

# **PRESQUE ISLE BAY**

## **ERIE COUNTY**

### **WATER CONTACT SPORTS USE ASSESSMENT REPORT**

**Segment: Bay  
Stream Code: 62245  
Drainage List: X**

**ASSESSMENT SECTION  
WATER QUALITY DIVISION  
BUREAU OF CLEAN WATER  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

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## **INTRODUCTION**

The Department of Environmental Protection (DEP) conducted a Water Contact Sports (WC) Use assessment of the Presque Isle Bay as part of routine assessment efforts and in response to numerous point-source discharge removals and remediations. The entire bay is currently designated Warm Water Fishes (WWF). Exceptions to the uses and criteria include a modification of pH throughout the bay from between 6-8 to between 7-9 standard units. For the Erie Federal Harbor subset of Presque Isle Bay, the WC Use and the associated “Bac<sub>1</sub>” criterion is deleted; additionally, the statewide “Bac<sub>1</sub>” criterion is replaced with the following site-specific Bac<sub>2</sub> criterion in 25 Pa. Code § 93.9x:

*“(Coliforms/100 ml)—Maximum of 5,000/100 ml as a monthly average value, no more than this number in more than 20% of the samples collected during a month, nor more than 20,000/100 ml in more than 5% of the samples”*

The reason for the exceptions were water pollution (primarily combined sewer overflows (CSOs) from the City of Erie and organic pollution from the former Hammermill paper company) as well as heavy shipping traffic (Regal and Overdorff 1986). Since the time of these exceptions there have been several notable point-source discharge eliminations including the Erie Waterworks Chestnut Street Water Treatment Plant, Presque Isle State Park’s Sewage Treatment Plant, and GAF Building Materials Corporation. These changes have likely changed water quality in Presque Isle Bay, so prioritizing a reassessment was necessary.

Components of this assessment included *E. coli* data collected during September 2022. The results of the data collection and assessment effort indicated that the entirety of Presque Isle Bay is supporting the WC Use, including the Erie Federal Harbor.

## **GENERAL WATERSHED DESCRIPTION**

Presque Isle Bay is a shallow 1500-hectare (3700 acre) embayment of Lake Erie with an average depth of approximately four meters. The bay is formed by the 11 km long Presque Isle peninsula (Presque Isle State Park) to the north and is bounded to the south by the City of Erie and the easternmost extent of Millcreek Township. The principal tributaries to Presque Isle Bay are Mill Creek (Stream Code 62418, including UNT 62417 to Lake Erie locally known as “Garrison Run”) and Cascade Creek (Stream Code 62428), which together account for approximately two-thirds of the inflow to the bay (DEP 1992). Presque Isle Bay is connected to Lake Erie through a single entrance channel at the east end of the bay. This channel, along with the approximately 122 hectares (300 acres) of the Erie Federal Harbor are maintained for navigation by the US Army Corps of Engineers to a minimum depth of 8.84 meters (29 feet).

