

Appendix W

Noise Assessment Documentation

BOAT HARBOUR REMEDIATION PLANNING AND DESIGN PROJECT

BASELINE NOISE MONITORING

March 8, 2018

CONFIDENTIAL





BOAT HARBOUR REMEDICATION PLANNING AND DESIGN

BASELINE NOISE MONITORING

GHD LIMITED

CONFIDENTIAL

PROJECT NO.: 171-10478-00

DATE: MARCH 08, 2018

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March 08, 2018

Confidential

Attention: Peter Oram, P. Geo
GHD LIMITED
45 Akerley Boulevard
Dartmouth, NS B3B 1J7

Dear Mr. Oram:

Subject: Baseline Noise - Boat Harbour Treatment Facility

WSP Canada Inc. was retained to complete an analysis of the background sound levels for the Boat Harbour Effluent Treatment Facility located in Pictou County, Nova Scotia, to gain an understanding of the current conditions.

The background sound level was measured per the definition in the Nova Scotia Environmental and Labour Publication "Guidelines for Environmental Noise Measurement and Assessment".

This report summarizes the findings of the background sound level assessment of the surrounding area on the proposed development site.

Sincerely,

A handwritten signature in blue ink that reads "Lee Hynes". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Lee Hynes, MAsc, P. Eng.
Project Manager, Atlantic Environment

WSP ref.: 171-10478-00

SIGNATURES

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1 INTRODUCTION

1.1 BACKGROUND INFORMATION

The Boat Harbour Effluent Treatment Facility (BHETF) became operational in 1967 and has been the primary processing system for effluent from the Kraft Pulp Mill.

The main components of the BHETF include: the wastewater effluent pipeline (over 3 km in length) that runs from the Kraft Pulp Mill and extends eastward, below the East River of Pictou (East River), to the BHETF property; twin settling basins and an Aeration Stabilization Basin (ASB) west-southwest of Boat Harbour; and the stabilization lagoon (Boat Harbour). Effluent from Boat Harbour discharges through a dam (northeast of Boat Harbour) into an estuary before being released to the Northumberland Strait. Prior to the construction of the twin settling basins and ASB, effluent was routed by open ditch from the pipeline on the east side of Highway 348 to a natural wetland area (Former Ponds 1, 2, and 3) before being discharged into the stabilization lagoon.

The total Site is approximately 546 hectares (ha) of which 141 ha is Boat Harbour. Boat Harbour contains approximately 300,000 m³ of sludge overlying native sediment. The sludge layer is an average of 20 cm thick, with thickness ranging from 10 cm to 1 m. The sludge is impacted with metals, polycyclic aromatic hydrocarbons, and dioxins/furans.

The remedial solution for BHETF may require the following:

- Management of residual mill effluent within the BHETF
- Risk management and/or removal, treatment, and disposal of impacted sediments/sludge and dewatering effluent from former effluent ditch and natural wetlands, twin settling basins, ASB, Boat Harbour, and potentially the estuary
- Remediation of impacted groundwater, soils, and surface water
- Use and closure of the existing waste containment cell, closure of the existing containment cell and construction of a new containment cell on-Site, or transportation and disposal at an approved off-Site facility
- Decommissioning of BHETF infrastructure including the pipeline, causeway, dam, and support facilities

To evaluate current conditions in the BHETF, baseline noise data was collected to document the current conditions present in the Boat Harbour area.

1.2 OBJECTIVES

The objective is to complete an analysis of the baseline sound pressure levels for the BHETF in support of the Boat Harbour Remediation Planning and Design (BHRPD) Project.

The background sound pressure level was measured in accordance with the Nova Scotia Environment and Labour Publication “Guidelines for Environmental Noise Measurement and Assessment” (NSE Noise Guidelines).

Background sound pressure level measurements were collected at five station locations from November 22, 2017 to December 19, 2017. The primary sensitive receptor is the Pictou Landing First Nation (PLFN) community on IR24, as well as individual residents to the north and east of the BHETF. Based on WSP’s understanding of the surrounding region Boat Harbour West Reserve No.37 encompasses the south of the

BHETF, Fisher's Grant Reserve No.24G encompasses the southeast of the BHETF, and Fishers Grant Reserve No.24 encompasses the north of the BHETF. The closest permanent occupied resident is located on the Fishers Grant Reserve No.24 and is approximately 75 m to the north of the Boat Harbour Study Area Boundary. The next closest permanent residences to the BHETF are found on Birch Street, and Cemetery Road on the Fishers Grant Reserve No.24.

