
MEL -0109	22-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	400	0.2932	21	10	733
MEL -0109	22-Aug-23	6565	Cryptomonas rostratiformis Skuja	400	0.87572	32	14	2189.3
MEL -0109	22-Aug-23	6568	Katablepharis ovalis Skuja	14368	0.57903	7.6	4	40.3
MEL -0109	22-Aug-23	7631	Gymnodinium helveticum Penard	200	4.71238	50	30	23561.9
MEL -0109	22-Aug-23	7632	Gymnodinium sp.	2200	14.01532	23	23	6370.6
MEL -0109	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	6400	26.40832	19.9	19.9	4126.3
MEL -0109	22-Aug-23	7641	Peridinium aciculiferum Lemmermann	600	5.42868	30	24	9047.8
MEL -0110	22-Aug-23	1054	Planktolynghbya limnetica	600	0.09906	146	1.2	165.1
MEL -0110	22-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -0110	22-Aug-23	2100	Pyramidomonas tetrahynchus Schmarda	400	0.26548	15	13	663.7
MEL -0110	22-Aug-23	2101	Carteria spp.	7184	3.76154	10	10	523.6
MEL -0110	22-Aug-23	2112	Sphaerocystis Schroeteri Chodat	114944	1.62071	3	3	14.1
MEL -0110	22-Aug-23	2121	Oocystis lacustris Chodat	21552	0.82975	6	3.5	38.5
MEL -0110	22-Aug-23	2130	Scenedesmus quadricauda (Turp.) Brebisson	28736	1.2845	8	4	44.7
MEL -0110	22-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0110	22-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07748	13.6	12	387.4
MEL -0110	22-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -0110	22-Aug-23	2206	Botryococcus braunii Kutzing	600	0.54288	12	12	904.8
MEL -0110	22-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	14368	0.06753	3	3	4.7
MEL -0110	22-Aug-23	3301	Euglena acus Ehrenberg	200	1.88496	125	12	9424.8
MEL -0110	22-Aug-23	4351	Small chrysophyceae	969840	6.20698	2.3	2.3	6.4
MEL -0110	22-Aug-23	4352	Large chrysophyceae	35920	6.45123	7	7	179.6
MEL -0110	22-Aug-23	4355	Chrysochromulina parva Lackey	445408	29.12968	5	5	65.4
MEL -0110	22-Aug-23	4357	Chrysococcus sp.	696848	45.57386	5	5	65.4
MEL -0110	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	28736	7.99723	8.1	8.1	278.3
MEL -0110	22-Aug-23	4362	Kephyrion sp.	93392	1.19542	2.9	2.9	12.8
MEL -0110	22-Aug-23	4363	Spiniferomonas serrata	21552	2.56038	6.1	6.1	118.8
MEL -0110	22-Aug-23	4378	Dinobryon borgei Lemmermann	86208	3.65522	9	3	42.4
MEL -0110	22-Aug-23	4383	Dinobryon bavaricum Imhof	14368	3.25004	12	6	226.2
MEL -0110	22-Aug-23	4383	Dinobryon bavaricum Imhof	1200	1.5	0	0	1250
MEL -0110	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	14368	3.25004	12	6	226.2
MEL -0110	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	3200	6.3712	0	0	1991
MEL -0110	22-Aug-23	4390	Dinobryon sociale Ehrenberg	93392	21.12527	12	6	226.2
MEL -0110	22-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	35920	0.98062	5.8	3	27.3
MEL -0110	22-Aug-23	4411	Bitrichia chodatii (Reverdin) Chodat	7184	0.36136	6	4	50.3
MEL -0110	22-Aug-23	4413	Chrysochromulina laurentiana Kling	71840	28.34806	9.1	9.1	394.6
MEL -0110	22-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	150864	7.58846	6	4	50.3
MEL -0110	22-Aug-23	4448	Rhizochrysis scherffellii Pascher	2600	7.93936	18	18	3053.6
MEL -0110	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1600	3.87248	11.55	23.1	2420.3
MEL -0110	22-Aug-23	5508	Cyclotella pseudostelligera	200	0.11008	7.05	14.1	550.4
MEL -0110	22-Aug-23	5511	Rhizosolenia erienne H.L. Smith	21552	1.67675	11	3	77.8
MEL -0110	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	6400	4.52416	75	6	706.9
MEL -0110	22-Aug-23	5518	Synedra acus Kutzing	2800	0.33712	115	2	120.4
MEL -0110	22-Aug-23	5524	Asterionella formosa Hassall	9800	1.02606	100	2	104.7
MEL -0110	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	57472	1.24714	2.4	4.8	21.7
MEL -0110	22-Aug-23	6554	Rhodomonas minuta Skuja	172416	26.00033	12	6	150.8
MEL -0110	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	6400	11.95392	27.3	14	1867.8
MEL -0110	22-Aug-23	6565	Cryptomonas rostratiformis Skuja	800	1.75144	32	14	2189.3
MEL -0110	22-Aug-23	7631	Gymnodinium helveticum Penard	200	4.71238	50	30	23561.9
MEL -0110	22-Aug-23	7632	Gymnodinium sp.	4600	29.30476	23	23	6370.6
MEL -0110	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	5400	22.28202	19.9	19.9	4126.3
MEL -0110	22-Aug-23	7641	Peridinium aciculiferum Lemmermann	400	3.61912	30	24	9047.8
MEL -0202	17-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -0202	17-Aug-23	2112	Sphaerocystis Schroeteri Chodat	215520	3.03883	3	3	14.1
MEL -0202	17-Aug-23	2113	Pediastrum duplex Meyen	200	0.28	0	0	1400
MEL -0202	17-Aug-23	2121	Oocystis lacustris Chodat	272992	7.72567	6	3	28.3
MEL -0202	17-Aug-23	2137	Dictyosphaerium simplex Sukja	86208	0.36207	2	2	4.2
MEL -0202	17-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0202	17-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.16188	13.9	12	404.7
MEL -0202	17-Aug-23	2193	Staurodesmus paradoxum Meyen	400	1.13264	26	24	2831.6
MEL -0202	17-Aug-23	2206	Botryococcus braunii Kutzing	800	0.72384	12	12	904.8
MEL -0202	17-Aug-23	2247	Oocystis gigas Archer	400	0.96508	18	16	2412.7
MEL -0202	17-Aug-23	4351	Small chrysophyceae	179600	1.00576	2.2	2.2	5.6
MEL -0202	17-Aug-23	4357	Chrysococcus sp.	215520	14.09501	5	5	65.4
MEL -0202	17-Aug-23	4362	Kephyrion sp.	64656	0.8276	2.9	2.9	12.8
MEL -0202	17-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	200	0.20734	19.8	10	1036.7
MEL -0202	17-Aug-23	4369	Mallomonas pseudocoronata Prescottt	400	0.69368	23	12	1734.2
MEL -0202	17-Aug-23	4388	Dinobryon sertularia Ehrenberg	21552	4.87506	12	6	226.2

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0202	17-Aug-23	4388	Dinobryon sertularia Ehrenberg	400	0.7964	0	0	1991
MEL -0202	17-Aug-23	4390	Dinobryon sociale Ehrenberg	7184	1.62502	12	6	226.2
MEL -0202	17-Aug-23	4413	Chrysochromulina laurentiana Kling	7184	2.83481	9.1	9.1	394.6
MEL -0202	17-Aug-23	4414	Stichogloea spp.	21552	1.08407	6	4	50.3
MEL -0202	17-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3200	7.6448	11.5	23	2389
MEL -0202	17-Aug-23	5509	Cyclotella ocellata Pant.	21552	2.33408	4.1	8.2	108.3
MEL -0202	17-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	1200	0.84828	75	6	706.9
MEL -0202	17-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	1000	1.3341	26	14	1334.1
MEL -0202	17-Aug-23	5518	Synedra acus Kutzing	400	0.04816	115	2	120.4
MEL -0202	17-Aug-23	5524	Asterionella formosa Hassall	18000	1.8846	100	2	104.7
MEL -0202	17-Aug-23	5551	Cyclotella michiganiana Skvortzow	143680	3.11786	2.4	4.8	21.7
MEL -0202	17-Aug-23	6554	Rhodomonas minuta Skuja	136496	20.5836	12	6	150.8
MEL -0202	17-Aug-23	6558	Cryptomonas erosa Ehrenberg	2800	5.17244	27	14	1847.3
MEL -0202	17-Aug-23	7631	Gymnodinium helveticum Penard	200	4.71238	50	30	23561.9
MEL -0202	17-Aug-23	7632	Gymnodinium sp.	1600	10.19296	23	23	6370.6
MEL -0202	17-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2200	8.6735	19.6	19.6	3942.5
MEL -0202	17-Aug-23	7641	Peridinium aciculiferum Lemmermann	400	3.61912	30	24	9047.8
MEL -0203	17-Aug-23	1073	Snowella sp	600	0.3	0	0	500
MEL -0203	17-Aug-23	2112	Sphaerocystis schroeteri Chodat	28736	0.40518	3	3	14.1
MEL -0203	17-Aug-23	2113	Pediastrum duplex Meyen	200	0.28	0	0	1400
MEL -0203	17-Aug-23	2121	Oocystis lacustris Chodat	488512	13.82489	6	3	28.3
MEL -0203	17-Aug-23	2137	Dictyosphaerium simplex Sukja	7184	0.03017	2	2	4.2
MEL -0203	17-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0203	17-Aug-23	2145	Crucigenia quadrata Morr.	28736	0.04023	2	2	1.4
MEL -0203	17-Aug-23	2182	Euastrum spp.	200	0.27926	20	20	1396.3
MEL -0203	17-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.16188	13.9	12	404.7
MEL -0203	17-Aug-23	2247	Oocystis gigas Archer	200	0.48254	18	16	2412.7
MEL -0203	17-Aug-23	4351	Small chrysophyceae	287360	1.8391	2.3	2.3	6.4
MEL -0203	17-Aug-23	4357	Chrysococcus sp.	165232	10.80617	5	5	65.4
MEL -0203	17-Aug-23	4383	Dinobryon bavaricum Imhof	200	0.19	0	0	950
MEL -0203	17-Aug-23	4388	Dinobryon sertularia Ehrenberg	200	0.25	0	0	1250
MEL -0203	17-Aug-23	4390	Dinobryon sociale Ehrenberg	21552	4.87506	12	6	226.2
MEL -0203	17-Aug-23	4413	Chrysochromulina laurentiana Kling	28736	11.33923	9.1	9.1	394.6
MEL -0203	17-Aug-23	4414	Stichogloea spp.	7184	0.36136	6	4	50.3
MEL -0203	17-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	100576	2.8463	6	3	28.3
MEL -0203	17-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3200	7.6448	11.5	23	2389
MEL -0203	17-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.77803	4.1	8.2	108.3
MEL -0203	17-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	1400	0.98966	75	6	706.9
MEL -0203	17-Aug-23	5518	Synedra acus Kutzing	600	0.06912	110	2	115.2
MEL -0203	17-Aug-23	5524	Asterionella formosa Hassall	21000	2.1987	100	2	104.7
MEL -0203	17-Aug-23	5551	Cyclotella michiganiana Skvortzow	79024	1.71482	2.4	4.8	21.7
MEL -0203	17-Aug-23	6554	Rhodomonas minuta Skuja	86208	13.00017	12	6	150.8
