NSARB-2023-001-APP-006

EXHIBIT 6

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APPLICATION PACKAGE

Volume 2

AQ#1205x, AQ#1432, AQ#1433

Submission to the Nova Scotia Aquaculture Review Board

Nova Scotia Department of Fisheries and Aquaculture

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APPENDIX C
Brooklyn Baseline Assessment Report

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Baseline Assessment Report

Proposed Site
Brooklyn

Liverpool Bay
Queens County
Nova Scotia

March 6, 2019

Prepared for:
Kelly Cove Salmon Ltd.
P.O. Box 33
Bridgewater, NS
B4V 2W6

Prepared by:
Sweeney International Marine Corp.
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SIMCorp File #SW2018-143

New Brunswick Newfoundland Nova Scotia

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March 6, 2019

SIMCorp File #SW2018-143

Jennifer Hewitt
P.O. Box 33
Bridgewater, NS
B4V 2W6

Dear Ms. Hewitt,

Reference: **Brooklyn Baseline Report**

Please find enclosed the above noted report and attached video footage for the baseline assessment of a proposed aquaculture site in Liverpool Bay, N.S.

If you have any questions or comments on the above noted report, please do not hesitate to contact me at 902-492-7865.
Sincerely,

[redacted]

Shaun Allain, B.Sc., EP
Marine Environmental Biologist
Sweeney International Marine Corp.
sallain@simcorp.ca

cc: Bob Sweeney (SIMCorp)
Kate Richardson (NSDFA)
Brennan Goreham (NSDFA)
Jeff Nickerson (KCS)
Ted Weaire (KCS)

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The following outlines the regulatory requirements of baseline assessments for the province of Nova Scotia and lists where the associated information can be found within this report.

	Regulatory Requirement	Sections of Regulation	Baseline Report Section
Depositional modeling	Modeled predicted contours of 1, 5, and 10 grams g C m^{-2} d^{-1}	AAR Paragraph 8(1)(a)	7.3
	Use of an aquaculture waste depositional model	AAR Paragraph 8(1)(a)	7.1
	Model inputs of food and fecal waste as accepted international standard values	AAR Paragraph 8(1)(a)	7.2
	Particle resuspension is not applicable	AAR Paragraph 8(1)(a)	7.1
Fish and Fish Habitat Survey	Survey of Fish and Fish Habitat within a grid that covers the lease, 1 g C m^{-2} d^{-1} depositional contour, and reference station	AAR Paragraph 8(1)(b)	8.2.1
	Species ≥ 1 cm in length are identified	AAR Paragraph 8(1)(b)	8.3.1
	All fish habitat and substrates type are identified	AAR Paragraph 8(1)(b)	8.3.1
	In lieu of a bathymetry survey, chart data with minimum resolution of 10 m contours were used to generate depth profiles within the 1 g C m^{-2} d^{-1} depositional contour, lease, and reference station	AAR Paragraph 8(1)(c)	3.4, 6.3, Appendix I
	Bathymetry survey equipment calibrated to industry standards and coordinates collected wi h a GPS	AAR Paragraph 8(1)(c)	3.4
Benthic Substrate Monitoring	Collected samples of the benthic substrate at each corner of the lease boundary, the site center, and a reference sta ion	AAR Paragraph 8(1)(d); NSDFA SOP's Appendix B	3.1
	Samples meet all quality criteria	AAR Paragraph 8(1)(d); NSDFA SOP's Section 4.3 & Appendix B	3.2, Appendix D, Appendix G
	Information concerning seabed and sediment samples is recorded	AAR Paragraph 8(1)(d); NSDFA SOP's Appendix B	5.0, Appendix D, Appendix B, Appendix C
	Concentration of free sulfide was determined within 36 hours	AAR Paragraph 8(1)(d)	4.1, 5.0, Appendix A, Appendix B
	Subsamples were kept cool until analyzed	AAR Paragraph 8(1)(d); NSDFA SOP's Appendix B	3.2, Appendix F
	A designated meter and probe combination were selected for sulfide measurements	NSDFA SOP's Appendix B	4.2, Appendix A
	Sulphide probe was calibrated using five serial dilutions of a standard sulfide solution beginning wi h the most dilute	AAR Paragraph 8(1)(d); NSDFA SOP's Appendix B	4.2, Appendix A
	Grain size distribution measurements recorded according to the Wentworth grain size scale	AAR Paragraph 8(1)(d); NSDFA SOP's Appendix B	3.2, Appendix C
	Redox measurements conducted as specified	AAR Paragraph 8(1)(d); NSDFA SOP's Appendix B	4.1, Appendix B
Video Monitoring	Video monitoring procedures were conducted as specified	AAR Paragraph 11(2)(a), (b), and (c); NSDFA SOP's Appendix B	3.3, 8.3.1
	Video monitoring was conducted at the same loca ions as benthic substrate samples	AAR Paragraph 11(2)(a), (b), and (c); NSDFA SOP's Appendix B	3.3, Appendix D
	A 150 meter video required by NSDFA was omitted after communications with NSDFA deemed it unnecessary when a fish habitat survey is also conducted.	NSDFA SOP's Appendix B	3.1, 5.0
	Sampling coordinates are collected by GPS and recorded degrees minutes decimal minutes (3 digits following decimal point) using NAD83	AAR Paragraph 11(2)(a), (b), and (c); NSDFA SOP's Appendix B	5.0, 8.3.1
	Timing of sampling occurred prior to the introduction of fish	AAR Paragraph 8	1.0
ADCP Measurements	Tidal current measurements were collected for a minimum of 30 days as close to the lease center as possible	NSDFA SOP's Appendix B	3.5, 6.2, Appendix H

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1.0 INTRODUCTION

The following baseline report and attached video have been prepared by SIMCorp for Kelly Cove Salmon Ltd. to summarize the findings of a formal baseline environmental survey required as part of the application for a proposed new site called Brooklyn. Brooklyn is in Liverpool Bay, southwest of Eastern Head, in Queens County (Fig. 1). This area is shown on CHS chart #4211. The proposed lease has dimensions of approximately 405 x 1005 m with an area of approximately 40.7 ha (Fig. 1, Table 1). This baseline assessment is required as part of the application for Brooklyn to become a new aquaculture site in Nova Scotia. If approved, the proposed lease would have a 2 x 10 cage grid configuration.

Figure 1 Proposed Brooklyn location in Liverpool Bay

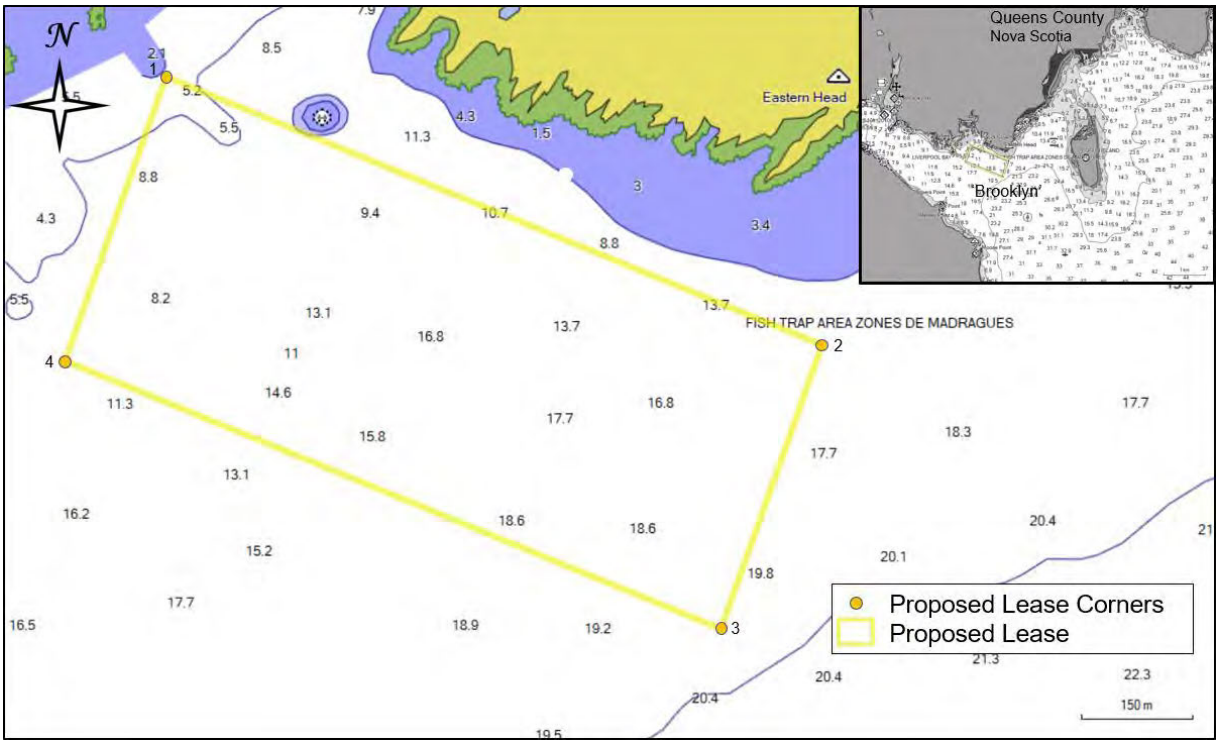

Table 1 Proposed boundary and center coordinates of Brooklyn

SITE COORDINATES (NAD 83)		
Corner	**Latitude**	**Longitude**
1	44° 02' 28.7"	64° 39' 57.9"
2	44° 02' 17.4"	64° 39' 15.5"
3	44° 02' 05.1"	64° 39' 21.8"
4	44° 02' 16.4"	64° 40' 04.2"
Site Center	44° 02' 16.9"	64° 39' 39.8"

Benthic field data contained within this report were collected during two sampling events. The first sampling event satisfied the benthic substrate sampling component of the baseline assessment and was carried out by SIMCorp Field Supervisor and Marine Environmental Biologist Shaun Allain, B.Sc., EP, Marine Environmental Biologist Neal Berry, B.Sc., and boat operator Chris Blackier on January 16, 2019. Low tide was at 10:39 (0.4 m), and high tide was at 16:26 (1.4 m). The second sampling event was to conduct a fish and fish habitat survey required under the Aquaculture Activities Regulations (AAR) and was carried out by SIMCorp Field Supervisor and Marine Environmental Biologist Shaun Allain, B.Sc., EP, Marine Environmental Biologist Neal Berry, B.Sc., and boat operator Chris Blackier on February 12, 2019. Low tide was at 7:55 (0.6 m), and high tide was at 13:08 (1.4 m).

Current speed and direction data presented in this document were collected with the use of an Acoustic Doppler Current Profiler (ADCP), deployed by SIMCorp in Liverpool Bay from January 14, 2019 to February 19, 2019 (36 days).

2.0 CONTACT INFORMATION

Proponent:

Company Name: Kelly Cove Salmon Ltd.
Principal Contact: Mr. Jeff Nickerson
Mailing Address: P.O. Box 33
Bridgewater, Nova Scotia
B4V 2W6
E-mail: [redacted]

Project Management:

Company Name: Sweeney International Marine Corp.
Principal Contact: Bob Sweeney
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Telephone: (506) 467-9014
Cellular: [redacted]
Facsimile: (506) 467-9503
E-mail: [redacted]

3.0 METHODOLOGY

The methods employed to conduct the seafloor sediment condition analyses were adapted, in consultation with Nova Scotia's Department of Fisheries and Aquaculture (NSDFA) officials, Appendix B of the Nova Scotia Department of Fisheries and Aquaculture *Standard Operating Procedures for the Environmental Monitoring of Marine Aquaculture in Nova Scotia* (Nova Scotia Department of Fisheries and Aquaculture 2018a), as well as the *Aquaculture Activities Regulations* (AAR) Guidance Document (Department of Fisheries and Oceans Canada 2018a) and Monitoring Standard (Department of Fisheries and Oceans Canada 2018b).

3.1 Sampling Locations

In order to satisfy the Nova Scotia Department of Fisheries and Aquaculture's (NSDFA) and the Aquaculture Activities Regulations (AAR) benthic substrate sampling criteria a total of six (6) stations were investigated for the purpose of this baseline survey (Fig. 2). The six (6) stations represent four (4) stations at the corners of the lease, one (1) at the site centre, and one (1) reference station. The baseline video transect was omitted after conversations with NSDFA that deemed the fish and fish habitat survey (referenced in section 8.0) to be sufficient video monitoring. Due to coarser substrates throughout most of the proposed lease, a full compliment of sediment samples was unattainable at all of the baseline survey stations. As such, video transects were conducted at stations BL1, BL2, BL4, and BL5. The sampling station coordinates are present in Table 2.

An Acoustic Doppler Current Profiler (ADCP) was deployed by SIMCorp in Liverpool Bay in approximately 18 m of water from January 14, 2019 to February 19, 2019 (Fig. 3). The current meter was deployed at the coordinate N44° 02' 15.6" W64° 39' 36.2".

Figure 2 Baseline sampling stations at Brooklyn

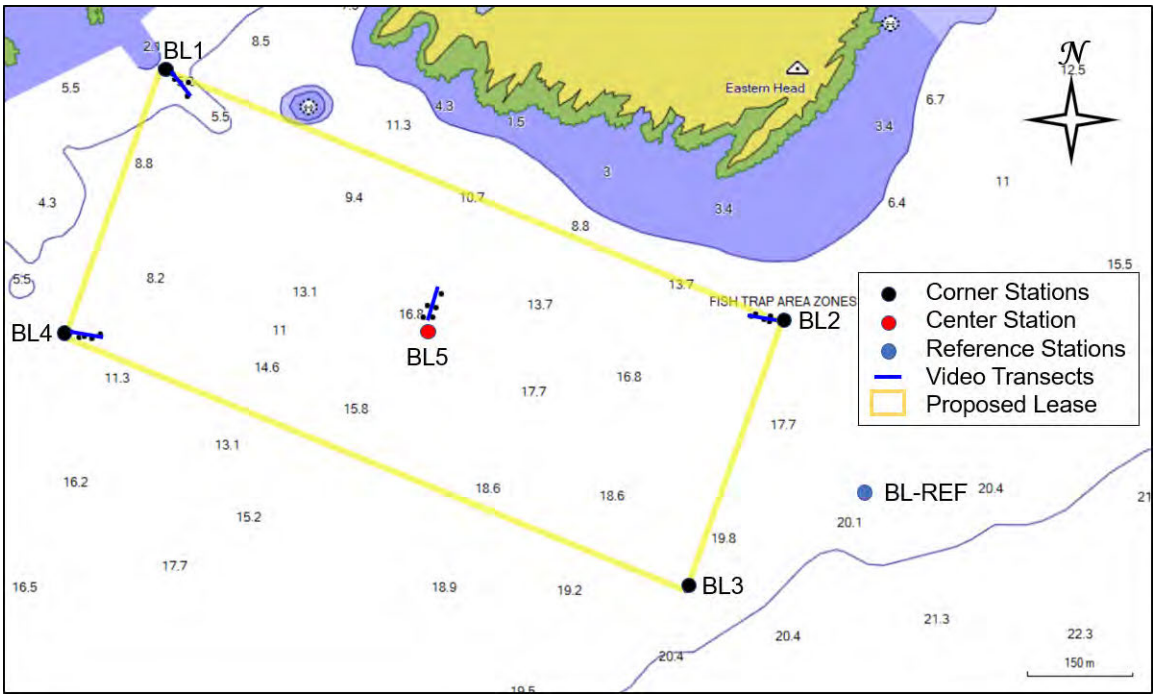
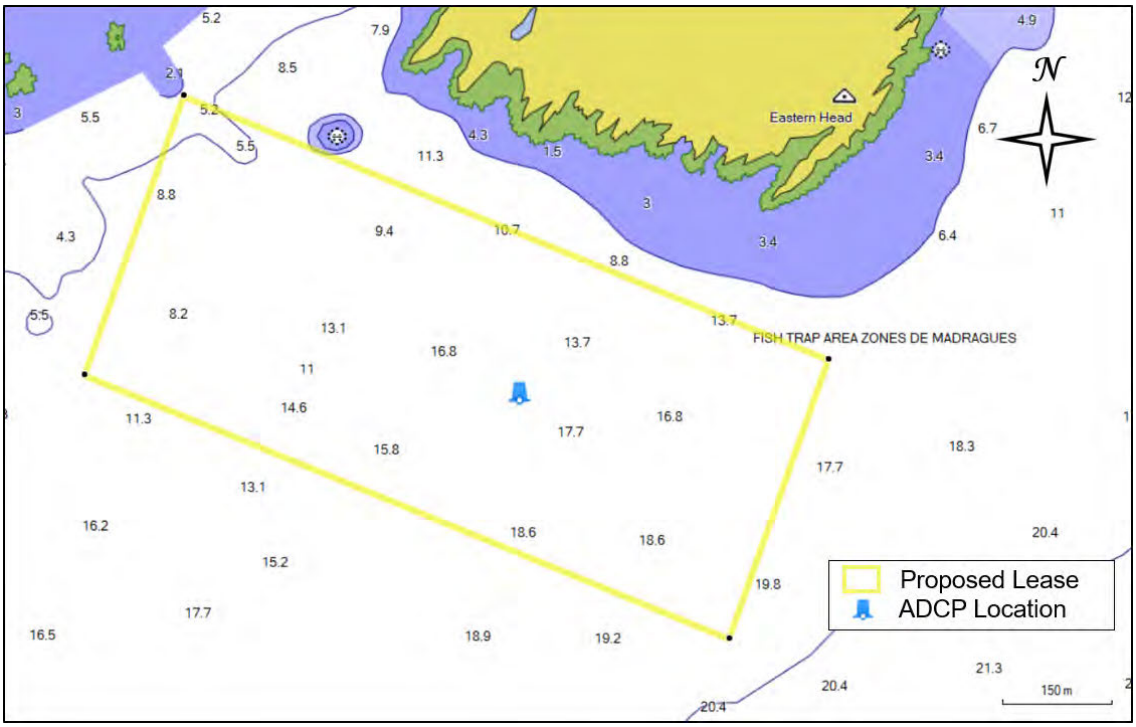


Table 2 Baseline Sampling Coordinates at Brooklyn, Liverpool Bay

SITE COORDINATES (NAD 83)			
Station	**Location**	**Latitude**	**Longitude**
BL1	NW corner	44° 02’ 28.7”	64° 39’ 57.7”
BL2	NE corner	44° 02’ 17.5”	64° 39’ 15.4”
BL3	SE corner	44° 02’ 05.2”	64° 39’ 21.7”
BL4	SW corner	44° 02’ 16.6”	64° 40’ 04.1”
BL5	Site centre	44° 02’ 16.9”	64° 39’ 39.5”
BL-REF	Reference Station	44° 02’ 09.7”	64° 39’ 09.8”

Figure 3 ADCP deployment location in Liverpool Bay



3.2 Sample Collection

A VanVeen grab was used to collect sediment samples from all the baseline stations. This grab type was selected due to its weight and size being sufficient to ensure vertical decent and meet the requirements outlined in section 4 (c) of the AAR monitoring standard. After deployment, the grab was pulled aboard and placed on the deck. When present, the overlying water in the grab was removed via siphon and a picture was taken of the contents (Appendix D). Notes were recorded on time, location, sediment type, colour, depth, odour, flora and fauna, etc. Sediment subsamples were collected from the top 2 cm of the grab samples with 10 mL syringes that were sealed with Parafilm M® and capped to form an airtight seal until analysed. The remaining top 2 cm of sediment was placed in 2 oz Whirl-Paks for use in grain size analysis according to the Wentworth grain size scale. Syringes and Whirl-Paks were labelled and placed in a plastic cooler with ice. Samples were kept cool until analysed for redox, sulphide, porosity, percent organic matter, and grain size.

Sample temperatures were recorded using HOBO ProV2 temperature loggers. Temperatures recorded from inside the sample cooler are presented graphically in Appendix F.

All reasonable efforts were made to conform to the provincial and federal regulatory requirements, maintain storage temperature of samples, to collect samples that were as undisturbed as possible, and to preserve the integrity of the samples until analysed.

3.3 Video Surveillance

Video footage was recorded using a VW Fisher Camera System, which was mounted perpendicular with the seafloor in an aluminum frame. The seafloor was illuminated with Kraken lights. A 0.25 m^2 quadrat was visible in the vertical field of view as a size reference. Appropriate weight was added to the camera frame to allow for stable movement through the water column. The video camera frame includes a scale bar demarcated with 5 cm segments, which allows for organisms greater than 1 cm to be visible and properly identified. Live video footage from the underwater camera was recorded using a J.W. Fishers digital video recorder (DVR) built into a VRM-1 video recorder and monitor system with a GPS interface, which allowed coordinate positions to be overlaid onto the video. Video recording of each sampling station started at the surface with the viewing of a "whiteboard" showing collection location information, followed by a 360° pan of the area at the sampling station and then the underwater footage. The recording continued uninterrupted for the duration of the underwater surveillance and was concluded only after the camera was returned to the vessel at the surface. Footage coverage included the camera's descent, impact with the sediment surface, and minimum of 5 m^2 of seafloor over a minimum duration of two minutes. Screen shots of the seafloor for each sample location were taken and are presented in Appendix E and Appendix J. All on-site visual assessments have been recorded in the field notes and video assessments supplement the field data included in this report. Seafloor characteristics for each station are presented in Tables 4 – 13 and Tables 20 – 21. Raw video files have been included on a DVD submitted to DFA and is also available upon request.

3.4 Bathymetric Profiling

Bathymetric profiling of the proposed lease area was not performed by SIMCorp during the scoping process. Depth profiles have been provided and were created using Mapsource software and hydrographic charts from BlueChart Americas v9.5. The data gathered from charts was then compiled and a three-dimensional surface map (Fig. 7) and a two-dimensional contour diagram (Fig. 6) were produced by interpolation. The maps illustrate the basic bathymetry of the proposed lease area and can serve to aid in the planning and placement of marine farm infrastructure such as grid anchors and other moorings.

Under the *Standards for Hydrographic Surveys* (CHS, 2013), accuracy requirements vary by survey works and area and are categorized into Orders. Order 1b is described as "*Areas shallower than 100 metres where under-keel clearance is not considered to be an issue for the type of surface shipping expected to transit the area.*" and further defined as a survey which only requires a general description of the seafloor which "*… is sufficient to ensure there are no obstructions on the seafloor that will endanger the type of vessel expected to transit or work the area.*".

3.5 Acoustic Doppler Current Profiler

Measurements of the current speed and direction were collected at Brooklyn using a 600 kHz Teledyne RDI Workhorse Sentinel Acoustic Doppler Current Profiler (ADCP) unit deployed by SIMCorp (Fig. 3). This meter was deployed in Liverpool Bay for a period of 36 days between January 14, 2019 to February 19, 2019. The ADCP was configured to record the current speed and direction of the water column in one (1) meter bins, collecting a profile every fifteen (15) minutes. Once the unit was recovered, the data was downloaded and analysed by SIMCorp and processed by SIMCorp Marine Environmental Biologist Marshall Elsemore. Graphs and figures illustrating the frequency distribution of both current speed and direction are presented in Appendix H and raw current speed and direction data is included in the supplementary material attached to this report (*Brooklyn.xlsx*).

Several quality assurance and quality control (QAQC) checks are performed on the data set to ensure there was no interferences that may affect the data in any way. There is a brief period (~19 hours) where the 'pitch and roll' of the meter appears to be slightly off. However, this corresponds to a time when divers were tending to the unit and strengthening lines attached to the anchors. After further QAQC checks the data set was found to pass all other tests and was used in analysis. This period of data could have been omitted from analysis and Aquamodel would have extrapolated this missing time piece. However, since the issue was not random and due to the data passing all other tests, this time period was retained.

4.0 SEDIMENT SAMPLE ANALYSIS AND DATA COLLECTION

4.1 Sediment Sample Analysis

All sediment samples were analysed within 27 hours of collection for redox potential and sulphide ion concentration (Table 14, Fig. 4). Temperatures were taken for each sample. Redox readings in mV were adjusted for temperature to produce mV readings relative to the normal hydrogen electrode (mV_{NHE}). Sulphide samples were brought to the same temperature at which the sulphide probe was calibrated before a reading was taken. Redox and sulphide measurements were made on the 0 - 2 cm deep portion of the grab samples. These results can be related to the Environmental Quality Definitions for Nova Scotia Marine Aquaculture Monitoring seen in Table 3 (NSDFA, 2018b). A copy of the laboratory data sheet for the redox and sulphide is presented in Appendix B.

Sediment samples from each station were sent to the SIMCorp Marine Benthic Sediments Laboratory for analysis of porosity, total organic content and grain size. The results of these analyses are presented in Table 15 and Appendix C.

Table 3 Environmental Quality Definitions for Nova Scotia Marine Aquaculture Monitoring

	Sediment Classification		
Measurement	**Oxic**	**Hypoxic**	**Anoxic**
Sediment colour	Tan to depth > 0.5 cm	Tan to < 0.5 cm with some black sediments at surface	Surface sediments black
Microbial presence	No sulphur bacteria present	Patchy sulphur bacteria	Widespread bacterial mats
Macrofaunal Assemblage	Wide array of infauna and epifauna	Mixed group of mostly small infauna	Small infauna only
Sulfide, µM	**< 750 (A) 750 to 1499 (B)**	**1500 to 2999 (A) 3000 to 5999 (B)**	**> 6000**
Redox (Eh), mV	>100 (A) 100 to -50 (B)	-50 to -100 (A) -100 to -150 (B)	< -150
Organic matter, %	<= reference*	1.5 to 2X ref.	> 2X reference
Porosity, %	<= reference*	1 to 10X ref.	> 10X reference

4.2 Lab Equipment and Calibrations

Redox measurements were taken using a combination meter (Fisher Accumet AP125) and probe [Orion Epoxy Sure-Flow Combination Redox/ORP Electrode (Cat. No. 9678BNW)], which was checked for electrical function just prior to use [Orion ORP standard (Cat. No. 967901)] using a ORP standard solution to ensure that at 25°C the mV values of the standard read at 220 +/- 3 mV. Readings were taken according to the Nova Scotia Department of Fisheries and Aquaculture Standard Operating Procedures (SOP) protocols and immediately followed by sulphide measurements (NSDFA, 2018a).

Sulphide measurements were taken using a calibrated combination meter (Fisher Accumet AP125) and probe [Orion Sure-Flow Combination Silver/Sulphide Electrode (Cat No. 9616BNWP)]. Meter and sulphide probe calibration took place in accordance with Nova Scotia Department of Fisheries and Aquaculture SOP protocols at 11:25 on January 17, 2019. One probe was calibrated and used to analyze the samples. The result of the five-point, factor calibration is located in Appendix A. The calibration temperature was 20.4°C.

5.0 RESULTS AND OBSERVATIONS OF BASELINE SURVEY

Table 4 BL-REF Benthic Log

Sampling Date:	January 16th, 2019
Water Body:	Liverpool Bay
Lease Name and Number:	Proposed 'Brooklyn' Site
Water Temperature (°C)	1.2 °C
Wind Direction and Speed:	S 15-25 knots
Wave Action:	Moderate swells
Current Direction & Speed:	Light E <-> W
Tide Schedule:	Low @ 10:39 (0.4m); High @ 16:29 (1.4m)
Vessel:	Carolina Skiff

Lease # or Reference Site:	Reference
Video Start Time:	8:51 AM
Recorder Name(s):	Shaun Allain
Sample Collector's Name(s)	**Sediment Samplers:** Neal Berry **Syringe Sampler:** Shaun Allain
Sampling Station ID:	BL-REF
Gear Present on Bottom	N/A
Dist. and Dir. from Waypoint:	N/A
Sampling Coordinates:	N44 02.161 W64 39.163
Station Depth (m):	21.9
Video (Y/N):	Y
Number of Collection Attempts:	7

Station Comments: All 3 replicates were from acceptable grabs.

Video Notes:
Moderately packed brown sand, silt; shell debris (some); detritus (some); poor visibility

Benthic Descriptor Key:
[1] *e.g.* Gas bubbles, feed, faeces, sediment: colour, type, and consistency
[2] *e.g.* Strong, slight, none
[3] *e.g.* Eel grass, kelp, lobster, starfish, *Beggiatoa* , polycheates, etc.

Sample/Collection method	Ascension Speed (m/s)	Sample (Y/N)	Sample ID	Sediment Description[1]	Odour[2]	Sediment Sample Depth (cm)	Flora/Fauna[3]
Benthic Replicate 1 (10 mL) 12 L Van Veen Grab	0.49	Y	BL-REF (1)	Brown silt, sand, shell debris	None	6	
Benthic Replicate 2 (10 mL) 12 L Van Veen Grab	0.51	Y	BL-REF (2)	Brown silt, sand, shell debris	None	9	Cumacea
Benthic Replicate 3 (10 mL) 12 L Van Veen Grab	0.5	Y	BL-REF (3)	Brown silt, sand, shell debris	None	6	

Table 5 BL3 Benthic Log

Lease # or Reference Site:	Brooklyn						**Station Comments:** All 3 replicates were from acceptable grabs.
Video Start Time:	9:42 AM						
Recorder Name(s):	Shaun Allain						
Sample Collector's Name(s)	**Sediment Samplers:** Neal Berry **Syringe Sampler:** Shaun Allain						**Video Notes:** Hard packed brown sand, silt; shell debris (some); detritus (rare)
Sampling Station ID:	BL3						
Gear Present on Bottom	N/A						
Dist. and Dir. from Waypoint:	5 m @ 39.1°						
Sampling Coordinates:	N44 02.087 W64 39.362						**Benthic Descriptor Key:**
Station Depth (m):	21.9						[1] *e.g.* Gas bubbles, feed, faeces, sediment: colour, type, and consistency
Video (Y/N):	Y						[2] *e.g.* Strong, slight, none
Number of Collection Attempts:	3						[3] *e.g.* Eel grass, kelp, lobster, starfish, *Beggiatoa* , polycheates, etc.
Sample/Collection method	**Ascension Speed (m/s)**	**Sample (Y/N)**	**Sample ID**	**Sediment Description[1]**	**Odour[2]**	**Sediment Sample Depth (cm)**	**Flora/Fauna[3]**
Benthic Replicate 1 (10 mL) 12 L Van Veen Grab	0.5	Y	BL3 (1)	Brown silt, sand, shell debris	None	5.5	Amphipods, worm tubes
Benthic Replicate 2 (10 mL) 12 L Van Veen Grab	0.51	Y	BL3 (2)	Brown silt, sand, shell debris	None	5	Amphipods, worm tubes
Benthic Replicate 3 (10 mL) 12 L Van Veen Grab	0.51	Y	BL3 (3)	Brown silt, sand, shell debris	None	5	Amphipods

Table 6 BL4 Benthic Log

Lease # or Reference Site:	Brooklyn						**Station Comments:** No acceptable grab samples could be collected. A video transect was conducted.
Video Start Time:	10:12 AM						
Recorder Name(s):	Shaun Allain						
Sample Collector's Name(s)	**Sediment Samplers:** Neal Berry **Syringe Sampler:** Shaun Allain						**Video Notes:** Hard packed brown bedrock, ledge, cobble, boulders; mussels; mussel shells; shell debris (rare)
Sampling Station ID:	BL4						
Gear Present on Bottom	N/A						
Dist. and Dir. from Waypoint:	6 m @ 7.0°						
Sampling Coordinates:	N44 02.277 W64 40.069						**Benthic Descriptor Key:**
Station Depth (m):	9.9						[1] *e.g.* Gas bubbles, feed, faeces, sediment: colour, type, and consistency
Video (Y/N):	Y						[2] *e.g.* Strong, slight, none
Number of Collection Attempts:	5						[3] *e.g.* Eel grass, kelp, lobster, starfish, *Beggiatoa* , polycheates, etc.
Sample/Collection method	**Ascension Speed (m/s)**	**Sample (Y/N)**	**Sample ID**	**Sediment Description[1]**	**Odour[2]**	**Sediment Sample Depth (cm)**	**Flora/Fauna[3]**
Benthic Replicate 1 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 2 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 3 (10 mL) 12 L Van Veen Grab		N					

Table 7 BL5 Benthic Log

Lease # or Reference Site:	Brooklyn	**Station Comments:** No acceptable grab samples could be collected. A video transect was conducted.
Video Start Time:	10:54 AM	
Recorder Name(s):	Shaun Allain	
Sample Collector's Name(s)	**Sediment Samplers:** Neal Berry **Syringe Sampler:** Shaun Allain	**Video Notes:** Hard packed brown sand, ledge, bedrock, boulders, cobble; coralline algae; mixed Rhodophyta; sea colander; shell debris (some)
Sampling Station ID:	BL5	
Gear Present on Bottom	N/A	
Dist. and Dir. from Waypoint:	8 m @ 98.6°	
Sampling Coordinates:	N44 02.281 W64 39.658	**Benthic Descriptor Key:**
Station Depth (m):	18.2	[1] *e.g.* Gas bubbles, feed, faeces, sediment: colour, type, and consistency
Video (Y/N):	Y	[2] *e.g.* Strong, slight, none
Number of Collection Attempts:	5	[3] *e.g.* Eel grass, kelp, lobster, starfish, *Beggiatoa* , polycheates, etc.

Sample/Collection method	Ascension Speed (m/s)	Sample (Y/N)	Sample ID	Sediment Description[1]	Odour[2]	Sediment Sample Depth (cm)	Flora/Fauna[3]
Benthic Replicate 1 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 2 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 3 (10 mL) 12 L Van Veen Grab		N					

Table 8 BL2 Benthic Log

Lease # or Reference Site:	Brooklyn	**Station Comments:** No acceptable grab samples could be collected. A video transect was conducted.
Video Start Time:	11:46 AM	
Recorder Name(s):	Shaun Allain	
Sample Collector's Name(s)	**Sediment Samplers:** Neal Berry **Syringe Sampler:** Shaun Allain	**Video Notes:** Hard packed brown silt, cobble, bedrock, ledge; sea colander; coralline algae; mixed Rhodophyta; kelp; shell debris (some)
Sampling Station ID:	BL2	
Gear Present on Bottom	N/A	
Dist. and Dir. from Waypoint:	4 m @ 72.2°	
Sampling Coordinates:	N44 02.291 W64 39.256	**Benthic Descriptor Key:** [1] *e.g.* Gas bubbles, feed, faeces, sediment: colour, type, and consistency [2] *e.g.* Strong, slight, none [3] *e.g.* Eel grass, kelp, lobster, starfish, *Beggiatoa* , polycheates, etc.
Station Depth (m):	17	
Video (Y/N):	Y	
Number of Collection Attempts:	5	

Sample/Collection method	Ascension Speed (m/s)	Sample (Y/N)	Sample ID	Sediment Description[1]	Odour[2]	Sediment Sample Depth (cm)	Flora/Fauna[3]
Benthic Replicate 1 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 2 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 3 (10 mL) 12 L Van Veen Grab		N					

Table 9 BL1 Benthic Log

Lease # or Reference Site:	Brooklyn						**Station Comments:** No acceptable grab samples could be collected. A video transect was conducted.
Video Start Time:	12:43 PM						
Recorder Name(s):	Shaun Allain						
Sample Collector's Name(s)	**Sediment Samplers:** Neal Berry **Syringe Sampler:** Shaun Allain						**Video Notes:** Hard packed brown cobble, bedrock, ledge; mixed Rhodophyta; coralline algae; kelp; shell debris (prevalent)
Sampling Station ID:	BL1						
Gear Present on Bottom	N/A						
Dist. and Dir. from Waypoint:	4 m @ 105.1°						
Sampling Coordinates:	N44 02.478 W64 39.961						**Benthic Descriptor Key:** [1] *e.g.* Gas bubbles, feed, faeces, sediment: colour, type, and consistency
Station Depth (m):	6.9						
Video (Y/N):	Y						[2] *e.g.* Strong, slight, none
Number of Collection Attempts:	5						[3] *e.g.* Eel grass, kelp, lobster, starfish, *Beggiatoa* , polycheates, etc.
Sample/Collection method	**Ascension Speed (m/s)**	**Sample (Y/N)**	**Sample ID**	**Sediment Description[1]**	**Odour[2]**	**Sediment Sample Depth (cm)**	**Flora/Fauna[3]**
Benthic Replicate 1 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 2 (10 mL) 12 L Van Veen Grab		N					
Benthic Replicate 3 (10 mL) 12 L Van Veen Grab		N					

Table 10 BL4 Transect Benthic Log

Station ID: BL4	0m	10m	20m	30m	40m	50m
Location (NAD 83)	N44 02.277 W64 40.069	N44 02.277 W64 38.063	N44 02.273 W64 38.053	N44 02.274 W64 38.047	N44 02.272 W64 38.039	N44 02.275 W64 38.029
Depth (m)	9.9	10.7	9.5	11	11.6	10.3
Time	10:13	10:32	10:35	10:39	10:43	10:47
Approximate Sediment Thickness (cm)	0	0	0	0	0	0
Sediment Colour	Brown	Brown	Brown	Brown	Brown	Brown
Sediment Consistency	Bedrock, ledge, cobble, boulder	Bedrock, ledge, boulder	Bedrock, ledge, cobble	Bedrock, pebbles	Bedrock, ledge, cobble	Bedrock, rubble, cobble
Sediment Surface Consolidation	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed
Gas Bubbles	None	None	None	None	None	None
Estimation of *Beggiatoa*-like Species	0%	0%	0%	0%	0%	0%
Estimation of OPC Coverage	0%	0%	0%	0%	0%	0%
Barrenness due to Aquaculture	None	None	None	None	None	None
Presence of Feed	None	None	None	None	None	None
Presence of Feces	None	None	None	None	None	None
Macrofauna	Mussels	None	None	None	None	None
Macroflora % Coverage	Mixed Rhodophyta (50%), sea colander (5%), coralline algae (30%), kelp (<5%)	Mixed Rhodophyta (60%), coralline algae (25%), sea colander (5%)	Mixed Rhodophyta (35%), coralline algae (40%), kelp (<5%)	Coralline algae (55%), mixed Rhodophyta (30%), kelp (5%)	Coralline algae (60%), mixed Rhodophyta (20%), kelp (5%)	Coralline algae (45%), mixed Rhodophyta (35%), kelp (5%)
Presence of Gear on Bottom	None	None	None	None	None	None
Detritus & Fouling	Mussel shells (rare)	None	None	None	None	None
Shell Debris	Rare	Rare	Rare	Some	Prevalent	Some
Notes						

Table 11 BL5 Transect Benthic Log

Station ID: BL5	0m	10m	20m	30m	40m	50m
Location (NAD 83)	N44 02.281 W64 39.658	N44 02.291 W64 39.665	N44 02.291 W64 39.654	N44 02.298 W64 39.650	N44 02.300 W64 39.660	N44 02.309 W64 39.644
Depth (m)	18.2	18	19	17	19	17.7
Time	10:51	11:20	11:24	11:28	11:32	11:37
Approximate Sediment Thickness (cm)	0	0	0	0	0	0
Sediment Colour	Brown	Brown	Brown	Brown	Brown	Brown
Sediment Consistency	Sand, ledge, bedrock, boulder, cobble	Silt, bedrock, ledge, boulder	Bedrock, ledge	Bedrock, cobble, boulder, ledge	Bedrock, ledge, silt	Bedrock, ledge, cobble
Sediment Surface Consolidation	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed
Gas Bubbles	None	None	None	None	None	None
Estimation of *Beggiatoa*-like Species	0%	0%	0%	0%	0%	0%
Estimation of OPC Coverage	0%	0%	0%	0%	0%	0%
Barrenness due to Aquaculture	None	None	None	None	None	None
Presence of Feed	None	None	None	None	None	None
Presence of Feces	None	None	None	None	None	None
Macrofauna	None	None	None	Sculpin	None	None
Macroflora % Coverage	Coralline algae (50%), mixed Rhodophyta (15%), sea colander (<5%)	Coralline algae (25%), mixed Rhodophyta (10%), sea colander (5%)	Coralline algae (35%), mixed Rhodophyta (15%), sea colander (5%), kelp (<5%)	Coralline algae (50%), mixed Rhodophyta (15%), sea colander (5%), kelp (5%)	Coralline algae (40%), mixed Rhodophyta (15%), sea colander (<5%), kelp (<5%)	Coralline algae (20%), mixed Rhodophyta (10%), sea colander (<5%)
Presence of Gear on Bottom	None	None	None	None	None	None
Detritus & Fouling	None	None	Mussel shells (rare)	None	None	None
Shell Debris	Some	Some	Some	Some	Prevalent	Some
Notes						

Table 12 BL2 Transect Benthic Log

Station ID: BL2	0m	10m	20m	30m	40m	50m
Location (NAD 83)	N44 02.291 W64 39.256	N44 02.290 W64 39.273	N44 02.294 W64 39.272	N44 02.292 W64 39.279	N44 02.296 W64 39.289	N44 02.294 W64 39.293
Depth (m)	17	14.7	15	17.3	17.5	17
Time	11:48	11:52	11:55	12:01	12:05	12:09
Approximate Sediment Thickness (cm)	0	0	0	0	0	0
Sediment Colour	Brown	Brown	Brown	Brown	Brown	Brown
Sediment Consistency	Cobble, bedrock, ledge, silt	Ledge, bedrock, cobble, pebble	Bedrock, ledge, cobble	Bedrock, ledge, cobble	Bedrock, ledge, cobble, rubble	Bedrock, silt, cobble, ledge
Sediment Surface Consolidation	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed
Gas Bubbles	None	None	None	None	None	None
Estimation of *Beggiatoa*-like Species	0%	0%	0%	0%	0%	0%
Estimation of OPC Coverage	0%	0%	0%	0%	0%	0%
Barrenness due to Aquaculture	None	None	None	None	None	None
Presence of Feed	None	None	None	None	None	None
Presence of Feces	None	None	None	None	None	None
Macrofauna	None	None	None	None	None	None
Macroflora % Coverage	Coralline algae (25%), mixed Rhodophyta (15%), sea colander (<5%), kelp (<5%)	Coralline algae (45%), mixed Rhodophyta (15%), encrusting algae (15%), kelp (<5%)	Coralline algae (65%), mixed Rhodophyta (10%), encrusting algae (5%), sea colander (<5%)	Coralline algae (50%), mixed Rhodophyta (10%), encrusting algae (<5%), sea colander (<5%)	Coralline alge (50%), mixed Rhodophyta (10%), encrusting algae (10%), kelp (<5%), sea colander (<5%)	Coralline algae (35%), encrusting algae (15%), mixed Rhodophyta (15%), sea colander (5%)
Presence of Gear on Bottom	None	None	None	None	None	None
Detritus & Fouling	None	None	Mussel shells (rare)	Mussel shells (rare)	None	None
Shell Debris	Some	Some	Some	Some	Some	Some
Notes						

Table 13 BL1 Transect Benthic Log

Station ID: BL1	0m	10m	20m	30m	40m	50m
Location (NAD 83)	N44 02.478 W64 39.961	N44 02.478 W64 39.961	N44 02.474 W64 39.951	N44 02.470 W64 39.948	N44 02.468 W64 39.933	N44 02.457 W64 39.934
Depth (m)	6.9	7.7	8	7	11.3	11.6
Time	12:45	12:49	12:53	12:57	13:02	13:09
Approximate Sediment Thickness (cm)	0	0	0	0	0	0
Sediment Colour	Brown	Brown	Brown	Brown	Brown	Brown
Sediment Consistency	Bedrock, ledge, cobble	Bedrock, rubble	Bedrock, pebble, cobble	Bedrock, ledge	Bedrock, cobble, sand, silt	Bedrock, cobble, silt
Sediment Surface Consolidation	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed	Hard packed
Gas Bubbles	None	None	None	None	None	None
Estimation of *Beggiatoa*-like Species	0%	0%	0%	0%	0%	0%
Estimation of OPC Coverage	0%	0%	0%	0%	0%	0%
Barrenness due to Aquaculture	None	None	None	None	None	None
Presence of Feed	None	None	None	None	None	None
Presence of Feces	None	None	None	None	None	None
Macrofauna	None	None	None	None	None	None
Macroflora % Coverage	Coralline algae (20%), mixed Rhodophyta (55%), kelp (5%)	Coralline algae (20%), mixed Rhodophyta (50%), kelp (5%)	Coralline algae (25%), mixed Rhodophyta (35%), kelp (10%)	Coralline algae (20%), mixed Rhodophyta (65%), kelp (5%)	Coralline algae (20%), mixed Rhodophyta (5%)	Coralline algae (10%), mixed Rhodophyta (20%)
Presence of Gear on Bottom	None	None	None	None	None	None
Detritus & Fouling	None	None	None	None	None	None
Shell Debris	Some	Some	Some	Prevalent	Prevalent	Prevalent
Notes	Visibility became poor towards the end of the transect					

Table 14 2019 redox and sulphide results for baseline sampling from the proposed Brooklyn site

Brooklyn - Proposed Site

Sample Collection: January 16, 2019 8:50 – 13:30
Sample Analysis: Redox: January 17, 2019 11:28 - 11:47
Sulphides: January 17, 2019 11:30 - 11:50

Sample I.D.		Core Sample Temp	Redox	Redox	Sulphide	
Station	ID #	°C	mV	mVNHE	µM	mV
BL-REF	1	4.8	210.0	429.2	0	-590.9
	2	5.5	58.9	277.4	69	-849.3
	3	6.5	185.1	402.6	0	-569.3
Means		5.6	151.3	**369.7**	**23**	-669.8
BL1	1	NS	NS	NS	NS	NS
	2	NS	NS	NS	NS	NS
	3	NS	NS	NS	NS	NS
Means		NS	NS	**NS**	**NS**	NS
BL2	1	NS	NS	NS	NS	NS
	2	NS	NS	NS	NS	NS
	3	NS	NS	NS	NS	NS
		NS	NS	**NS**	**NS**	NS
BL3	1	5.2	198.9	417.7	0	-668.6
	2	5.6	214.5	432.9	0	-572.7
	3	7.3	184.6	401.3	0	-534.5
Means		6.0	199.3	**417.3**	**0**	-591.9
BL4	1	NS	NS	NS	NS	NS
	2	NS	NS	NS	NS	NS
	3	NS	NS	NS	NS	NS
Means		NS	NS	**NS**	**NS**	NS
BL5	1	NS	NS	NS	NS	NS
	2	NS	NS	NS	NS	NS
	3	NS	NS	NS	NS	NS
Means		NS	NS	**NS**	**NS**	NS

Redox Test Solution
Prior to analysis: 221.1 mV @ 25°C
Post analysis: 220.5 mV @ 25°C

Sulphide Probe Calibration:

Standard	mV
100	-854.8
500	-875.9
1000	-884.4
5000	-903.9
10000	-911.3

Sulphide Probe Calibration Temperatures: 20.4°C

Sample met all grab quality criteria
Sample did not meet all quality criteria
Reference stations
NS = No Sample

Figure 4 Graph of mean redox and sulphide values for baseline sampling at the proposed Brooklyn site

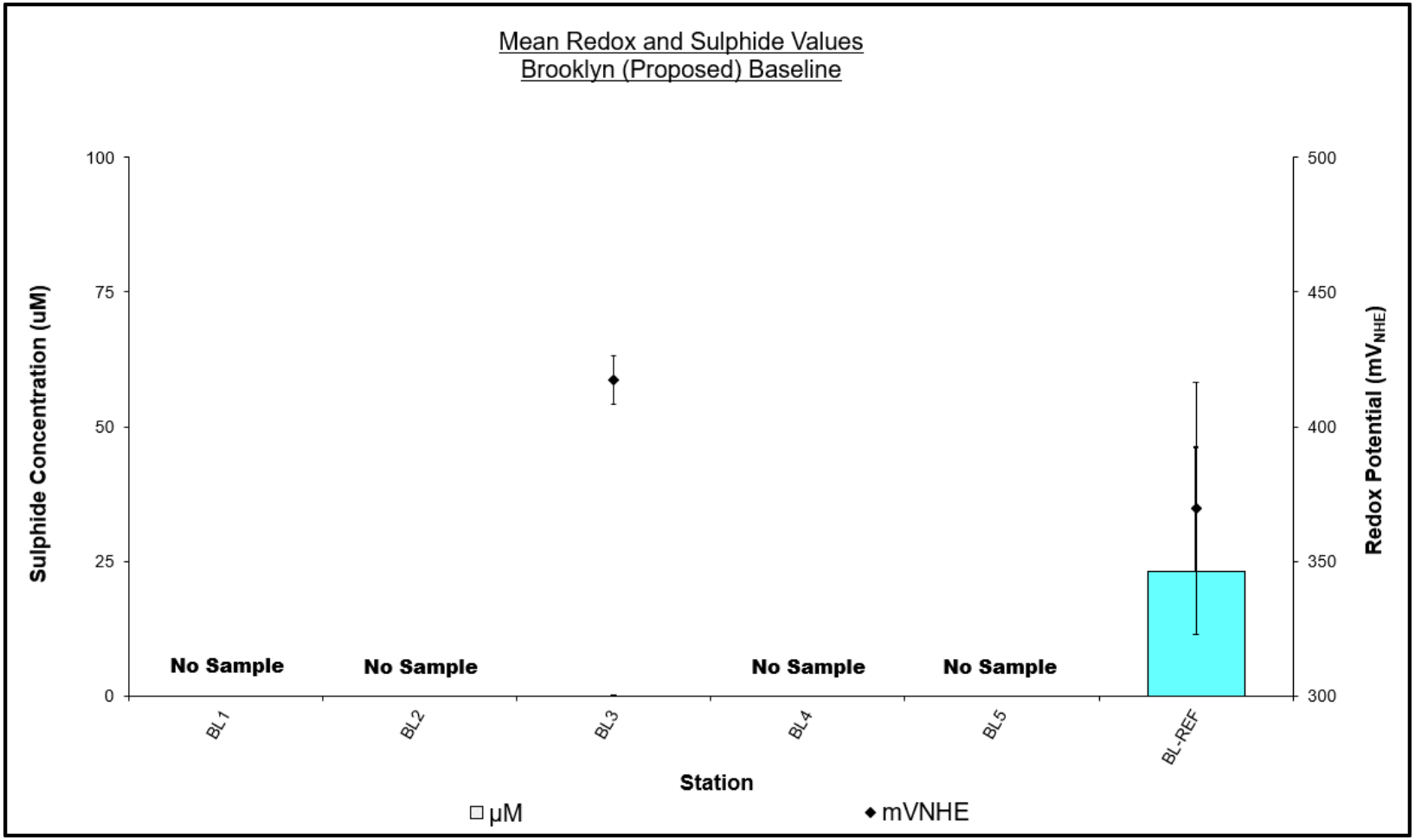


Table 15 2019 porosity and percent organic matter results for baseline sampling from the proposed Brooklyn site

Station	Sample #	Porosity Value (%)	% Organic Matter
BL-REF	1	21.80	0.63
BL-REF	2	26.83	1.30
BL-REF	3	25.20	0.77
BL1	1	NS	NS
BL1	2	NS	NS
BL1	3	NS	NS
BL2	1	NS	NS
BL2	2	NS	NS
BL2	3	NS	NS
BL3	1	24.68	0.95
BL3	2	25.34	0.80
BL3	3	26.27	0.80
BL4	1	NS	NS
BL4	2	NS	NS
BL4	3	NS	NS
BL5	1	NS	NS
BL5	2	NS	NS
BL5	3	NS	NS

Notes: samples in turquoise are from reference stations; NS = no sample

6.0 DISCUSSION

6.1 Benthic Observation and Analysis

Review of the video footage and grab observations collected from the proposed lease area in Liverpool Bay revealed no faeces and/or waste feed. The substrate beneath the proposed consisted mainly of bedrock and coarser sediment types such as boulders and cobble. Finer sediments were observed at the reference station (BL-REF) and southwest corner (BL3). Grain size analysis results are presented in Appendix C and further support these observations.

Flora and fauna observed in the video footage and in collected grab samples included worm tubes, Cumacea shrimp, coralline algae, sea colander, kelp, encrusting algae, mussels, and mixed Rhodophyta. *Beggiatoa*-like bacteria was not observed at any station. Shell debris was common.

Since the proposed site at Brooklyn is characterized by predominantly coarser sediment types, only two (2) of the stations sampled allowed for a full compliment of sediment samples to be collected. Due to coarser substrate at BL1, BL2, BL4, and BL5 acceptable grab samples could not be collected, and video transects were conducted. Analysis of the sulphide concentration and redox potential of the collected sediments from the soft bottom stations (BL-REF and BL3) revealed oxic conditions at each station. The highest mean sulphide concentration obtained during this baseline assessment was 23 µM at the reference station (BL-REF)

6.2 Current Speed and Direction

The petals on the current rose diagrams indicate the direction in which the current was flowing (*i.e.* if the broad ends of the petals are pointing to the east, then the current was flowing to the east). Analysis of the depth averaged current speed and direction at Brooklyn shows that the majority of water flow experienced at this location flowed towards the northwest. The depth averaged current speed of all recorded profiles at this site was 5.05 cm/s (Fig. 5). In the depth profiles analysed, 4 – 16 m above the ocean bottom, the maximum recorded speed was 37.3 cm/s occurring 16 m from the bottom. The most frequently observed speeds were between 2 and 4 cm/s throughout the entire water column. Further statistics are found in Table 16. The figures in Appendix H illustrate trends in current flow throughout the water column at Brooklyn. The direction of current flow remains relatively consistent throughout the water column except for a shift towards the southeast 16 m above bottom which is likely attributable to wind. Data obtained from cells higher in the water column did not yield reliable data as less than 70% of the data was absent due to wind and wave action. Therefore, data from 17 - 18 m above the ocean bottom were not analyzed. Average current speeds did not vary significantly with depth however cells closer to the surface were faster and likely driven by wind. The cells nearest to the surface had the highest occurrence of currents greater than 10 cm/s.

Figure 5 Average current speed and direction recorded in Liverpool Bay within 4 – 16 m above the seafloor

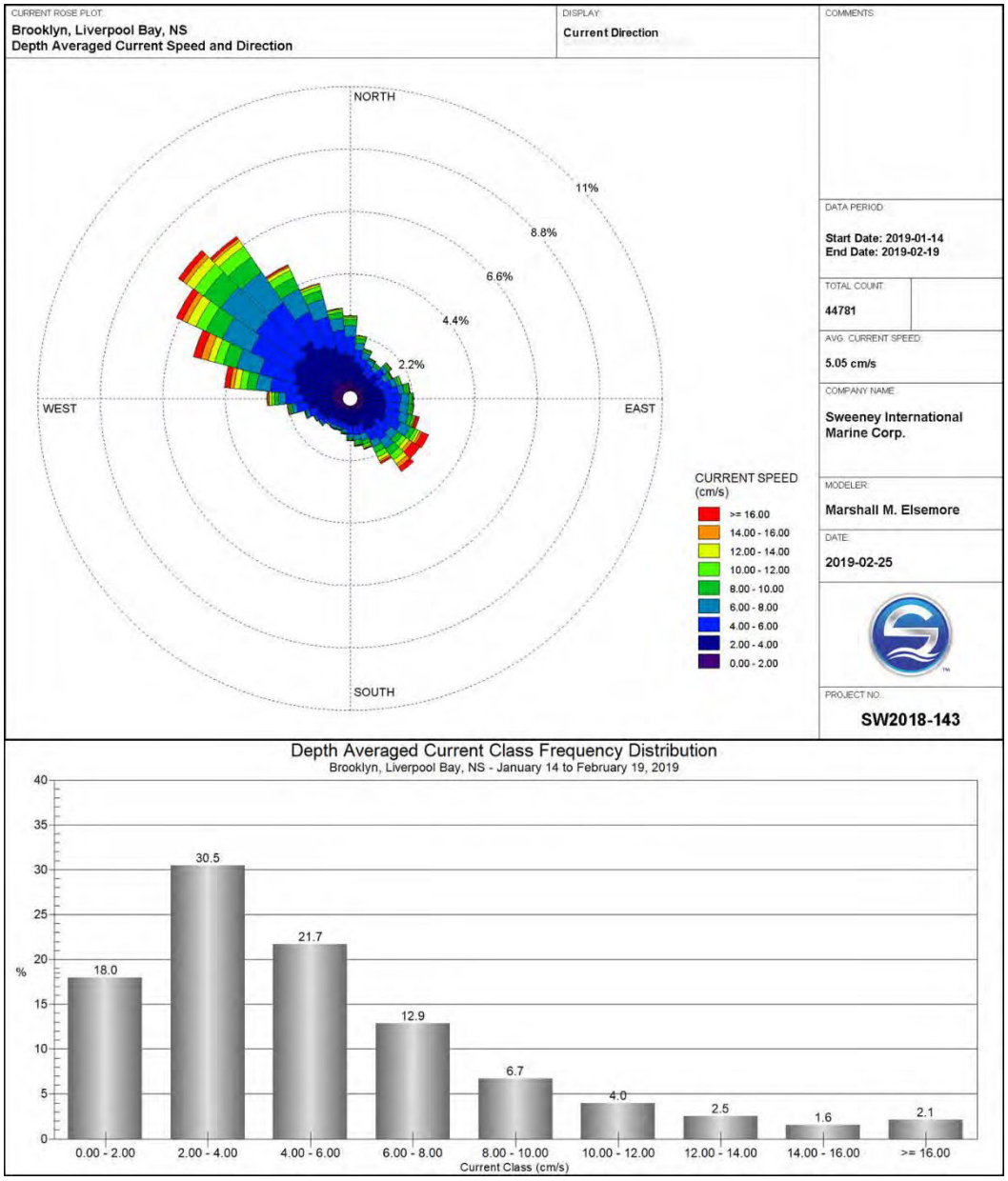


Table 16 Summary statistics of current data from Liverpool Bay

Distance from Bottom (m)	Distance from Surface (m)	Speed							Direction
		Most Frequent (cm/s)	Minimum (cm/s)	Average (cm/s)	Maximum (cm/s)	< 2.0 cm/s (%)	< 10.0 cm/s (%)	> 16.0 cm/s (%)	Highest Frequency (°)
4	14	2.0 - 4.0	0.1	4.1	18.2	23.3	95.1	0.3	315-325
5	13	2.0 - 4.0	0.1	4.1	18.4	22.8	95.1	0.3	315-325
6	12	2.0 - 4.0	0.1	4.2	20.9	20.8	94.4	0.1	315-325
7	11	2.0 - 4.0	0.0	4.3	19.3	21.3	94.2	0.2	305-315
8	10	2.0 - 4.0	0.0	4.3	19.3	21.9	94.3	0.3	305-315
9	9	2.0 - 4.0	0.0	4.3	20.2	20.1	94.3	0.4	305-315
10	8	2.0 - 4.0	0.1	4.4	19.5	20.5	94.4	0.4	315-325
11	7	2.0 - 4.0	0.0	4.6	21.5	17.6	93.9	0.9	305-315
12	6	2.0 - 4.0	0.0	5.0	26.3	15.3	92.3	1.5	295-305
13	5	2.0 - 4.0	0.0	5.4	28.2	14.4	88.4	2.5	295-305
14	4	2.0 - 4.0	0.0	6.0	27.2	14.0	83.6	3.8	285-295
15	3	2.0 - 4.0	0.1	6.8	31.1	12.2	77.3	5.9	285-295
16	2	2.0 - 4.0	0.1	8.1	37.3	9.2	67.9	11.1	135-145
Depth Averaged		**2.0 - 4.0**	**0.0**	**5.1**	**37.3**	**18.0**	**89.8**	**2.1**	**305-315**

6.3 Bathymetry

A bathymetric survey was not conducted during the scoping process and chart data from the Canadian Hydrographic Service, obtained through Mapsource software and BlueChart Americas v9.5 charts, was used to produce both a three-dimensional, surface map and a two-dimensional, contour diagram of the site. Figures 6 - 7 show the water depth within the survey area at the time of scanning. Water depth ranged from approximately 4 m at the northwest corner at lowest low tide with depths increasing to 16 m near site center and up to 20 m at the southeastern corner.

Figure 6 Interpolated 2-D bathymetric profile of proposed site Brooklyn

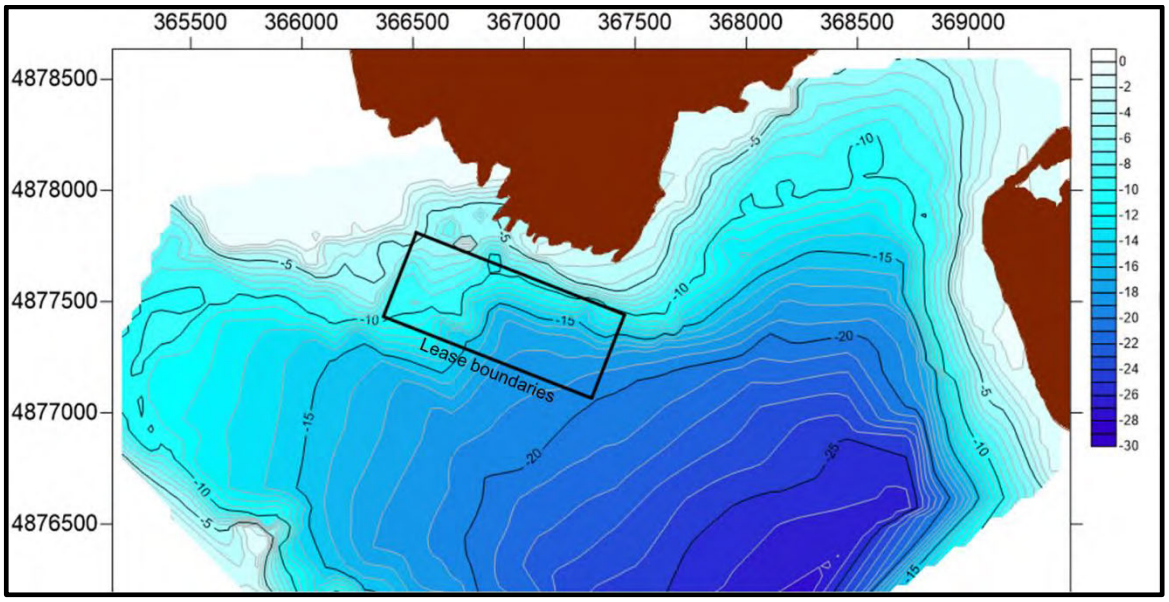
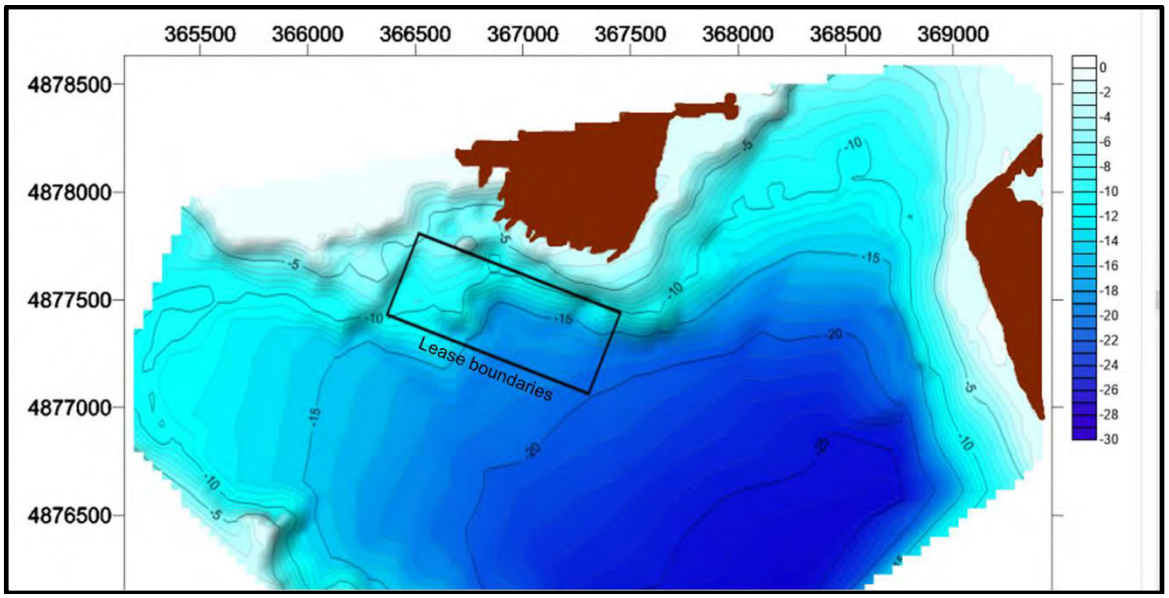


Figure 7 Interpolated 3-D surface map of proposed site Brooklyn



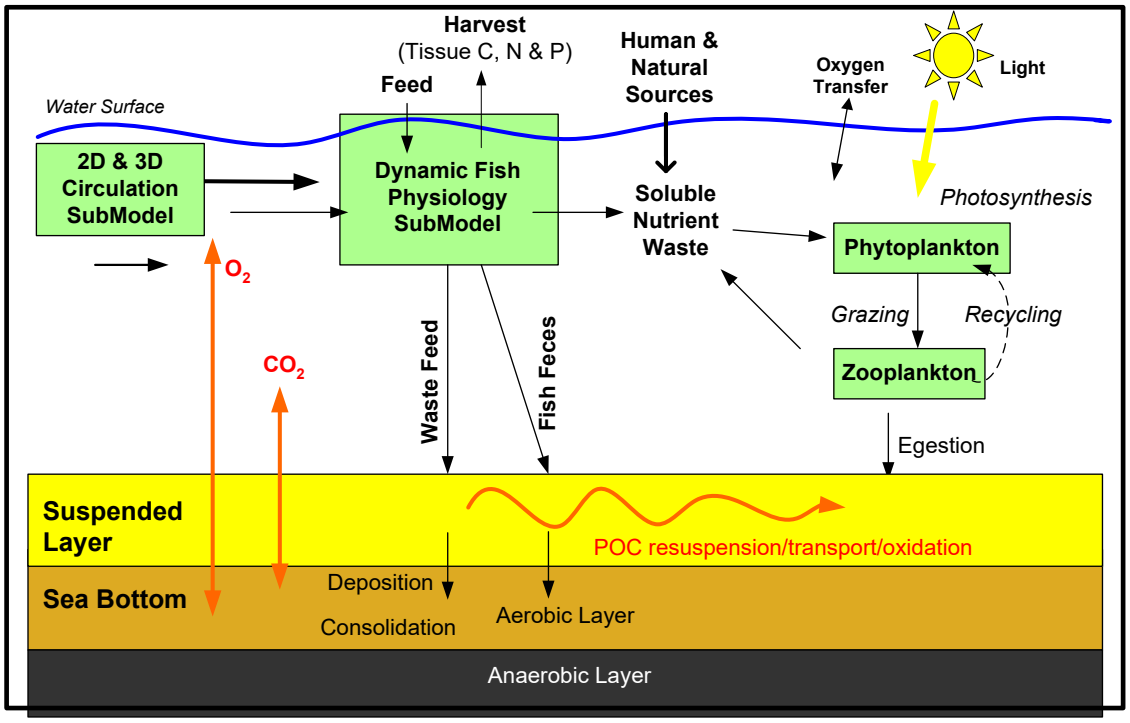
7.0 DEPOSITIONAL MODELING

7.1 Introduction

AquaModel is a computational tool for planning and evaluating proposed aquaculture sites, acquiring permits, and assessing investment risks and opportunities. It runs on a standard PC and provides a simple interface to enter environmental and operational information. Graphical outputs map the distribution over time of key parameters including water temperature, oxygen, particulate-organic and dissolved-nutrient wastes, algal and plankton effects, and dozens of other environmental and fish cultural/management parameters. It is designed to be used by non-modellers or experts with widely different computer skill levels with or without assistance by AquaModel developers and consultants. AquaModel is also a full-fledged Geographic Information System (GIS), fully compatible with leading stand-alone GIS systems.

AquaModel is a true dynamic model, not a look-up spreadsheet-based model but one where the fish eat, grow, swim and excrete at rates based on the well-established science for Atlantic Salmon (and 11 other species of fish) as shown in the figure below. The developers of AquaModel include scientists with decades of fish-farm experience involving sediment-effects monitoring and research as well as fish physiology and nutrient effects on algae and microalgae.

Figure 8 Schematic of the dynamic processes in AquaModel



AquaModel has been used numerous times in Atlantic Canada by Sweeney International Marine Corp. (SIMCorp) and the developers of the model, and so it has a custom Atlantic salmon submodel designed and validated for both accurate growth and food conversion ratio results in Atlantic Canada. In the model, if fish are overcrowded, subjected to excessive current velocity or insufficient oxygen supply at a proposed site, the user can readily determine that modifications in the site setup or location are warranted.

Resuspension in AquaModel does not affect the modeling of depositional contours as they are an estimate of the total organic carbon (TOC) being deposited prior to resuspension even occurring. Resuspension is used in the calculation of the estimated TOC that accumulates in the sediment, a parameter not required under the AAR's, and is thus not applicable to this model.

Further information on AquaModel can be found at http://www.aquamodel.net/. For information on model validation, see http://www.aquamodel.net/Validation.html.

7.2 Model Inputs and Assumptions

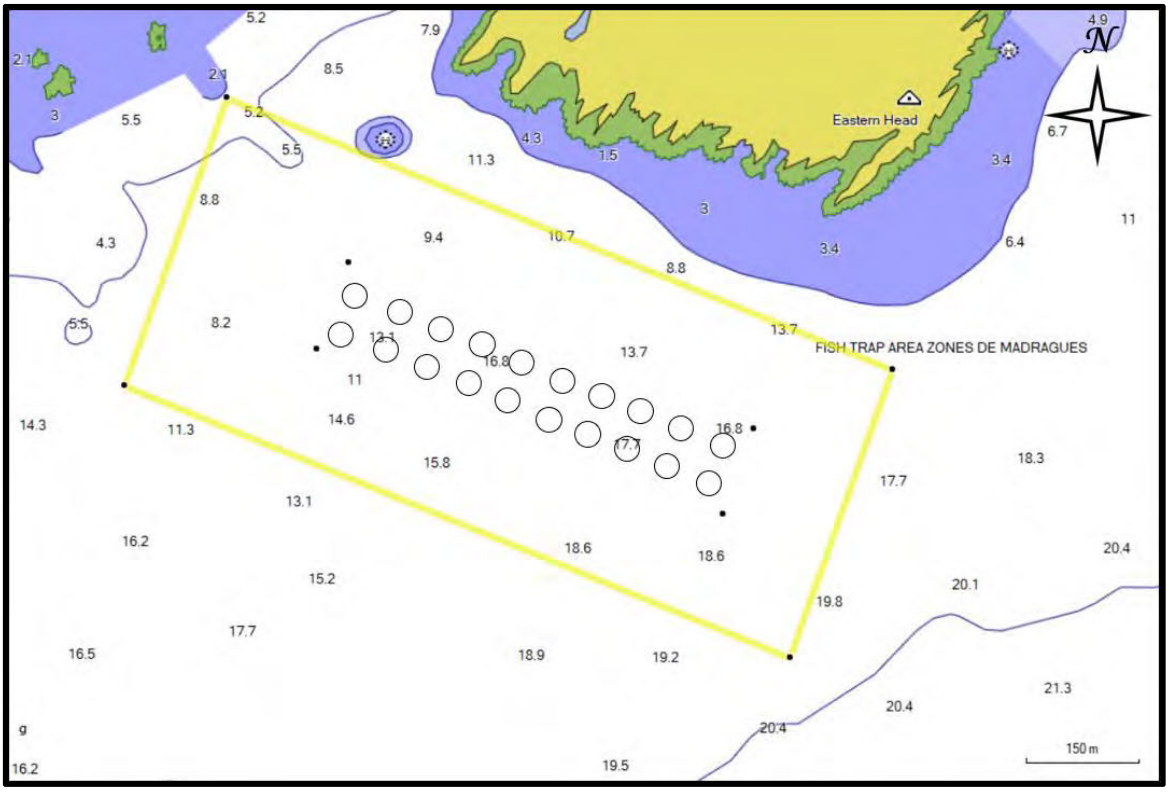
7.2.1 Species

The 2-D mode was selected for analyzing the depositional rate at the proposed Brooklyn aquaculture site. The 2-D mode is used for analysis at an individual farm level whereas the 3-D mode is used for bay-wide scales and can include multiple farm inputs. The Atlantic salmon submodel "AtlanticSalmonNS", designed and validated for both accurate growth and food conversion ratio results in Atlantic Canada, was selected.

7.2.2 Bathymetry

Bathymetry was entered as a simple text file with longitude, latitude and depth arranged in x, y, z format (i.e. three columns of data). Detailed bathymetry is available in section 6.3 of this report. Bathymetry was collected from chart data. The shoreline was based on user-collected data using Google Earth (Fig. 9).

Figure 9 Simplified Bathymetry of Brooklyn



7.2.3 Currents

Current meter data was input with a simple Excel file. ADCP data was collected from January 14, 2019 to February 19, 2019 in Liverpool Bay in approximately 18 m of water (Fig. 3).

7.2.4 Events Files

For operational effects, an events Excel file was compiled for inputs of estimated mortality and harvesting. Table 17 illustrates the estimated fish loses throughout the growth cycle due to mortalities and harvests. Beginning in November of the second year of production, harvests were simulated.

Temperature and dissolved oxygen data from the nearby #1205 Liverpool aquaculture site during operations were used to simulate a full year of environmental data. The one year of data was extended to cover the entire simulated production period, which was from April 15, 2021 to December 31, 2022.