This report summarizes the findings of the background sound pressure level measurements, and presents recommendations based on the sound pressure levels recorded.

2 METHODOLOGY

WSP conducted background sound pressure level measurements as defined in the NSE Noise Guidelines. Measurements were conducted at five separate locations for the purpose of collecting baseline data. As per industry practices sufficient background data should encompass 48 h of monitoring data without interruption from precipitation or wind speeds in excess of 20 km/h, and within the instruments operation tolerance as related to relative humidity and temperature.

All five monitoring stations were installed on November 22, 2017 and were deployed in the field for approximately one month. **Figure 1** shows the location of each monitoring station surrounding Boat Harbour. **Table 2-1** outlines the monitoring station location and equipment type installed at each location.

Table 2-1 Summary of Monitoring Locations and Sound Level Meters

	Equipment	Sound Level Meter Serial Number	Easting	Northing
Station 1	Larson Davis LxT soundtrack	0003201	528060.447	5057510.634
	PCB PRMLxTIL	021469		
	PCB 377B02	156803		
Station 2	Larson Davis LxT soundtrack	0003094	527303.049	5057368.761
	PCB PRMLxTIL	032196		
	PCB 377B02	142315		
Station 3	Larson Davis LxT soundtrack	0002784	526582.660	5055338.803
	PCB PRMLxTIL	019035		
	Bruël & Kjaer	4189 2146250		
Station 4	Larson Davis LxT	0003116	525342.272	5056210.594
	PRMLxTIL	021496		
	PCB model 377B02	129699		
Station 5	Larson Davis LxT soundtrack	0005163	526517.700	5056422.312
	PRM LxTIL	042880		
	PCB model 377B02	177625		

Data was logged on the sound level meters in one minute intervals. From the recorded data, the one hour equivalent sound level (L_{eq}) was calculated for each period as per the NSE Noise Guidelines. The guideline outlines three averaging periods with specific levels associated with that time period as follows:

- Daytime (07:00 – 18:59); 65 dBA
- Evening (19:00 – 22:59); 60 dBA
- Nighttime (23:00 – 06:59); 55 dBA

3 RESULTS

3.1 OBSERVATIONS

WSP staff were on site during monitoring station commissioning (November 22, 2017), data checks (November 28, 2017, December 7, 2017, December 14, 2017, and December 20, 2017) and decommissioning (December 20, 2017). Pre measurement calibration of the sound level meters at all five monitoring stations was completed

on November 22, November 28, December 7, December 14, and December 20, 2017. Post measurement calibration of the sound level meters was completed before downloading data from the sound level meters on November 28, December 7, December 14, and December 20, 2017. Pre and post calibrations of the sound level meters were found to be within the tolerances considered acceptable as per industry standard. While WSP staff were on site during commissioning, and data checks, the following sources were audible in the general vicinity and were the most likely causes of background sound levels measured:

- Wildlife;
- Light vehicular traffic; and,
- Operational noise from the BHEFT (particularly aeration equipment in the ASB directly south of Station 2);

3.2 MEASUREMENTS

The results of the background sound level measurements are summarized for the monitoring stations in **Table 3-1**. As a dedicated power connection was not available at any of the background noise monitoring locations, the equipment was powered by 12-volt batteries. The 12 volt power supply was replaced by WSP staff during data checks on November 28, December 7 and December 14, 2017. On occasion, power interruptions were noted at some monitoring stations due to poor battery performance over periods of colder weather.