MEL -0203	17-Aug-23	6558	Cryptomonas erosa Ehrenberg	4000	7.3892	27	14	1847.3
MEL -0203	17-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1600	1.1728	21	10	733
MEL -0203	17-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.45156	33	14	2257.8
MEL -0203	17-Aug-23	7632	Gymnodinium sp.	1200	7.64472	23	23	6370.6
MEL -0203	17-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2200	8.6735	19.6	19.6	3942.5
MEL -0203	17-Aug-23	7641	Peridinium aciculiferum Lemmermann	200	1.80956	30	24	9047.8
MEL -0205	17-Aug-23	1014	Chroococcus limneticus Lemmermann	28736	0.54024	3.3	3.3	18.8
MEL -0205	17-Aug-23	1073	Snowella sp	2200	1.1	0	0	500
MEL -0205	17-Aug-23	2105	Chlamydomonas spp.	14368	0.35202	5.2	3	24.5
MEL -0205	17-Aug-23	2112	Sphaerocystis schroeteri Chodat	143680	2.02589	3	3	14.1
MEL -0205	17-Aug-23	2121	Oocystis lacustris Chodat	330464	9.35213	6	3	28.3
MEL -0205	17-Aug-23	2137	Dictyosphaerium simplex Sukja	143680	0.60346	2	2	4.2
MEL -0205	17-Aug-23	2145	Crucigenia quadrata Morr.	28736	0.13506	3	3	4.7
MEL -0205	17-Aug-23	2167	Elakatothrix gelatinosa Willen	57472	0.90231	10	2	15.7
MEL -0205	17-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	14368	0.54167	6	6	37.7
MEL -0205	17-Aug-23	4351	Small chrysophyceae	193968	1.2414	2.3	2.3	6.4
MEL -0205	17-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0205	17-Aug-23	4357	Chrysococcus sp.	215520	14.09501	5	5	65.4
MEL -0205	17-Aug-23	4362	Kephyrion sp.	122128	1.56324	2.9	2.9	12.8
MEL -0205	17-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	200	0.20526	19.6	10	1026.3
MEL -0205	17-Aug-23	4378	Dinobryon borgei Lemmermann	7184	0.3046	9	3	42.4
MEL -0205	17-Aug-23	4381	Dinobryon mucronatom Nygaard	21552	2.82116	10	5	130.9
MEL -0205	17-Aug-23	4388	Dinobryon sertularia Ehrenberg	200	0.25	0	0	1250
MEL -0205	17-Aug-23	4390	Dinobryon sociale Ehrenberg	43104	9.75012	12	6	226.2
MEL -0205	17-Aug-23	4413	Chrysochromulina laurentiana Kling	21552	8.50442	9.1	9.1	394.6
MEL -0205	17-Aug-23	4414	Stichogloea spp.	50288	2.52949	6	4	50.3
MEL -0205	17-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	158048	4.47276	6	3	28.3
MEL -0205	17-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2400	5.7336	11.5	23	2389
MEL -0205	17-Aug-23	5509	Cyclotella ocellata Pant.	35920	3.77519	4.08	8.1	105.1
MEL -0205	17-Aug-23	5518	Synedra acus Kutzing	400	0.04816	115	2	120.4
MEL -0205	17-Aug-23	5524	Asterionella formosa Hassall	17000	1.7799	100	2	104.7
MEL -0205	17-Aug-23	5551	Cyclotella michiganiana Skvortzow	143680	3.11786	2.4	4.8	21.7
MEL -0205	17-Aug-23	6554	Rhodomonas minuta Skuja	50288	7.58343	12	6	150.8
MEL -0205	17-Aug-23	6558	Cryptomonas erosa Ehrenberg	1400	2.58622	27	14	1847.3
MEL -0205	17-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	400	0.2932	21	10	733
MEL -0205	17-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.45156	33	14	2257.8
MEL -0205	17-Aug-23	7632	Gymnodinium sp.	2400	15.28944	23	23	6370.6
MEL -0205	17-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2600	10.2505	19.6	19.6	3942.5
MEL -0205	17-Aug-23	7641	Peridinium aciculiferum Lemmermann	600	5.42868	30	24	9047.8
MEL -0206	17-Aug-23	1073	Snowella sp	400	0.2	0	0	500
MEL -0206	17-Aug-23	2105	Chlamydomonas spp.	7184	0.0819	4.1	2.3	11.4

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0206	17-Aug-23	2112	Sphaerocystis schroeteri Chodat	567536	8.00226	3	3	14.1
MEL -0206	17-Aug-23	2121	Oocystis lacustris Chodat	172416	4.87937	6	3	28.3
MEL -0206	17-Aug-23	2137	Dictyosphaerium simplex Sukja	79024	0.3319	2	2	4.2
MEL -0206	17-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	21552	1.04312	7.7	4	48.4
MEL -0206	17-Aug-23	2145	Crucigenia quadrata Morr.	287360	1.35059	3	3	4.7
MEL -0206	17-Aug-23	2182	Euastrum spp.	200	0.37168	22	22	1858.4
MEL -0206	17-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	600	0.23244	13.6	12	387.4
MEL -0206	17-Aug-23	2206	Botryococcus braunii Kutzing	400	0.36192	12	12	904.8
MEL -0206	17-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	21552	0.10129	3	3	4.7
MEL -0206	17-Aug-23	4351	Small chrysophyceae	481328	2.69544	2.2	2.2	5.6
MEL -0206	17-Aug-23	4355	Chrysochromulina parva Lackey	21552	1.4095	5	5	65.4
MEL -0206	17-Aug-23	4357	Chrysococcus sp.	265808	17.38384	5	5	65.4
MEL -0206	17-Aug-23	4362	Kephyrion sp.	100576	1.28737	2.9	2.9	12.8
MEL -0206	17-Aug-23	4383	Dinobryon bavaricum Imhof	200	0.25	0	0	1250
MEL -0206	17-Aug-23	4388	Dinobryon sertularia Ehrenberg	7184	1.62502	12	6	226.2
MEL -0206	17-Aug-23	4388	Dinobryon sertularia Ehrenberg	800	1.5928	0	0	1991
MEL -0206	17-Aug-23	4390	Dinobryon sociale Ehrenberg	7184	1.62502	12	6	226.2
MEL -0206	17-Aug-23	4413	Chrysochromulina laurentiana Kling	21552	8.50442	9.1	9.1	394.6
MEL -0206	17-Aug-23	4414	Stichogloea spp.	35920	1.80678	6	4	50.3
MEL -0206	17-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	35920	1.01654	6	3	28.3
MEL -0206	17-Aug-23	4448	Rhizochrysis scherffellii Pascher	200	0.61072	18	18	3053.6
MEL -0206	17-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1800	4.3002	11.5	23	2389
MEL -0206	17-Aug-23	5509	Cyclotella ocellata Pant.	57472	5.99433	4.05	8.1	104.3
MEL -0206	17-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	1600	1.13104	75	6	706.9
MEL -0206	17-Aug-23	5515	Fragilaria crotonensis Kitton	6800	1.99376	70	4	293.2
MEL -0206	17-Aug-23	5518	Synedra acus Kutzing	600	0.06912	110	2	115.2
MEL -0206	17-Aug-23	5524	Asterionella formosa Hassall	16000	1.6752	100	2	104.7
MEL -0206	17-Aug-23	5551	Cyclotella michiganiana Skvortzow	28736	0.62357	2.4	4.8	21.7
MEL -0206	17-Aug-23	6554	Rhodomonas minuta Skuja	172416	26.00033	12	6	150.8
MEL -0206	17-Aug-23	6558	Cryptomonas erosa Ehrenberg	2200	3.91336	26	14	1778.8
MEL -0206	17-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1600	1.1728	21	10	733
MEL -0206	17-Aug-23	6565	Cryptomonas rostratiformis Skuja	600	1.35468	33	14	2257.8
MEL -0206	17-Aug-23	7632	Gymnodinium sp.	1800	11.46708	23	23	6370.6
MEL -0206	17-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	1800	7.0965	19.6	19.6	3942.5
MEL -0206	17-Aug-23	7641	Peridinium aciculiferum Lemmermann	200	1.80956	30	24	9047.8
MEL -0208	17-Aug-23	1073	Snowella sp	1600	0.8	0	0	500
MEL -0208	17-Aug-23	2112	Sphaerocystis schroeteri Chodat	272992	3.84919	3	3	14.1
MEL -0208	17-Aug-23	2121	Oocystis lacustris Chodat	287360	8.13229	6	3	28.3
MEL -0208	17-Aug-23	2137	Dictyosphaerium simplex Sukja	136496	0.57328	2	2	4.2
MEL -0208	17-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	28736	1.39082	7.7	4	48.4
MEL -0208	17-Aug-23	2145	Crucigenia quadrata Morr.	57472	0.08046	2	2	1.4
MEL -0208	17-Aug-23	2167	Elakatothrix gelatinosa Willen	35920	0.56394	10	2	15.7
MEL -0208	17-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0208	17-Aug-23	2206	Botryococcus braunii Kutzing	400	0.36192	12	12	904.8
MEL -0208	17-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	7184	0.03376	3	3	4.7
MEL -0208	17-Aug-23	4351	Small chrysophyceae	100576	0.56323	2.2	2.2	5.6
MEL -0208	17-Aug-23	4362	Kephyrion sp.	7184	0.09196	2.9	2.9	12.8
MEL -0208	17-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	200	0.20734	19.8	10	1036.7
MEL -0208	17-Aug-23	4388	Dinobryon sertularia Ehrenberg	800	1.5928	0	0	1991
MEL -0208	17-Aug-23	4390	Dinobryon sociale Ehrenberg	21552	4.87506	12	6	226.2
MEL -0208	17-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	7184	0.18966	5.6	3	26.4
MEL -0208	17-Aug-23	4413	Chrysochromulina laurentiana Kling	14368	5.66961	9.1	9.1	394.6
MEL -0208	17-Aug-23	4414	Stichogloea spp.	143680	7.2271	6	4	50.3
MEL -0208	17-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	43104	1.21984	6	3	28.3
MEL -0208	17-Aug-23	4448	Rhizochrysis scherffellii Pascher	200	0.61072	18	18	3053.6
MEL -0208	17-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1800	4.3002	11.5	23	2389
MEL -0208	17-Aug-23	5509	Cyclotella ocellata Pant.	57472	5.99433	4.05	8.1	104.3
MEL -0208	17-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	7000	4.9483	75	6	706.9
MEL -0208	17-Aug-23	5515	Fragilaria crotonensis Kitton	400	0.11728	70	4	293.2
MEL -0208	17-Aug-23	5518	Synedra acus Kutzing	600	0.06912	110	2	115.2
MEL -0208	17-Aug-23	5524	Asterionella formosa Hassall	11800	1.23546	100	2	104.7
MEL -0208	17-Aug-23	5551	Cyclotella michiganiana Skvortzow	43104	0.93536	2.4	4.8	21.7
MEL -0208	17-Aug-23	6554	Rhodomonas minuta Skuja	150864	22.75029	12	6	150.8
MEL -0208	17-Aug-23	6558	Cryptomonas erosa Ehrenberg	3200	5.69216	26	14	1778.8
MEL -0208	17-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1000	0.733	21	10	733
MEL -0208	17-Aug-23	6565	Cryptomonas rostratiformis Skuja	800	1.80624	33	14	2257.8
MEL -0208	17-Aug-23	7632	Gymnodinium sp.	2600	16.56356	23	23	6370.6