Table 17 Events file created for Brooklyn to simulate estimated fish losses from mortalities and harvests

	Pen 1 Mortality (count)	Pen 1 Harvest (%)	Pen 2 Mortality (count)	Pen 2 Harvest (%)	Pen 3 Mortality (count)	Pen 3 Harvest (%)	Pen 4 Mortality (count)	Pen 4 Harvest (%)	Pen 5 Mortality (count)	Pen 5 Harvest (%)	Pen 6 Mortality (count)	Pen 6 Harvest (%)	Pen 7 Mortality (count)	Pen 7 Harvest (%)	Pen 8 Mortality (count)	Pen 8 Harvest (%)	Pen 9 Mortality (count)	Pen 9 Harvest (%)	Pen 10 Mortality (count)	Pen 10 Harvest (%)
Apr-21	224	-	208	-	208	-	208	-	208	-	208	-	208	-	208	-	208	-	208	-
May-21	388	-	343	-	343	-	343	-	343	-	343	-	343	-	343	-	343	-	343	-
Jun-21	306	-	300	-	300	-	300	-	300	-	300	-	300	-	300	-	300	-	300	-
Jul-21	280	-	280	-	280	-	280	-	280	-	280	-	280	-	280	-	280	-	280	-
Aug-21	249	-	249	-	249	-	249	-	249	-	249	-	249	-	249	-	249	-	249	-
Sep-21	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-
Oct-21	187	-	187	-	187	-	187	-	187	-	187	-	187	-	187	-	187	-	187	-
Nov-21	150	-	150	-	150	-	150	-	150	-	150	-	150	-	150	-	150	-	150	-
Dec-21	125	-	125	-	125	-	125	-	125	-	125	-	125	-	125	-	125	-	125	-
Jan-22	96	-	96	-	96	-	96	-	96	-	96	-	96	-	96	-	96	-	96	-
Feb-22	112	-	112	-	112	-	112	-	112	-	112	-	112	-	112	-	112	-	112	-
Mar-22	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-
Apr-22	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-
May-22	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-
Jun-22	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-
Jul-22	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-
Aug-22	123	-	123	-	123	-	123	-	123	-	123	-	123	-	123	-	123	-	123	-
Sep-22	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-
Oct-22	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-
Nov-22	3	100	9	100	15	100	24	100	33	100	45	100	48	100	57	100	66	100	75	100
Dec-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	Pen 11 Mortality (count)	Pen 11 Harvest (%)	Pen 12 Mortality (count)	Pen 12 Harvest (%)	Pen 13 Mortality (count)	Pen 13 Harvest (%)	Pen 14 Mortality (count)	Pen 14 Harvest (%)	Pen 15 Mortality (count)	Pen 15 Harvest (%)	Pen 16 Mortality (count)	Pen 16 Harvest (%)	Pen 17 Mortality (count)	Pen 17 Harvest (%)	Pen 18 Mortality (count)	Pen 18 Harvest (%)	Pen 19 Mortality (count)	Pen 19 Harvest (%)	Pen 20 Mortality (count)	Pen 20 Harvest (%)
Apr-21	224	-	224	-	224	-	224	-	224	-	224	-	224	-	224	-	224	-	224	-
May-21	388	-	388	-	388	-	388	-	388	-	388	-	388	-	388	-	388	-	388	-
Jun-21	306	-	306	-	306	-	306	-	306	-	306	-	306	-	306	-	306	-	306	-
Jul-21	280	-	280	-	280	-	280	-	280	-	280	-	280	-	280	-	280	-	280	-
Aug-21	249	-	249	-	249	-	249	-	249	-	249	-	249	-	249	-	249	-	249	-
Sep-21	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-	210	-
Oct-21	187	-	187	-	187	-	187	-	187	-	187	-	187	-	187	-	187	-	187	-
Nov-21	150	-	150	-	150	-	150	-	150	-	150	-	150	-	150	-	150	-	150	-
Dec-21	125	-	125	-	125	-	125	-	125	-	125	-	125	-	125	-	125	-	125	-
Jan-22	96	-	96	-	96	-	96	-	96	-	96	-	96	-	96	-	96	-	96	-
Feb-22	112	-	112	-	112	-	112	-	112	-	112	-	112	-	112	-	112	-	112	-
Mar-22	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-
Apr-22	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-
May-22	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-	124	-
Jun-22	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-
Jul-22	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-
Aug-22	123	-	123	-	123	-	123	-	123	-	123	-	123	-	123	-	123	-	123	-
Sep-22	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-	120	-
Oct-22	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-	93	-
Nov-22	87	100	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-	90	-
Dec-22	-	-	3	100	18	100	30	100	39	100	51	100	60	100	72	100	81	100	93	100

7.2.5 Pen Parameters

The cage centers were entered through the menu, and other simple factors such as fish size at introduction and stocking density were specified. Circular cages with a length and width (i.e. diameter) of 31.83 m were entered. Net depth was set to 8 m. The introductory fish weights and the initial densities were set based on estimates of proposed production (Table 18).

Table 18 Introductory fish weights and cage densities

Cage #	Introductory mean fish weight (g)	Starting density (kg m^{-3})
Each of the 20 cages	150	0.7775

7.2.6 Feed Parameters

Under the Operations tab, the optimal feed rate option was selected and a waste feed rate (3%) was entered. The carbon fraction of the feed as a dry weight was set at 51.5% and the water fraction of the bulk feed was set at 5.5%. The faecal settling rate was set at 3 cm/s and the feed settling rate was set at 9 cm/s, based on best available literature.

7.2.7 Other Inputs

Under the Benthic menu tab of the model, the initial value of the TOC fraction of the seafloor was set to 0.0021 (fraction dry weight = 0.21%), which assumes a seafloor composition of very fine sand. The particle deposition threshold was set to 6 cm/s (fecal) and 8 cm/s (pellet). The particle erosion threshold was set to 8 cm/s (fecal) and 12 cm/s (pellet) and the erosion factor to 1.0 g C m^{-2} d^{-1} (both fecal and pellet). Ambient TOC deposition was assumed to be 0.02 g C m^{-2} d^{-1}. The TOC deposition moving average was set to 1 day and the seston TOC oxidation rate/day at 0.02. All of these factors were set based on prior experience with Atlantic Canada and other location salmon farms including use of sensitivity analyses.

Under the Array menu tab, the plankton model was turned off, but the physiology and benthic models were enabled with the organic matter type set to TOC.

Under Drifter Processing Type, the no drifters option was selected.

Under the Conditions menu tab, the ambient value of dissolved oxygen was set to 8.0 mg L^{-1} and the surface (mixed) layer depth was set to 40 m for both winter and summer. This depth is greater than the actual water depth, so assumes no stratification of the water column.

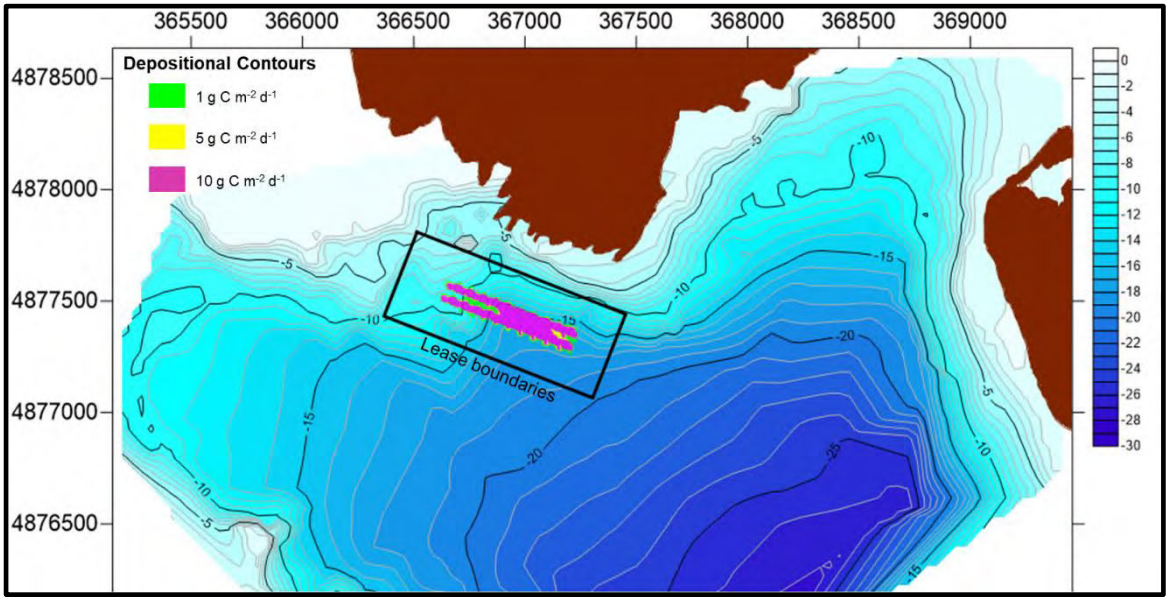
7.3 Model Output

Because AquaModel is a mass-balance model, all components of the model are available for user inspection and use. Over 50 parameters are available and are quite valuable to understand a problem that may occur at a proposed or existing site. For example, a user can view sediment oxygen flux while watching the competing populations of aerobic and anaerobic bacteria to understand when a site changes to less-desirable anaerobic conditions. However, for the purposes of the AAR, only contours generated to represent TOC deposition at the time of peak feeding are required.

The model was run with a start date of April 15, 2021 and the first harvest occurring in November 2022. The date of highest feed use was calculated to occur in October of the second year of production (i.e. 2022). The map of the contours showing the predicted sediment TOC rate of deposition (1, 5, and 10 g C m^{-2} d^{-1}) was captured for this time period and is included in Figure 10 below. The 1 g C m^{-2} d^{-1} contour falls directly under the cage array and extends very slightly to the west northwest in the direction of the

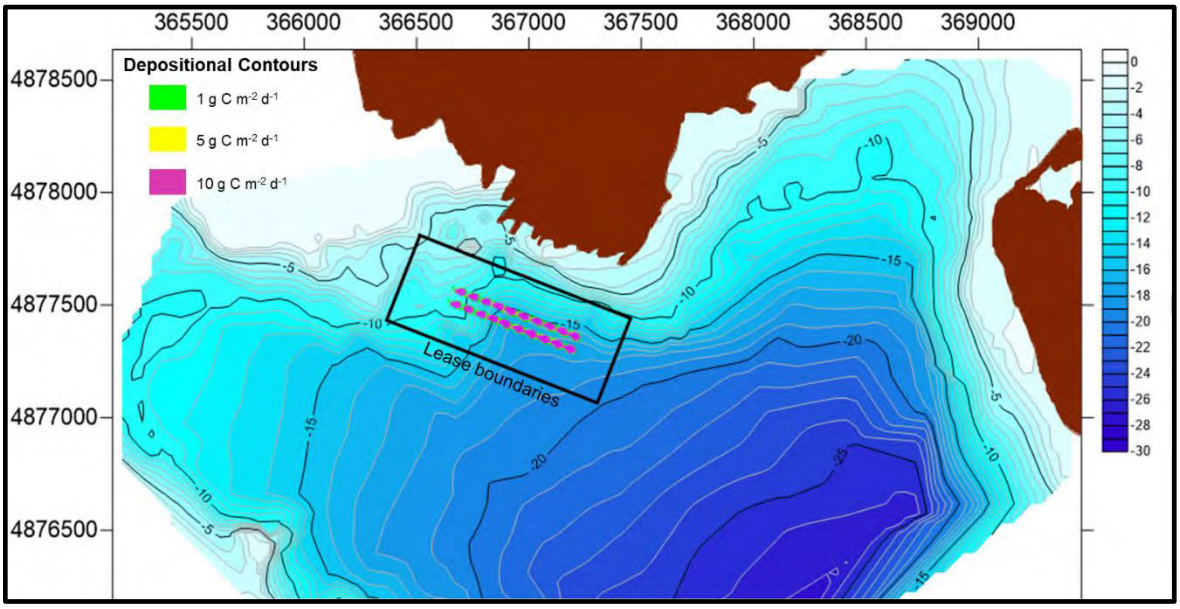
dominant current. None of the depositional contours modeled extend outside of the lease boundary. Cage positions are represented by black circles.

Figure 10 Predicted TOC rate of deposition for October 7, 2022 (peak feeding)



July 13, 2022 was selected to represent the TOC deposition rate during a period of mean feed usage. A map of the depositional contours for this time is shown in Figure 11. The 1 g C m^{-2} d^{-1} contour falls directly under the cage array and extends very slightly to the west northwest in the direction of the dominant current. None of the depositional contours modeled extend outside of the lease boundary.

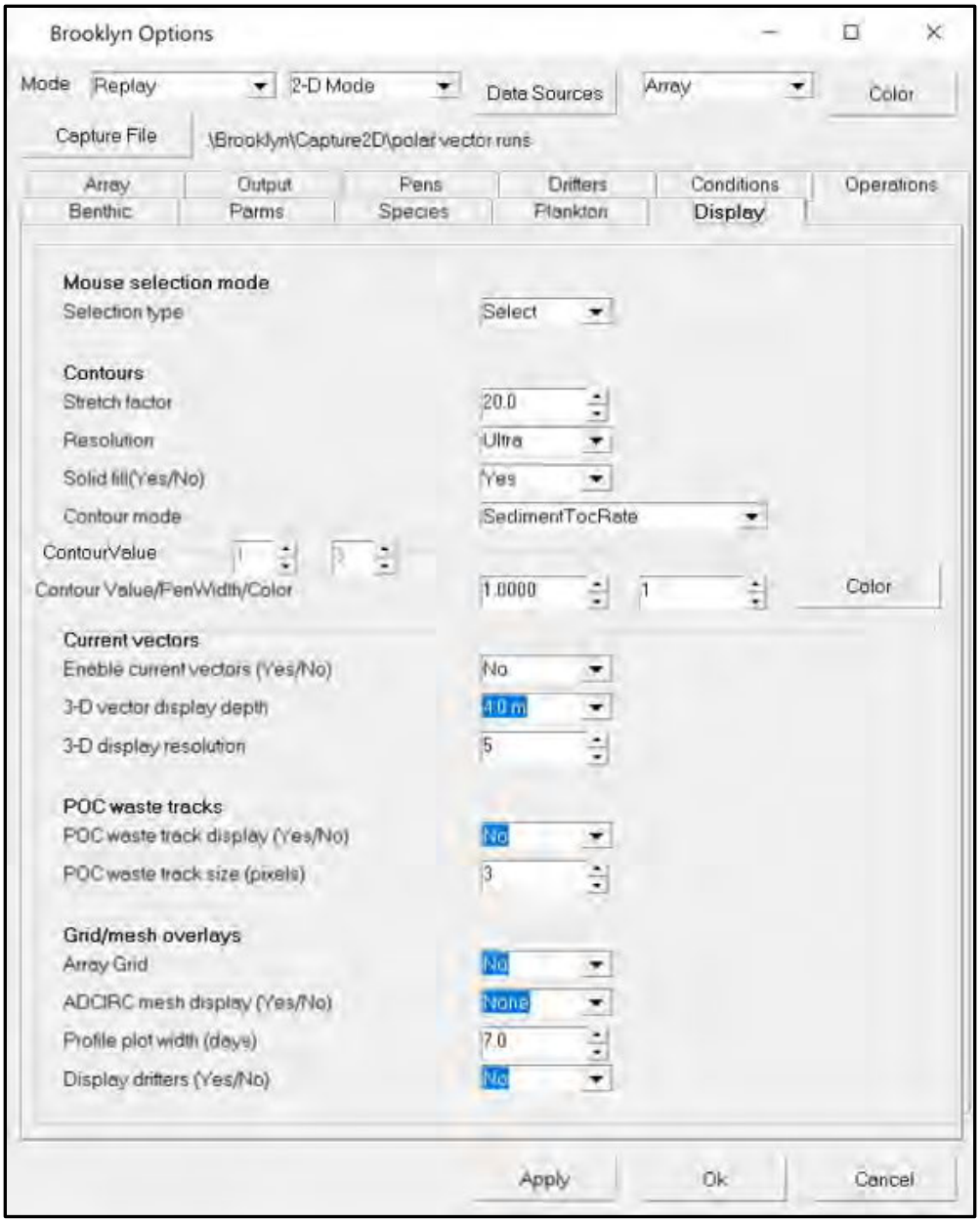
Figure 11 Predicted TOC rate of deposition for July 13, 2022 (time of mean feed usage)

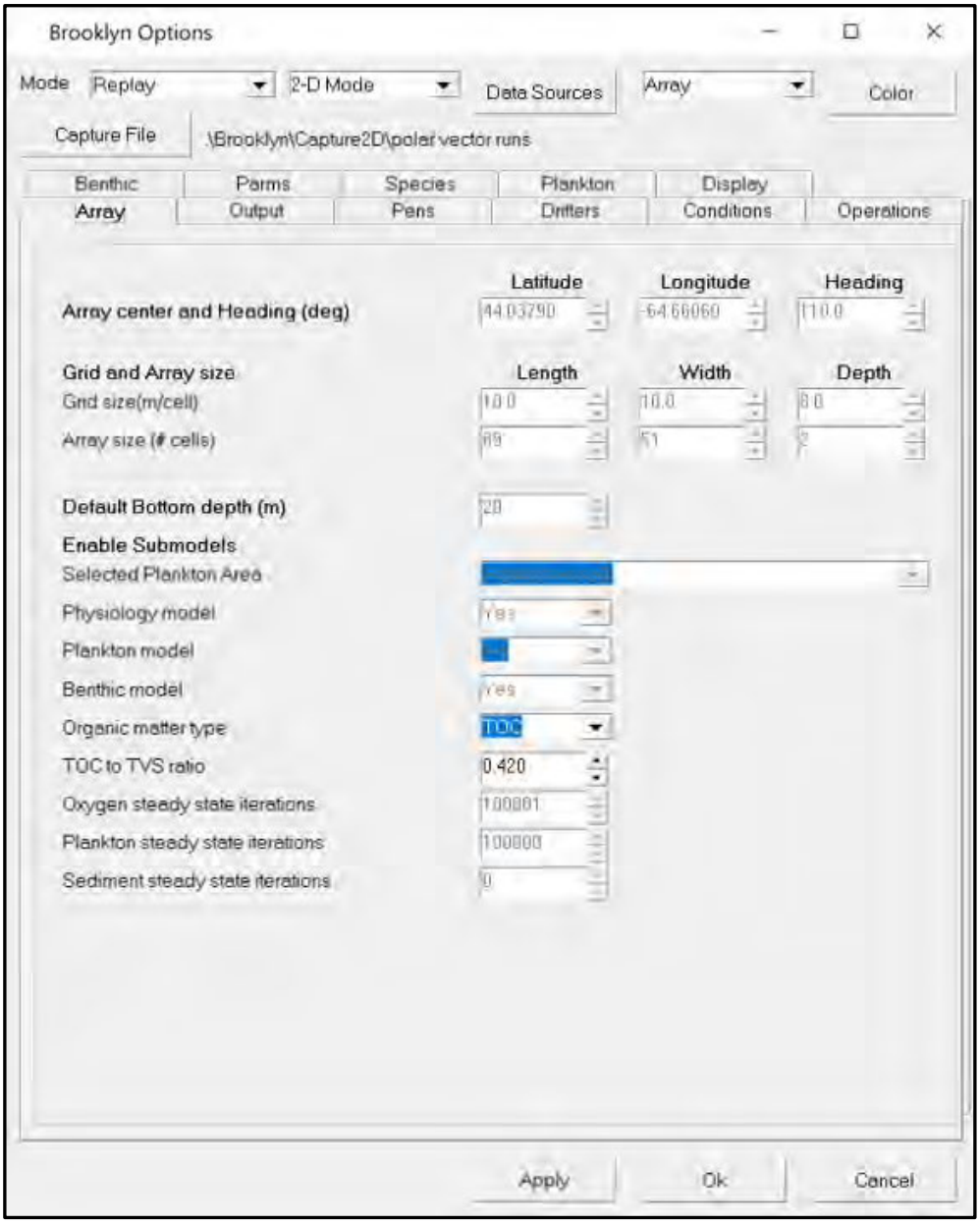


7.4 Aquamodel Settings

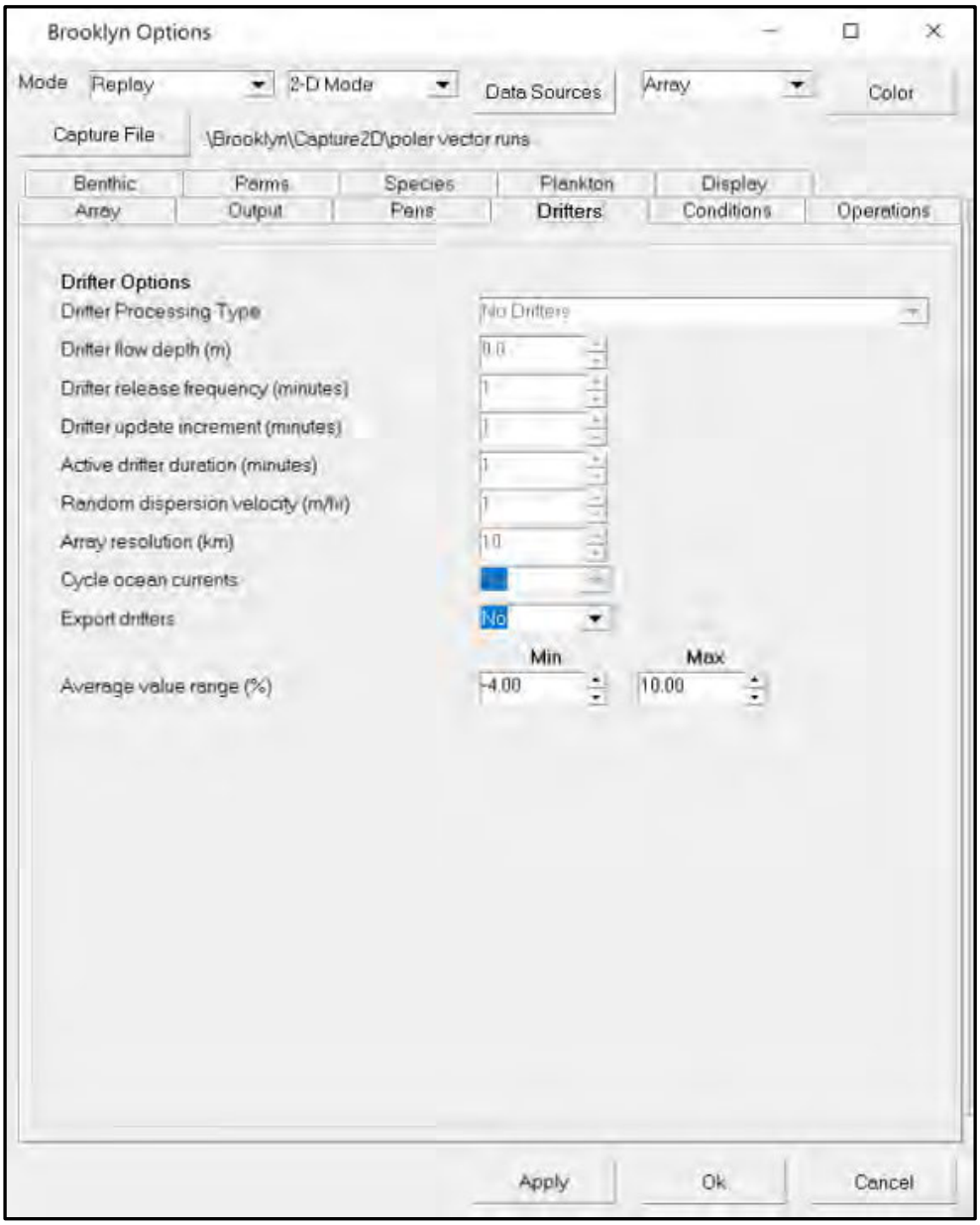
The thirteen (13) screen shots shown in the following pages illustrate the inputs and settings used to run the model for the proposed Brooklyn lease. The current meter, bathymetry, temperature / oxygen, and mortality / harvest data files are available on the accompanying CD.

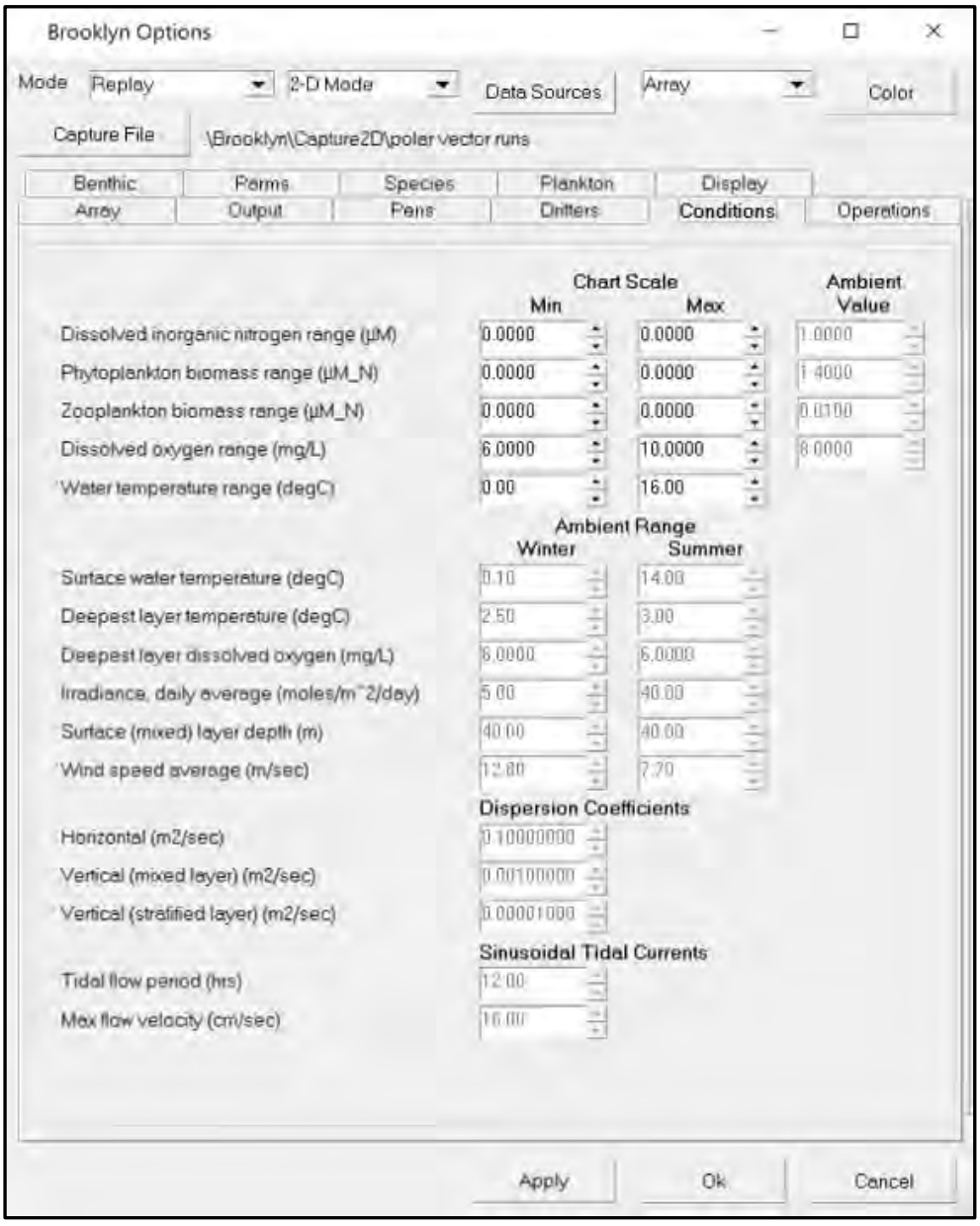
7.4.1 Project Options

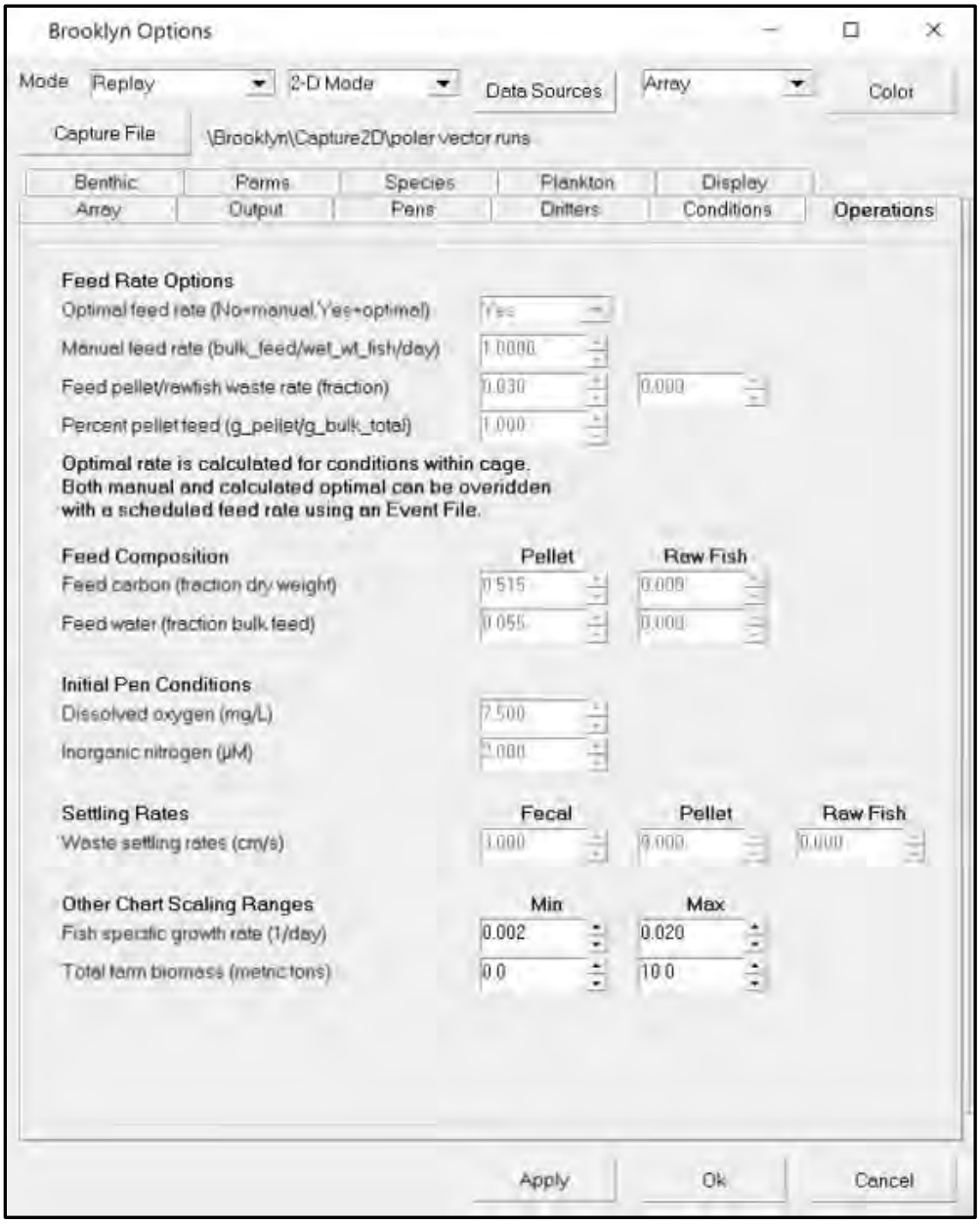



Brooklyn Options
Mode
Replay
2-D Mode
Data Sources
Array
Color
Capture File
\Brooklyn\Capture2D\polar vector runs
Benthic
Parms
Species
Plankton
Display
Array
Output
Pens
Drifters
Conditions
Operations
Latitude
Longitude
Heading
Array center and Heading (deg)
44.03790
-64.66060
110.0
Grid and Array size
Length
Width
Depth
Grid size(m/cell)
10.0
10.0
0.0
Array size (# cells)
89
51
2
Default Bottom depth (m)
20
Enable Submodels
Selected Plankton Area
Physiology model
Plankton model
Benthic model
Organic matter type
TOC
TOC to TVS ratio
0.420
Oxygen steady state iterations
100001
Plankton steady state iterations
100000
Sediment steady state iterations
0
Apply
Ok
Cancel

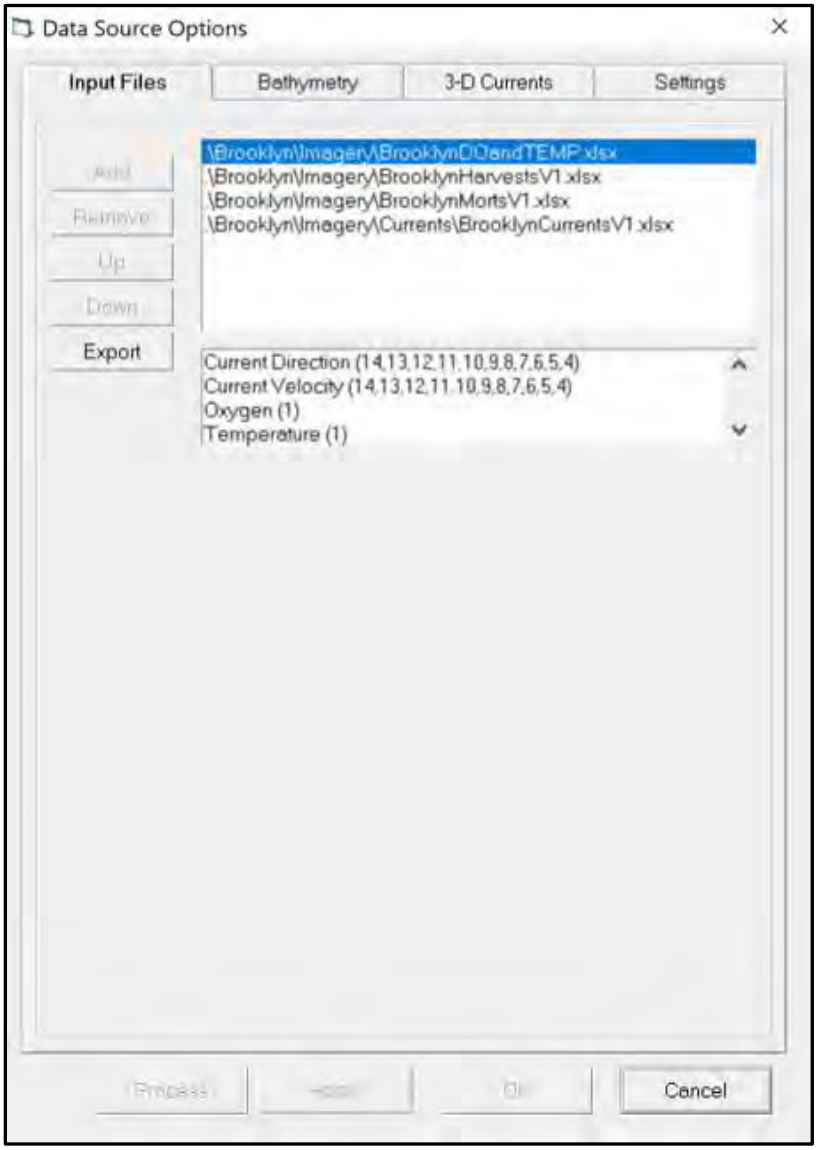

Brooklyn Options
Mode
Replay
2-D Mode
Data Sources
Array
Color
Capture File
\Brooklyn\Capture2D\polar vector runs
Benthic
Perms
Species
Plankton
Display
Array
Output
Pens
Drifters
Conditions
Operations
Pen
1
of
20
Species
AtlanticSalmonNS
Pen Shape
Circular
Pen Color
Black
Pen lat/lon/depth (deg,m)
44.03851
-64.06396
4.0
Pen size L/W/H (m)
31.83
31.83
8.00
Fish weight/density/Ox Lim (g,kg/m3,mg/L)
150.0000
0.7775
5.0000
Pen temperature offset (degC)
0.00
Apply
Ok
Cancel


Brooklyn Options
Mode
Replay
2-D Mode
Data Sources
Array
Color
Capture File
\Brooklyn\Capture2D\poler vector runs
Benthic
Parms
Species
Plankton
Display
Array
Output
Pens
Drifters
Conditions
Operations
Drifter Options
Drifter Processing Type
No Drifters
Drifter flow depth (m)
0.0
Drifter release frequency (minutes)
1
Drifter update increment (minutes)
1
Active drifter duration (minutes)
1
Random dispersion velocity (m/hr)
1
Array resolution (km)
10
Cycle ocean currents
Export drifters
No
Min
Max
Average value range (%)
-4.00
10.00
Apply
Ok
Cancel


Brooklyn Options
Mode
Replay
2-D Mode
Data Sources
Array
Color
Capture File
\Brooklyn\Capture2D\polar vector runs
Benthic
Parms
Species
Plankton
Display
Array
Output
Pens
Drifters
Conditions
Operations
Chart Scale
Min
Max
Ambient Value
Dissolved inorganic nitrogen range (µM)
0.0000
0.0000
1.0000
Phytoplankton biomass range (µM_N)
0.0000
0.0000
1.4000
Zooplankton biomass range (µM_N)
0.0000
0.0000
0.0100
Dissolved oxygen range (mg/L)
6.0000
10.0000
8.0000
Water temperature range (degC)
0.00
16.00
Ambient Range
Winter
Summer
Surface water temperature (degC)
0.10
14.00
Deepest layer temperature (degC)
2.50
3.00
Deepest layer dissolved oxygen (mg/L)
6.0000
6.0000
Irradiance, daily average (moles/m^2/day)
5.00
40.00
Surface (mixed) layer depth (m)
40.00
40.00
Wind speed average (m/sec)
12.80
7.70
Dispersion Coefficients
Horizontal (m2/sec)
0.10000000
Vertical (mixed layer) (m2/sec)
0.00100000
Vertical (stratified layer) (m2/sec)
0.00001000
Sinusoidal Tidal Currents
Tidal flow period (hrs)
12.00
Max flow velocity (cm/sec)
16.00
Apply
Ok
Cancel

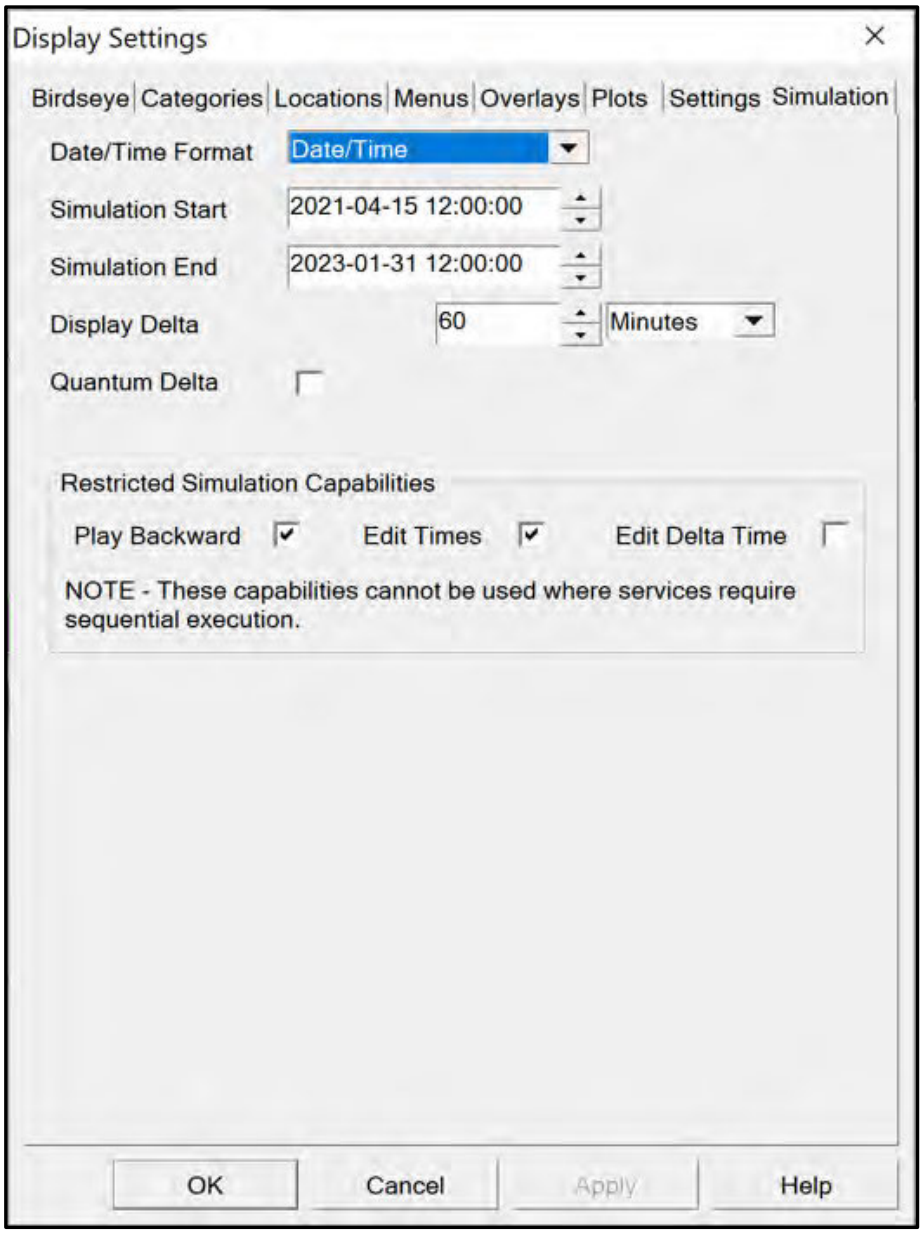

Brooklyn Options
Mode
Replay
2-D Mode
Data Sources
Array
Color
Capture File
\Brooklyn\Capture2D\polar vector runs
Benthic
Parms
Species
Plankton
Display
Array
Output
Pens
Drifters
Conditions
Operations
Feed Rate Options
Optimal feed rate (No=manual,Yes=optimal)
Yes
Manual feed rate (bulk_feed/wet_wt_fish/day)
1.0000
Feed pellet/rawfish waste rate (fraction)
0.030
0.000
Percent pellet feed (g_pellet/g_bulk_total)
1.000
Optimal rate is calculated for conditions within cage.
Both manual and calculated optimal can be overidden
with a scheduled feed rate using an Event File.
Feed Composition
Pellet
Raw Fish
Feed carbon (fraction dry weight)
0.515
0.000
Feed water (fraction bulk feed)
0.055
0.000
Initial Pen Conditions
Dissolved oxygen (mg/L)
7.500
Inorganic nitrogen (µM)
5.000
Settling Rates
Fecal
Pellet
Raw Fish
Waste settling rates (cm/s)
1.000
9.000
0.000
Other Chart Scaling Ranges
Min
Max
Fish specific growth rate (1/day)
0.002
0.020
Total farm biomass (metric tons)
0.0
10.0
Apply
Ok
Cancel

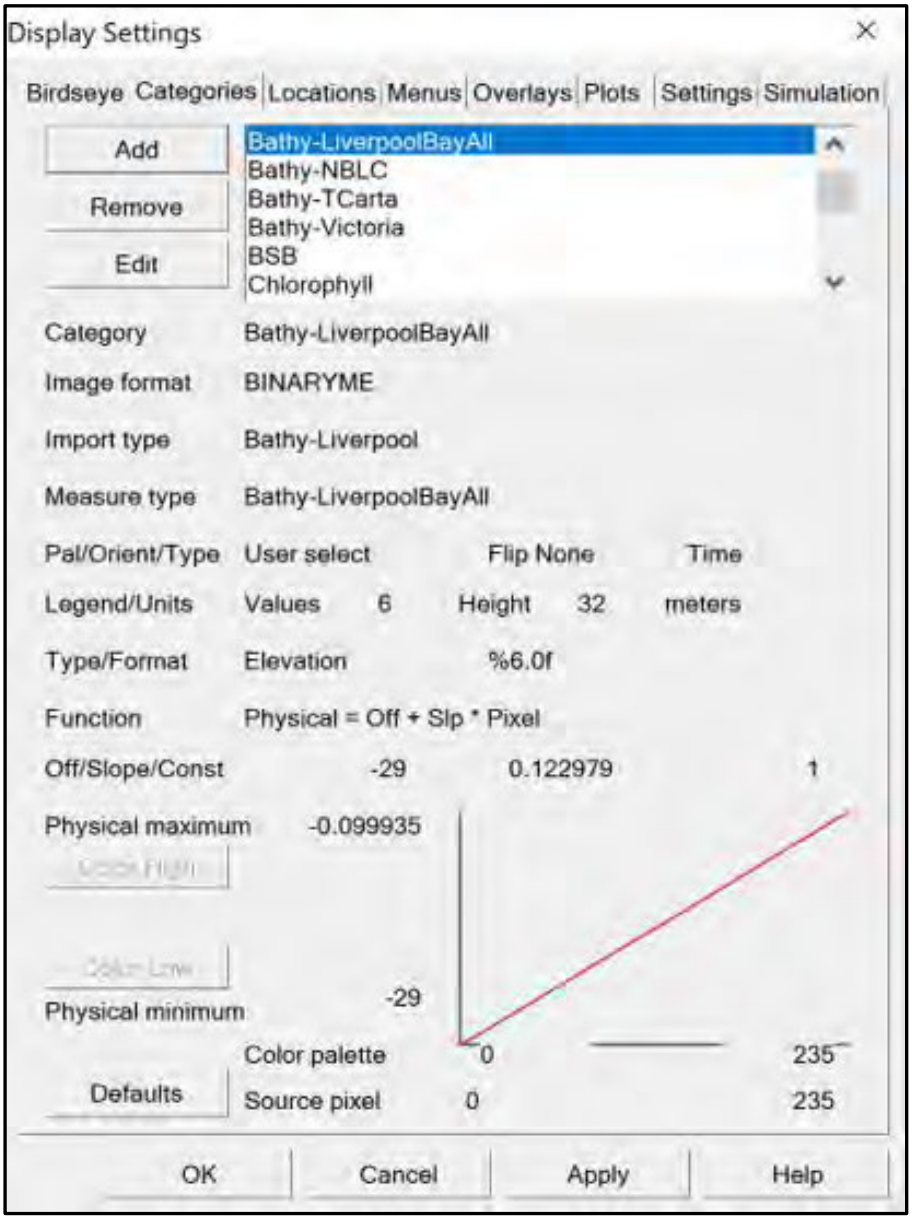
7.4.2 Data Source Options



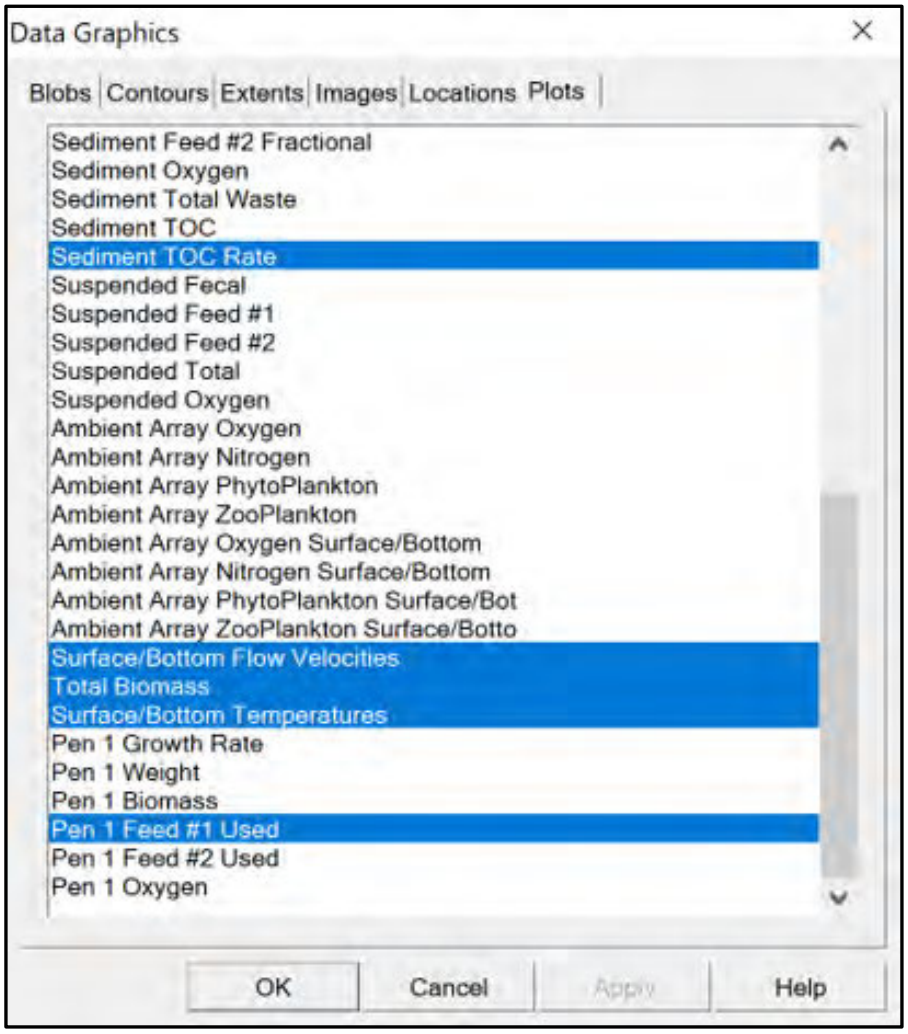

Data Source Options
Input Files
Bathymetry
3-D Currents
Settings
Primary Source
Category
Bathy-LiverpoolBayAll
Image
Bathy-LiverpoolBayAll
Orientation
Elevation
Bottom
Bathymetry File
Dep Ave/Cnt
13
4823
Detailed Source
Type
None
File
Create Image
Scale From
Category
None
Orientation
Bathymetry
Dep Ave/Cnt
0
0
Preprocess Bathymetry Data
Auto-process
\Brooklyn\BathymetryArrayFile
Cancel

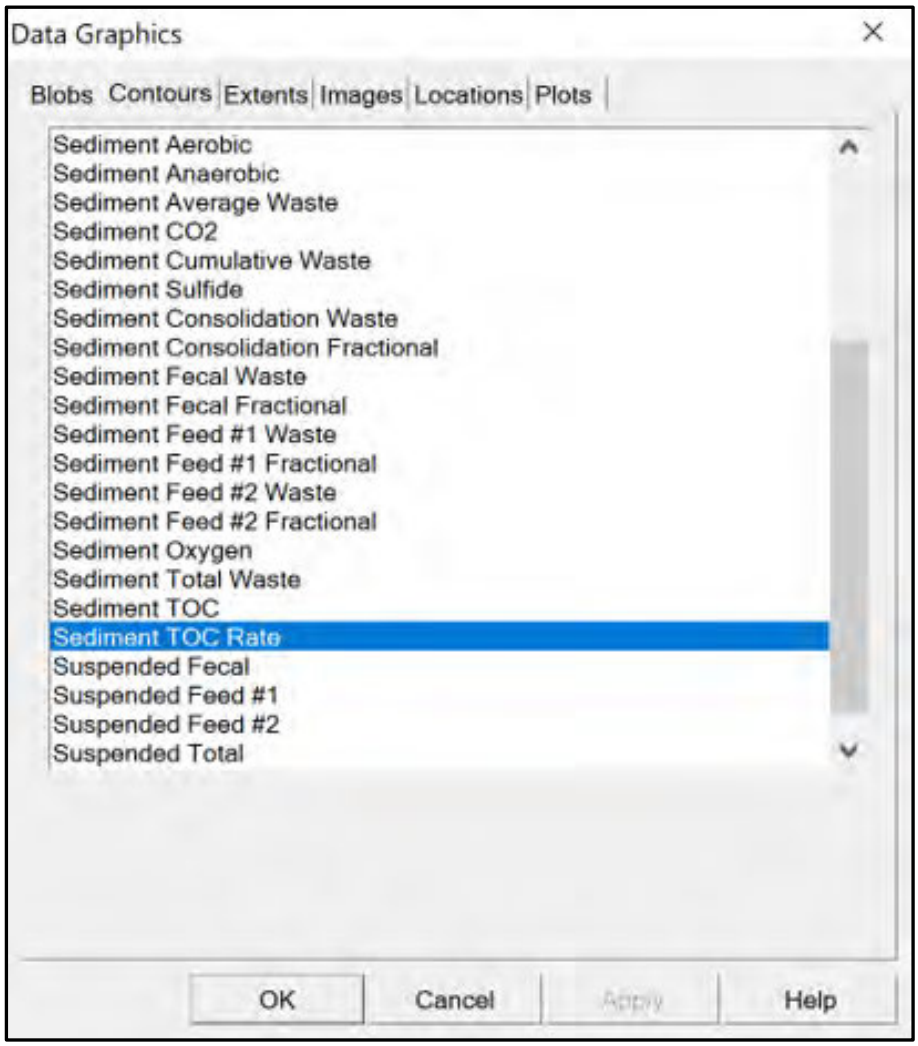
7.4.3 Display Settings

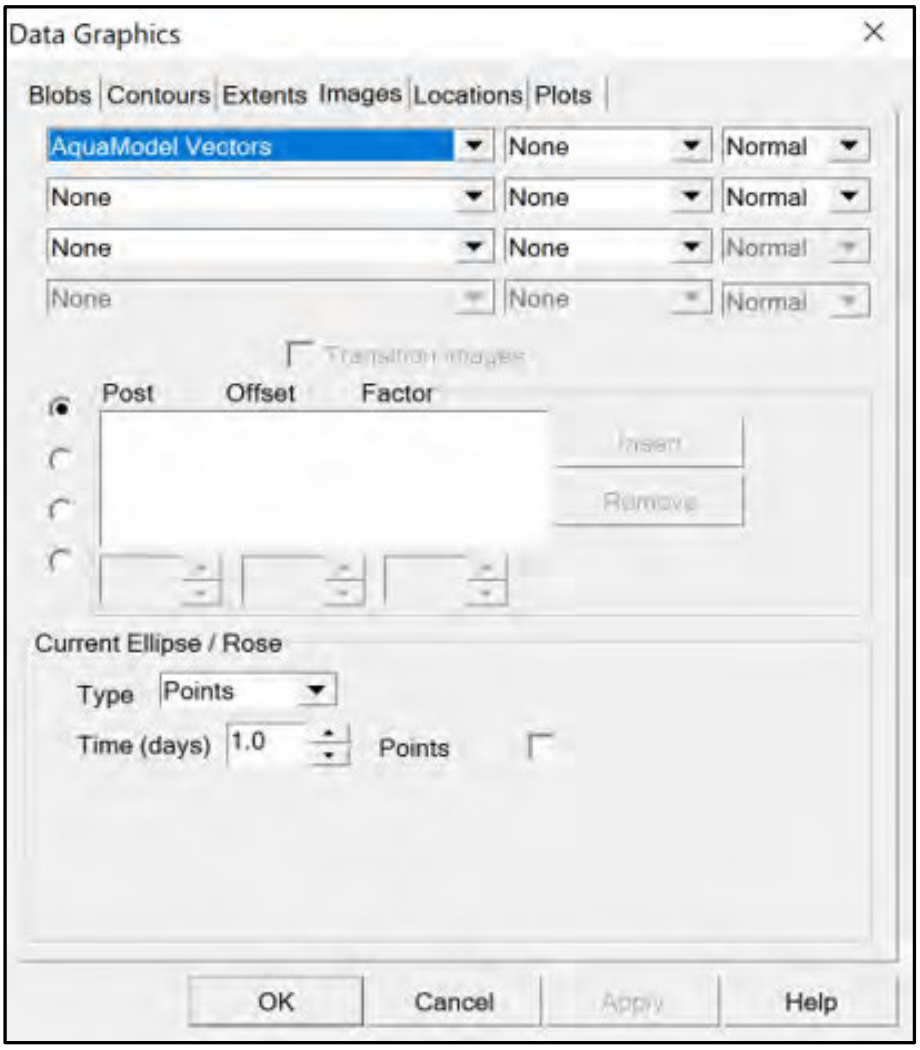



Display Settings
Birdseye Categories Locations Menus Overlays Plots Settings Simulation
Add
Remove
Edit
Bathy-LiverpoolBayAll
Bathy-NBLC
Bathy-TCarta
Bathy-Victoria
BSB
Chlorophyll
Category Bathy-LiverpoolBayAll
Image format BINARYME
Import type Bathy-Liverpool
Measure type Bathy-LiverpoolBayAll
Pal/Orient/Type User select Flip None Time
Legend/Units Values 6 Height 32 meters
Type/Format Elevation %6.0f
Function Physical = Off + Slp * Pixel
Off/Slope/Const -29 0.122979 1
Physical maximum -0.099935
Physical minimum -29
Color palette 0 235
Defaults
Source pixel 0 235
OK
Cancel
Apply
Help

7.4.4 Data Graphics




Data Graphics
Blobs
Contours
Extents
Images
Locations
Plots
Sediment Aerobic
Sediment Anaerobic
Sediment Average Waste
Sediment CO2
Sediment Cumulative Waste
Sediment Sulfide
Sediment Consolidation Waste
Sediment Consolidation Fractional
Sediment Fecal Waste
Sediment Fecal Fractional
Sediment Feed #1 Waste
Sediment Feed #1 Fractional
Sediment Feed #2 Waste
Sediment Feed #2 Fractional
Sediment Oxygen
Sediment Total Waste
Sediment TOC
Sediment TOC Rate
Suspended Fecal
Suspended Feed #1
Suspended Feed #2
Suspended Total
OK
Cancel
Apply
Help


Data Graphics
Blobs
Contours
Extents
Images
Locations
Plots
AquaModel Vectors
None
Normal
None
None
Normal
None
None
Normal
None
None
Normal
Transition Images
Post
Offset
Factor
Insert
Remove
Current Ellipse / Rose
Type
Points
Time (days)
1.0
Points
OK
Cancel
Apply
Help

8.0 FISH AND FISH HABITAT SURVEY

8.1 Summary

A benthic visual survey was undertaken to collect qualitative data of the physical and biological characteristics of fish and fish habitat within the proposed Brooklyn lease. Following the AAR requirements, the presence and relative abundance of dominant substrate type and flora and fauna were documented within the vicinity of the lease to provide a qualitative evaluation of the physical and biological characteristics of fish and fish habitat.

The fish and fish habitat survey carried out at the proposed Brooklyn site revealed:

- Shell debris was common
- Rare mussel shells were observed
- Approximately 41% is characterized by finer substrates and deemed 'soft bottom' while the remaining half (52%) contained coarser substrates and deemed 'hard bottom'
- Small red algae beds were observed on many of the hard bottom stations
- No sensitive species were present
- No species at risk were present

8.2 Methodology

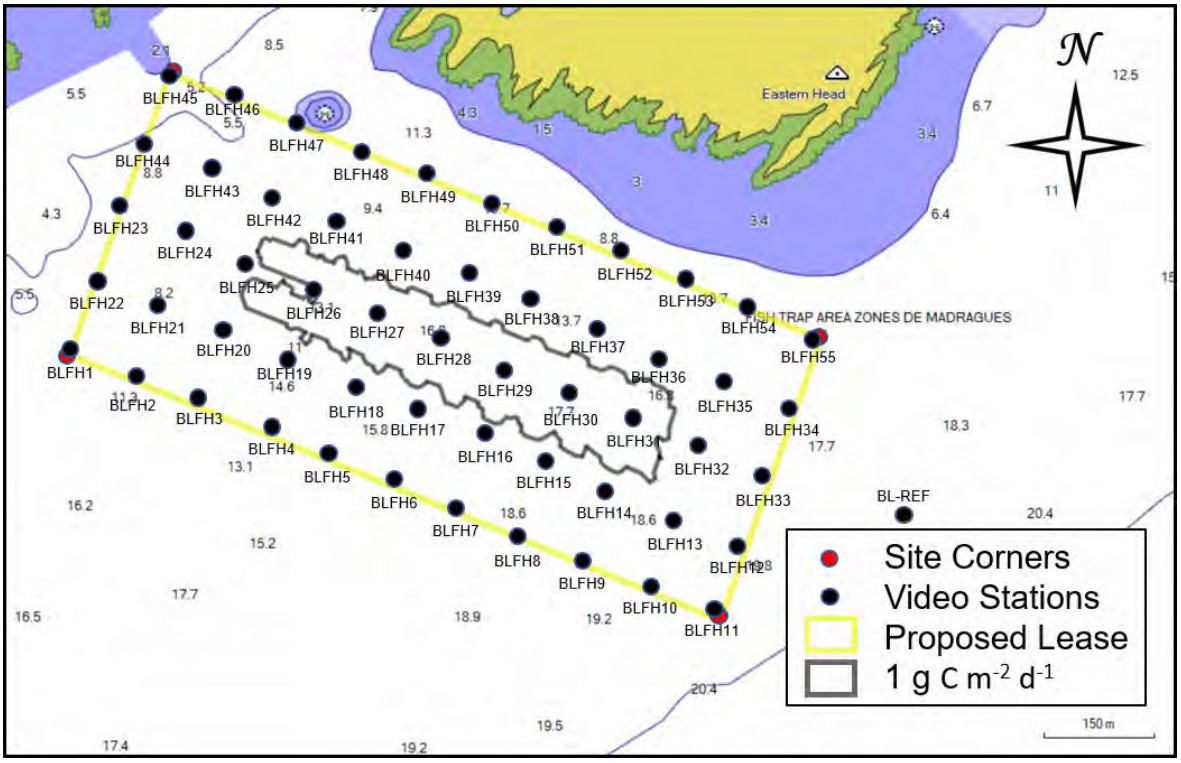
The fish and fish habitat survey was carried out on February 12, 2019 by SIMCorp to collect underwater video footage at stations within the lease using a combination of a video camera and a VRM-2 video recorder by J.W. Fishers. Benthic video sampling of the reference station occurred during the benthic substrate sampling on January 16, 2019.

The video footage was reviewed and analyzed by SIMCorp, noting observations of substrate type, fauna and flora at each station. Seafloor observations from the video stations were used to conduct the fish habitat survey. Observations were compiled in pictorial form to produce a habitat map of the seafloor characteristics as required in the AAR for baseline surveys. Please refer to the habitat map located in Appendix I.

8.2.1 Sampling Locations

A total of fifty-six (56) video stations were investigated for the purpose of the fish and fish habitat survey (Figure 12). All stations, except for the reference station, were equally spaced (approximately 100 m) in a grid formation across the proposed Brooklyn lease boundary and 1 g C m^{-2} d^{-1} depositional contour and were filmed for at least 2 minutes of bottom time.

Figure 12 Brooklyn video station locations surveyed on January 16, and February 12, 2019



8.2.2 Video Surveillance

Analyses of the substrate type, benthic indicators, flora and fauna were carried out on the entire lease area, a reference station, as well as the required 1 g C m^{-2} d^{-1} deposition area as identified through AquaModel depositional modeling (Section 7.0). Abundance estimates were recorded as number of individuals, percent coverage, or relative estimates, depending on the organism being assessed.

8.3 Results

8.3.1 Results and Observations of Benthic Visual Survey

Screen shots of the seafloor for observations at each station during the habitat survey of the proposed Brooklyn site are available in Appendix J. Table 19 provides a list of flora and fauna species (or higher taxonomic level) observed during the benthic survey. A more detailed and comprehensive species list over the entire survey area is available in Appendix K. Tables 20 and 21 include the substrate and benthic indicator observations from the baseline sampling stations as required in the AAR. Raw video footage is available on the DVD provided to the Nova Scotia Department of Fisheries and Aquaculture (NSDFA) with this report and is also available upon request.

Table 19 List of species (or higher taxonomic level) observed during the benthic survey of Brooklyn

List of Species Observed		
Acid Kelp	Blood Star	Mixed Rhodophyta
Algae (Coralline)	Fish (Unidentifiable)	Sea Colander
Algae (Encrusting)	Kelp	Sea Star (Common)
Anemone (Unidentifiable)	Knotted Wrack Weed	White Branching Bryozoan

Beggiatoa-like bacteria was observed in significant quantities at one (1) of the fifty-six (56) stations surveyed. This level is very low at 5% but still meets the AAR threshold to be considered significant. Insignificant amounts of *Beggiatoa*-like bacteria were also found at an additional sixteen (17) stations.

The sediment characteristics below the proposed Brooklyn lease area consisted of mixed substrates. Approximately 41% was characterized primarily by finer substrates such as sand, mud and silt. These soft bottom stations were found predominantly in the southwest area of the proposed lease. The remaining stations consisted of mixed and coarser substrates such as gravel, cobble, rubble, boulders, and bedrock. Shell debris was common. Mussel shells were observed in rare quantities.

Table 20 Baseline video observations of substrate type from the Brooklyn survey, January 16 and February 12, 2019

Station (m)	Latitude (dd mm.mmm)	Longitude (dd mm.mmm)	Depth (m)	Time	Video Quality	Figure #	Substrate											Comments and Observations
							Primary [1]	Descriptors										
							> 50% (hard/soft)	Rockwall	Bedrock	Boulders	Rubble	Cobble	Gravel	Sand	Silt/Mud	Organic	Floc	
BLFH1	44 2.275	64 40.069	11.4	11:40	4	J-1	Hard		100%									
BLFH2	44 2.255	64 39.998	13.9	11:45	4	J-1	Hard		90%			5%	5%					
BLFH3	44 2.239	64 39.931	18.2	11 56	4	J-1	Hard		20%	20%	5%	15%	5%	35%				
BLFH4	44 2.219	64 39.849	19.1	12 01	4	J-1	Hard		5%	70%	5%	5%		15%				
BLFH5	44 2.201	64 39.789	19.1	12 06	4	J-1	Hard		90%			10%						
BLFH6	44 2.183	64 39.719	21.3	12:11	4	J-1	Soft							100%				
BLFH7	44 2.161	64 39.652	21.6	12:17	4	J-1	Soft							100%				
BLFH8	44 2.142	64 39.582	22.0	12 23	4	J-1	Soft							100%				
BLFH9	44 2.125	64 39.512	22.3	12 28	4	J-2	Soft							100%				
BLFH10	44 2.106	64 39.439	22.6	12 34	4	J-2	Soft							100%				
BLFH11	44 2.090	64 39.370	23.1	12 39	4	J-2	Soft							100%				
BLFH12	44 2.137	64 39.346	22.9	12:45	4	J-2	Soft							100%				
BLFH13	44 2.156	64 39.414	22.3	12 51	4	J-2	Soft							100%				
BLFH14	44 2.176	64 39.485	22.0	12 56	4	J-2	Soft							100%				
BLFH15	44 2.197	64 39.553	21.9	13 02	4	J-2	Soft							100%				
BLFH16	44 2.216	64 39.621	21.5	13 08	4	J-2	Soft							100%				
BLFH17	44 2.233	64 39.692	21.2	13:14	4	J-3	Soft					Trace		100%				
BLFH18	44 2.249	64 39.761	20.5	13:19	4	J-3	Hard		40%	30%	5%	5%	5%	15%				
BLFH19	44 2.270	64 39.834	17.8	13 25	4	J-3	Hard		60%	20%		10%		10%				
BLFH20	44 2.290	64 39.903	17.1	13 30	4	J-3	Hard		50%	30%	5%	5%	Trace	10%				
BLFH21	44 2.307	64 39.976	14.7	13 36	4	J-3	Hard		90%			5%	5%					
BLFH22	44 2.324	64 40.042	14.1	13:41	4	J-3	Soft							100%				
BLFH23	44 2.380	64 40.017	10.0	13:47	4	J-3	Hard		95%		Trace	5%	Trace					
BLFH24	44 2.360	64 39.948	14.7	13 52	4	J-3	Hard		60%	10%	5%	15%	5%	5%				
BLFH25	44 2.339	64 39.882	16.7	13 57	4	J-4	Hard		30%	15%			5%	50%				
BLFH26	44 2.320	64 39.807	16.9	14 02	4	J-4	Hard		65%	20%	5%	10%						
BLFH27	44 2.304	64 39.739	20.4	14 08	4	J-4	Soft		5%		10%			85%				
BLFH28	44 2.285	64 39.667	20.0	14:13	4	J-4	Hard		90%			5%		5%				

1 t is important to clarify that hard bottom is indicative of bedrock, boulder, rubble, cobble, gravel or hard packed finer substrate consisting of mud, sand or silt. Soft bottom is indicative of a softer, more loosely packed mud, sand or silt. Substrate Descriptions are visual estimations of surface coverage.

Table 20 Baseline video observations of substrate type from the Brooklyn survey, January 16 and February 12, 2019 (continued)

Station (m)	Latitude (dd mm.mmm)	Longitude (dd mm.mmm)	Depth (m)	Time	Video Quality	Figure #	Substrate										Comments and Observations
							Primary [1]	Descriptors									
							> 50% (hard/soft)	Rockwall	Bedrock	Boulders	Rubble	Cobble	Gravel	Sand	Silt/Mud	Organic	Floc	
BLFH29	44 2.264	64 39.600	21.3	14:18	4	J-4	Soft							100%				
BLFH30	44 2.246	64 39.528	21.6	14 23	4	J-4	Soft							100%				
BLFH31	44 2.229	64 39.459	23.3	14 28	4	J-4	Soft		Trace					100%				
BLFH32	44 2.210	64 39.389	21.9	14 34	4	J-4	Soft							100%				
BLFH33	44 2.188	64 39.318	22.5	14 39	4	J-5	Soft							100%				
BLFH34	44 2.238	64 39.291	21.0	14:48	4	J-5	Hard		50%	5%		5%		40%				
BLFH35	44 2.256	64 39.360	20.2	14 54	4	J-5	Soft							100%				
BLFH36	44 2.273	64 39.432	18.1	15 00	4	J-5	Hard	50%	45%	5%								
BLFH37	44 2.294	64 39.501	20.6	15 06	4	J-5	Soft							100%				
BLFH38	44 2.315	64 39.570	19.1	15:11	4	J-5	Hard		85%		5%				10%			
BLFH39	44 2.333	64 39.639	19.8	15:17	4	J-5	Hard		15%				15%	70%				Sand over bedrock
BLFH40	44 2.351	64 39.710	16.6	15 22	4	J-5	Hard		100%									
BLFH41	44 2.370	64 39.782	16.4	15 29	4	J-6	Hard		30%	20%	10%		5%	35%				
BLFH42	44 2.389	64 39.854	15.0	15 35	4	J-6	Soft							100%				
BLFH43	44 2.408	64 39.918	11.5	15:40	4	J-6	Hard	10%	85%			Trace		5%				
BLFH44	44 2.428	64 39.989	8 9	15:44	4	J-6	Hard		100%									
BLFH45	44 2.476	64 39.968	7 0	15:49	4	J-6	Hard		95%			5%	Trace					
BLFH46	44 2.462	64 39.897	9 0	15 54	4	J-6	Hard	5%	90%			5%		Trace				
BLFH47	44 2.443	64 39.827	11.4	15 59	4	J-6	Hard		60%			5%		35%				Sand over bedrock
BLFH48	44 2.421	64 39.758	9.4	16 04	4	J-6	Hard	5%	95%		Trace							
BLFH49	44 2.404	64 39.684	15.3	16 08	4	J-7	Hard		75%		15%	5%		5%				
BLFH50	44 2.385	64 39.616	13.4	16:13	4	J-7	Hard		50%		20%	25%		5%				
BLFH51	44 2.368	64 39.544	15.6	16:18	4	J-7	Hard		20%	30%	10%	5%	5%	30%				
BLFH52	44 2.350	64 39.474	13.1	16 23	4	J-7	Hard		90%			5%		5%				
BLFH53	44 2.331	64 39.404	13.4	16 28	4	J-7	Hard		95%			5%						
BLFH54	44 2.311	64 39.335	16.5	16 33	4	J-7	Hard		45%			5%	5%	45%				
BLFH55	44 2.291	64 39.264	17.3	16 39	4	J-7	Hard		85%			5%	5%	5%				
BL-REF	44 2.161	64 39.163	21.9	8:59	2	E-1	Soft							100%				

1 t is important to clarify that hard bottom is indicative of bedrock, boulder, rubble, cobble, gravel or hard packed finer substrate consisting of mud, sand or silt. Soft bottom is indicative of a softer, more loosely packed mud, sand or silt. Substrate Descriptions are visual estimations of surface coverage.

Table 21 Baseline video observations of benthic indicators from the Brooklyn survey, January 16 and February 12, 2019

Station (m)	Latitude (dd mm.mmm)	Longitude (dd mm.mmm)	Depth (m)	Time	Video Quality	Figure #	Benthic Indicators					Other Benthic Descriptors or Observations							Comments and Observations
							Bacteria		OPC		Barren	Off Gas	Feed	Shell Debris	Mussel Shells	Sed. Color	Flora (%)	Fauna (Abundance) / Flora (Percent Coverage)	
							P/A	%	P/A	%	(P/A)								
BLFH1	44 2.275	64 40.069	11.4	11:40	4	J-1	A		A		A	A	A	A	A	Brown	75%	Blood Star (3), White Branching Bryozoan (10%), Coraline Algae (25%), Kelp (<5%), Sea Colander (5%), Mixed Rhodophyta (40%), Encrusting Algae (5%)	
BLFH2	44 2.255	64 39.998	13.9	11:45	4	J-1	P	5	A		A	A	A	P	A	Brown	80%	Blood Star (2), Mixed Rhodophyta (30%), Coralline Algae (50%), Kelp (<5%), Sea Colander (<5%)	
BLFH3	44 2.239	64 39.931	18.2	11:56	4	J-1	A	<5	A		A	A	A	P	P	Brown	55%	Acid Kelp (5%), Coralline Algae (35%), Mixed Rhodophyta (5%), Blood Star (1), Encrusting Algae (5%), Sea Colander (5%)	
BLFH4	44 2.219	64 39.849	19.1	12:01	4	J-1	A		A		A	A	A	P	A	Brown	80%	Coralline Algae (55%), Sea Colander (10%), Mixed Rhodophyta (15%)	
BLFH5	44 2.201	64 39.789	19.1	12:06	4	J-1	A		A		A	A	A	P	A	Brown	85%	Blood Star (12), Sea Colander (15%), Mixed Rhodophyta (10%), Coralline Algae (60%), Kelp (<5%)	
BLFH6	44 2.183	64 39.719	21.3	12:11	4	J-1	A		A		A	A	A	A	A	Brown	0%		Detritus
BLFH7	44 2.161	64 39.652	21.6	12:17	4	J-1	A		A		A	A	A	A	A	Brown	0%		Detritus
BLFH8	44 2.142	64 39.582	22.0	12:23	4	J-1	A		A		A	A	A	A	A	Brown	0%		Detritus
BLFH9	44 2.125	64 39.512	22.3	12:28	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH10	44 2.106	64 39.439	22.6	12:34	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH11	44 2.090	64 39.370	23.1	12:39	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH12	44 2.137	64 39.346	22.9	12:45	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH13	44 2.156	64 39.414	22.3	12:51	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH14	44 2.176	64 39.485	22.0	12:56	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH15	44 2.197	64 39.553	21.9	13:02	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH16	44 2.216	64 39.621	21.5	13:08	4	J-2	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH17	44 2.233	64 39.692	21.2	13:14	4	J-3	A		A		A	A	A	A	A	Brown	0%		Detritus
BLFH18	44 2.249	64 39.761	20.5	13:19	4	J-3	A	<5	A		A	A	A	P	P	Brown	50%	Coralline Algae (35%), Mixed Rhodophyta (10%), Encrusting Algae (5%), Sea Colander (<5%), Blood Star (4)	Detritus
BLFH19	44 2.270	64 39.834	17.8	13:25	4	J-3	A		A		A	A	A	P	A	Brown	75%	Coralline Algae (50%), Mixed Rhodophyta (20%), Sea Colander (5%), Unidentifiable Fish (1), Kelp (<5%), Blood Star (1)	
BLFH20	44 2.290	64 39.903	17.1	13:30	4	J-3	A	<5	A		A	A	A	P	A	Brown	60%	Coralline Algae (30%), Mixed Rhodophyta (30%), Kelp (<5%), Sea Colander (<5%)	Detritus
BLFH21	44 2.307	64 39.976	14.7	13:36	4	J-3	A		A		A	A	A	P	A	Brown	75%	Coralline Algae (35%), White Branching Bryozoan (10%), Sea Colander (5%), Kelp (<5%), Mixed Rhodophyta (25%), Blood Star (3)	
BLFH22	44 2.324	64 40.042	14.1	13:41	4	J-3	A		A		A	A	A	P	A	Brown	<5%	Mixed Rhodophyta (<5%)	Detritus
BLFH23	44 2.380	64 40.017	10.0	13:47	4	J-3	A		A		A	A	A	P	A	Brown	85%	Kelp (5%), White Branching Bryozoan (40%), Mixed Rhodophyta (25%), Coralline Algae (15%), Sea Colander (<5%)	
BLFH24	44 2.360	64 39.948	14.7	13:52	4	J-3	A	<5	A		A	A	A	P	P	Brown	75%	Mixed Rhodophyta (50%), Coralline Algae (25%), White Branching Bryozoan (5%), Blood Star (1), Sea Colander (<5%)	
BLFH25	44 2.339	64 39.882	16.7	13:57	4	J-4	A	<5	A		A	A	A	P	A	Brown	40%	Mixed Rhodophyta (15%), Coraline Algae (20%), Encrusting Algae (<5%), Sea Colander (<5%), Kelp (<5%)	Detritus
BLFH26	44 2.320	64 39.807	16.9	14:02	4	J-4	A	<5	A		A	A	A	P	P	Brown	85%	Mixed Rhodophyta (45%), Sea Colander (5%), Coralline Algae (35%), Kelp (<5%), Blood Star (2), Encrusting Algae (<5%)	
BLFH27	44 2.304	64 39.739	20.4	14:08	4	J-4	A		A		A	A	A	P	A	Brown	5%	Coralline Algae (5%), Mixed Rhodophyta (<5%)	
BLFH28	44 2.285	64 39.667	20.0	14:13	4	J-4	A	<5	A		A	A	A	P	P	Brown	55%	Coralline Algae (35%), Mixed Rhodophyta (10%), Sea Colander (5%), Knotted Wrack Weed (<5%), Blood Star (3), Encrusting Algae (5%)	Detritus, tree log

Note: It is important to clarify that percent coverage of Bacteria, OPC and Other Benthic Observations of Flora are visual estimations of surface coverage.
Benthic Indicators: A or "Absence" represents < 5 % coverage of OPC and / or bacteria and / or where barrenness due to aquaculture is not observed. P or "Presence" represents ≥ 5 % coverage of OPC and / or bacteria and / or where barrenness due to aquaculture is observed.