Table 3.2-1 Results of Background Sound Level Measurements

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
November 22, 2017								
Daytime (07:00-18:59)	65 dBA	-	-	-	-	-		-
Evening (19:00-22:59)	60 dBA	44.6 dBA	51.7 dBA	42.8 dBA	49.4 dBA	45.6 dBA	21 mm rain	-
Nighttime (23:00-06:59)	55 dBA	56.4 dBA	60.3 dBA	54.8 dBA	57.7 dBA	53.8 dBA	21 mm rain	-
November 23, 2017								
Daytime (07:00-18:59)	65 dBA	50.5 dBA	55.5 dBA	48.4 dBA	48.2 dBA	47.3 dBA	1.0 mm rain	-
Evening (19:00-22:59)	60 dBA	37.4 dBA	53.0 dBA	36.4 dBA	34.7 dBA	41.7 dBA	1.0 mm rain	-
Nighttime (23:00-06:59)	55 dBA	37.1 dBA	50.9 dBA	-	33.1 dBA	35.1 dBA	1.0 mm rain	-
November 24, 2017								
Daytime (07:00-18:59)	65 dBA	45.0 dBA	51.8 dBA	36.1 dBA	37.7 dBA	44.3 dBA	Excellent	19.0 km/h
Evening (19:00-22:59)	60 dBA	41.3 dBA	50.4 dBA	32.7 dBA	34.8 dBA	43.0 dBA	Excellent	8.5 km/h
Nighttime (23:00-06:59)	55 dBA	42.7 dBA	49.8 dBA	34.3 dBA	37.0 dBA	37.5 dBA	Excellent	15.0 km/h
November 25, 2017								
Daytime (07:00-18:59)	65 dBA	52.3 dBA	56.6 dBA	45.4 dBA	52.5 dBA	54.3 dBA	2.8 mm rain	-
Evening (19:00-22:59)	60 dBA	41.5 dBA	52.7 dBA	34.7 dBA	41.0 dBA	43.2 dBA	2.8 mm rain	-
Nighttime (23:00-06:59)	55 dBA	41.2 dBA	50.5 dBA	ID dBA	38.4 dBA	38.1 dBA	2.8 mm rain	-

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
November 26, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	38.0 dBA	42.1 dBA	43.2 dBA	5.0 mm rain	-
Evening (19:00-22:59)	60 dBA	PI	PI	PI	48.0 dBA	44.0 dBA	5.0 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	38.8 dBA	40.4 dBA	5.0 mm rain	-
November 27, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	36.7 dBA	43.8 dBA	Excellent	7.0 km/h
Evening (19:00-22:59)	60 dBA	PI	PI	PI	36.5 dBA	39.8 dBA	Excellent	9.0 km/h
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	39.4 dBA	40.3 dBA	Excellent	8.0 km/h
November 28, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	37.8 dBA	43.4 dBA	Excellent	9.5 km/h
Evening (19:00-22:59)	60 dBA	40.5 dBA	48.2 dBA	34.3 dBA	34.3 dBA	42.5 dBA	Excellent	4.0 km/h
Nighttime (23:00-06:59)	55 dBA	46.4 dBA	54.7 dBA	43.1 dBA	45.9 dBA	47.5 dBA	Excellent	10.0 km/h
November 29, 2017								
Daytime (07:00-18:59)	65 dBA	47.6 dBA	PI	42.9 dBA	46.5 dBA	49.8 dBA	0.8 mm rain	-
Evening (19:00-22:59)	60 dBA	42.3 dBA	PI	44.9 dBA	45.7 dBA	45.3 dBA	0.8 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	46.8 dBA	43.8 dBA	0.8 mm rain	-
November 30, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	35.4 dBA	42.4 dBA	Excellent	19 km/h
Evening (19:00-22:59)	60 dBA	PI	PI	PI	37.0 dBA	40.5 dBA	Excellent	11.0 km/h
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	36.5 dBA	35.8 dBA	Excellent	14.0 km/h
December 1, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	44.5 dBA	45.8 dBA	15 mm rain	-

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
Evening (19:00-22:59)	60 dBA	PI	PI	PI	47.4 dBA	44.1 dBA	15 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	47.2 dBA	40.8 dBA	15 mm rain	-
December 2, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	41.7 dBA	42.9 dBA	2.0 mm rain	-
Evening (19:00-22:59)	60 dBA	PI	PI	PI	37.1 dBA	42.9 dBA	2.0 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	31.6 dBA	34.4 dBA	2.0 mm rain	-