MEL -0208	17-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	3200	12.616	19.6	19.6	3942.5
MEL -0208	17-Aug-23	7641	Peridinium aciculiferum Lemmermann	600	5.42868	30	24	9047.8
MEL -0301	18-Aug-23	2105	Chlamydomonas spp.	7184	0.19325	5.7	3	26.9
MEL -0301	18-Aug-23	2112	Sphaerocystis schroeteri Chodat	43104	0.60777	3	3	14.1
MEL -0301	18-Aug-23	2121	Oocystis lacustris Chodat	150864	3.98281	5.6	3	26.4
MEL -0301	18-Aug-23	2137	Dictyosphaerium simplex Sukja	64656	0.27156	2	2	4.2
MEL -0301	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0301	18-Aug-23	2182	Euastrum spp.	400	0.74336	22	22	1858.4
MEL -0301	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07748	13.6	12	387.4
MEL -0301	18-Aug-23	2193	Staurodesmus paradoxum Meyen	200	0.56632	26	24	2831.6
MEL -0301	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	57472	2.16669	6	6	37.7
MEL -0301	18-Aug-23	2206	Botryococcus braunii Kutzing	600	0.54288	12	12	904.8
MEL -0301	18-Aug-23	4351	Small chrysophyceae	172416	0.96553	2.2	2.2	5.6
MEL -0301	18-Aug-23	4355	Chrysochromulina parva Lackey	7184	0.46983	5	5	65.4
MEL -0301	18-Aug-23	4357	Chrysococcus sp.	531616	34.76769	5	5	65.4
MEL -0301	18-Aug-23	4361	Kephyrion boreale Skuja	7184	0.85346	6.1	6.1	118.8

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0301	18-Aug-23	4362	Kephyrion sp.	71840	0.91955	2.9	2.9	12.8
MEL -0301	18-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	200	0.20944	20	10	1047.2
MEL -0301	18-Aug-23	4378	Dinobryon borgei Lemmermann	28736	1.21841	9	3	42.4
MEL -0301	18-Aug-23	4383	Dinobryon bavaricum Imhof	600	0.75	0	0	1250
MEL -0301	18-Aug-23	4390	Dinobryon sociale Ehrenberg	122128	27.62535	12	6	226.2
MEL -0301	18-Aug-23	4413	Chrysochromulina laurentiana Kling	43104	17.00884	9.1	9.1	394.6
MEL -0301	18-Aug-23	4414	Stichogloea spp.	114944	5.78168	6	4	50.3
MEL -0301	18-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	7184	0.19972	5.9	3	27.8
MEL -0301	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	800	1.9112	11.5	23	2389
MEL -0301	18-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.74929	4.05	8.1	104.3
MEL -0301	18-Aug-23	5511	Rhizosolenia erienne H.L. Smith	7184	0.6092	12	3	84.8
MEL -0301	18-Aug-23	5515	Fragilaria crotonensis Kitton	800	0.23456	70	4	293.2
MEL -0301	18-Aug-23	5518	Synedra acus Kutzing	400	0.04608	110	2	115.2
MEL -0301	18-Aug-23	5524	Asterionella formosa Hassall	7400	0.77478	100	2	104.7
MEL -0301	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	7184	0.15589	2.4	4.8	21.7
MEL -0301	18-Aug-23	5720	Cyclotella bodanica Eulenst.	200	1.41124	16.5	33	7056.2
MEL -0301	18-Aug-23	6554	Rhodomonas minuta Skuja	143680	21.66694	12	6	150.8
MEL -0301	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	1200	2.20848	26.9	14	1840.4
MEL -0301	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1000	0.7679	22	10	767.9
MEL -0301	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	400	0.87572	32	14	2189.3
MEL -0301	18-Aug-23	7632	Gymnodinium sp.	1200	7.64472	23	23	6370.6
MEL -0301	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	5400	21.2895	19.6	19.6	3942.5
MEL -0301R	18-Aug-23	2112	Sphaerocystis schroeteri Chodat	28736	0.40518	3	3	14.1
MEL -0301R	18-Aug-23	2121	Oocystis lacustris Chodat	86208	2.27589	5.6	3	26.4
MEL -0301R	18-Aug-23	2137	Dictyosphaerium simplex Sukja	86208	0.36207	2	2	4.2
MEL -0301R	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0301R	18-Aug-23	2182	Euastrum spp.	200	0.37168	22	22	1858.4
MEL -0301R	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	43104	1.62502	6	6	37.7
MEL -0301R	18-Aug-23	2206	Botryococcus braunii Kutzing	400	0.36192	12	12	904.8
MEL -0301R	18-Aug-23	4351	Small chrysophyceae	136496	0.76438	2.2	2.2	5.6
MEL -0301R	18-Aug-23	4352	Large chrysophyceae	14368	2.58049	7	7	179.6
MEL -0301R	18-Aug-23	4357	Chrysococcus sp.	488512	31.94868	5	5	65.4
MEL -0301R	18-Aug-23	4358	Chrysostephanosphaera globulifera Scherffell	14368	3.99861	8.1	8.1	278.3
MEL -0301R	18-Aug-23	4361	Kephyrion boreale Skuja	7184	0.85346	6.1	6.1	118.8
MEL -0301R	18-Aug-23	4362	Kephyrion sp.	114944	1.47128	2.9	2.9	12.8
MEL -0301R	18-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	600	0.62832	20	10	1047.2
MEL -0301R	18-Aug-23	4378	Dinobryon borgei Lemmermann	7184	0.3046	9	3	42.4
MEL -0301R	18-Aug-23	4383	Dinobryon bavaricum Imhof	400	0.5	0	0	1250
MEL -0301R	18-Aug-23	4390	Dinobryon sociale Ehrenberg	150864	34.12544	12	6	226.2
MEL -0301R	18-Aug-23	4411	Bitrichia chodatii (Reverdin) Chodat	7184	0.36136	6	4	50.3
MEL -0301R	18-Aug-23	4413	Chrysochromulina laurentiana Kling	35920	14.17403	9.1	9.1	394.6
MEL -0301R	18-Aug-23	4414	Stichogloea spp.	136496	6.86575	6	4	50.3
MEL -0301R	18-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	7184	0.19972	5.9	3	27.8
MEL -0301R	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	600	1.4334	11.5	23	2389
MEL -0301R	18-Aug-23	5509	Cyclotella ocellata Pant.	21552	2.24787	4.05	8.1	104.3
MEL -0301R	18-Aug-23	5511	Rhizosolenia erienne H.L. Smith	14368	1.21841	12	3	84.8
MEL -0301R	18-Aug-23	5515	Fragilaria crotonensis Kitton	1600	0.46912	70	4	293.2
MEL -0301R	18-Aug-23	5518	Synedra acus Kutzing	200	0.02304	110	2	115.2
MEL -0301R	18-Aug-23	5524	Asterionella formosa Hassall	9800	1.02606	100	2	104.7
MEL -0301R	18-Aug-23	5720	Cyclotella bodanica Eulenst.	200	1.41124	16.5	33	7056.2
MEL -0301R	18-Aug-23	6554	Rhodomonas minuta Skuja	114944	17.33356	12	6	150.8
MEL -0301R	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	600	1.10424	26.9	14	1840.4
MEL -0301R	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	600	0.46074	22	10	767.9
MEL -0301R	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	600	1.31358	32	14	2189.3
MEL -0301R	18-Aug-23	7632	Gymnodinium sp.	2000	12.7412	23	23	6370.6
MEL -0301R	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	4800	18.924	19.6	19.6	3942.5
MEL -0302	18-Aug-23	2112	Sphaerocystis schroeteri Chodat	258624	3.6466	3	3	14.1
MEL -0302	18-Aug-23	2121	Oocystis lacustris Chodat	143680	4.06614	6	3	28.3
MEL -0302	18-Aug-23	2137	Dictyosphaerium simplex Sukja	143680	0.60346	2	2	4.2
MEL -0302	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0302	18-Aug-23	2145	Crucigenia quadrata Morr.	28736	0.04023	2	2	1.4
MEL -0302	18-Aug-23	2167	Elakatothrix gelatinosa Willen	28736	0.45116	10	2	15.7
MEL -0302	18-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0302	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -0302	18-Aug-23	4351	Small chrysophyceae	258624	1.44829	2.2	2.2	5.6
MEL -0302	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0302	18-Aug-23	4357	Chrysococcus sp.	294544	19.26318	5	5	65.4
MEL -0302	18-Aug-23	4358	Chrysostephanosphaera globulifera Scherffell	43104	11.12945	7.9	7.9	258.2
MEL -0302	18-Aug-23	4361	Kephyrion boreale Skuja	7184	0.85346	6.1	6.1	118.8
MEL -0302	18-Aug-23	4362	Kephyrion sp.	35920	0.45978	2.9	2.9	12.8
MEL -0302	18-Aug-23	4383	Dinobryon bavaricum Imhof	7184	1.62502	12	6	226.2
MEL -0302	18-Aug-23	4383	Dinobryon bavaricum Imhof	200	0.25	0	0	1250
MEL -0302	18-Aug-23	4390	Dinobryon sociale Ehrenberg	64656	14.62519	12	6	226.2
MEL -0302	18-Aug-23	4413	Chrysochromulina laurentiana Kling	21552	8.50442	9.1	9.1	394.6
MEL -0302	18-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	43104	1.19829	5.9	3	27.8
MEL -0302	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2600	6.2114	11.5	23	2389
MEL -0302	18-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.69541	3.95	7.9	96.8
MEL -0302	18-Aug-23	5515	Fragilaria crotonensis Kitton	600	0.17592	70	4	293.2
MEL -0302	18-Aug-23	5518	Synedra acus Kutzing	1200	0.13824	110	2	115.2
MEL -0302	18-Aug-23	5524	Asterionella formosa Hassall	3200	0.33504	100	2	104.7
MEL -0302	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	7184	0.15589	2.4	4.8	21.7
MEL -0302	18-Aug-23	5720	Cyclotella bodanica Eulenst.	400	3.08692	17	34	7717.3
MEL -0302	18-Aug-23	6554	Rhodomonas minuta Skuja	100576	15.16686	12	6	150.8

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0302	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3000	5.5212	26.9	14	1840.4
MEL -0302	18-Aug-23	6559	Cryptomonas ovata Ehrenberg	1000	2.1893	32	14	2189.3
MEL -0302	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1000	0.733	21	10	733
MEL -0302	18-Aug-23	7631	Gymnodinium helveticum Penard	200	4.71238	50	30	23561.9
MEL -0302	18-Aug-23	7632	Gymnodinium sp.	1600	10.19296	23	23	6370.6
MEL -0302	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	7800	30.7515	19.6	19.6	3942.5
MEL -0302	18-Aug-23	7641	Peridinium aciculiferum Lemmermann	200	1.80956	30	24	9047.8
MEL -0303	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	35920	0.50647	3	3	14.1
MEL -0303	18-Aug-23	2121	Oocystis lacustris Chodat	79024	2.23638	6	3	28.3
MEL -0303	18-Aug-23	2137	Dictyosphaerium simplex Sukja	244256	1.02588	2	2	4.2