Table 21 Baseline video observations of benthic indicators from the Brooklyn survey, January 16 and February 12, 2019 (continued)

Station (m)	Latitude (dd mm.mmm)	Longitude (dd mm.mmm)	Depth (m)	Time	Video Quality	Figure #	Benthic Indicators					Other Benthic Descriptors or Observations							Comments and Observations
							Bacteria		OPC		Barren	Off Gas	Feed	Shell Debris	Mussel Shells	Sed. Color	Flora (%)	Fauna (Abundance) / Flora (Percent Coverage)	
							P/A	%	P/A	%	(P/A)								
BLFH29	44 2.264	64 39.600	21.3	14:18	4	J-4	A		A		A	A	A	A	A	Brown	0%		Detritus
BLFH30	44 2.246	64 39.528	21.6	14:23	4	J-4	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH31	44 2.229	64 39.459	23.3	14:28	4	J-4	A		A		A	A	A	P	A	Brown	0%	Blood Star (2)	Detritus, rope
BLFH32	44 2.210	64 39.389	21.9	14:34	4	J-4	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH33	44 2.188	64 39.318	22.5	14:39	4	J-5	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH34	44 2.238	64 39.291	21.0	14:48	4	J-5	A	<5%	A		A	A	A	P	A	Brown	35%	Coraline Algae (25%), Sea Colander (<5%), Mixed Rhodophyta (5%), Encrusting Algae (5%)	
BLFH35	44 2.256	64 39.360	20.2	14:54	4	J-5	A		A		A	A	A	P	A	Brown	0%	Unidentifiable Anemone (2)	Detritus
BLFH36	44 2.273	64 39.432	18.1	15:00	4	J-5	A		A		A	A	A	P	A	Brown	85%	Sea Colander (10%), Coralline Algae (60%), Mixed Rhodophyta (5%), Encrusting Algae (10%), Kelp (<5%), Unidentifiable Anemone (1)	
BLFH37	44 2.294	64 39.294	20.6	15:06	4	J-5	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH38	44 2.315	64 39.315	19.1	15:11	4	J-5	A	<5%	A		A	A	A	P	P	Brown	70%	Coraline Algae (45%), Mixed Rhodophyta (10%), Sea Colander (5%), Encrusting Algae (10%), Common Sea Star (2), Blood Star (3)	Detritus
BLFH39	44 2.333	64 39.333	19.8	15:17	4	J-5	A		A		A	A	A	P	A	Brown	10%	Coralline Algae (10%)	
BLFH40	44 2.351	64 39.351	16.6	15:22	4	J-5	A		A		A	A	A	P	A	Brown	75%	Coralline Algae (30%), Mixed Rhodophyta (45%), Sea Colander (<5%), Blood Star (5)	
BLFH41	44 2.370	64 39.370	16.4	15:29	4	J-6	A	<5%	A		A	A	A	P	A	Brown	50%	Mixed Rhodophyta (25%), Coraline Algae (25%), Blood Star (1)	
BLFH42	44 2.389	64 39.389	15.0	15:35	4	J-6	A		A		A	A	A	P	A	Brown	0%		Detritus
BLFH43	44 2.408	64 39.918	11.5	15:40	4	J-6	A		A		A	A	A	P	A	Brown	70%	White Branching Bryozoan (15%), Coralline Algae (20%), Mixed Rhodophyta (50%), Kelp (<5%), Blood Star (3)	
BLFH44	44 2.428	64 39.989	8.9	15:44	4	J-6	A	<5%	A		A	A	A	A	A	Brown	40%	Mixed Rhodophyta (25%), White Branching Bryozoan (50%), Coralline Algae (10%), Kelp (5%), Common Sea Star (1)	
BLFH45	44 2.476	64 39.968	7.0	15:49	4	J-6	A		A		A	A	A	P	A	Brown	70%	Mixed Rhodophyta (40%), White Branching Bryozoan (25%), Coralline Algae (25%), Kelp (5%)	
BLFH46	44 2.462	64 39.897	9.0	15:54	4	J-6	A	<5%	A		A	A	A	A	A	Brown	80%	Mixed Rhodophyta (65%), Coralline Algae (15%), Kelp (<5%), White Branching Bryozoan (10%), Blood Star (1)	
BLFH47	44 2.443	64 39.827	11.4	15:59	4	J-6	A		A		A	A	A	P	A	Brown	55%	Mixed Rhodophyta (35%), Coralline Algae (20%), Kelp (<5%), White Branching Bryozoan (5%), Blood Star (2), Sea Colander (<5%)	
BLFH48	44 2.421	64 39.758	9.4	16:04	4	J-6	A		A		A	A	A	P	A	Brown	65%	White Branching Bryozoan (25%), Coralline Algae (25%), Mixed Rhodophyta (25%), Encrusting Algae (5%), Kelp (10%), Blood Star (1)	
BLFH49	44 2.404	64 39.684	15.3	16:08	4	J-7	A		A		A	A	A	P	A	Brown	80%	Sea Colander (5%), Coralline Algae (30%), White Branching Bryozoan (10%), Mixed Rhodophyta (35%), Blood Star (1), Encrusting Algae (10%)	
BLFH50	44 2.385	64 39.616	13.4	16:13	4	J-7	A	<5%	A		A	A	A	P	A	Brown	90%	Sea Colander (<5%), Coralline Algae (40%), Mixed Rhodophyta (45%), Kelp (<5%), Blood Star (4), Encrusting Algae (5%), White Branching Bryozoan (<5%)	
BLFH51	44 2.368	64 39.544	15.6	16:18	4	J-7	A	<5%	A		A	A	A	P	P	Brown	60%	Sea Colander (5%), Encrusting Algae (5%), Coralline Algae (20%), Mixed Rhodophyta (30%)	Detritus
BLFH52	44 2.350	64 39.474	13.1	16:23	4	J-7	A	<5%	A		A	A	A	P	A	Brown	80%	Blood Star (2), Sea Colander (5%), Mixed Rhodophyta (35%), Coralline Algae (30%), White Branching Bryozoan (10%), Encrusting Algae (10%), Kelp (<5%)	
BLFH53	44 2.331	64 2.404	13.4	16:28	4	J-7	A	<5%	A		A	A	A	P	A	Brown	75%	White Branching Bryozoan (15%), Coraline Algae (50%), Mixed Rhodophyta (5%), Kelp (5%), Sea Colander (5%), Encrusting Algae (10%)	
BLFH54	44 2.311	64 2.335	16.5	16:33	4	J-7	A		A		A	A	A	P	P	Brown	30%	Mixed Rhodophyta (5%), Coraline Algae (20%), Encrusting Algae (5%), Blood Star (2), Sea Colander (<5%), White Branching Bryozoan (<5%)	
BLFH55	44 2.291	64 2.264	17.3	16:39	4	J-7	A	<5%	A		A	A	A	P	A	Brown	60%	Encrusting Algae (10%), Coralline Algae (40%), Blood Star (1), Mixed Rhodophyta (5%), Sea Colander (5%), White Branching Bryozoan (5%)	
BL-REF	44 2.161	64 39.163	21.9	8:59	2	E-1	A		A		A	A	A	P	A	Brown	0%		Detritus

Note: It is important to clarify that percent coverage of Bacteria, OPC and Other Benthic Observations of Flora are visual estimations of surface coverage.
Benthic Indicators: A or "Absence" represents < 5 % coverage of OPC and / or bacteria and / or where barrenness due to aquaculture is not observed. P or "Presence" represents ≥ 5 % coverage of OPC and / or bacteria and / or where barrenness due to aquaculture is observed.

8.3.2 Results of Fish and Fish Habitat Survey

Just over half of the proposed aquaculture site was found to consist of predominately coarse substrates with approximately 41% of the stations consisting of fine substrates.

The stations with coarse substrates or 'hard bottom' stations often also contained small red algae beds.

Faunal species observed included blood stars, common sea stars, anemones, and white branching bryozoans.

9.0 REFERENCES

Canadian Hydrographic Service (CHS) 2013. Standards for Hydrographic Surveys, Edition 2. CHS Survey Management Guidelines. 17 p.

Department of Fisheries and Oceans Canada, 2018a. Aquaculture Activities Regulations Guidance Document. http://www.dfo-mpo.gc.ca/aquaculture/management-gestion/aar-raa-gd-eng.htm. August 13, 2018.

Department of Fisheries and Oceans Canada, 2018b. Aquaculture Activities Regulations Monitoring Standard. July 13, 2018.

Nova Scotia Department of Fisheries and Aquaculture (NSDFA), 2018a. Standard Operating Procedures for the Environmental Monitoring of Marine Aquaculture in Nova Scotia. June 2018.

Nova Scotia Department of Fisheries and Aquaculture (NSDFA), 2018b. Environmental Monitoring Program Framework for Marine Aquaculture in Nova Scotia. June 2018.

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APPENDIX A
Sulphide Probe Calibration Certificate

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Calibration Report

NRC-IMB Research Facilities
1411 Oxford Street
Suite 367-368
Halifax, NS
B3H 3Z1
Tel: (902) 492-7865
(902) 492-0359
Fax: (902) 492-7734

Date: 17-Jan-19
Meter: 837623
Sulfide Probe ID: SS1-15920

Project: SW2018-153 Brooklyn (proposed)

5-point calibration using 100, 500, 1000, 5 000 and 10 000 µM sulphide standards.

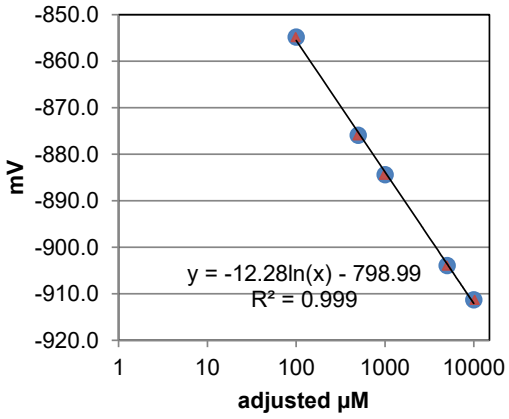
Date calibration performed: 17-Jan-19
Time calibration completed: 11:25am **Expiration time:** 2:25pm
Calibration performed by: Una Goggin

Calibration Temperture: 20.4°C

Calibration -

After calibration the standards were re-measured to verify calibration.

10 µM (really 100 µM)	set at	-854.8 mV	read at	9.84 µM at	-853.9 mV
50 µM (really 500 µM)	set at	-875.9 mV	read at	49.2 µM at	-875.1 mV
100 µM (really 1000 µM)	set at	-884.4 mV	read at	97.6 µM at	-883.3 mV
500 µM (really 5 000 µM)	set at	-903.9 mV	read at	497 µM at	-903.0 mV
1 000 µM (really 10 000 µM)	set at	-911.3 mV	read at	1020 µM at	-911.4 mV



Final slope (meter) = -30.1 mV

10 fold slope (validation)

500 to 5 000 µM: -28.0 mV
1000 to 10 000 µM: -26.9 mV

Calibration meets final slope range of -27 to -33 mV and 10-fold slope of -25 to -30 mV.

Signed off by:

[redacted]

Leah Lewis-McCrea, M.Sc.
Senior Laboratory Manager

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APPENDIX B
Redox and Sulphide Data Sheet

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NRC-IMB Research Facilities
1411 Oxford Street
Suite 367-368
Halifax, NS
B3H 3Z1
Tel: (902) 492-7865
(902) 492-0359
Fax: (902) 492-7734

Redox and Sulphide Test Report

Site #:	Brooklyn (proposed)	**Sample Collection:**	16-Jan-19
Redox Start:	11:28am on 17-Jan-19	**Redox Stop:**	11:47am on 17-Jan-19
Sulphide Start:	11:30am on 17-Jan-19	**Sulphide Stop:**	11:50am on 17-Jan-19

Sample I.D.		Temp	Redox	Sulphide		
Station	ID #	°C	mV	unadjusted µM	mV	adjusted µM
BL 3	1	5.2	198.9	0.000	-668.6	0.000
	2	5.6	214.5	0.000	-572.7	0.000
	3	7.3	184.6	0.000	-534.5	0.000
BL- REF	1	4.8	210.0	0.000	-590.9	0.000
	2	5.5	58.9	6.92	-849.3	69.2
	3	6.5	185.1	0.000	-569.3	0.000

Field Crew: Shaun Allain

Analysis Crew: Una Goggin
Kiersten Watson

Redox Check (mV):
Prior to analy 221.1 mV @ 25°C
Post analysis 220.5 mV @ 25°C

Sulphide Temp: 20.4°C

Redox reading at 2 minutes
Exceeds calibra ion limit
Less than Repor ing Limit (RL)

Equipment:

Sulphide Analysis

Probe kit: NSLAB001
Sulphide probe: SS1-15920
Temperature probe: T016

Redox Analysis

Meter number: 487142
Redox probe: RO10
Temperature probe: T007

SAOB + L-AA mixture

Addition: 11:20am

Expiration: 2:20pm

[redacted]

Leah Lewis-McCrea, M.Sc.
Senior Laboratory Manager

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APPENDIX C
Sediment Grain Size Analysis

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Suite 367-368
Halifax, NS
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Tel: (902) 492-7865
(902) 492-0359
Fax: (902) 492-7734
www.simcorp.ca

Date: 15-Feb-19
File No.: SW2018-143
Site Name/#: Brooklyn
Province: Nova Scotia

Grain Size Analysis

			% Fraction			
		mm	BL 3-1	BL 3-2	BL 3-3	Average
Gravel	Pebble	>4	0.00	0.00	0.07	0.02
	Granule	2-4	0.03	0.02	0.00	0.01
Sand	Very Coarse	1-2	0.06	0.03	0.03	0.04
	Coarse	0.5-1	0.08	0.09	0.06	0.08
	Medium	0.25-0.5	0.57	0.44	0.29	0.43
	Fine	0.125-0.25	21.65	22.47	15.92	20.02
	Very Fine	0.063-0.125	64.11	62.57	70.91	65.86
Mud	Silt	0.040 - 0.063	9.75	10.09	9.18	9.67
	Clay	0.004 - 0.040	3.76	4.29	3.54	3.86
% Gravel			0.03	0.02	0.07	0.04
% Sand			86.47	85.60	87.21	86.43
% Mud			13.51	14.39	12.72	13.54

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Grain Size Analysis

			% Fraction			
		mm	BL-REF-1	BL-REF-2	BL-REF-3	Average
Gravel	Pebble	>4	0.00	0.20	0.05	0.08
	Granule	2-4	0.06	0.52	0.04	0.21
Sand	Very Coarse	1-2	0.06	0.94	0.10	0.37
	Coarse	0.5-1	0.25	3.79	0.26	1.43
	Medium	0.25-0.5	1.23	6.14	1.11	2.83
	Fine	0.125-0.25	27.40	40.10	25.70	31.07
	Very Fine	0.063-0.125	62.77	42.80	65.27	56.95
Mud	Silt	0.040 - 0.063	5.44	2.38	5.26	4.36
	Clay	0.004 - 0.040	2.78	3.13	2.22	2.71
% Gravel			0.06	0.72	0.09	0.29
% Sand			91.71	93.77	92.43	92.64
% Mud			8.22	5.51	7.48	7.07

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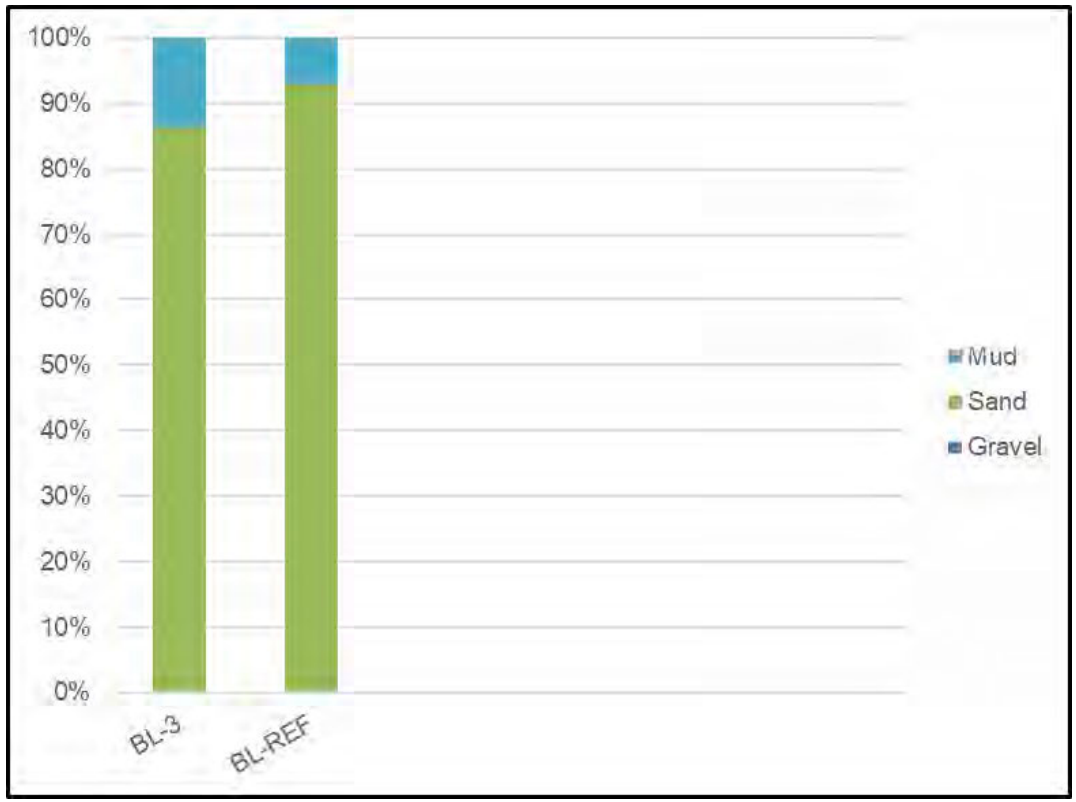
www.simcorp.ca

Figure 1: Grain Size Distribution



Signed off by:

[redacted]

Leah Lewis-McCrea, M.Sc.
Senior Laboratory Manager

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APPENDIX D
Grab Photos

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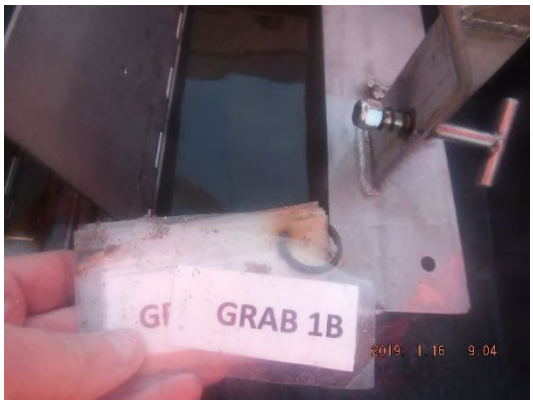
BL-REF

Pre-siphon

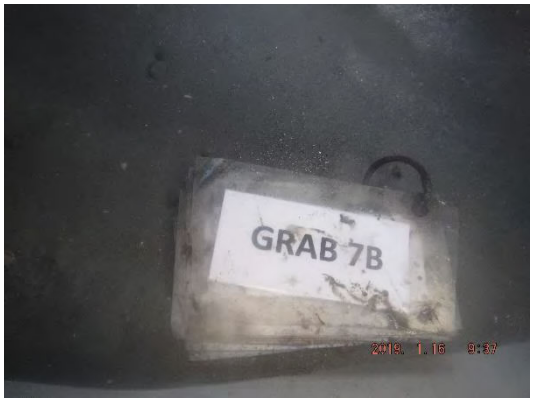


Post-siphon

BL-REF (Continued)

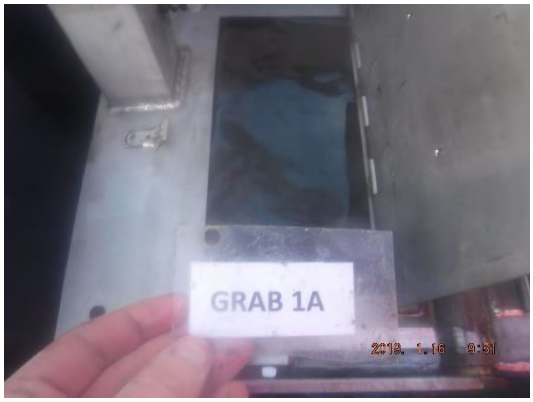
Pre-siphon

Post-siphon



BL3

Pre-siphon



Post-siphon

BL3 (Continued)

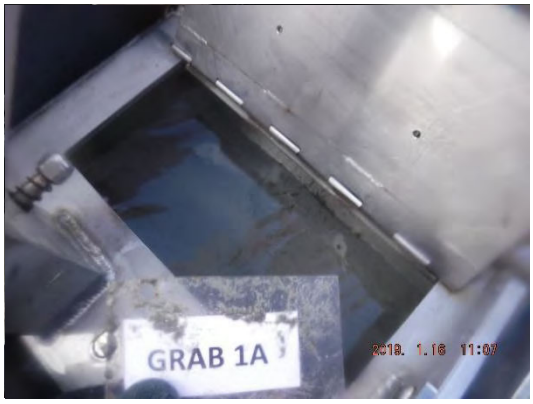
Pre-siphon

Post-siphon

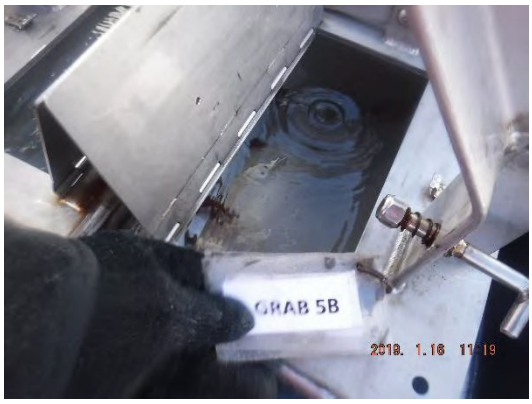
BL4
Grabs that were not sampled

BL4 (Continued)
Grabs that were not sampled

BL5
Grabs that were not sampled



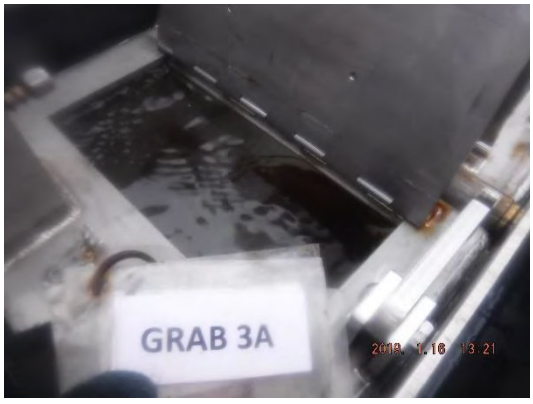
BL5 (Continued)
Grabs that were not sampled



BL2
Grabs that were not sampled

BL2 (Continued)
Grabs that were not sampled

BL1
Grabs that were not sampled



BL1 (Continued)
Grabs that were not sampled

APPENDIX E
Benthic Substrate Sampling Screen Captures of the Seafloor

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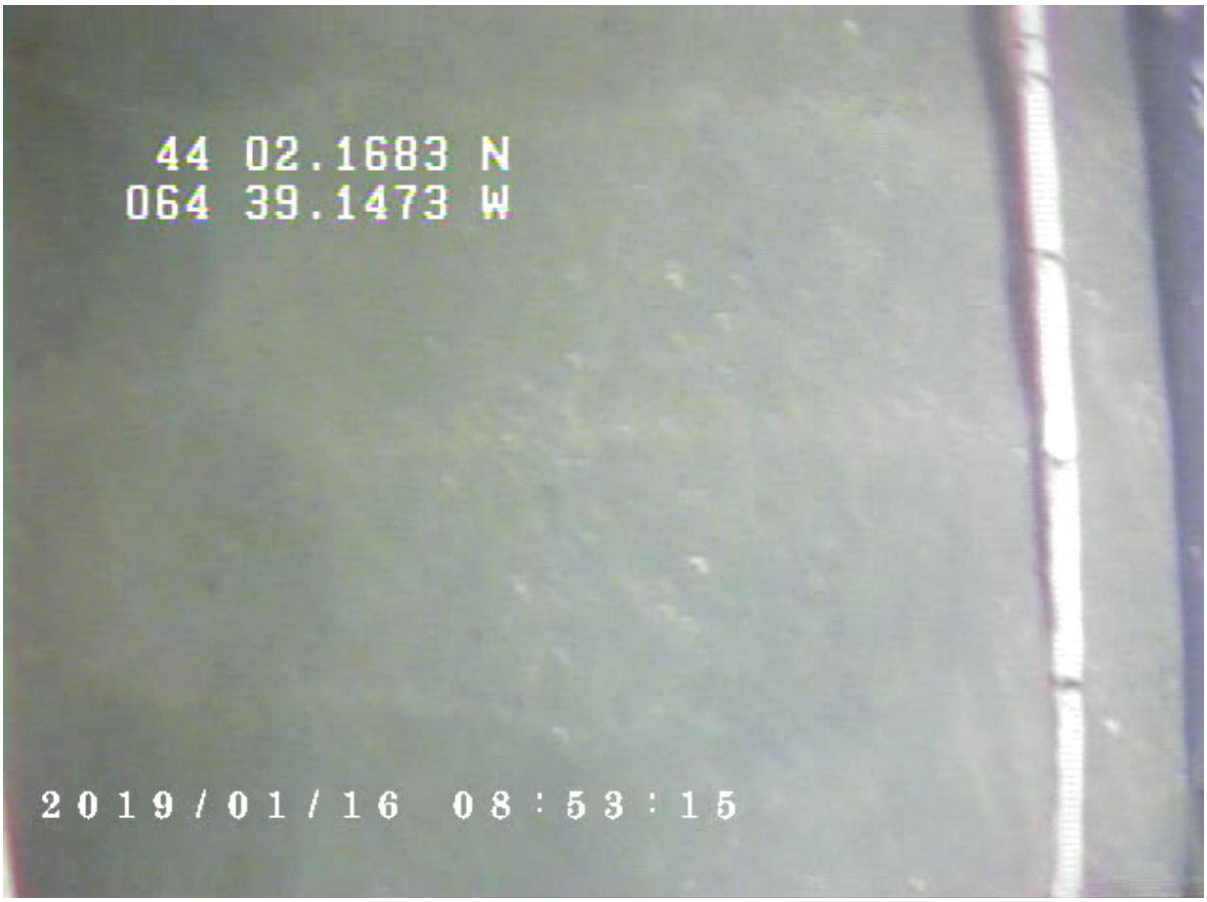
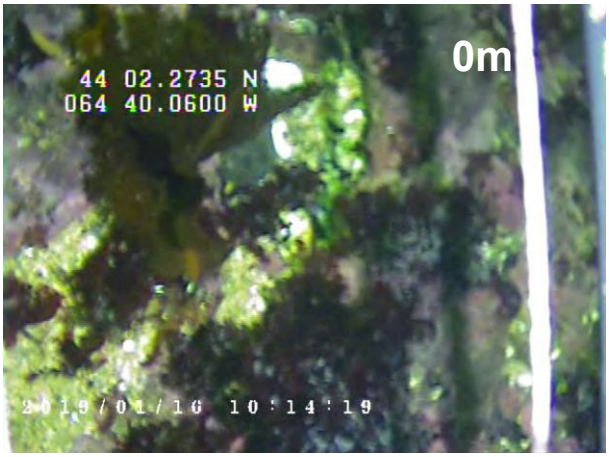
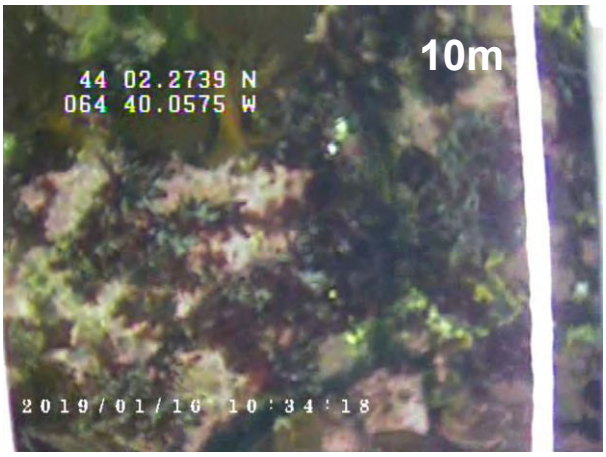
BL-REF

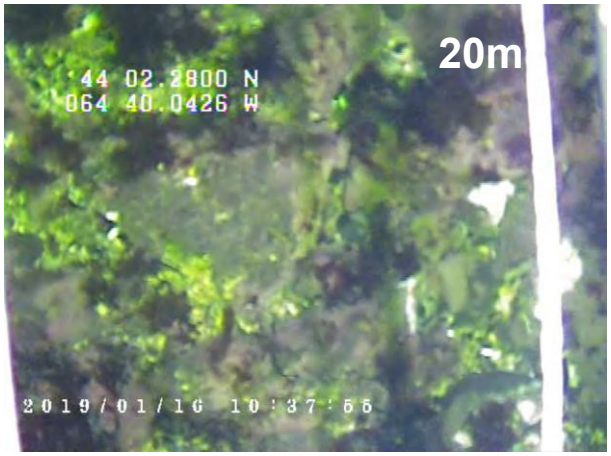


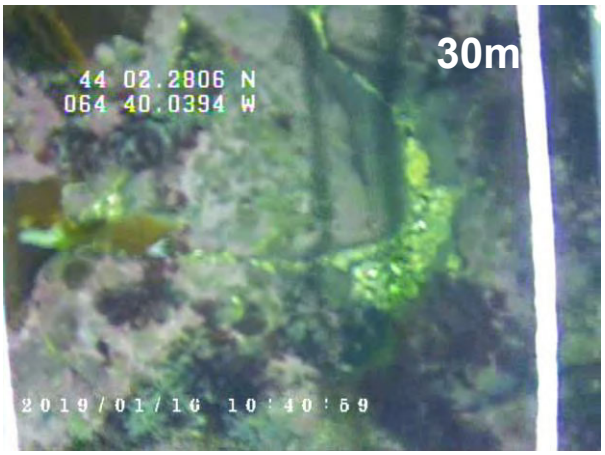
BL3

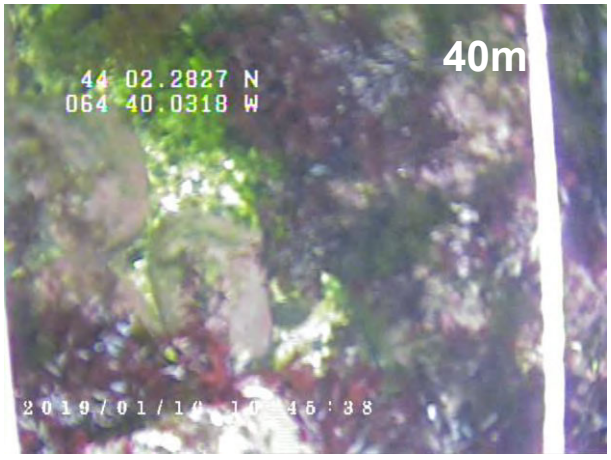
BL4


0m
44 02.2735 N
064 40.0600 W
2019/01/16 10:14:19


10m
44 02.2739 N
064 40.0575 W
2019/01/16 10:34:18

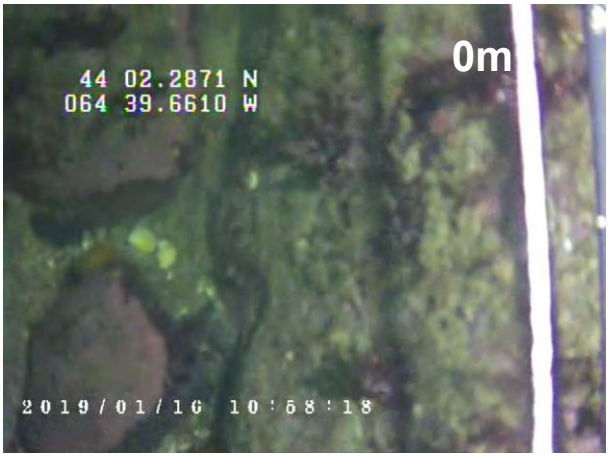

20m
44 02.2800 N
064 40.0426 W
2019/01/16 10:37:56

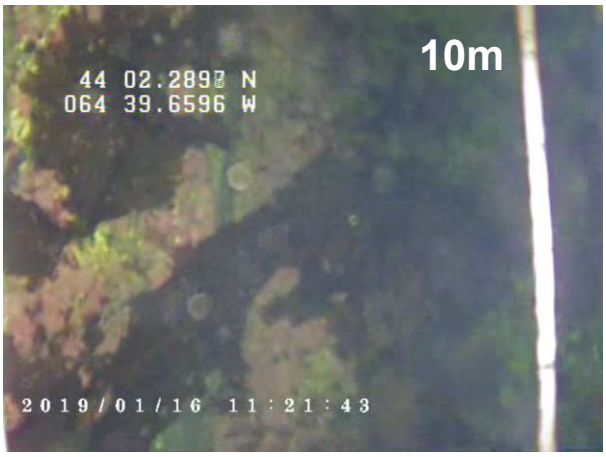

30m
44 02.2806 N
064 40.0394 W
2019/01/16 10:40:59


40m
44 02.2827 N
064 40.0318 W


50m
44 02.2696 N
064 40.0112 W
2019/01/16 10:49:47

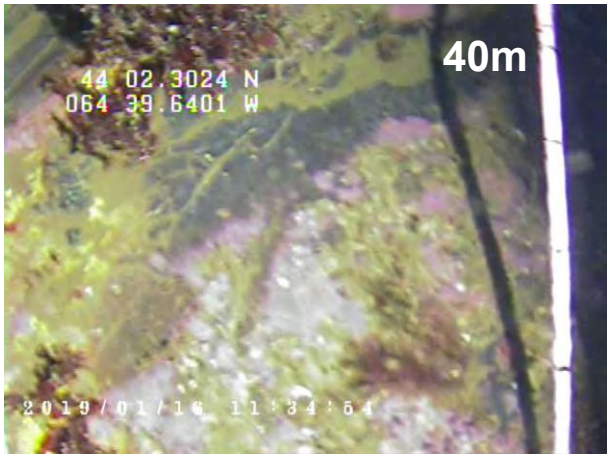
BL5

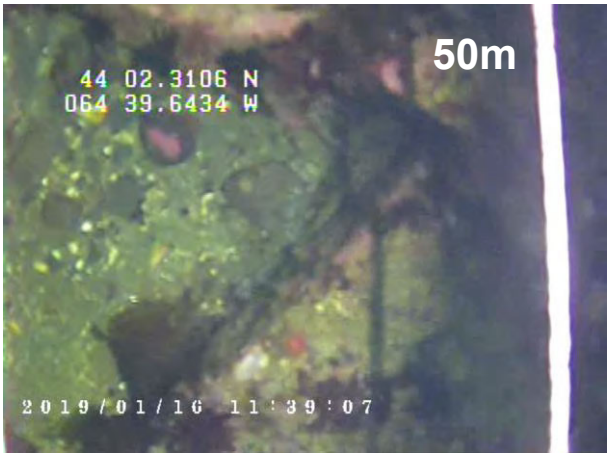

0m
44 02.2871 N
064 39.6610 W
2019/01/16 10:58:18


10m
44 02.2897 N
064 39.6596 W
2019/01/16 11:21:43

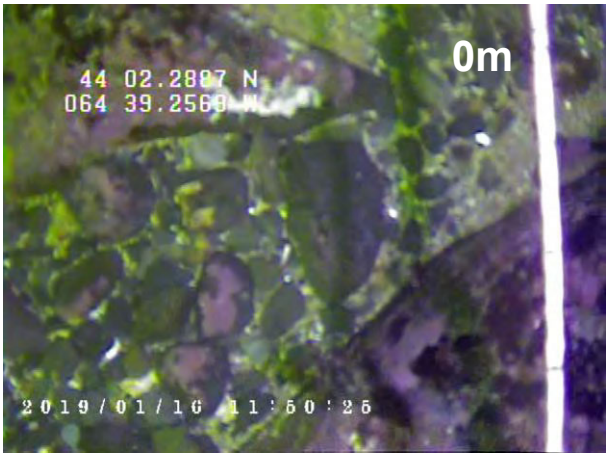

20m
44 02.2995 N
064 39.6456 W
2019/01/16 11:24:43

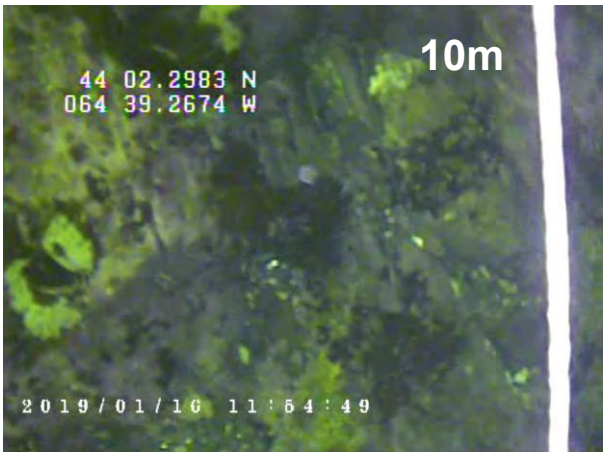

30m
44 02.2919 N
064 39.6490 W
2019/01/16 11:29:28

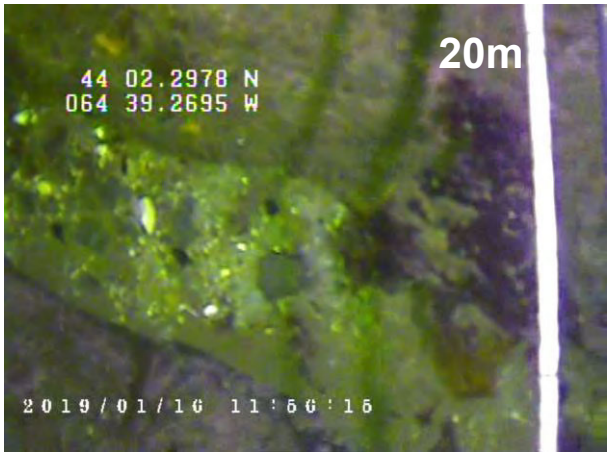

40m
44 02.3024 N
064 39.6401 W
2019/01/16 11:34:54

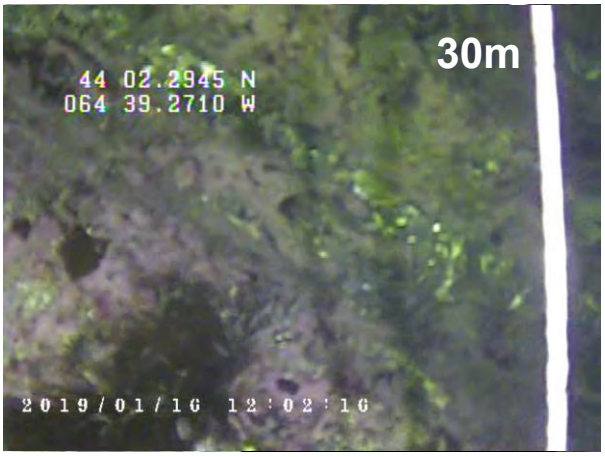

50m
44 02.3106 N
064 39.6434 W
2019/01/16 11:39:07

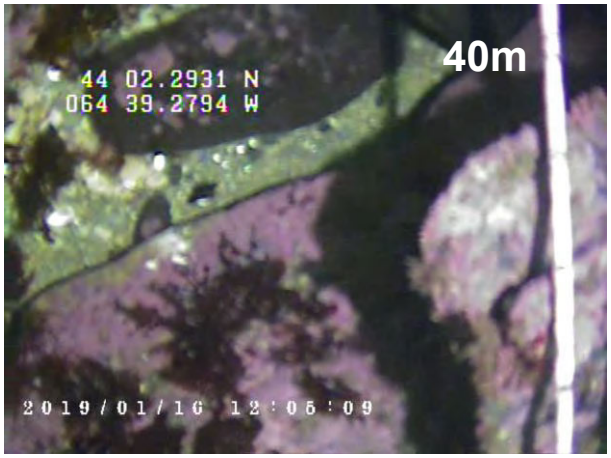
BL2

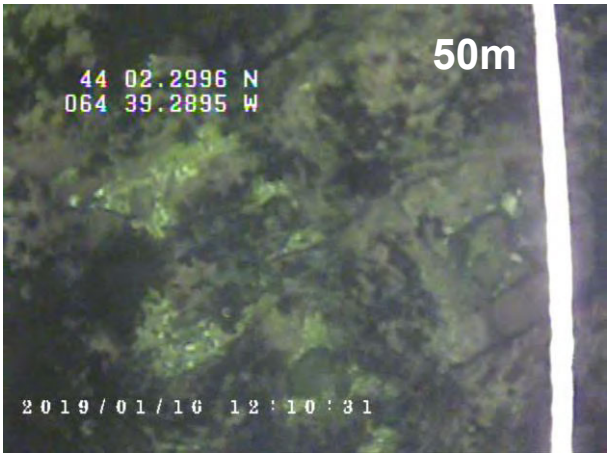

0m
44 02.2807 N
064 39.2568 W
2019/01/16 11:50:25


10m
44 02.2983 N
064 39.2674 W
2019/01/16 11:54:49


20m
44 02.2978 N
064 39.2695 W
2019/01/16 11:56:15


30m
44 02.2945 N
064 39.2710 W
2019/01/16 12:02:16

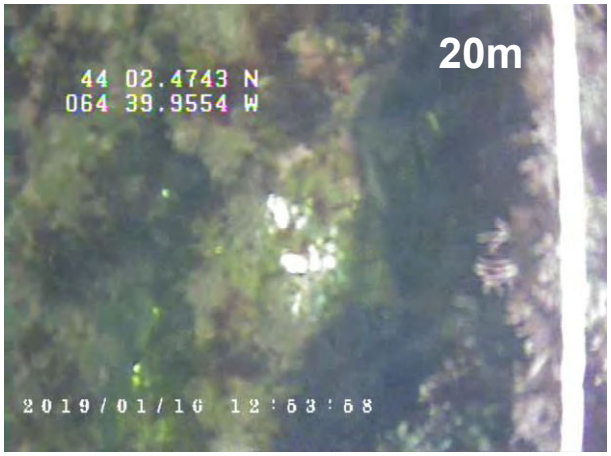

40m
44 02.2931 N
064 39.2794 W
2019/01/16 12:06:09


50m
44 02.2996 N
064 39.2895 W
2019/01/16 12:10:31

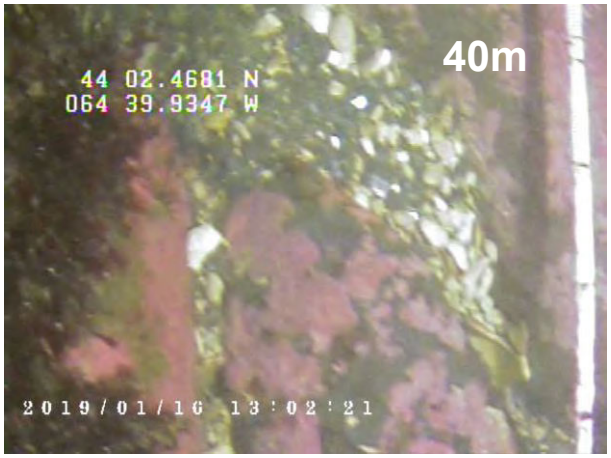
BL1

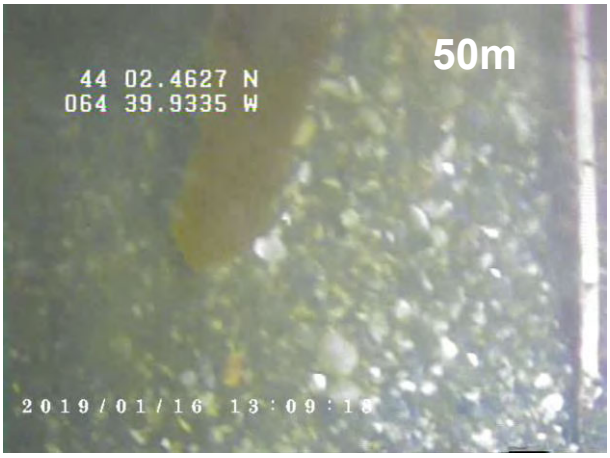

0m
44 02.4847 N
064 39.9557 W
2019/01/16 12:45:59


10m
44 02.4702 N
064 39.9586 W
2019/01/16 12:51:21


20m
44 02.4743 N
064 39.9554 W
2019/01/16 12:53:58


30m
44 02.4731 N
064 39.9497 W
2019/01/16 12:58:39


40m
44 02.4681 N
064 39.9347 W
2019/01/16 13:02:21


50m
44 02.4627 N
064 39.9335 W
2019/01/16 13:09:18

APPENDIX F
Sample Storage Temperatures

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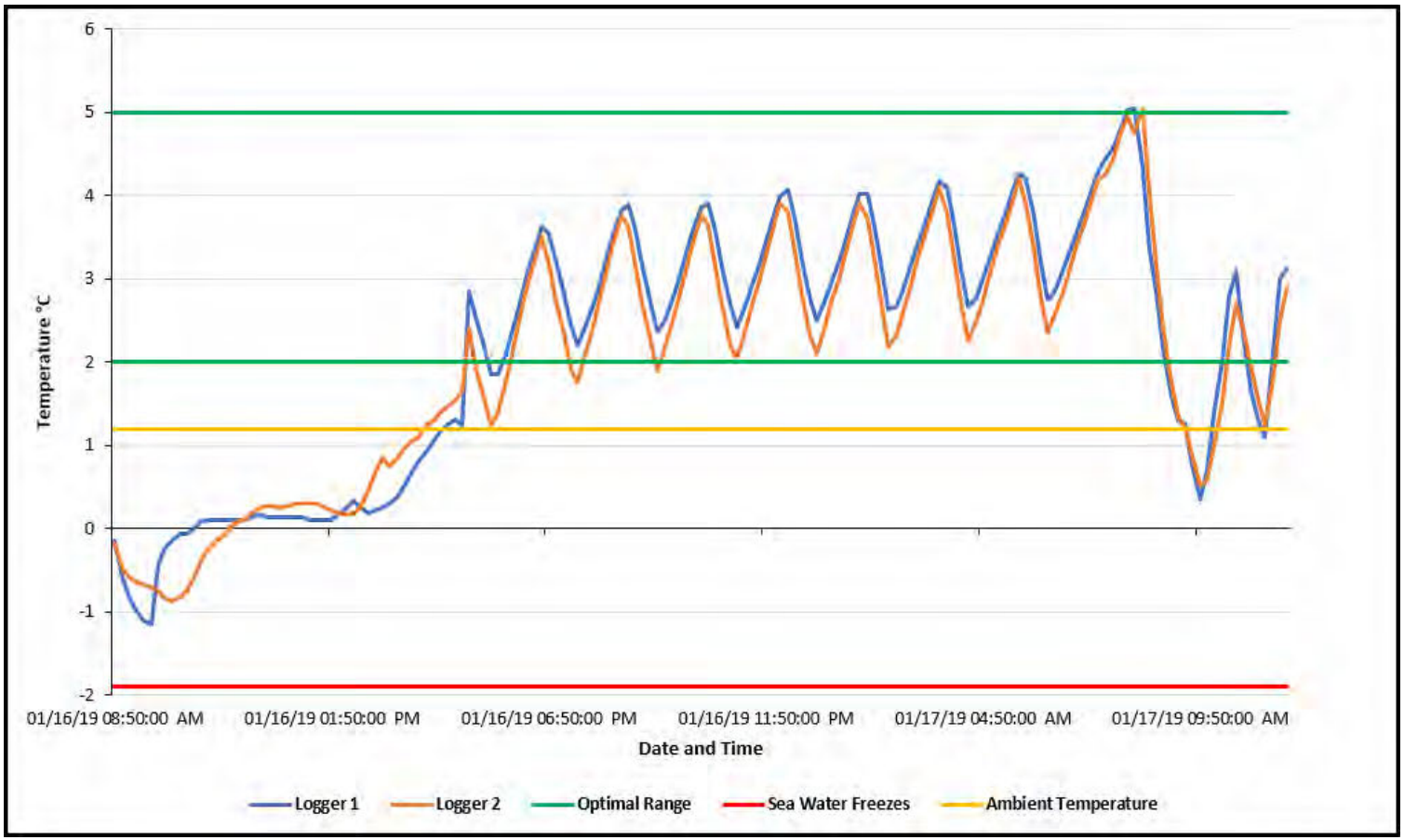
6
5
4
3
2
1
0
-1
-2
Temperature °C
01/16/19 08:50:00 AM
01/16/19 01:50:00 PM
01/16/19 06:50:00 PM
01/16/19 11:50:00 PM
01/17/19 04:50:00 AM
01/17/19 09:50:00 AM
Date and Time
Logger 1
Logger 2
Optimal Range
Sea Water Freezes
Ambient Temperature

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APPENDIX G
Sediment Sample Quality Criteria

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Station	Grab attempts	Grabs that were subsampled	Grab retrieval speeds (cm/s)	Flap position	Sediment depths (cm)	Reason for rejecting grab	Free-falls
BL-REF	7	1, 4, 7	49, 51, 50	Down	6, 9, 6	2 - < 5 cm depth 3 - < 5 cm depth 5 - < 5 cm depth 6 - < 5 cm depth	No
BL3	3	1, 2, 3	50, 51, 51	Down	5.5, 5, 5	N/A	No
BL4	5	N/A	N/A	N/A	N/A	1 - < 5 cm depth 2 - < 5 cm depth 3 - < 5 cm depth 4 - < 5 cm depth 5 - < 5 cm depth	No
BL5	5	N/A	N/A	N/A	N/A	1 - < 5 cm depth 2 - < 5 cm depth 3 - < 5 cm depth 4 - < 5 cm depth 5 - < 5 cm depth	No
BL2	5	N/A	N/A	N/A	N/A	1 - < 5 cm depth 2 - < 5 cm depth 3 - < 5 cm depth 4 - < 5 cm depth 5 - < 5 cm depth	No
BL1	5	N/A	N/A	N/A	N/A	1 - < 5 cm depth 2 - < 5 cm depth 3 - < 5 cm depth 4 - < 5 cm depth 5 - < 5 cm depth	No

Station	Grab Attempt						
	Grab 1	Grab 2	Grab 3	Grab 4	Grab 5	Grab 6	Grab 7
BL-REF	VV	VV	VV	VV	VV	VV	VV
BL3	VV	VV	VV	-	-	-	-
BL4	VV	VV	VV	VV	VV	-	-
BL5	VV	VV	VV	VV	VV	-	-
BL2	VV	VV	VV	VV	VV	-	-
BL1	VV	VV	VV	VV	VV	-	-

PP = Petite Ponar
SP = Standard Ponar
VV = 25 kg Van Veen
Grabs there were subsampled are highlighted in green

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APPENDIX H
ADCP Data

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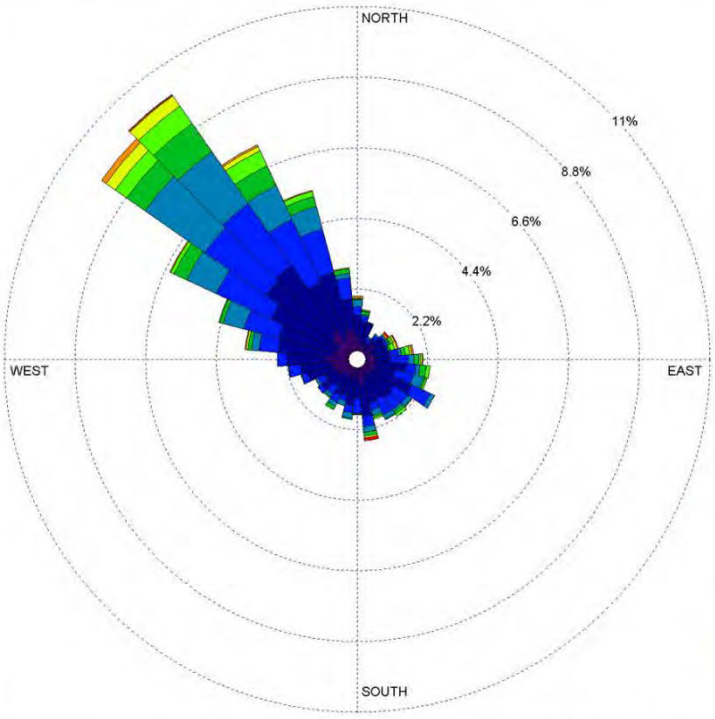
CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 4m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

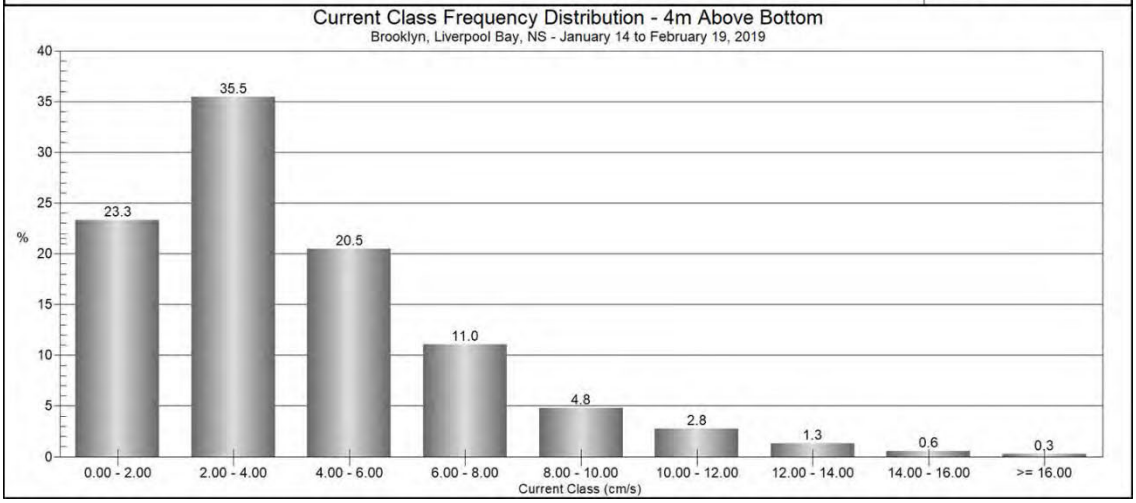
AVG. CURRENT SPEED:
4.08 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

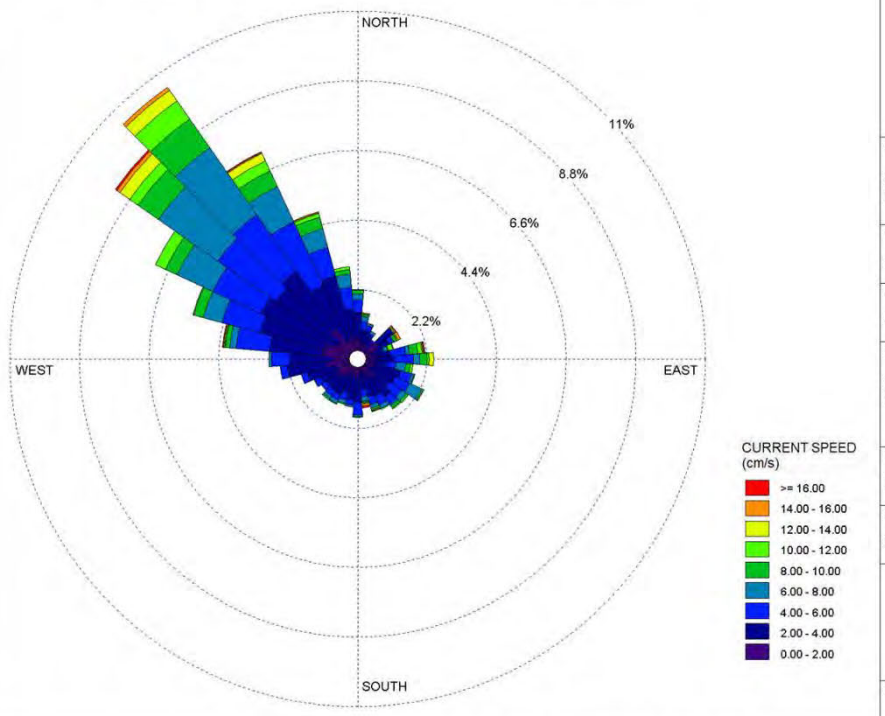
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 5m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

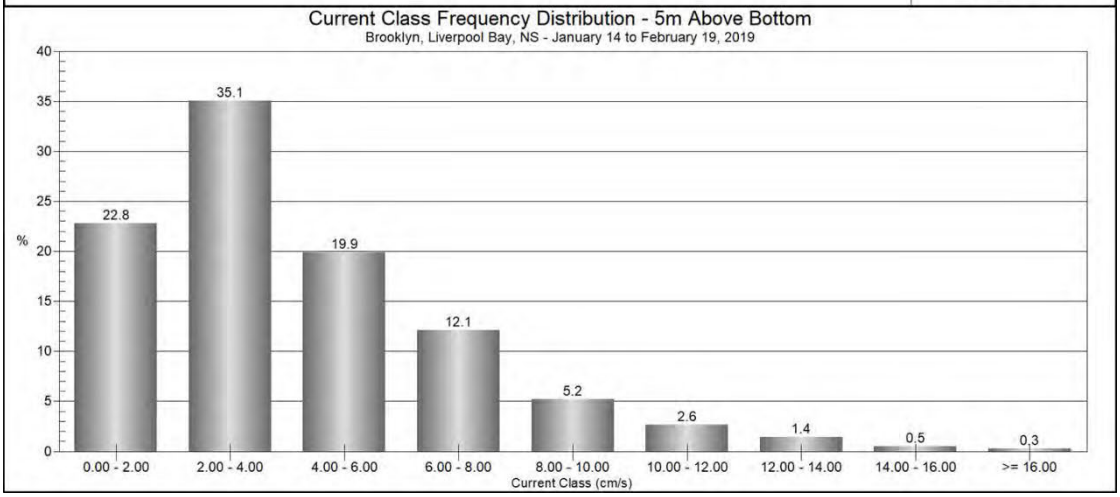
AVG. CURRENT SPEED:
4.14 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

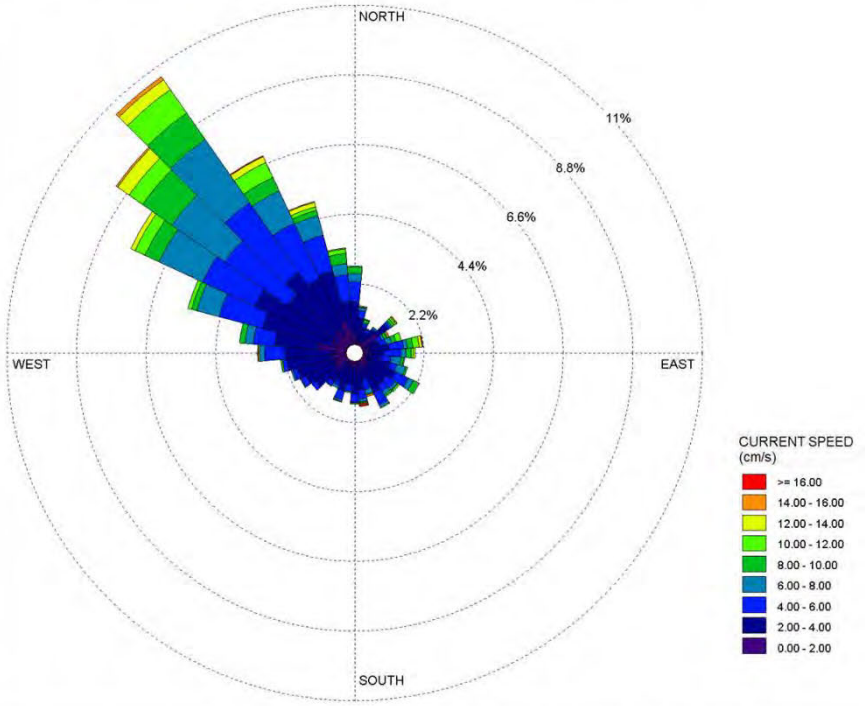
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 6m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

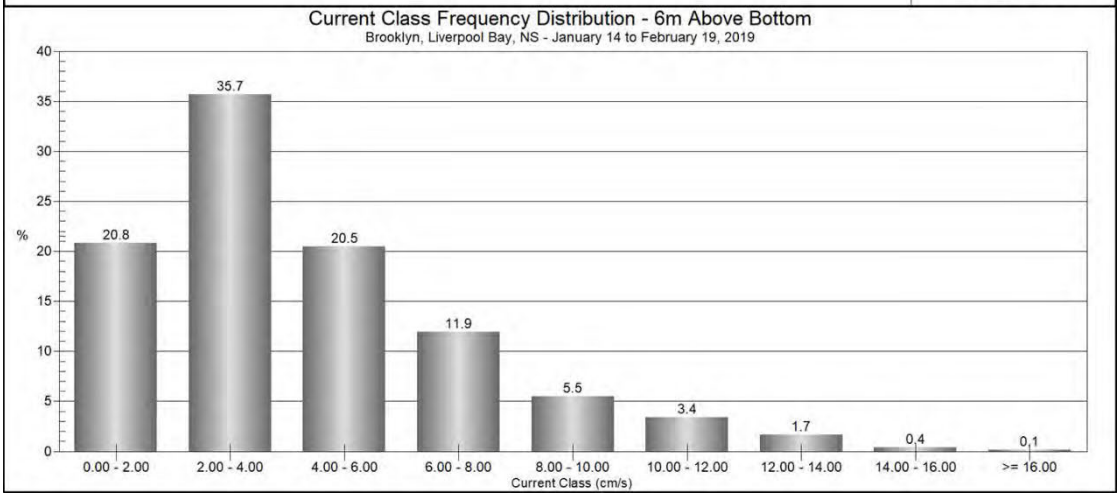
AVG. CURRENT SPEED:
4.24 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

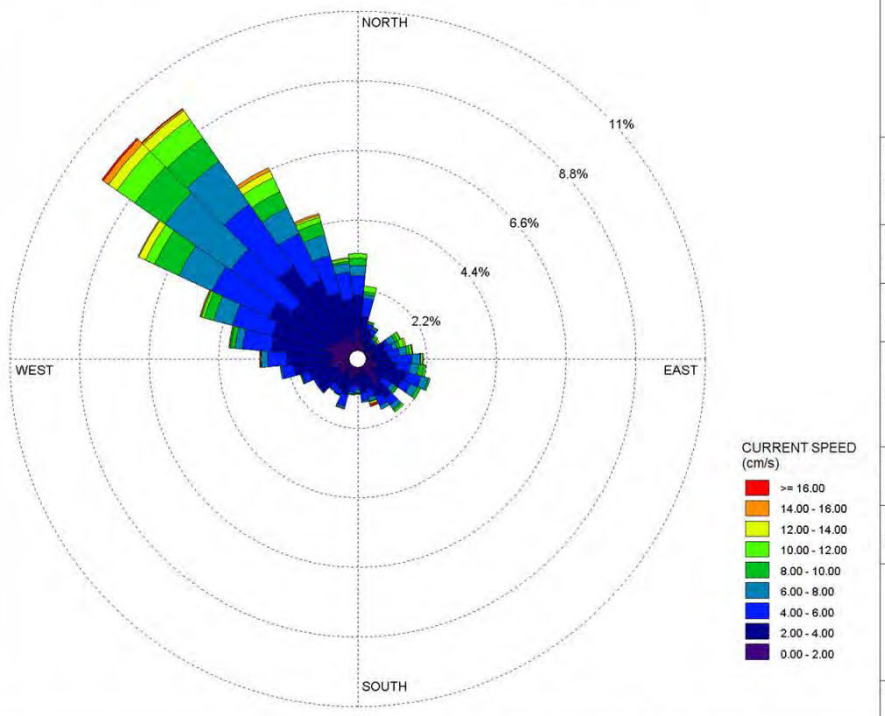
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 7m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

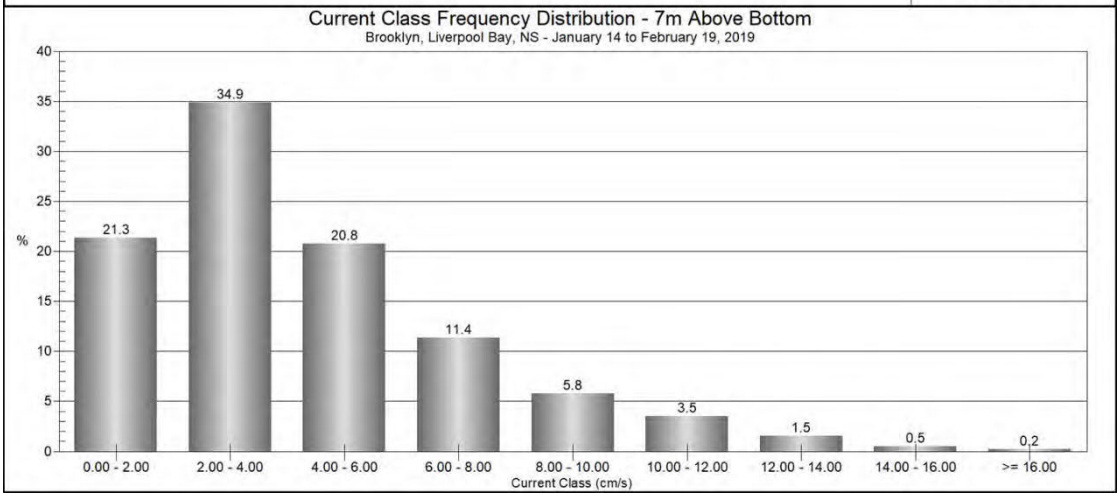
AVG. CURRENT SPEED:
4.27 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

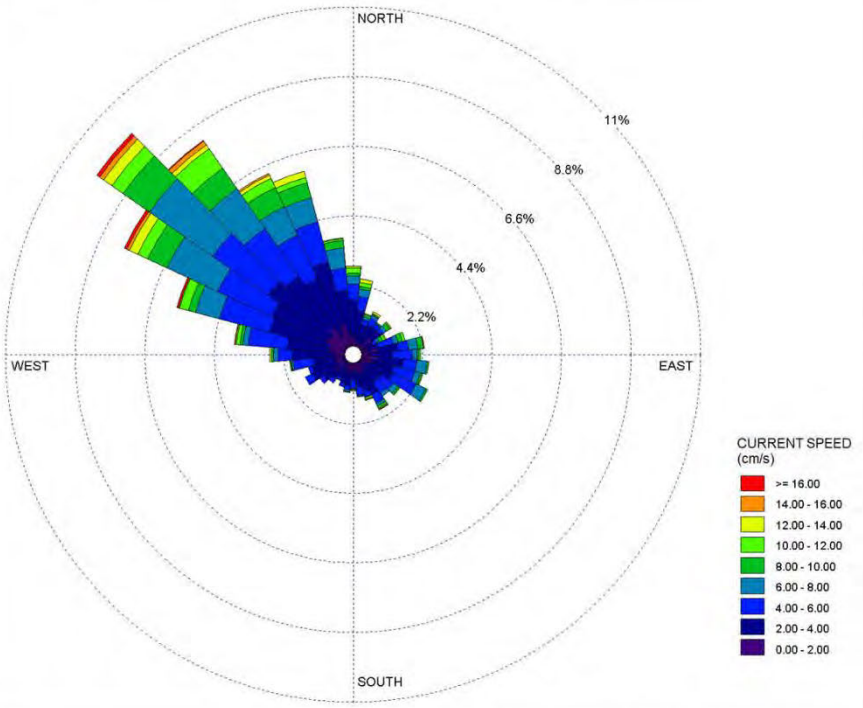
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 8m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

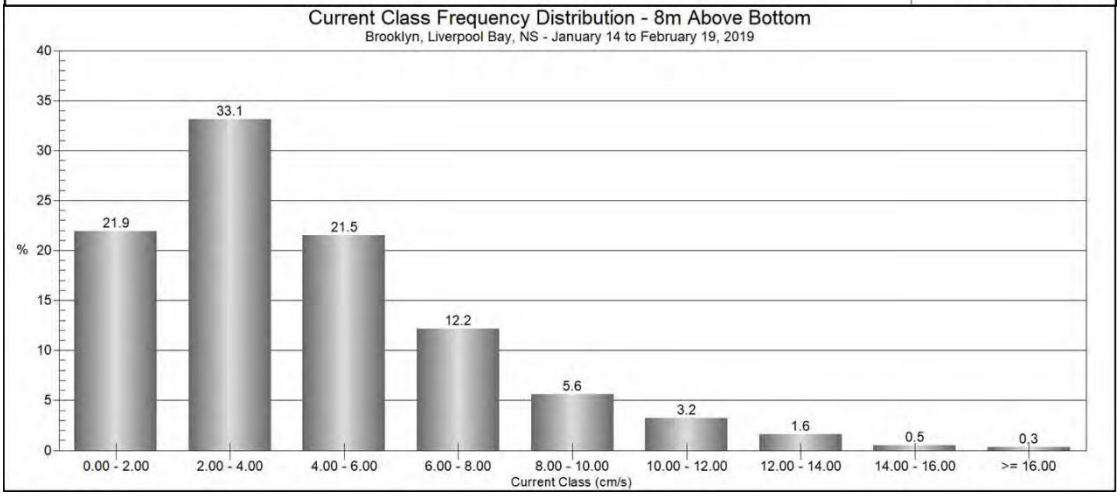
AVG. CURRENT SPEED:
4.29 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

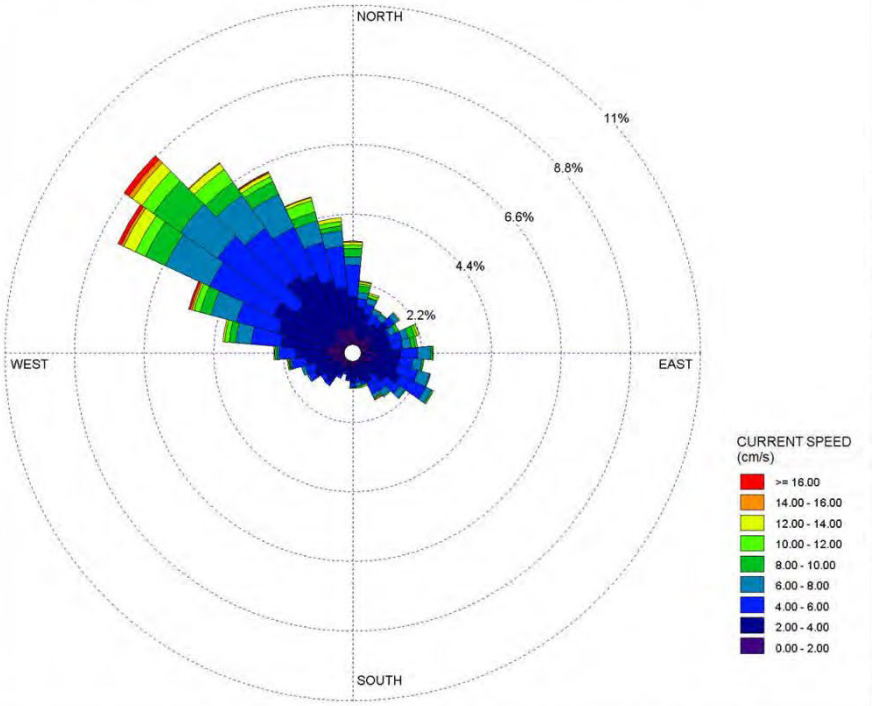
PROJECT NO.
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 9m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

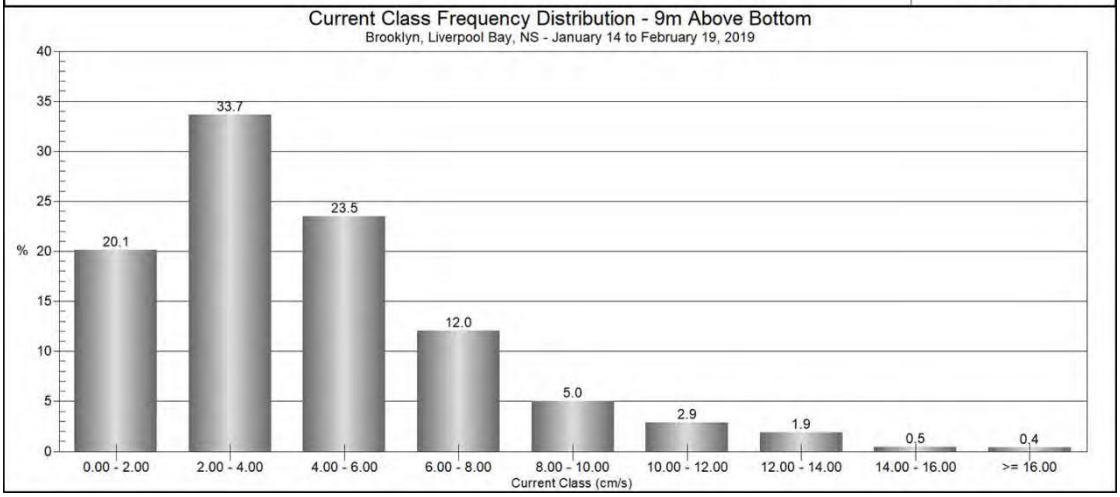
AVG. CURRENT SPEED:
4.33 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