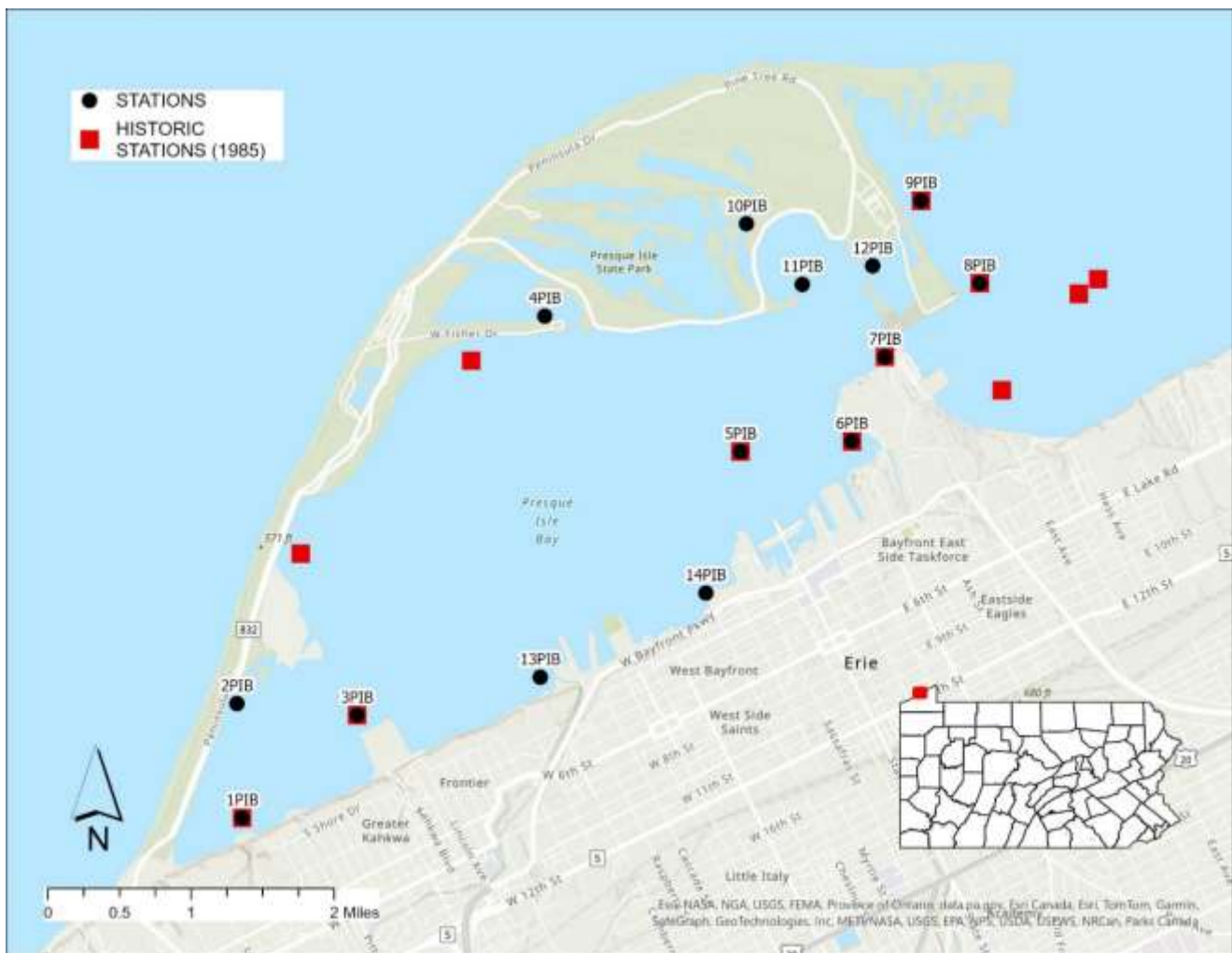
As of this report, the only remaining NPDES-permitted point-source discharge directly to Presque Isle Bay is filter backwash from Erie Waterworks’ Wasielewski (formerly Sommerheim) treatment plant. In addition, 47 CSOs discharge directly or indirectly into Presque Isle Bay. Thirty-eight (81%) of these combined sewer overflows discharge to Mill Creek and/or its tributary, Garrison Run. Four active CSOs

remain within the city's wastewater collection system. In 2022 (the most recent Chapter 94 Wasteload Management Report data available), these four CSOs contributed over 700,000 gallons of combined stormwater and untreated wastewater to Mill Creek.

The Presque Isle Bay was previously assessed in 2010. Results of the previous assessment indicated that the bay was impaired for Source Unknown, Cause Pathogens.

## **WATER QUALITY**

With some modifications due to data collection occurring along targeted shoreline areas and in lentic waters, sampling design and data collection were implemented according to DEP's *Water Quality Monitoring Protocols for Streams and Rivers* (Lookenbill and Whiteash 2021) and an assessment was conducted according to DEP's *Assessment Methodology for Streams and Rivers* (Shull and Whiteash 2021). Station locations (Figure 1 & Table 1) were established to be representative of conditions found in Presque Isle Bay, pursuant to DEP's *Sampling Design and Planning* (Lookenbill 2020) and *Assessment Determination and Delisting Methods* (Shull and Pulket 2021). Stations were also located to compare some historically collected locations in 1985 (Regal and Overdorff 1986).