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
December 3, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	36.3 dBA	42.0 dBA	1.4 mm rain	-
Evening (19:00-22:59)	60 dBA	PI	PI	PI	33.3 dBA	41.9 dBA	1.4 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	39.4 dBA	36.9 dBA	1.4 mm rain	-
December 4, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	41.2 dBA	43.7 dBA	1.0 mm rain	-
Evening (19:00-22:59)	60 dBA	PI	PI	PI	42.0 dBA	45.2 dBA	1.0 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	37.5 dBA	39.9 dBA	1.0 mm rain	-
December 5, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	37.4 dBA	43.4 dBA	1.0 mm rain	-
Evening (19:00-22:59)	60 dBA	PI	PI	PI	47.7 dBA	45.2 dBA	1.0 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	43.9 dBA	43.5 dBA	1.0 mm rain	-
December 6, 2017								

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	55.8 dBA	53.7 dBA	9.0 mm rain	-
Evening (19:00-22:59)	60 dBA	PI	PI	PI	38.2 dBA	41.6 dBA	9.0 mm rain	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	32.2 dBA	37.8 dBA	9.0 mm rain	-
December 7, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	42.3 dBA	44.0 dBA	Excellent	8.5 km/h
Evening (19:00-22:59)	60 dBA	39.7 dBA	49.9 dBA	34.5 dBA	36.2 dBA	40.9 dBA	Excellent	10.5 km/h
Nighttime (23:00-06:59)	55 dBA	39.0 dBA	49.4 dBA	31.6 dBA	34.3 dBA	35.7 dBA	Excellent	8.0 km/h
December 8, 2017								
Daytime (07:00-18:59)	65 dBA	46.6 dBA	51.0 dBA	34.6 dBA	35.7 dBA	42.8 dBA	Excellent	12.5 km/h
Evening (19:00-22:59)	60 dBA	59.1 dBA	50.0 dBA	35.0 dBA	34.5 dBA	42.3 dBA	Excellent	7 km/h
Nighttime (23:00-06:59)	55 dBA	45.7 dBA	50.7 dBA	34.1 dBA	30.6 dBA	37.2 dBA	Excellent	8 km/h
December 9, 2017								
Daytime (07:00-18:59)	65 dBA	49.2 dBA	47.8 dBA	36.5 dBA	42.6 dBA	42.5 dBA	35.4 mm rain	-
Evening (19:00-22:59)	60 dBA	47.5 dBA	46.2 dBA	49.6 dBA	54.2 dBA	50.4 dBA	35.4 mm rain	-
Nighttime (23:00-06:59)	55 dBA	50.0 dBA	47.9 dBA	53.0 dBA	54.3 dBA	49.8 dBA	35.4 mm rain	-

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
December 10, 2017								
Daytime (07:00-18:59)	65 dBA	42.0 dBA	52.7 dBA	44.9 dBA	40.7 dBA	42.5 dBA	2.0 mm rain	-
Evening (19:00-22:59)	60 dBA	39.8 dBA	52.6 dBA	40.1 dBA	36.5 dBA	44.2 dBA	2.0 mm rain	-
Nighttime (23:00-06:59)	55 dBA	39.7 dBA	51.2 dBA	PI	35.5 dBA	35.3 dBA	2.0 mm rain	-
December 11, 2017								
Daytime (07:00-18:59)	65 dBA	43.3 dBA	49.3 dBA	PI	36.0 dBA	44.2 dBA	2.0 cm snow	-
Evening (19:00-22:59)	60 dBA	38.0 dBA	48.5 dBA	PI	33.1 dBA	40.7 dBA	2.0 cm snow	-
Nighttime (23:00-06:59)	55 dBA	36.5 dBA	PI	PI	26.6 dBA	34.4 dBA	2.0 cm snow	-
December 12, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	38.2 dBA	43.1 dBA	Excellent	4.5 km/h
Evening (19:00-22:59)	60 dBA	PI	PI	PI	38.5 dBA	41.9 dBA	Excellent	7.0 km/h
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	49.5 dBA	44.7 dBA	Excellent	17.5 km/h
December 13, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	50.1 dBA	49.5 dBA	8 mm rain 0.4 cm snow	-
Evening (19:00-22:59)	60 dBA	PI	PI	PI	46.5 dBA	48.9 dBA	8 mm rain 0.4 cm snow	-
Nighttime (23:00-06:59)	55 dBA	PI	PI	PI	55.0 dBA	54.8 dBA	8 mm rain 0.4 cm snow	-
December 14, 2017								
Daytime (07:00-18:59)	65 dBA	PI	PI	PI	49.4 dBA	52.0 dBA	Excellent	14.5 km/h
Evening (19:00-22:59)	60 dBA	42.7 dBA	51.8 dBA	36.4 dBA	40.8 dBA	42.9 dBA	Excellent	9.0 km/h
Nighttime (23:00-06:59)	55 dBA	44.8 dBA	54.2 dBA	34.0 dBA	42.2 dBA	42.7 dBA	Excellent	9.0 km/h
December 15, 2017								