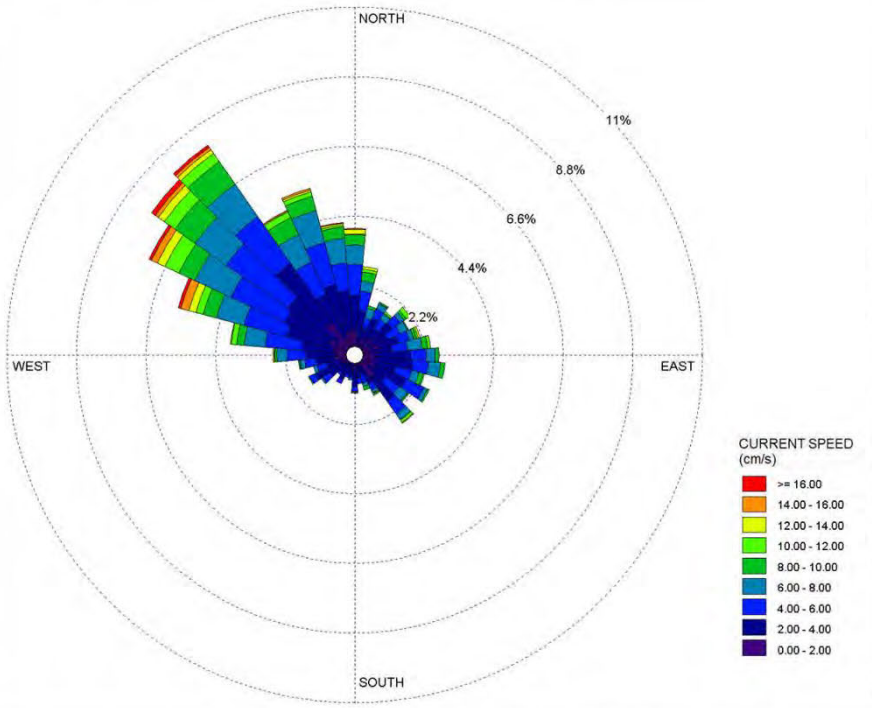
DATE:
2019-02-25

PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 10m Above Bottom

DISPLAY:
Current Direction



COMMENTS:

DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

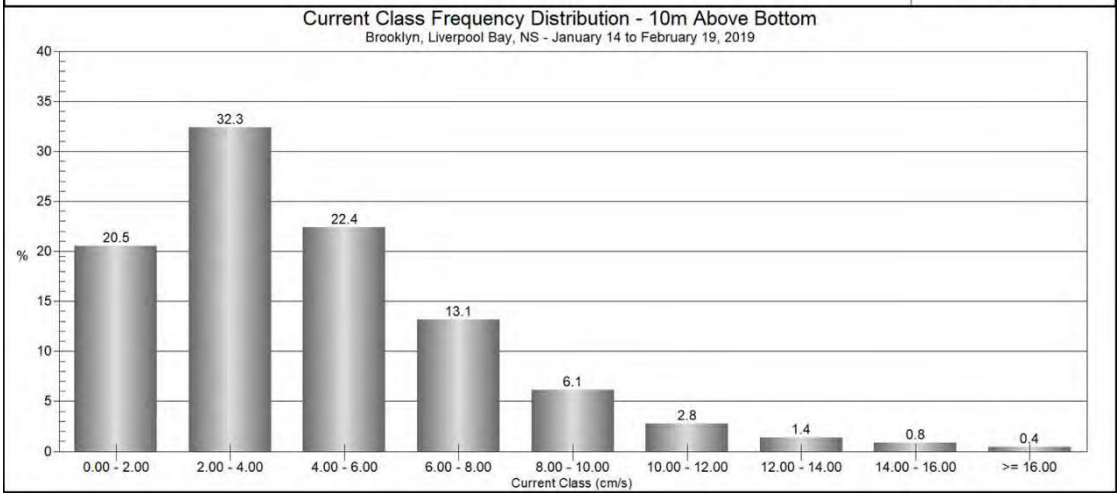
AVG. CURRENT SPEED:
4.41 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

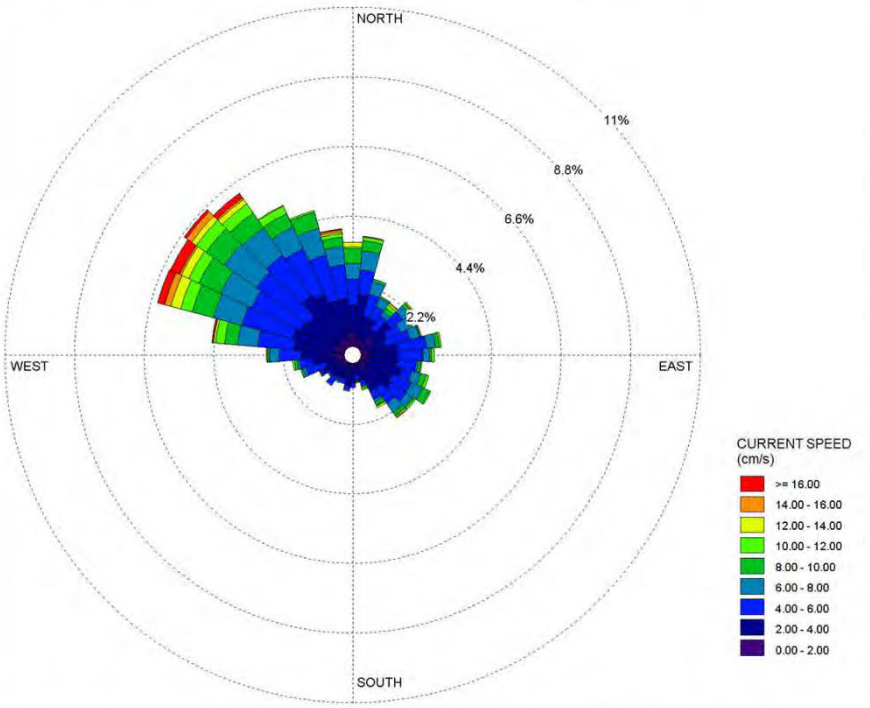
DATE:
2019-02-25

PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 11m Above Bottom

DISPLAY:
Current Direction



COMMENTS:

DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

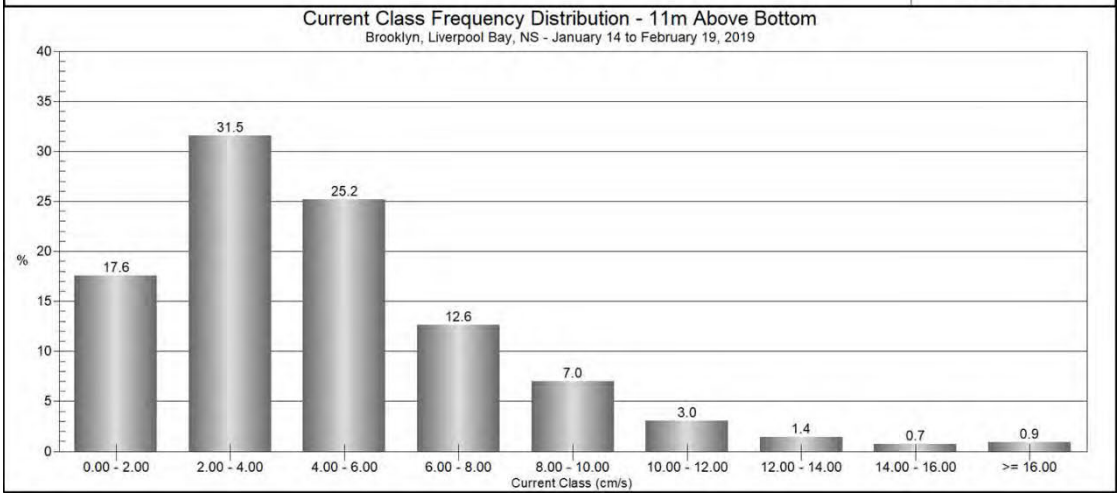
AVG. CURRENT SPEED:
4.62 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

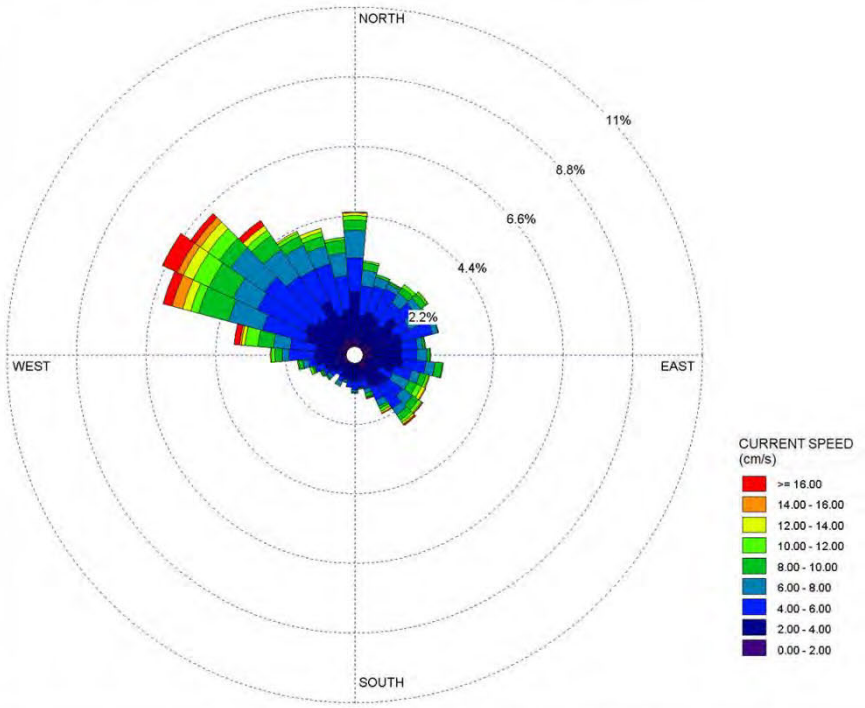
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 12m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

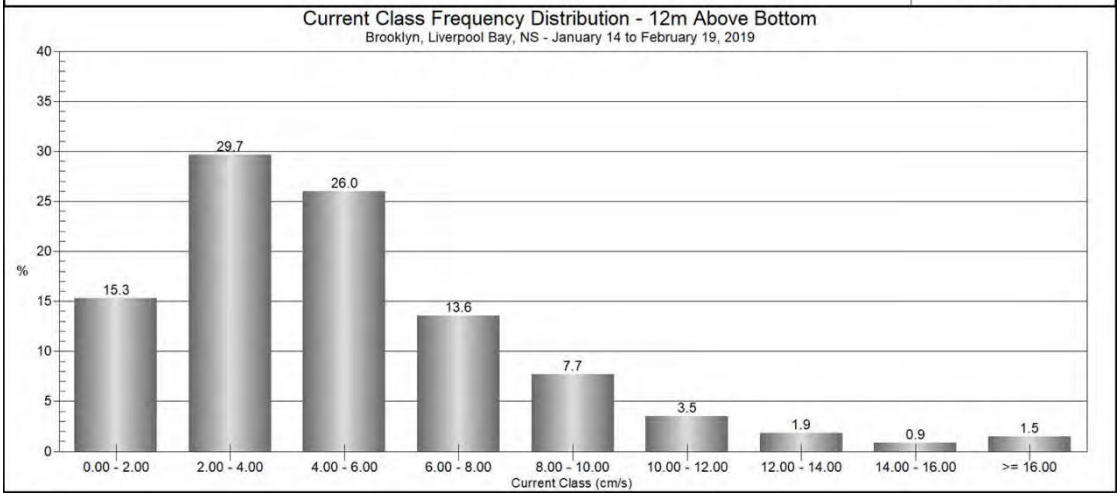
AVG. CURRENT SPEED:
4.99 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

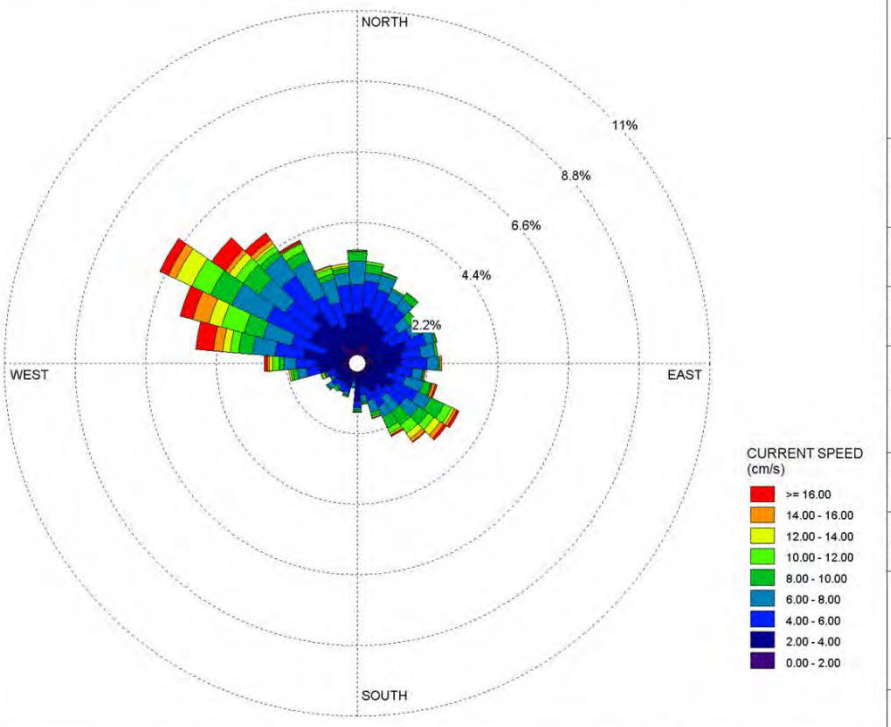
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 13m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

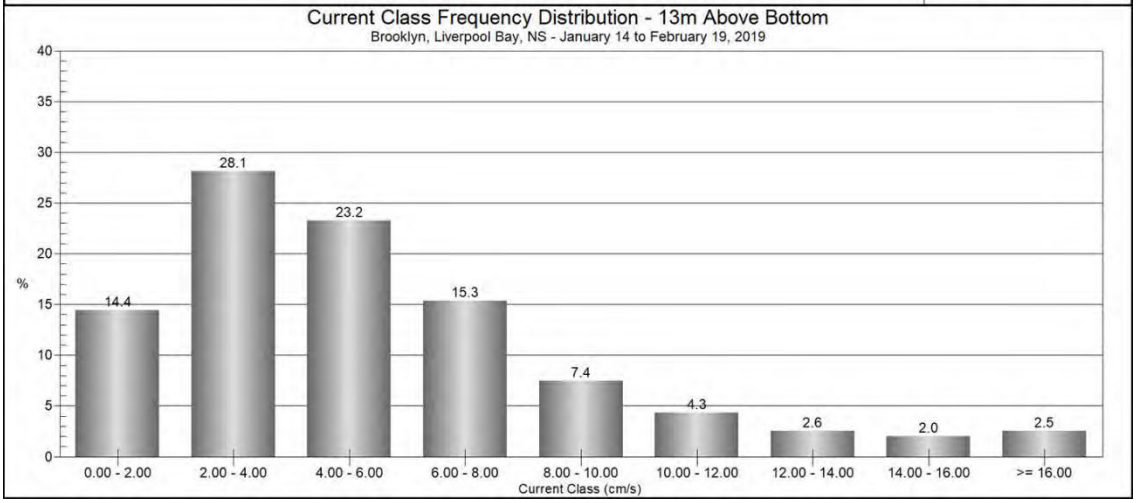
AVG. CURRENT SPEED:
5.43 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

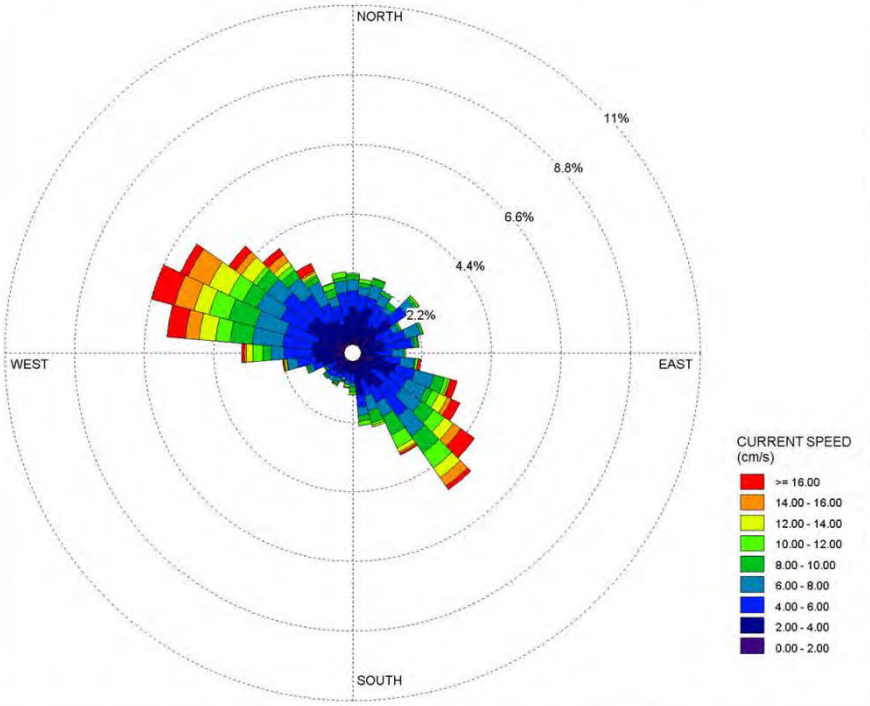
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 14m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

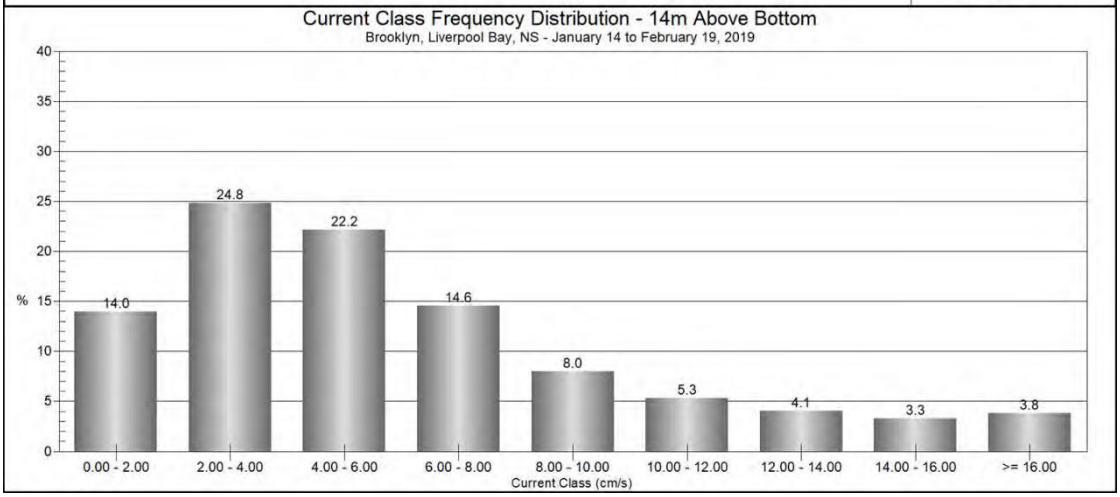
AVG. CURRENT SPEED:
5.99 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

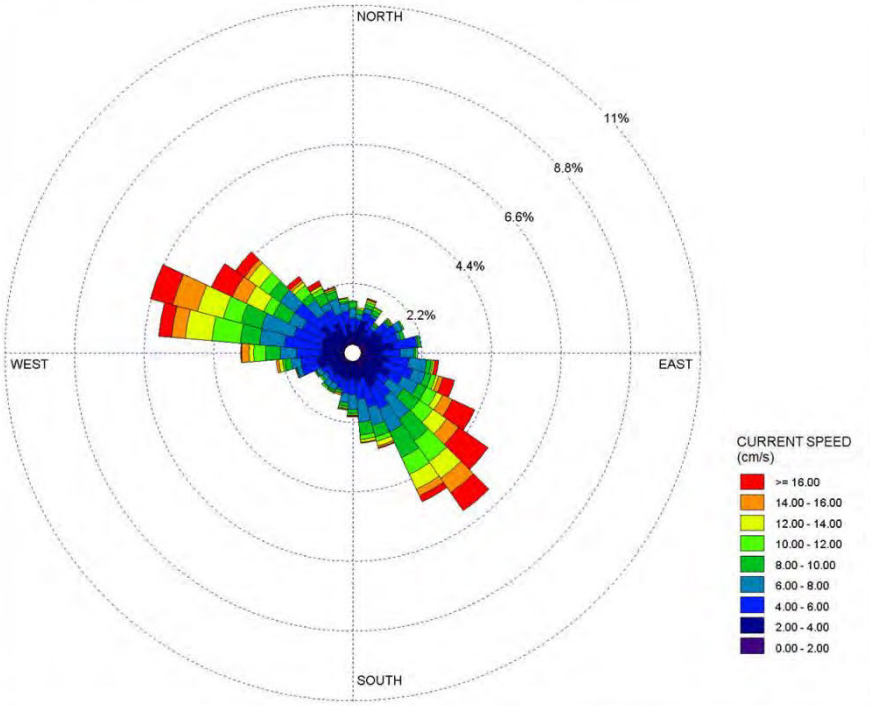
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 15m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3449

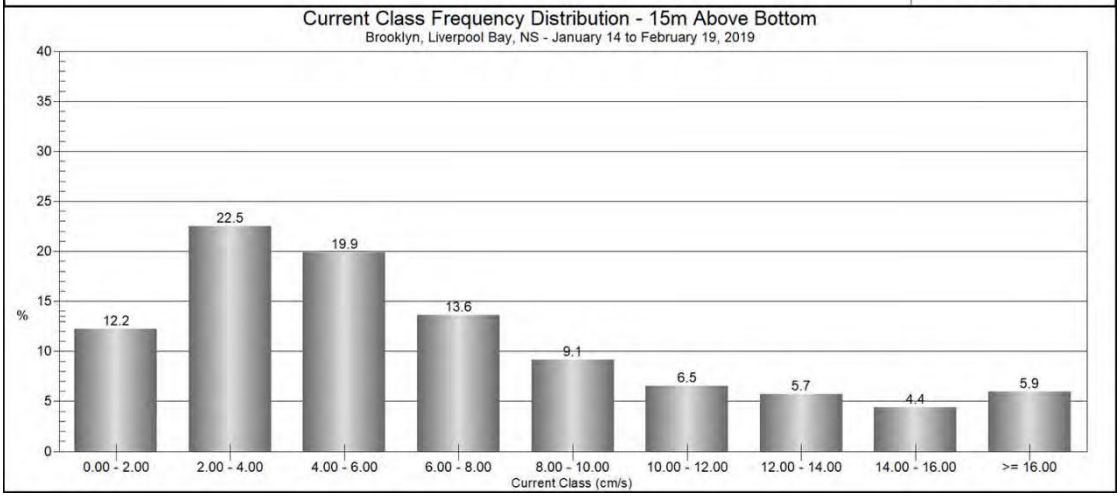
AVG. CURRENT SPEED:
6.82 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

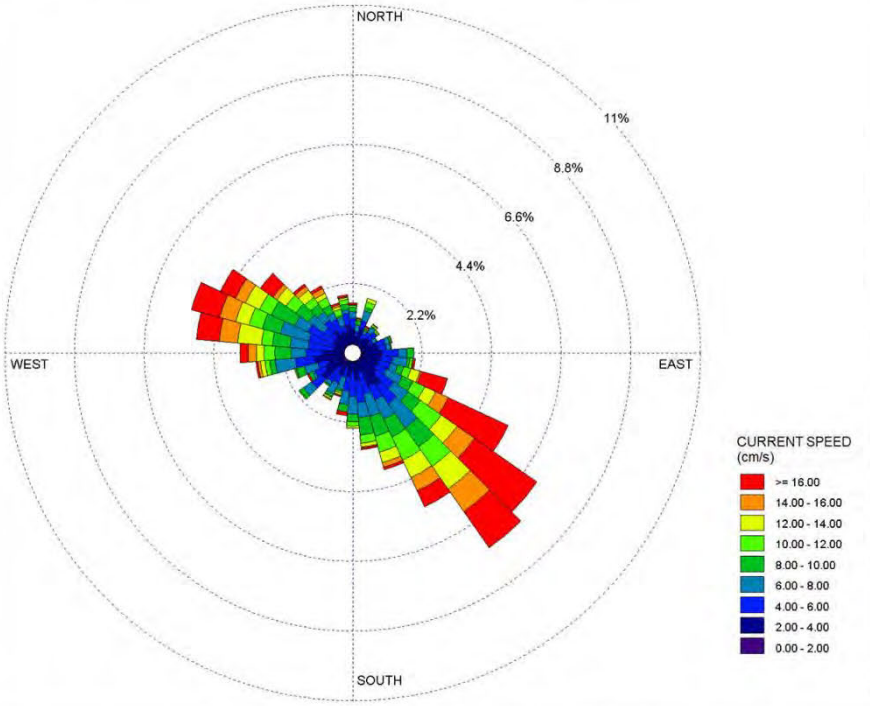
PROJECT NO.:
SW2018-143



CURRENT ROSE PLOT:
Brooklyn, Liverpool Bay, NS
Current Speed and Direction - 16m Above Bottom

DISPLAY:
Current Direction

COMMENTS:



DATA PERIOD:
Start Date: 2019-01-14
End Date: 2019-02-19

TOTAL COUNT:
3393

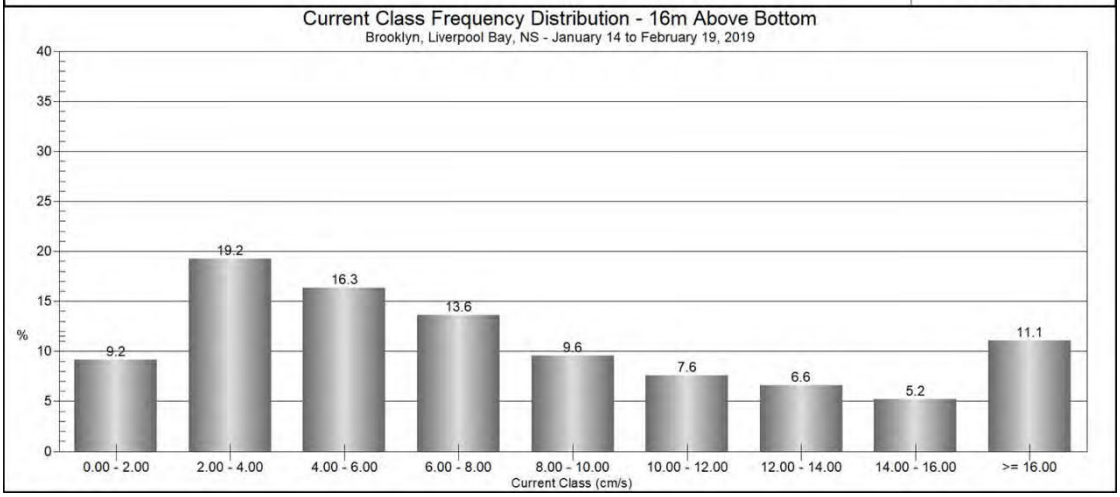
AVG. CURRENT SPEED:
8.11 cm/s

COMPANY NAME:
Sweeney International Marine Corp.

MODELER:
Marshall M. Elsemore

DATE:
2019-02-25

PROJECT NO.:
SW2018-143



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APPENDIX I
Habitat Map of Seafloor Characteristics of Mersey Point

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KELLY COVE SALMON LTD.

Sweeney International Marine Corp.

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46 Milltown Blvd
St. Stephen, NB
E3L 1G3

Project #: SW2018-143

Drawn By: [redacted]
Marshall Elsemore,
Marine Environmental Biologist

Date: February 25, 2019

709

Nova Scotia Grid North

HABITAT MAP OF PROPOSED MARINE AQUACULTURE SITE

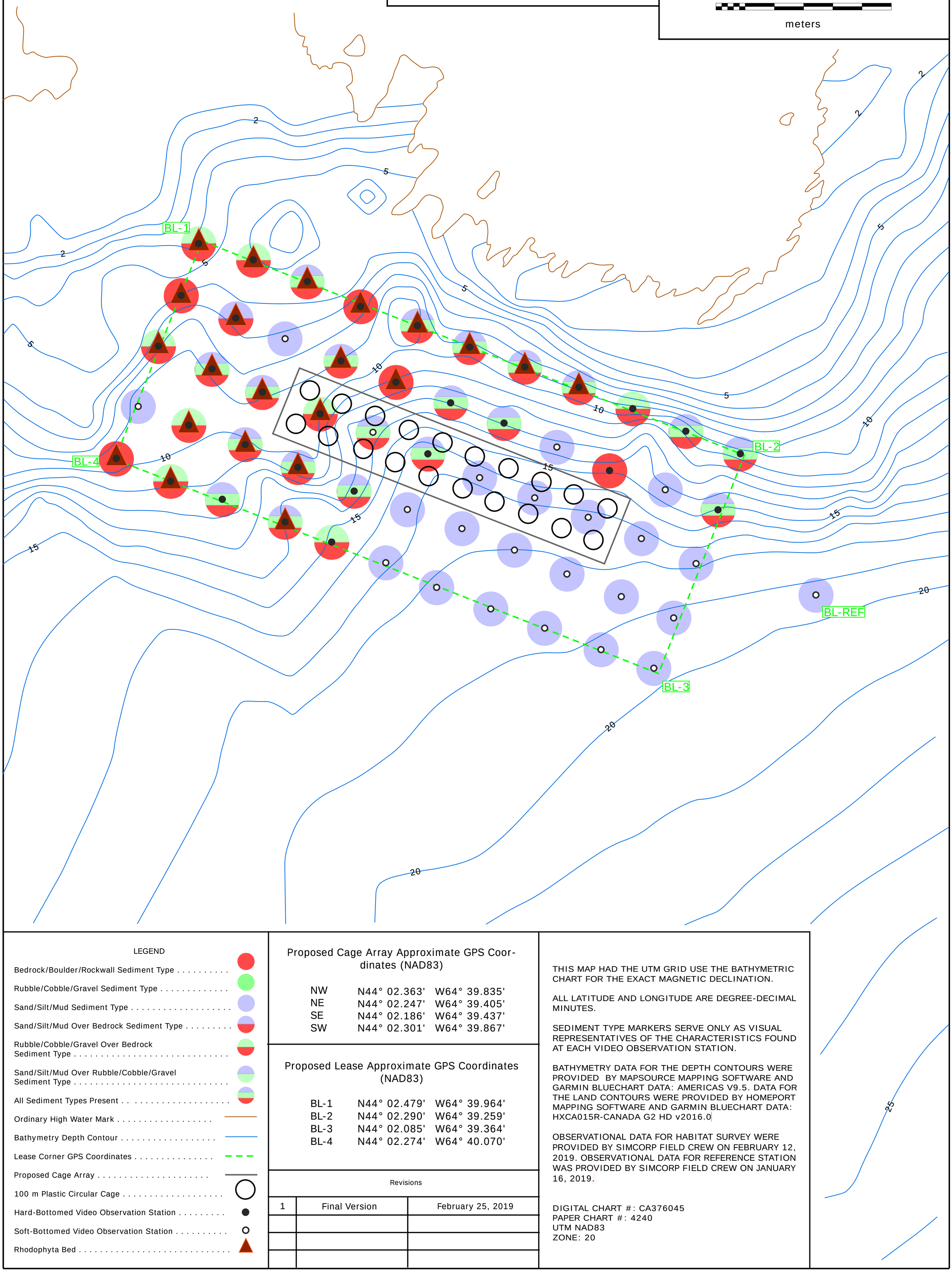
BROOKLYN

LIVERPOOL BAY
QUEENS COUNTY
PROVINCE OF NOVA SCOTIA
2019

Scale 1 : 3500

50 0 50 100 150 200 250

meters



LEGEND

- Bedrock/Boulder/Rockwall Sediment Type
- Rubble/Cobble/Gravel Sediment Type
- Sand/Silt/Mud Sediment Type
- Sand/Silt/Mud Over Bedrock Sediment Type
- Rubble/Cobble/Gravel Over Bedrock Sediment Type
- Sand/Silt/Mud Over Rubble/Cobble/Gravel Sediment Type
- All Sediment Types Present
- Ordinary High Water Mark
- Bathymetry Depth Contour
- Lease Corner GPS Coordinates
- Proposed Cage Array
- 100 m Plastic Circular Cage
- Hard-Bottomed Video Observation Station
- Soft-Bottomed Video Observation Station
- Rhodophyta Bed

Proposed Cage Array Approximate GPS Coordinates (NAD83)

NW	N44° 02.363'	W64° 39.835'
NE	N44° 02.247'	W64° 39.405'
SE	N44° 02.186'	W64° 39.437'
SW	N44° 02.301'	W64° 39.867'

Proposed Lease Approximate GPS Coordinates (NAD83)

BL-1	N44° 02.479'	W64° 39.964'
BL-2	N44° 02.290'	W64° 39.259'
BL-3	N44° 02.085'	W64° 39.364'
BL-4	N44° 02.274'	W64° 40.070'

Revisions

1	Final Version	February 25, 2019

THIS MAP HAD THE UTM GRID USE THE BATHYMETRIC CHART FOR THE EXACT MAGNETIC DECLINATION.

ALL LATITUDE AND LONGITUDE ARE DEGREE-DECIMAL MINUTES.

SEDIMENT TYPE MARKERS SERVE ONLY AS VISUAL REPRESENTATIVES OF THE CHARACTERISTICS FOUND AT EACH VIDEO OBSERVATION STATION.

BATHYMETRY DATA FOR THE DEPTH CONTOURS WERE PROVIDED BY MAPSOURCE MAPPING SOFTWARE AND GARMIN BLUECHART DATA: AMERICAS V9.5. DATA FOR THE LAND CONTOURS WERE PROVIDED BY HOMEPORT MAPPING SOFTWARE AND GARMIN BLUECHART DATA: HXCA015R-CANADA G2 HD v2016.0

OBSERVATIONAL DATA FOR HABITAT SURVEY WERE PROVIDED BY SIMCORP FIELD CREW ON FEBRUARY 12, 2019. OBSERVATIONAL DATA FOR REFERENCE STATION WAS PROVIDED BY SIMCORP FIELD CREW ON JANUARY 16, 2019.

DIGITAL CHART #: CA376045
PAPER CHART #: 4240
UTM NAD83
ZONE: 20

APPENDIX J
Fish and Fish Habitat Survey Station Screen Captures of the Seafloor

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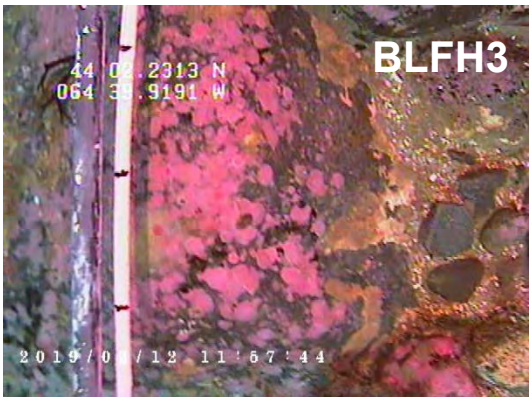
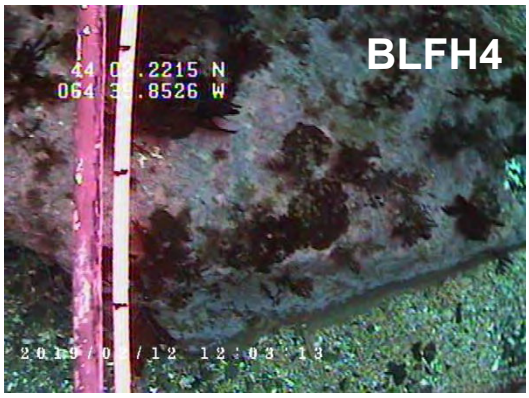
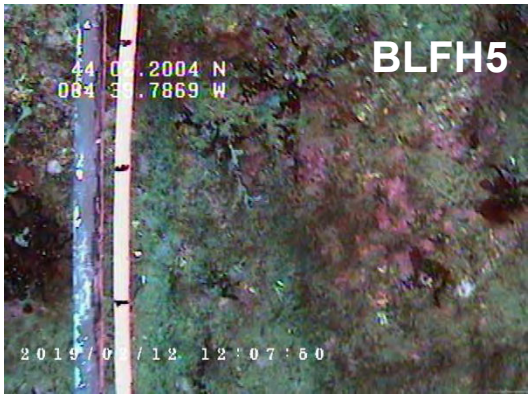
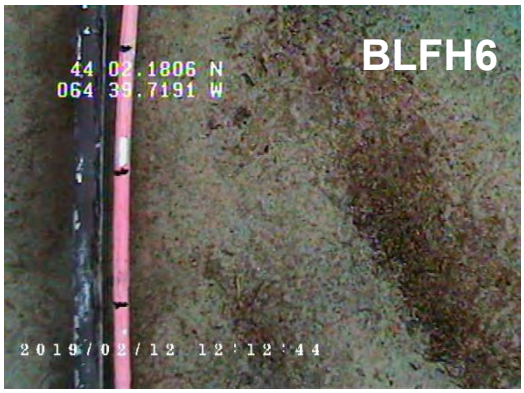
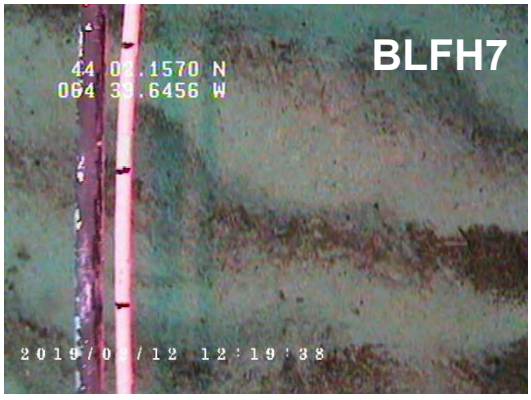
Figure J-1: BLFH1 – BLFH8 video screen captures











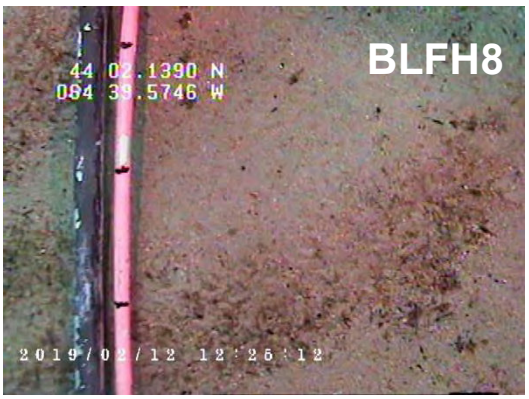
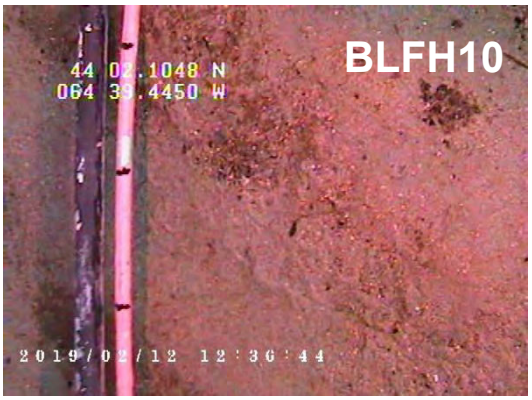


Figure J-2: BLFH9 – BLFH16 video screen captures



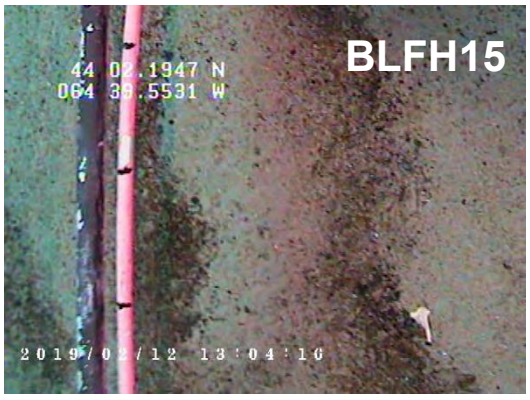
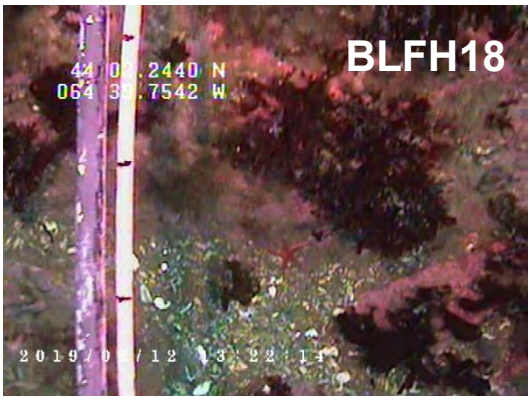
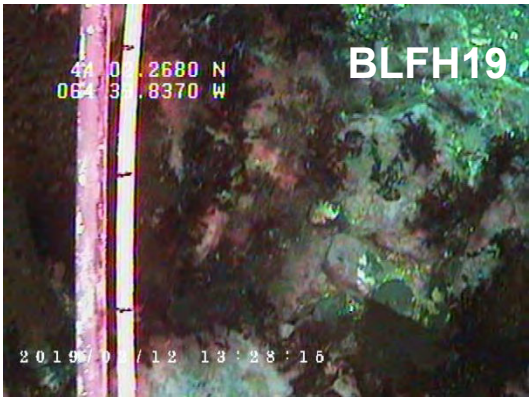


Figure J-3: BLFH17 – BLFH24 video screen captures





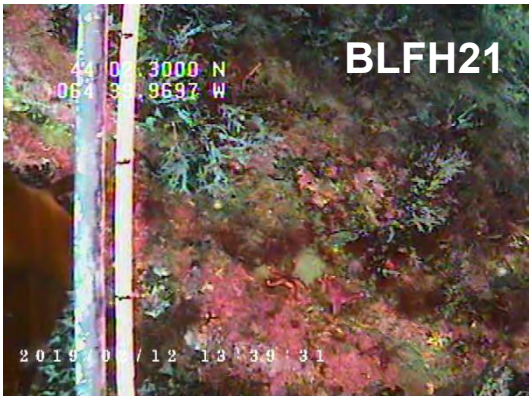
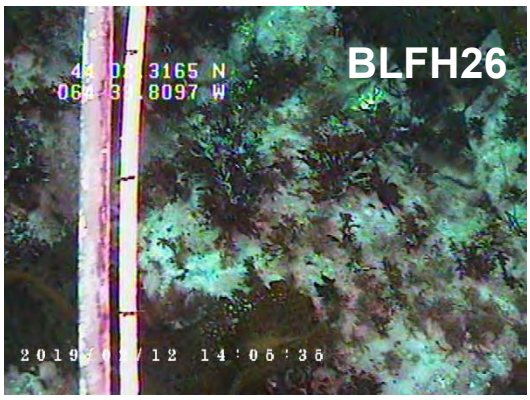
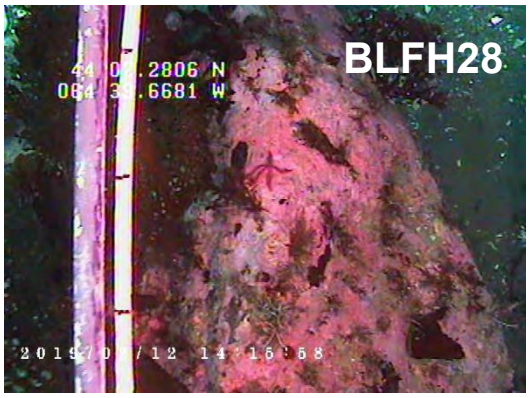
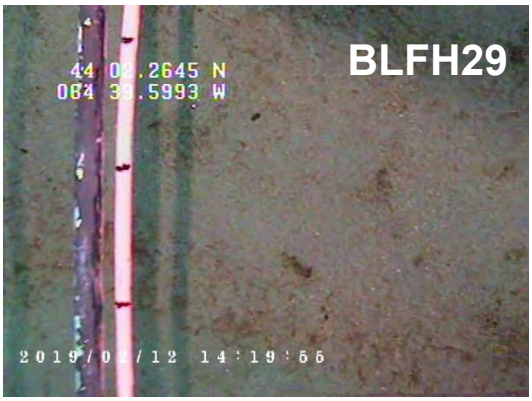
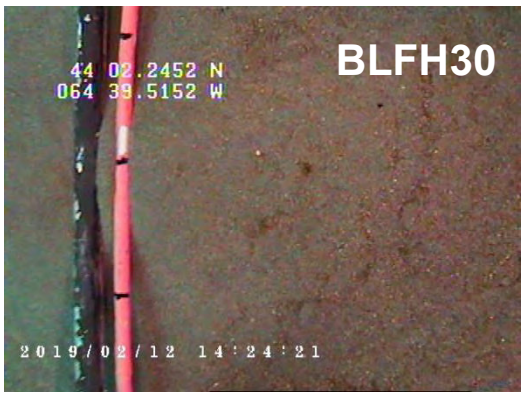


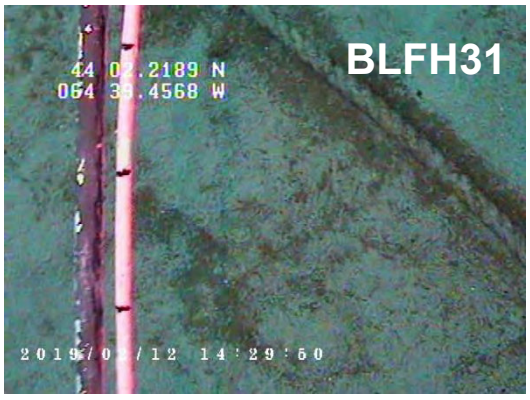
Figure J-4: BLFH25 – BLFH32 video screen captures











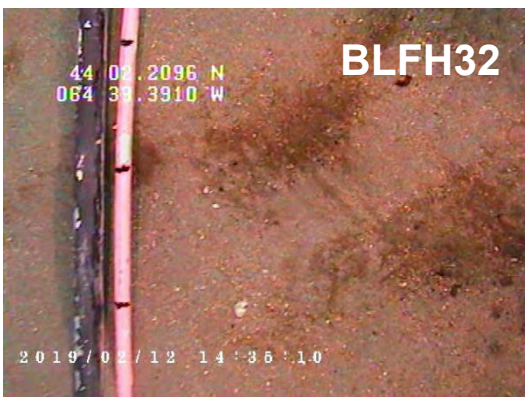
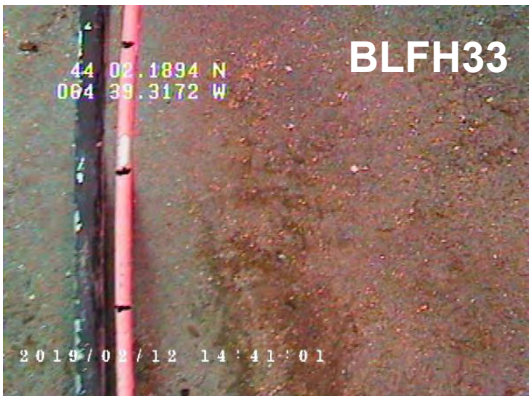
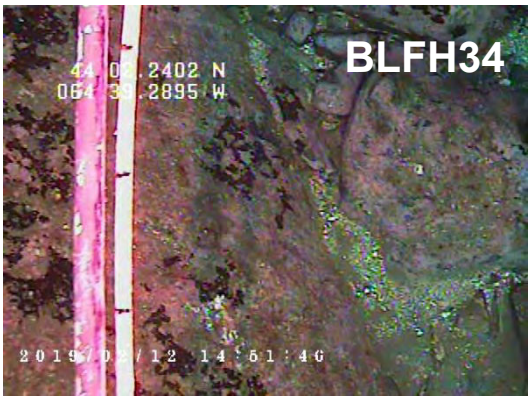
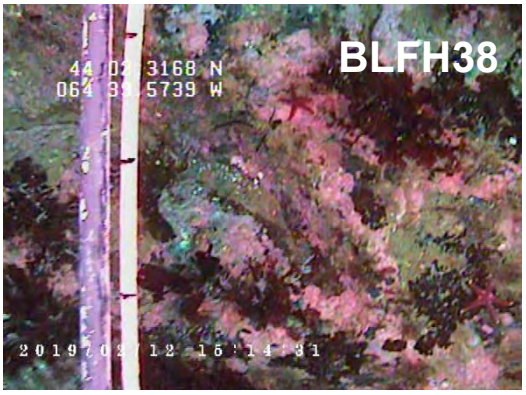
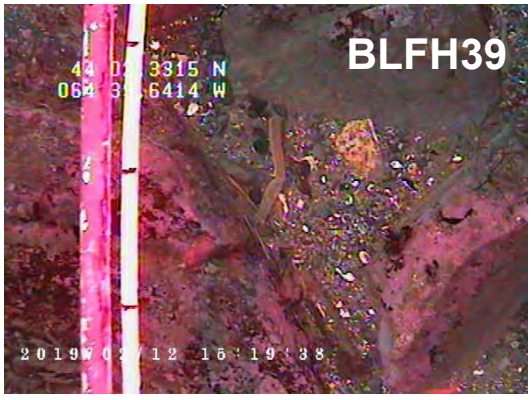


Figure J-5: BLFH33 – BLFH40 video screen captures









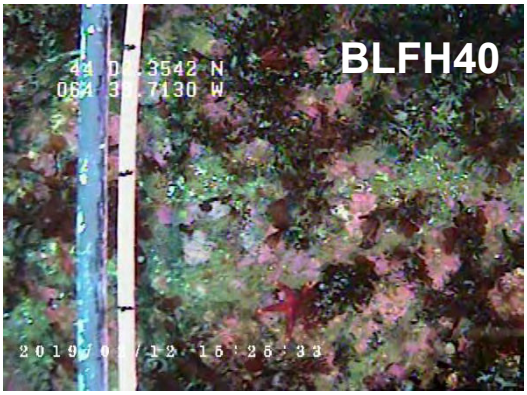
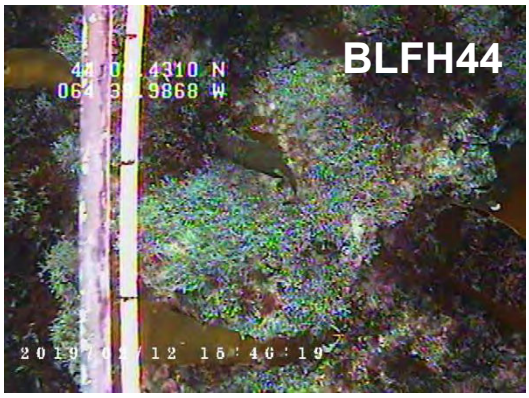
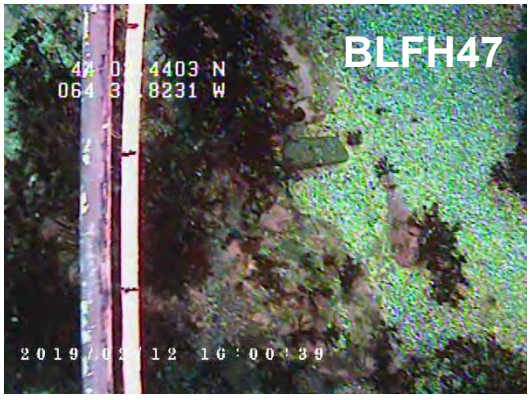


Figure J-6: BLFH41 – BLFH48 video screen captures





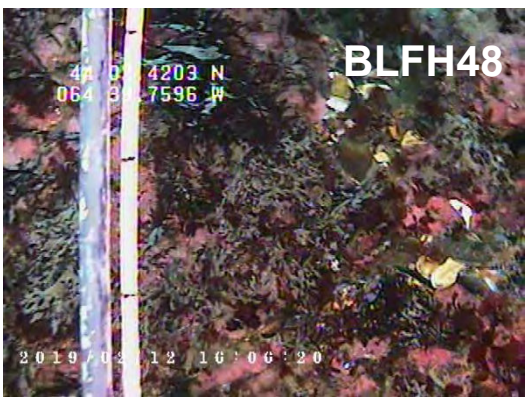
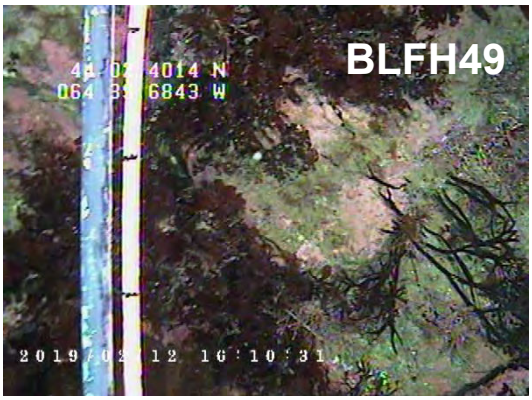
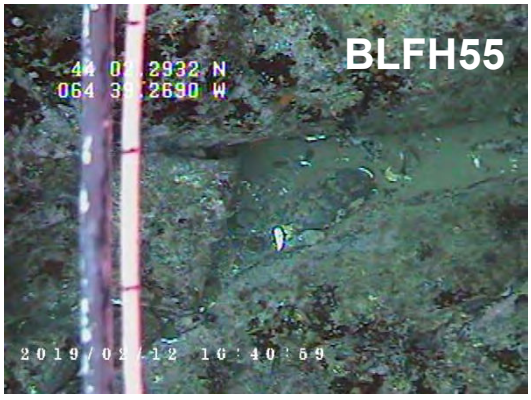


Figure J-7: BLFH49 – BLFH55 video screen captures





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APPENDIX K
Comprehensive Species List Observed during the Fish and Fish Habitat Survey of Mersey Point

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Common Name	Station																										
	BLFH1	BLFH2	BLFH3	BLFH4	BLFH5	BLFH6	BLFH7	BLFH8	BLFH9	BLFH10	BLFH11	BLFH12	BLFH13	BLFH14	BLFH15	BLFH16	BLFH17	BLFH18	BLFH19	BLFH20	BLFH21	BLFH22	BLFH23	BLFH24	BLFH25	BLFH26	BLFH27	BLFH28
Blood Star	3	2	1		12													4	1		3			1		2		3
White Branching Bryozoan	10%																				10%		40%	5%				
Coralline Algae	25%	50%	35%	55%	60%													35%	50%	30%	35%		15%	25%	20%	35%	5%	35%
Kelp	Trace	Trace			Trace														Trace	Trace	Trace		5%		Trace	Trace		
Sea Colander	5%	Trace	5%	10%	15%													Trace	5%	Trace	5%		Trace	Trace	Trace	5%		5%
Mixed Rhodophyta	40%	30%	5%	15%	10%													10%	20%	30%	25%	Trace	25%	50%	15%	45%	Trace	10%
Encrusting Algae	5%		5%															5%							Trace	Trace		5%
Acid Kelp			5%																									
Unidentifiable Fish																			1%									
Knotted Wrack Weed																												Trace
Unidentifiable Anemone																												
Common Sea Star																												

Common Name	Station																											
	BLFH29	BLFH30	BLFH31	BLFH32	BLFH33	BLFH34	BLFH35	BLFH36	BLFH37	BLFH38	BLFH39	BLFH40	BLFH41	BLFH42	BLFH43	BLFH44	BLFH45	BLFH46	BLFH47	BLFH48	BLFH49	BLFH50	BLFH51	BLFH52	BLFH53	BLFH54	BLFH55	BL-REF
Blood Star			2							3		5	1		3			1	2	1	1	4		2		2	1	
White Branching Bryozoan															15%	50%	25%	10%	5%	25%	10%	Trace		10%	15%	Trace	5%	
Coralline Algae						25%		60%		45%	10%	30%	25%		20%	10%	25%	15%	20%	25%	30%	40%	20%	30%	50%	20%	40%	
Kelp								Trace							Trace	5%	5%	Trace	Trace	10%		Trace		Trace	5%			
Sea Colander						Trace		10%		5%		Trace							Trace		5%	Trace	5%	5%	5%	Trace	5%	
Mixed Rhodophyta						5%		5%		10%		45%	25%		50%	25%	40%	65%	35%	25%	35%	45%	30%	35%	5%	5%	5%	
Encrusting Algae						5%		10%		10%										5%	10%	5%	5%	10%	10%	5%	10%	
Acid Kelp																												
Unidentifiable Fish																												
Knotted Wrack Weed																												
Unidentifiable Anemone							2	1																				
Common Sea Star										2%						1%												

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Sweeney International Marine Corp.
46 Milltown Blvd.
St. Stephen, NB
E3L 1G3

NRC-IMB Research Facilities
1411 Oxford Street
Suite367-368
Halifax, NS
B3H 3Z1

APPENDIX D
Financial Viability Letter

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April 23, 2018

Province of Nova Scotia
Department of Fisheries and Aquaculture
1575 Lake Road
Shelburne, Nova Scotia
B0T 1W0

Attention: Bruce Hancock, Director of Aquaculture

Dear Mr. Hancock,

Re: Boundary Amendment and new sites in the Liverpool, NS area.

Kelly Cove Salmon Ltd. has been involved in aquaculture in Nova Scotia for almost 18 years. During that time we have demonstrated that we have the financial capacity to enable us to farm in a sustainable manner.

The undersigned confirms that Kelly Cove Salmon Ltd. has the financial resources and wherewithal to continue to successfully provide said resources to sustainably farm our Nova Scotia aquaculture operations, including a Boundary amendment of AQ-1205 and two new additional sites in that area.

Kelly Cove Salmon Ltd. is a related company to Cooke Aquaculture Inc.

Please feel free to contact me with any questions,

Yours truly,

[redacted]

Peter Buck, CFO
Cooke Aquaculture Inc.
Vice-President, Finance
Kelly Cove Salmon Ltd.

cc J Nickerson, KCS
cc Kris Nichols, COO
cc Michael Szemerda, VP

May 17, 2018

Honorable Keith Colwell
Minister, Fisheries and Aquaculture
1800 Argyle Street,
Suite 607, World Trade and Convention Center
Halifax, NS
B3J 2R5

Ref: Kelly Cove Salmon Ltd. marine aquaculture lease application for boundary amendment and new sites in the Liverpool, NS area

Dear Minister Colwell

We act as agent for a syndicate of lenders, including our affiliate DNB Capital LLC, in connection with an Amended and Restated Credit Agreement dated as of April 11, 2018 (the "Credit Facility") for Cooke Aquaculture Inc. as Canadian Borrower and Cooke Aquaculture USA Inc. as US Borrower, in which Kelly Cove Salmon Ltd. is named as a "Designated Party" as defined therein.

This is to confirm that, as of today's date, the Credit Facility is available in accordance with its terms, in part for the purpose of the Canadian Borrower to finance the general corporate purposes and working capital purposes of the Group (as defined in the Credit Facility), including Kelly Cove Salmon Ltd., and the amount available for drawdown for such purposes is approximately CAD $[redacted]

I trust the foregoing is sufficient for your purposes.

Yours truly,

[redacted]

Philip Kurpiewski
Senior Vice President

For and on behalf of DNB Bank ASA, New York Branch

— DNB BANK ASA
200 Park Avenue, 31st Floor
New York, New York 10166-0396
Telephone: 212 681 3800
Fax: 212 681 3900
www.dnb.no

APPENDIX E
Wildlife Interaction Plan

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Wildlife Interaction Plan

for Marine Salmon Farms on the East Coast of North America

Cooke Aquaculture Inc.
Version 18.07-04

This Wildlife Interaction Plan (WIP) has been created to meet the requirements for Section 7 Environment – Predator and Wildlife Interactions of the Best Aquaculture Practices (BAP) Salmon Farms Standard. The guidance and practice herein have and will continue to be followed by all North American employees of Cooke Aquaculture who are employed in the Saltwater Division and those who directly interact with the salmon farms. This plan merely acts as an overall summary of the current requirements that each salmon farm must follow and in the effect of any conflict of information or direction between this document and the requirements, the requirements will prevail.

Table of Contents

Referenced Materials

1 – New Brunswick SARA List
2 – Newfoundland SARA List
3 – Nova Scotia SARA List
4 – Maine DIFW: Maine's Endangered, Threatened & Recovered Species
5 – Maine DMR: Endangered or Threatened Marine Species
6 – USFWS: Threatened or Endangered Species
7 – USFWS: Nationally Significant Seabird, Wading Bird and Eagle Nesting Islands in Coastal Maine
8 – Acoustic Deterrent Policy

Section 1; Local Laws and Regulations for Wildlife Management and Protection

1.1 Canadian Federal Legislation

- **Aquaculture Activities Regulations (AAR), 2015 –** Fisheries and Oceans Canada has developed the Aquaculture Activities Regulations, to clarify conditions under which aquaculture operators may treat their fish and deposit organic matter, while ensuring the protection of fish and fish habitat and sector sustainability.
- **Canadian Environmental Assessment Act, 2012** – CEAA is an environmental assessment focused on potential adverse environmental effects that are within federal jurisdiction, including: fish and fish habitat; other aquatic species; migratory birds; federal lands; effects that cross provincial or international boundaries; effects that impact on Aboriginal peoples, such as their use of lands and resources for traditional purposes; changes to the environment that are directly linked to or necessarily incidental to any federal decisions about a project. If there is a Provincial requirement for an environmental assessment or review, the applicant has an exemption form the CEAA.
- **Canadian Environmental Protection Act, 1999** - an Act respecting pollution prevention and the protection of the environment and human health to contribute to sustainable development.
- **Fisheries Act, 1985** - established to manage and protect Canada's fisheries resources. It applies to all fishing zones, territorial seas and inland waters of Canada and is binding to federal, provincial and territorial governments.
- **Marine Mammal Regulations, 1993 –** regulations that govern the fishing and hunting and in effect treatment of marine mammals in Canada.
- **Migratory Birds Convention Act, 1994** - protecting and conserving migratory birds.
- **Oceans Act, 1997** - Canada made a legal commitment to conserve, protect and develop the oceans in a sustainable manner.
- **Species at Risk Act (SARA), 2002** - The purposes of this Act are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened because of human activity and to manage species of special concern to prevent them from becoming endangered or threatened.

1.2 Canadian Provincial Legislation

1.2.1 New Brunswick

- Clean Environment Act, 1973 - t*he Clean Environment Act contains many regulations that are centered on dealing with materials and actions that can contaminate the physical environment. It includes above and below surface level.*
- Clean Water Act, 1989 - *Governs water quality in the Province of New Brunswick.*
- Clean Air Act, 1997 - *supports and promotes the protection, restoration, enhancement and wise use of the environment.*
- Crown Lands and Forests Act, 1980 - t*he Minister is responsible for the development, utilization, protection and integrated management of the resources of Crown Lands, including habitat for the maintenance of fish and wildlife populations.*
- Species at Risk Act (SARA), 2012 - *the purposes of this Act are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened.*

1.2.2 Nova Scotia

- Aquaculture Management Regulations, 2015 **–** *Regulations under the Fisheries and Coastal Resource Act for the management and development of the aquaculture industry – specifically regarding aquaculture management and licensing.*
- Endangered Species Act, 1998 - *the purpose of this Act is to provide for the protection, designation, recovery and other relevant aspects of conservation of species at risk in the Province, including habitat protection.*

1.2.3 Newfoundland

- NL Endangered Species Act, 2001 - p*rovides special protection for plant and animal species considered to be endangered, threatened, or vulnerable in the province.*
- Wilderness and Ecological Reserves Act, 1990 - *an act to provide for the natural areas in the province to be set aside for the benefit, education and enjoyment of the people of the province.*

1.3 United States Federal Legislation

- **Endangered Species Act of 1973** (16 U.S.C 1531 et seq.) - requires federal agencies, in consultation with the U.S. Fish and Wildlife Service and/or the U.S National Oceanic and Atmosphere Administration (NOAA) Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.
- **Clean Water Act of 1972 (Formerly the Federal Water Pollution Control Act of 1948)** (33 U.S.C 1251 et seq.) – under this Act, it is unlawful for any person to discharge any pollutant from a point of source into navigable waters, unless a permit is obtained under its provisions.
- **Coastal Zone Management Act of 1972** (16 U.S.C. 1451-1465) - this act, administered by NOAA, provides for the management of the nation's coastal resources, including the Great Lakes. The goal is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."
- **Migratory Bird Treaty Act of 1918** (16 U.S.C 703-712) - protecting and conserving migratory birds, or the parts, nests, or eggs of such birds.

1.4 State Legislation

1.4.1 Maine

- Maine Endangered Species Act, 1975 – to conserve, by according such protection as is necessary to maintain and enhance all species of fish or wildlife found in the State, as well as the ecosystems upon which they depend.
- Maine Coastal Management Program, 1978 – led by the Maine Department of Agriculture, Conservation, and Forestry. The coastal management program consists of a network of 19 state laws with four state agencies working in cooperation with local governments, nonprofit organizations, private businesses, and the public to improve management of coastal resources. Maine's coastal zone extends to the inland boundary of all towns bordering tidal waters and includes all coastal islands.

Section 2; Specific Conditions of Operating Permits for Wildlife Management and Protection

2.1 New Brunswick

2.1.1 ***License*****:** Schedule A; this license may be suspended or revoked should the licensee fail to comply with the *Clean Water Act,* the *Clean Environment Act*, the *Navigation Protection Act* (formerly the *Navigable Water Protection Act*), the Federal *Fisheries* Act or the *Crown Lands and Forests Act*, the *Public Health Act,* the *Seafood Processing Act*, the *Fish and Wildlife Act,* or any other applicable law.

2.1.2 ***Approval to Operate*****:** Schedule A; the Approval Holder shall ensure that all wastes generated throughout the operation and maintenance of the Facility are managed and disposed; shall operate the Facility to minimize impacts to benthic environment below the facility, and; shall operate the facility so as to minimize noise emission impacts to off-site receptors in accordance with the most recent version of the *Environmental Management Program for the Marine Finfish Cage Aquaculture Industry in New Brunswick.*

2.2 Newfoundland

2.2.1 ***Lease*****:** Schedule C; the use of the demised premises will, for its intended purpose, be subject to and in accordance with all provincial acts and regulations respecting the promotion of efficient aquaculture and environmental control.

2.2.2 ***License*****:** The proponent is required to complete, on an annual basis, a DFO Finfish Aquaculture Farm Monitoring Report for Fish Habitat.

2.2.3 ***Water Use Permit*****:** The Licensee/Holder shall not impair, pollute or cause to be polluted the quality of water.

2.3 Nova Scotia

2.3.1 ***Lease & License*****:** Any undertakings required by Schedule "B" to this license, and any permits, protocols, approvals, licenses or permissions which may be required under the laws of the Province or Canada form part of this Agreement, and the Licensee hereby agrees to comply with any conditions or limitations contained in these requirements unless compliance for licensing purposes is expressly waived by the Minister.

2.4 Maine

2.4.1 ***DMR Lease*****:** DMR Rule Chapter 2.37; Area Resources (Essential Habitats/Endangered Species) – Under the Maine Endangered Species Act a state agency or municipal government shall not permit, license, fund or carry out projects occurring partly or wholly within the Essential Habitat, without the approval of the Commissioner of MDIFW. Applicants are required to provide a signed statement to confirm the proposed lease either does not fall within the boundary of an Essential Habitat or that the applicant has contacted MDIF&W and preliminary review will grant approval for the MDMR to issue an aquaculture lease within part or the entire boundary of a designated Essential Habitat. No nuisance shall be permitted to exist on the leased premises. Lessee shall not operate in such a fashion as to be detrimental to public health, personal property or marine resources, or as to create a serious threat to the marine environment.

2.4.2 ***ACOE Permit*****:** Appendix C; Special Conditions which are intended to minimize potential impact to Atlantic salmon, Atlantic salmon critical habitat, other fisheries, benthic habitat, and local water quality.

2.4.3 ***DEP Permit*****:** PART II.I.1-8 (Protection of Atlantic Salmon)

Section 3; Local Endangered or Threatened Species

3.1 Atlantic Canada

The following species are listed as endangered or threatened in Atlantic Canada:

E = Endangered under the SARA and listed on COSEWIC
T = Threatened under the SARA and listed on COSEWIC
s = Special Concern under the SARA and listed on COSEWIC
c = COSEWIC Designation, no SARA Status

Birds

1 Bank Swallow (*Riparia riparia)* **c**
2 Barn Swallow (*Hirundo rustica)* **c**
3 Barrow's Goldeneye (*Bucephala islandica)* **s**
4 Canada Warbler (*Wilsonig anadensis)* **T**
5 Chimney Swift (Chaetura pelagica) **T**
6 Common Nighthawk (*Chordeiles minor)* **T**
7 Eastern Wood Peewee (*Contopus virens)* **c**
8 Harlequin Duck (*Histrionicus histrionicus)* **s**
9 Ivory Gull *(Pagophila eburnean)* **E**
10 Olive-sided Flycatcher (*Contopus cooperi)* **T**
11 Peregrine Falcon – Anatum Subspecies (*Falco peregrinus anatum)* **c**
12 Piping Plover (*Charadrius melodus)* **E**
13 Red Knot Rufa (*Calidris canutus rufa)* **E**
14 Roseate Tern (*Sterna dougallii)* **E**
15 Rusty Blackbird (*Euphagus carolinus)* **s**
16 Short-eared Owl (*Asio flammeus)* **s**

Fish

17 American Eel (*Anguilla rostrate)* **c**
18 American Plaice (*Hippoglossoides platessoides)* **c**
19 Atlantic Bluefin Tuna (*Thunnus thynnus)* **c**
20 Atlantic Cod – Newfoundland and Labrador, Laurentian North and South, Southern Populations (*Gadus morhua)* **E**
21 Atlantic Salmon – Inner Bay of Fundy, Eastern Cape Breton, Outer Bay of Fundy, Nova Scotia Southern Upland Populations (Salmo salar) **E**
22 Atlantic Sturgeon – Maritime Population (*Acipenser oxyrinchus)* **c**
23 Atlantic Whitefish (*Coregonus* huntsman*)* **E**
24 Atlantic Wolffish (*Anarhichas lupus)* **s**
25 Basking Shark – Atlantic Population (*Cetorhinus maximus)* **c**
26 Blue Shark (*Prionace glauca)* **c**
27 Porbeagle (*Lamna nasus)* **E**
28 Shortfin Mako – Atlantic Population (*Isurus oxyrinchus)* **c**
29 Smooth Skate – Lauranian-Scotian Population (*Malacoraja senta)* **c**
30 Spiny Dogfish (*Squalus acanthias)* **c**
31 Spotted Wolffish (*Anarhichas minor)* **T**
32 Striped Bass – Bay of Fundy, St. Lawrence River Populations (*Morone saxatillis)* **E**
33 Thorny Skate (*Amblyraja radiata)* **c**
34 White Shark (*Carcharodon Carcharias)* **E**
35 White Hake (*Urophycis tenuis)* **c**
36 Winter Skate – Georges Bank, Western Scotian Shelf, Bay of Fundy Populations (*Leucoraja ocellate)* **c**

Mammals

37 Blue Whale (*Balaenoptera musculus)* **E**
38 Fin Whale (*Balaenoptera physalus)* **s**
39 Harbour Porpoise (*Phocoena phocoena)* **s**
40 Humpback Whale (*Megaptera novaeangliae)* **s**
41 Killer Whale – Northwest Atlantic Population (*Orcinus orca)* **c**
42 North Atlantic Right Whale (*Eubalaena glacialis)* **E**
43 Sowerby's Beaked Whale (*Mesoplodon bidens)* **s**

Turtles

44 Leatherback Sea Turtle – Atlantic Population (*Dermochelys coriacea)* **E**
45 Loggerhead Sea Turtle (*Caretta caretta)* **c**

3.2 Maine

The following species are listed as endangered or threatened in Maine:

F = Federally Endangered under the U.S. Endangered Species Act
f = federally threatened under the U.S. Endangered Species Act
S= State Endangered under the Maine Endangered Species Act
s = state threatened under the Maine Endangered Species Act

Beetles

1 American Burying Beetle (*Nicrophorus americanus*) **F**

Birds

2 American Pipit (*Anthus rubescens*) (Breeding population only) **S**
3 Arctic Tern (*Sterna paradisaea*) **s**
4 Atlantic Puffin (*Fratercula arctica*) **s**
5 Barrow's Goldeneye (*Buchephala islandica*) **s**
6 Black-crowned Night Heron (*Nycticorax nycticorax*) **s**
7 Black Tern (*Chlidonias niger*) **S**
8 Common Moorhen (*Gallinula chloropus*) **s**
9 Eskimo Curlew (*Numenius borealis*) **F**
10 Golden Eagle (*Aquila chrysaetos*) **S**
11 Grasshopper Sparrow (*Ammodramus savannarum*) **S**
12 Great Cormorant (*Phalacrocorax carbo*) (Breeding population only) **s**
13 Harlequin Duck (*Histrionicus histrionicus*) **s**
14 Least Bittern (*Lxobrychus exilis*) **S**
15 Least Tern (*Sterna antillarum)* **S**
16 Peregrine Falcon (*Falco peregrinus*) (Breeding population only) **S**
17 Piping Plover (*Charadrius melodus*) **S f**
18 Razorbill (*Alca torda*) **s**
19 Roseate Tern (*Sterna dougallii*) **S F**
20 Sedge Wren (*Cistothorus platensis*) **S**
21 Short-eared Owl (*Asio flammeus*) (Breeding population only) **s**
22 Upland Sandpiper (*Bartramia longicauda*) **s**

Fish

23 Atlantic Salmon (*Salmo salar*) **F**
24 Redfin Pickerel (*Esox americanus americanus*) **S**
25 Shortnose Sturgeon (*Acipenser brevirostrum*) **F**
26 Swamp Darter (*Etheostoma fusiforme*) **s**

Butterflies and Skippers

27 Clayton's Copper (*Lycaena dorcas claytoni*) **S**
28 Edwards' Hairstreak (*Satyrium edwardsii*) **S**
29 Hessel's Hairstreak (*Callophrys hesseli*) **S**
30 Juniper Hairstreak (*Callophrys gryneus*) **S**
31 Karner Blue (*Lycaeides melissa samuelis*) **F**
32 Katahdin Arctic (*Oeneis polixenes katahdin*) **S**
33 Purple Lesser Fritillary (*Boloria chariclea grandis*) **s**
34 Sleepy Duskywing (*Erynnis brizo*) **s**

Dragonflies and Damselflies

35 Boreal Snaketail (*Ophiogomphus colubrinus*) **s**
36 Rapids Clubtail (*Gomphus quadricolor*) **S**
37 Ringed Boghaunter (*Williamsonia lintneri*) **s**

Freshwater Mussels

38 Brook Floater (*Alasmidonta varicosa*) **s**
39 Tidewater Mucket (*Leptodea ochracea*) **s**
40 Yellow Lampmussel (*Lampsilis cariosa*) **s**

Mayflies

41 Flat-headed Mayfly (Roaring Brook Mayfly) (*Epeorus frisoni*) **S**
42 Tomah Mayfly (*Siphlonisca aerodromia*) **s**

Moths

43 Pine Barrens Zanclognatha (*Zanclognatha martha*) **s**
44 Twilight Moth (*Lycia rachelae*) **s**

Mammals

45 Canada Lynx (*Lynx canadensis*) **f**
46 Eastern Cougar (*Felis concolor couguar*) **F**
47 Finback Whale (*Balaenoptera physalus*) **F**
48 Gray Wolf (*Canis lupus*) **F**
49 Humpback Whale (*Megaptera novaeangliae*) **F**
50 New England Cottontail (*Sylvilagus transitionalis*) **S**
51 Northern Bog Lemming (*Synaptomys borealis*) **s**
52 Northern Right Whale (*Eubalaena glacialis*) **F**
53 Sei Whale (*Balaenoptera borealis*) **F**
54 Sperm Whale (*Physeter catodon*) **F**

Snakes

55 Black Racer (*Coluber constrictor*) **S**

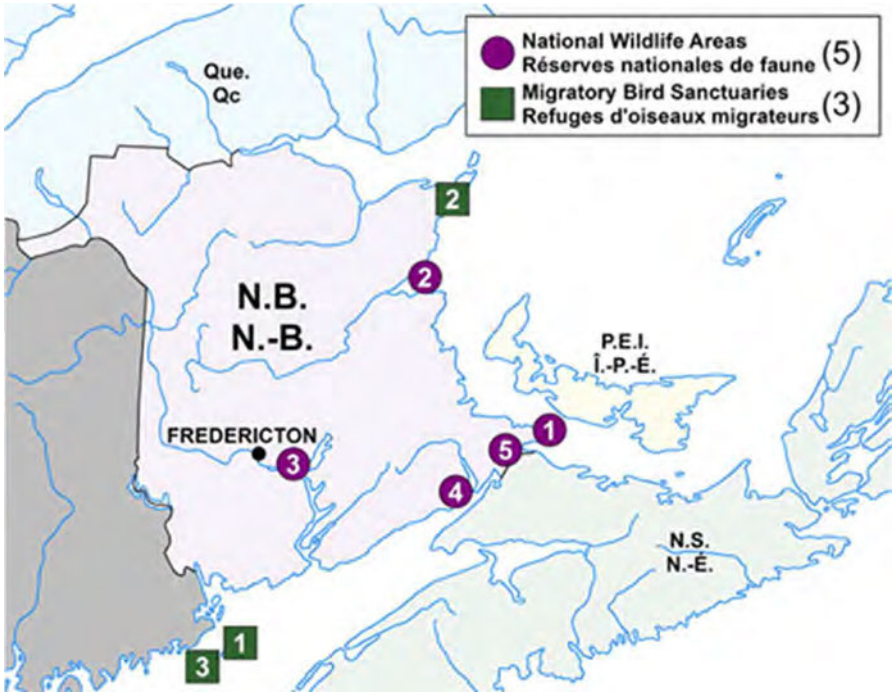
Turtles

56 Atlantic Ridley (*Lepidochelys kempi*) **F**
57 Blanding's Turtle (*Emys blandingii*) **S**
58 Box Turtle (*Terrapene carolina*) **S**
59 Leatherback (*Dermochelys coriacea*) **F**
60 Loggerhead (*Caretta caretta*) **f**
61 Spotted Turtle (*Clemmys guttata*) **s**

Section 4; Map of Sensitive Areas

4.1 Atlantic Canada

4.1.1 *National Wildlife Areas and Migratory Bird Sanctuaries in New Brunswick*



National Wildlife Areas			
No.	**Name**	**Year Established**	**Size in Hectares**
1	Cape Jourimain	1980	662
2	Portage Island	1979	349
3	Portobello Creek	1995	2,154
4	Shepody	1980	1,069
5	Tintamarre	1977	1,941

Migratory Bird Sanctuaries			
No.	**Name**	**Year Established**	**Size in Hectares**
1	Grand Manan MBS	1931	433
2	Inkerman MBS	1998	16
3	Machias Seal Island MBS	1944	1,046

4.1.2 Migratory Bird Sanctuaries and Wilderness and Ecological Reserves in Newfoundland and Labrador.

There are no Canadian Wildlife Service of Environment Canada designated National Wildlife Areas in Newfoundland and Labrador. However, there are 3 designated Migratory Bird Sanctuaries. The first two are located near Belle Isle, off the northeast coast of Newfoundland, the third is located in the Bonavista Bay region of northeastern Newfoundland, adjacent to Terra Nova Provincial Park.