**Figure 1.** Presque Isle Bay Station Locations.

**Table 1.** Presque Isle Bay Station Locations.

<b>STATION</b>	<b>DESCRIPTION</b>
<b>1PIB</b>	Near Sommerheim Waste Treatment Plant Historical Station (1985) Lat: 42.11631                      Long: -80.14508
<b>2PIB</b>	Vista 3 Boat Launch Lat: 42.12486                      Long: -80.14560
<b>3PIB</b>	Near Erie Yacht Club Historical Station (1985) Lat: 42.12400                      Long: -80.13346
<b>4PIB</b>	Near Marina Boat Launch Lat: 42.15390                      Long: -80.11450
<b>5PIB</b>	NW of Public Dock; within Erie Federal Harbor Historical Station (1985) Lat: 42.14375                      Long: -80.09472
<b>6PIB</b>	Mouth of Mill Creek Historical Station (1985) Lat: 42.14451                      Long: -80.08348
<b>7PIB</b>	Entrance of Erie Federal Harbor West Channel Historical Station (1985) Lat: 42.15084                      Long: -80.08014
<b>8PIB</b>	Entrance of Erie Federal Harbor East Channel Historical Station (1985) Lat: 42.15636                      Long: -80.07056
<b>9PIB</b>	Near Beach 11 Historical Station (1985) Lat: 42.16252                      Long: -80.07648
<b>10PIB</b>	Canoe Livery Lat: 42.16081                      Long: -80.09411
<b>11PIB</b>	Near Perry Monument Lat: 42.15628                      Long: -80.08847
<b>12PIB</b>	Horseshoe Pond Lat: 42.15764                      Long: -80.08139
<b>13PIB</b>	Mouth of Cascade Creek Lat: 42.12685                      Long: -80.11496
<b>14PIB</b>	Chestnut Street Boat Launch Lat: 42.13315                      Long: -80.11496

**Discrete Physicochemical**

Physicochemical data were collected using the DEP *In-situ Field Meter and Transect Data Collection Protocol* (Hoger 2020, Appendix A). The DEP *Discrete Physicochemical Assessment Method* (Biggs and Whiteash 2021) was used to make assessments. During the sampling effort, Presque Isle Bay was

within the summer epilimnion of Lake Erie. As such, stratification events within the bay tend to be minimal and transient. A single vertical profile taken at the approximate center of the bay on 8 September 2022 confirmed a warm, mixed (unstratified) water column with oxygen saturation from top to bottom. Water temperatures averaged 19.8°C and ranged from 13.5°C to 22°C with cooler water temperatures noted during the final two sampling events. Dissolved oxygen levels averaged 8.76 mg/L and ranged from 6.72 (75% saturation) to 10.51 mg/L (115% saturation). Water pH ranged from 7.57 – 8.73 standard units, with an average value of 8.31 standard units. Specific conductance averaged 278 µS/cm, ranging from 260.8 to 374.2 µS/cm. In short, field chemistries were within typical ranges for Presque Isle Bay and no digressions of water quality criteria were observed.

## Biological

Bacteriological data were collected at each station using the DEP’s *Bacteriological Data Collection Protocol* (Miller 2023). Data were assessed using DEP’s *Bacteriological Assessment Method for Water Contact Sports* (Miller and Whiteash 2021). A single 30-day *E. coli* geometric mean, reported as colony forming units per 100 mL (CFU/100mL), was calculated at each station to make assessment decisions and to identify any potential problem areas (Table 2).

Overall, the geometric mean of all samples collected in Presque Isle Bay was 40 CFU/100mL. Stations 5PIB and 6PIB each had a single sample that digressed the 410 CFU/100mL portion of the bacteria criterion. Even with the inclusion of the sample collected at station 5PIB (within the Erie Federal Harbor), there was only approximately a 3% excursion frequency observed. Moreover, samples collected from within the Erie Federal Harbor were not significantly different in terms of *E. coli* concentrations from those collected elsewhere in Presque Isle Bay.