MEL -0303	18-Aug-23	2169	Planctonema lauterbornii Schmidle	21552	7.61648	18	5	353.4
MEL -0303	18-Aug-23	2193	Staurodesmus paradoxum Meyen	200	0.56632	26	24	2831.6
MEL -0303	18-Aug-23	4351	Small chrysophyceae	316096	1.77014	2.2	2.2	5.6
MEL -0303	18-Aug-23	4352	Large chrysophyceae	35920	6.45123	7	7	179.6
MEL -0303	18-Aug-23	4355	Chrysochromulina parva Lackey	28736	1.87933	5	5	65.4
MEL -0303	18-Aug-23	4357	Chrysococcus sp.	330464	21.61235	5	5	65.4
MEL -0303	18-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	7184	1.99931	8.1	8.1	278.3
MEL -0303	18-Aug-23	4362	Kephyrion sp.	114944	1.47128	2.9	2.9	12.8
MEL -0303	18-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	600	0.62832	20	10	1047.2
MEL -0303	18-Aug-23	4378	Dinobryon borgei Lemmermann	21552	0.9138	9	3	42.4
MEL -0303	18-Aug-23	4388	Dinobryon sertularia Ehrenberg	400	0.5	0	0	1250
MEL -0303	18-Aug-23	4390	Dinobryon sociale Ehrenberg	64656	14.62519	12	6	226.2
MEL -0303	18-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	7184	0.19972	5.9	3	27.8
MEL -0303	18-Aug-23	4411	Bitrichia chodatii (Reverdin) Chodat	7184	0.36136	6	4	50.3
MEL -0303	18-Aug-23	4413	Chrysochromulina laurentiana Kling	7184	2.83481	9.1	9.1	394.6
MEL -0303	18-Aug-23	4414	Stichogloea spp.	21552	1.08407	6	4	50.3
MEL -0303	18-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	21552	0.60992	6	3	28.3
MEL -0303	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2200	5.2558	11.5	23	2389
MEL -0303	18-Aug-23	5509	Cyclotella ocellata Pant.	21552	2.24787	4.05	8.1	104.3
MEL -0303	18-Aug-23	5515	Fragilaria crotonensis Kitton	400	0.11728	70	4	293.2
MEL -0303	18-Aug-23	5518	Synedra acus Kutzing	1200	0.13824	110	2	115.2
MEL -0303	18-Aug-23	5524	Asterionella formosa Hassall	2000	0.2094	100	2	104.7
MEL -0303	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	71840	1.37214	2.3	4.6	19.1
MEL -0303	18-Aug-23	6554	Rhodomonas minuta Skuja	186784	28.16703	12	6	150.8
MEL -0303	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	1200	2.20848	26.9	14	1840.4
MEL -0303	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	800	0.5864	21	10	733
MEL -0303	18-Aug-23	7632	Gymnodinium sp.	800	5.09648	23	23	6370.6
MEL -0303	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	3000	11.8275	19.6	19.6	3942.5
MEL -0304	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	21552	0.30388	3	3	14.1
MEL -0304	18-Aug-23	2121	Oocystis lacustris Chodat	172416	4.87937	6	3	28.3
MEL -0304	18-Aug-23	2137	Dictyosphaerium simplex Sukja	150864	0.63363	2	2	4.2
MEL -0304	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0304	18-Aug-23	2178	Cosmarium sp.	400	0.55852	20	20	1396.3
MEL -0304	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15496	13.6	12	387.4
MEL -0304	18-Aug-23	2193	Staurodesmus paradoxum Meyen	600	1.69896	26	24	2831.6
MEL -0304	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	21552	0.81251	6	6	37.7
MEL -0304	18-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	28736	0.13506	3	3	4.7
MEL -0304	18-Aug-23	4351	Small chrysophyceae	294544	1.64945	2.2	2.2	5.6
MEL -0304	18-Aug-23	4352	Large chrysophyceae	35920	6.45123	7	7	179.6
MEL -0304	18-Aug-23	4357	Chrysococcus sp.	431040	28.19002	5	5	65.4
MEL -0304	18-Aug-23	4361	Kephyrion boreale Skuja	7184	0.85346	6.1	6.1	118.8
MEL -0304	18-Aug-23	4362	Kephyrion sp.	86208	1.10346	2.9	2.9	12.8
MEL -0304	18-Aug-23	4383	Dinobryon bavaricum Imhof	7184	1.62502	12	6	226.2
MEL -0304	18-Aug-23	4388	Dinobryon sertularia Ehrenberg	200	0.25	0	0	1250
MEL -0304	18-Aug-23	4390	Dinobryon sociale Ehrenberg	86208	19.50025	12	6	226.2
MEL -0304	18-Aug-23	4413	Chrysochromulina laurentiana Kling	100576	39.68729	9.1	9.1	394.6
MEL -0304	18-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	7184	0.20331	6	3	28.3
MEL -0304	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2400	5.7336	11.5	23	2389
MEL -0304	18-Aug-23	5509	Cyclotella ocellata Pant.	50288	5.24504	4.05	8.1	104.3
MEL -0304	18-Aug-23	5515	Fragilaria crotonensis Kitton	4000	1.1392	68	4	284.8
MEL -0304	18-Aug-23	5518	Synedra acus Kutzing	600	0.06282	100	2	104.7
MEL -0304	18-Aug-23	5524	Asterionella formosa Hassall	1400	0.14658	100	2	104.7
MEL -0304	18-Aug-23	5540	Aulacoseira italica v subarctica (O. Muller) Simonsen	200	1.50954	250	6.2	7547.7
MEL -0304	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	143680	3.11786	2.4	4.8	21.7
MEL -0304	18-Aug-23	6554	Rhodomonas minuta Skuja	158048	23.83364	12	6	150.8
MEL -0304	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	600	1.10424	26.9	14	1840.4
MEL -0304	18-Aug-23	6559	Cryptomonas ovata Ehrenberg	200	1.11702	40	20	5585.1
MEL -0304	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1600	1.1728	21	10	733
MEL -0304	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.45156	33	14	2257.8
MEL -0304	18-Aug-23	7632	Gymnodinium sp.	1000	6.3706	23	23	6370.6
MEL -0304	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	4200	16.5585	19.6	19.6	3942.5
MEL -0305	18-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -0305	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	136496	1.92459	3	3	14.1
MEL -0305	18-Aug-23	2121	Oocystis lacustris Chodat	201152	5.6926	6	3	28.3
MEL -0305	18-Aug-23	2137	Dictyosphaerium simplex Sukja	114944	0.48276	2	2	4.2
MEL -0305	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	21552	1.04312	7.7	4	48.4
MEL -0305	18-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0305	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15496	13.6	12	387.4
MEL -0305	18-Aug-23	2193	Staurodesmus paradoxum Meyen	200	0.56632	26	24	2831.6
MEL -0305	18-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	7184	0.03376	3	3	4.7
MEL -0305	18-Aug-23	4351	Small chrysophyceae	165232	0.9253	2.2	2.2	5.6
MEL -0305	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0305	18-Aug-23	4357	Chrysococcus sp.	488512	31.94868	5	5	65.4

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0305	18-Aug-23	4361	Kephyrion boreale Skuja	7184	0.85346	6.1	6.1	118.8
MEL -0305	18-Aug-23	4362	Kephyrion sp.	64656	0.8276	2.9	2.9	12.8
MEL -0305	18-Aug-23	4378	Dinobryon borgei Lemmermann	7184	0.30819	9.1	3	42.9
MEL -0305	18-Aug-23	4383	Dinobryon bavaricum Imhof	200	0.25	0	0	1250
MEL -0305	18-Aug-23	4390	Dinobryon sociale Ehrenberg	43104	9.75012	12	6	226.2
MEL -0305	18-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	7184	0.19612	5.8	3	27.3
MEL -0305	18-Aug-23	4413	Chrysochromulina laurentiana Kling	7184	2.83481	9.1	9.1	394.6
MEL -0305	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3800	9.0782	11.5	23	2389
MEL -0305	18-Aug-23	5509	Cyclotella ocellata Pant.	28736	2.99716	4.05	8.1	104.3
MEL -0305	18-Aug-23	5515	Fragilaria crotonensis Kitton	400	0.1156	69	4	289
MEL -0305	18-Aug-23	5518	Synedra acus Kutzing	400	0.04188	100	2	104.7
MEL -0305	18-Aug-23	5524	Asterionella formosa Hassall	200	0.02094	100	2	104.7
MEL -0305	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	71840	1.55893	2.4	4.8	21.7
MEL -0305	18-Aug-23	6554	Rhodomonas minuta Skuja	35920	5.41674	12	6	150.8
MEL -0305	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3800	6.99352	26.9	14	1840.4
MEL -0305	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1000	0.733	21	10	733
MEL -0305	18-Aug-23	7632	Gymnodinium sp.	800	5.09648	23	23	6370.6
MEL -0305	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	4400	17.347	19.6	19.6	3942.5
MEL -0401	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	64656	0.91165	3	3	14.1
MEL -0401	18-Aug-23	2121	Oocystis lacustris Chodat	294544	7.77596	5.6	3	26.4
MEL -0401	18-Aug-23	2137	Dictyosphaerium simplex Sukja	114944	0.48276	2	2	4.2
MEL -0401	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0401	18-Aug-23	2178	Cosmarium sp.	400	0.55852	20	20	1396.3
MEL -0401	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07634	13.5	12	381.7
MEL -0401	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -0401	18-Aug-23	2206	Botryococcus braunii Kutzing	200	0.10472	10	10	523.6
MEL -0401	18-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	7184	0.03376	3	3	4.7
MEL -0401	18-Aug-23	4351	Small chrysophyceae	272992	1.52876	2.2	2.2	5.6
MEL -0401	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0401	18-Aug-23	4355	Chrysochromulina parva Lackey	43104	2.819	5	5	65.4
MEL -0401	18-Aug-23	4357	Chrysococcus sp.	208336	13.62517	5	5	65.4
MEL -0401	18-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	7184	1.65088	7.6	7.6	229.8
MEL -0401	18-Aug-23	4361	Kephyrion boreale Skuja	21552	2.56038	6.1	6.1	118.8
MEL -0401	18-Aug-23	4362	Kephyrion sp.	71840	0.91955	2.9	2.9	12.8
MEL -0401	18-Aug-23	4378	Dinobryon borgei Lemmermann	71840	3.04602	9	3	42.4
MEL -0401	18-Aug-23	4390	Dinobryon sociale Ehrenberg	129312	29.25037	12	6	226.2
MEL -0401	18-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	7184	0.19612	5.8	3	27.3