Migratory Bird Sanctuaries			
No.	**Name**	**Year Established**	**Size in Hectares**
1	Shepherd Island	1991	18
2	Ile aux Canes	1991	162
3	Terra Nova	1967	1,178

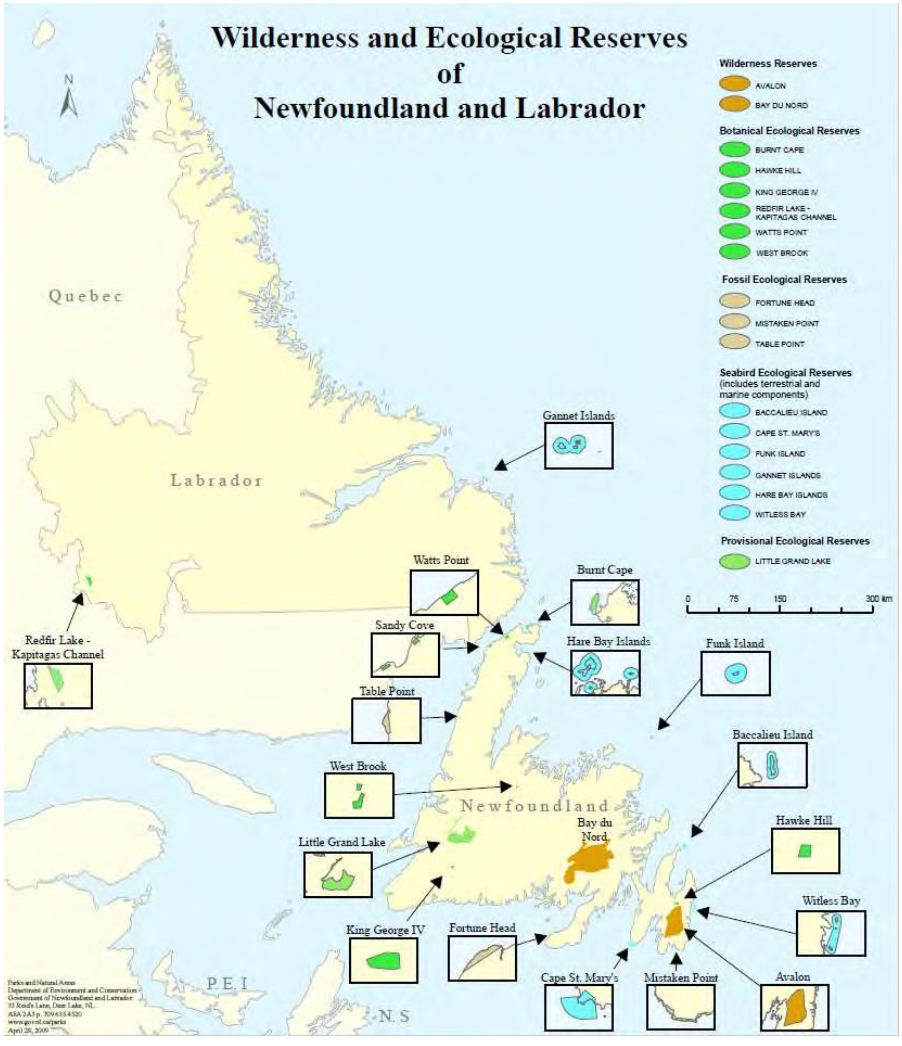
The government of Newfoundland and Labrador has designated 18 wilderness and ecological reserves which protect wide-ranging caribou herds, diverse seabird colonies, globally important fossil sites, and habitat for endangered or threatened plants and animals. Several protected areas are representative examples of the province's natural regions.

Wilderness reserves are large protected areas (greater than 1,000 km^2) that are designed to protect significant natural features and landscapes. There are two wilderness reserves in Newfoundland - the Avalon and the Bay du Nord and none in Labrador which were created primarily to protect the habitat and range of a caribou herd.

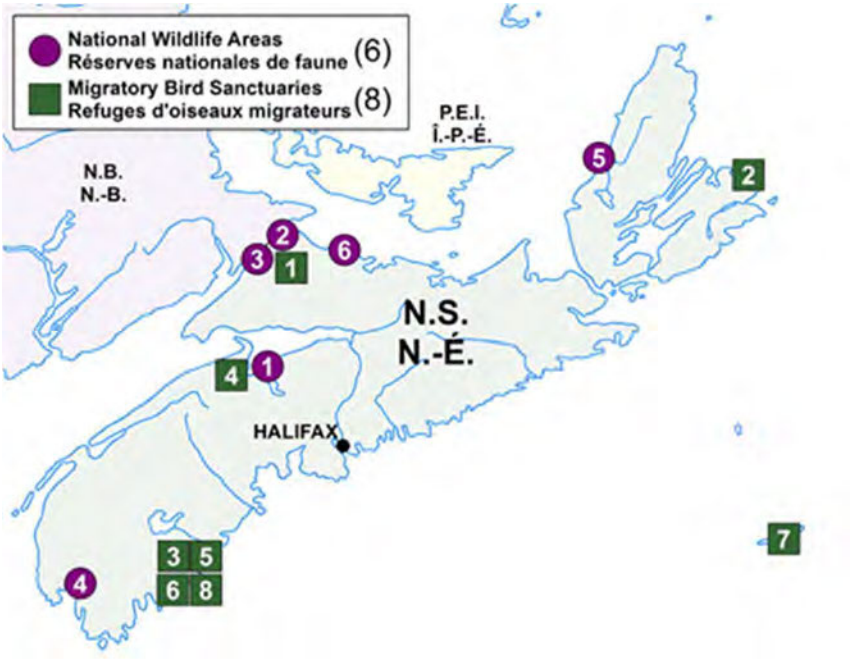
Ecological reserves are protected areas (less than 1,000 km^2) that were created for two main purposes:

1. To protect representative examples of ecosystems or ecoregions, or
2. To protect unique, rare, or endangered plants, animals, or other elements of our natural heritage.

Most of the reserves in the second category are divided into three general types- botanical, fossil, and seabird ecological reserves.



4.1.3 National Wildlife Areas and Migratory Bird Sanctuaries in Nova Scotia



National Wildlife Areas			
No.	**Name**	**Year Established**	**Size in Hectares**
1	Boot Island	1979	107
2	Chignecto	1978	432
3	John Lusby Marsh	1982	552
4	Sand Pond	1977	531
5	Sea Wolf Island	1982	76
6	Wallace Bay	1980	783

Migratory Bird Sanctuaries			
No.	**Name**	**Year Established**	**Size in Hectares**
1	Amherst Point	1947	432
2	Big Glace Bay Lake	1939	393
3	Port Herbert	1980	346
4	Kentville	1939	506
5	Port Joli	1941	346
6	Sable River	1941	397
7	Sable Island	1977	3,100
8	Haley Lake	1941	313

4.1.3 Marine Protected Areas

Marine Protected Areas (MPAs) are defined geographic areas dedicated to and managed for the long-term conservation of nature. The Department of Fisheries and Oceans (DFO) Canada establishes and manages MPAs under the Oceans Act in order to conserve numerous aspects which include, but are not limited to, commercial and non-commercial fishery resources, endangered or threatened marine species, unique habitats and other marine resources, or habitats necessary to fulfill the DFOs mandate of scientific research.

As of May 2018, there are 11 MPAs designated across Canada, 6 of these are in Atlantic Canada.

- Basin Head – located off the eastern tip of PEI, about 100 km east of Charlottetown.
- Eastport – surrounds Round Island and Duck Islands located in Bonavista Bay, roughly 3 hours drive from St. John's, Newfoundland
- Gilbert Bay – located 300km from Happy Valley-Goose Bay on the south coast of Labrador.
- The Gully – located 200km of the coast of Nova Scotia and east of Sable Island.
- Musquash Estuary – located 20km southwest of Saint John, New Brunswick with the boundary defined by low tide water levels.
- St. Anns Bank – located east of Scatarie Island, off Cape Breton, Nova Scotia.

4.2 Maine

4.2.1 Maine Natural Areas Program

Ecological Reserves are lands specifically set aside to protect and monitor the State of Maine's natural ecosystems. These lands are managed by the Bureau of Parks and Public Lands, and the Maine Natural Areas Program oversees the long-term ecological monitoring plan. As of 2013, Maine has designated more than 90,000 acres of Ecological Reserves on 17 public land units. The purposes of the Reserves are:

1. To maintain one or more natural community types or native ecosystem types in a natural condition and range of variation and contribute to the protection of Maine's biological diversity,
2. To act as a benchmark against which biological and environmental change may be measured, as a site for ongoing scientific research, long-term environmental monitoring and education, and
3. To protect sufficient habitat for those species whose habitat needs are unlikely to be met on lands managed for other purposes.

Reserves were designated following a multi-year inventory and assessment project coordinated by the Maine Forest Biodiversity Project, with staff assistance from The Nature Conservancy, the Maine Natural Areas Program, and the Bureau of Parks and Public Lands. In total, there are 17 Maine Ecological Reserves as of July 2018 - ranging in size from 775 acres at Wassataquoik Stream to over 11,000 acres at Nahmakanta.

Factsheets on each of the reserves are available through the Maine Department of Agriculture, Conservation and Forestry website (https://www.maine.gov/dacf/mnap/reservesys/factsheets.htm

- Big Spencer Mountain
- Bigelow Preserve
- Chamberlain Lake/Lock Dam
- Cutler Preserve
- Deboullie
- Duck Lake
- Gero Island
- Great Heath
- Mahoosucs Unit
- Mt. Abraham
- Nahmakanta
- Number Five Bog
- Rocky Lake
- Salmon Brook Lake
- St. John Ponds
- Tunk Lake Area, including Donnell Pond and Spring River Lake
- Wassataquoik Stream

The US Fish and Wildlife Service and Maine Department of Inland Fisheries and Wildlife has identified coastal islands that support nesting pairs of seabirds, wading birds, and bald eagles. A table of these areas is attached to this document.

The Cross Island (MACH CI2) is located near one of these islands and a line of impasse is described in the Army Corp of Engineers Permit for MACH CI2 (1989) and that no aquaculture gear can be placed south of this line.

Section 5; Risk Assessment

5.1 Atlantic Canada Aquaculture Sites and the Species at Risk Act (SARA)

The Species at Risk Act is a key federal government commitment *"to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened."*[1] SARA provides for the legal protection of wildlife species and the conservation of their biological diversity.

When creating New Site and Boundary Amendment Applications, endangered, at risk and threatened species that have been or may be found in the area of the site have to be identified. For some species it is easy to determine whether or not they would be found in the area, for others it has to be assumed they could be found there as the limited available data does not state otherwise. Species listed under the Federal SARA (Species at Risk Act) designation must be protected.

5.2 Maine Aquaculture Sites and the Maine Endangered Species Act

The Maine Endangered Species Act provides the Maine Department of Inland Fisheries and Wildlife (MDIFW) with a mandate to conserve all of the species of fish and wildlife found in the State, as well as the ecosystems upon which they depend.

Under the Maine Endangered Species Act, as stated in Maine aquaculture site DMR Leases, a state agency or municipal government shall not permit, license, fund or carry out projects occurring partly or wholly within the Essential Habitat, without the approval of the Commissioner of MDIFW.

Applicants are required to provide a signed statement to confirm the proposed lease either does not fall within the boundary of an Essential Habitat or that the applicant has contacted MDIFW and preliminary review will grant approval for the Maine Department of Marine Resources (MDMR) to issue an aquaculture lease within part or all the boundary of a designated Essential Habitat.

Section 6; Reporting and Training

Farm staff will be trained in recognizing endangered, threatened and protected species they may see from their farm and a system for recording and reporting such observations to farm management. A Standard Operating Procedure for Predator Interaction is also included in the Fish Health Management Plan available on each site.

6.1 SARA Reporting

Species identified on the Provincial Protected Wildlife factsheets are protected under SARA (Species at Risk Act) and COSEWIC (Committee on the status of Endangered Wildlife in Canada) and have been or could be found in the area of aquaculture sites in Atlantic Canada.

If any of these animals are found in distress around the aquaculture sites, Canadian Coast Guard should be contacted at 1-800-565-1633.

If the animals are observed around the aquaculture sites, care should be exercised to avoid causing them any harm.

6.2 Nuisance Seal Reporting

A Nuisance Seal license may be obtained from the Department of Fisheries and Oceans under the Marine Mammal Regulations. It authorizes producers to harvest those seals that have been observed to be causing damage to aquaculture gear, or fish entrapped in aquaculture gear.

The license holder shall submit a catch report annually which identifies:

a. The day, month, year on which any seals were taken
b. The location where any seals were taken
c. The number of seals recovered
d. The number of seals struck but not recovered

The catch report shall be mailed to the Department of Fisheries and Oceans (see permit for address).

6.3 General Predator Interactions

Due to the environment in which we operate, wildlife interactions will be unavoidable – both positive or neutral and negative (predator).

Positive or neutral interactions may require management notification if the species is listed on a Species at Risk list or other similar document.

Negative or predator interactions should be noted to determine if there is an increase or decrease in activity. If a predator is persistent or there is the potential for endangerment of employees, deterrence methods may be required. Any interaction, whether intentional or accidental, must be reported.

An IMS Incident Report Form must be completed and submitted in the event of a negative predator interaction – hard copy or via Pronto Forms on an iPad.

6.4 Canadian Wildlife Service Permit

Marine birds may become entangled, trapped or oiled from gear or chemicals on an aquaculture site. The first step to preventing such emergencies is prevention. Continually checking nets for integrity and avoiding oil, gas and chemical spills is important.

If a large spill does occur, immediately contact Coast Guard (CG) at 1-800-565-1633 and activate the Spill Prevention and Response Plan (SPRP) or Spill Prevention, Control and Countermeasure (SPCC) Plan. If wildlife is not initially affected, it should be kept out of the spill area, if possible.

Migratory birds are protected under the Migratory Birds Convention Act and some species are also protected under the Species at Risk Act (SARA); this protection can extend to the point where evening handling these species is not allowed without a Canadian Wildlife Service Permit.

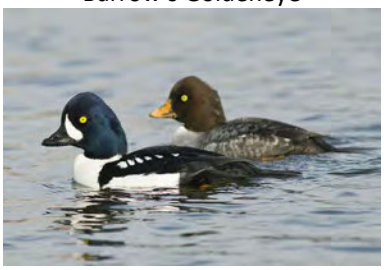
Common sense must prevail in all circumstances and caution must be exercised when dealing with birds. In stressful situations, birds may react with more force in an attempt to protect themselves. As well, birds can carry diseases and parasites which may be transmitted to humans. If a bird can be easily released from entrapment without handling, this may be attempted by site workers. Workers should not touch birds, regardless of the situation. If a bird must be handled, clean work gloves must be worn and the bird handled with care. If an incident cannot be resolved, Canadian Wildlife Services should be contacted (506-364-5068) for further direction. A permit may become necessary to handle and transport the bird to a rehabilitation facility.

Any instances of wildlife interaction shall be recorded on the IMS Incident Report Form.

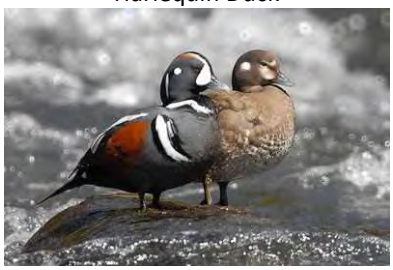
If any of these species are found around the sites in distress, the Canadian Coast Guard should be contacted immediately at 1-800-565-5068. The Coast Guard can help confirm the identity of the bird(s) in question. Workers must describe the scenario (entanglement, chemical spill, etc.) which caused the distress, if known, as well as the location of the species. Proper directions and/or coordinates are essential to help experts arrive in time.

Migratory birds that are more commonly seen around the sites or have the greatest potential to be seen include:

Barrow's Goldeneye



Harlequin Duck



Ivory Gull

Roseate Tern

Section 7; Control Measures

Any measures taken to protect fish from predators are always carried out in a manner that considers predator welfare and does not endanger the predator population; however, if a predator cannot be deterred and is threatening the security of the containment, it may be dispatched in accordance with Government Policy and Saltwater Management consent.

7.1 Passive Control Measures

The primary containment net will be protected from predators by the use of a predator net as needed. The predator net mesh size will be consistent with that utilized in the area for controlling access by predators. Bird nets shall be present over top of each containment net when fish are present and only pulled back to allow access to the cage.

7.2 Active Control Measures

Non-Lethal, acoustic deterrent devices may be used on sites to discourage birds from landing on the cages. Usage of underwater acoustic devices must be administered under Regulatory approval and following the Acoustic Deterrent Policy.

7.3 Lethal Control Measures

Lethal control measures for predators are prohibited, unless there is a permit in place and actions are carried out according to said permit under the instructions and guidance of Senior Management.

7.4 Daily Inspections

Daily inspections are required on each cage with fish. Any debris should be removed from around or in the cages including garbage, large sticks, and excessive amounts of kelp or rockweed. Waterlines or handrail ties that are missing, broken or chaffed should be replaced. Any lines that are untied must be retied.

For larger repairs, such as broken, chaffed or missing bridals, weight ring ropes or camera lines should be reported to the Site Manager as these types of repairs may require the use of divers, maintenance vessels, or plastic welders.

Any holes discovered in the netting should immediately be repaired, if able, or reported to the Site Manager so that divers can be called in to assess and check for signs of fish escapement.

Section 8; Special Requirements

8.1 Newfoundland

Interactions between wildlife and aquaculture facilities are bound to occur from time to time. Therefore, our activities should be conducted with respect and care for the local wildlife, ensuring that harmful encounters are minimized.

In cases where you do encounter entangled birds, other wildlife and marine mammals on your site, whether alive or dead, you must contact the following authorities for their information and action;

- Birds and other wildlife: notify the local Conservation Officer, Department of Environment and Conservation (in the Bay D'Espoir area the phone number is 882-2200). If the animal in question is an eagle, you should also contact the Conne River Band Council.
- Marine mammals and fish (tuna, etc.): contact the local Department of Fisheries and Oceans Canada Conservation and Protection Officer in your community.

In the case of wild animals that are alive, the province's Department of Environment and Conservation has a "Wildlife Care and Rehabilitation Program" at Salmonier Nature Park. The local Conservation Officer will be able to determine if the animal in question should be sent to the Salmonier Park.

If a dead animal is encountered, it should be retrieved where possible, treated respectfully, and turned over to the appropriate authority when directed to do so. In the case of bald eagles, the Conservations Officer will make properly permitted arrangements to turn them over to the Conne River Band Council for respectful burial at Conne River.

REFERENCED MATERIALS

1 – New Brunswick SARA List
2 – Newfoundland SARA List
3 – Nova Scotia SARA List
4 – Maine DIFW: Maine's Endangered, Threatened & Recovered Species
5 – Maine DMR: Endangered or Threatened Marine Species
6 – USFWS: Threatened or Endangered Species
7 – USFWS: Nationally Significant Seabird, Wading Bird and Eagle Nesting Islands in Coastal Maine
8 – Acoustic Deterrent Policy

New Brunswick's Protected Wildlife

The following species are protected under SARA (Species at Risk Act) and COSEWIC (Committee on the status of Endangered Wildlife in Canada) and have been or could be found in the area of southwestern NB's aquaculture sites. If any of these animals are found in distress around the aquaculture sites, Canadian Coast Guard should be contacted at **1-800-565-1633**. If the animals are observed around the aquaculture sites, care should be exercised to avoid causing them any harm.

Atlantic Cod *(Gadus morhua)*
Habitat: Shoreline to continental shelf in Northeast Atlantic
Description: Brown to green or grey with spots on dorsal surface, pale underside. Distinctive chin barbell.
3 dorsal fins and 2 anal fins.
Max. size: 2 m, 96 kg

Atlantic Salmon (*Salmo salar*)
Habitat: Fresh water streams in winter then migrates out to Bay
Description: Sides and belly are silvery,
back varies from shades of brown to green and blue.
Adult size: 60 cm, 3 kg
Season of Concern: Spring, summer and fall

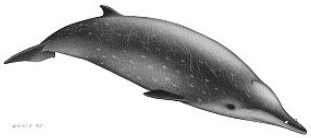
Atlantic Wolffish *(Anarhichas lupus)*
Habitat: Inhabits cold, deep water, bottom dwellers, prefer rock or hard-clay sediment
Description: Rounded profile, heavy head, blunt snout, lacking pelvic fins. Body color ranges from slate blue to dull green to purplish brown with vertical, dark brown bars along the sides. Extensive teeth structure
Max. size: 150 cm, 20 kg

Fin Whale *(Balaenoptera physalus)*
"Grey hound of the deep"
Habitat: Temperate, deep, cool waters
Description: Baleen whale with a long and slender, streamlined body, dark greybody, white underneath. Narrow, V-shaped head, pointed snout, paired blowholes.
Adult Size: 20-27 m, 70,000 kg

Harbour Porpoise *(Phocoena phocoena)*
Habitat: Close to cooler (<16 °C), coastal areas or river estuaries
Description: Black back, grayish-white sides fading to white underneath
Max. size: 1.7 m , 65 kg

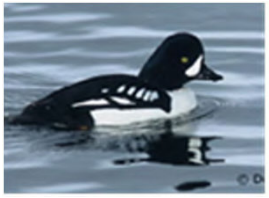
North Atlantic Right Whale *(Eubalaena glacialis)*
Habitat: Temperate northern waters in summer Description: Large black baleen whale distinguished by the callosities (thick, hard, white bumps) on its head. Broad back, lacks a dorsal fin.
Adult Size: 16-17 m, 63,500 kg
Season of Concern: Congregate in summer and fall in the lower Bay of Fundy, mainly east of Grand Manan

Porbeagle *(Lamna nasus)*
Habitat: Coastal and oceanic
Description: Large shark with a powerful streamlined body. Grey-bluish black body with a white patch on the back of dorsal fin, white underside. Head is stout, snout is pointed. Distinguished by its 3-cusped teeth.
Max. size: 3 m in length, 135 kg



Sowerby's Beaked Whale *(Mesoplodons bidens)*
Habitat: Generally found in deep waters, continental shelf/slope
Description: Medium sized dark gray, beaked whale. Streamlined body with a small head with a long, narrow beak. Tails have no central notch. Small, triangular dorsal fin.
Max. size: 4.5 -5.5 m in length, 1000-1300 kg

Leatherback Sea Turtle (*Dermochelys coriacea*)
Habitat: Prefer open ocean, deep water. Nest on ocean beaches.
Description: Largest living sea turtle. Lacks a bony shell, instead its carapace is covered by bluish black skin.
Max.size: 2.4 m in length, 3.6 m wide, up to 725 kg
Season of Concern: June to October



Barrow's Goldeneye *(Buscephala islandica)*
Habitat: Wooded lakes, beaver ponds, overwinter in protected coastal waters or open inland water
Description: Medium sized sea duck. Males are black and white. Females are grayish brown and white on the sides and belly with a chocolate brown head
Adult Size: 53 cm, 1 kg

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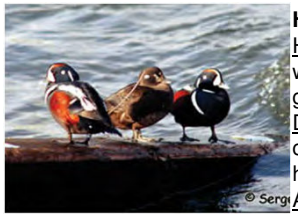
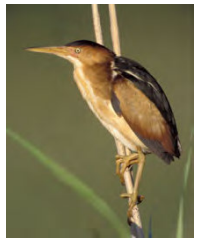
Eskimo curlew *(Numenius borealis)*
*May have gone extinct
Habitat: Pass through Maritimes during migration, no specific habitat known
Description: Mottled brown shorebird, brown back, buff underside, long legs, long, thin down-curving bill
Adult size: 337 cm in length, 270-454 g, 19-23 cm wing span
Season of Concern: July – October (fall migration)



Harlequin Duck *(Histrionicus histrionicus)*
Habitat: Turbulent mountain streams in summer, rocky coastal waters in winter. Nest in a well-concealed location on the ground, near a stream
Description: Small sea duck. Males have slate-blue plumage, chestnut sides, and streaks of white, chestnut and black on head. Females are plain, brownish-grey with patches of white
Adult size: 45cm



Least Bittern *(Ixobrynchus exilis)*
Habitat: Nest in freshwater marches and swamps, often with cattails
Description: Member of the heron family. Mainly brown and buff colored body, white underside, black head and back
Adult Size: 30 cm in length, 80 g
Season of Concern: Summer (overwinter in southern US states)

Piping Plover *(Charadrius melodus melodus)*
Habitat: Nests along coastal sand, gravel beaches, sand flats
Description: Small, sand coloredshorebird. Black ring around neck. Bill yellow with a black tip, yellow legs (In winter, bill is black, legs are pale)
Adult size: 15-19 cm, 43-48 g
Season of Concern: Late April /May to August

Ivory Gull *(Pagophila eburnea)*
Habitat: Live near the edges of pack or drift ice
Description: Small white seabird with black legs. Juveniles have a dusky face and chin and black spots on the breast and along the flanks and tail.
Adult size: 38-43 cm
Season of Concern: Late May/early June (breeding season)

Yellow Rail *(Coturnicops noveboracensis)*
Habitat: Found in marshes through summer, coastal wetlands and rice fields in winter
Description: Tiny bird with black and white markings on plumage, short tail, small bill. Almost never flies unless disturbed.
Adult size: 15-19 cm in length, 60 g

Monarch *(Danaus plexippus)*
Habitat: Wherever milkweed and wildflowers are found- fields, meadows, gardens, *etc.*
Description: Small sea duck. Males have slate-blue plumage, chestnut sides, and streaks of white, chestnut and black on head. Females are plain, brownish-grey with patches of white
Adult size: 45cm

Roseate Tern (*Sterna dougalli*)
Habitat: Nests are usually built on flat terrain or on sheer cliffs above ice sheets.
Description: Adults have black legs and pure white plumage. Bill is slate blue at the base, yellow in the middle with a red tip.
Season of Concern: Spring to late August/September

Newfoundland and Labrador Protected Wildlife

The following species are protected under SARA (Species at Risk Act) and COSEWIC (Committee on the status of Endangered Wildlife in Canada) and have been or could be found near aquaculture sites on the south coast of Newfoundland island. If any of these animals are found in distress around the aquaculture sites, Canadian Coast Guard should be contacted at **1-800-565-1633**. If the animals are observed around the aquaculture sites, care should be exercised to avoid causing them any harm.

American Eel (*Anguilla rostrata*)
Habitat: Uses all salinities during life stage, found in all freshwater that are accessible to the to Atlantic Ocean.
Description: Elongated body, grey with white or cream color belly, one dorsal/caudal/anal fin.
Max. size: Adults - male: 0.4 m, female: 1.0 m

Leatherback Sea Turtle (*Dermochelys coriacea*)
Habitat: Prefer open ocean, deep water. Nest on ocean beaches.
Description: Largest living sea turtle. Lacks a bony shell, its carapace is covered by bluish black skin.
Max.size: 2.4 m in length, 3.6 m wide, 725 kg
Season of Concern: June to October

Atlantic Cod – Laurentain North (*Gadus morhua*)
Habitat: Northern Gulf of St. Lawrence and waters off the south coast of Newfoundland. Migrate inshore to their feeding grounds.
Description: Brown to green or grey with spots on dorsal surface, pale underside. Distinctive chin barbell, 3 dorsal and 2 anal fins.
Max. size: 2 m, 96 kg

Blue Whale (*Balaenoptera musculus*)
Habitat: Along the north shore of the Gulf of St. Lawrence; off eastern Nova Scotia; off the south coast of the island of Newfoundland.
Description: Largest animal on earth, colored dark and light grey, smallish dorsal fin and pointed pectoral flippers.
Max. size: 30 m, 181 MT

Fin Whale (Balaenoptera physalus)
Habitat: Temperate, deep, cool waters.
Description: Baleen whale with a long and slender, streamlined body, dark grey body, white underneath. Narrow, V-shaped head, pointed snout, paired blowholes.
Adult Size: 20 - 27 m, 70 MT

Harbour Porpoise (Phocoena phocoena)
Habitat: Close to cooler (<16 °C), coastal areas or river estuaries.
Description: Black back, grayish-white sides fading to white underneath.
Max. size: 1.7 m , 65 kg

North Atlantic Right Whale (Eubalaena glacialis)
Habitat: Temperate northern waters in summer.
Description: Large black baleen whale distinguished by the callosities (thick, hard, white bumps) on its head. Broad back, lacks a dorsal fin.
Adult Size: 16 - 17 m, 64 MT

Atlantic Wolffish (Anarhichas lupus)
Habitat: Inhabits cold, deep water, bottom dwellers, prefer rock or hard-clay sediment.
Description: Rounded profile, heavy head, blunt snout, lacking pelvic fins. Body color ranges from slate blue to dull green to purplish brown with vertical, dark brown bars along the sides. Extensive teeth structure.
Max. size: 150 cm, 20 kg

Northern Wolffish (*Anarhichas denticulatus*)
Habitat: Open continental-shelf water that is cold—usually between 2°C to 5°C—and mainly at depths between 400 and 1000 metres. Prefer a rocky or muddy sea floor.
Description: Thick and heavy set, with a large head, small sharp teeth with grey to dark chocolate color appearance.
Max. size: 1.4 m , 20 kg

Spotted Wolffish (*Anarhichas minor*)
Habitat:Found offshore in cold, deep water, usually below 5°C and between 50 – 800 m in depth but as shallow as 25 m, prefer a coarse sand bottom with rocky areas.
Description: Canine teeth, round blunt head long body, olive to deep brown with blackish-brown spots.
Max. size: 1.8 m, 23 kg

Harlequin Duck (*Histrionicus histrionicus*)
Habitat: Turbulent mountain streams in summer, rocky coastal waters in winter. Nest in a well-concealed location on the ground.
Description: Small sea duck. Males have slate-blue plumage, chestnut sides, and streaks of white, chestnut and black on head. Females are plain, brownish-grey with patches of white.
Adult size: 45 cm

Short-eared owl (*Asio flammeus*)
Habitat: Tundra, coastal barrens, sand dunes, field and bog areas. All coastal areas and near shore islands are suitable.
Description: Medium-sized, puffy white and brown owl with shirt ear tufts and yellow eyes.
Max. size: 34 - 43 cm , 206 - 475 g

Red Crossbill
(*Loxia curvirostra percna*)
Habitat: Restricted to the island of NL. Found in mature conifer forests.
Description: Medium-sized finch with a crossed beak. Males are dull red color with brown shading . Females are grayish-olive with yellow rumps.
Max size: 14 - 16 cm

Olive-sided Flycatcher
(*Contopus cooperi*)
Habitat: Coniferous, mixed wood or boreal forests where suitable habitat is more likely to be in or near wetland areas.
Description: Dark olive on the face, upperparts and flanks. They have light under parts, a large dark bill and a short tail.
Max. size: 18 - 20 cm

Monarch (*Danaus plexippus*)
Habitat: Wherever milkweed and wildflowers are found- fields, meadows, gardens, *etc.*
Description: Bright orange butterfly with heavy black veins and a wide black border containing two rows of white spots.
Adult size: Wingspan of 8.9 - 10.2 cm

Boreal Felt Lichen
(*Erioderma pedicellatum*)
Habitat: It grows on trees in damp boreal forests along the Atlantic coast.
Description: Medium-sized foliose lichen, fuzzy upper surface that is greyish-brown when dry and slate-blue when moist. The underside is white with edges usually curled upward
Max. size: 2 - 5 cm across, sometimes reaching 12 cm in diameter

Cooke AQUACULTURE Inc.
SIMCorp MARINE ENVIRONMENTAL INC.

Nova Scotia Protected Wildlife

The following species are protected under SARA (Species at Risk Act) and/or COSEWIC (Committee On the Status of Endangered Wildlife In Canada) and have been or could be found in areas of NS where aquaculture is taking place. If any of these animals are found in distress around the aquaculture sites, Canadian Coast Guard should be contacted at **1-800-565-1633**. If the animals are observed around the aquaculture sites, care should be exercised to avoid causing them any harm.

Atlantic Whitefish (Coregonus huntsmani)
Habitat: Petite Riviere watershed and surrounding waters. Found at sea during spring and summer. Returns to freshwater to spawn during winter.
Description: Black, dark green or blue back, silver sides, white underbelly, large scales,
Classification: Endangered (COSEWIC & SARA)
Max Size: Up to 40 cm

Atlantic Cod (*Gadus morhua*)
Habitat: Shoreline to continental shelf in Northeast Atlantic
Description: Brown to green or grey with spots on dorsal surface, pale underside. Distinctive chin barbs. 3 dorsal fins and 2 anal fins.
Classification: Endangered (COSEWIC)
Max Size: 2 m, 96 kg

Atlantic Wolffish (*Anarhichas lupus*)
Habitat: All around Nova Scotia. Deep, rocky continental shelf. Periodically found on sandy or muddy bottom.
Description: Rounded profile, heavy head, blunt snout, lacking pelvic fins. Body color ranges from slate blue to dull green to purplish brown with vertical, dark brown bars along the sides. Extensive teeth structure.
Classification: Threatened (COSEWIC & SARA)
Max Size: 150 cm, 20 kg

Atlantic Salmon (*Salmo salar*)
Habitat: Throughout the inner Bay of Fundy following anadromous migration.
Description: Sides and belly are silvery, back varies from shades of brown to green and blue.
Classification: Endangered (COSEWIC & SARA)
Max Size: 60 cm, 3 kg

Barrow's Goldeneye (*Buscephala islandica*)
Habitat: Coastal waters throughout Atlantic Canada
Description: Medium sized sea duck. High, rounded head is black with white patch under eye. Males are black and white, femaes are greyishh brown and white.
Classification: Threatened (COSEWIC & SARA)
Max Size: 53 cm, 1 kg

Piping Plover (*Charadrius melodus*)
Habitat: Nest and feed primarily on coastal sand or gravel beaches and sand flats. Found all along the southern shore of Nova Scotia.
Description: Grey/brown sides and back, white under. Black spots around neck, on forehead and at beak tip.
Classification: Endangered (COSEWIC & SARA)
Max Size: 19 cm, 48 g

Roseate Tern (*Sterna dougallii*)
Habitat: Occurs in large colonies on coasts and islands all along the Atlantic shore of Nova Scotia
Description: Medium sized seabird with long forked tail. White with black head cap and bill.
Classification: Endangered (COSEWIC & SARA)
Max Size: 40cm, 130 g

Peregrine Falcon (*Falco peregrinus*)
Habitat: Along the Bay of Fundy coast of Nova Scotia. Nests on cliff ledges near water and large open spaces.
Description: Medium sized, grey/blue upper body and wings, white to light brown speckled underparts, black bars on legs.
Classification: Threatened (SARA)
Max Size: 59 cm, 910 g

NOVA SCOTIA

Cooke AQUACULTURE Inc.

SWEENEY INTERNATIONAL Management Corp.

Blue Whale (*Balaenoptera musculus*)
Habitat: North shore of the Gulf of St. Lawrrence and off Eastern Nova Scotia during spring, summer and fall.
Description: Tapered, elongated body, pleated grooves in the skin of the neck, small dorsal fin, mottled dark blue and grey.
Classification: Endangered (COSEWIC & SARA)
Max Size: 30 m, 181 MT

Red Knot (*Calidris canustus*)
Habitat: Migrate from Canadian Arctic to South America in July and August. Migration stops can include tidal sandflats and mudflats along the gulf of St Lawrence and Bay of Fundy.
Description: Shorebird with long straight bill, small head and long legs. Brownish red face, neck, chest, and underparts. White stripe on upper part of wings.
Classification: Endangered (COSEWIC)
Max Size: 26 cm

North Atlantic Right Whale
(*Eubalaena glacialis*)
Habitat: Temperate northern waters in summer
Description: Large black baleen whale distinguished by the callosities (thick, hard, white bumps) on its head. Broad back, lacks a dorsal fin.
Classification: Endangered (COSEWIC & SARA)
Max Size: 17 m, 64 MT

Leatherback Sea Turtle
(*Dermochelys coriacea*)
Habitat: Often found in deep, temperate waters throughout the Atlantic where they feed. Often sighted between June and October.
Description: Blue-black carapace composed of skin and small bones. Seven ridges running entire length of carapace.
Classification: Endangered (COSEWIC & SARA)
Max Size: 2.4 m, 725 kg

Northern Bottlenose Whale
(*Hyperoodon ampullatus*)
Habitat: Scotian Shelf, areas surrounding 'The Gully', a submarine canyon off the Southeast coast of Nova Scotia
Description: Beaked whale with bulbous 'forehead'. Variable in colour, ranging from chocolate brown in young animals, to light brown in older animals, to yellowish brown (with whitish beaks and heads) in very old males.
Classification: Endangered (COSEWIC & SARA)
Max Size: 10 m, 7.5 MT

Least Bittern (*Ixobrychus exilis*)
Habitat: Prefer large marshes with stable water levels during spring and summer. Winter habitat can be any wetland, including brackish and saline swamps.
Description: Small member of the heron family. Brown plumage with broad buff streaks on its white underside. Back and crown are glossy black.
Classification: Threatened (COSEWIC & SARA)
Max Size: 30 cm, 80 g

Harbour Porpoise (*Phocoena phocoena*)
Habitat: Three distinct Canadian Atlantic populations: Newfoundland-Labrador, St. Lawrence and Bay of Fundy.
Description: Rounded head with no obvious beak, small triangular dorsal fin. White underside, mottled grey/white sides to dark grey back.
Classification: Threatened (SARA)
Max Size: 1.7 m, 65 kg

Striped Bass (*Morone saxatilis*)
Habitat: Anadramous species spawns in freshwater, moves to coastal brackish or salt water to feed and mature. Found along the Atlantic coast; noteably in several rivers which drain into the Bay of Fundy.
Description: Dark olive green back with pale silver striped sides and white belly.
Classification: Threatened (COSEWIC)
Max Size: 1.8 m

NOVA SCOTIA

Cooke AQUACULTURE Inc.

SWEENEY INTERNATIONAL Management Corp.

MAINE'S ENDANGERED SPECIES[1]

(12 MRSA §12803: last revision = September 12, 2009)

Birds

American pipit (*Anthus rubescens*): breeding population only
Black tern (*Chlidonias niger*)
Golden eagle (*Aquila chrysaetos*)
Grasshopper sparrow (*Ammodramus savannarum*)
Least bittern (*Ixobrychus exilis*)
Least tern (*Sterna antillarum*)
Peregrine falcon (*Falco peregrinus*): breeding population only
Piping plover (*Charadrius melodus*)[2]
Roseate tern (*Sterna dougallii*)[2]
Sedge wren (*Cistothorus platensis*)

Fish

Redfin pickerel (*Esox americanus americanus*)

Invertebrates

Butterflies and Skippers
Clayton's copper (*Lycaena dorcas claytoni*)
Edwards' hairstreak (*Satyrium edwardsii*)
Hessel's hairstreak (*Callophrys hesseli*)
Juniper hairstreak (*Callophrys gryneus*)
Katahdin Arctic (*Oenis polixenes katahdin*)
Dragonflies and Damselflies
Rapids clubtail (*Gomphus quadricolor*)
Mayflies
Flat-headed mayfly (a.k.a., Roaring Brook mayfly; *Epeorus frisoni*)

Mammals

New England cottontail (Sylvilagus transitionalis)

Reptiles

Snakes
Black racer (*Coluber constrictor*)
Turtles
Blanding's turtle (*Emydoidea blandingii*)
Box turtle (*Terrapene carolina*)

MAINE'S THREATENED SPECIES[1]

(12 MRSA §12803: last revision = September 12, 2009)

Birds

Arctic tern (*Sterna paradisaea*)
Atlantic puffin (*Fratercula arctica*)
Barrow's goldeneye (*Bucephala islandica*)
Black-crowned night heron (*Nycticorax nycticorax*)
Common moorhen (*Gallinula chloropus*)
Great cormorant (*Phalacrocorax carbo*): breeding population only
Harlequin duck (*Histrionicus histrionicus*)
Razorbill (*Alca torda*)
Upland sandpiper (*Bartramia longicauda*)
Short-eared owl (*Asio flammeus*): breeding population only

Fish

Swamp darter (*Etheostoma fusiforme*)

Invertebrates

Butterflies and Skippers
Purple lesser fritillary (*Boloria chariclea grandis*)
Sleepy duskywing (*Erynnis brizo*)
Moths
Pine barrens zanclognatha (*Zanclognatha martha*)
Twilight moth (*Lucia rachelae*)
Dragonflies and Damselflies
Boreal snaketail (*Ophiogomphus colubrinus*)
Ringed boghaunter (*Williamsonia lintneri*)
Freshwater Mussels
Brook floater (*Alasmidonta varicosa*)
Tidewater mucket (*Leptodea ochracea*)
Yellow lampmussel (*Lampsilis cariosa*)
Mayflies
Tomah mayfly (*Siphlonisca aerodromia*)

Mammals

Northern bog lemming (*Synaptomys borealis*)

Reptiles

Turtles
Spotted turtle (*Clemmys guttata*)

MAINE'S RECOVERED SPECIES

(12 MRSA §12810: last revision = September 12, 2009)

Birds

Bald eagle (*Haliaeetus leucocephalus)*

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[1] Includes only species listed by the Maine legislature after recommendation by the Department of Inland Fisheries and Wildlife (*Maine Revised Statutes: Title 12 Conservation, Part 13 Inland Fisheries and Wildlife, Chapter 925 Fish and Wildlife Management and Research, Subchapter 3 Endangered Species §12801 - §12810*); http://www.mainelegislature.org/legis/statutes/12/title12sec12803.html This summary excludes:

(a) marine species (except migratory birds) listed separately through the Maine Department of Marine Resources (12 MRSA § 6975), and
(b) federally listed species designated only under the U.S. Endangered Species Act (16 USC Chapter 35) that are not listed under Maine law.

[2] These species are also federally listed under the U.S. Endangered Species Act as well as Maine's Endangered Species Act.

Maine Revised Statutes

Title 12: CONSERVATION

Part 9: MARINE RESOURCES

Subpart 2: LICENSING

Chapter 631: ENDANGERED OR THREATENED MARINE SPECIES

§6975. List of state endangered and state threatened marine species

The list of state endangered or state threatened marine species by common name, scientific name and status is as follows: [2003, c. 573, §1 (NEW).]

1. Right whale. Right whale, Eubalaena glacialis, endangered;

[2003, c. 573, §1 (NEW) .]

2. Humpback whale. Humpback whale, Megaptera novaeangliae, endangered;

[2003, c. 573, §1 (NEW) .]

3. Finback whale. Finback whale, Balaenoptera physalus, endangered;

[2003, c. 573, §1 (NEW) .]

4. Sperm whale. Sperm whale, Physeter catodon, endangered;

[2003, c. 573, §1 (NEW) .]

5. Sei whale. Sei whale, Balaenoptera borealis, endangered;

[2003, c. 573, §1 (NEW) .]

6. Leatherback turtle. Leatherback turtle, Dermochelys coriacea, endangered;

[2003, c. 573, §1 (NEW) .]

7. Atlantic ridley turtle. Atlantic ridley turtle, Lepidochelys kempii, endangered;

[2007, c. 6, §1 (AMD) .]

8. Loggerhead turtle. Loggerhead turtle, Caretta caretta, threatened; and

[2007, c. 6, §2 (AMD) .]

9. Shortnose sturgeon. Shortnose sturgeon, Acipenser brevirostrum, endangered.

[2007, c. 6, §3 (NEW) .]

SECTION HISTORY
2003, c. 573, §1 (NEW). 2007, c. 6, §§1-3 (AMD).

U.S. Fish & Wildlife Service

ECOS

ECOS / Species Reports / Species occurrence by state / Listed species believed to or known to occur in Maine

Listed species believed to or known to occur in Maine

Notes:

- **As of 02/13/2015 the data in this report has been updated to use a different set of information. Results are based on where the species is believed to or known to occur. The FWS feels utilizing this data set is a better representation of species occurrence. Note: there may be other federally listed species that are not currently known or expected to occur in this state but are covered by the ESA wherever they are found; Thus if new surveys detected them in this state they are still covered by the ESA. The FWS is using the best information available on this date to generate this list.**
- This report shows listed species or populations believed to or known to occur in Maine
- This list does not include experimental populations and similarity of appearance listings.
- This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.
- Click on the highlighted scientific names below to view a Species Profile for each listing.

Listed species -- 12 listings

Animals -- 9 listings

Status	Species/Listing Name
T	Bat, Northern long-eared Wherever found (*Myotis septentrionalis*)
E	Bumble bee, Rusty patched Wherever found (*Bombus affinis*)
T	Knot, red Wherever found (*Calidris canutus rufa*)
T	Lynx, Canada Wherever Found in Contiguous U.S. (*Lynx canadensis*)
T	Plover, piping [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. (*Charadrius melodus*)
E	Salmon, Atlantic Gulf of Maine DPS (*Salmo salar*)
E	Sea turtle, hawksbill Wherever found (*Eretmochelys imbricata*)
E	Sea turtle, leatherback Wherever found (*Dermochelys coriacea*)

Status	Species/Listing Name
E	Tern, roseate northeast U.S. nesting pop. (*Sterna dougallii dougallii*)

Plants -- 3 listings

Status	Species/Listing Name
E	Lousewort, Furbish (*Pedicularis furbishiae*)
T	Orchid, eastern prairie fringed (*Platanthera leucophaea*)
T	Pogonia, small whorled (*Isotria medeoloides*)

Nationally Significant Seabird, Wading Bird and Eagle Nesting Islands in Coastal Maine

For many years, seabird biologists from U.S. Fish and Wildlife Service and Maine Dept. of Inland Fisheries and Wildlife have conducted surveys to identity coastal islands that support nesting pairs of seabirds, wading birds, and bald eagles. The table below is based on information last updated in 2002.

KEY TO THE TABLE on the following 8 pages):

CIR# Coastal Island Registry Number (every island has a unique CIR#)

OWNER (May indicate fee and/or easement ownership)

- **IFW** Maine Dept. of Inland Fisheries and Wildlife
- **FWS** U.S. Fish and Wildlife Service, Maine Coastal Nesting Islands NWR
- **ANP** Acadia National Park
- **BPL** Maine Bureau of Parks and Lands
- **MDOT** Maine Dept. of Transportation
- **NGO** Non-government conservation organization
- **PRI** towns and private owners
- **(E)** Privately owned, protected with conservation easement
- ***** nesting site -- usually for bald eagles -- on a relatively large island with multiple owners

VALUES

- **S** Island where 1% or more of the state's seabird population nests
- **W** Island where 1% or more of the state's wading bird population nests
- **R** Island where any number of federally endangered roseate terns nests
- **E** Island where bald eagles nest
- **D** Island that may not meet the 1% population criteria for any one species, but support three or more species of nesting seabirds

MCINWR

- ✔ Island identified in the Comprehensive Conservation Management Plan for potential acquisition by Maine Coastal Islands National Wildlife Refuge — if current owners are willing sellers and federal funds are available for acquisition.

This list of nationally significant islands is intended to provide a helpful reference to inform recreational users and to catalyze protection of high value nesting islands through effective stewardship, management agreements, easements and/or fee acquisition with willing landowners. This list alone should not be used for making final management decisions or for regulatory purposes. Rather, the list should be considered as a helpful first reference, to be checked for updates and accuracy on an as-needed, island-specific basis.

In order to minimize disturbance and maximize nesting success, please respect island closures for recreational uses during the nesting season (April 1 - August 31).

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
55-012	FREYEE ISLAND (EAST)	IFW	Brooklin	9.6	E	
55-088	UPPER COOMBS ISLAND	PRI	Brunswick	8.6	E	✔
55-105	DOUGHTY ISLAND	NGO	Harpswell	1.4	E	
55-156	DUCK ROCK	IFW	Harpswell	1.0	D	
55-159	JENNY ISLAND	IFW	Harpswell	3.5	S, R, D	
55-175	LONG LEDGE	IFW	Harpswell	1.3	D	
55-176	LONG LEDGE (SOUTH)	IFW	Harpswell	2.0	S, D	
55-177	FLAG ISLAND ISLAND	IFW	Harpswell	26.2	S, D	
55-178	TWO BUSH ISLAND	IFW	Harpswell	2.0	D	
55-179	CEDAR LEDGE	IFW	Harpswell	2.4	D	
55-200	LANES ISLAND	PRI	Yarmouth	28.2	E	✔
55-223	THE NUBBIN	IFW	Yarmouth	0.2	R	
55-245	SOW AND PIGS	PRI	Freeport	2.9	E	
55-275	UPPER GREEN (SOUTH)	IFW	Cumberland	1.2	S, D	
55-282	LITTLE WHALEBOAT ISLAND	PRI	Harpswell	18.0	W	✔
55-283	LITTLE WHALEBOAT ISLAND (SE)	PRI	Harpswell	4.3	D	✔
55-295	WILLIAMS ISLAND	PRI,PRI/NGO	Freeport	21.4	E	
55-297	UPPER GREEN ISLAND (N)	IFW	Cumberland	0.6	D	
55-330	SCREECHING GULL	IFW	Falmouth	0.1	R	
55-381	HOUSE ISLAND	PRI	Portland	31.1	D	✔
55-383	RAM ISLAND	IFW	Portland	14.1	S, W, D	
55-386	OUTER GREEN ISLAND	IFW	Portland	5.4	S, D	
55-406	LITTLE BIRCH ISLAND	IFW	Harpswell	9.2	S, D	
55-415	UPPER FLAG ISLAND	FWS	Harpswell	34.1	D	
55-427	TURNIP ISLAND	PRI	Harpswell	1.9	D	✔
55-437	LITTLE MARK ISLAND	IFW	Harpswell	1.7	S, D	
55-439	EAGLE ISLAND	BPR	Harpswell	13.3	D	
55-458	WEST BROWN COW ISLAND	IFW	Cumberland	1.3	D	
55-499	INNER GREEN ISLAND	IFW	Portland	3.0	D	
55-521	RAM ISLAND	PRI	Cape Elizabeth	2.8	S, D	✔
55-605	RAM ISLAND	FWS	Harpswell	6.3	D	
55-615	POND ISLAND	IFW	Harpswell	22.7	S, R, D	
55-626	RAGGED ISLAND	PRI	Harpswell	74.9	S, D	✔
55-628	WHITE BULL ISLAND	IFW	Harpswell	5.5	D	
55-630	MARK ISLAND	IFW	Harpswell	10.5	W, D	
55-632	EAST BROWN COW	IFW	Harpswell	2.4	D	
59-010	HOG ISLAND	PRI/ANP	Gouldsboro	52.3	E	
59-012	JORDAN ISLAND	PRI/ANP	Winter Harbor	261.5	E	
59-036	BALD ROCK	PRI	Steuben	1.3	D	✔
59-037	SALLY ISLAND	PRI	Gouldsboro	5.3	D	✔
59-039	SHEEP ISLAND	PRI	Gouldsboro	9.4	E	✔
59-060	ROLLING ISLAND	ANP	Winter Harbor	5.1	E	
59-062	SCHOODIC ISLAND	ANP	Winter Harbor	67.2	S, D, E	
59-065	TURTLE ISLAND	TNC	Winter Harbor	128.7	W, E	
59-084	BURYING ISLAND	PRI/IFW	Franklin	37.8	W, E	
59-087	HILLS COVE ISLAND	PRI/NGO	Hancock	9.9	E	
59-089	KILKENNY COVE ISLAND	PRI	Hancock	3.1	E	
59-110	BUCKSKIN ISLAND	PRI	Franklin	5.6	E	✔
59-119	MT DESERT ISLAND*	PRI	Bar Harbor	69,049.0	E	
59-127	INDIAN PT LEDGE	IFW	Bar Harbor	0.4	S	

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
59-132	BLACK ISLAND	NGO	Bar Harbor	13.8	E	✔
59-136	JED ISLAND	PRI	Bar Harbor	11.8	E	
59-137	CONARY NUB	PRI	Blue Hill	0.2	S	✔
59-160	THE TWINNIES (NORTH)	PRI	Bar Harbor	3.6	E	✔
59-161	THE TWINNIES (SOUTH)	FWS	Bar Harbor	3.3	E	
59-170	TREASURE ISLAND	PRI	Sorrento	18.7	E	
59-177	CALF ISLAND	PRI	Sorrento	98.2	E	
59-180	STAVE ISLAND	PRI	Gouldsboro	499.4	E	
59-182	IRONBOUND ISLAND	PRI/ANP	Winter Harbor	830.8	E	
59-183	PREBLE ISLAND	NGO	Sorrento	78.8	E	
59-189	INGALLS ISLAND	PRI/ANP	Sorrento	23.5	E	
59-190	BEAN ISLAND	PRI/ANP	Sorrento	30.1	W, E	✔
59-195	SHEEP PORCUPINE ISLAND	NPS	Gouldsboro	22.2	E	
59-197	BALD PORCUPINE ISLAND	NPS	Gouldsboro	31.9	E	
59-198	BURNT PORCUPINE ISLAND	PRI	Gouldsboro	37.6	E	
59-201	LONG PORCUPINE ISLAND	NGO	Gouldsboro	130.1	E	
59-236	HARDWOOD ISLAND	PRI/ANP	Tremont	196.1	E	
59-240	BARTLETT ISLAND*	PRI/TOWN	Mount Desert	2,158.6	E	
59-242	TINKER ISLAND	NGO,PRI/NGO	Tremont	446.9	E	
59-265	BAR ISLAND	NPS	Mount Desert	6.7	E	
59-270	GREAT CRANBERRY ISLAND*	PRI	Cranberry Isles	1,064.9	E	
59-300	THE THRUMCAP	IFW	Bar Harbor	2.6	S, D	
59-301	EGG ROCK	FWS	Winter Harbor	12.5	R, D	
59-313	LT CRANBERRY ISLAND	PRI	Cranberry Isles	491.3	E	
59-340	TRUMPET ISLAND	FWS	Tremont	6.4	D	
59-341	SHIP ISLAND	FWS	Tremont	13.1	S	
59-343	WEST BARGE ISLAND	FWS	Tremont	0.5	D	
59-347	POND ISLAND	PRI	Frenchboro	241.0	E	✔
59-351	JOHNS ISLAND	PRI	Swans Island	21.8	E	✔
59-398	GOOSEBERRY ISLAND	PRI	Swans Island	5.4	D	✔
59-409	BAKER ISLAND (N)	NGO	Swans Island	8.1	E	
59-413	SWANS ISLAND*	PRI	Swans Island	6,853.3	E	
59-438	PLACENTIA ISLAND	NGO	Frenchboro	553.0	E	
59-439	LT DUCK ISLAND	NGO	Frenchboro	89.8	S, D, E	
59-440	GREAT DUCK ISLAND	PRI/NGO's/IFW	Frenchboro	212.0	S, D, E	
59-443	LT BLACK ISLAND	PRI(NGO)	Frenchboro	2.9	E	
59-445	GREEN I LEDGE	IFW	Frenchboro	1.9	D	
59-446	GREEN ISLAND	IFW	Frenchboro	5.6	S, D	
59-447	SISTER ISLAND	PRI	Swans Island	30.3	E	✔
59-448	CROW ISLAND	PRI	Frenchboro	10.6	E	✔
59-449	DRY MONEY LEDGE	IFW	Frenchboro	0.6	S	
59-450	HARBOR ISLAND	PRI	Frenchboro	19.9	E	✔
59-451	LONG ISLAND*	PRI,PRI/NGO	Frenchboro	1,468.5	E	
59-470	RINGTOWN(LT MARSHALL) ISLAND	FWS	Swans Island	13.9	E	
59-479	BRIMSTONE ISLAND	IFW	Swans Island	1.2	D	
59-480	HERON ISLAND	NPS	Swans Island	51.8	S, D	
59-481	MASON LEDGE	IFW	Swans Island	4.5	S, D	
59-483	JOHN'S ISLAND	FWS	Swans Island	43.1	S, D	
59-570	VERONA ISLAND*	PRI	Verona	3,977.1	E	
59-587	YOUNGS ISLAND (MID) (SAMS?)	PRI	Pembroke	2.9	E	

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
59-596	NN I S BEAR HEAD(RAM?)	PRI	Brooksville	0.4	E	
59-650	HOLBROOK ISLAND	BPL	Castine	110.9	E	
59-651	RAM ISLAND	NGO	Castine	7.3	E	
59-669	THRUMCAP ISLAND	IFW	Brooksville	1.2	D	
59-672	BUCK ISLAND	IFW	Brooksville	0.9	D	
59-673	SPECTACLE ISLAND	PRI	Brooksville	8.7	S, D	✔
59-674	GREEN LEDGE	IFW	Deer Isle	0.8	D	
59-675	WESTERN ISLAND	PRI/NGO	Deer Isle	22.0	S, E	✔
59-685	COLT HEAD	IFW	Deer Isle	4.3	D	
59-687	BEACH ISLAND	PRI	Deer Isle	73.4	E	
59-709	SCOTT I (W)	PRI/NGO	Deer Isle	6.2	E	
59-742	NN I S CARLETON I(SALT POND IS.?)	IFW	Blue Hill	0.2	E	
59-771	BRADBURY ISLAND	NGO	Deer Isle	160.7	E	
59-772	LITTLE SPRUCEHEAD	PRI	Deer Isle	44.1	S	✔
59-782	HARDHEAD ISLAND	IFW	Deer Isle	5.2	S, D	
59-789	GRASS LEDGE (W)	IFW	Deer Isle	1.1	S, D	
59-790	COMPASS ISLAND	PRI	Deer Isle	7.0	D	✔
59-799	INNER PORCUPINE ISLAND	PRI	Deer Isle	10.2	E	✔
59-800	OUTER PORCUPINE ISLAND	PRI	Deer Isle	6.3	E	✔
59-802	GRASS LEDGE	IFW	Deer Isle	1.3	D	
59-810	CROW ISLAND	IFW	Deer Isle	5.3	E	
59-825	BARRED ISLAND	NGO	Deer Isle	3.4	E	
59-836	SCRAGGY ISLAND	PRI/NGO	Stonington	8.5	W	✔
59-849	CURRENT ISLAND	PRI?	Deer Isle	2.3	E	
59-923	CAMPBELL ISLAND	NGO	Deer Isle	92.0	E	
59-925	BEAR ISLAND	PRI	Deer Isle	20.1	E	✔
59-931	SMUTTYNOSE ISLAND	IFW	Brooklin	0.7	R	
59-933	MAHONEY ISLAND	PRI	Brooklin	7.0	S, D	✔
59-956	EASTERN MARK ISLAND	PRI/ANP	Stonington	9.9	E	✔
59-959	SHINGLE ISLAND	PRI/ANP	Stonington	9.2	E	✔
59-966	RAM ISLAND	BPL	Stonington	2.8	E	
59-977	NO MANS ISLAND	BPL	Stonington	4.7	E	
59-980	THREE BUSH ISLAND	PRI	Swans Island	1.6	S	✔
59-991	HALIBUT ROCKS (EAST)	IFW	Swans Island	2.7	D	
59-996	SHABBY ISLAND	IFW/ANP	Deer Isle	3.6	S, D	
59-998	SPIRIT LEDGE	IFW	Swans Island	1.7	D	
61-002	NEHUMKEAG ISLAND	PRI?	Gardiner	2.3	E	
63-011	SPOON LEDGE	IFW	North Haven	0.8	S, D	
63-013	BURNT ISLAND	IFW	North Haven	17.2	E	
63-018	SHEEP Island	IFW	North Haven	22.5	E	
63-034	STIMPSONS ISLAND	PRI/NGO	North Haven	194.0	E	
63-079	BLUFF HEAD	PRI/NGO	Vinalhaven	7.8	E	
63-081	NECK ISLAND	PRI/NGO	Vinalhaven	21.7	E	
63-093	PENOBSCOT ISLAND	PRI/NGO	Vinalhaven	257.0	E	
63-135	GREEN LEDGE	PRI	Vinalhaven	0.7	D	✔
63-157	GREENS ISLAND	PRI	Vinalhaven	432.5	E	
63-160	VINALHAVEN*	PRI	Vinalhaven	11,397.8	E	
63-166	CARVERS ISLAND	BPL (IFW)	Vinalhaven	8.4	S, D	
63-169	HAY ISLAND	NGO	Vinalhaven	3.6	D	
63-174	ROBERTS ISLAND	FWS	Vinalhaven	10.8	S, D	

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
63-175	ROBERTS ISLAND (WEST)	FWS	Vinalhaven	2.4	S, D	
63-176	BRIMSTONE ISLAND	NGO	Vinalhaven	32.3	S, D	
63-179	LITTLE BRIMSTON	NGO	Vinalhaven	3.3	D	
63-183	OTTER ISLAND	IFW/NGO	Vinalhaven	44.4	S, D	
63-200	SPARROW ISLAND	IFW	Isle au Haut	5.3	S, D	
63-204	HARDWOOD ISLAND	IFW	Isle au Haut	13.6	E	
63-211	RAM ISLAND	IFW	Isle au Haut	3.4	E	
63-230	ISLE AU HAUT*	PRI/ANP	Isle au Haut	6,808.7	E	
63-260	SOUTHERN MARK ISLAND	IFW	Isle au Haut	5.3	S, D	
63-264	FOG ISLAND	PRI/NGO	Isle au Haut	56.7	E	✔
63-266	GREEN LEDGE	IFW	Isle au Haut	4.2	S, D	
63-283	COW PEN (WEST)	IFW	Isle au Haut	3.8	S	
63-284	COW PEN (EAST)	IFW	Isle au Haut	2.6	S	
63-287	GREAT SPOON ISLAND	IFW/ANP	Isle au Haut	50.4	S, D	
63-289	LITTLE SPOON ISLAND	NGO/ANP	Isle au Haut	23.1	S, D	
63-313	CURTIS ISLAND	PRI?	Camden	7.8	E	
63-314	GOOSE ROCK	IFW	Rockport	0.5	D	
63-323	RAM ISLAND	PRI	Rockport	1.1	S, D	✔
63-330	MOUSE ISLAND	PRI	North Haven	2.7	D	✔
63-335	EAST GOOSE ROCK	IFW	North Haven	0.7	D	
63-336	GOOSE ISLAND	IFW	North Haven	1.6	D	
63-339	MARK ISLAND	NGO	North Haven	31.1	E	
63-341	ROBINSON ROCK	IFW	North Haven	1.9	D	
63-393	SHEEP ISLAND	PRI	Owls Head	62.3	E	
63-402	FISHERMAN ISLAND	IFW	Matinicus Isle Pl.	8.9	D	
63-403	MARBLEHEAD ISLAND	IFW	Matinicus Isle Pl.	1.0	D	
63-418	LT GREEN ISLAND	PRI	Matinicus Isle Pl.	2.9	S, D	✔
63-420	GARDEN ISLAND	IFW	Thomaston	1.5	D	
63-421	OAK ISLAND	PRI	Matinicus Isle Pl.	1.8	D	✔
63-485	GREEN ISLAND	IFW	Vinalhaven	1.7	D	
63-493	GREEN LEDGES	IFW	Vinalhaven	2.3	S, D	
63-501	CRANE ISLAND (NORTH)	PRI	Vinalhaven	35.9	E	
63-503	SPECTACLE ISLAND (WHITE IS.?)	PRI	Vinalhaven	3.7	E	
63-505	CRANE ISLAND (SOUTH)	PRI	Vinalhaven	1.6	E	✔
63-526	HURRICANE ISLAND LEDGE	IFW	Vinalhaven	1.4	D	
63-578	GUNNING ROCK (EAST)	IFW	Saint George	2.7	D	
63-579	THE BROTHERS (NORTH)	NGO	Saint George	3.8	D	✔
63-580	THE BROTHERS (C)	NGO	Saint George	0.6	R, D	✔
63-581	THE BROTHERS (SOUTH)	NGO	Saint George	7.4	D	✔
63-582	HAY LEDGE	NGO	Saint George	5.0	D	
63-584	METINIC ISLAND	FWS/PRI	Matinicus Isle Pl.	346.0	S, R, D	
63-585	METINIC GREEN ISLAND	PRI	Matinicus Isle Pl.	8.7	S, D	
63-588	HOG ISLAND	PRI	Matinicus Isle Pl.	9.4	D	
63-626	HURRICANE ISLAND	PRI	Matinicus Isle Pl.	1.8	D	✔
63-634	GRAFFAM ISLAND	PRI	Muscle Ridge S.	65.1	W	✔
63-651	CROW ISLAND	PRI	Matinicus Isle Pl.	11.8	E	✔
63-653	TWO BUSH ISLAND	FWS	Matinicus Isle Pl.	8.1	D	
63-654	LT GREEN ISLAND	PRI	Matinicus Isle Pl.	36.0	S, D	✔
63-655	LARGE GREEN ISLAND	PRI	Matinicus Isle Pl.	85.3	S, R, D	✔
63-701	HARBOR ISLAND	NGO/PRI	Friendship	96.7	S	✔

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
63-705	CRANE ISLAND	PRI/FWS	Friendship	11.9	S, D	
63-707	FRANKLIN ISLAND	FWS	Friendship	10.9	S, W, D	
63-730	SAND ISLAND	PRI	Friendship	4.2	E	✔
63-731	RAM ISLAND	PRI	Friendship	1.3	E	✔
63-802	BAR ISLAND	PRI	Saint George	8.1	S, D	✔
63-820	SHAG LEDGES (EAST)	IFW	Saint George	1.7	D	
63-821	SHAG LEDGDES (WEST)	IFW	Saint George	1.4	D	
63-833	HART ISLAND	FWS	Saint George	13.2	S, D	
63-836	GUNNING RK (WEST)	IFW	Saint George	2.1	S, D	
63-839	OLD HUMP LEDGES (SOUTH)	IFW	Saint George	1.7	D	
63-860	EASTERN EGG ROCK	IFW	Saint George	9.6	S, R, D	
63-873	LITTLE EGG ROCK	IFW	Saint George	3.2	D	
63-875	SHARK ISLAND	IFW	Saint George	2.5	S, D	
63-900	NO MAN'S LAND	IFW	Matinicus Isle Pl.	23.5	S, D	
63-901	TWO BUSH ISLAND	PRI	Matinicus Isle Pl.	5.9	S, D	✔
63-917	WOODEN BALL ISLAND	PRI	Matinicus Isle Pl.	38.2	S, D	✔
63-920	TENPOUND ISLAND	NGO	Matinicus Isle Pl.	28.3	S, D	
63-923	SEAL ISLAND	FWS	Vinalhaven	95.8	S, R, D	
63-924	PUDDING ISLANDI	IFW	Matinicus Isle Pl.	2.9	S, D	
63-929	GREEN LEDGE	IFW	Matinicus Isle Pl.	4.4	D	
63-930	RAGGED ISLAND	PRI	Matinicus Isle Pl.	332.3	D	
63-940	MATINICUS ROCK	FWS	Matinicus Isle Pl.	25.7	S, R, D	
65-019	HOG ISLAND	PRI	Damariscotta	4.7	E	✔
65-123	HODGSONS ISLAND	NGO	South Bristol	23.2	E	
65-165	HOG ISLAND	NGO	Bremen	302.2	E	
65-173	CROTCH ISLAND (SOUTH)	IFW	Bremen	0.7	E	
65-189	KILLICK STONE	IFW	Bristol	5.5	R, D	
65-194	WRECK ISLAND	IFW	Bristol	14.1	S, W, D, E	
65-198	ROSS ISLAND	NGO	Bristol	26.7	S, D	
65-200	HADDOCK ISLAND	PRI	Bristol	12.1	D	✔
65-201	WESTERN EGG ROCK	NGO	Bristol	7.9	S, D	
65-244	CHRISTMAS COVE	IFW	South Bristol	0.3	R, D	
65-258	THREAD OF LIFE	PRI	South Bristol	1.4	S, D	✔
65-267	THRUMCAP ISLAND (SOUTH)	FWS	South Bristol	9.0	R	
65-274	FISHERMAN ISLAND	PRI	Boothbay	70.7	W, D	✔
65-276	WHITE ISLAND (INNER)	NGO/FWS	Boothbay	10.6	S, D	
65-278	WHITE ISLAND (OUTER)	FWS	Boothbay	13.4	W, D	
65-279	OUTER HERON ISLAND	FWS	Boothbay	66.2	W, E	
65-280	DAMARISCOVE ISLAND	NGO	Boothbay	242.3	S, D	✔
65-287	PUMPKIN ISLAND	State of Maine	Boothbay	5.7	D	
65-313	EASTERN DUCK ROCK	IFW	Monhegan Island	2.2	D	
65-408	ISLE OF SPRINGS	PRI	Boothbay Harbor	104.9	E	
65-423	GREEN ISLAND	PRI	Southport	19.6	E	
65-461	LOWER MARK ISLAND	NGO/FWS	Southport	9.5	S, W	
73-010	SWAN ISLAND	IFW	Perkins Twp	1,434.7	E	
73-012	LT SWAN ISLAND	IFW	Perkins Twp	46.3	E	
73-030	FREYEE ISLAND (WEST)	PRI	Topsham	5.3	E	✔
73-065	NN I (STONEY ?)	PRI?	Bath	1.5	E	
73-067	THORNE ISLAND	PRI	Woolwich	11.5	E	
73-072	CRAWFORD ISLAND	PRI	Bath	7.6	E	

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
73-090	LITTLE LINES ISLAND	PRI?	Woolwich	0.9	E	
73-168	LEE ISLAND	IFW	Phippsburg	105.6	E	
73-213	NORTH SUGARLOAF	IFW	Phippsburg	0.8	R	
73-262	OUTER HEAD	BPL	Georgetown	3.4	R	
73-280	SOUTH SUGARLOAF	IFW	Phippsburg	1.3	S, R, D	
73-282	POND ISLAND	FWS	Phippsburg	10.5	S	
73-308	FULLER ROCK	PRI	Phippsburg	2.4	D	✔
73-313	HERON ISLAND (NORTH)	NGO	Phippsburg	2.0	S, D	
73-315	HERON ISLAND (C)	NGO	Phippsburg	2.7	D	
73-316	HERON ISLAND (SOUTH)	NGO	Phippsburg	3.3	S, D	
73-320	SEGUIN ISLAND	NGO	Georgetown	63.1	S, D	✔
77-011	SEARS ISLAND	MDOT	Searsport	977.1	E	
77-012	ISLESBORO*	PRI	Islesboro	7,750.6	E	
77-045	RAM ISLAND	PRI	Islesboro	7.0	E	✔
77-047	FLAT ISLAND	IFW	Islesboro	11.5	S, D	
79-012	ST. CROIX ISLAND	ANP	Calais	7.4	E	
79-061	FALLS ISLAND	NGO,PRI/NGO	Trescott Twp	143.1	E	
79-072	WILBUR NECK (SOUTH)	IFW	Pembroke	6.1	E	
79-081	WILBUR NECK (NORHT)	PRI	Pembroke	69.4	E	
79-085	NN I REYNOLDS POINT	IFW	Edmunds Twp	0.3	E	
79-126	GOOSE ISLAND	IFW	Eastport	3.7	S, D	
79-128	MATTHEWS ISLAND	PRI?	Eastport	18.1	E	
79-132	SPECTACLE ISLAND	PRI	Eastport	4.8	S, D	✔
79-172	BIRCH ISLAND (SOUTH)	FWS	Edmunds Twp	2.1	E	
79-193	FREDS ISLAND	PRI	Trescott Twp	3.4		
79-219	GOOSEBERRY ISLAND	PRI	Lubec	4.5	E	
79-222	TALBOT COVE ISLAND (WEST)	IFW	Trescott Twp	4.5	E	
79-228	CARLOS COVE ISLAND	IFW	Trescott Twp	3.8	E	
79-241	HOG ISLAND	NGO	Lubec	12.6	E	
79-279	HOG ISLAND	IFW	Machiasport	30.7	D, E	
79-285	SALT ISLAND	IFW/PRI	Machiasport	73.0	E	
79-290	YELLOW HEAD ISLAND	PRI?	Machias	15.8	E	
79-291	BAR ISLAND	??	Machiasport	49.7	E	
79-297	CAPE WASH ISLAND	PRI	Cutler	21.1	E	✔
79-304	LT RIVER ISLAND	US Coast Guard	Cutler	16.9	E	
79-313	OLD MAN ISLAND	FWS	Cutler	5.3	S, D	
79-345	MINK ISLAND	FWS	Cutler	11.2	E	
79-347	CROSS ISLAND	FWS	Cutler	1,474.8	E	
79-351	DBL HEADSHOT (INNER)	FWS	Cutler	8.0	E	
79-352	DBL HEADSHOT (OUTER)	FWS	Cutler	14.5	S, D	
79-356	STONE ISLAND	NGO	Machiasport	57.7	W, E	
79-359	BIG LIBBY ISLAND	IFW	Machiasport	95.6	S, D	
79-360	LITTLE LIBBY	FWS	Machiasport	39.7	D	
79-370	TREAT ISLAND	PRI	Eastport	73.2	E	
79-371	POPES FOLLY	IFW	Lubec	1.7	E	
79-393	HOPE ISLAND	PRI	Roque Bluffs	5.5	E	✔
79-410	HARDWOOD ISLAND	PRI	Addison	20.2	E	
79-412	DUCK LEDGE ISLAND	PRI	Addison	1.1	D	✔
79-422	INNER GOOSE ISLAND	IFW	Addison	2.9	E	
79-462	LT RAM ISLAND	PRI	Roque Bluffs	2.0	E	✔

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
79-464	FELLOWS ISLAND	PRI	Roque Bluffs	33.0	E	✔
79-475	ROQUE ISLAND	PRI	Jonesport	1,306.7	E	
79-481	LT SPRUCE ISLAND	PRI	Jonesport	84.3	E	
79-488	BALLAST	IFW	Jonesport	3.5	S, D	
79-493	MARK ISLAND	NGO	Jonesport	39.2	E	
79-499	NIPPLE ISLAND	NGO	Jonesport	0.3	D	
79-512	GREAT WASS ISLAND*	PRI/NGO	Beals	2,653.5	E	
79-514	SHEEP ISLAND	PRI	Jonesport	4 2	E	✔
79-520	PIG ISLAND	PRI	Beals	54.1	E	
79-523	FRENCH HOUSE ISLAND	PRI	Beals	8.1	E	
79-570	HALIFAX ISLAND	FWS	Jonesport	60.0	D	
79-572	GREEN ISLAND	IFW	Jonesport	2.0	D	
79-573	EAST BROTHERS	FWS	Jonesport	16.8	S, D	
79-574	ANGUILLA ISLAND	PRI	Jonesport	12.9	E	
79-576	PULPIT ROCK	IFW	Jonesport	1.7	S, D	
79-580	DOUBLE SHOT ISLAND	PRI	Jonesport	7.5	E	
79-586	WEST BROTHERS	IFW	Jonesport	12.9	D	
79-600	LITTLE RAM ISLAND	IFW	Beals	13.1	E	
79-601	BIG RAM ISLAND	PRI	Beals	29.3	E	✔
79-602	OUTER RAM ISLAND	PRI	Beals	8.6	E	✔
79-605	EGG ROCK	IFW	Beals	1.9	D	
79-610	TOMS ISLAND (NORHT)	PRI	Addison	1.6	E	
79-614	INNER SAND ISLAND	FWS	Addison	17.8	D	
79-619	PLUMMER ISLAND (EAST)	NGO	Addison	8.0	E	
79-621	FLAT ISLAND	PRI	Addison	19.6	S, D	✔
79-623	RAM ISLAND	PRI?	Addison	5.7	E	
79-626	BIG NASH ISLAND/CONE	PRI	Addison	75.3	S, R, D	✔
79-627	NASH ISLAND	PRI/FWS	Addison	16 7	S, D	✔
79-632	THE LADLE	PRI	Addison	2.3	D	✔
79-635	PLUMMER ISLAND (WEST)	PRI	Addison	13.0	E	
79-638	LITTLE DRISKO	IFW	Addison	10.9	S	
79-662	LT HARDWOOD ISLAND	NGO	Jonesport	5.2	E	
79-676	FREEMAN ROCK	IFW	Jonesport	1.5	S, D	
79-679	MINK ISLAND	PRI	Beals	2.6	E	
79-693	BROWNEY ISLAND	NGO	Beals	39.8	S, D, E	
79-694	FISHERMAN ISLAND	PRI	Beals	48.1	S, D	✔
79-740	UPPER BIRCH ISLAND	NGO	Addison	27.5	E	
79-742	LOWER BIRCH ISLAND	PRI	Addison	23.9	E	
79-748	NIGHTCAP ISLAND	PRI/IFW	Addison	2.7	S, D	
79-751	EAGLE ISLAND	PRI/NGO	Addison	3.5	E	
79-757	BOWLINE HEAD	NGO	Harrington	7.2	E	
79-763	STROUT ISLAND	PRI	Harrington	20.8	E	✔
79-765	OTTER ISLAND	BPL	Harrington	1.0	E	
79-778	RIPLEY ISLAND	PRI	Harrington	0.9	E	
79-787	PINKHAM ISLAND	PRI	Milbridge	79.6	E	✔
79-789	FOSTER ISLAND	PRI	Harrington	322.5	E	
79-820	BAR ISLAND	PRI?	Milbridge	82.2	E	
79-824	BOIS BUBERT ISLAND	FWS/PRI	Milbridge	1,059.3	E	
79-832	POP ISLAND	PRI?	Steuben	2.8	E	
79-835	SHEEP ISLAND	PRI	Steuben	7.9	E	✔

CIR #	Island name	OWNER	TOWN	Acres	Values	MCINWR
79-836	SALLY ISLAND	FWS	Steuben	1.3	E	
79-843	EASTERN ISLAND	PRI	Steuben	4.7	S, D	✔
79-903	FLINT ISLAND	NGO	Harrington	136.0	E	
79-906	SHIPSTERN ISLAND	NGO	Harrington	8.0	E	
79-909	TRAFTON ISLAND	PRI/IFW	Harrington	113.2	W	✔
79-917	DOUGLAS ISLAND (WEST)	PRI	Milbridge	10.5	E	
79-918	DOUGLAS ISLAND (MID)	PRI	Milbridge	19.4	E	
79-919	DOUGLAS ISLAND (EAST)	PRI	Milbridge	3.9	E	
79-922	JORDANS DELIGHT	FWS/PRI	Harrington	27.0	S, D	
79-929	GREEN ISLAND	IFW	Steuben	14.2	S, D	
79-933	PETIT MANAN	FWS	Steuben	15.7	S, R, D	
79-935	EGG ROCK	IFW	Milbridge	1.8	D	
81-001	BLUFF ISLAND	NGO	Saco	14.5	S, D	
81-002	STRATTON ISLAND	NGO	Saco	30.0	S, W, R, D	
81-010	EAGLE ISLAND	PRI	Saco	3.1	S, D	✔
81-015	WOOD ISLAND	NGO/US Coast Guard	Biddeford	43.5	S, D	✔
81-016	STAGE ISLAND	NGO	Biddeford	10.1	D	
81-018	BEACH ISLAND	IFW	Biddeford	3.1	R	
81-025	GOOSEBERRY ISLAND	IFW	Biddeford	1.7	D	
81-040	W GOOSE ROCKS	IFW	Kennebunkport	2.1	R	
81-041	W GOOSE ROCKS	IFW	Kennebunkport	0.4	R	
81-098	GREEN ISLAND	NGO	Kennebunkport	5.8	S, D	
81-101	FOLLY ISLAND	PRI	Kennebunkport	5.4	S, D	✔
81-102	BUMPKIN ISLAND	NGO	Kennebunkport	1.7	S, D	
81-181	DUCK ISLAND	FWS	Kittery	8.8	S, D	
81-182	SMUTTYNOSE ISLAND	PRI/FWS	Kittery	40.5	S, D	
81-191	APPLEDORE ISLAND	PRI	Kittery	99.1	S, W, D	✔

Acoustic Deterrent Policy

Version 15.05-01

From the careful selection of farm sites and investment in the best technology in everything from cage and net construction to feeding systems, to regular monitoring and sampling of sediment under cage sites, we ensure that all the necessary steps to safeguard the health of our salmon and of the surrounding areas are taken. To make certain that we live up to the commitment of protecting and maintaining the sustainability of the environment in which we operate, we need to establish Best Management Practices and Policies and as such we have developed this Acoustic Deterrent Policy regarding their use.