**Table 2.** *E. coli* geometric means (CFU/100ML) at each station.

STATION <sup>1</sup>	<i>E. coli</i> GEOMETRIC MEAN <sup>2</sup>
1PIB	29
2PIB	25
3PIB	29
4PIB	29
5PIB	66
6PIB	120
7PIB	59
8PIB	33
9PIB	25
10PIB	38
11PIB	25
12PIB	33
13PIB	53
14PIB	112

<sup>1</sup>Refer to Figure 1 & Table 1 for Station Locations.

<sup>2</sup>*E. coli* geometric mean > 126 = Impaired.

## **PROTECTED USE ASSESSMENT**

The assessment was implemented to make final assessments based on all collected data and analyses (Table 3) according to DEP’s *Assessment Methodology for Streams and Rivers* (Shull and Whiteash 2021). Specifically, the *Discrete Physicochemical Assessment Method* (Biggs and Whiteash 2021) was applied to the physicochemical data and the *Bacteriological Assessment Method for Water Contact Sports* (Miller and Whiteash 2021) was applied to the bacteria data. As a result of this assessment effort, a total of 3655 acres (100%) were supporting.

**Table 3.** Presque Isle Bay Assessment Decision Summary.

<b>STATION<sup>1</sup></b>	<b>PHYSICOCHEMICAL ASSESSMENT</b>	<b>BIOLOGICAL ASSESSMENT</b>	<b>FINAL ASSESSMENT DECISION</b>
1PIB	Supporting	Supporting	Supporting
2PIB	Supporting	Supporting	Supporting
3PIB	Supporting	Supporting	Supporting
4PIB	Supporting	Supporting	Supporting
5PIB	Supporting	Supporting	Supporting
6PIB	Supporting	Supporting	Supporting
7PIB	Supporting	Supporting	Supporting
8PIB	Supporting	Supporting	Supporting
9PIB	Supporting	Supporting	Supporting
10PIB	Supporting	Supporting	Supporting
11PIB	Supporting	Supporting	Supporting
12PIB	Supporting	Supporting	Supporting
13PIB	Supporting	Supporting	Supporting
14PIB	Supporting	Supporting	Supporting

<sup>1</sup>Refer to Figure 1 & Table 1 for Station Locations.

Details of the assessments are described below.

### **Presque Isle Bay – Entire Bay**

Physicochemical and *E. coli* data collected in 2022 at all stations indicated that the Presque Isle Bay was supporting.

- Field chemistries were within typical ranges for Presque Isle Bay and no digressions of water quality criteria were observed.
- *E. coli* data collected and assessed at each station individually showed no exceedances of criteria. This suggests that water quality has improved, especially at locations where historical data showed high concentrations of bacteria (Fecal Coliform data was collected in 1985, not *E. coli*).

- There was no significant difference between *E. coli* data collected within the Erie Federal Harbor and data outside of the Erie Federal Harbor.
- The overall *E. coli* geometric mean of all samples collected showed no exceedance of criteria. Additionally, excursions of the 410 CFU/100mL portion of the criterion only reached 3%.

The following impairments were removed from Presque Isle Bay:

- Source Unknown, cause Pathogens

## **LITERATURE CITED**

- Biggs, H., and R. Whiteash. (editors). 2021. Discrete physicochemical assessment method. Chapter 3.1, pages 2–13 in D. R. Shull, and R. Whiteash (editors). Assessment methodology for streams and rivers. Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.
- Hoger, M. S. (editor). 2020. In-situ field meter and transect data collection protocol. Chapter 4.1, pages 2–8 in M. J. Lookenbill, and R. Whiteash (editors). Water quality monitoring protocols for streams and rivers. Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.
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- Lookenbill, M. J. and R. Whiteash (editors). 2021. Water quality monitoring protocols for streams and rivers. Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.
- Miller, S. 2023. Bacteriological Data Collection Protocol. Chapter 3, pages 199–206 in M. J. Lookenbill and R. Whiteash (editors). Water quality monitoring protocols for streams and rivers. Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.
- Miller, S. and R. Whiteash (editors). 2021. Bacteriological Assessment Method for Water Contact Sports. Chapter 5, pages 220–225 in D. R. Shull and M. Pulket (editors). Assessment methodology for streams and rivers. Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.
- Pennsylvanian Department of Environmental Protection (DEP). 1992. Presque Isle Bay Remedial Action Plan. Pennsylvania Department of Environmental Protection, Meadville Regional Office and the Presque Isle Bay Public Advisory Committee. December 1992. <https://www.epa.gov/sites/default/files/2015-03/documents/presque-isle-bay-rap-199212-348pp.pdf>
- Regal and Overdorff. 1986. Presque Isle Bay and Erie Outer Harbor. Priority Water Body Survey Report. Water Quality Standards Review. September 1985. Water Quality Assessment Unit. Division of Water Quality. Bureau of Water Quality Management. Department of Environmental Resources. Harrisburg, PA. September 1986.
- Shull, D. R., and M. Pulket (editors). 2021. Assessment determination and delisting methods. Chapter 5, pages 2–15 in D. R. Shull, and R. Whiteash (editors). Assessment methodology for streams and rivers. Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.
- Shull, D. R., and R. Whiteash (editors). 2021. Assessment methodology for streams and rivers. Pennsylvania Department of Environmental Protection, Harrisburg, Pennsylvania.