MEL -0401	18-Aug-23	4413	Chrysochromulina laurentiana Kling	21552	8.50442	9.1	9.1	394.6
MEL -0401	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3000	7.167	11.5	23	2389
MEL -0401	18-Aug-23	5509	Cyclotella ocellata Pant.	35920	3.74646	4.05	8.1	104.3
MEL -0401	18-Aug-23	5511	Rhizosolenia eriensis H.L. Smith	7184	0.6092	12	3	84.8
MEL -0401	18-Aug-23	5518	Synedra acus Kutzing	1000	0.1152	110	2	115.2
MEL -0401	18-Aug-23	5523	Synedra ulna (Nitzsch) Ehrenberg	200	0.51836	275	6	2591.8
MEL -0401	18-Aug-23	5524	Asterionella formosa Hassall	1000	0.1047	100	2	104.7
MEL -0401	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	100576	1.921	2.3	4.6	19.1
MEL -0401	18-Aug-23	6554	Rhodomonas minuta Skuja	114944	17.33356	12	6	150.8
MEL -0401	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3000	5.2545	25.6	14	1751.5
MEL -0401	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1400	1.07506	22	10	767.9
MEL -0401	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.43786	32	14	2189.3
MEL -0401	18-Aug-23	6568	Katablepharis ovalis Skuja	7184	0.32112	8	4	44.7
MEL -0401	18-Aug-23	7632	Gymnodinium sp.	200	1.27412	23	23	6370.6
MEL -0401	18-Aug-23	7635	Peridinium willei Huitfeldt-Kaas	200	4.8858	36	36	24429
MEL -0401	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	5800	22.8665	19.6	19.6	3942.5
MEL -0401	18-Aug-23	7641	Peridinium aciculiferum Lemmermann	200	1.80956	30	24	9047.8
MEL -0402	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	179600	2.53236	3	3	14.1
MEL -0402	18-Aug-23	2121	Oocystis lacustris Chodat	64656	1.70692	5.6	3	26.4
MEL -0402	18-Aug-23	2137	Dictyosphaerium simplex Sukja	179600	0.75432	2	2	4.2
MEL -0402	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	14368	0.69541	7.7	4	48.4
MEL -0402	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15268	13.5	12	381.7
MEL -0402	18-Aug-23	4351	Small chrysophyceae	359200	2.01152	2.2	2.2	5.6
MEL -0402	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0402	18-Aug-23	4357	Chrysococcus sp.	344832	22.55201	5	5	65.4
MEL -0402	18-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	7184	2.39227	8.6	8.6	333
MEL -0402	18-Aug-23	4362	Kephyrion sp.	107760	1.37933	2.9	2.9	12.8
MEL -0402	18-Aug-23	4390	Dinobryon sociale Ehrenberg	35920	8.1251	12	6	226.2
MEL -0402	18-Aug-23	4413	Chrysochromulina laurentiana Kling	7184	2.83481	9.1	9.1	394.6
MEL -0402	18-Aug-23	4414	Stichogloea spp.	57472	2.89084	6	4	50.3
MEL -0402	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1800	4.3002	11.5	23	2389
MEL -0402	18-Aug-23	5511	Rhizosolenia eriensis H.L. Smith	7184	0.6092	12	3	84.8
MEL -0402	18-Aug-23	5518	Synedra acus Kutzing	400	0.04608	110	2	115.2
MEL -0402	18-Aug-23	5523	Synedra ulna (Nitzsch) Ehrenberg	200	0.51836	275	6	2591.8
MEL -0402	18-Aug-23	5524	Asterionella formosa Hassall	3000	0.3141	100	2	104.7
MEL -0402	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	114944	2.19543	2.3	4.6	19.1
MEL -0402	18-Aug-23	6554	Rhodomonas minuta Skuja	114944	17.33356	12	6	150.8
MEL -0402	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3000	5.2545	25.6	14	1751.5
MEL -0402	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	2400	1.84296	22	10	767.9
MEL -0402	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.45156	33	14	2257.8
MEL -0402	18-Aug-23	7632	Gymnodinium sp.	400	2.54824	23	23	6370.6
MEL -0402	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	3400	13.4045	19.6	19.6	3942.5
MEL -0402R	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	201152	2.83624	3	3	14.1
MEL -0402R	18-Aug-23	2121	Oocystis lacustris Chodat	64656	1.70692	5.6	3	26.4
MEL -0402R	18-Aug-23	2137	Dictyosphaerium simplex Sukja	114944	0.48276	2	2	4.2
MEL -0402R	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	43104	2.08623	7.7	4	48.4

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0402R	18-Aug-23	2178	Cosmarium sp.	600	0.83778	20	20	1396.3
MEL -0402R	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07634	13.5	12	381.7
MEL -0402R	18-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	14368	0.81179	36	2	56.5
MEL -0402R	18-Aug-23	4351	Small chrysophyceae	510064	2.85636	2.2	2.2	5.6
MEL -0402R	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0402R	18-Aug-23	4357	Chrysococcus sp.	280176	18.32351	5	5	65.4
MEL -0402R	18-Aug-23	4362	Kephyrion sp.	64656	0.8276	2.9	2.9	12.8
MEL -0402R	18-Aug-23	4381	Dinobryon mucronatom Nygaard	14368	1.88077	10	5	130.9
MEL -0402R	18-Aug-23	4390	Dinobryon sociale Ehrenberg	50288	11.37515	12	6	226.2
MEL -0402R	18-Aug-23	4411	Bitrichia chodatii (Reverdin) Chodat	7184	0.36136	6	4	50.3
MEL -0402R	18-Aug-23	4413	Chrysochromulina laurentiana Kling	7184	2.83481	9.1	9.1	394.6
MEL -0402R	18-Aug-23	4414	Stichogloea spp.	50288	2.52949	6	4	50.3
MEL -0402R	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1400	3.3446	11.5	23	2389
MEL -0402R	18-Aug-23	5509	Cyclotella ocellata Pant.	21552	2.24787	4.05	8.1	104.3
MEL -0402R	18-Aug-23	5518	Synedra acus Kutzing	1200	0.13824	110	2	115.2
MEL -0402R	18-Aug-23	5524	Asterionella formosa Hassall	5400	0.56538	100	2	104.7
MEL -0402R	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	107760	2.05822	2.3	4.6	19.1
MEL -0402R	18-Aug-23	6554	Rhodomonas minuta Skuja	79024	11.91682	12	6	150.8
MEL -0402R	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	6400	11.2096	25.6	14	1751.5
MEL -0402R	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	3200	2.45728	22	10	767.9
MEL -0402R	18-Aug-23	7632	Gymnodinium sp.	400	2.54824	23	23	6370.6
MEL -0402R	18-Aug-23	7635	Peridinium willei Huitfeldt-Kaas	200	4.8858	36	36	24429
MEL -0402R	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2400	9.462	19.6	19.6	3942.5
MEL -0403	18-Aug-23	2121	Oocystis lacustris Chodat	201152	5.6926	6	3	28.3
MEL -0403	18-Aug-23	2137	Dictyosphaerium simplex Sukja	409488	1.71985	2	2	4.2
MEL -0403	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	21552	1.04312	7.7	4	48.4
MEL -0403	18-Aug-23	2145	Crucigenia quadrata Morr.	28736	0.13506	3	3	4.7
MEL -0403	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	600	0.23244	13.6	12	387.4
MEL -0403	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	57472	2.16669	6	6	37.7
MEL -0403	18-Aug-23	2247	Oocystis gigas Archer	200	0.48254	18	16	2412.7
MEL -0403	18-Aug-23	4351	Small chrysophyceae	308912	1.97704	2.3	2.3	6.4
MEL -0403	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0403	18-Aug-23	4355	Chrysochromulina parva Lackey	7184	0.46983	5	5	65.4
MEL -0403	18-Aug-23	4357	Chrysococcus sp.	229888	15.03468	5	5	65.4
MEL -0403	18-Aug-23	4362	Kephyrion sp.	7184	0.09196	2.9	2.9	12.8
MEL -0403	18-Aug-23	4363	Spiniferomonas serrata	7184	0.66093	5.6	5.6	92
MEL -0403	18-Aug-23	4390	Dinobryon sociale Ehrenberg	122128	27.62535	12	6	226.2
MEL -0403	18-Aug-23	4413	Chrysochromulina laurentiana Kling	86208	34.01768	9.1	9.1	394.6
MEL -0403	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3800	9.0782	11.5	23	2389
MEL -0403	18-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.74929	4.05	8.1	104.3
MEL -0403	18-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	800	0.56552	75	6	706.9
MEL -0403	18-Aug-23	5518	Synedra acus Kutzing	1000	0.1152	110	2	115.2
MEL -0403	18-Aug-23	5524	Asterionella formosa Hassall	4000	0.4188	100	2	104.7
MEL -0403	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	122128	2.33264	2.3	4.6	19.1
MEL -0403	18-Aug-23	5720	Cyclotella bodanica Eulenst.	200	1.6837	17.5	35	8418.5
MEL -0403	18-Aug-23	6554	Rhodomonas minuta Skuja	114944	17.33356	12	6	150.8
MEL -0403	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	2800	4.9042	25.6	14	1751.5
MEL -0403	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	1600	1.22864	22	10	767.9
MEL -0403	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.45156	33	14	2257.8
MEL -0403	18-Aug-23	7632	Gymnodinium sp.	200	1.27412	23	23	6370.6
MEL -0403	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	1600	6.308	19.6	19.6	3942.5
MEL -0404	18-Aug-23	2121	Oocystis lacustris Chodat	50288	1.42315	6	3	28.3
MEL -0404	18-Aug-23	2137	Dictyosphaerium simplex Sukja	215520	0.90518	2	2	4.2
MEL -0404	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	35920	1.73853	7.7	4	48.4
MEL -0404	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07748	13.6	12	387.4
MEL -0404	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	28736	1.08335	6	6	37.7
MEL -0404	18-Aug-23	2206	Botryococcus braunii Kutzing	200	0.18096	12	12	904.8
MEL -0404	18-Aug-23	4351	Small chrysophyceae	581904	3.72419	2.3	2.3	6.4
MEL -0404	18-Aug-23	4355	Chrysochromulina parva Lackey	114944	7.51734	5	5	65.4
MEL -0404	18-Aug-23	4357	Chrysococcus sp.	660928	43.22469	5	5	65.4
MEL -0404	18-Aug-23	4362	Kephyrion sp.	50288	0.64369	2.9	2.9	12.8
MEL -0404	18-Aug-23	4378	Dinobryon borgei Lemmermann	7184	0.3046	9	3	42.4