Acoustic Deterrent Devices (ADDs), also referred to as Acoustic Harassment Devices (AHDs) are equipment used underneath the surface of the water to deter predators away from our cages. While we continue to advance our predator exclusion systems, such as the use of the steel-core nets, redesign of our grid systems and other technologies, including ADDs, predator interactions are unavoidable given the environment in which we operate.

- Any use of an ADD must be first communicated with and approved by the respective Area and/or Production Manager to ensure that all other preventative measures have been taken.
    - Other factors such as the legality to use such devices or the requirements of certification schemes need to be referred to prior to deployment and your Area and/or Production Manager are your best resources to answer these questions.
- To ensure that non-target species are not negatively impacted, we will limit the use of any ADDs during periods of high population densities. As such, the use of ADDs will NOT BE PERMITTED during the months of June through September.
    - It is imperative that the devices are removed from the water during this time.

This policy supports our commitments to our Environmental Management System.

[redacted]

Michael Szemerda
VP Saltwater Operations
Kelly Cove Salmon Ltd.

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APPENDIX F
Liverpool - Notice of Works

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NAVIGATION PROTECTION ACT (NPA)
NOTICE OF WORKS FORM

WARNING: Any false or misleading statement with respect to this form and supporting documentation, including the misrepresentation of a material fact, may result in the refusal to authorize or issue Approval, or result in the suspension or cancellation of an Approval obtained through fraudulent means.

PRIOR TO COMPLETING THIS FORM:
1. Determine if your project is on a navigable water listed on the Schedule to the NPA. A *Notice to the Minister* is required for works on scheduled navigable waters. Works on non-scheduled navigable waters may be eligible to opt in; if requesting Opt-in, the Opt-in annex must be included with your *Notice to the Minister*.
2. Self assess your project against the *Minor Works Order* to determine if a *Notice to the Minister* is required. Links to the NPA Schedule, Order and Regulations can be accessed through the Navigation Protection Program (NPP) website at http://www.tc.gc.ca/eng/programs-621.html.

PURPOSE

This *Notice of Works* Form and its supporting documentation (as well as other relevant information) which may be required for a review by Transport Canada (TC), once completed and submitted, comprise the *Notice to the Minister* as required under the NPA. For assistance in completing your submission, refer to the guidance provided on the NPP website under "Apply to the NPP" including the *Guide to the Navigation Protection Program's Notification, Application and Review Requirements*.

SUPPORTING DOCUMENTATION REQUIREMENTS

Mandatory Information Checklist (incomplete information will be returned with no action)	Recommended Information (may expedite your review)
☑ Completed and signed "Notice of Works Form" with all mandatory fields completed	☑ Body of water details
☑ Map showing location of project[1]	☑ Land use/Ownership information
☑ Top/Plan drawing with dimensions[1]	☑ Body of water use information
☑ Side/Profile drawing with dimensions[1]	☑ Impacts, obstructions and mitigation plans
	☑ Any environmental review information
[1] 6 copies if hard copy submission	☑ Operation, maintenance and marking plans
	☐ Photographs of work site and body of water
	☐ Aboriginal consultation results
	☑ Other government agencies involved
	☐ Water lot lease information
	☐ Opt-in request annex (non-scheduled navigable waters only)

When submitting a Notice to the Minister, owners should note:

- All plans and drawings must be leg ble when printed on 11" x 17" paper
- For e-mail submissions, provide a scan of all relevant supporting documentation
- Your completed Notice to the Minister should be sent to the appropriate regional office as outlined below

TRANSPORT CANADA NAVIGATION PROTECTION PROGRAM REGIONAL OFFICE LOCATIONS

Pacific Region
820-800 Burrard Street
Vancouver BC V6Z 2J8
Telephone: 604-775-8867
Email: NPPPAC-PPNPAC@tc.gc.ca

Prairie and Northern Region
Canada Place 1100-9700 Jasper Ave
Edmonton AB T5J 4E6
Telephone: 780-495-8215
Email: NPPPNR-PPNRPN@tc.gc.ca

Ontario Region
100 South Front Street, 1st Floor
Sarnia ON N7T 2M4
Telephone: 519-383-1863
Email: NPPONT-PPNONT@tc.gc.ca

Headquarters
(For info on the NPP and NPA ONLY)
Notices not processed at this office
Tower C, 330 Sparks Street, 18th Floor
Ottawa ON K1A 0N5
Telephone: 613-991-3476
Email: NPPHQ-PPNAC@tc.gc.ca

Quebec Region
401-1550 d'Estimauville Avenue, 5th Floor
Quebec QC G1J 0C8
Telephone: 877-646-6420
Email: PPNQUE-NPPQUE@tc.gc.ca

Atlantic Region
95 Foundry Street, 6th Floor
P.O. Box 42
Moncton NB E1C 8K6
Telephone: 506-851-3113
Email: NPPATL-PPNATL@tc.gc.ca

NAVIGATION PROTECTION ACT
NOTICE OF WORKS FORM

TC file number (if known): **8200-93-3054**

Are you the riparian property owner? ◯Yes ◉No

GENERAL INFORMATION

Official and/or local name(s) of the body of water (Required)
Liverpool - Coffin Island, Liverpool Bay

Is the body of water listed on the schedule to the NPA?
◉Yes ◯No ◯Unknown

Are you also requesting an Approval, if required?
◉Yes ◯No

Is this an Opt-in request?
◯Yes ◉No

Are you representing an Aboriginal group?
◯Yes ◉No

Is the work near/on First Nations reserve or land claim?
◯Yes ◉No ◯Unknown

Does this project involve throwing or depositing materials in water?
◯Yes ◉No

Does this project involve dewatering a body of water?
◯Yes ◉No

OWNER CONTACT INFORMATION[2]

Individual or company name (Required)
Kelly Cove Salmon Ltd.

Contact name (Required)
Jeff Nickerson

Mailing address (Required)
P.O.Box 33

City/Town (Required)
Bridgewater

Province/Territory (Required)
Nova Scotia

Postal code (Required)
B4V 2W6

Primary telephone number (Required)
[redacted]

Other telephone number

E-mail
jnickerson@cookeaque.com

Owner's agent/mandatary (contractor/consultant/representative/co-proponent, if any)

Company name
Sweeney International Marine Corp.

Contact name
Leah Lewis-McCrea

Mailing address
46 Milltown Blvd.

City/Town
St. Stephen

Province/Territory
NB

Postal code
E3L 1G3

Primary telephone number
[redacted]

Other telephone number

E-mail
llewis@simcorp.ca

WORK SITE INFORMATION

Nearest municipality/county/district (Required)
Liverpool, Queens County

Province/Territory (Required)
Nova Scotia

Site location such as lot, concession, section, township, range, meridian, 911 address, property identification, etc. (Required)
Liverpool aquaculture site #1205 is located in Liverpool Bay, approximately 6.1 kilometers east of the town of Liverpool. Site #1205 is situated on the western side of Coffin Island.

Site position Latitude North (Required)
Degrees **44** Minutes **02** Seconds **30.7**

Site position Longitude West (Required)
Degrees **64** Minutes **38** Seconds **23.3**

Hydro chart number: **4211**

Topo map number:

Body of water details, such as characteristics, bank/bottom features, biological components, flow/tides, etc.

Site #1205 is located on the western side of Coffin Island in Liverpool Bay, occupies a 40.703 ha parcel, and is located over waters ranging from 8 - 20 m in depth. The sediment composition of the seafloor is composed primarily of hard packed sand.

Potential obstructions, such as natural/man-made, other works, navigation aids, etc.

This site consists of plastic circular cages and compensator buoys. The outside corners of the lease are marked with a 0.6 m buoy equipped with a light and radar reflectors. Liverpool Bay also has a marked navigation channel.

Land use/Ownership, such as past/current, private/government, rural/suburban, coastal, environmental, etc.

Aquaculture site #1205 is owned by Kelly Cove Salmon Ltd.

BODY OF WATER USE INFORMATION

Navigation types (check all that apply)

☑ Commercial ☑ Recreational

Maximum vessel size

Length _____ Width _____ Draft _____

Traffic direction

◯ One-way ◉ Two-way

Manoeuvrability (check all that apply)

☐ Poor ☐ Good ☑ Excellent

Day/Night

◯ Day ◯ Night ◉ Both

Volume

◯ Low ◉ Med ◯ High

Navigation season(s) (check all that apply)

☑ Winter ☑ Spring ☑ Summer ☑ Fall

Other uses such as cottagers, special events, fishing, etc

The area surrounding aquaculture site #1205 is used primarily by fishing vessels traveling in and out of the port of Liverpool. Recreational vessels also frequent this area. The primary vessel traffic around Liverpool #1205 would be from vessels servicing the site.

PROJECT INFORMATION

Name of work such as bridge, dam, marina, etc. (Required)

Aquaculture site

Type of work (check all that apply) (Required)

☐ Construct ☐ Place ☑ Alter

☐ Repair ☐ Decommission ☐ Rebuild

☑ Permanent ☐ Temporary ☐ Remove

Brief project description (or attach) such as status, structures, operation, etc. (Required)

The aquaculture site consists of two strings of 10 circular 100 m circumference cages. Cages are present on site all year round.

Method of construction such as temporary works, activities, etc. (Required)

Aquaculture site consists of anchored cage systems (see attached plans). Crews visit the site daily to feed and maintain cage system.

Anticipated impacts such as source, severity, mitigation, marking, waste/debris management, use, cumulative, etc.

Expected start date (dd-mm-yyyy) (Required)	Expected completion date (dd-mm-yyyy) (Required)
Immediately	**Ongoing**

Canada

ENVIRONMENTAL REVIEW INFORMATION

Is the work located on Federal lands?

◯ Yes ◉ No ◯ Unknown

Is the project a designated project under the *Regulations Designating Physical Activities* under the *Canadian Environmental Assessment Act, 2012*?

◯ Yes ◉ No ◯ Unknown

Is the project subject to Northern Environmental Assessment (EA) Regime(s)?

◯ Yes ◉ No ◯ Unknown

If yes, identify the northern EA regime(s) that apply

- ☐ Inuvialuit Final Agreement (IFA)
- ☐ *Mackenzie Valley Resource Management Act* (MVRMA)
- ☐ Nunavut Land Claims Agreement (NLCA)
- ☐ *Yukon Environmental and Socio-economic Assessment Act* (YESAA)

Other Federal Organizations involved

- ☑ Canadian Environmental Assessment Agency (CEAA)
- ☑ Fisheries and Oceans Canada (DFO)
- ☐ Major Projects Management Office (MPMO)
- ☐ Aboriginal Affairs and Northern Development Canada (AANDC)
- ☐ Environment Canada (EC)
- ☐ Natural Resources Canada (NRCan)
- ☐ Northern Projects Management Office (NPMO)
- ☐ Other: _____

OWNER AUTHORIZATION[2]

I hereby certify that the information contained herein and in any of the supporting documents is complete, true and accurate to the best of my knowledge and belief, and that I am authorized, as the owner, to submit this Notice to the Minister.

[redacted]

Signature (Required)

14/2/2019

Date (dd-mm-yyyy) (Required)

[redacted]

Print Name (Required)

FOR OFFICE USE ONLY

	Date stamped (dd-mm-yyyy)

[2] "Owner", in relation to a work, means the actual or reputed owner of the work or that owner's agent or mandatary. It includes a person who is in possession or claiming ownership of the work and a person who is authorizing or otherwise responsible for the construction, placement, alteration, repair, rebuilding, removal, decommissioning, maintenance, operation, safety or use of the work. It also includes a person who proposes to construct or place a work.

The personal information provided on this Notice to the Minister is collected under the authority of the ***Navigation Protection Act***, sections 4, 5, 6, 9, 21, 22, 23 and 24. This information is required for the purpose of processing applications made under the above-noted sections for proposed, commenced or existing works that are or will be constructed, placed, altered, repaired, rebuilt, removed or decommissioned in, on, over, under, through or across any navigable water in Canada. The personal information collected is described in a personal information bank entitled ***Navigation Protection Program*** (bank number TC PPU 086). Under the provisions of the ***Privacy Act***, individuals have the right of access to, correction of and protection of their personal information. Instructions for obtaining personal information are provided in Info Source, a copy of which is available in major public and academic libraries or online at http:// ww.infosource.gc.ca

Canada

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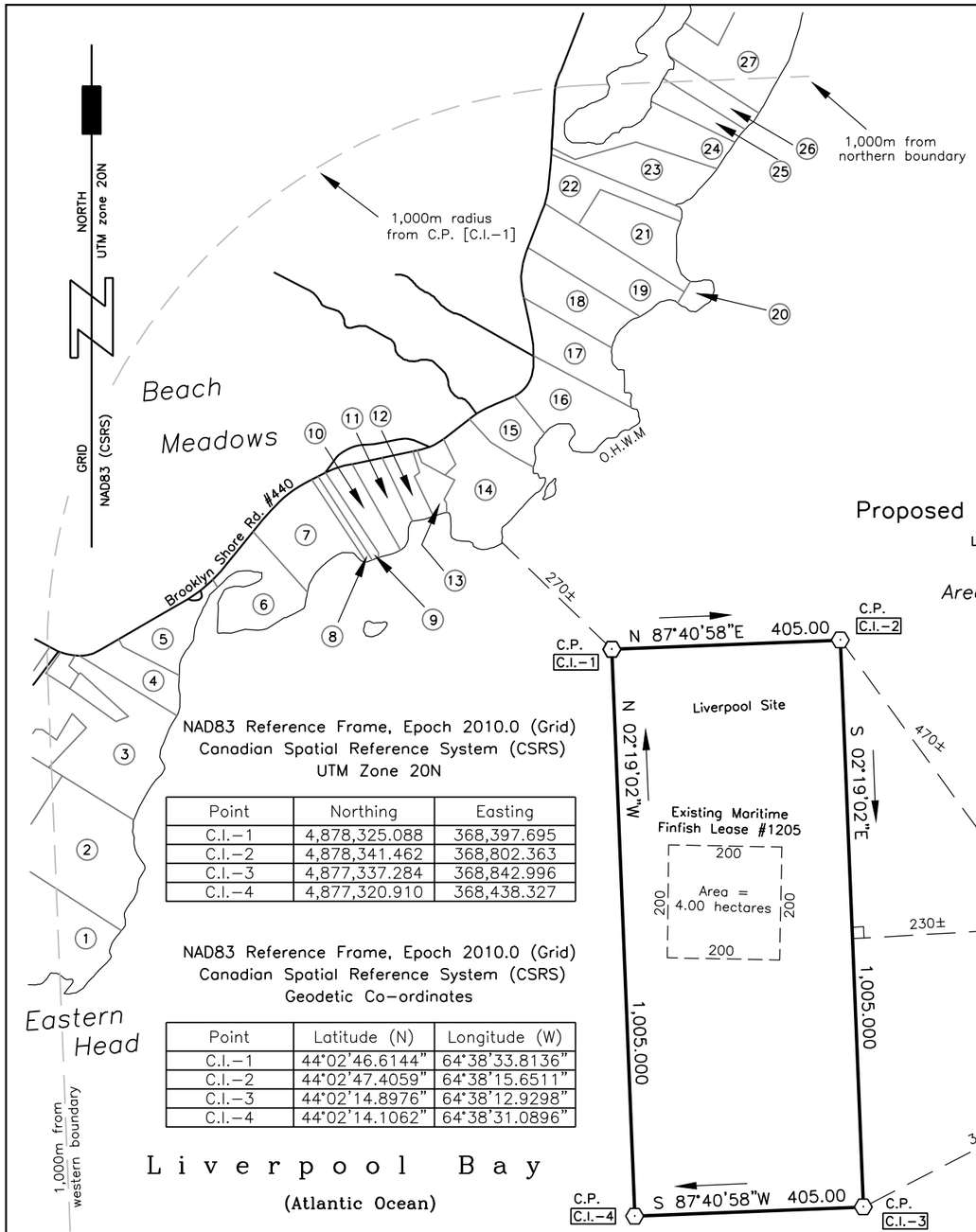

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
C.I.–1	4,878,325.088	368,397.695
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C.I.–3	4,877,337.284	368,842.996
C.I.–4	4,877,320.910	368,438.327

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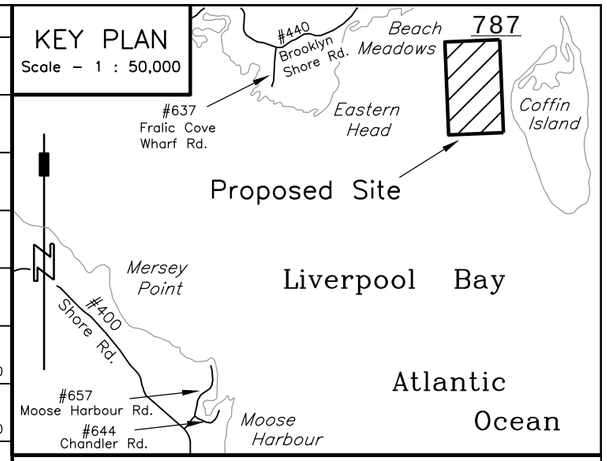
C.I.–3	44°02'14.8976"	64°38'12.9298"
C.I.–4	44°02'14.1062"	64°38'31.0896"

Proposed Marine Aquaculture Site

Liverpool Aquaculture Site
Kelly Cove Salmon Ltd.
Area = 40.703 hectares

#	P.I.D. #	OWNER / ADDRESS
1	70100946	Dennis Conrad RR #1, Brooklyn, N.S. B0J 1H0
2	70100672	Wilhelmina R. Conrad et.al. RR #1, Brooklyn, N.S. B0J 1H0
3	70100656	Hazel M. Mouzar P.O. Box 173, Liverpool, N.S. B0T 1K0
4	70100599	Donald T. Fralic et.ux. RR #1, Brooklyn, N.S. B0J 1H0
5	70100086	Wilhelmina R. Conrad et.al. RR #1, Brooklyn, N.S. B0J 1H0
6	70100540	Andrew R. Godfrey et.al. RR #1, Brooklyn, N.S. B0J 1H0
7	70100615	Rosalie E. Fralic et.al. RR #1, Brooklyn, N.S. B0J 1H0
8	70231675	Owners Unknown
9	70168976	Rosalie E. Fralic et.al. RR #1, Brooklyn, N.S. B0J 1H0
10	70100532	John T. Cumbler et.ux. 380 Old Chequessett Neck Rd. Wellfleet, MA., USA., 02667
11	70100524	Joel Gerrett Connor 4997 Prospect Lake Rd. Victoria, B.C., Can., V9E 1J5
12	70167093	Thomas P. Marian 14759 Niagara Pky, RR #1 Niagara, ON., Can., L0S 1J0
13	70168984	Beach Meadows Cemetery RR #1, Brooklyn, N.S. B0J 1H0
14	70100474	Patrick J. Smith 950 Brooklyn Shore Rd. Beach Meadows, N.S., B0J 1H0
15	70100433	Stanley A. Wentzell et.ux. RR #1, Brooklyn Beach Meadows, N.S., B0J 1H0
16	70100342	Stanley A. Wentzell 174 Pretoria Ave, Ottawa, Ont. K1S 1X2
17	70100326	Ricardo A. Rendon et.al. 6265 Oakland Rd., Halifax, N.S. B3H 1P4
18	70100318	Elizabeth D. Bush et.al. RR #1, Brooklyn, N.S. B0J 1H0
19	70100268	Mary L. White et al. 1022 Brooklyn Shore Rd. Beach Meadows, N.S., B0J 1H0
20	70100383	Region of Queens Mun. P.O. Box 1264 Liverpool, N.S., B0T 1K0
21	70160288	Eric d. Goulden et.al. 7 Hutt Cre. Aurora, Ont., L4G 0T3
22	70100201	Susan M. Smith 4 306 Sackville St. Toronto, Ont., M5A 3G2
23	70100227	Susan M. Smith 4 306 Sackville St. Toronto, Ont., M5A 3G2
24	70100219	Queens Condominium Corp. Liverpool, N.S., B0T 1K0
25	70100102	Kenneth M. Hirsch 4807 42 Street, Beaumont AB, T4X 1H2
26	70099965	Warren Wismer et.al. 931 Shawnee Dr. SW Calgary, AB T2Y 2G8
27	70099759	Region of Queens Mun. P.O. Box 1264 Liverpool, N.S., B0T 1K0
28	70268289	Owners Unknown
29	70089354	Crown Land (D.N.R.) P.O. Box 698 Halifax, N.S., B3J 2T9
30	70245832	Crown Land (D.N.R.) P.O. Box 698 Halifax, N.S., B3J 2T9

KEY PLAN
Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
- NORTHING / EASTING . . . N. / E.
- LOCAL REGISTRY NUMBER . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING
- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

PROPOSED BOUNDARY AMENDMENT TO LEASE #1205

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–1205

SHEET 1 OF 6 | DATE: JAN. 9, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 1 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND AS WELL AS ADJACENT PARCELS OF LAND, FOR ADDITIONAL SITE INFORMATION, REFER TO SHEETS 2–6.

200 0 200 400 600

SCALE – 1 : 10,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors &
Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
B0W 3M0
Phone: (902) 648–2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

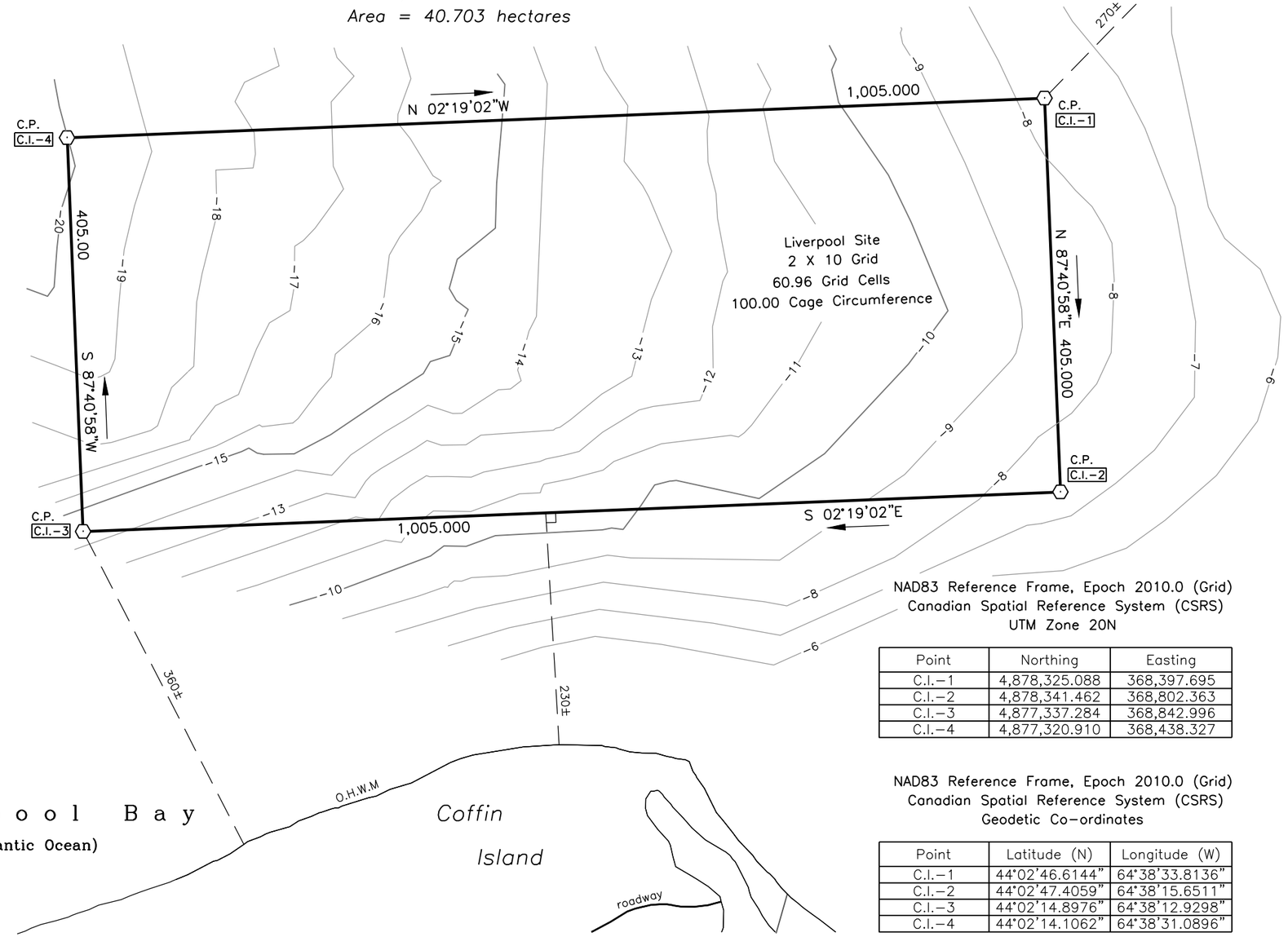
Proposed Marine Aquaculture Site

Liverpool Aquaculture Site

Kelly Cove Salmon Ltd.

Area = 40.703 hectares

GRID NAD83 (CSRS) — NORTH UTM zone 20N



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KEY PLAN

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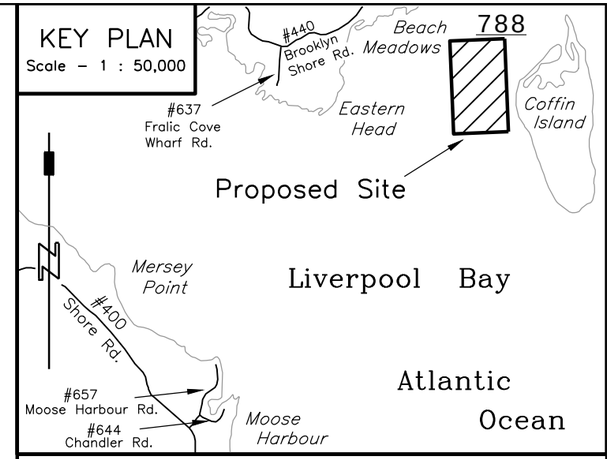

Legend:

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- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

BASIC SEAFLOOR TOPOGRAPHY

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–1205

SHEET 2 OF 6 | DATE: JAN. 9, 2019

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(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
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FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 2 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND BASIC SEAFLOOR TOPOGRAPHY, FOR ADDITIONAL ADDITIONAL SITE INFORMATION, REFER TO SHEETS 1, 3–6.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.

Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
B0W 3M0

Phone: (902) 648–2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0

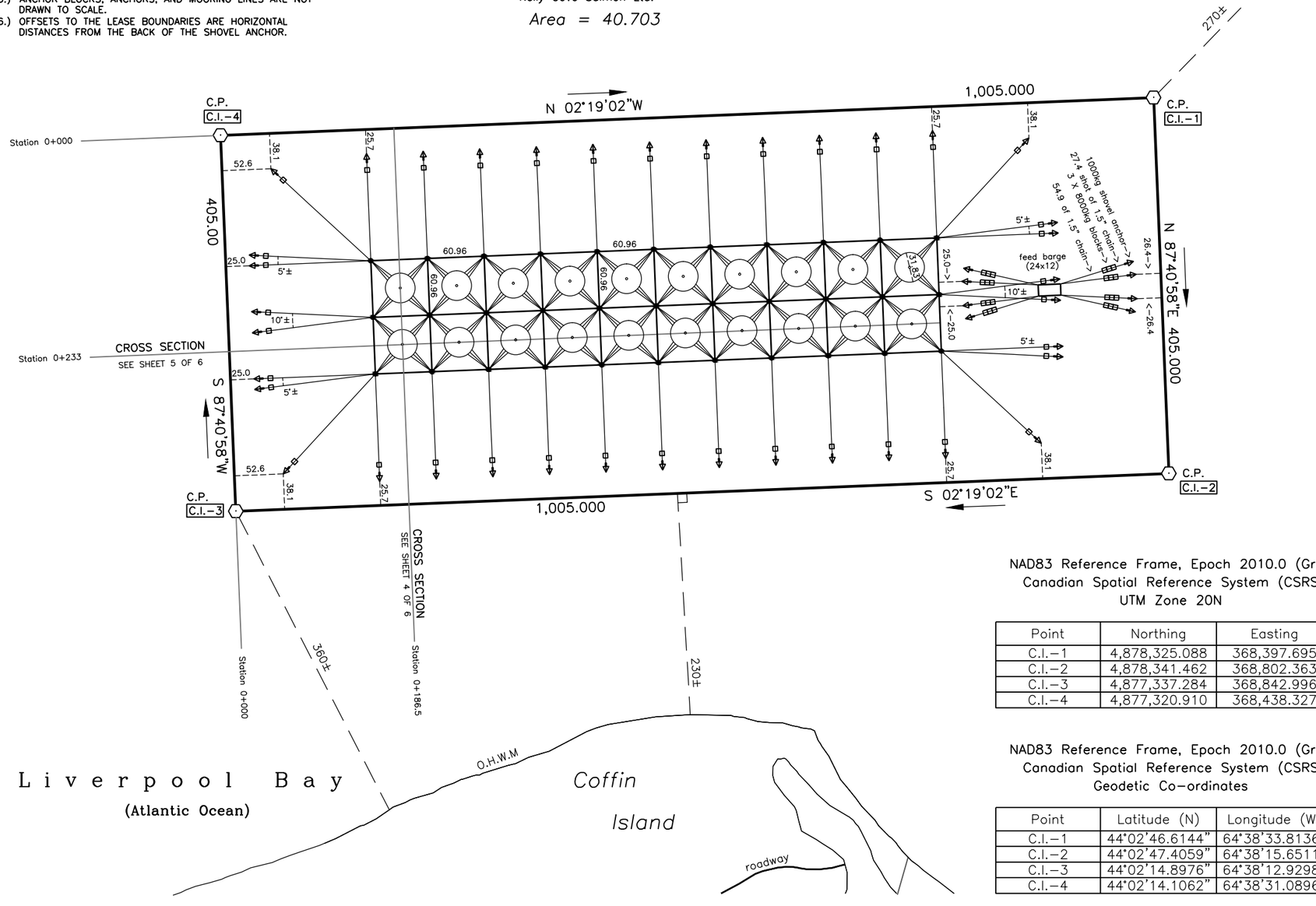
Phone: (902) 875–2110
info@adsurveying.ca

SHEET 3 OF 6 NOTES:
(1.) 14 PROPOSED CAGES IN A 2x10 SUNKEN GRID LAYOUT.
(2.) CAGE DIAMETER IS 31.83m.
(3.) GRID SIZE IS 60.96m x 60.96m (200'x200').
(4. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.
(5.) ANCHOR BLOCKS, ANCHORS, AND MOORING LINES ARE NOT DRAWN TO SCALE.
(6.) OFFSETS TO THE LEASE BOUNDARIES ARE HORIZONTAL DISTANCES FROM THE BACK OF THE SHOVEL ANCHOR.

Proposed Marine Aquaculture Site

Liverpool Aquaculture Site
Kelly Cove Salmon Ltd.
Area = 40.703

GRID NAD83 (CSRS) — NORTH UTM zone 20N



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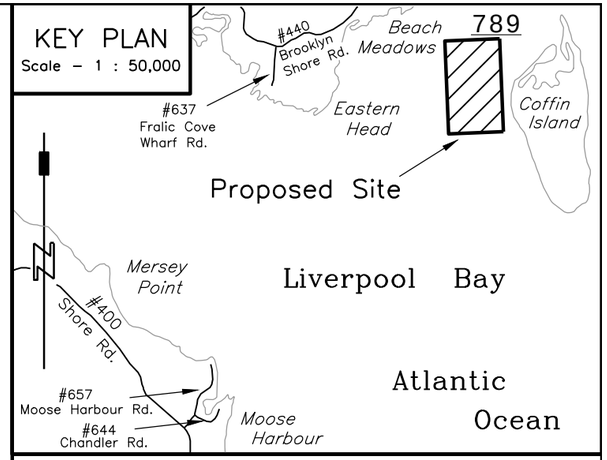

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NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . + 00.0
CONCRETE MOORING
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING
AQUACULTURE CAGE CONFIGURATION
KELLY COVE SALMON LTD. / LIVERPOOL SITE
LOCATED AT:
COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

[redacted]
Jeff Nickerson

A&D JOB #300–18–1205

SHEET 3 OF 6 | DATE: JAN. 9, 2019

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA.
(5.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(6.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(7.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 3 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATIONS OF ALL ANCHORS, CAGES, AND THE GRID/MOORING CONFIGURATION RELATIVE TO THE LEASE BOUNDARIES.

100 0 100 200 300
SCALE – 1 : 5,000 (METRIC)

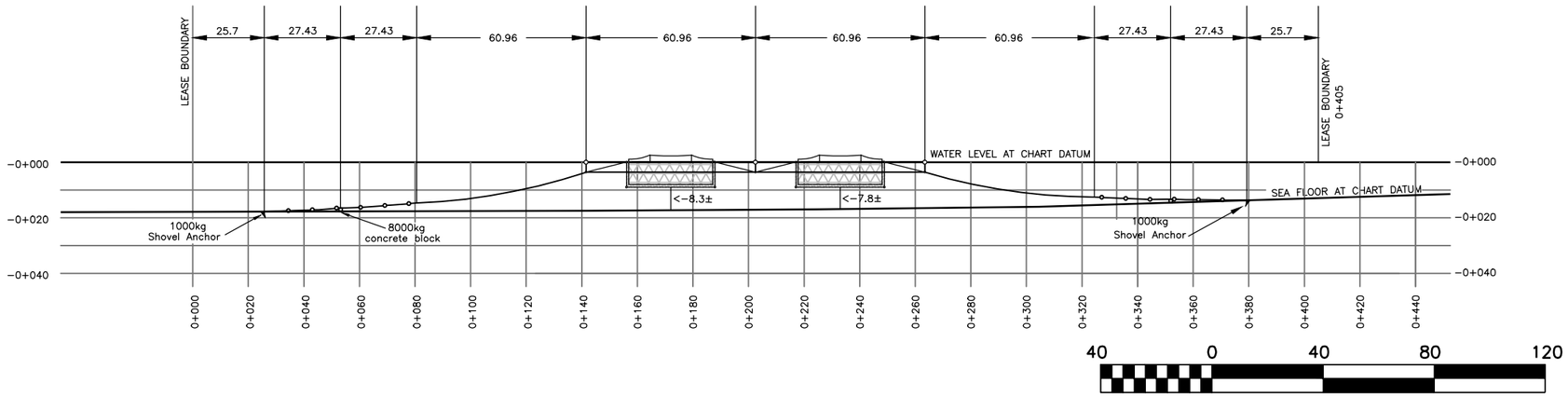
Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
B0W 3M0
Phone: (902) 648–2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+186.5

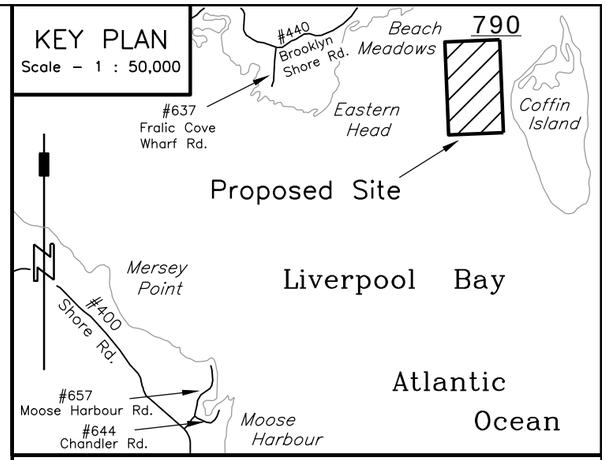
HORIZONTAL SCALE – 1 : 2,000 (METRIC)
VERTICAL SCALE – 1 : 2,000 (METRIC)



SCALE – 1 : 2,000 (METRIC)

KEY PLAN

Scale – 1 : 50,000



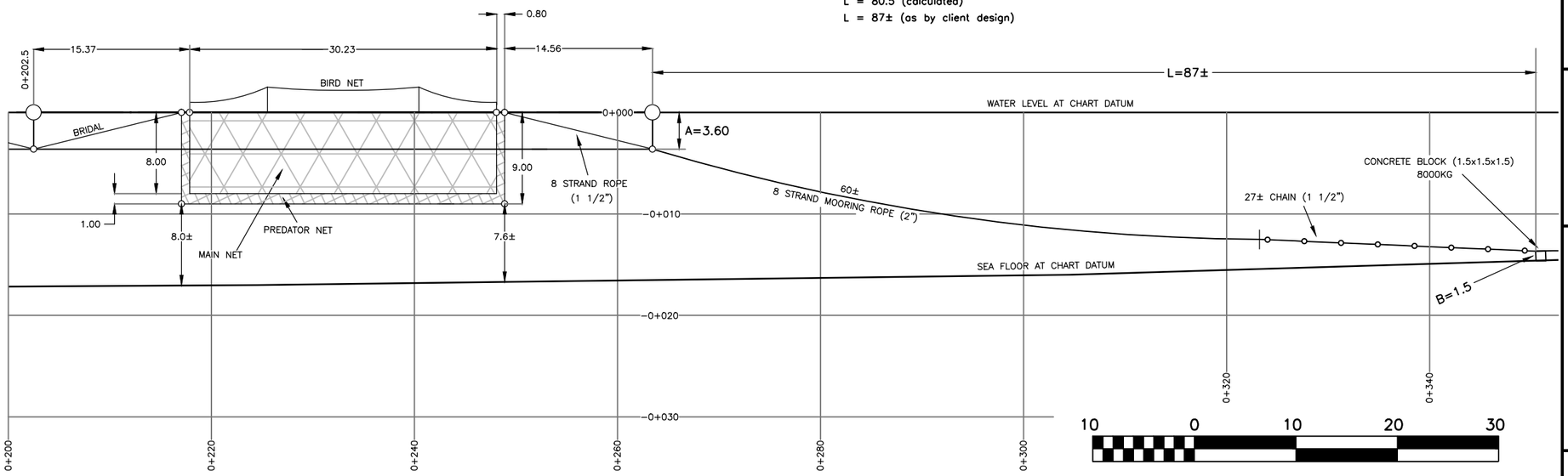
Legend:

- CALCULATED POINT . . . . . C.P.
- CALCULATED . . . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
- NORTHING / EASTING . . . . . N. / E.
- LOCAL REGISTRY NUMBER . . . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . . . + 00.0
- CONCRETE MOORING . . . . . □
- SHOVEL ANCHOR

DETAILED CROSS SECTION – STATION 0+186.5

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 87± (as by client design)



SCALE – 1 : 500 (METRIC)

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LATERAL CROSS–SECTION

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–1205

SHEET 4 OF 6 | DATE: JAN. 9, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
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(6.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(7.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 4 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LATERAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 6.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

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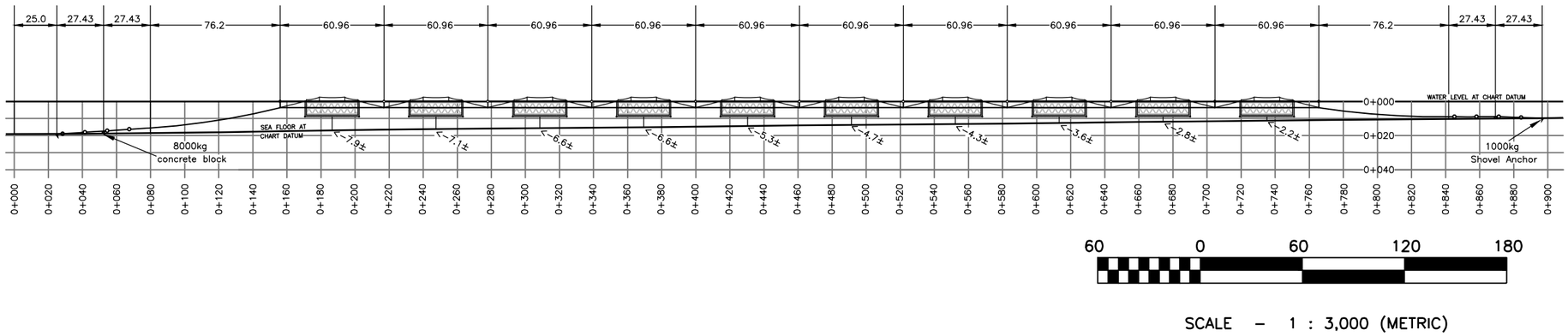
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 3,000 (METRIC)
VERTICAL SCALE – 1 : 3,000 (METRIC)

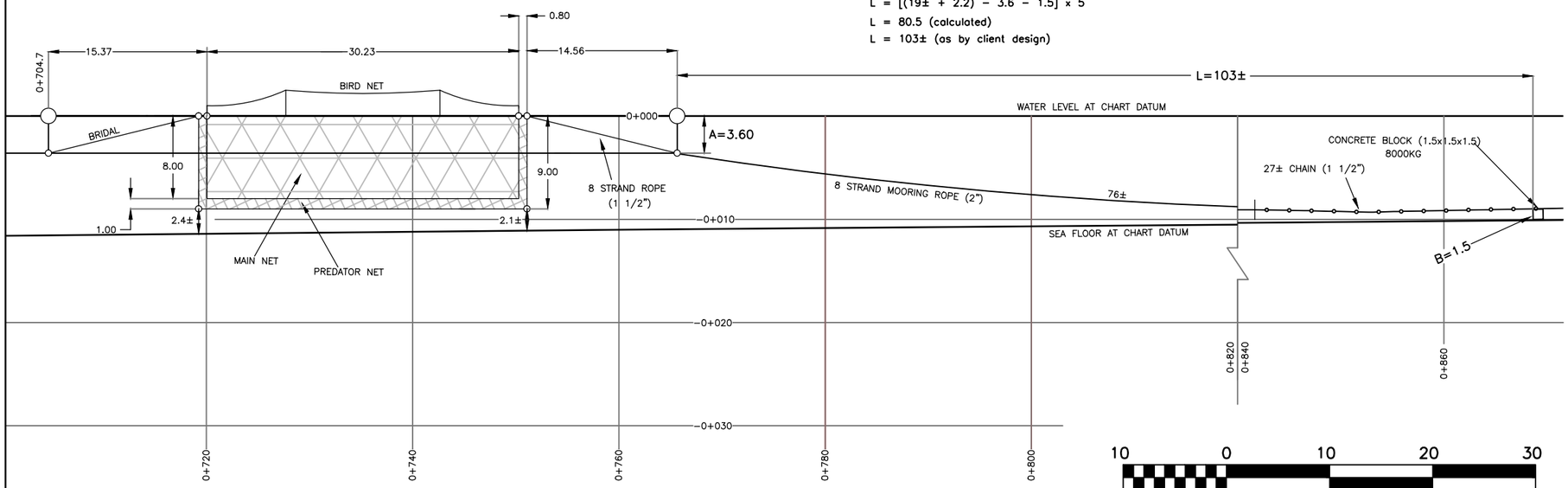


SCALE – 1 : 3,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 103± (as by client design)



SCALE – 1 : 500 (METRIC)

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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 5 OF 6)

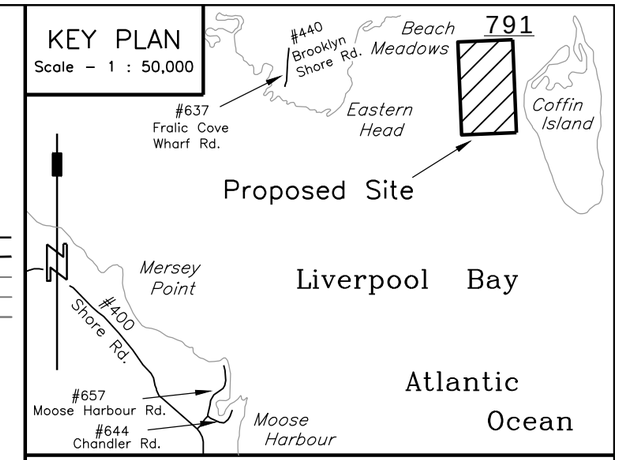
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LONGITUDINAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 6.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT . . . . . C.P.
CALCULATED . . . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
NORTHING / EASTING . . . . . N. / E.
LOCAL REGISTRY NUMBER . . . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . . . + 00.0
CONCRETE MOORING
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LONGITUDINAL CROSS-SECTION

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300-18-1205

SHEET 5 OF 6 | DATE: JAN. 9, 2019

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Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
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80B Ohio Road, P.O. Box 367
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B0T 1W0

Phone: (902) 648-2186
www.adsurveying.ca

Phone: (902) 875-2110
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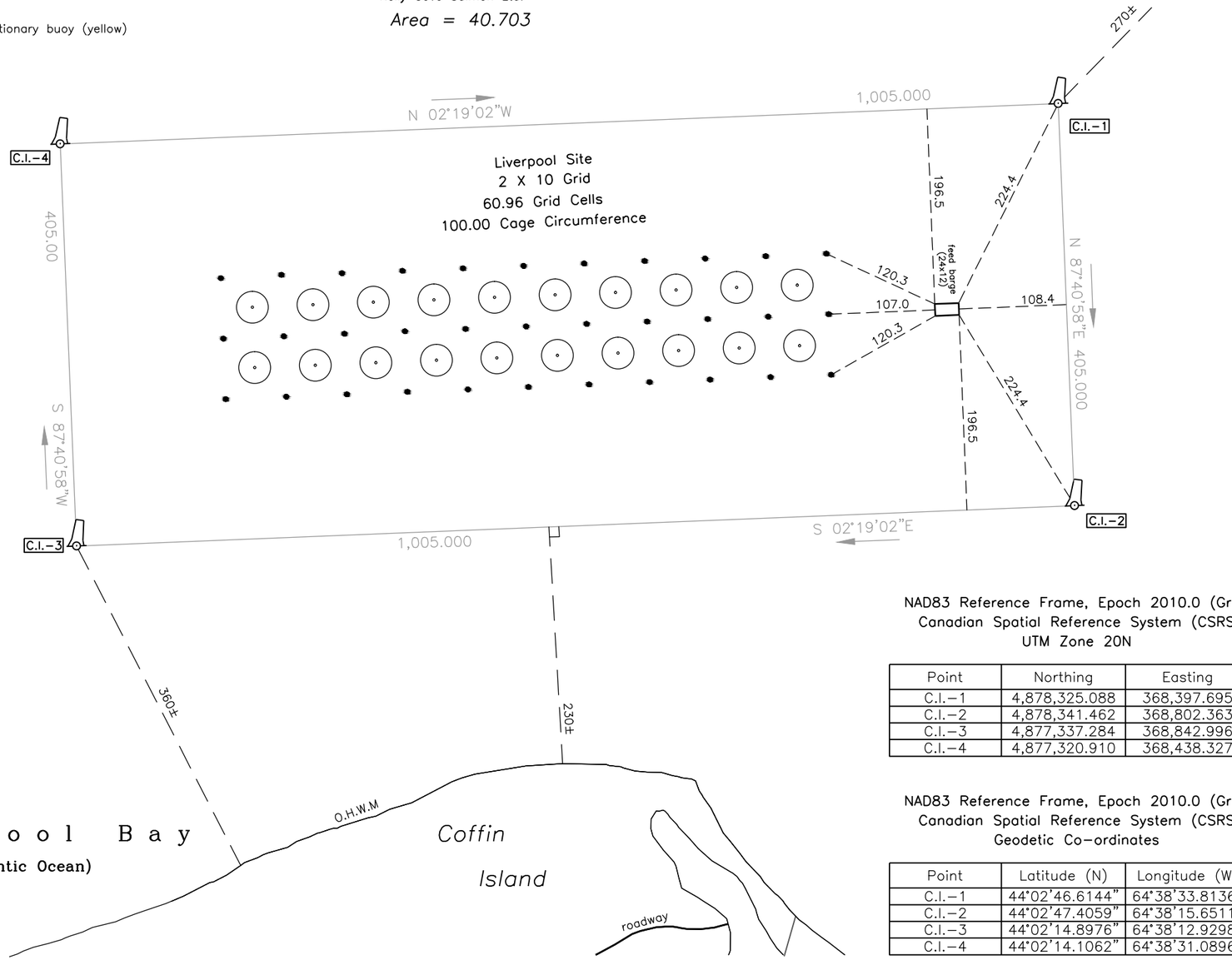
Proposed Navigational Aids Marking

Liverpool Aquaculture Site
Kelly Cove Salmon Ltd.
Area = 40.703

● = compensator buoys (yellow)
⊙ = aquaculture cages (31.83m diameter)
= cautionary buoy (yellow)

GRID NAD83 (CSRS) — NORTH UTM zone 20N



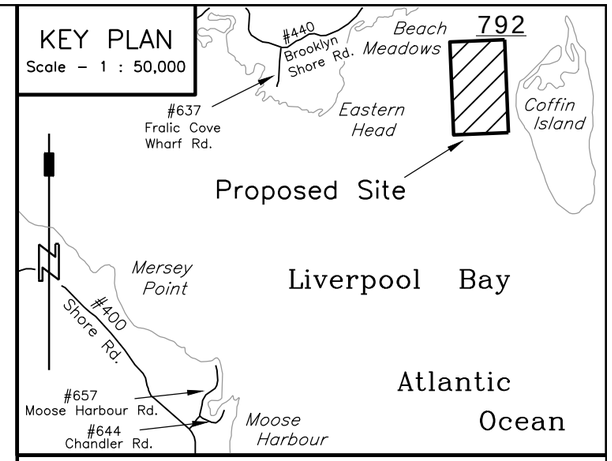
NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
C.I.–1	4,878,325.088	368,397.695
C.I.–2	4,878,341.462	368,802.363
C.I.–3	4,877,337.284	368,842.996
C.I.–4	4,877,320.910	368,438.327

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
C.I.–1	44°02'46.6144"	64°38'33.8136"
C.I.–2	44°02'47.4059"	64°38'15.6511"
C.I.–3	44°02'14.8976"	64°38'12.9298"
C.I.–4	44°02'14.1062"	64°38'31.0896"

KEY PLAN
Scale – 1 : 50,000



Legend:

CALCULATED POINT . . . . . C.P.
CALCULATED . . . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
NORTHING / EASTING . . . . . N. / E.
LOCAL REGISTRY NUMBER . . . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . . . + 00.0
CONCRETE MOORING . . . . . □
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING
PROPOSED NAVIGATIONAL AIDS MARKING PLAN
KELLY COVE SALMON LTD. / LIVERPOOL SITE
LOCATED AT:
COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

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[redacted]

Jeff Nickerson

A&D JOB #300–18–1205

SHEET 6 OF 6 | DATE: JAN. 9, 2019

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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 6 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATION AND TYPES OF ALL NAVIGATIONAL AIDS RELATIVE TO THE PROPOSED LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
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APPENDIX G
Mersey Point - Notice of Works

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NAVIGATION PROTECTION ACT (NPA)
NOTICE OF WORKS FORM

WARNING: Any false or misleading statement with respect to this form and supporting documentation, including the misrepresentation of a material fact, may result in the refusal to authorize or issue Approval, or result in the suspension or cancellation of an Approval obtained through fraudulent means.

PRIOR TO COMPLETING THIS FORM:
1. Determine if your project is on a navigable water listed on the Schedule to the NPA. A *Notice to the Minister* is required for works on scheduled navigable waters. Works on non-scheduled navigable waters may be eligible to opt in; if requesting Opt-in, the Opt-in annex must be included with your *Notice to the Minister*.
2. Self assess your project against the *Minor Works Order* to determine if a *Notice to the Minister* is required. Links to the NPA Schedule, Order and Regulations can be accessed through the Navigation Protection Program (NPP) website at http://www.tc.gc.ca/eng/programs-621.html.

PURPOSE

This *Notice of Works* Form and its supporting documentation (as well as other relevant information) which may be required for a review by Transport Canada (TC), once completed and submitted, comprise the *Notice to the Minister* as required under the NPA. For assistance in completing your submission, refer to the guidance provided on the NPP website under "Apply to the NPP" including the *Guide to the Navigation Protection Program's Notification, Application and Review Requirements*.

SUPPORTING DOCUMENTATION REQUIREMENTS

Mandatory Information Checklist (incomplete information will be returned with no action)	Recommended Information (may expedite your review)
☑ Completed and signed "Notice of Works Form" with all mandatory fields completed	☑ Body of water details
☑ Map showing location of project[1]	☑ Land use/Ownership information
☑ Top/Plan drawing with dimensions[1]	☑ Body of water use information
☑ Side/Profile drawing with dimensions[1]	☑ Impacts, obstructions and mitigation plans
	☑ Any environmental review information
[1] 6 copies if hard copy submission	☑ Operation, maintenance and marking plans
	☐ Photographs of work site and body of water
	☐ Aboriginal consultation results
	☑ Other government agencies involved
	☐ Water lot lease information
	☐ Opt-in request annex (non-scheduled navigable waters only)

When submitting a Notice to the Minister, owners should note:

- All plans and drawings must be leg ble when printed on 11" x 17" paper
- For e-mail submissions, provide a scan of all relevant supporting documentation
- Your completed Notice to the Minister should be sent to the appropriate regional office as outlined below

TRANSPORT CANADA NAVIGATION PROTECTION PROGRAM REGIONAL OFFICE LOCATIONS

Pacific Region
820-800 Burrard Street
Vancouver BC V6Z 2J8
Telephone: 604-775-8867
Email: NPPPAC-PPNPAC@tc.gc.ca

Prairie and Northern Region
Canada Place 1100-9700 Jasper Ave
Edmonton AB T5J 4E6
Telephone: 780-495-8215
Email: NPPPNR-PPNRPN@tc.gc.ca

Ontario Region
100 South Front Street, 1st Floor
Sarnia ON N7T 2M4
Telephone: 519-383-1863
Email: NPPONT-PPNONT@tc.gc.ca

Headquarters
(For info on the NPP and NPA ONLY)
Notices not processed at this office
Tower C, 330 Sparks Street, 18th Floor
Ottawa ON K1A 0N5
Telephone: 613-991-3476
Email: NPPHQ-PPNAC@tc.gc.ca

Quebec Region
401-1550 d'Estimauville Avenue, 5th Floor
Quebec QC G1J 0C8
Telephone: 877-646-6420
Email: PPNQUE-NPPQUE@tc.gc.ca

Atlantic Region
95 Foundry Street, 6th Floor
P.O. Box 42
Moncton NB E1C 8K6
Telephone: 506-851-3113
Email: NPPATL-PPNATL@tc.gc.ca

NAVIGATION PROTECTION ACT
NOTICE OF WORKS FORM

TC file number (if known):

Are you the riparian property owner? ◯ Yes ◉ No

GENERAL INFORMATION

Official and/or local name(s) of the body of water (Required)	Is the body of water listed on the schedule to the NPA?
Liverpool Bay	◉ Yes ◯ No ◯ Unknown
Are you also requesting an Approval, if required?	Is this an Opt-in request?
◉ Yes ◯ No	◯ Yes ◉ No
Are you representing an Aboriginal group?	Is the work near/on First Nations reserve or land claim?
◯ Yes ◉ No	◯ Yes ◉ No ◯ Unknown
Does this project involve throwing or depositing materials in water?	Does this project involve dewatering a body of water?
◯ Yes ◉ No	◯ Yes ◉ No

OWNER CONTACT INFORMATION[2]

Individual or company name (Required)	Contact name (Required)
Kelly Cove Salmon Ltd.	Jeff Nickerson

Mailing address (Required)

P.O.Box 33

City/Town (Required)	Province/Territory (Required)	Postal code (Required)
Bridgewater	Nova Scotia	B4V 2W6

Primary telephone number (Required)	Other telephone number	E-mail
[redacted]		jnickerson@cookeaque.com

Owner's agent/mandatary (contractor/consultant/representative/co-proponent, if any)

Company name	Contact name
Sweeney International Marine Corp.	Leah Lewis-McCrea

Mailing address

46 Milltown Blvd.

City/Town	Province/Territory	Postal code
St. Stephen	NB	E3L 1G3

Primary telephone number	Other telephone number	E-mail
[redacted]		llewis@simcorp.ca

WORK SITE INFORMATION

Nearest municipality/county/district (Required)	Province/Territory (Required)
Liverpool, Queens County	Nova Scotia

Site location such as lot, concession, section, township, range, meridian, 911 address, property identification, etc. (Required)

Mersey Point aquaculture site is located in Liverpool Bay, approximately 3.8 kilometers south southeast of the town of Liverpool. The site is east of Mersey Point, between Black Point and Moose Harbour.

Site position Latitude North (Required)	Site position Longitude West (Required)
Degrees 44 Minutes 01 Seconds 36.1	Degrees 64 Minutes 39 Seconds 59.6

Hydro chart number:	Topo map number:
4211	

Canada

Body of water details, such as characteristics, bank/bottom features, biological components, flow/tides, etc.

The Mersey Point site is located east of Mersey Point between Black Point and Moose Harbour in Liverpool Bay, occupies a 40.703 ha parcel, and is located over waters ranging from 7 - 20 m in depth. The sediment composition of the seafloor is composed primarily of cobble, rubble, and hard packed sand, with infrequent boulders.

Potential obstructions, such as natural/man-made, other works, navigation aids, etc.

This site consists of plastic circular cages and compensator buoys. The outside corners of the lease are marked with a 0.6 m buoy equipped with a light and radar reflectors. Liverpool Bay also has a marked navigation channel.

Land use/Ownership, such as past/current, private/government, rural/suburban, coastal, environmental, etc.

Kelly Cove Salmon Ltd. has submitted an application for the Mersey Point site, as described in this document.

BODY OF WATER USE INFORMATION

Navigation types (check all that apply)

☑ Commercial ☑ Recreational

Maximum vessel size

Length _____ Width _____ Draft _____

Traffic direction

◯ One-way ◉ Two-way

Manoeuvrability (check all that apply)

☐ Poor ☐ Good ☑ Excellent

Day/Night

◯ Day ◯ Night ◉ Both

Volume

◯ Low ◉ Med ◯ High

Navigation season(s) (check all that apply)

☑ Winter ☑ Spring ☑ Summer ☑ Fall

Other uses such as cottagers, special events, fishing, etc

The area surrounding the proposed Mersey Point site is used primarily by fishing vessels traveling in and out of the port of Liverpool. Recreational vessels also frequent this area. The primary vessel traffic around the proposed site will be from vessels servicing the site.

PROJECT INFORMATION

Name of work such as bridge, dam, marina, etc. (Required)

Aquaculture site

Type of work (check all that apply) (Required)

☑ Construct ☐ Place ☑ Alter

☐ Repair ☐ Decommission ☐ Rebuild

☑ Permanent ☐ Temporary ☐ Remove

Brief project description (or attach) such as status, structures, operation, etc. (Required)

The aquaculture site consists of two strings of 10 circular 100 m circumference cages. Cages will be present on site all year round.

Method of construction such as temporary works, activities, etc. (Required)

Aquaculture site consists of anchored cage systems (see attached plans). Crews will visit the site daily to feed and maintain cage system.

Anticipated impacts such as source, severity, mitigation, marking, waste/debris management, use, cumulative, etc.

Expected start date (dd-mm-yyyy) (Required)	Expected completion date (dd-mm-yyyy) (Required)
Spring 2021	**Ongoing**

Canada

ENVIRONMENTAL REVIEW INFORMATION

Is the work located on Federal lands?

◯ Yes ◉ No ◯ Unknown

Is the project a designated project under the *Regulations Designating Physical Activities* under the *Canadian Environmental Assessment Act, 2012*?

◯ Yes ◉ No ◯ Unknown

Is the project subject to Northern Environmental Assessment (EA) Regime(s)?

◯ Yes ◉ No ◯ Unknown

If yes, identify the northern EA regime(s) that apply

- ☐ Inuvialuit Final Agreement (IFA)
- ☐ *Mackenzie Valley Resource Management Act* (MVRMA)
- ☐ Nunavut Land Claims Agreement (NLCA)
- ☐ *Yukon Environmental and Socio-economic Assessment Act* (YESAA)

Other Federal Organizations involved

- ☑ Canadian Environmental Assessment Agency (CEAA)
- ☑ Fisheries and Oceans Canada (DFO)
- ☐ Major Projects Management Office (MPMO)
- ☐ Aboriginal Affairs and Northern Development Canada (AANDC)
- ☐ Environment Canada (EC)
- ☐ Natural Resources Canada (NRCan)
- ☐ Northern Projects Management Office (NPMO)
- ☐ Other: _____

OWNER AUTHORIZATION[2]

I hereby certify that the information contained herein and in any of the supporting documents is complete, true and accurate to the best of my knowledge and belief, and that I am authorized, as the owner, to submit this Notice to the Minister.

[redacted]

Signature (Required)

14/2/2019

Date (dd-mm-yyyy) (Required)

[redacted]

Print Name (Required)

FOR OFFICE USE ONLY

	Date stamped (dd-mm-yyyy)

[2] "Owner", in relation to a work, means the actual or reputed owner of the work or that owner's agent or mandatary. It includes a person who is in possession or claiming ownership of the work and a person who is authorizing or otherwise responsible for the construction, placement, alteration, repair, rebuilding, removal, decommissioning, maintenance, operation, safety or use of the work. It also includes a person who proposes to construct or place a work.

The personal information provided on this Notice to the Minister is collected under the authority of the ***Navigation Protection Act***, sections 4, 5, 6, 9, 21, 22, 23 and 24. This information is required for the purpose of processing applications made under the above-noted sections for proposed, commenced or existing works that are or will be constructed, placed, altered, repaired, rebuilt, removed or decommissioned in, on, over, under, through or across any navigable water in Canada. The personal information collected is described in a personal information bank entitled ***Navigation Protection Program*** (bank number TC PPU 086). Under the provisions of the ***Privacy Act***, individuals have the right of access to, correction of and protection of their personal information. Instructions for obtaining personal information are provided in Info Source, a copy of which is available in major public and academic libraries or online at http:// ww.infosource.gc.ca

Canada

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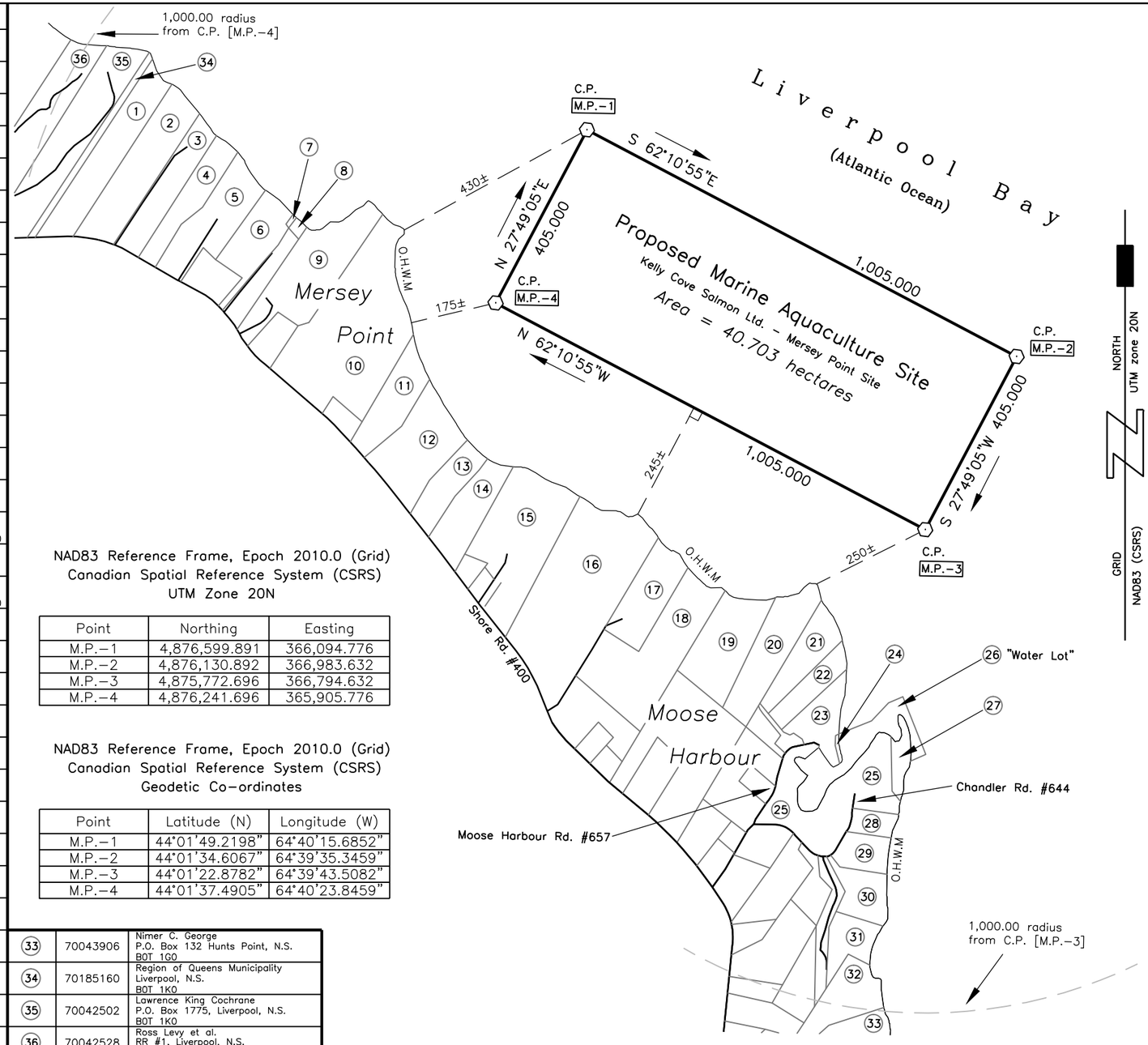
#	P.I.D. #	OWNER / ADDRESS
1	70042551	Cindy Lorene Hartlen 2 Dresden Ct., Lower Sackville, N.S. B4C 3W8
2	70042577	Gordon Levy RR #1, Liverpool, N.S. B0T 1K0
3	70042619	John P. Doucette et al. P.O. Box 1752, Liverpool, N.S. B0T 1K0
4	70216825	Ann Louise Levy P.O. Box 751, Liverpool, N.S. B0T 1K0
5	70228986	Peter Lee Stewart et ux. RR #1, Liverpool, N.S. B0T 1K0
6	70042684	Carey McKiel P.O. Box 353, Yellowknife, N.T. X1A 2N3
7	70042692	Carey McKiel P.O. Box 353, Yellowknife, N.T. X1A 2N3
8	70230677	Kenneth Andrews et ux. P.O. Box 1661, Liverpool, N.S. B0T 1K0
9	70229133	Thomas H. Randall et ux. P.O. Box 910, Liverpool, N.S. B0T 1K0
10	70042783	Michael Kenneth Lohnes et ux. RR #1, Liverpool, N.S. B0T 1K0
11	70245204	Dr. R. Myers Professional Corp. 569 Shore Rd., Liverpool, N.S. B0T 1K0
12	70245212	David R. Myers 130 Whitecap Ridge, Black Point, N.S., B0J 1B0
13	70245220	Dr. R. Myers Professional Corp. 569 Shore Rd., Liverpool, N.S. B0T 1K0
14	70042890	Roger V. Savage et ux. 611 Shore Rd., Liverpool, N.S. B0T 1K0
15	70043013	Ronald Henry Miller et ux. RR #1, 643 Shore Rd., Liverpool, B0T 1K0
16	70163027	Angus William Smyth et ux. 163 GB 13, Site 5, RR #1 Sand Beach Rd., Liverpool, B0T 1K0
17	70261284	David Thomas Wright et al. 695 Shore Rd., Mersey Point, N.S. B0T 1K0
18	70043054	Angus William Smyth et ux. 163 GB 13, Site 5, RR #1 Sand Beach Rd., Liverpool, B0T 1K0
19	70043286	Phillip Irwin Brooklyn, N.S. B0J 1H0
20	70043294	Donald Whynot P.O. Box 948, Liverpool, N.S. B0T 1K0
21	70043633	Victor A. Frank et ux. 76 Clouser Rd., Littlestown, PA., U.S.A., 17340-9541
22	70043625	Michael T. Ashcroft et al. 28 Tremaine Ter, Cobourg, ON., K9A 5A8
23	70043617	John O'Brien et ux. 10 RR #4, Hill Country Dr., Stouffville, Ont., L4A 7X5
24	70247960	H.M. in right of Canada (D.F.O.) P.O. Box 698, Halifax, N.S. B3J 2T9
25	70043682	Mersey Seafoods Limited P.O. Box 1290, Liverpool, N.S. B0T 1K0
26	70247952	H.M. in right of Canada (D.F.O.) P.O. Box 698, Halifax, N.S. B3J 2T9
27	70043690	H.M. in right of Canada P.O. Box 1724, Liverpool, N.S. B0T 1K0
28	70043666	Wayne F. Rafuse et ux. P.O. Box 204, Liverpool, N.S. B0T 1K0
29	70043609	Bettina Herdt 37 AM Wiesengrund Offenbach Germany, D-63075
30	70043641	Sheila A. Rear et ux. 3049 Gavin Pl., Duluth, GA., U.S.A. 30096
31	70189972	Matthew P. Kuruc et ux. 340 Cresent, Leonia, N.J., U.S.A. 07605
32	70043914	2220092 Ontario Inc. 2489 Bloor St., Toronto, Ontario M6S 1R6
33	70043906	Nimer C. George P.O. Box 132 Hunts Point, N.S. B0T 1G0
34	70185160	Region of Queens Municipality Liverpool, N.S. B0T 1K0
35	70042502	Lawrence King Cochrane P.O. Box 1775, Liverpool, N.S. B0T 1K0
36	70042528	Ross Levy et al. RR #1, Liverpool, N.S. B0T 1K0



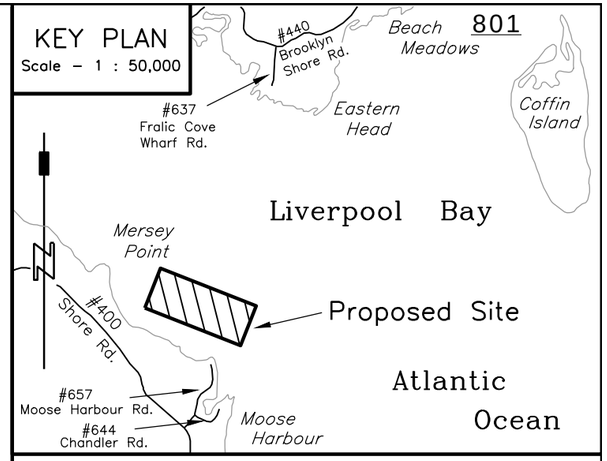
NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
M.P.-1	4,876,599.891	366,094.776
M.P.-2	4,876,130.892	366,983.632
M.P.-3	4,875,772.696	366,794.632
M.P.-4	4,876,241.696	365,905.776

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co-ordinates

Point	Latitude (N)	Longitude (W)
M.P.-1	44°01'49.2198"	64°40'15.6852"
M.P.-2	44°01'34.6067"	64°39'35.3459"
M.P.-3	44°01'22.8782"	64°39'43.5082"
M.P.-4	44°01'37.4905"	64°40'23.8459"

KEY PLAN
Scale - 1 : 50,000



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
- NORTHING / EASTING . . . N. / E.
- LOCAL REGISTRY NUMBER . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING . . . □
- SHOVEL ANCHOR . . . ⚓

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

AQUACULTURE SITE APPLICATION

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300-18-MERSEY POINT

SHEET 1 OF 6 | DATE: January 18, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 1 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND AS WELL AS ADJACENT PARCELS OF LAND, FOR ADDITIONAL SITE INFORMATION, REFER TO SHEETS 2-6.