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
Daytime (07:00-18:59)	65 dBA	50.1 dBA	57.3 dBA	39.2 dBA	48.0 dBA	50.2 dBA	Excellent	13.0 km/h
Evening (19:00-22:59)	60 dBA	39.4 dBA	48.6 dBA	28.3 dBA	34.3 dBA	43.7 dBA	Excellent	5.0 km/h
Nighttime (23:00-06:59)	55 dBA	37.8 dBA	48.7 dBA	27.0 dBA	31.5 dBA	33.3 dBA	Excellent	1.0 km/h
December 16, 2017								
Daytime (07:00-18:59)	65 dBA	41.2 dBA	48.9 dBA	33.8 dBA	38.4 dBA	43.6 dBA	0.4 cm snow	-
Evening (19:00-22:59)	60 dBA	43.0 dBA	50.9 dBA	37.0 dBA	40.6 dBA	46.7 dBA	0.4 cm snow	-
Nighttime (23:00-06:59)	55 dBA	42.7 dBA	51.4 dBA	37.3 dBA	40.5 dBA	44.4 dBA	0.4 cm snow	-

TIME OF DAY	GUIDELINE CRITERIA	STATION 1	STATION 2	STATION 3	STATION 4	STATION 5	DATA QUALITY NOTES	AVERAGE WIND SPEED
December 17, 2017								
Daytime (07:00-18:59)	65 dBA	<i>46.0 dBA</i>	<i>50.1 dBA</i>	<i>33.2 dBA</i>	<i>37.0 dBA</i>	<i>40.4 dBA</i>	<i>1.4 cm snow</i>	-
Evening (19:00-22:59)	60 dBA	<i>40.0 dBA</i>	<i>50.4 dBA</i>	<i>34.8 dBA</i>	<i>38.4 dBA</i>	<i>38.8 dBA</i>	<i>1.4 cm snow</i>	-
Nighttime (23:00-06:59)	55 dBA	<i>36.7 dBA</i>	<i>49.8 dBA</i>	<i>30.3 dBA</i>	<i>33.9 dBA</i>	<i>44.6 dBA</i>	<i>1.4 cm snow</i>	-
December 18, 2017								
Daytime (07:00-18:59)	65 dBA	<i>39.2 dBA</i>	<i>48.1 dBA</i>	<i>28.7 dBA</i>	<i>33.9 dBA</i>	<i>39.5 dBA</i>	<i>0.6 cm snow</i>	-
Evening (19:00-22:59)	60 dBA	<i>37.4 dBA</i>	<i>48.3 dBA</i>	<i>29.1 dBA</i>	<i>34.4 dBA</i>	<i>41.9 dBA</i>	<i>0.6 cm snow</i>	-
Nighttime (23:00-06:59)	55 dBA	<i>39.0 dBA</i>	<i>48.9 dBA</i>	<i>28.3 dBA</i>	<i>36.4 dBA</i>	<i>34.5 dBA</i>	<i>0.6 cm snow</i>	-
December 19, 2017								
Daytime (07:00-18:59)	65 dBA	<i>PI</i>	<i>49.7 dBA</i>	<i>PI</i>	<i>43.4 dBA</i>	<i>46.5 dBA</i>	<i>7.4 mm rain</i>	-
Evening (19:00-22:59)	60 dBA	<i>PI</i>	<i>49.9 dBA</i>	<i>PI</i>	<i>37.4 dBA</i>	<i>43.7 dBA</i>	<i>7.4 mm rain</i>	-
Nighttime (23:00-06:59)	55 dBA	<i>PI</i>	<i>PI</i>	<i>PI</i>	<i>41.9 dBA</i>	<i>39.0 dBA</i>	<i>7.4 mm rain</i>	-

- **Bold** values indicate data of adequate quality collected during acceptable meteorological conditions
- *Italicized* values indicates unusable data due to meteorological conditions
- *PI* indicates power interruption - indicates insufficient data collected to report on the monitoring period

4 CONCLUSIONS

Based on the background sound levels recorded during monitoring of the BHETF site on November 22, 2017 through December 19, 2017, that the noise levels surrounding the BHETF are within acceptable levels defined by the NSE Noise Guidelines.