MEL -0404	18-Aug-23	4383	Dinobryon bavaricum Imhof	200	0.25	0	0	1250
MEL -0404	18-Aug-23	4390	Dinobryon sociale Ehrenberg	100576	22.75029	12	6	226.2
MEL -0404	18-Aug-23	4413	Chrysochromulina laurentiana Kling	86208	34.01768	9.1	9.1	394.6
MEL -0404	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3800	9.0782	11.5	23	2389
MEL -0404	18-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.74929	4.05	8.1	104.3
MEL -0404	18-Aug-23	5518	Synedra acus Kutzing	200	0.02408	115	2	120.4
MEL -0404	18-Aug-23	5524	Asterionella formosa Hassall	1600	0.16752	100	2	104.7
MEL -0404	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	86208	1.64657	2.3	4.6	19.1
MEL -0404	18-Aug-23	5720	Cyclotella bodanica Eulenst.	200	1.54346	17	34	7717.3
MEL -0404	18-Aug-23	6554	Rhodomonas minuta Skuja	251440	37.91715	12	6	150.8
MEL -0404	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	7400	12.9611	25.6	14	1751.5
MEL -0404	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	2400	1.84296	22	10	767.9
MEL -0404	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.45156	33	14	2257.8
MEL -0404	18-Aug-23	7632	Gymnodinium sp.	1000	6.3706	23	23	6370.6
MEL -0404	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2200	8.6735	19.6	19.6	3942.5
MEL -0405	18-Aug-23	1073	Snowella sp	400	0.2	0	0	500
MEL -0405	18-Aug-23	2112	Sphaerocystis schroeteri Chodat	57472	0.81036	3	3	14.1
MEL -0405	18-Aug-23	2121	Oocystis lacustris Chodat	50288	1.42315	6	3	28.3
MEL -0405	18-Aug-23	2137	Dictyosphaerium simplex Sukja	172416	0.72415	2	2	4.2
MEL -0405	18-Aug-23	2178	Cosmarium sp.	400	0.55852	20	20	1396.3
MEL -0405	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15496	13.6	12	387.4

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0405	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	28736	1.08335	6	6	37.7
MEL -0405	18-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	21552	1.21769	36	2	56.5
MEL -0405	18-Aug-23	4351	Small chrysophyceae	438224	2.80463	2.3	2.3	6.4
MEL -0405	18-Aug-23	4355	Chrysochromulina parva Lackey	86208	5.638	5	5	65.4
MEL -0405	18-Aug-23	4357	Chrysococcus sp.	431040	28.19002	5	5	65.4
MEL -0405	18-Aug-23	4361	Kephyrion boreale Skuja	7184	0.85346	6.1	6.1	118.8
MEL -0405	18-Aug-23	4362	Kephyrion sp.	50288	0.64369	2.9	2.9	12.8
MEL -0405	18-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	200	0.20526	19.6	10	1026.3
MEL -0405	18-Aug-23	4378	Dinobryon borgei Lemmermann	7184	0.3046	9	3	42.4
MEL -0405	18-Aug-23	4388	Dinobryon sertularia Ehrenberg	400	0.38	0	0	950
MEL -0405	18-Aug-23	4390	Dinobryon sociale Ehrenberg	71840	16.25021	12	6	226.2
MEL -0405	18-Aug-23	4390	Dinobryon sociale Ehrenberg	200	0.25	0	0	1250
MEL -0405	18-Aug-23	4413	Chrysochromulina laurentiana Kling	14368	5.66961	9.1	9.1	394.6
MEL -0405	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2800	6.6892	11.5	23	2389
MEL -0405	18-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.74929	4.05	8.1	104.3
MEL -0405	18-Aug-23	5518	Synedra acus Kutzing	2000	0.2304	110	2	115.2
MEL -0405	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	21552	0.41164	2.3	4.6	19.1
MEL -0405	18-Aug-23	6554	Rhodomonas minuta Skuja	359200	54.16736	12	6	150.8
MEL -0405	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3600	6.3054	25.6	14	1751.5
MEL -0405	18-Aug-23	6559	Cryptomonas ovata Ehrenberg	200	1.11702	40	20	5585.1
MEL -0405	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	2200	1.53582	20	10	698.1
MEL -0405	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	400	0.90312	33	14	2257.8
MEL -0405	18-Aug-23	7632	Gymnodinium sp.	600	3.82236	23	23	6370.6
MEL -0405	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2800	11.039	19.6	19.6	3942.5
MEL -0501	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	488512	6.88802	3	3	14.1
MEL -0501	18-Aug-23	2121	Oocystis lacustris Chodat	337648	9.55544	6	3	28.3
MEL -0501	18-Aug-23	2137	Dictyosphaerium simplex Sukja	71840	0.30173	2	2	4.2
MEL -0501	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	57472	2.78164	7.7	4	48.4
MEL -0501	18-Aug-23	2145	Crucigenia quadrata Morr.	172416	0.24138	2	2	1.4
MEL -0501	18-Aug-23	2167	Elakatothrix gelatinosa Willen	79024	1.36712	11	2	17.3
MEL -0501	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15496	13.6	12	387.4
MEL -0501	18-Aug-23	2191	Staurodesmus cuspidatus (Brebisson and Ralfs) Teiling	200	0.42772	23.6	22	2138.6
MEL -0501	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -0501	18-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	21552	0.10129	3	3	4.7
MEL -0501	18-Aug-23	4351	Small chrysophyceae	294544	1.64945	2.2	2.2	5.6
MEL -0501	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0501	18-Aug-23	4355	Chrysochromulina parva Lackey	7184	0.46983	5	5	65.4
MEL -0501	18-Aug-23	4357	Chrysococcus sp.	316096	20.67268	5	5	65.4
MEL -0501	18-Aug-23	4362	Kephyrion sp.	21552	0.27587	2.9	2.9	12.8
MEL -0501	18-Aug-23	4388	Dinobryon sertularia Ehrenberg	7184	1.62502	12	6	226.2
MEL -0501	18-Aug-23	4390	Dinobryon sociale Ehrenberg	35920	8.1251	12	6	226.2
MEL -0501	18-Aug-23	4413	Chrysochromulina laurentiana Kling	14368	5.66961	9.1	9.1	394.6
MEL -0501	18-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	7184	0.20331	6	3	28.3
MEL -0501	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2400	5.7336	11.5	23	2389
MEL -0501	18-Aug-23	5509	Cyclotella ocellata Pant.	50288	5.24504	4.05	8.1	104.3
MEL -0501	18-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	1600	1.13104	75	6	706.9
MEL -0501	18-Aug-23	5518	Synedra acus Kutzing	400	0.04608	110	2	115.2
MEL -0501	18-Aug-23	5524	Asterionella formosa Hassall	2000	0.2094	100	2	104.7
MEL -0501	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	71840	1.6595	2.45	4.9	23.1
MEL -0501	18-Aug-23	5720	Cyclotella bodanica Eulenst.	200	1.54346	17	34	7717.3
MEL -0501	18-Aug-23	6554	Rhodomonas minuta Skuja	272992	41.16719	12	6	150.8
MEL -0501	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3200	5.8016	26.5	14	1813
MEL -0501	18-Aug-23	6559	Cryptomonas ovata Ehrenberg	200	1.11702	40	20	5585.1
MEL -0501	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	3000	2.199	21	10	733
MEL -0501	18-Aug-23	6568	Katablepharis ovalis Skuja	14368	0.57903	7.6	4	40.3
MEL -0501	18-Aug-23	7632	Gymnodinium sp.	800	5.09648	23	23	6370.6
MEL -0501	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	4800	18.924	19.6	19.6	3942.5
MEL -0502	18-Aug-23	1054	Planktolyngbya limnetica	400	0.09048	200	1.2	226.2
MEL -0502	18-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -0502	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	172416	2.43107	3	3	14.1
MEL -0502	18-Aug-23	2121	Oocystis lacustris Chodat	431040	12.19843	6	3	28.3
MEL -0502	18-Aug-23	2137	Dictyosphaerium simplex Sukja	21552	0.09052	2	2	4.2
MEL -0502	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	64656	3.12935	7.7	4	48.4
MEL -0502	18-Aug-23	2167	Elakatothrix gelatinosa Willen	35920	0.56394	10	2	15.7
MEL -0502	18-Aug-23	2169	Planctonema lauterbornii Schmidle	7184	1.12861	8	5	157.1
MEL -0502	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15496	13.6	12	387.4
MEL -0502	18-Aug-23	2195	Staurodesmus bullardii G.M. Smith	200	0.71154	28	26	3557.7
MEL -0502	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	28736	1.08335	6	6	37.7
MEL -0502	18-Aug-23	2206	Botryococcus braunii Kutzing	14368	13.00017	12	12	904.8
MEL -0502	18-Aug-23	2247	Oocystis gigas Archer	400	0.96508	18	16	2412.7
MEL -0502	18-Aug-23	4351	Small chrysophyceae	114944	0.64369	2.2	2.2	5.6
MEL -0502	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -0502	18-Aug-23	4357	Chrysococcus sp.	193968	12.68551	5	5	65.4
MEL -0502	18-Aug-23	4362	Kephyrion sp.	86208	1.10346	2.9	2.9	12.8
MEL -0502	18-Aug-23	4363	Spiniferomonas serrata	7184	0.85346	6.1	6.1	118.8
MEL -0502	18-Aug-23	4381	Dinobryon mucronatom Nygaard	7184	0.94039	10	5	130.9
MEL -0502	18-Aug-23	4390	Dinobryon sociale Ehrenberg	7184	1.62502	12	6	226.2
MEL -0502	18-Aug-23	4413	Chrysochromulina laurentiana Kling	7184	2.83481	9.1	9.1	394.6
MEL -0502	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1200	2.8668	11.5	23	2389
MEL -0502	18-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.74929	4.05	8.1	104.3
MEL -0502	18-Aug-23	5511	Rhizosolenia erienne H.L. Smith	21552	1.82761	12	3	84.8
MEL -0502	18-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	800	0.56552	75	6	706.9
MEL -0502	18-Aug-23	5518	Synedra acus Kutzing	800	0.09216	110	2	115.2

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0502	18-Aug-23	5524	Asterionella formosa Hassall	400	0.04188	100	2	104.7
MEL -0502	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	71840	1.55893	2.4	4.8	21.7
MEL -0502	18-Aug-23	5720	Cyclotella bodanica Eulenst.	400	3.08692	17	34	7717.3