200 0 200 400 600

SCALE - 1 : 10,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
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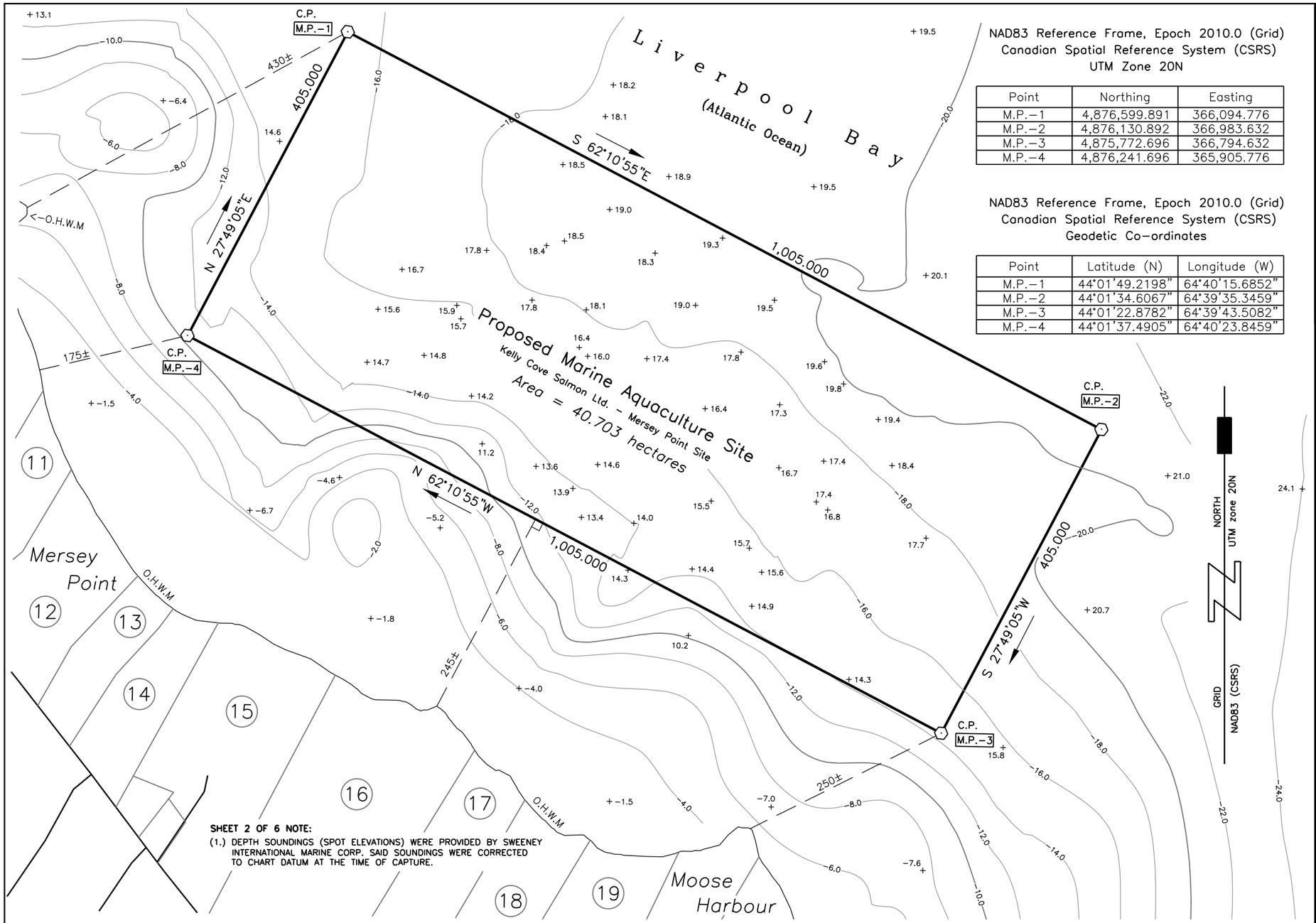
Phone: (902) 648-2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875-2110
info@adsurveying.ca



NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
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M.P.–2	4,876,130.892	366,983.632
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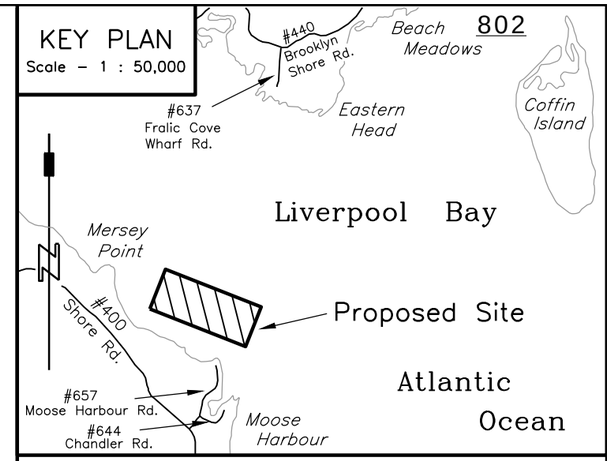
M.P.–2	44°01'34.6067"	64°39'35.3459"
M.P.–3	44°01'22.8782"	64°39'43.5082"
M.P.–4	44°01'37.4905"	64°40'23.8459"

SHEET 2 OF 6 NOTE:
(1.) DEPTH SOUNDINGS (SPOT ELEVATIONS) WERE PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM AT THE TIME OF CAPTURE.

KEY PLAN
Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P.
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	
OTHER BOUNDARY	
TIE LINES	
NOT TO SCALE	
MAJOR CONTOURS	
MINOR CONTOURS	
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	
SHOVEL ANCHOR	

AQUACULTURE SITE DEVELOPMENT PLANS
SHOWING
BASIC SEAFLOOR TOPOGRAPHY
KELLY COVE SALMON LTD. / MERSEY POINT
LOCATED AT:
MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–MERSEY POINT

SHEET 2 OF 6 | DATE: January 18, 2019

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
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(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen Acker
Stephen D.F. Acker
N.S.L.S.
639
MEMBER

PURPOSE OF PLAN (SHEET 2 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND BASIC SEAFLOOR TOPOGRAPHY, FOR ADDITIONAL ADDITIONAL SITE INFORMATION, REFER TO SHEETS 1, 3–6.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
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Phone: (902) 648–2186
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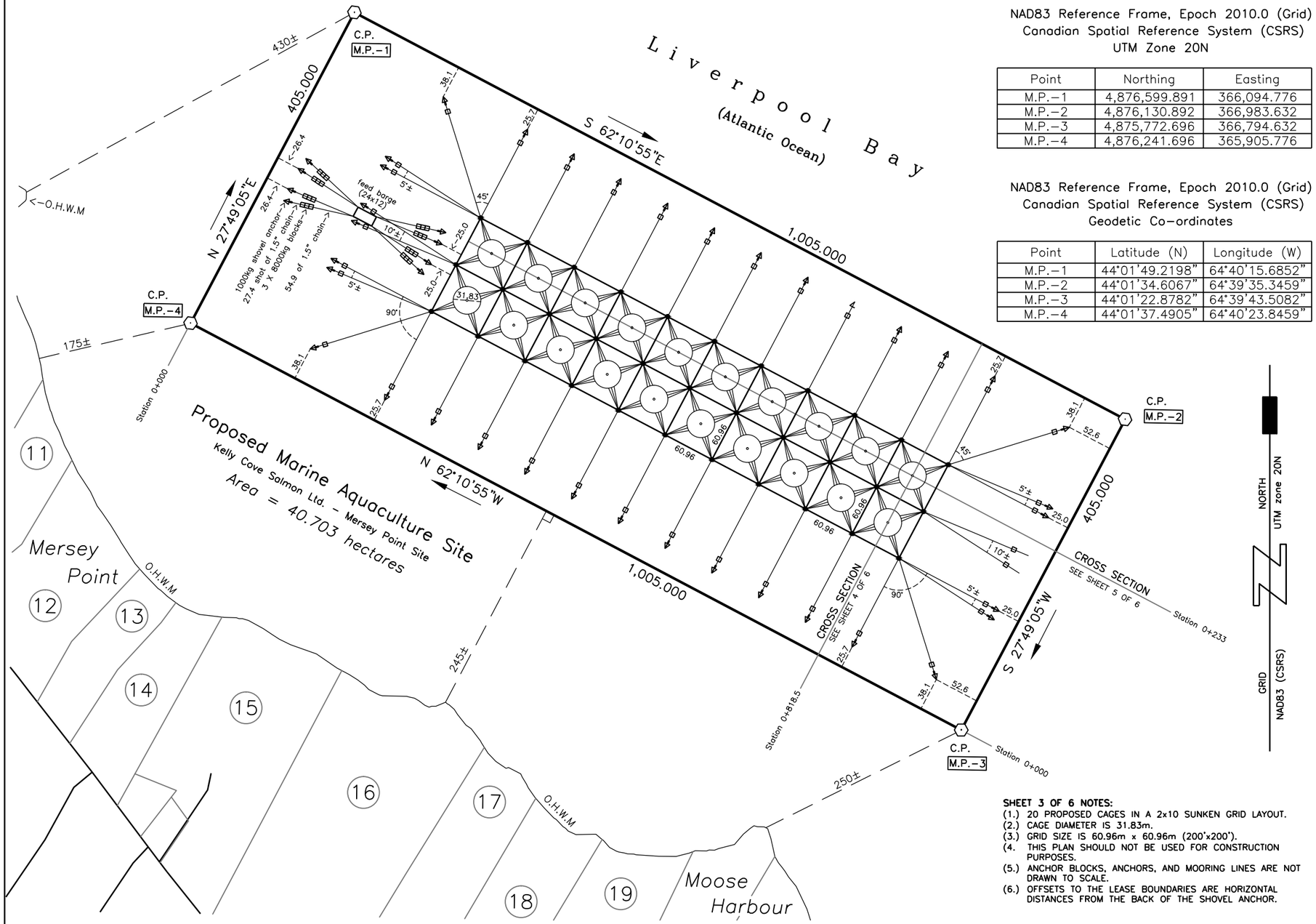
80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca



NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
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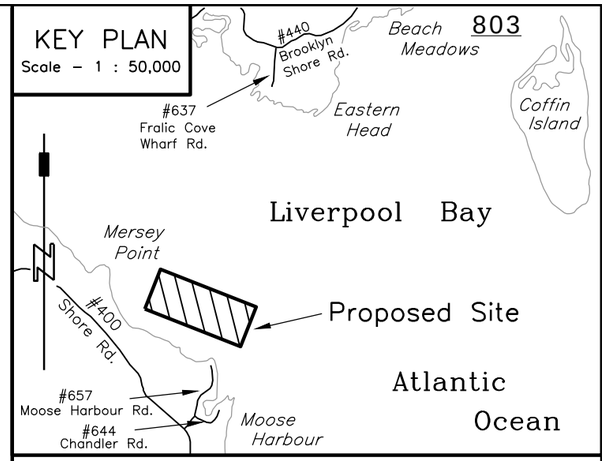
M.P.–3	44°01'22.8782"	64°39'43.5082"
M.P.–4	44°01'37.4905"	64°40'23.8459"

SHEET 3 OF 6 NOTES:
(1.) 20 PROPOSED CAGES IN A 2x10 SUNKEN GRID LAYOUT.
(2.) CAGE DIAMETER IS 31.83m.
(3.) GRID SIZE IS 60.96m x 60.96m (200'x200').
(4. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.
(5.) ANCHOR BLOCKS, ANCHORS, AND MOORING LINES ARE NOT DRAWN TO SCALE.
(6.) OFFSETS TO THE LEASE BOUNDARIES ARE HORIZONTAL DISTANCES FROM THE BACK OF THE SHOVEL ANCHOR.

KEY PLAN
Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P. ⊙
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	———
OTHER BOUNDARY	———
TIE LINES	– – – –
NOT TO SCALE	– – –⁄\– – –
MAJOR CONTOURS	———
MINOR CONTOURS	———
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	□
SHOVEL ANCHOR	⚓

AQUACULTURE SITE DEVELOPMENT PLANS
SHOWING
AQUACULTURE CAGE CONFIGURATION
KELLY COVE SALMON LTD. / MERSEY POINT
LOCATED AT:
MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–MERSEY POINT

SHEET 3 OF 6 | DATE: January 18, 2019

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 3 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATIONS OF ALL ANCHORS, CAGES, AND THE GRID/MOORING CONFIGURATION RELATIVE TO THE LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
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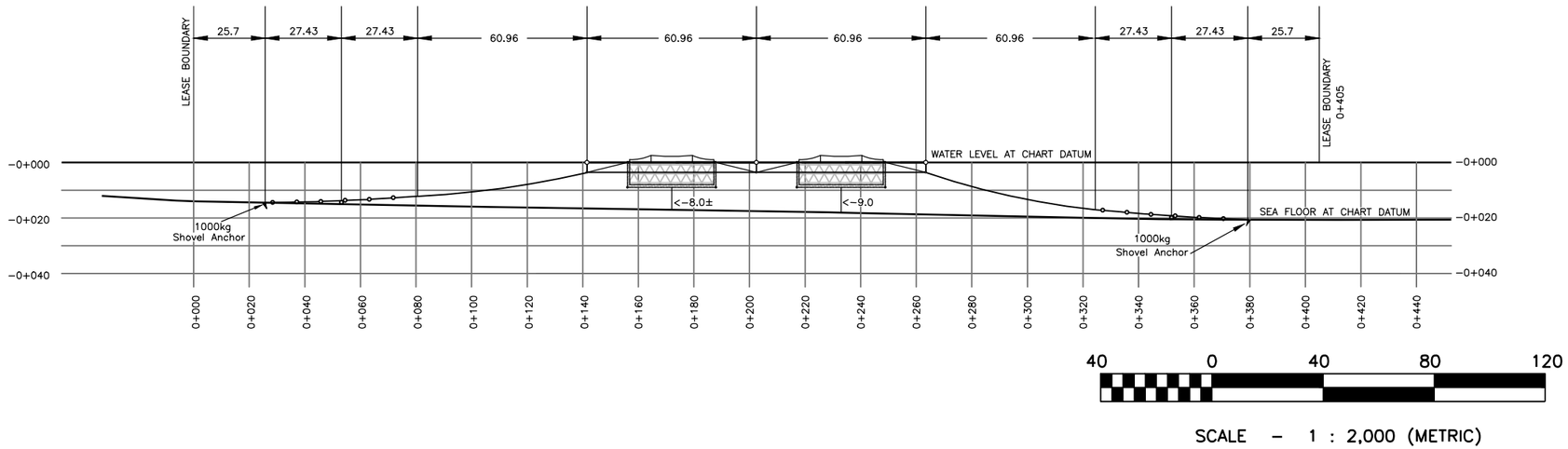
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 2,000 (METRIC)
VERTICAL SCALE – 1 : 2,000 (METRIC)

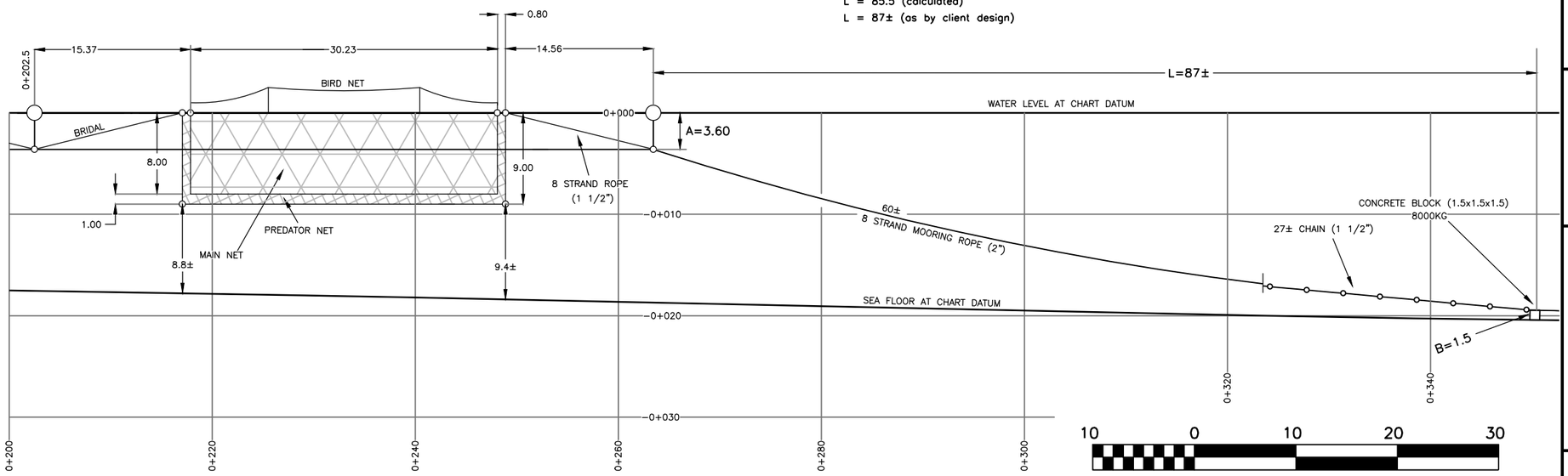


40 0 40 80 120

SCALE – 1 : 2,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)



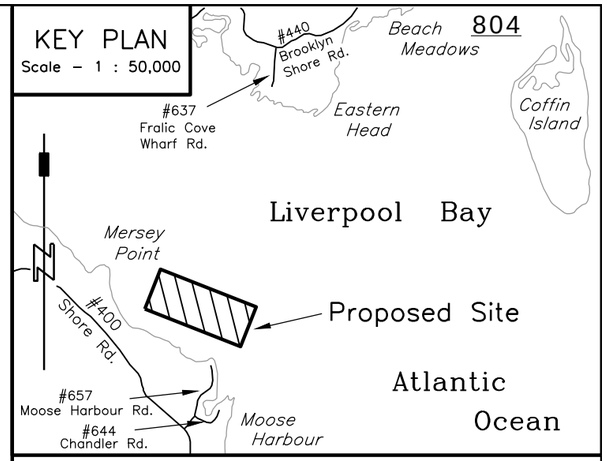
5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(20± + 2.2) – 3.6 – 1.5] x 5
L = 85.5 (calculated)
L = 87± (as by client design)

10 0 10 20 30

SCALE – 1 : 500 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P.
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	
OTHER BOUNDARY	
TIE LINES	
NOT TO SCALE	
MAJOR CONTOURS	
MINOR CONTOURS	
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	□
SHOVEL ANCHOR	

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LATERAL CROSS–SECTION

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–MERSEY POINT

SHEET 4 OF 6 | DATE: January 18, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 4 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LATERAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 5.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
B0W 3M0

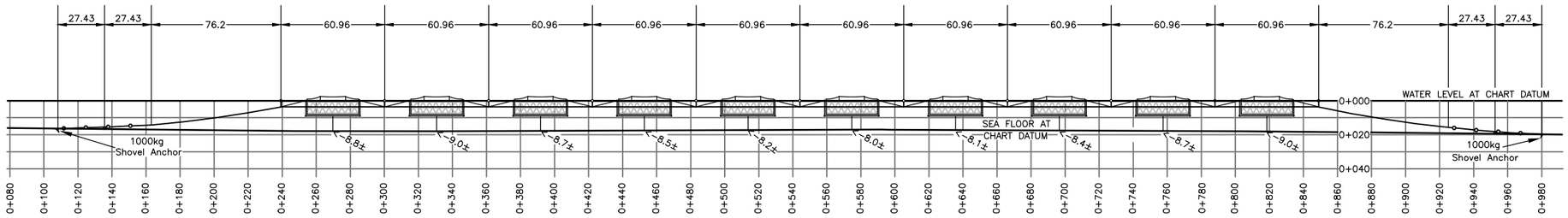
80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0

Phone: (902) 648–2186
www.adsurveying.ca

Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 3,000 (METRIC)
VERTICAL SCALE – 1 : 3,000 (METRIC)



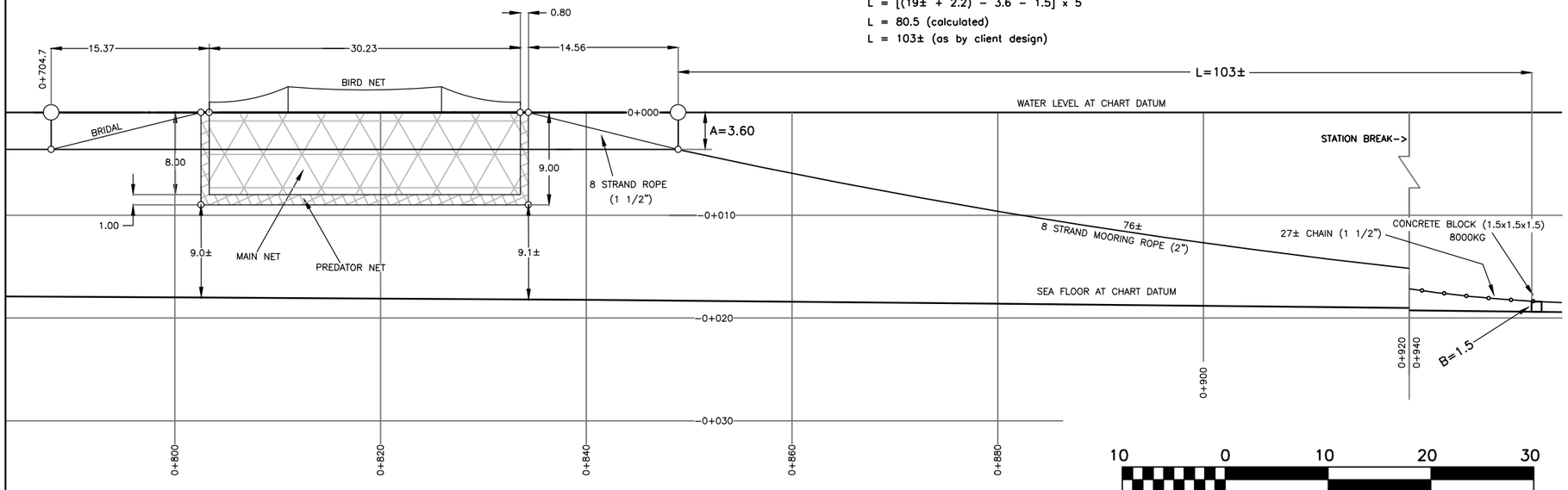
60 0 60 120 180

SCALE – 1 : 3,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 103± (as by client design)

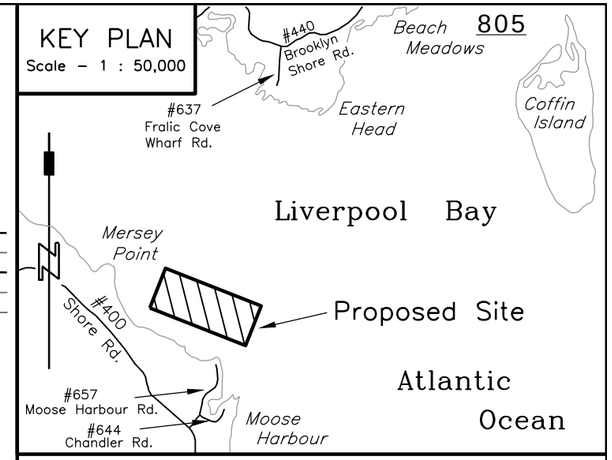


10 0 10 20 30

SCALE – 1 : 500 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . . . C.P.
- CALCULATED . . . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
- NORTHING / EASTING . . . . . N. / E.
- LOCAL REGISTRY NUMBER . . . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . . . + 00.0
- CONCRETE MOORING
- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LONGITUDINAL CROSS-SECTION

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300-18-MERSEY POINT

SHEET 5 OF 6 | DATE: January 18, 2019

NOTES:

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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S.
639
MEMBER

PURPOSE OF PLAN (SHEET 5 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LONGITUDINAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

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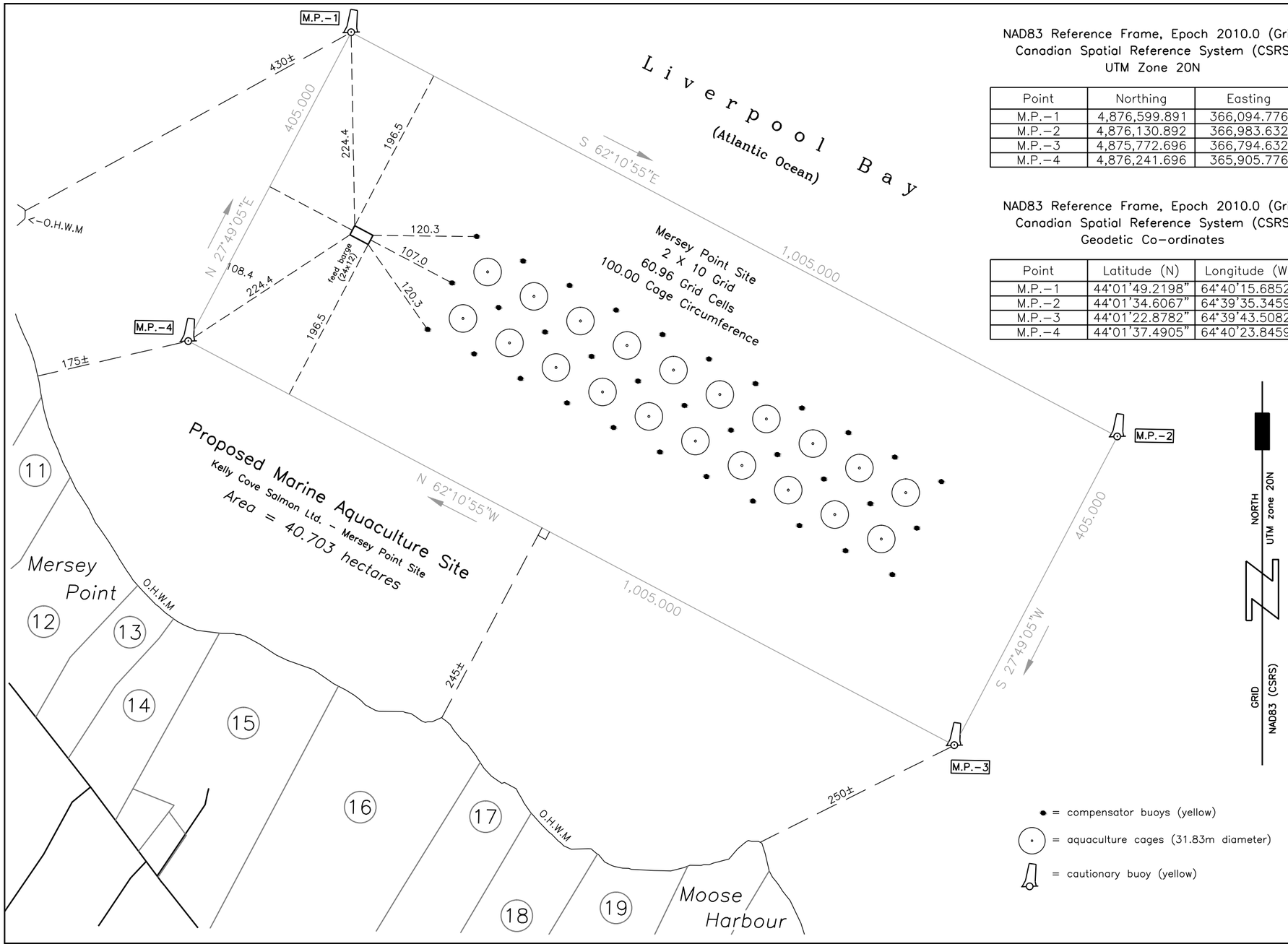


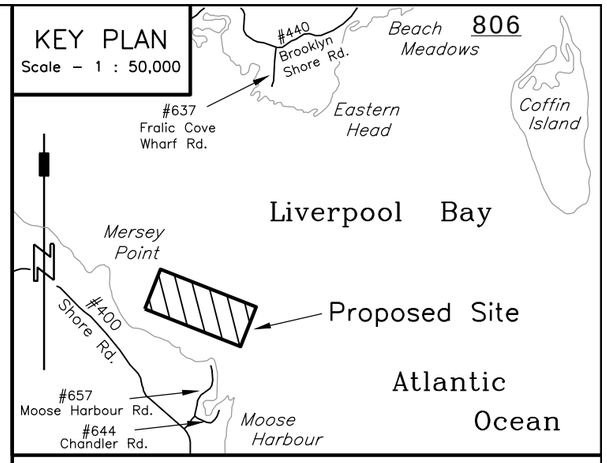
NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
M.P.–1	4,876,599.891	366,094.776
M.P.–2	4,876,130.892	366,983.632
M.P.–3	4,875,772.696	366,794.632
M.P.–4	4,876,241.696	365,905.776

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
M.P.–1	44°01'49.2198"	64°40'15.6852"
M.P.–2	44°01'34.6067"	64°39'35.3459"
M.P.–3	44°01'22.8782"	64°39'43.5082"
M.P.–4	44°01'37.4905"	64°40'23.8459"

KEY PLAN
Scale – 1 : 50,000



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NORTHING / EASTING . . . . . N. / E.
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BOUNDARY DEALT WITH BY THIS PLAN . . . . .
OTHER BOUNDARY . . . . .
TIE LINES . . . . .
NOT TO SCALE . . . . .
MAJOR CONTOURS . . . . .
MINOR CONTOURS . . . . .
DEPTH SOUNDINGS . . . . . + 00.0
CONCRETE MOORING . . . . . □
SHOVEL ANCHOR . . . . .

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

PROPOSED NAVIGATIONAL AIDS MARKING PLAN

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–MERSEY POINT

SHEET 6 OF 6 | DATE: January 18, 2019

NOTES:

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KELLY COVE SALMON LTD.

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FOUNDED 1951
Stephen D.F. Acker
N.S.L.S.
639
MEMBER

PURPOSE OF PLAN (SHEET 6 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATION AND TYPES OF ALL NAVIGATIONAL AIDS RELATIVE TO THE PROPOSED LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

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APPENDIX H
Brooklyn - Notice of Works

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NAVIGATION PROTECTION ACT (NPA)
NOTICE OF WORKS FORM

WARNING: Any false or misleading statement with respect to this form and supporting documentation, including the misrepresentation of a material fact, may result in the refusal to authorize or issue Approval, or result in the suspension or cancellation of an Approval obtained through fraudulent means.

PRIOR TO COMPLETING THIS FORM:
1. Determine if your project is on a navigable water listed on the Schedule to the NPA. A *Notice to the Minister* is required for works on scheduled navigable waters. Works on non-scheduled navigable waters may be eligible to opt in; if requesting Opt-in, the Opt-in annex must be included with your *Notice to the Minister*.
2. Self assess your project against the *Minor Works Order* to determine if a *Notice to the Minister* is required. Links to the NPA Schedule, Order and Regulations can be accessed through the Navigation Protection Program (NPP) website at http://www.tc.gc.ca/eng/programs-621.html.

PURPOSE

This *Notice of Works* Form and its supporting documentation (as well as other relevant information) which may be required for a review by Transport Canada (TC), once completed and submitted, comprise the *Notice to the Minister* as required under the NPA. For assistance in completing your submission, refer to the guidance provided on the NPP website under "Apply to the NPP" including the *Guide to the Navigation Protection Program's Notification, Application and Review Requirements*.

SUPPORTING DOCUMENTATION REQUIREMENTS

Mandatory Information Checklist
(incomplete information will be returned with no action)

- ☑ Completed and signed "Notice of Works Form" with all mandatory fields completed
- ☑ Map showing location of project[1]
- ☑ Top/Plan drawing with dimensions[1]
- ☑ Side/Profile drawing with dimensions[1]

[1] 6 copies if hard copy submission

Recommended Information
(may expedite your review)

- ☑ Body of water details
- ☑ Land use/Ownership information
- ☑ Body of water use information
- ☑ Impacts, obstructions and mitigation plans
- ☑ Any environmental review information
- ☑ Operation, maintenance and marking plans
- ☐ Photographs of work site and body of water
- ☐ Aboriginal consultation results
- ☑ Other government agencies involved
- ☐ Water lot lease information
- ☐ Opt-in request annex (non-scheduled navigable waters only)

When submitting a Notice to the Minister, owners should note:

- All plans and drawings must be leg ble when printed on 11" x 17" paper
- For e-mail submissions, provide a scan of all relevant supporting documentation
- Your completed Notice to the Minister should be sent to the appropriate regional office as outlined below

TRANSPORT CANADA NAVIGATION PROTECTION PROGRAM REGIONAL OFFICE LOCATIONS

Pacific Region
820-800 Burrard Street
Vancouver BC V6Z 2J8
Telephone: 604-775-8867
Email: NPPPAC-PPNPAC@tc.gc.ca

Prairie and Northern Region
Canada Place 1100-9700 Jasper Ave
Edmonton AB T5J 4E6
Telephone: 780-495-8215
Email: NPPPNR-PPNRPN@tc.gc.ca

Ontario Region
100 South Front Street, 1st Floor
Sarnia ON N7T 2M4
Telephone: 519-383-1863
Email: NPPONT-PPNONT@tc.gc.ca

Headquarters
(For info on the NPP and NPA ONLY)
Notices not processed at this office
Tower C, 330 Sparks Street, 18th Floor
Ottawa ON K1A 0N5
Telephone: 613-991-3476
Email: NPPHQ-PPNAC@tc.gc.ca

Quebec Region
401-1550 d'Estimauville Avenue, 5th Floor
Quebec QC G1J 0C8
Telephone: 877-646-6420
Email: PPNQUE-NPPQUE@tc.gc.ca

Atlantic Region
95 Foundry Street, 6th Floor
P.O. Box 42
Moncton NB E1C 8K6
Telephone: 506-851-3113
Email: NPPATL-PPNATL@tc.gc.ca

NAVIGATION PROTECTION ACT
NOTICE OF WORKS FORM

TC file number (if known):

Are you the riparian property owner? ◯ Yes ◉ No

GENERAL INFORMATION

Official and/or local name(s) of the body of water (Required)
Liverpool Bay

Is the body of water listed on the schedule to the NPA?
◉ Yes ◯ No ◯ Unknown

Are you also requesting an Approval, if required?
◉ Yes ◯ No

Is this an Opt-in request?
◯ Yes ◉ No

Are you representing an Aboriginal group?
◯ Yes ◉ No

Is the work near/on First Nations reserve or land claim?
◯ Yes ◉ No ◯ Unknown

Does this project involve throwing or depositing materials in water?
◯ Yes ◉ No

Does this project involve dewatering a body of water?
◯ Yes ◉ No

OWNER CONTACT INFORMATION[2]

Individual or company name (Required)
Kelly Cove Salmon Ltd.

Contact name (Required)
Jeff Nickerson

Mailing address (Required)
P.O.Box 33

City/Town (Required)
Bridgewater

Province/Territory (Required)
Nova Scotia

Postal code (Required)
B4V 2W6

Primary telephone number (Required)
[redacted]

Other telephone number

E-mail
jnickerson@cookeaque.com

Owner's agent/mandatary (contractor/consultant/representative/co-proponent, if any)

Company name
Sweeney International Marine Corp.

Contact name
Leah Lewis-McCrea

Mailing address
46 Milltown Blvd.

City/Town
St. Stephen

Province/Territory
NB

Postal code
E3L 1G3

Primary telephone number
[redacted]

Other telephone number

E-mail
llewis@simcorp.ca

WORK SITE INFORMATION

Nearest municipality/county/district (Required)
Liverpool, Queens County

Province/Territory (Required)
Nova Scotia

Site location such as lot, concession, section, township, range, meridian, 911 address, property identification, etc. (Required)
Brooklyn aquaculture site is located in Liverpool Bay, approximately 4.1 kilometers east of the town of Liverpool. The site is south of Eastern Head.

Site position Latitude North (Required)
Degrees **44** Minutes **02** Seconds **17.0**

Site position Longitude West (Required)
Degrees **64** Minutes **39** Seconds **40.0**

Hydro chart number: **4211**

Topo map number:

Body of water details, such as characteristics, bank/bottom features, biological components, flow/tides, etc.

The Brooklyn site is located south of Eastern Head in Liverpool Bay, occupies a 40.703 ha parcel, and is located over waters ranging from 6 - 20 m in depth. The sediment composition of the seafloor is composed primarily of boulders, bedrock and hard packed sand, with a ledge and infrequent cobble/rubble.

Potential obstructions, such as natural/man-made, other works, navigation aids, etc.

This site consists of plastic circular cages and compensator buoys. The outside corners of the lease are marked with a 0.6 m buoy equipped with a light and radar reflectors. Liverpool Bay also has a marked navigation channel.

Land use/Ownership, such as past/current, private/government, rural/suburban, coastal, environmental, etc.

Kelly Cove Salmon Ltd. has submitted an application for the Brooklyn site, as described in this document.

BODY OF WATER USE INFORMATION

Navigation types (check all that apply)

☑ Commercial ☑ Recreational

Maximum vessel size

Length _____ Width _____ Draft _____

Traffic direction

◯ One-way ◉ Two-way

Manoeuvrability (check all that apply)

☐ Poor ☐ Good ☑ Excellent

Day/Night

◯ Day ◯ Night ◉ Both

Volume

◯ Low ◉ Med ◯ High

Navigation season(s) (check all that apply)

☑ Winter ☑ Spring ☑ Summer ☑ Fall

Other uses such as cottagers, special events, fishing, etc

The area surrounding the proposed Brooklyn site is used primarily by fishing vessels traveling in and out of the port of Liverpool. Recreational vessels also frequent this area. The primary vessel traffic around the proposed site will be from vessels servicing the site.

PROJECT INFORMATION

Name of work such as bridge, dam, marina, etc. (Required)

Aquaculture site

Type of work (check all that apply) (Required)

☑ Construct ☐ Place ☑ Alter

☐ Repair ☐ Decommission ☐ Rebuild

☑ Permanent ☐ Temporary ☐ Remove

Brief project description (or attach) such as status, structures, operation, etc. (Required)

The aquaculture site consists of two strings of 10 circular 100 m circumference cages. Cages will be present on site all year round.

Method of construction such as temporary works, activities, etc. (Required)

Aquaculture site consists of anchored cage systems (see attached plans). Crews will visit the site daily to feed and maintain cage system.

Anticipated impacts such as source, severity, mitigation, marking, waste/debris management, use, cumulative, etc.

Expected start date (dd-mm-yyyy) (Required)

Spring 2021

Expected completion date (dd-mm-yyyy) (Required)

Ongoing

Canada

ENVIRONMENTAL REVIEW INFORMATION

Is the work located on Federal lands?

◯ Yes ◉ No ◯ Unknown

Is the project a designated project under the *Regulations Designating Physical Activities* under the *Canadian Environmental Assessment Act, 2012*?

◯ Yes ◉ No ◯ Unknown

Is the project subject to Northern Environmental Assessment (EA) Regime(s)?

◯ Yes ◉ No ◯ Unknown

If yes, identify the northern EA regime(s) that apply

- ☐ Inuvialuit Final Agreement (IFA)
- ☐ *Mackenzie Valley Resource Management Act* (MVRMA)
- ☐ Nunavut Land Claims Agreement (NLCA)
- ☐ *Yukon Environmental and Socio-economic Assessment Act* (YESAA)

Other Federal Organizations involved

- ☑ Canadian Environmental Assessment Agency (CEAA)
- ☑ Fisheries and Oceans Canada (DFO)
- ☐ Major Projects Management Office (MPMO)
- ☐ Aboriginal Affairs and Northern Development Canada (AANDC)
- ☐ Environment Canada (EC)
- ☐ Natural Resources Canada (NRCan)
- ☐ Northern Projects Management Office (NPMO)
- ☐ Other: _____

OWNER AUTHORIZATION[2]

I hereby certify that the information contained herein and in any of the supporting documents is complete, true and accurate to the best of my knowledge and belief, and that I am authorized, as the owner, to submit this Notice to the Minister.

[redacted]

Signature (Required)

14/2/2019

Date (dd-mm-yyyy) (Required)

[redacted]

Print Name (Required)

FOR OFFICE USE ONLY

	Date stamped (dd-mm-yyyy)

[2] "Owner", in relation to a work, means the actual or reputed owner of the work or that owner's agent or mandatary. It includes a person who is in possession or claiming ownership of the work and a person who is authorizing or otherwise responsible for the construction, placement, alteration, repair, rebuilding, removal, decommissioning, maintenance, operation, safety or use of the work. It also includes a person who proposes to construct or place a work.

The personal information provided on this Notice to the Minister is collected under the authority of the ***Navigation Protection Act***, sections 4, 5, 6, 9, 21, 22, 23 and 24. This information is required for the purpose of processing applications made under the above-noted sections for proposed, commenced or existing works that are or will be constructed, placed, altered, repaired, rebuilt, removed or decommissioned in, on, over, under, through or across any navigable water in Canada. The personal information collected is described in a personal information bank entitled ***Navigation Protection Program*** (bank number TC PPU 086). Under the provisions of the ***Privacy Act***, individuals have the right of access to, correction of and protection of their personal information. Instructions for obtaining personal information are provided in Info Source, a copy of which is available in major public and academic libraries or online at http:// ww.infosource.gc.ca

Canada

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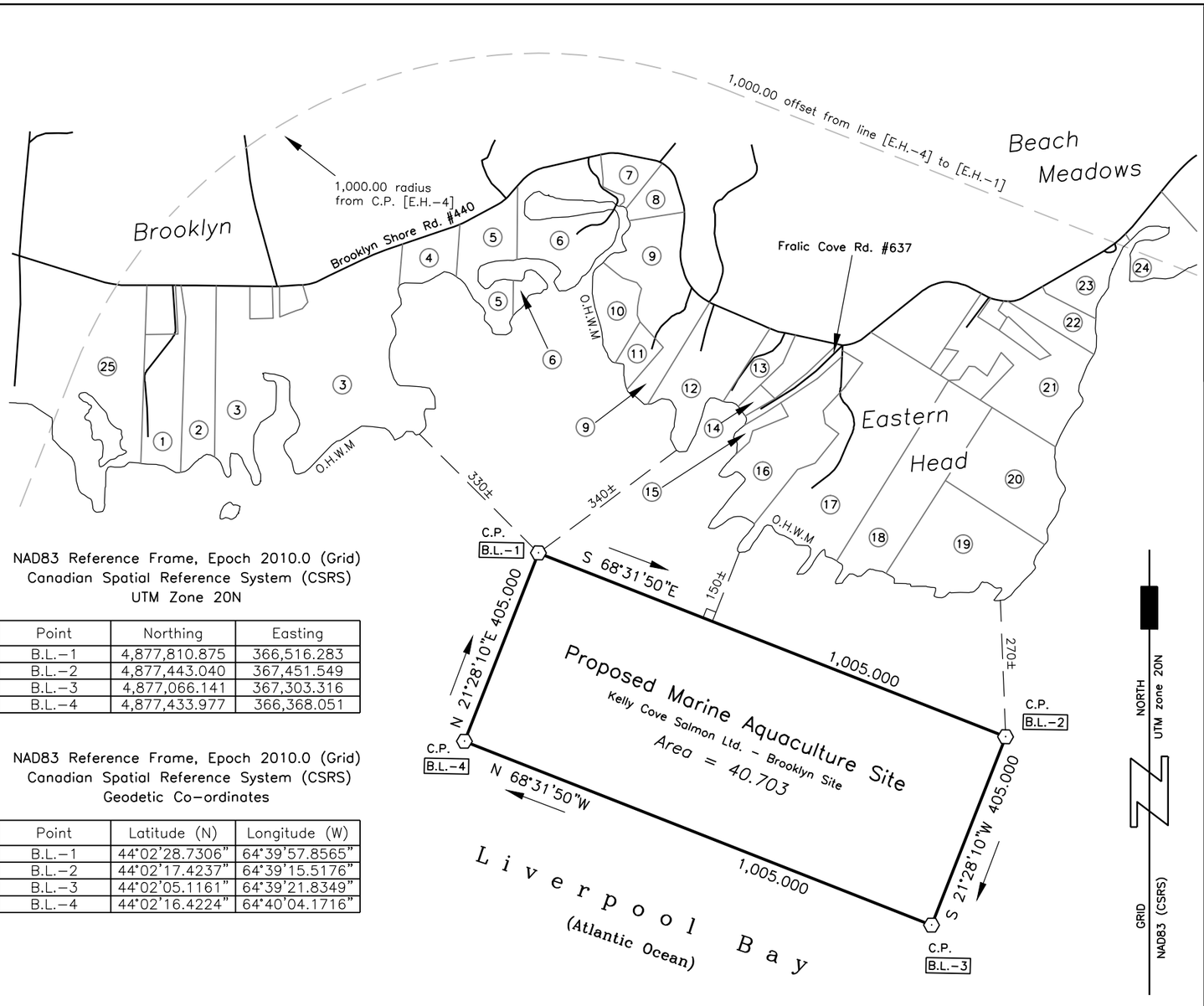
#	P.I.D. #	OWNER / ADDRESS
1	70089073	Paul Shot et ux. RR #1, Brooklyn, N.S. B0J 1H0
2	70089081	Krista C. Decker et al. 22 Odell Dr., Dartmouth, N.S. B2W 3T4
3	70089099	James F. Mitton et al. RR #1, Brooklyn, N.S. B0J 1H0
4	70089131	Delphine Dexter 89 Shore Rd., Brooklyn, N.S. B0J 1H0
5	70089164	Ian D. Kent et al. RR #1, Brooklyn, N.S. B0J 1H0
6	70089172	Barry S. Anthony et ux. 532 Brooklyn Shore Rd., Brooklyn, N.S., B0J 1H0
7	70089222	Jason Pendragon Finck 580 Brooklyn Shore Rd., Brooklyn, N.S., B0J 1H0
8	70089255	Ryan Mullen 592 Brooklyn Shore Rd., RR #1 Brooklyn, N.S., B0J 1H0
9	70089305	John E. Conrad et ux. P.O. Box 32, Brooklyn, N.S. B0J 1H0
10	70089313	Allen Harrington P.O. Box 55, Brooklyn, N.S. B0J 1H0
11	70089321	John E. Conrad et ux. P.O. Box 32, Brooklyn, N.S. B0J 1H0
12	70089339	Gary P. Roberton et ux. 31 Oak Street, Oak Hill, N.S. B4V 0C5
13	70100797	Garry Marsh et al. P.O. Box 790, Liverpool, N.S. B0T 1K0
14	70205646	Garry Marsh et al. P.O. Box 790, Liverpool, N.S. B0T 1K0
15	70100755	Garry Marsh et al. P.O. Box 790, Liverpool, N.S. B0T 1K0
16	70100789	Gary Morash et ux. P.O. Box 790, Liverpool, N.S. B0T 1K0
17	70100748	Gary Morash et ux. P.O. Box 790, Liverpool, N.S. B0T 1K0
18	70100714	Reynold Fralic et al. RR #4, Site 19, Comp 10 New Glasgow, N.S., B2H 5C7
19	70100946	Dennis Conrad RR #1, Brooklyn, N.S. B0J 1H0
20	70100672	Wilhelmina R. Conrad et al. RR #1, Brooklyn, N.S. B0J 1H0
21	70100656	Hazel M. Mouzar P.O. Box 173, Liverpool, N.S. B0T 1K0
22	70100599	Donald T. Fralic et ux. RR #1, Brooklyn, N.S. B0J 1H0
23	70100086	Wilhelmina R. Conrad et al. RR #1, Brooklyn, N.S. B0J 1H0
24	70100540	Andrew R. Godfrey et ux. RR #1, Brooklyn, N.S. B0J 1H0



NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

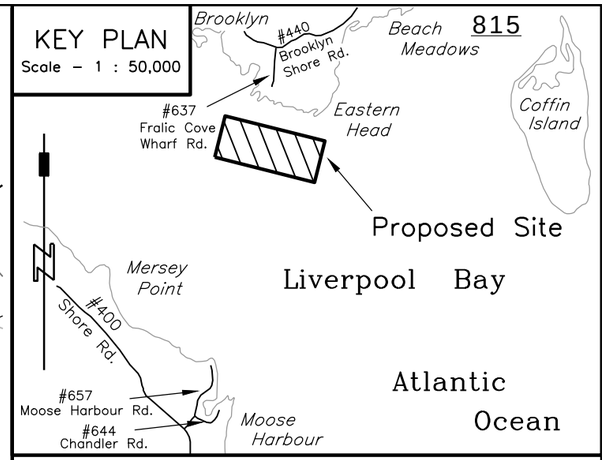
Point	Northing	Easting
B.L.–1	4,877,810.875	366,516.283
B.L.–2	4,877,443.040	367,451.549
B.L.–3	4,877,066.141	367,303.316
B.L.–4	4,877,433.977	366,368.051

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
B.L.–1	44°02'28.7306"	64°39'57.8565"
B.L.–2	44°02'17.4237"	64°39'15.5176"
B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

#	P.I.D. #	OWNER / ADDRESS
25	70261698	Randall N. Fralic et al. RR #1, Brooklyn, N.S. B0J 1H0

KEY PLAN
Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P. ⊙
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	———
OTHER BOUNDARY	———
TIE LINES	– – – –
NOT TO SCALE	– – ⁄\⁄ – –
MAJOR CONTOURS	———
MINOR CONTOURS	———
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	□
SHOVEL ANCHOR	⚓

AQUACULTURE SITE DEVELOPMENT PLANS
SHOWING
AQUACULTURE SITE APPLICATION
KELLY COVE SALMON LTD. / BROOKLYN SITE
LOCATED AT:
BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 1 OF 6 | DATE: JAN. 14, 2019

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 1 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND AS WELL AS ADJACENT PARCELS OF LAND, FOR ADDITIONAL SITE INFORMATION, REFER TO SHEETS 2–6.

200 0 200 400 600
SCALE – 1 : 10,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers
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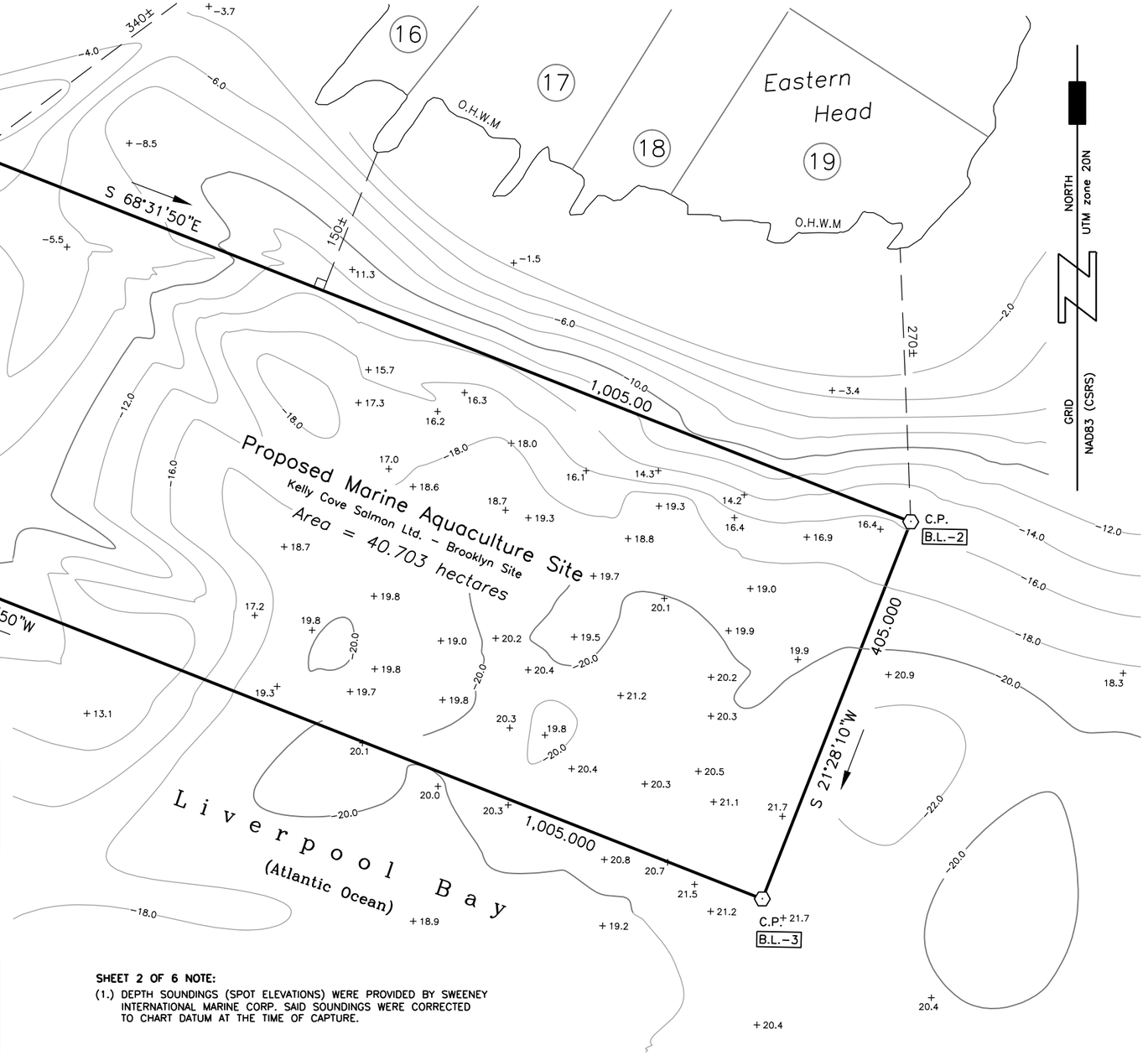
www.adsurveying.ca
80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca



NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

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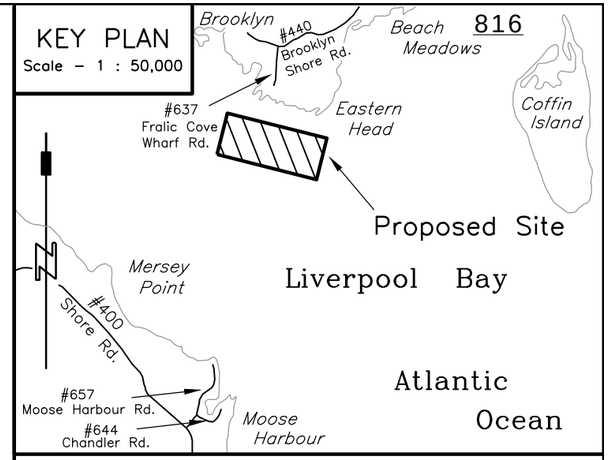
B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

SHEET 2 OF 6 NOTE:

(1.) DEPTH SOUNDINGS (SPOT ELEVATIONS) WERE PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM AT THE TIME OF CAPTURE.

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P.
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	
OTHER BOUNDARY	
TIE LINES	
NOT TO SCALE	
MAJOR CONTOURS	
MINOR CONTOURS	
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	□
SHOVEL ANCHOR	

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

BASIC SEAFLOOR TOPOGRAPHY

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 2 OF 6 | DATE: JAN. 14, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
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(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 2 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND BASIC SEAFLOOR TOPOGRAPHY, FOR ADDITIONAL ADDITIONAL SITE INFORMATION, REFER TO SHEETS 1, 3–6.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
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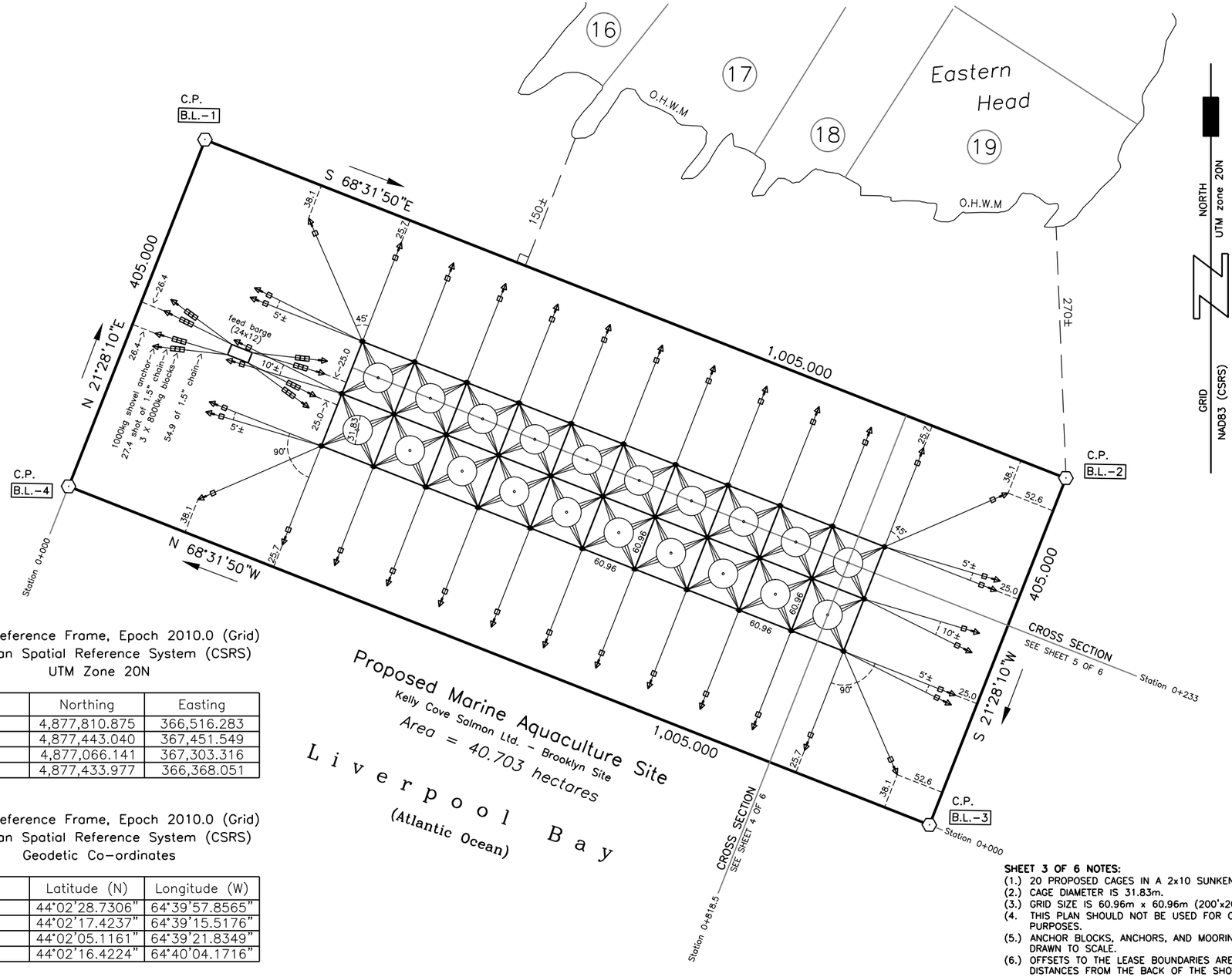
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca



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Canadian Spatial Reference System (CSRS)
UTM Zone 20N

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B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

SHEET 3 OF 6 NOTES:
(1.) 20 PROPOSED CAGES IN A 2x10 SUNKEN GRID LAYOUT.
(2.) CAGE DIAMETER IS 31.83m.
(3.) GRID SIZE IS 60.96m x 60.96m (200'x200').
(4.) THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.
(5.) ANCHOR BLOCKS, ANCHORS, AND MOORING LINES ARE NOT DRAWN TO SCALE.
(6.) OFFSETS TO THE LEASE BOUNDARIES ARE HORIZONTAL DISTANCES FROM THE BACK OF THE SHOVEL ANCHOR.

NOTES:
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(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
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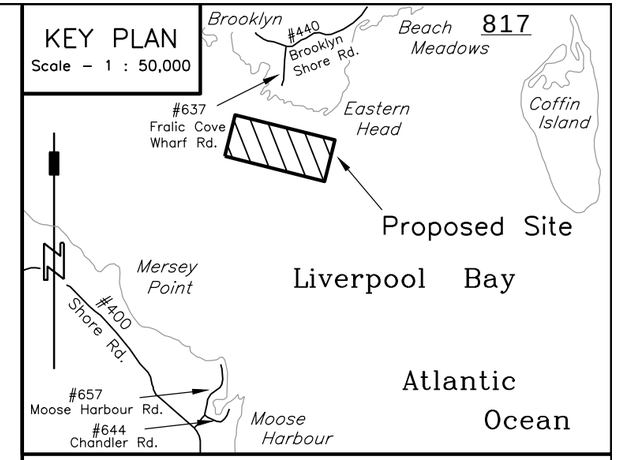
KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 3 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATIONS OF ALL ANCHORS, CAGES, AND THE GRID/MOORING CONFIGURATION RELATIVE TO THE LEASE BOUNDARIES.