**APPENDIX A: PHYSICOCHEMICAL DATA**

**Table A1.** Physicochemical Data – Presque Isle Bay.

<b>STATION<sup>1</sup></b>	<b>SAMPLE</b>	<b>DATE</b>	<b>TIME</b>	<b>TEMPERATURE (°C)</b>	<b>pH (S.U.)</b>	<b>DISSOLVED OXYGEN (mg/L)</b>	<b>SPECIFIC CONDUCTANCE (µS/cm)</b>
1PIB	2543899	9/8/2022	10:10	20.5	8.17	8.7	310.7
1PIB	2544569	9/13/2022	10:00	20.7	8.6	6.72	374.2
1PIB	2544593	9/15/2022	09:30	19.7	8.19	7.62	343.7
1PIB	2544612	9/20/2022	09:30	20.4	8.61	7.9	357
1PIB	2544649	9/28/2022	09:30	13.9	8.13	9.8	330.8
2PIB	2544189	9/8/2022	10:40	21.7	8.51	8.91	273.2
2PIB	2544590	9/13/2022	10:05	20.9	8.27	7.47	272.3
2PIB	2544600	9/15/2022	09:35	20.4	8.32	8.66	273.4
2PIB	2544643	9/20/2022	09:35	20.7	8.43	8.79	273.6
2PIB	2544671	9/28/2022	09:35	15.5	8.07	8.88	268.9
3PIB	2544200	9/8/2022	10:30	21.3	8.28	8.15	272.7
3PIB	2544591	9/13/2022	10:10	21.3	8.5	8.29	271.9
3PIB	2544601	9/15/2022	09:40	20.6	8.52	9.46	272.2
3PIB	2544644	9/20/2022	09:40	21	8.62	9.16	273.6
3PIB	2544672	9/28/2022	09:40	15.2	8.09	9.3	269.5
4PIB	2544201	9/8/2022	15:40	21.7	8.32	7.54	270.2
4PIB	2544592	9/13/2022	10:15	21.7	8.58	8.75	267.5
4PIB	2544602	9/15/2022	09:45	21.4	8.72	9.33	268.1
4PIB	2544645	9/20/2022	09:45	22	8.77	9.41	266.8
4PIB	2544673	9/28/2022	13:00	15.8	8.11	9.14	264.5
5PIB	2513926	9/8/2022	11:05	21.9	8.36	7.73	273
5PIB	2544603	9/13/2022	10:20	21.3	8.32	8.02	275.5
5PIB	2544646	9/15/2022	09:50	20.9	8.51	9.2	272.5
5PIB	2515931	9/20/2022	09:50	21	8.73	9.62	271.1
5PIB	2544683	9/28/2022	09:50	15.6	8.19	9.54	260.8
6PIB	2517577	9/8/2022	11:20	22.1	8.55	8.56	273.7
6PIB	2513913	9/13/2022	10:25	-	8.51	8.14	292.8
6PIB	2544605	9/15/2022	09:55	20.7	8.52	9.6	301.6
6PIB	2544647	9/20/2022	09:55	20.8	8.59	9.15	286.2
6PIB	2544676	9/28/2022	10:11	-	-	-	-
6PIB	2544686	10/6/2022	09:40	14.9	7.8	10.17	276.7
7PIB	2517578	9/8/2022	11:35	22	8.19	7.59	268.6