MEL -0502	18-Aug-23	6554	Rhodomonas minuta Skuja	222704	33.58376	12	6	150.8
MEL -0502	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	4400	7.9772	26.5	14	1813
MEL -0502	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	4800	3.5184	21	10	733
MEL -0502	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	800	1.80624	33	14	2257.8
MEL -0502	18-Aug-23	7632	Gymnodinium sp.	1600	10.19296	23	23	6370.6
MEL -0502	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	3600	14.193	19.6	19.6	3942.5
MEL -0503	18-Aug-23	1014	Chroococcus limneticus Lemmermann	57472	5.28742	5.6	5.6	92
MEL -0503	18-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -0503	18-Aug-23	2105	Chlamydomonas spp.	7184	0.17601	5.2	3	24.5
MEL -0503	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	818976	11.54756	3	3	14.1
MEL -0503	18-Aug-23	2121	Oocystis lacustris Chodat	431040	12.19843	6	3	28.3
MEL -0503	18-Aug-23	2137	Dictyosphaerium simplex Sukja	21552	0.09052	2	2	4.2
MEL -0503	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0503	18-Aug-23	2167	Elakatothrix gelatinosa Willen	71840	1.12789	10	2	15.7
MEL -0503	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07748	13.6	12	387.4
MEL -0503	18-Aug-23	2191	Staurodesmus cuspidatus (Brebisson and Ralfs) Teiling	200	0.36932	23	20	1846.6
MEL -0503	18-Aug-23	2193	Staurodesmus paradoxum Meyen	200	0.56632	26	24	2831.6
MEL -0503	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	28736	1.08335	6	6	37.7
MEL -0503	18-Aug-23	4351	Small chrysophyceae	143680	0.80461	2.2	2.2	5.6
MEL -0503	18-Aug-23	4357	Chrysococcus sp.	158048	10.33634	5	5	65.4
MEL -0503	18-Aug-23	4361	Kephyrion boreale Skuja	7184	0.85346	6.1	6.1	118.8
MEL -0503	18-Aug-23	4362	Kephyrion sp.	21552	0.27587	2.9	2.9	12.8
MEL -0503	18-Aug-23	4363	Spiniferomonas serrata	21552	1.98278	5.6	5.6	92
MEL -0503	18-Aug-23	4364	Mallomonas caudata Ivanov	200	1.07234	40	16	5361.7
MEL -0503	18-Aug-23	4381	Dinobryon mucronatom Nygaard	7184	0.94039	10	5	130.9
MEL -0503	18-Aug-23	4390	Dinobryon sociale Ehrenberg	7184	1.62502	12	6	226.2
MEL -0503	18-Aug-23	4413	Chrysochromulina laurentiana Kling	14368	5.66961	9.1	9.1	394.6
MEL -0503	18-Aug-23	4414	Stichogloea spp.	71840	3.61355	6	4	50.3
MEL -0503	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	6200	14.8118	11.5	23	2389
MEL -0503	18-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	6400	8.53824	26	14	1334.1
MEL -0503	18-Aug-23	5518	Synedra acus Kutzing	600	0.06912	110	2	115.2
MEL -0503	18-Aug-23	5524	Asterionella formosa Hassall	3400	0.35598	100	2	104.7
MEL -0503	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	43104	0.93536	2.4	4.8	21.7
MEL -0503	18-Aug-23	5720	Cyclotella bodanica Eulenst.	400	2.82248	16.5	33	7056.2
MEL -0503	18-Aug-23	6554	Rhodomonas minuta Skuja	93392	14.08351	12	6	150.8
MEL -0503	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	5200	9.4276	26.5	14	1813
MEL -0503	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	2800	2.0524	21	10	733
MEL -0503	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	600	1.35468	33	14	2257.8
MEL -0503	18-Aug-23	7631	Gymnodinium helveticum Penard	200	4.71238	50	30	23561.9
MEL -0503	18-Aug-23	7632	Gymnodinium sp.	1400	8.91884	23	23	6370.6
MEL -0503	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	4000	15.77	19.6	19.6	3942.5
MEL -0504	18-Aug-23	2105	Chlamydomonas spp.	7184	0.09411	4	2.5	13.1
MEL -0504	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	172416	2.43107	3	3	14.1
MEL -0504	18-Aug-23	2121	Oocystis lacustris Chodat	265808	7.52237	6	3	28.3
MEL -0504	18-Aug-23	2137	Dictyosphaerium simplex Sukja	79024	0.3319	2	2	4.2
MEL -0504	18-Aug-23	2178	Cosmarium sp.	400	0.55852	20	20	1396.3
MEL -0504	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07748	13.6	12	387.4
MEL -0504	18-Aug-23	2193	Staurodesmus paradoxum Meyen	200	0.56632	26	24	2831.6
MEL -0504	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -0504	18-Aug-23	2247	Oocystis gigas Archer	200	0.48254	18	16	2412.7
MEL -0504	18-Aug-23	4351	Small chrysophyceae	359200	2.01152	2.2	2.2	5.6
MEL -0504	18-Aug-23	4352	Large chrysophyceae	35920	6.45123	7	7	179.6
MEL -0504	18-Aug-23	4355	Chrysochromulina parva Lackey	43104	2.819	5	5	65.4
MEL -0504	18-Aug-23	4357	Chrysococcus sp.	344832	22.55201	5	5	65.4
MEL -0504	18-Aug-23	4362	Kephyrion sp.	71840	0.91955	2.9	2.9	12.8
MEL -0504	18-Aug-23	4363	Spiniferomonas serrata	7184	0.77228	5.9	5.9	107.5
MEL -0504	18-Aug-23	4381	Dinobryon mucronatom Nygaard	7184	0.94039	10	5	130.9
MEL -0504	18-Aug-23	4390	Dinobryon sociale Ehrenberg	57472	13.00017	12	6	226.2
MEL -0504	18-Aug-23	4413	Chrysochromulina laurentiana Kling	7184	2.83481	9.1	9.1	394.6
MEL -0504	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	1800	4.3002	11.5	23	2389
MEL -0504	18-Aug-23	5508	Cyclotella pseudostelligera	7184	3.95407	7.05	14.1	550.4
MEL -0504	18-Aug-23	5509	Cyclotella ocellata Pant.	7184	0.74929	4.05	8.1	104.3
MEL -0504	18-Aug-23	5515	Fragilaria crotonensis Kitton	400	0.11728	70	4	293.2
MEL -0504	18-Aug-23	5518	Synedra acus Kutzing	1200	0.13824	110	2	115.2
MEL -0504	18-Aug-23	5524	Asterionella formosa Hassall	1200	0.12564	100	2	104.7
MEL -0504	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	79024	1.71482	2.4	4.8	21.7
MEL -0504	18-Aug-23	6554	Rhodomonas minuta Skuja	294544	44.41724	12	6	150.8
MEL -0504	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3000	5.439	26.5	14	1813
MEL -0504	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	6000	4.398	21	10	733
MEL -0504	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	600	1.35468	33	14	2257.8
MEL -0504	18-Aug-23	7632	Gymnodinium sp.	2000	12.7412	23	23	6370.6
MEL -0504	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	4000	15.77	19.6	19.6	3942.5
MEL -0505	18-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -0505	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	352016	4.96343	3	3	14.1
MEL -0505	18-Aug-23	2121	Oocystis lacustris Chodat	258624	7.31906	6	3	28.3
MEL -0505	18-Aug-23	2137	Dictyosphaerium simplex Sukja	57472	0.24138	2	2	4.2
MEL -0505	18-Aug-23	2141	Monoraphidium contortum (Thur.) Komarkova-Legnerova	7184	0.13362	21	1.5	18.6
MEL -0505	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -0505	18-Aug-23	2178	Cosmarium sp.	200	0.27926	20	20	1396.3
MEL -0505	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	400	0.15496	13.6	12	387.4

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -0505	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	14368	0.54167	6	6	37.7
MEL -0505	18-Aug-23	2206	Botryococcus braunii Kutzing	400	0.36192	12	12	904.8
MEL -0505	18-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	7184	0.03376	3	3	4.7
MEL -0505	18-Aug-23	4351	Small chrysophyceae	158048	0.88507	2.2	2.2	5.6
MEL -0505	18-Aug-23	4352	Large chrysophyceae	21552	3.87074	7	7	179.6
MEL -0505	18-Aug-23	4355	Chrysochromulina parva Lackey	7184	0.46983	5	5	65.4
MEL -0505	18-Aug-23	4357	Chrysococcus sp.	158048	10.33634	5	5	65.4
MEL -0505	18-Aug-23	4361	Kephyrion boreale Skuja	14368	1.70692	6.1	6.1	118.8
MEL -0505	18-Aug-23	4362	Kephyrion sp.	64656	0.8276	2.9	2.9	12.8
MEL -0505	18-Aug-23	4390	Dinobryon sociale Ehrenberg	50288	11.37515	12	6	226.2
MEL -0505	18-Aug-23	4413	Chrysochromulina laurentiana Kling	71840	28.34806	9.1	9.1	394.6
MEL -0505	18-Aug-23	4414	Stichogloea spp.	79024	3.97491	6	4	50.3
MEL -0505	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3600	8.6004	11.5	23	2389
MEL -0505	18-Aug-23	5508	Cyclotella pseudostelligera	21552	11.86222	7.05	14.1	550.4
MEL -0505	18-Aug-23	5509	Cyclotella ocellata Pant.	43104	4.49575	4.05	8.1	104.3
MEL -0505	18-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	200	0.26682	26	14	1334.1
MEL -0505	18-Aug-23	5518	Synedra acus Kutzing	800	0.09216	110	2	115.2
MEL -0505	18-Aug-23	5524	Asterionella formosa Hassall	400	0.04188	100	2	104.7
MEL -0505	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	28736	0.62357	2.4	4.8	21.7
MEL -0505	18-Aug-23	6554	Rhodomonas minuta Skuja	165232	24.91699	12	6	150.8
MEL -0505	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	4200	7.6146	26.5	14	1813
MEL -0505	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	5400	3.9582	21	10	733
MEL -0505	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	400	0.90312	33	14	2257.8
MEL -0505	18-Aug-23	7632	Gymnodinium sp.	1600	10.19296	23	23	6370.6
MEL -0505	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	1800	7.0965	19.6	19.6	3942.5
MEL -DUP1	18-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -DUP1	18-Aug-23	2105	Chlamydomonas spp.	7184	0.20331	6	3	28.3
MEL -DUP1	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	100576	1.41812	3	3	14.1
MEL -DUP1	18-Aug-23	2121	Oocystis lacustris Chodat	208336	5.89591	6	3	28.3