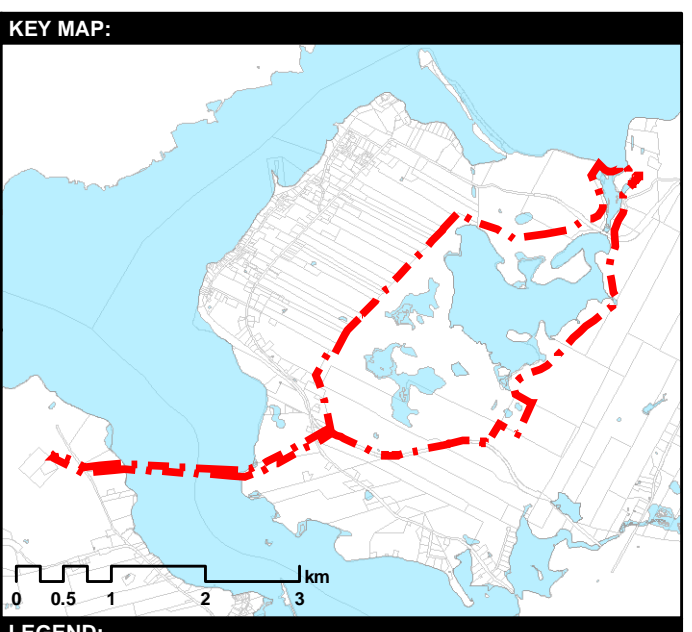
Of the monitoring data collected over 28 days, 19 days of data was invalidated due to meteorological conditions having negatively impacted data quality. Of the nine days in which meteorological conditions were considered to be ideal for monitoring, three complete days (72 h) of monitoring data was recovered. Of the data collected during the three complete days of monitoring, during what is to be considered ideal monitoring conditions, at no time did sound levels exceed the criteria guideline set by Nova Scotia Environment and Labour. In addition to the three complete days of monitoring data collected from all five monitoring stations surrounding the site, there were six days where partial data was recovered from the monitoring stations when meteorological conditions were considered to be ideal for monitoring. Within the additional six days of partial data recovered, at no time did sound levels exceed the criteria guidelines set by Nova Scotia Environment and Labour.

Since sound levels did not exceed the guidelines during baseline monitoring the exceedance threshold for noise should be set at the guideline limits for both the pilot scale activities and the full scale remediation activities. Noise monitoring should be carried out during all future site activities to ensure sound levels are below the guidelines as set by the Nova Scotia Environment and Labour.

APPENDIX

A SITE PLAN





- LEGEND:**
- NOISE MONITORING STATIONS
 - NEAREST NOISE RECEPTORS
- BIRCH STREET
- CEMETERY ROAD
 - FIELD DELINEATED WATERCOURSE
(WSP, 2017)
WC - watercourse; DC - drainage channel
 - WATERCOURSE
(GHD)
 - FIELD DELINEATED WETLAND BOUNDARY
(WSP, 2017)
 - APPROXIMATE LOCATION OF CLEARED AREA
 - FIRST NATIONS
TERRITORY BOUNDARY
 - BOAT HARBOUR
STUDY AREA BOUNDARY

DISCLAIMER:
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PROJECT:
PROJECT: BOAT HARBOUR REMEDIATION, PLANNING AND DESIGN

PROJECT NO.: 171-10478

CLIENT:

FIGURE:
TITLE: NOISE MONITORING STATIONS

FIGURE NO.: 1 **REVISION NO.:** 0

SCALE:
0 50 100 200 300 400 Meters
1:5,700

DATUM: NAD 83 CSRS **PROJECTION:** UTM ZONE 20 NORTH

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