<b>STATION<sup>1</sup></b>	<b>SAMPLE</b>	<b>DATE</b>	<b>TIME</b>	<b>TEMPERATURE (°C)</b>	<b>pH (S.U.)</b>	<b>DISSOLVED OXYGEN (mg/L)</b>	<b>SPECIFIC CONDUCTANCE (µS/cm)</b>
7PIB	2543912	9/13/2022	10:30	21.3	8.37	8.38	272.7
7PIB	2544578	9/15/2022	10:00	21	8.54	9.2	272.1
7PIB	2544594	9/20/2022	10:00	21.2	8.57	9.14	270
7PIB	2544614	9/28/2022	10:15	15.6	8.14	9.29	273.9
8PIB	2544650	9/8/2022	12:00	22	8.25	8.32	266.1
8PIB	2544150	9/13/2022	10:35	21.4	8.39	8.5	270.8
8PIB	2544579	9/15/2022	10:05	-	-	-	-
8PIB	2513931	9/20/2022	10:05	21	8.54	9.09	270.8
8PIB	2544615	9/28/2022	10:20	16	8.15	9.34	270.3
9PIB	2544659	9/8/2022	12:10	20.5	8.33	9.1	261.1
9PIB	2544169	9/13/2022	10:40	21.4	8.42	9.2	266.7
9PIB	2544580	9/15/2022	10:10	20	8.59	10.51	263
9PIB	2544595	9/20/2022	10:10	21.1	8.52	9.6	264.1
9PIB	2544637	9/28/2022	10:35	15.1	8.22	9.91	266.4
10PIB	2544661	9/8/2022	13:00	21.7	7.98	7	272.2
10PIB	2544181	9/13/2022	10:45	21.6	7.64	6.88	278.1
10PIB	2544581	9/15/2022	10:15	21	7.81	7.61	284.4
10PIB	2544596	9/20/2022	10:15	21.9	8.09	8.85	280.5
10PIB	2544638	9/28/2022	11:00	13.5	7.57	8.3	265.5
11PIB	2544662	9/8/2022	12:50	22.6	8.68	9.93	268
11PIB	2544205	9/13/2022	11:00	21.1	8.24	9.84	272.1
11PIB	2544582	9/15/2022	10:20	20.9	8.63	9.6	270.6
11PIB	2544597	9/20/2022	10:20	21.7	8.69	9.22	262.4
11PIB	2544639	9/28/2022	11:15	14.8	7.88	8.62	266.1
12PIB	2515933	9/8/2022	12:35	21.3	7.73	5.76	277.2
12PIB	2544678	9/13/2022	11:05	20.5	8.23	8.3	273.4
12PIB	2544185	9/15/2022	10:25	21.9	8.66	10.02	273.9
12PIB	2544583	9/20/2022	11:00	21.9	8.63	8.98	265.1
12PIB	2544598	9/28/2022	11:20	14.4	8.07	9.23	263.4
13PIB	2544640	9/13/2022	11:10	-	-	-	-
13PIB	2544667	9/15/2022	10:30	20.5	8.51	9.94	277.1
13PIB	2544187	9/20/2022	11:05	20.7	8.28	8.02	267.2
13PIB	2544588	9/28/2022	10:01	-	-	-	-
13PIB	2513936	10/6/2022	09:30	14.5	8.01	10.33	308.1

<b>STATION<sup>1</sup></b>	<b>SAMPLE</b>	<b>DATE</b>	<b>TIME</b>	<b>TEMPERATURE (°C)</b>	<b>pH (S.U.)</b>	<b>DISSOLVED OXYGEN (mg/L)</b>	<b>SPECIFIC CONDUCTANCE (µS/cm)</b>
13PIB	2544641	10/6/2022	09:55	-	-	-	-
14PIB	2544668	9/13/2022	09:00	-	-	-	-
14PIB	2544188	9/15/2022	11:00	20.5	8.43	9.67	273.6
14PIB	2544589	9/20/2022	11:10	21.3	8.24	7.56	269
14PIB	2544599	9/28/2022	10:05	14.8	7.81	8.79	265.1
14PIB	2544642	10/6/2022	09:35	14.5	7.9	9.42	277.3
14PIB	2544669	10/6/2022	11:00	-	-	-	-

<sup>1</sup> Refer to Appendix A for Station Locations.