MEL -DUP1	18-Aug-23	2137	Dictyosphaerium simplex Sukja	129312	0.54311	2	2	4.2
MEL -DUP1	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	7184	0.34771	7.7	4	48.4
MEL -DUP1	18-Aug-23	2169	Planctonema lauterbornii Schmidle	7184	2.53883	18	5	353.4
MEL -DUP1	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -DUP1	18-Aug-23	2247	Oocystis gigas Archer	200	0.48254	18	16	2412.7
MEL -DUP1	18-Aug-23	4351	Small chrysophyceae	258624	1.44829	2.2	2.2	5.6
MEL -DUP1	18-Aug-23	4355	Chrysochromulina parva Lackey	7184	0.46983	5	5	65.4
MEL -DUP1	18-Aug-23	4357	Chrysococcus sp.	438224	28.65985	5	5	65.4
MEL -DUP1	18-Aug-23	4362	Kephyrion sp.	114944	1.47128	2.9	2.9	12.8
MEL -DUP1	18-Aug-23	4369	Mallomonas pseudocoronata Prescott	200	0.34684	23	12	1734.2
MEL -DUP1	18-Aug-23	4388	Dinobryon sertularia Ehrenberg	200	0.25	0	0	1250
MEL -DUP1	18-Aug-23	4390	Dinobryon sociale Ehrenberg	86208	19.50025	12	6	226.2
MEL -DUP1	18-Aug-23	4396	Chrysolykos skuja (Nauwerck) Willen	7184	0.19612	5.8	3	27.3
MEL -DUP1	18-Aug-23	4413	Chrysochromulina laurentiana Kling	57472	22.67845	9.1	9.1	394.6
MEL -DUP1	18-Aug-23	4414	Stichogloea spp.	7184	0.36136	6	4	50.3
MEL -DUP1	18-Aug-23	4418	Salpingoeca frequentissima (Zach.) Lemmermann	7184	0.19972	5.9	3	27.8
MEL -DUP1	18-Aug-23	4448	Rhizochrysis scherffellii Pascher	200	0.61072	18	18	3053.6
MEL -DUP1	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	3000	7.7901	12.5	23	2596.7
MEL -DUP1	18-Aug-23	5509	Cyclotella ocellata Pant.	21552	2.24787	4.05	8.1	104.3
MEL -DUP1	18-Aug-23	5515	Fragilaria crotonensis Kitton	600	0.17592	70	4	293.2
MEL -DUP1	18-Aug-23	5518	Synedra acus Kutzing	200	0.02408	115	2	120.4
MEL -DUP1	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	43104	0.93536	2.4	4.8	21.7
MEL -DUP1	18-Aug-23	5720	Cyclotella bodanica Eulenst.	200	1.54346	17	34	7717.3
MEL -DUP1	18-Aug-23	6554	Rhodomonas minuta Skuja	165232	22.83506	11	6	138.2
MEL -DUP1	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	2400	4.41696	26.9	14	1840.4
MEL -DUP1	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	200	0.1466	21	10	733
MEL -DUP1	18-Aug-23	6568	Katablepharis ovalis Skuja	7184	0.32112	8	4	44.7
MEL -DUP1	18-Aug-23	7632	Gymnodinium sp.	600	3.82236	23	23	6370.6
MEL -DUP1	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2200	8.6735	19.6	19.6	3942.5
MEL -DUP2	22-Aug-23	1073	Snowella sp	800	0.4	0	0	500
MEL -DUP2	22-Aug-23	2105	Chlamydomonas spp.	50288	1.23206	5.2	3	24.5
MEL -DUP2	22-Aug-23	2112	Sphaerocystis Schroeteri Chodat	143680	2.02589	3	3	14.1
MEL -DUP2	22-Aug-23	2115	Pediastrum tetras (Ehrenberg) Ralfs	200	0.24	0	0	1200
MEL -DUP2	22-Aug-23	2121	Oocystis lacustris Chodat	50288	1.93609	6	3.5	38.5
MEL -DUP2	22-Aug-23	2137	Dictyosphaerium simplex Sukja	14368	0.06035	2	2	4.2
MEL -DUP2	22-Aug-23	2167	Elakatothrix gelatinosa Willen	7184	0.11279	10	2	15.7
MEL -DUP2	22-Aug-23	2195	Staurodesmus bullardii G.M. Smith	200	0.51914	26	22	2595.7
MEL -DUP2	22-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	14368	0.54167	6	6	37.7
MEL -DUP2	22-Aug-23	2206	Botryococcus braunii Kutzing	600	0.54288	12	12	904.8
MEL -DUP2	22-Aug-23	2235	Ankistrodesmus spiralis Lemmermann	7184	0.37213	33	2	51.8
MEL -DUP2	22-Aug-23	4351	Small chrysophyceae	919552	5.88513	2.3	2.3	6.4
MEL -DUP2	22-Aug-23	4352	Large chrysophyceae	50288	9.03172	7	7	179.6
MEL -DUP2	22-Aug-23	4355	Chrysochromulina parva Lackey	93392	6.10784	5	5	65.4
MEL -DUP2	22-Aug-23	4357	Chrysococcus sp.	538800	35.23752	5	5	65.4
MEL -DUP2	22-Aug-23	4358	Chrysostephanosphaera globulifera Scherffel	21552	7.68975	8.8	8.8	356.8
MEL -DUP2	22-Aug-23	4361	Kephyrion boreale Skuja	28736	3.41384	6.1	6.1	118.8
MEL -DUP2	22-Aug-23	4362	Kephyrion sp.	100576	1.28737	2.9	2.9	12.8
MEL -DUP2	22-Aug-23	4378	Dinobryon borgei Lemmermann	100576	4.26442	9	3	42.4
MEL -DUP2	22-Aug-23	4383	Dinobryon bavaricum Imhof	57472	13.00017	12	6	226.2
MEL -DUP2	22-Aug-23	4383	Dinobryon bavaricum Imhof	2800	3.5	0	0	1250
MEL -DUP2	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	28736	6.50008	12	6	226.2
MEL -DUP2	22-Aug-23	4388	Dinobryon sertularia Ehrenberg	5600	11.1496	0	0	1991
MEL -DUP2	22-Aug-23	4390	Dinobryon sociale Ehrenberg	172416	39.0005	12	6	226.2
MEL -DUP2	22-Aug-23	4390	Dinobryon sociale Ehrenberg	200	0.19	0	0	950

Station	Date	Species Code	Speceis name	density	biomass	length	width	cell volume
				cells/L ⁻¹	mg/m ⁻³	μ	μ	μ ³
MEL -DUP2	22-Aug-23	4413	Chrysochromulina laurentiana Kling	64656	25.51326	9.1	9.1	394.6
MEL -DUP2	22-Aug-23	4418	Salpingoecca frequentissima (Zach.) Lemmermann	150864	7.58846	6	4	50.3
MEL -DUP2	22-Aug-23	4448	Rhizochrysis scherffelii Pascher	1600	4.88576	18	18	3053.6
MEL -DUP2	22-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	4600	11.13338	11.55	23.1	2420.3
MEL -DUP2	22-Aug-23	5508	Cyclotella pseudostelligera	7184	3.95407	7.05	14.1	550.4
MEL -DUP2	22-Aug-23	5509	Cyclotella ocellata Pant.	50288	5.44619	4.1	8.2	108.3
MEL -DUP2	22-Aug-23	5511	Rhizosolenia erienne H.L. Smith	21552	1.67675	11	3	77.8
MEL -DUP2	22-Aug-23	5513	Tabellaria fenestrata (Lyngbye) Kutzing	800	0.56552	75	6	706.9
MEL -DUP2	22-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	200	0.26682	26	14	1334.1
MEL -DUP2	22-Aug-23	5518	Synedra acus Kutzing	3200	0.38528	115	2	120.4
MEL -DUP2	22-Aug-23	5524	Asterionella formosa Hassall	14400	1.50768	100	2	104.7
MEL -DUP2	22-Aug-23	5551	Cyclotella michiganiana Skvortzow	150864	3.27375	2.4	4.8	21.7
MEL -DUP2	22-Aug-23	6554	Rhodomonas minuta Skuja	136496	20.5836	12	6	150.8
MEL -DUP2	22-Aug-23	6558	Cryptomonas erosa Ehrenberg	7400	13.82172	27.3	14	1867.8
MEL -DUP2	22-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	400	0.2932	21	10	733
MEL -DUP2	22-Aug-23	6565	Cryptomonas rostratiformis Skuja	400	0.87572	32	14	2189.3
MEL -DUP2	22-Aug-23	7631	Gymnodinium helveticum Penard	1400	32.98666	50	30	23561.9
MEL -DUP2	22-Aug-23	7632	Gymnodinium sp.	3600	22.93416	23	23	6370.6
MEL -DUP2	22-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	7800	32.18514	19.9	19.9	4126.3
MEL -DUP3	18-Aug-23	1073	Snowella sp	200	0.1	0	0	500
MEL -DUP3	18-Aug-23	2112	Sphaerocystis Schroeteri Chodat	172416	2.43107	3	3	14.1
MEL -DUP3	18-Aug-23	2121	Oocystis lacustris Chodat	373568	10.57197	6	3	28.3
MEL -DUP3	18-Aug-23	2137	Dictyosphaerium simplex Sukja	50288	0.21121	2	2	4.2
MEL -DUP3	18-Aug-23	2143	Monoraphidium minutum (Nag.) Komarkova-Legnerova	21552	1.04312	7.7	4	48.4
MEL -DUP3	18-Aug-23	2145	Crucigenia quadrata Morr.	28736	0.04023	2	2	1.4
MEL -DUP3	18-Aug-23	2167	Elakatothrix gelatinosa Willen	7184	0.11279	10	2	15.7
MEL -DUP3	18-Aug-23	2178	Cosmarium sp.	400	0.55852	20	20	1396.3
MEL -DUP3	18-Aug-23	2187	Staurodesmus extensus (Andersson) Teiling	200	0.07748	13.6	12	387.4
MEL -DUP3	18-Aug-23	2199	Spondylosium planum (Wolle) W. and G.S. West	7184	0.27084	6	6	37.7
MEL -DUP3	18-Aug-23	2215	Tetraedron caudatum (Corda) Hansgrig	7184	0.03376	3	3	4.7
MEL -DUP3	18-Aug-23	2247	Oocystis gigas Archer	200	0.48254	18	16	2412.7
MEL -DUP3	18-Aug-23	4351	Small chrysophyceae	524432	2.93682	2.2	2.2	5.6
MEL -DUP3	18-Aug-23	4352	Large chrysophyceae	7184	1.29025	7	7	179.6
MEL -DUP3	18-Aug-23	4355	Chrysochromulina parva Lackey	71840	4.69834	5	5	65.4
MEL -DUP3	18-Aug-23	4357	Chrysococcus sp.	474144	31.00902	5	5	65.4
MEL -DUP3	18-Aug-23	4362	Kephyrion sp.	50288	0.64369	2.9	2.9	12.8
MEL -DUP3	18-Aug-23	4368	Mallomonas crassisquama (Asmund) Fott	200	0.20944	20	10	1047.2
MEL -DUP3	18-Aug-23	4381	Dinobryon mucronatom Nygaard	7184	0.94039	10	5	130.9
MEL -DUP3	18-Aug-23	4390	Dinobryon sociale Ehrenberg	7184	1.62502	12	6	226.2
MEL -DUP3	18-Aug-23	4413	Chrysochromulina laurentiana Kling	43104	17.00884	9.1	9.1	394.6
MEL -DUP3	18-Aug-23	5507	Cyclotella stelligera Cleve and Grunow	2200	5.2558	11.5	23	2389
MEL -DUP3	18-Aug-23	5509	Cyclotella ocellata Pant.	43104	4.49575	4.05	8.1	104.3
MEL -DUP3	18-Aug-23	5514	Tabellaria flocculosa (Roth) Kutzing	6600	8.80506	26	14	1334.1
MEL -DUP3	18-Aug-23	5518	Synedra acus Kutzing	1000	0.1152	110	2	115.2
MEL -DUP3	18-Aug-23	5524	Asterionella formosa Hassall	8600	0.90042	100	2	104.7
MEL -DUP3	18-Aug-23	5551	Cyclotella michiganiana Skvortzow	21552	0.46768	2.4	4.8	21.7
MEL -DUP3	18-Aug-23	5720	Cyclotella bodanica Eulens.	200	1.41124	16.5	33	7056.2
MEL -DUP3	18-Aug-23	6554	Rhodomonas minuta Skuja	308912	46.58393	12	6	150.8
MEL -DUP3	18-Aug-23	6558	Cryptomonas erosa Ehrenberg	3400	6.1642	26.5	14	1813
MEL -DUP3	18-Aug-23	6562	Cryptomonas reflexa (Marsson) Skuja	8400	6.1572	21	10	733
MEL -DUP3	18-Aug-23	6565	Cryptomonas rostratiformis Skuja	200	0.45156	33	14	2257.8
MEL -DUP3	18-Aug-23	6568	Katablepharis ovalis Skuja	7184	0.32112	8	4	44.7
MEL -DUP3	18-Aug-23	7632	Gymnodinium sp.	800	5.09648	23	23	6370.6
MEL -DUP3	18-Aug-23	7639	Peridinium pusillum (Penard) Lemmermann	2600	10.2505	19.6	19.6	3942.5