“-“ Indicates Parameter Was Not Tested

**APPENDIX B: BACTERIOLOGICAL DATA**

**Table B1.** Bacteriological Data – Presque Isle Bay.

STATION <sup>1</sup>	SAMPLE	DATE	TIME	<i>E. COLI</i>	MST qPCR (GC/100mL)						
				(CFU/100mL)	HUMAN	SWINE	BOVINE	AVIAN	DOG	HORSE	DEER
1PIB	2543899	9/8/2022	10:10	<25	-	-	-	-	-	-	-
1PIB	2544569	9/13/2022	10:00	13	-	-	-	-	-	-	-
1PIB	2544593	9/15/2022	09:30	25	-	-	-	-	-	-	-
1PIB	2544612	9/20/2022	09:30	25	-	-	-	-	-	-	-
1PIB	2544649	9/28/2022	09:30	100	-	-	-	-	-	-	-
2PIB	2544189	9/8/2022	10:40	<25	-	-	-	-	-	-	-
2PIB	2544590	9/13/2022	10:05	<25	-	-	-	-	-	-	-
2PIB	2544600	9/15/2022	09:35	<25	-	-	-	-	-	-	-
2PIB	2544643	9/20/2022	09:35	<25	-	-	-	-	-	-	-
2PIB	2544671	9/28/2022	09:35	25	-	-	-	-	-	-	-
3PIB	2544200	9/8/2022	10:30	25	-	-	-	-	-	-	-
3PIB	2544591	9/13/2022	10:10	<25	-	-	-	-	-	-	-
3PIB	2544601	9/15/2022	09:40	<25	-	-	-	-	-	-	-
3PIB	2544644	9/20/2022	09:40	<25	-	-	-	-	-	-	-
3PIB	2544672	9/28/2022	09:40	50	-	-	-	-	-	-	-
4PIB	2544201	9/8/2022	15:40	<25	-	-	-	-	-	-	-
4PIB	2544592	9/13/2022	10:15	<25	-	-	-	-	-	-	-
4PIB	2544602	9/15/2022	09:45	<25	-	-	-	-	-	-	-
4PIB	2544645	9/20/2022	09:45	<25	-	-	-	-	-	-	-
4PIB	2544673	9/28/2022	13:00	50	-	-	-	-	-	-	-
5PIB	2513926	9/8/2022	11:05	25	-	-	-	-	-	-	-
5PIB	2544603	9/13/2022	10:20	75	-	-	-	-	-	-	-
5PIB	2544646	9/15/2022	09:50	<25	-	-	-	-	-	-	-
5PIB	2515931	9/20/2022	09:50	50	-	-	-	-	-	-	-
5PIB	2544683	9/28/2022	09:50	525	-	-	-	-	-	-	-
6PIB	2517577	9/8/2022	11:20	125	-	-	-	-	-	-	-
6PIB	2513913	9/13/2022	10:25	<25	-	-	-	-	-	-	-
6PIB	2544605	9/15/2022	09:55	25	-	-	-	-	-	-	-
6PIB	2544647	9/20/2022	09:55	300	-	-	-	-	-	-	-
6PIB	2544676	9/28/2022	10:11	1075	<100	<100	<100	<100	<100	<100	<100
6PIB	2544686	10/6/2022	09:40	<25	6166	<100	<100	<100	<100	<100	<100
7PIB	2517578	9/8/2022	11:35	100	-	-	-	-	-	-	-
7PIB	2543912	9/13/2022	10:30	25	-	-	-	-	-	-	-

STATION <sup>1</sup>	SAMPLE	DATE	TIME	<i>E. COLI</i>	MST qPCR (GC/100mL)						
				(CFU/100mL)	HUMAN	SWINE	BOVINE	AVIAN	DOG	HORSE	DEER
7PIB	2544578	9/15/2022	10:00	<25	-	-	-	-	-	-	-
7PIB	2544594	9/20/2022	10:00	50	-	-	-	-	-	-	-
7PIB	2544614	9/28/2022	10:15	225	-	-	-	-	-	-	-
8PIB	2544650	9/8/2022	12:00	38	-	-	-	-	-	-	-
8PIB	2544150	9/13/2022	10:35	25	-	-	-	-	-	-	-
8PIB	2544579	9/15/2022	10:05	13	-	-	-	-	-	-	-
8PIB	2513931	9/20/2022	10:05	<25	-	-	-	-	-	-	-
8PIB	2544615	9/28/2022	10:20	125	-	-	-	-	-	-	-
9PIB	2544659	9/8/2022	12:10	<25	-	-	-	-	-	-	-
9PIB	2544169	9/13/2022	10:40	<25	-	-	-	-	-	-	-
9PIB	2544580	9/15/2022	10:10	25	-	-	-	-	-	-	-
9PIB	2544595	9/20/2022	10:10	<25	-	-	-	-	-	-	-
9PIB	2544637	9/28/2022	10:35	<25	-	-	-	-	-	-	-
10PIB	2544661	9/8/2022	13:00	<25	-	-	-	-	-	-	-
10PIB	2544181	9/13/2022	10:45	<25	-	-	-	-	-	-	-
10PIB	2544581	9/15/2022	10:15	<25	-	-	-	-	-	-	-
10PIB	2544596	9/20/2022	10:15	100	-	-	-	-	-	-	-
10PIB	2544638	9/28/2022	11:00	50	-	-	-	-	-	-	-
11PIB	2544662	9/8/2022	12:50	<25	-	-	-	-	-	-	-
11PIB	2544205	9/13/2022	11:00	<25	-	-	-	-	-	-	-
11PIB	2544582	9/15/2022	10:20	<25	-	-	-	-	-	-	-
11PIB	2544597	9/20/2022	10:20	<25	-	-	-	-	-	-	-
11PIB	2544639	9/28/2022	11:15	<25	-	-	-	-	-	-	-
12PIB	2515933	9/8/2022	12:35	<25	-	-	-	-	-	-	-
12PIB	2544678	9/13/2022	11:05	50	-	-	-	-	-	-	-
12PIB	2544185	9/15/2022	10:25	<25	-	-	-	-	-	-	-
12PIB	2544583	9/20/2022	11:00	50	-	-	-	-	-	-	-
12PIB	2544598	9/28/2022	11:20	25	-	-	-	-	-	-	-
13PIB	2544640	9/13/2022	11:10	25	-	-	-	-	-	-	-
13PIB	2544667	9/15/2022	10:30	<25	-	-	-	-	-	-	-
13PIB	2544187	9/20/2022	11:05	100	-	-	-	-	-	-	-
13PIB	2544588	9/28/2022	10:01	125	<100	<100	<100	<100	<100	<100	<100
13PIB	2513936	10/6/2022	09:30	<25	-	-	-	-	-	-	-
13PIB	2544641	10/6/2022	09:55	<25	<100	<100	<100	<100	<100	<100	<100
14PIB	2544668	9/13/2022	09:00	<25	-	-	-	-	-	-	-

STATION <sup>1</sup>	SAMPLE	DATE	TIME	<i>E. COLI</i>	MST qPCR (GC/100mL)						
				(CFU/100mL)	HUMAN	SWINE	BOVINE	AVIAN	DOG	HORSE	DEER
14PIB	2544188	9/15/2022	11:00	125	-	-	-	-	-	-	-
14PIB	2544589	9/20/2022	11:10	200	-	-	-	-	-	-	-
14PIB	2544599	9/28/2022	10:05	200	-	-	-	-	-	-	-
14PIB	2544642	10/6/2022	09:35	25	-	-	-	-	-	-	-
14PIB	2544669	10/6/2022	11:00	25	<100	<100	<100	<100	<100	<100	<100

<sup>1</sup>Refer to Figure 1 & Table 1 for Station Locations.

"<" Indicates Concentrations Below the Reporting Limit.

"-" Indicates Parameter Was Not Tested.