100 0 100 200 300
SCALE – 1 : 5,000 (METRIC)

KEY PLAN
Scale – 1 : 50,000



Legend:
CALCULATED POINT . . . C.P.
CALCULATED . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
NORTHING / EASTING . . . N. / E.
LOCAL REGISTRY NUMBER . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . + 00.0
CONCRETE MOORING
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING
AQUACULTURE CAGE CONFIGURATION
KELLY COVE SALMON LTD. / BROOKLYN SITE
LOCATED AT:
BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019

[redacted]

Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 3 OF 6 | DATE: JAN. 14, 2019

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
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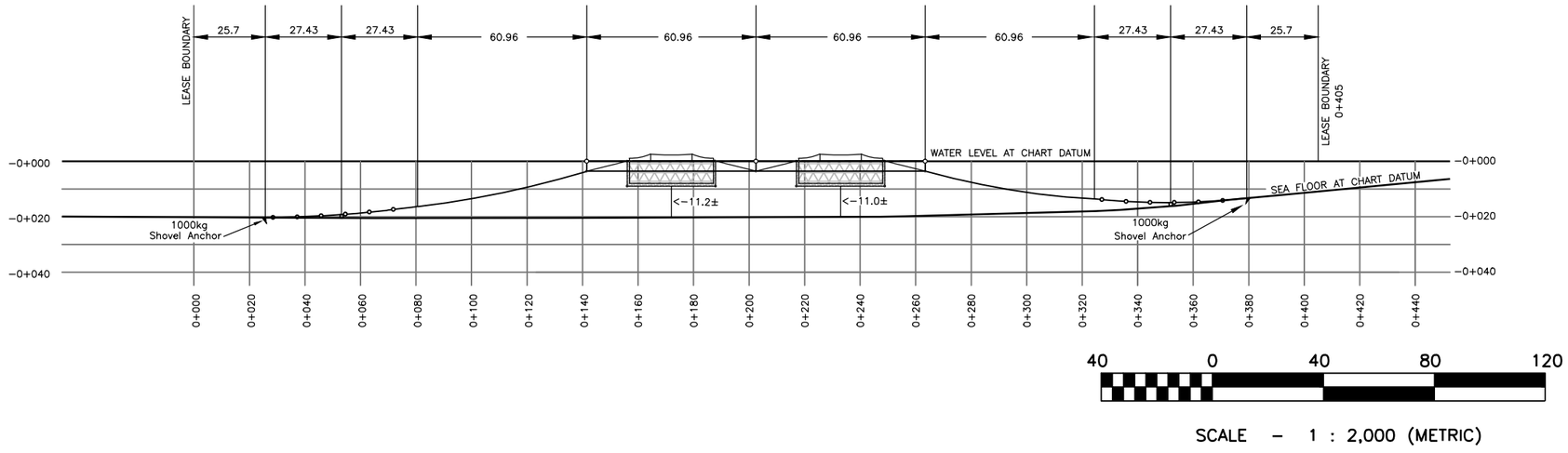
Phone: (902) 648–2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 2,000 (METRIC)
VERTICAL SCALE – 1 : 2,000 (METRIC)

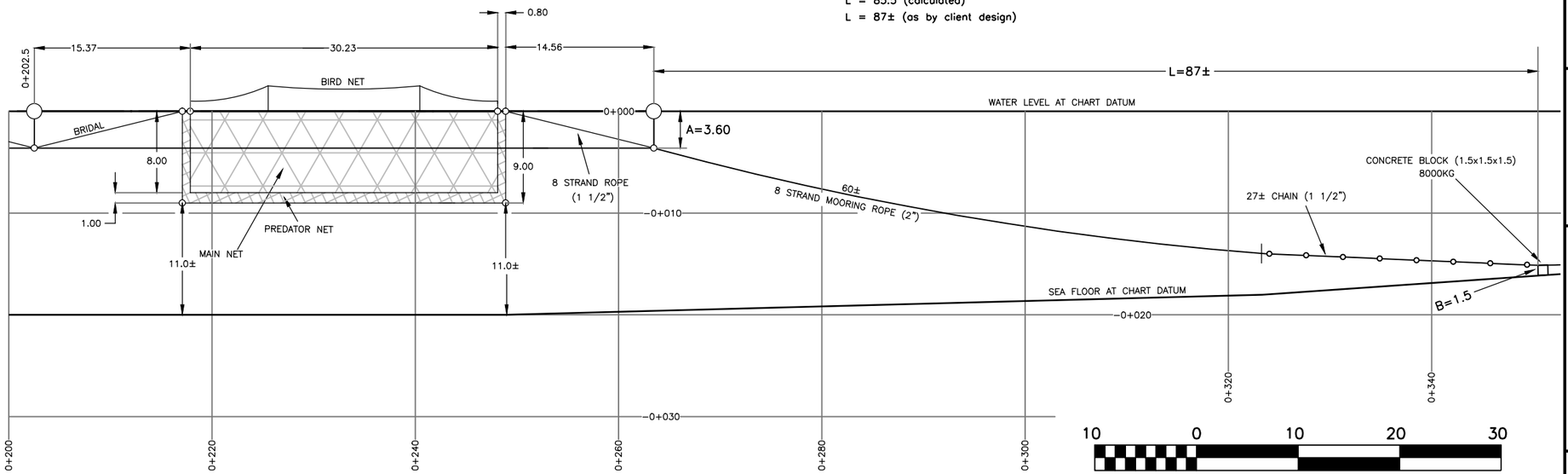


40 0 40 80 120

SCALE – 1 : 2,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)



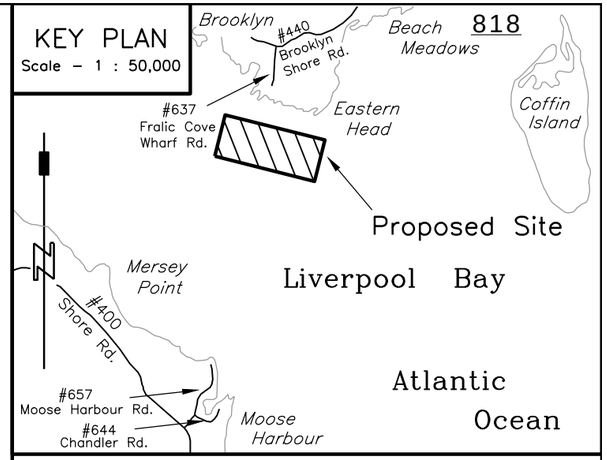
10 0 10 20 30

SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(20± + 2.2) – 3.6 – 1.5] x 5
L = 85.5 (calculated)
L = 87± (as by client design)

KEY PLAN

Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
- NORTHING / EASTING . . . N. / E.
- LOCAL REGISTRY NUMBER . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . O.H.W.M.
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- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING . . . □
- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LATERAL CROSS-SECTION

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

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[redacted]

Jeff Nickerson

A&D JOB #300-18-BROOKLYN

SHEET 4 OF 6 | DATE: JAN. 14, 2019

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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 4 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LATERAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 5.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

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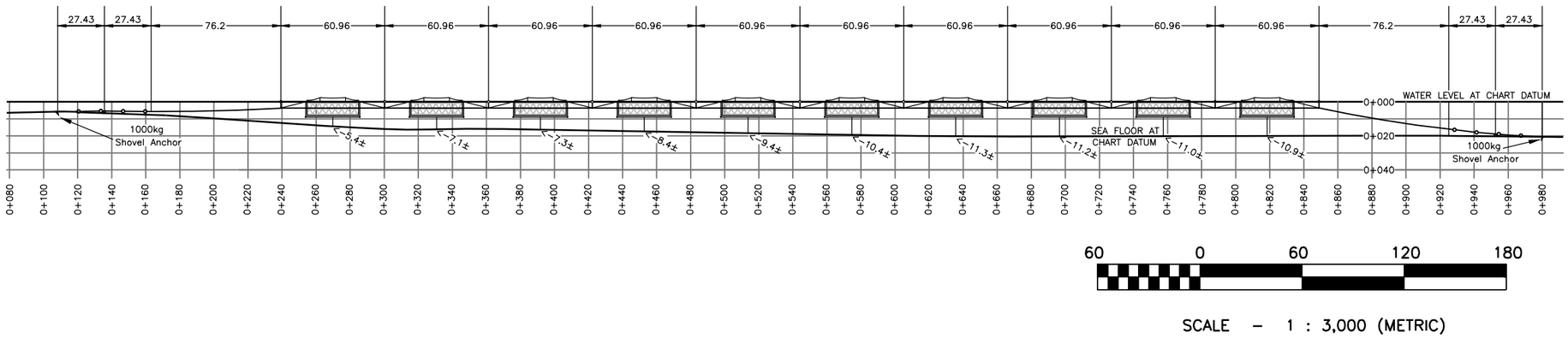
Phone: (902) 648-2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875-2110
info@adsurveying.ca

CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 3,000 (METRIC)
VERTICAL SCALE – 1 : 3,000 (METRIC)



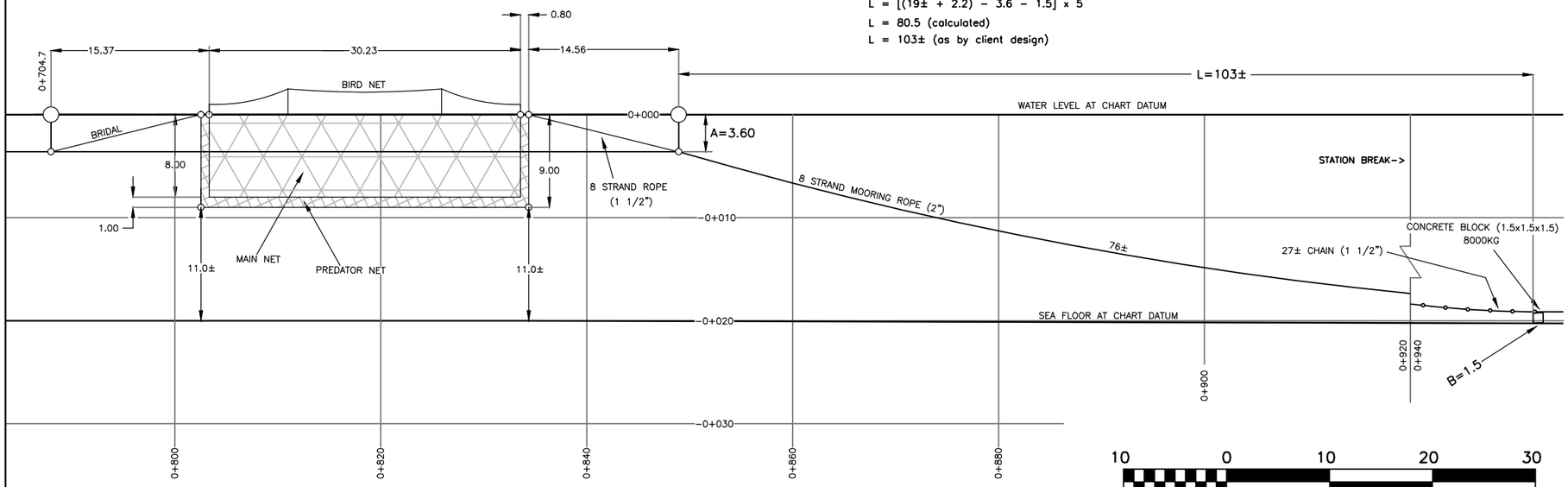
60 0 60 120 180

SCALE – 1 : 3,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 103± (as by client design)

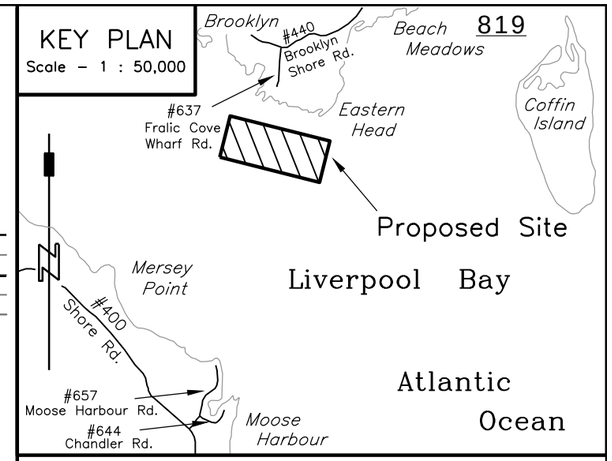


10 0 10 20 30

SCALE – 1 : 500 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P.
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	
OTHER BOUNDARY	
TIE LINES	
NOT TO SCALE	
MAJOR CONTOURS	
MINOR CONTOURS	
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	□
SHOVEL ANCHOR	

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LONGITUDINAL CROSS-SECTION

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300-18-BROOKLYN

SHEET 5 OF 6 | DATE: JAN. 14, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 5 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LONGITUDINAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 5.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
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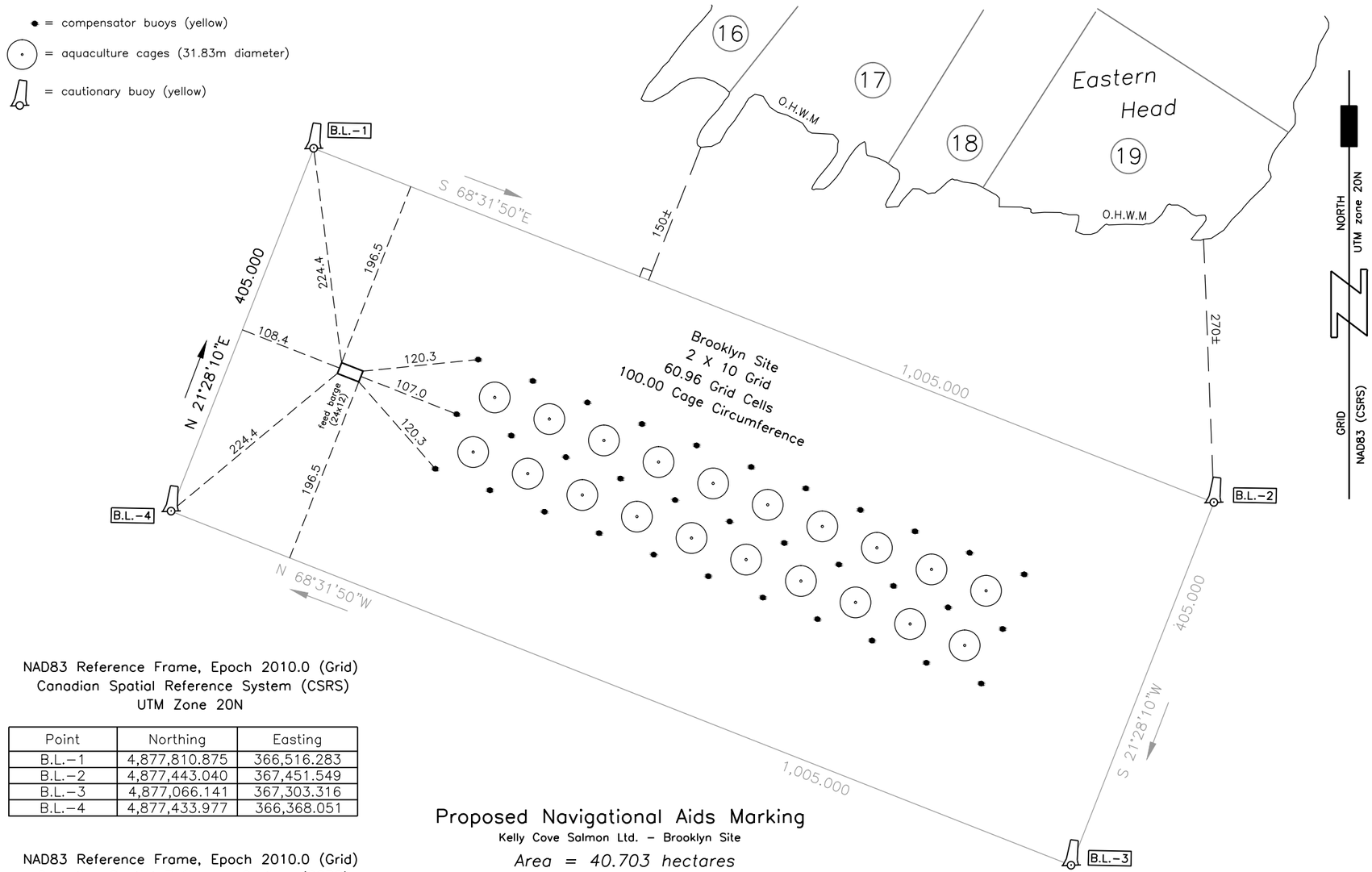

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
B.L.–1	4,877,810.875	366,516.283
B.L.–2	4,877,443.040	367,451.549
B.L.–3	4,877,066.141	367,303.316
B.L.–4	4,877,433.977	366,368.051

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
B.L.–1	44°02'28.7306"	64°39'57.8565"
B.L.–2	44°02'17.4237"	64°39'15.5176"
B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

Proposed Navigational Aids Marking

Kelly Cove Salmon Ltd. – Brooklyn Site

Area = 40.703 hectares

L i v e r p o o l B a y

(Atlantic Ocean)

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

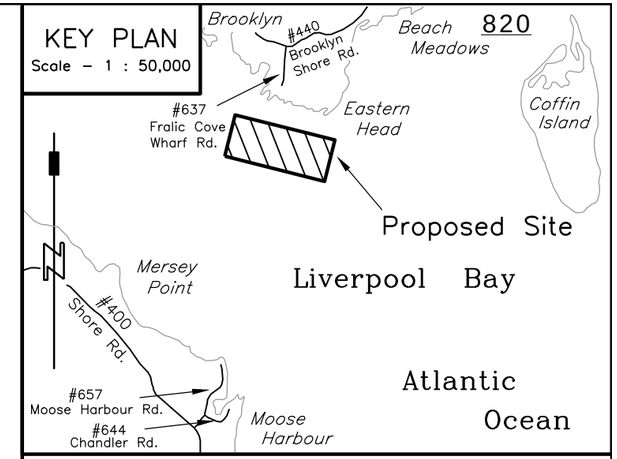
PURPOSE OF PLAN (SHEET 6 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATION AND TYPES OF ALL NAVIGATIONAL AIDS RELATIVE TO THE PROPOSED LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT . . . . . C.P.
CALCULATED . . . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
NORTHING / EASTING . . . . . N. / E.
LOCAL REGISTRY NUMBER . . . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . . . + 00.0
CONCRETE MOORING
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

PROPOSED NAVIGATIONAL AIDS MARKING PLAN

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 6 OF 6 | DATE: JAN. 14, 2019

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

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B0T 1W0
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info@adsurveying.ca

APPENDIX I
Cooke Sponsorship

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Donation Request Date	Organization/Charity/ Company/Event	Donation
20-Jan-16	Aquaculture Association of Nova Scotia	3 lbs portions, 90 people for luncheon, Seafarmers Conference
20-Jan-16	Aquaculture Association of Nova Scotia	4 sides and 4lbs candied salmon for meet & greet event Seafarmers Conf.
10-Feb-16	The Grocery Foundation of Atlantic Canada	4 tickets to Grocery Gift Gala dinner event
10-Apr-16	Lockport Sea Derby Association	25th Anniversary celebration - the derby is a major event
10-Apr-16	Westport Recreation Ladies Auxiliary	to support community (rec hall, park, family activities)
29-Apr-16	Aquaculture Association of Nova Scotia	10 lbs of portions - shipped to AC Covert - couriered to Cole Harbour - Vine
13-May-16	West Green Harbour Recreation Association (NS)	Clean up day, wharf and beaches
20-May-16	Camp Jordan	Summer Camp in Shelburne NS.
10-Jun-16	10th Annual Digby Relay for Life	Raise money for cancer - Relay for Life run/walk
4-Jun-16	IWK Foundation - Miracle Match	Annual fundraiser to support the IWK hospital in Halifax
24-Jun-16	Island Consolidated School Bursary for Graduate	(NS) Island Consolidated School - to be awarded to a student pursuing Science
15-Jul-16	Shelburne County Agricultural Exhibition	Donation for special prizes
15-Jul-16	IGT Youth Group	Mission trip to Toronto - great experience for the youth
22-Jul-16	AANS Aquaculture Association of NS for Digby Scallop Days	Community event 60 lbs of salmon fillets for sampling, 1/2 skin on 1/2 skin off.
26-Aug-16	Shelburne Harbour Yacht Club	Requested 8 whole salmon for the plank supper
1-Oct-16	Aquaculture Assoc. of NS (AANS)	Skewers (400 pieces) and candied salmon (20 lbs)
30-Jan-17	Master Promotions - fish show reception	Grand Hotel Yarmouth - reception (400 small kabobs/appetizer size)
8-Mar-17	IWK Foundation - Miracle Match	Annual fundraiser to support the IWK hospital in Halifax
7-Apr-17	Maritime Voyageur Brigade Society - NS	Part of the Canada 150 events in NS
18-Apr-17	Aquaculture Association of NS	(4) 5 lb boxes of BBQ salmon skewers
18-Apr-17	Enactus St. Mary's University Annual Gala NS	Gala sponsor - purchased table to support young entrepreneurs
21-Apr-17	NAFF III National Indigenous NS Fish & Aqua Forum	National conference to enhance growth and diversify fisheries and aqua sector

11-May-17	Old Home Week (NS) Westport Rec Aux.	Festival Support
19-May-17	Missions to Seafarers (NS)	Golf Tournament to raise funds
26-May-17	Lockeport Sea Derby Assoc - Annual Fishing Derby	Annual fishing derby - sponsorship will purchase prizes
26-May-17	Greenfield & District Fire Dept	Approved discount purchase at $4.50 /lb difference donated = 900 lbs + 110 lbs
2-Jun-17	Privateer Days - Liverpool, NS	Yearly celebration
8-Jun-17	Digby Area - Relay For Life - Canadian Cancer Society	Rodney O'Neill / Nell Halse recommend we support this event in NS.
27-Jun-17	Aquaculture Association of NS - Digby Scallop Days	60 lbs of mini skewers $655.04 / 8 pkgs of Candied Smoked Salmon $120.00
28-Aug-17	AANS - Aqua Association of NS, Halifax Oyster Festival	Skewers sent for the event for AANS Info Booth - to promote fresh salmon
23-Sep-17	Dalhousie University - Scholarship	Agriculture program - scholarship for student in related field
30-Nov-17	Aquaculture Assoc of NS - Holiday Reception	Product from AC Covert supplied; smoked and kabobs
5-Jan-18	AANA-NS SeaFarmers' Conference	SeaFarmer's Conference Gold Level Sponsorship
9-Jan-18	Kathy Bourque Family - house fire in NS	Family lost four children in this fire.
23-Feb-18	Science Atlantic - Aqua & Fish Committee	Student Award - DAL university
5-Mar-18	St. FX University - CANstruction Team	Sponsored team to compete in university fundraiser
6-Apr-18	AANS - Saltscapes Expo	Candied Salmon for this event
16-May-18	KCS - BEACH CLEAN UP	Kabobs for the BBQ for the volunteers - Brier Island
16-May-18	Western Recreation Auxiliary BEACH CLEAN UP	Same clean up as above - this donation will help with supplies and equipment
16-May-18	Digby - Relay for Life	Support participant
29-May-18	Privateer Days (NS)	Family event - summer festival
29-May-18	Pro Arm Wrestling Championship	Digby employee entered this event
29-May-18	Westport Recreational Auxiliary (NS)	Old home week / Canada Day celebrations
1-Jun-18	IWK Foundation - Miracle Match	Annual fundraiser to support the IWK hospital in Halifax
7-Jun-18	Greenfield and District Fire Dept (NS)	Gave employee rate $6.15/lb, Retail was $6.60, difference was $392.19.
13-Jun-18	Town of Shelburne - Founder's Day	Festival to celebrate history and culture

13-Jun-18	Festival Acadian de Clare (NS)	Along with AF Theriault supporting the oldest festival in NS
7-Jul-18	Brier Island Trail Society	Phase one of the trail project
30-Jul-18	Beach Clean Up	Skewers and smoked product / Skewers $ 250.00 / Candied $75.00
12-Aug-18	Yarmouth Seafood Extravaganza	Salmon was showcased at their event
10-Aug-18	Lockport Sea Derby Association	Donation towards prizes for this annual fishing derby
15-Aug-18	DALHOUSIE Annual Award - Scholarship	Dalhousie Faculty of Agriculture
26-Sep-18	NAIA 25th Anniversary Conference and Trade Show	Gold Sponsor
28-Sep-18	Oyster Festival - Aqua Association of NS	Product supplied for this annual event in Halifax
11-Oct-18	Dartmouth Whalers Bantam AA - Banner Logo	Jersey sponsor
22-Oct-18	Clean Nova Scotia - Ocean Plastics Summit	Two day gathering to bring together major players from diverse sectors
23-Oct-18	South Queens Chamber of Commerce - luncheon	Fillets for luncheon - introducing the expansion plans
20-Oct-18	AF Theriault & Son 80th Anniversary	Product supplied for the BBQ - anniversary celebration
30-Oct-18	Liverpool - Open House	To support the new site applications - sides of salmon and smoked salmon
6-Nov-18	New Boots - Progressing Women in Trades	Trade Conference in Halifax - promoting women in trades
15-Nov-18	Queens Place Emera Centre SIGN sponsorship	Sign made $345.00 / annual fee to be displayed at Centre, $2017/year.
28-Nov-18	Aqua Association of NS	2 sides of cold and 10 lbs of mini bites for the reception

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Sweeney International Marine Corp.
46 Milltown Blvd.
St. Stephen, NB
E3L 1G3

NRC-IMB Research Facilities
1411 Oxford Street
Suite 367-368
Halifax, NS
B3H 3Z1

Section 4

Community Engagement

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Report on Liverpool Public Engagement

for

Option to Lease: Liverpool Bay, Queens County

Kelly Cove Salmon Ltd.
134 North Street, Bridgewater, NS B4V 2W6

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Cooke Aquaculture

Option to Lease: Liverpool Bay, Queens County

Report on Liverpool Public Engagement

Table of Contents

List of Tables

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List of Figures

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1.0 Introduction

Kelly Cove Salmon Ltd. is a subsidiary of Cooke Aquaculture, a family-owned company that has been operating in Atlantic Canada for over 30 years. Cooke began with a single marine cage site containing 5,000 salmon. Over the years, the company has expanded its facilities, product lines, and distribution networks to become fully-integrated within its aquaculture operations.

Kelly Cove Salmon has been operating in Nova Scotia for almost 18 years. The company currently holds 13 leases and has expanded its production to almost $100 million in 2017. Cooke Aquaculture has always been committed to working with local suppliers. In 2017, Cooke purchased approximately $231,000,000 of goods and services from 1269 local small, medium and large businesses in Atlantic Canada, including hundreds of Nova Scotia companies.

Cooke Aquaculture is now in it's 14th year holding a Platinum Member status under Canada's Best Managed Companies, a leading business awards program recognizing excellence in the private Canadian-owned companies. Kelly Cove Salmon Ltd. currently has been granted an option to lease in Liverpool Bay by the Nova Scotia's Department of Fisheries and Aquaculture. Engaging stakeholders and soliciting public feedback on the proposed development is a requirement of the option process.

On Tuesday, October 30, 2018, Cooke Aquaculture held a public Open House in the Community Room at the Emera Center located at 50 Queens Place Dive, Liverpool from 4:00-7:00 pm. There were 184 members of the public that attended the Open House.

This report will discuss the format and outcome of the public engagement strategy put forth by Kelly Cove Salmon Ltd. The public engagement will be ongoing, and Kelly Cove Salmon Ltd. will submit an addendum before the review board hearing.

2.0 Public Meeting

2.1 Community Open House Advertising

An ad was posted in the South Shore Breaker October 17th and October 24th publications. This local paper is freely distributed to Nova Scotia's South Shore residents (Fig 2.1.1).

Figure 2.1.1 Cooke Aquaculture Community Open House ad published in the South Shore Breaker

CKBW radio station also advertised the Open House on air and had an article posted on their website and Facebook page stating the public consultation set for Queens Place Emera Center October 30 beginning at 4:00 pm (Fig 2.1.2).

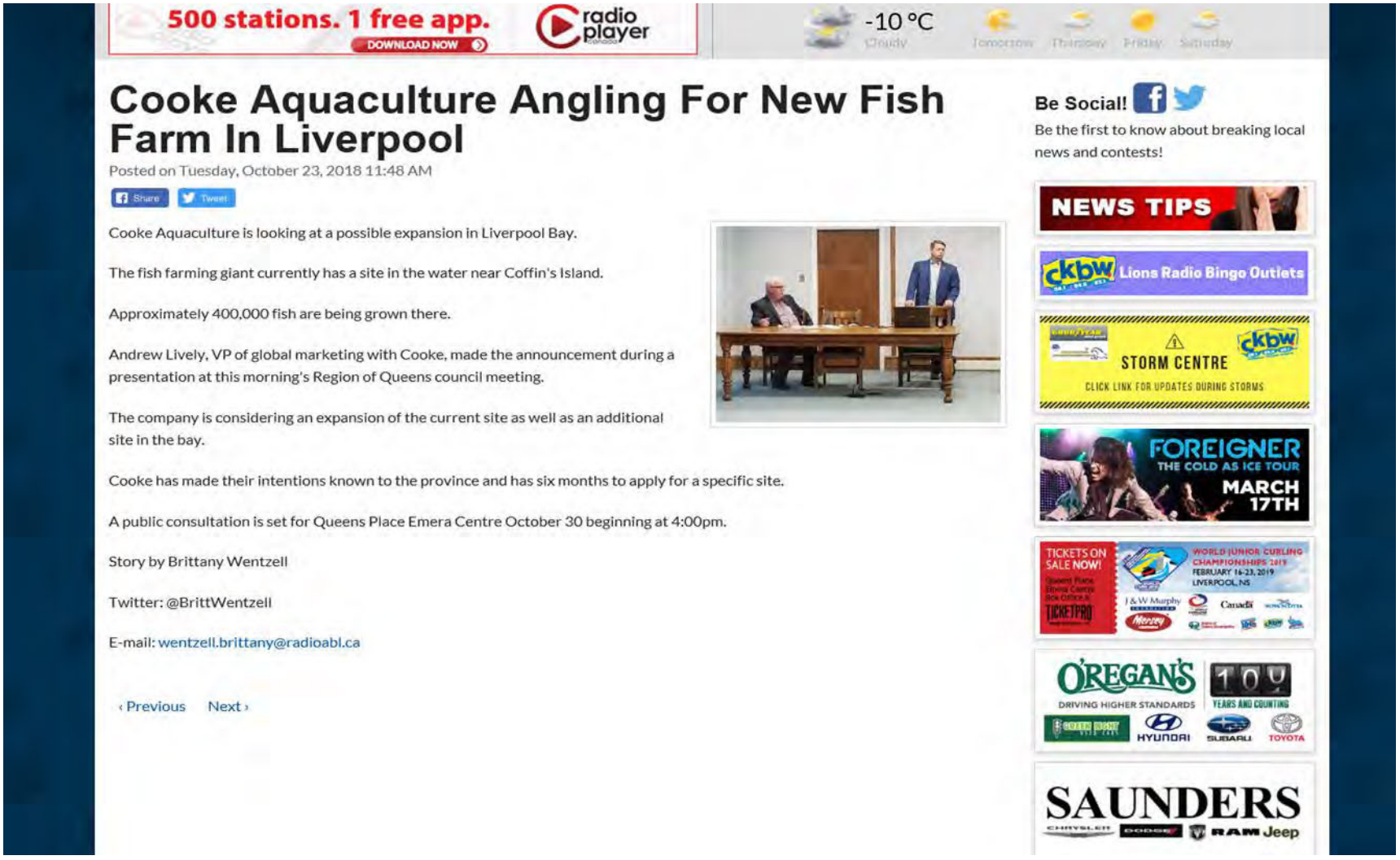
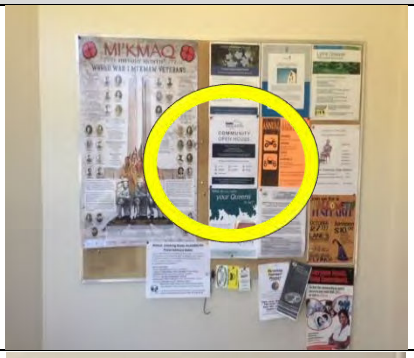
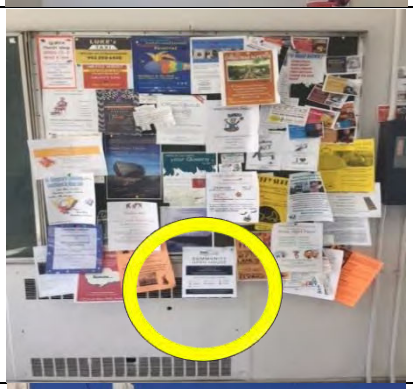
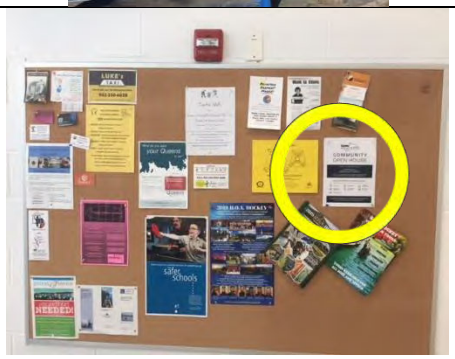
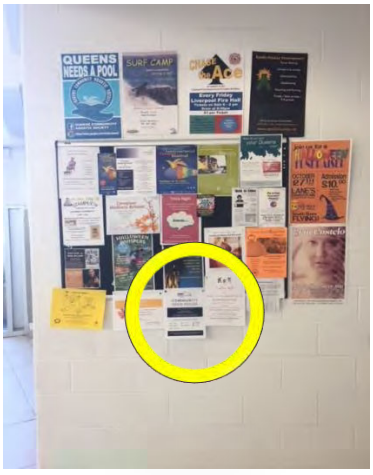


Figure 2.1.2 Screen shot taken from CKBW website October 23, 2018

Two weeks prior to the public engagement session signs were posted throughout the Municipality of Queens detailing the Cooke Aquaculture Community Open House. These notices were posted at the Recreation & Community Facilities & Economic Development building, Canada Post Office, Harbour Authority of Moose Harbour and Brooklyn and at the Queens Place Emera Center (Table 2.1.1).

Table 2.1.1 Locations of posted open house notices in the municipality of Liverpool

Location	Public Notice
Recreation & Community Facilities & Economic Development P.O. Box 1264 White Point Road Liverpool, NS B0T 1K0	
Canada Post 176 Main Street Liverpool, NS B0T 1K0	
Harbour Authority of Moose Harbour - Liverpool	

Harbour Authority of Brooklyn - Liverpool	
Queens Place Emera Center 50 Queens Place Drive Liverpool, NS B0T 1K0	 

2.2 Open House Structure

Cooke had nine information booths on Equipment Manufacturing and Repair, Feed Technology, Saltwater Operations, Compliance and Certification, Fish Health & Human Resources.

There were also information booths representing Research and Development (Dalhousie University), AANS (Aquaculture Association of Nova scotia), and SIMCorp (Sweeney International Marine Corp) – Environmental Management Services.

Each booth was labeled for easy identification. The open house was set-up in this way to ensure that if the public had specific questions they could address it to the proper individuals. All Cooke employees wore name tags with their job titles/department.

2.2.1 Reception

Attendees at the open house were invited to fill out a ballot for a chance to win a $150 gift certificate for White Point Resort. Participation in the draw was voluntary; not everyone filled out a ballot.

Cooke staff did make a record of the number of people who attended the open house, and 184 individuals entered the open house exhibit room.

Figure 2.2.1 Community member filling out a ballot

2.2.2 GMG

GMG is an affiliate Company of Cooke Aquaculture that fabricates and repairs moorings, cages and nets. This booth had physical components of the cage on hand for viewing which including stanchions, grid plates, mooring lines and a cage model. It was important to display the cage model to educate the public on the containment nets and predator nets and how the design minimizes fish escapes.

GMG also conducts research and development, and engineering studies on the various components to ensure we have the best equipment available for our industry.

Figure 2.2.2 Employees from GMG attend their booth

2.2.3 Research and Development

The Research & Development booth was staffed by Dr. Jon Grant and Dr. Ramone Filgueria from Dalhousie University, as well as Dalhousie research students [redacted] (PhD Candidate) & [redacted] (MSc Candidate).

The laptop on the right displayed how the Real Time Aquaculture probes installed in our cages sends constant information to the operators on temperature and dissolved oxygen in real time. The laptop on the left showed lobster habitat mapping and particle tracking (physical model of where a particle moves within the bay and how it is affected by water currents).

The tank represented a visual representation of what an aquaculture site looks like in the water.

See Appendix A for posters that were displayed from this booth.

Figure 2.2.3 Dalhousie students attending the research and development booth

2.2.4 Feeding

Tom Taylor the Corporate Feed & Inventory Control Manager was on site to speak about feed composition, feed rates, feed conversions, and feed wastage. A 10 lb salmon was on display long with 11 lbs of fish feed to illustrate the amount of feed the salmon easts over its lifecycle to obtain the desired weight. Samples of the fish feed were also used as visual aids.

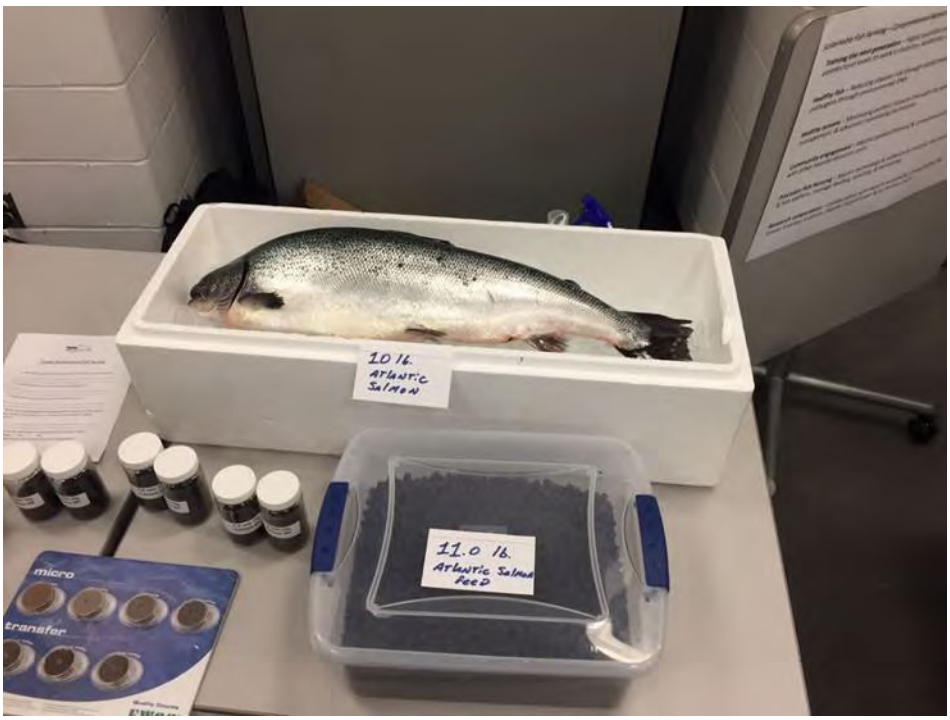


Figure 2.2.4 Feed to fish ratio

2.2.5 Saltwater Operations

The Vice President of Saltwater Operations, the Vice President of Marine Services, and regional and area managers were all on site to answers any questions related to the boundary amendment, new lease option, farming practices, etc. Posters were displayed showing the scoping area so people could understand and share their thoughts on the proposed sites in the bay.

Figure 2.2.5 Illustrates the attendance during the open house

2.2.6 Aquaculture Association of Nova Scotia

The Aquaculture Association of Nova Scotia had a booth at the open house and offered reading materials on aquaculture in the province. This booth was staffed by Tom Smith, Executive Director of the Aquaculture Association of Nova Scotia, and Community Engagement Consultant Ken Donnelly.

Please see Appendix B for a report from Ken Donnelly on his review of the Open House event.

Figure 2.2.6 AANS booth set up at the open house

2.2.7 Sweeney International Marine Corp (SIMCorp)

SIMCorp had a booth at the Liverpool Open House. The company offers a range of aquaculture environmental management services for Kelly Cove Salmon Ltd. SIMCorp staff were present to educate the public on the environmental monitoring regulations prescribed and enforced by the Nova Scotia Department of Fisheries and Aquaculture and the federal Aquaculture Activities Regulations. SIMCorp had several banners on display that outlined their environmental management services as well as the procedures and laboratory analyses required for environmental monitoring. Area and site-specific environmental parameters, such as bathymetry, currents, and fish and fish habitat were displayed for Liverpool (#1205) and both areas proposed for two additional sites. Liverpool Bay posters were available for viewing, allowing public to view the option line and the proposed new site locations. Leases scaled to the dimensions of the map were provided to adjust the sites accordingly on the map for engagement and discussion purposes.

See Appendix C for a copy of the posters that were displayed at this booth.

Figure 2.2.7 SIMCorp booth at the open house

2.2.8 Compliance & Certification

The compliance & certification booth had information on the Farm Management Plans, Best Aquaculture Practices certification (BAP), Aquaculture Manager Regulations and a map of the scoping area.

See Appendix D for the posters that were on displayed at this booth.

Figure 2.2.8 Jennifer Wiper (in white) Corporate Certification Manager discussing the scoping area to a local fisherman

2.2.9 Fish Health

Dr. Eoin MacInnis Nova Scotia's veterinarian for Kelly Cove Salmon Ltd. was there to speak on any fish health concerns, sea lice monitoring and the provincial sampling surveillance program.

Please see Appendix E for the fish health poster that was displayed at this station.

Figure 2.2.9 Dr. Jon Grant and Dr. Eoin MacInnis speaking with attendees of the open house

2.3 Public Feedback from Open House

In accordance to the Aquaculture Licence and Lease Regulations for Nova Scotia made under Section 64, Chapter 25 of the Acts of 1996, the Fisheries and Coastal Resources Act, scoping is required for new marine applications and boundary amendments. During the scoping process all information collected must be collated on the eight factors to be considered in decisions related to marine aquaculture sites:

(a) the optimum use of marine resources;

(b) the contribution of the proposed operation to community and Provincial economic development;

(c) fishery activity in the public waters surrounding the proposed aquaculture operation;

(d) the oceanographic and biophysical characteristics of the public waters surrounding the proposed aquaculture operation;

(e) the other users of the public waters surrounding the proposed aquacultural operation;

(f) the public right of navigation;

(g) the sustainability of wild salmon; and

(h) the number and productivity of other aquaculture sites in the public waters surrounding the proposed aquaculture operation.

The following tables outlines the questions, concerns and comments from the attendees of the Public meeting:

Table 2.3.1 Questions and concerns expressed during the Open House

Question	Factor to be considered	Department	Response
How big will the new lease be with the additional cages?	a, f	Compliance & Certification	Looking to add 6 additional cages therefore using ~ 40 Ha.
How many additional cages are you wanting to add to the existing site?	a, f	Compliance & Certification	6 cages making it from 14 to 20 cages.
With additional cages how, many fish will be on the site?	a	Compliance & Certification	~ 660,000
How many fish will be in Liverpool bay in total if new sites are approved?	a, d, h	Compliance & Certification	It depends on the scoping work to evaluate the biological and oceanographic data to determine the potential size of the sites.
Is it true that it is more lucrative for Cooke to claim fish losses through insurance than it is to farm the fish?	Other	Compliance & Certification	That is incorrect. It is part of any agriculture/aquaculture business to sometimes encounter crop losses. Unlike the agriculture industry there are no government funded crop loss programs, so we have to get very costly private insurance, This insurance would help absorb some of the loss for a catastrophic event, however, the Company would have to absorb a significant portion of the financial loss as well.
Where does the feed & feces go?	d	Compliance & Certification	It is dispersed in the water column and some may settle on the bottom. That is why it is very important that sites are in areas of good flushing and that there are fallow periods. Benthic monitoring ensures that the bottoms are in good condition. In the Federal AAR program, we cannot restock a farm until the sediment under the farm is under a certain threshold.

Question	Factor to be considered	Department	Response
Is this open house considered to be the public meeting?	Other	Compliance & Certification	Yes
Will there be other public consultations?	Other	Compliance & Certification	At this time, this is the only public consultation scheduled. If more are required, then they will be posted.
When this process is completed, will the new farms be there or is there other things that need to happen.	Other	Compliance & Certification	No. This is just an open house regarding the option to look at new sites. During this time, we must conduct various studies to determine potential locations and then once we identify the locations, we will need to do more detailed work on those identified areas which includes current analysis, sediment, identification of other users and potentially impacted species and areas. From there each new site will have to go through its own process before it can be put in place.
Who will decide if the farms will be allowed?	Other	Compliance & Certification	The Province and the Nova Scotia Aquaculture Review Board will review the application. The Department of Environment, Transport Canada and DFO are part of the network that will also review site applications. Recommendations from all these parties will then go to the independent Aquaculture review board
How long is the site going to be empty? Is there a regulation for that?	a, d	Compliance & Certification	The site must be fallowed for the time established in the Farm Management Plan, which is based on the length of time the fish are in the water. The longer the fish are in, the longer the site must be fallowed. Liverpool will be fallowed approximately three months.

Question	Factor to be considered	Department	Response
Have you treated for sea lice?	c, g	Compliance & Certification	We have never treated for sea lice in southern N.S.
Why were 14 cages installed on a 4-hectare lease when that is outside the boundary.	a, f	Compliance & Certification	When the site was transferred from the trout producer to Cooke, the company applied to put 14 cages on site with the intention to complete a boundary amendment. A boundary amendment was submitted in fall 2013, however all boundary amendments were put on hold during the Dolle-Lahey regulatory review. Even though the regulatory review is finished and new regulations are in place, it is only recently that the Province opened the boundary amendment and new site applications to salmon farms. Even though we were outside of the lease boundary, the Province was aware, and we were granted permission to occupy that area until the boundary amendment could be processed. We are not allowed to increase production, only remain as is.
How long is the site going to be empty? Is there a regulation for that?	a, d	Compliance & Certification	The site must be fallowed for the time established in the Farm Management Plan, which is based on the length of time the fish are in the water. The longer the fish are in, the longer the site must be fallowed. Liverpool will be fallowed approximately three months.

Question	Factor to be considered	Department	Response
How do you manage sea lice?	c, d, g	Compliance & Certification	Although sea lice numbers in Southern Nova Scotia are very low, and we do not see the Lep. species which is the one of concern. We monitor the fish on a weekly basis as is required by regulation, and we have various tools available that we use in New Brunswick such as in-feed, well boat treatments and alternative removal methods that use only water that could be used in Nova Scotia if necessary.
Is there a maximum number of sea lice to have to treat for?	c, g	Compliance & Certification	Within the new Farm Management Plans required in Nova Scotia, there are thresholds for when lice treatments are required. Luckily, we do not have to treat for lice in Nova Scotia. External auditors are often amazed by this fact and believe that this is something that the Nova Scotia industry should be very proud of.
Do you put paint on the fish to dye them?	Other	Compliance & Certification	No. The feed contains a natural pigment which gives the salmon their colour. We do not inject them with dye or paint them. The pigment is from the same as what is in the shells of crustaceans. The way salmon flesh gets its colour is like the way a flamingo gets its colour. Unless a flamingo eats shrimp and algae species to get the carotenoids, it will be very pale. Eating those small crustaceans and algae is what makes the flamingo pink. So, salmon eating feed with carotenoids will turn the flesh pink.

Question	Factor to be considered	Department	Response
Do you place anchors on certain types of sediment?	g	Compliance & Certification	There are different types of anchors for different types of sediment. Some are blocks that sit on the bottom, others are like a plough and dig into the sediment to set in place.
Can you go onto the lease (inside the yellow markers) with kayaks?	a, e, f	Compliance & Certification	We cannot prevent you from entering the lease, however, for your own safety, we would recommend that you do not attempt to kayak onto the site. The vessels are large and are trying to navigate around the site. A kayak is not the most visible vessel and is low in the water.
Do you allow fisherman to set traps on your sites?	a, c	Compliance & Certification	Fishermen can set traps on our sites, but we recommend they set outside of the grid system (yellow buoys) to avoid entanglement
Do all fish go to NB for processing?	b	Compliance & Certification	Yes, all fish from New Brunswick, Nova Scotia and Maine go to New Brunswick for processing. Fish in Newfoundland are primary processed there but some also go to New Brunswick for further processing.
What type of certification is there? What type of BAP (Best Aquaculture Facilities) are there in the area?	Other	Compliance & Certification	Best Aquaculture Practices is the standard that we subscribe to. Our processing plants are also BRC certified which is a food safety standard. In this area, there are certified farms, hatcheries and our feed mill in Truro.

Question	Factor to be considered	Department	Response
How are the benthic samples collected? How often does it occur?	c	Compliance & Certification	*Generally directed to Sweeney to address technically "how it is done."* Provincially it is conducted annually. Sampling is completed about the same time each year so that we can compare results. The Federal AAR program requires that we also sample the site at peak biomass or peak feeding per production cycle.
What protocol is put in place to retrieve fish/cage parts if they were to wash up on the beach?	g	GMG (Equipment & Repair)	We have approved policies and procedures in our Farm Management Plan for this.
How are the cages held in place and how are they anchored to the sea floor?	g	GMG (Equipment & Repair)	Cages are held in place by a grid mooring system which is anchored to the bottom with a combination of different types of anchors.
How much feed & feces are collected on the bottom under the cages?	c, d	GMG (Equipment & Repair)	Every cage has a camera which is used during feeding to monitor fish behavior and to ensure the fish are not overfed, leading to wasted feed. The bottom under the cages is monitored regularly to ensure there is no buildup under the cages. This is also monitored by both Provincial and Federal Governments.
Do the feed barges reduce the number of employees needed on site?	b	GMG (Equipment & Repair)	The feed barges do not reduce the number of employees on site, however, it does allow the employees to work a less rigorous schedule. Without the systems they are on site from daylight to dark. With the systems they are able to work more normal hours.

Question	Factor to be considered	Department	Response
How do the company know how heavy the gear is needed to be mooring off the farm?	g	GMG (Equipment & Repair)	All components are engineered to meet the ISO 16488 Offshore Standard.
Do you check the grid after it is deployed?	g	GMG (Equipment & Repair)	We are required by regulation to inspect the grids biannually, usually in the fall and spring. We also inspect them after major storms or is staff suspect there may be an issue.
How are the morts removed?	Other	GMG (Equipment & Repair)	As per the Farm Management Plan we have trained divers enter the cages weekly to remove any morts. Divers also inspect the health of the fish as well as the nets during this dive to ensure no damage has occurred.
How are the nets cleaned?	d	GMG (Equipment & Repair)	We have remote net washer units that are placed in the cage and use high pressure to remove any build up that may occur along the netting.
Are there sea lice in NS?	c, g	Fish Health	We currently do not have *L. salmonis* in N.S.
Do we use chemicals to treat for sea lice in NS?	c, g	Fish Health	No. Sea lice are not an issue here, so we have never had to use chemicals to treat for them in Southern Nova Scotia.
Will we use chemicals to treat for sea lice if it becomes a problem in NS?	c, g	Fish Health	Probably not. There are other treatments available such as biological control with cleaner fish, in feed medications and physical treatments with hot water.
Is it humane to raise salmon in net pens?	Other	Fish Health	If they are raised properly, yes.

Question	Factor to be considered	Department	Response
Are all fish vaccinated prior to being transferred to marine sites?	c	Fish Health	Yes. All fish are vaccinated prior to being transferred to marine sites.
Do we use antibiotics to treat fish and how do we decide to treat with them?	c	Fish Health	Very rarely, and much less than terrestrial farmed animals. We treat with antibiotics when we know, through diagnostic testing, that there is a bacterial infection that needs to be treated with. Antibiotics are not used as part of the production cycle like they are with some terrestrial farmed animals. Unlike agriculture, antibiotics can only be administered under a prescription by a certified veterinarian.
A lady bought in a sample of bugs in a vial and the veterinarian was asked to identify them. She thought they were sea lice. The lady stated there has been an abundance of them since the fish farm went in and obviously thought there is a direct relationship between the two. Some individuals stated they are getting bitten by the bugs.	c, d	Fish Health	Dr. Jon Grant from the Oceanography Department at Dalhousie University identified the bugs as isopods and copepods commonly found in our waters and shores. Dr. Grant explained that these organisms have always been abundant here and sea lice do not bite people, but some isopods will bite people. These are commonly known as ‘sand fleas’.
Question was asked why the lobster catch decreased around the Liverpool site since the fish farm went in?	c	Fish Health	This is not what others have observed.
With the proposed site expansion, have Cooke given any thought to where they would tie their boats due to already crowded harbours	a, c, e	Salt Water	Cooke will meet with various Harbor Authorities early in 2019 to discuss options. One option would be to do a lot of the vessel servicing from Mersey Park.
Fisherman stated that he has a mackerel trap licence off Mersey point that he hasn’t used in a while but may want to in the future.	a, c	Salt Water	Cooke will meet with DFO to determine the location this permit and include in any application that may be submitted.

Question	Factor to be considered	Department	Response
Where are the new sites going to be located	a, c, d, e, f,	Salt Water	Unknown at this point. We have several areas we are looking at off Brooklyn and Mersey Point. At this point we are doing our due diligence and engaging public as well as looking at Oceanographic and biological factors. We will decide by March 6, 2019 if we are going to apply for a site(s).
Your farm is infested with Sea lice. The Beach is covered in sea lice	c	Salt Water	There are no sea lice on the beaches. They are sand fleas. We do not have a salmon lice issue in N.S. I have been involved in salmon farming in N.S. since 1993 and have never had to give a bath treatment for sea lice. We monitor for lice weekly and submit results to the provincial government.
Fisherman stated that he fishes all his traps along Mersey Point	a, c	Salt Water	We try to locate our farms in areas that interfere the least with fishermen. Cooke allows fishermen to fish within their lease area. We have divers to free traps if they get caught in lines. A lot of fishermen love to fish close to our sites.
How long have the existing cages been at Coffin Island	a	Salt Water	They have been there since 2002. Cooke purchased the farm in 2011.
How many jobs will this bring to the area	b	Salt Water	Depending upon the size of the expansion, it could bring up to 20 new jobs to the Liverpool area. In addition to this would be spinoff jobs such as trucking, mechanical, machine shops, boat yards, etc.

Question	Factor to be considered	Department	Response
I just retired from Ontario and moved here. I don't want to see your farm from my house	e	Salt Water	We do our best to minimize any impact on our neighbours, but Nova Scotians have historically made a living from the ocean.
My property values will fall if the expansion goes through	e	Salt Water	There is no evidence of this in other areas we operate. In fact, property values have risen in some areas due to the increased economic activity.
This meeting is a sham. Just a check in the box for Government	Other	Salt Water	We take community engagement very seriously and this is just one step in that process for us. There will be more community engagement, as well as a public hearing conducted by the aquaculture review board. We have also set up a website, www.aquaculturegrowsns.ca, to provide info.
Who do I speak with about applying for a job?	Other	Salt Water	We have a Human Resource rep in attendance with applications.
Are you worried about storm damage to your cages	d, g	Salt Water	We have done a lot of engineering with our cages and moorings. We have collected oceanographic data and used independent engineering companies to model our infrastructure to withstand the conditions. Our infrastructure will be engineered to meet ISO Standard 16488 relating to offshore Aquaculture.
All your fish escaped from site 1358 on January 4th, 2018 in a winter hurricane. Why would you want to bring your operations to Liverpool	Other	Salt Water	Our farm 1358 suffered some superficial damage from the January 4th, 2018 storm. No fish escaped. We expect to start harvesting those fish in December.

Question	Factor to be considered	Department	Response
How many people currently work at the existing farm	b	Salt Water	Eight fulltime and four on a part-time basis. This doesn't include divers, admin, etc.
Why don't you grow your fish on land?	Other	Salt Water	We are the largest landbased salmon farmer in Canada. Right now, it doesn't make sense economically and environmentally to do it on a large scale.
We have heard about the Salmon enhancement project you are involved with in NB. Why aren't you doing that in NS?	g	Salt Water	We would love the opportunity to partner on a similar project in N.S. In fact, we have recently had some discussions on this with stakeholders.
This will ruin the tourism in the area.	b. e	Salt Water	There is evidence that this type of development will actually enhance tourism in the area.
These farms will ruin the lobster fishery in the area	c	Salt Water	We farm in multiple areas in Atlantic Canada. Lobster catches have not gone down in these areas. There has been aquaculture in Liverpool Bay since 2002 and it doesn't appear to have hurt catches. There are also many scientific papers on lobster/aquaculture interactions.
You have a Community Liaison Committee in the Shelburne Area. Why don't you have one here?	Other	Salt Water	We intend to set up a CLC in the near future.
You seem to be a good corporate citizen in other areas. What have you done for Queens County?	b	Salt Water	We have sponsored many events, but frankly can do a better job of getting out into the community. The development of the CLC should help us do that.
There is a bright light coming from the site can it be stopped?	e	Salt Water	We are required to keep a navigation light on but all others can be turned off. There have been several occasions crew have left lights on all night by accident, but we are putting procedures in place to prevent this.

Question	Factor to be considered	Department	Response
What do you feed the fish?	Other	Salt Water	Feed made at our feed mill in Truro, N.S.
The beach smells bad at times, is that coming from the site?	e	Salt Water	Not that we are aware of. Sometimes in the summer decomposing seaweeds on many N.S beaches smell bad.
"Do you know that your company breaks the law about pesticides	Other	Salt Water	No answer given.
You should research how to not pollute the ocean with fish waste from your sites	c, d	Salt Water	We have conducted many research projects to minimize our impact on the environment. We follow all government regulations.
How many fish escape from the farms?"	g	Salt Water	We have not had any fish escape from this farm since we took ownership. We have a strict Code of Containment which is regulated by both Provincial and Federal Governments.
Can you move the site somewhere else	a, b, c, d, e	Salt Water	The existing site location was picked because of low fishing effort and oceanographic conditions. We are consulting the community on where any additional sites should be located.
How many people work for Cooke in Queens county?	b	Salt Water	We would have to get those numbers from HR.
Why did you put your regional office in Bridgewater, not Liverpool?"	b	Salt Water	Bridgewater was central to our operations in Nova Scotia.

Question	Factor to be considered	Department	Response
It is better to grow fish on land, why don't you just do that?"	Other	Salt Water	We are the largest landbased salmon farmer in Canada. Right now, it doesn't make sense economically and environmentally to do it on a large scale.
Is this the only time you are going to talk to people about the farms?"	Other	Salt Water	No. We plan to speak with the community many times moving forward as we have existing operations here and want to be part of the community.
How much do you pay in taxes in Queens county?	b	Salt Water	Unsure
Why wasn't this held in a hall so we could ask questions to everyone at once?"	Other	Salt Water	This format allows everyone to ask questions of the experts without feeling intimidated.
I don't like this format for a public meeting, is there going to be another meeting later?	Other	Salt Water	There will be a public meeting put on by the Aquaculture review panel.
How is Dalhousie affiliated with Cooke?	Other	Research & Development	Jon Grant is the NSERC-Cooke Industrial Research Chair in Sustainable Aquaculture at Dalhousie University.
Where does Dalhousie funding come from?	Other	Research & Development	Ocean Frontier Institute, Natural Sciences and Engineering Research Council and other federal funding agencies.
Why does the dissolved oxygen decrease during August and September? (After looking at AquaCurrent)	d	Research & Development	As temperature increases, the ocean's capacity to dissolve oxygen decreases.
How can this information (currents) help you for deciding location of farm?	d	Research & Development	Farm siting is determined from exposure (waves), circulation for the fish (oxygen), and distance from other farms (health management). Various sensors are used as input to this decision.

Question	Factor to be considered	Department	Response
Why would universities and industry work together?	Other	Research & Development	Universities are sources of advanced knowledge and learning. This information can be used to help industry with economic return as well as sustainability. This ultimately benefits Canadian society.
How do you plan on cleaning the ocean floor from fish feces?	c, d	Research & Development	Waste is degraded naturally in place and dispersed.
You should develop a device that collects and disposes of fish feces.	c, d	Research & Development	If managed properly, the seafloor is capable of taking care of wastes with no long-term degradation.
Our lobsters eat the fish feces, become toxic, and are no longer edible.	c	Research & Development	The fish feces are not toxic, and there is no evidence that lobster meat is in any way affected by aquaculture.
Sea lice are coming from the farms and biting people at the beach, what are you going to do about it?	c, e, g	Research & Development	There is currently no issue with sea lice in Liverpool. The animals you mention are not sea lice and have nothing to do with fish farming.
How are you going to limit litter washing up on the shores?	e	Research & Development	Any debris reaching the shoreline is cleaned up by Cooke. They are happy to be made aware of litter from the farms. Unfortunately, there is a lot of marine debris from boaters as well as from the land that has nothing to do with Cooke.
Is the lobster habitat being impacted by the fish farm?	c	Research & Development	The farm is not located on lobster habitat.
Comments regarding farming activities near Beach Meadows – should any sites be constructed, consideration of placement (out of the line of site of Beach Meadows) is important.	e	SIMCorp	Indicated that this concern would be relayed to KCS

Question	Factor to be considered	Department	Response
Suggestion to move the boundaries of the current Liverpool site to the south; further away from the land; even 50m would help	a	SIMCorp	We will communicate this request to KCS; we listened to their concerns more than speaking about it. SIMCorp had a map with moveable "sites" and encouraged people to move the pieces around for them to understand the vision.
Any future sites should consider the distance from the land. Move as far away from the land as possible to reduce the effects on the residences along the coastline.	a, e	SIMCorp	Indicated the constraints of moving sites too far from land increases exposure to wind/waves; ideal positioning is near a land mass to reduce exposure.
Many people from Eagle Head expressing their concern on the effect fish farming may have on their tourism as the area is likened to Peggy's Cove; washed up aquaculture gear, eye sore, offensive noise, Escapees in the last 5 years.	b, e, g	SIMCorp	Could not counter their opinions; acknowledged their concerns. indicated that I was not aware of escapees at the Liverpool site.
A lot of questions regarding the effect on the lobster industry – apparently there were several lobster fishermen from the Jordan Bay area at the meeting stating that the lobster has the left the area due to aquaculture. It is an important industry in this area and there is concern that it will diminish.	c	SIMCorp	Attempted to answer these questions as SIMCorp has participated in a number of studies examining the interaction between aquaculture farms and lobster. I also directed a few people to Dr. Jon Grant who also has participated in such studies. I indicated that many lobsters' fishermen fish directly off cages with great success. Lobster are attracted to the area.
Much discussion over Port Mouton where the farm has devastated the seafloor.	Other	SIMCorp	Attempted to redirect as the open house was related to Cooke operations in Liverpool Bay rather than Ocean Trout operations in Port Mouton. Indicated that annual environmental monitoring is completed in accordance to provincial and federal standard operating procedures to monitor the environmental health of the seafloor.

Question	Factor to be considered	Department	Response
Questions regarding the distance between the two "proposed" sites (Mersey and Brooklyn). It was one gentleman's understanding that Shelburne sites were rejected as they were < 3km apart.	a	SIMCorp	I am not aware of any formal documentation stating this rule.
Uninformed about the new process to apply for new sites – the "Option" line had people very concerned. They thought that it was an opportunity for Cooke to "pack" as many leases in this area as possible. I had one woman lay out all of the mock leases stacked side by side; indicated that Cooke could apply for 50 or so sites in this area. Spent a lot of time informing people on the process.	Other	SIMCorp	Explanation that the Option Line was provided to KCS to scope out the area without potential competition cuckolding them out of a specific site. Sites could be placed throughout the bay, however only a few areas have been defined for optimal placement of cages due to several factors, primarily environmental. It was not ideal for cages to be placed in the middle of the bay due to excessive wind/waves. Positioning the sites near a land mass provides some shelter from these environmental factors.
Many were hoping for a summary presentation of what Cooke intends to do within the bay. While many enjoyed the format of the open house. I see value in a formal presentation prior to the open house meeting to squelch some of the main concerns	Other	SIMCorp	This is a new process and acknowledged that it is not well understood by many. Explained the new process requires a community engagement piece to allow for the public to understand KCS's intent and to have one on one discussions with experts in the company as well as service providers like ourselves to answer their questions.
Mistrust in the government. Period.	Other	SIMCorp	Listened to their grievances. Indicated the Provincial Regulations, Standard Operating Procedures and Framework as well as the Federal AAR regulations and monitoring standard are available online for their viewing. These documents dictate SIMCorp's sampling events and consequently laboratory analyses to ensure compliance to both government regulating bodies.

Question	Factor to be considered	Department	Response
Many people used the word “feedlot”. A term that I have never heard used to describe an aquaculture operation. I had the first woman define it for me – “inhuman enclosure of fish to be fed and put to marked with no regard to the fish or the environment”. Likened to cattle farming where they penned and fed without exposure to the outside.	a, c	SIMCorp	The density, or the number of fish, is defined and approved by the provincial government to ensure that overcrowding does not occur. In terms of the environment aspect, annual environmental monitoring in accordance to provincial and federal regulations and policies ensures minimal environmental impact. If impact is observed, a number of mitigative strategies are approved by NSDFA and employed by KCS to reduce environmental strain. For example, an extensive monitoring event to determine the area(s) in which impacted sediment is found; increased monitoring events, operation evaluation (feeding techniques), increased site staff training.
Mistrust in Cooke – operating outside their lease boundaries illegally; they do what they want, when they want; pesticide usage in NB; “pillage and rape the ocean”; cannot understand economic spin off – 10 jobs is not enough for the community considering the impact it has on them.	Other	SIMCorp	Previous provincial requirements only included the above water gear to be within the lease. A boundary amendment is required to expand the lease to include the below water gear. A boundary amendment application to expand the lease to encompass both above and below water gear was submitted in 2012. However, with the moratorium and change in government in 2013 this application was not officially processed. A lot of listening was done by our staff when the public spoke their grievances about KCS. There were no responses other than that we could not speak about the pesticide usage in NB, their specific operations, nor the economic spin off.

Question	Factor to be considered	Department	Response
Mistrust in SIMCorp – many thought environmental monitoring was performed by a subsidiary business of Cooke. After finding that out, they still believed we doctor the results to benefit Cooke even after being informed of the auditing process by DFA.	Other	SIMCorp	Informed those that perceived SIMCorp as a subsidiary business that we were service provider/contractor to perform environmental monitoring and assessments. While our company is paid by Cooke, provincial and federal procedures are explicit and strict. NSDFA QA/QC's every report submitted; field, laboratory and analytic audits are performed by NSDFA to ensure procedures adhere to standard operating procedures set by the provincial government and analytical results yield the same site classification to ensure accuracy.
What ingredients are in the feed?	Other	Feeding	Plant, animal by-product ingredients from human food industry, fish proteins and oils all approved by CFIA.
Where do the ingredients come from?	Other	Feeding	Plant, animal by-product ingredients from human food industry, fish proteins and oils all approved by CFIA.
How is the feed made?	Other	Feeding	Ingredients are finely ground, cooked with steam extruded in to pellet form.
Where is the feed made?	Other	Feeding	Truro, N.S. for dry diet Northeast Nutrition Inc feed mill. St. George, N.B. for Charlotte Feeds moist salmon feed.
Is the feed formulation the same through all feed sizes?	Other	Feeding	No, formulation is specific to pellet size (mm) which aligns with average fish size range to meet animal nutrition requirement specific to life cycle stage.

Question	Factor to be considered	Department	Response
How much food do salmon eat while in cages?	Other	Feeding	From seawater smolt input to market weight harvest approximately seven kilograms in total.
How do you load the feeding barges?	Other	Feeding	Feed is transported in bulk tote packaging and delivered to feeding system by barge or boat. The tote is lifted by crane to silo opening and tote is opened to load silos onboard feed barge.
How do you feed the salmon?	Other	Feeding	Feed is measured in KG's per meal per cage during meal feeding on feed barges. It is measured by a dosing system and feed is delivered from barge to cage by air in piping.
What is the sink rate of the feed in seawater?	Other	Feeding	Approximately 10 cm/s sink rate.
What is the conversion rate from feed to flesh in salmon?	Other	Feeding	It can range from 1.2 KG feed: 1.0 KG flesh gain to 1.5:1.0 depending on timing of fish entry, harvest completion, and fish health during rearing period.
Are the salmon GMO?	Other	Feeding	No, the salmon are not GMO.
Do the salmon contain heavy metals?	Other	Feeding	Feed sampling for heavy metal content is conducted by 3rd party approved laboratories. QC Sampling program is managed by NNI Nutritionist and is compliant with CFIA regulations and BAP program policy.
How much fecal matter is excreted?	Other	Feeding	This is minimal due to highly efficient feed conversion ratio of feed to flesh in salmon. I did not give a quantified response to this question.

Question	Factor to be considered	Department	Response
What happens to the excrement?	c, d	Feeding	Excrement is dispersed in ocean currents during decent to bottom. Dispersion is dependent on current conditions on site. Bottom sampling is conducted to monitor build up and environmental impact as per regulations.
How long does it take to grow a salmon?	Other	Feeding	Twenty to 24 months is our current seawater period for rearing from smolt entry to harvest.
Where do the juvenile salmon come from?	g	Feeding	We have an internal broodstock and smolt supply division located on land which use aquaculture recirculation and flow-through freshwater hatchery systems.
How do we manage fish health?	c	Feeding	We have internal fish health veterinarians and biologists on staff to provide monitoring and sampling in all regions where we farm. There are also provincial inspections conducted in compliance with regulations. We also include vaccination practices in our fish health program.
How are the salmon treated when sick?	c	Feeding	When it is deemed necessary, a medicated feed prescription is issued by a licensed practicing veterinarian for treatment application.
What happens to fish that are sick and depopulated?	Other	Feeding	Depending on their fish health status and size when scheduled for removal, fish may be either composted or sold. Any sales would be in compliance with CFIA programs.
How many fish are in a cage?	Other	Feeding	Approximately 30,000 fish in a 100m cage.
How many salmon are entered on a site?	Other	Feeding	It is dependent on the site carrying capacity and area of license.

Question	Factor to be considered	Department	Response
How do you determine how many salmon can enter a site?	Other	Feeding	The carrying capacity is established based on environmental sampling results.
How do you measure the size of the salmon?	Other	Feeding	We use underwater bi-optical camera system (VICASS) for biomass sizing of swimming inventory.
How much space do the fish have in the cages?	Other	Feeding	Lots of spacing available for fish in cages. Less than 5% of space available is filled by fish.
What is the desired harvest weight?	Other	Feeding	Approximately 5.5 - 6 KGs swimming weight.
Why do the salmon not mature in the cages?	Other	Feeding	We select late maturation characteristics in our Broodstock program to prevent maturation occurring during our rearing cycle. Maturation causes downgrade in flesh quality and is not preferred.
Are the salmon which consume feeds containing wheat safe to eat for persons with Celiac disease?	Other	Feeding	Yes, the salmon are able to consume wheat as an ingredient and it is safe for humans with Celiac disease to consume.
Can you move the sites further off shore?	a	Feeding	It would depend on exposure and environmental conditions at offshore location. Existing sites are in areas deemed appropriate for use.

2.4 Open House Exit Surveys

Upon exiting the Public meeting each guest was asked to fill out an exit survey. There were 32 surveys completed. An illustration of the exit survey used is shown below followed by the responses from the public.

Cooke Aquaculture Exit Survey

1. What was your primary reason for attending the open house?

2. Did you find the information provided helpful?

3. Was there a particular area that interested you?

4. What outstanding questions or suggestions might you have about our farms in Liverpool area, or about our operations in Nova Scotia?

5. Would you be interested in serving on a Community Liaison Committee?

   YES NO

   If yes please leave your name and contact information.

Figure 2.4.1 Aquaculture Exit Survey

Table 2.4.1 Responses to question #4 on the exit survey

Questions / Suggestions	Factor to be considered
Keep it the same size! Too much pollution.	c, Other
Suggesting land-based operations, if any; where the specific marine-based operations are and what they are.	Other
I would like to hear a presentation and an opportunity for community members to ask questions. This event seemed like information only, another √ in the box.	Other
Cancer-causing salmon. Protecting owners and beach sensitive areas.	Other
What the effects are on lobster fishery?	c
a. Environmental destruction; Beach Meadows Beach does not need fish pollution b. I don't trust Cooke. They break too many guidelines. C. Why aren't you practicing land-based fish farms?	c, Other
What are the environmental benefits of aquaculture?	Others
Where new sites will be located?	a
How many fish is too many?	Other
They should all be shut down or moved on shore.	Other
How much actual money does civic & provincial government earn from this>	b

Questions / Suggestions	Factor to be considered
What was the smell coming from the farm this summer as I drove regularly along the Brooklyn Shore Rd, near the lookoff to Beach Meadows Beach.	Other
My suggestion is to discontinue ocean-based fish farming in Nova Scotia.	Other
Jobs for local people?	b
Why aren't you expanding more!	b, Other
Need a public forum!	Other
We need a town meeting where residents can ask questions and voice concerns (ASAP).	Other
Amount of monies received by Cooke from N.S. or Canadian government each year.	b
This is a money losing deal for the residents of Liverpool and Nova Scotia.	b
This is a money losing deal for the residents of Liverpool and Nova Scotia.	b, Other
Testing on Beach Meadows Beach.	c, Other
The operations in Jordan Bay are an unmitigated disaster. As predicted ahead of time.	Other
What is the $ value going directly into Queens County? Is it worth the risk to our environment/health?	b
Suggest In-land aquaculture instead.	Other

Questions / Suggestions	Factor to be considered
Take out what's here and don't come back.	Other
Hold a proper meeting - this format would allow for a necessary information exchange.	Other
I am not in support of fish farms in our natural waters.	Other
An open meeting with an exchange of opinions.	Other
What is in it for local community and where are the safe guards.	b, c, other

Table 2.4.2 Responses to remaining exit survey questions, question 5 has been omitted to respect people's privacy

What was your primary reason for attending the open house?	Did you find the information provided helpful?	Was there a particular area that interested you?	Other comments
To voice my concerns about doubling the size of the fish farm	Did not look. Too busy.	Pesticides used, diseases, too big farm for area.	I thought this seminar was propaganda to a large extent. Answers to questions were skirted. On the other hand, I appreciated seeing the displays of the equipment.
Information/education	Somewhat	All areas	Concerned about smell & unhealthy bacteria/microbes when I or my dog swim off Beach Meadows beach.
General information for an oceanfront property owner	Yes	Very difficult to see the videos - too crowded and noisy	I would like a town hall type meeting that would present a balanced view.
Wanting to find out more about the intent for the fish farm in Queens County	Somewhat	Suppliers	Suggest another meeting for the public in a "town hall" style. Prefer a venue that is not so noisy. Suggest a facilitator/mediator at a town hall style meeting.
To find out about the environmental issues and the resale value of beachfront property near the fish farms	Could not get any specific answers	Protecting beachfront property - environmental issue	We don't want you "farming" (growing) fish in a "feed lot" in our community.
I thought it was an open meeting to ask questions	no	Pollution, pesticides, antibiotics, disease, waste of government (taxpayer) dollars)	Sent 40 additional questions to Joel's attention after the event.

What was your primary reason for attending the open house?	Did you find the information provided helpful?	Was there a particular area that interested you?	Other comments
Worry about standards enforcement	Somewhat	Regulations	I would love to see the N.S. Auditor General examine Cooke Aquaculture to determine the money flow into and out of N.S. As a taxpayer I don't feel I'm getting my "tax dollar" benefits. I feel there are dollars leaving N.S. and heading for N.B.
I thought it was going to be a presentation; a public consultation.	Somewhat - very loud.	Proposed sites	P.S. the candied salmon was excellent
To protest the expansion of aquaculture in the area	Yes - it paints quite a rosy picture.	Yes, what are the environmental benefits of aquaculture?	
Information/Lobster Fishery	Yes	Feeding/Site expansion	
To find out where the expansion will be.	Would have preferred a "Town Hall" style venue. Too noisy to hear my questions answered.	Boundaries, food fed to fish ingredients	

What was your primary reason for attending the open house?	Did you find the information provided helpful?	Was there a particular area that interested you?	Other comments
Information gathering	The information is all spin doctoring.	All the presentations were well done. Of course, the where of the new farm was important.	
Environmental concerns	No.	The impact of sea lice? Impact on the seabed at existing site?	
Learn about the proposal	Not really	Cost-benefit; environment; animal welfare.	
General information	Yes	Site of farm - limit	
Concern for our community, and the environment.	Yes & no, Disappointed that no opportunity for open mic with Q&A.	How much actual money does civic & province government earn from this?	
Express concerns; get answers	No	That pregnant women are still being fed your salmon.	
Concern over proposed expansion	"Not really - promo for Cooke" "go team Cooke""	The cages, fish in cages (quantity), feeding.	

What was your primary reason for attending the open house?	Did you find the information provided helpful?	Was there a particular area that interested you?	Other comments
Glad there was independent monitoring group	Spoke with environmental monitoring	Why not try in-land fish farming? With unprecedented & unknown temperature rise of our local oceans, open-pen farming in salt water will have lots of wild cards.	Glad there was independent monitoring group.
To express our vehement disagreement with fish farming operations.	Yes, but disgusted with PR propaganda on Cooke's part.		
To learn more	No		
To learn and confirm about the Cooke aquaculture company & processing	No		
To ensure that no expansion of production ever is approved for Queens County	Perhaps…with certain bias though		
To find out more about fish farms.	yes		

What was your primary reason for attending the open house?	Did you find the information provided helpful?	Was there a particular area that interested you?	Other comments
To express my horror at the thought of one more salmon feed lot	Yes, very honest & informative		

3.0 Aquaculture Grows Nova Scotia

October 11, 2018 Cooke Aquaculture activated www.aquaculturegrowsns.ca as a means of making information about the open house, and the proposed project available to the public. The site includes background information on Cooke Aquaculture, the expansion option we are exploring (including a map of the option area), an FAQ page that addressed some of the questions posed to Cooke Aquaculture from the public, and a "contact us" form for the public to submit questions, comments or concerns.

The URL to this site was included on the newspaper ad and promotional posters that were developed for the open house. Following the open house, Cooke also ran advertising on CKBW that directed people to the site for more information about the project. The 30 second ad aired 16 times over a two-day period on November 2-3, 2018. Please see Appendix F for radio ad script.

From October 11, 2018 – February 25, 2019, Cooke received a total of 54 submissions via the "contact us" page of www.aquaculturegrowsns.ca. The first comment was received on November 2, 2018. Two inquiries were responded to directly by staff at Cooke Aquaculture; one from a representation of the Queens County Fair seeking sponsorship for an event, and one from a researcher at Dalhousie University seeking footage for a video project. The rest were sent the following response:

"Thank you for submitting your comments regarding our sea farming site expansion option in Liverpool Bay, N.S. All input will be thoroughly reviewed and researched as we consider the expansion and will be included if the company proceeds with submitting an application to the Nova Scotia Department of Fisheries and Aquaculture. For more information, please visit www.aquaculturegrowsns.ca."

Analytical data recorded from the www.aquaculturegrowsns.ca website shows only 52.65% of the page views were generated in the province of Nova Scotia. Thus, the remaining 47.35% was generated outside of the province. See Appendix G for graphic.

Questions and/or comments received on the aquaculturegrowsns.ca website is listed in the table below (current as of February 25, 2019).

Table 2.41.1 Table of questions and/or comments received on the aquaculturegrowsns.ca website

Date	Correspondence
19-Dec-18	"Hello Mr. Richardson, Many residents are concerned about the effects that Cooke Aquaculture's operations may be having on Liverpool Bay especially on other fisheries, wild salmon, migrating birds and on the beaches. In 2016 Sweeney International Marine Corp wrote an impact assessment report for site 1205 (Coffin Island). I believe it is in everyones best interest when information is shared in an open and transparent way and I know that your company wishes that everyone would discuss issues based on facts. Therefore, would you release that report to the public? Thank You,"
14-Jan-19	"Dear Mr. Richardson, I am a resident of Brooklyn Queen's County NS. I frequently walk Beach Meadows and the marsh beside Beach Meadows Beach is ideal for bird watching. Any increase in the current pens will be a detriment to this ecologically sensitive area. I will continue to explore alternatives to your product. I ask that you do not increase your current production from Queen's County NS. Respectfully,"
14-Jan-19	Please be advised I am writing this letter to state my opposition to finfish farms in Liverpool Bay, Queens county, Nova Scotia. I disagree with this practise. It is bad for the environment, the ocean, the wild salmon, our coast line, our beaches.
15-Jan-19	"I would like to express that I DO NOT SUPPORT THE EXPANSION OF FISH FARMS IN LIVERPOOL BAY NS AND AREA. If it were up to me, I would have you REMOVE the existing ones!
16-Jan-19	"Dear Mr. Richardson, I am a long-time vacationer to your magnificent province, and I have family in the area where you are expanding your fish farms. I look forward to my annual sojourn to Liverpool every summer to spend time with my family and enjoy the sweet breezes on the beach. Please don't expand the farm, it is destroying the environment. Find another location for your enterprise and leave the pristine ocean and natural environment for us, the weary city dwellers who come from away to experience a little bit of heaven on earth. I implore you to reconsider your expansion plans for the well-being of the people of Liverpool, my family and all the vacationers who flock to your shores. Sincerely,"

Date	Correspondence
16-Jan-19	"Dear Mr. Richardson, I would like your organization to know that, as a property owner at Beach Meadows, and for many other reasons, I am NOT in support of any expansion to Cooke Aquaculture's fish farm in Liverpool Bay. The destructive impacts of fish farms are well documented in the scientific literature and despite any assurances to the contrary, we all know the potential impact on our beautiful Beach Meadows environment and quality of life is far greater than your limited corporate liability. This decision to expand what is already an existing eye-sore cannot be allowed to stand. We trust this letter will be forwarded to the Aquaculture Review Board. Sincerely, "
16-Jan-19	"Dear Mr. Richardson: Please let it be noted, that for many reasons, I am NOT in support of any expansion to Cooke Aquaculture's fish farm in Liverpool Bay. This is a beautiful area of Nova Scotia. The pristine waters of Beach Meadows, and its long, white, sandy beach, draw many visitors, and prospective new residents alike. Many come from afar, just to spend the day at this beach, and swim in the clear waters. The surrounding environmentally significant wetlands are also home to much wildlife, including species at risk, and many migratory birds. The destructive impacts of fish farms are well documented in the scientific literature. On a professional footnote, I can inform you that the presence of the existing fish farm along with the prospect of expansion have already negatively affected real estate sales along that section of coastline. I trust this letter will be forwarded to the Aquaculture Review Board. Sincerely, "
16-Jan-19	"Dear Mr. Richardson: Please let it be noted, that for many reasons, I am NOT in support of any expansion to Cooke Aquaculture's fish farm in Liverpool Bay. This is a beautiful area of Nova Scotia. The pristine waters of Beach Meadows, and its long, white, sandy beach, draw many visitors, and prospective new residents alike. Many come from afar, just to spend the day at this beach, and swim in the clear waters. The surrounding environmentally significant wetlands are also home to much wildlife, including species at risk, and many migratory birds. The destructive impacts of fish farms are well documented in the scientific literature. I trust this letter will be forwarded to the Aquaculture Review Board. Sincerely, Mersey Point NS"

Date	Correspondence
15-Jan-19	"Dear Mr. Richardson, Please let it be noted, that for many reasons, we are NOT in support of any expansion to Cooke Aquaculture's fish farm in Liverpool Bay. This is a beautiful area of Nova Scotia, and the pristine waters of Beach Meadows, and its long, white, sandy beach, draw many visitors, both locals and tourists alike. Many come from afar, just to spend the day at this beach, and swim in the clear waters. The surrounding environmentally significant wetlands, are also home to much wildlife, including species at risk, and many migratory birds. The destructive impacts of fish farms are well documented in the scientific literature. We trust this letter will be forwarded to the Aquaculture Review Board. Sincerely,"
16-Jan-19	I DO NOT SUPPORT THE EXPANSION OF THE FISH FARM IN LIVERPOOL BAY, NS.
15-Jan-19	"Please be advised that I do not support the expansion of the fish farm in Liverpool Bay, Nova Scotia. Sincerely, "
16-Jan-19	Good morning Joel: I have appended two e-mails concerning the scoping process for a possible application by your company to expand open net pen salmon production in Liverpool Bay. The intent of the first one was to make certain that the Minister of DFA got the real story of the open house in Liverpool. At the time of writing I was not aware of the makeup of the Board. The second concerned the meeting that was held in Shelburne with the Mayor and Councillors of the Region of Queens. Please ensure that this material is included among feedback documents from citizens, to be forwarded to the Review Board. **Date:** December 22, 2018 at 4:14:31 PM AST **To:** min_dfa@gov.ns.ca **Cc:** PREMIER@novascotia.ca, Minister.Environment@novascotia.ca, dbdagley@regionofqueens.com **Subject: Fwd: Aquaculture Review Board.** Good afternoon: I understand your department recently held a meeting with the Mayor and Councillors of the Region of Queens.

	In the appended letter I gave a proper summary of the open house that Cooke Seafood officials held in Liverpool last month. I am curious what your department received from Cooke officials regarding the open house meeting. The only comment that I heard was a reference to the number of attendees. That comment was obviously made to hide the barrage of resistance, questions and challenges of the citizens who are well aware of the past failures and squandering of government funding. Regardless of what you may have heard from Cooke representatives or from the Mayor and Councillors, the majority of the citizens of Queens County, for totally valid reasons, are strongly opposed to ANY AND ALL APPLICATIONS FOR EXPANSION OF OPEN NET PEN FEEDLOTS IN LIVERPOOL BAY OR ANYWHERE IN QUEENS COUNTY. Please acknowledge and provide a reasoned response at your earliest convenience. **Date:** November 28, 2018 at 1:44:23 PM EST **To:** MINDFA@novascotia.ca **Cc:** PREMIER@novascotia.ca, Minister.Environment@novascotia.ca **Subject: Aquaculture Review Board.** Good afternoon Minister Colwell: My name is [redacted], now living in Hantsport after being a resident of Liverpool for 51 years. I am concerned about the application by Cooke Seafood to expand production in Liverpool Bay. I was a supporter of FPMB, (Friends of Port Mouton Bay), when the moratorium against expansion there was declared several years ago. After the government change, as you recall, Cooke was provided a loan of $25 million to construct a large farm in Jordan Bay, expand food production in Truro and build a processing plant in Shelburne with the promise of 300 jobs. Needless to say, the Mayor and Councillors of Shelburne and most of the citizens who were not aware of the negative effects that were certain to occur in Jordan Bay were excited about the prospect of this plant and 300 jobs. When I say that there was certain to be serious problems in Jordan Bay, I do so with the knowledge gained by the work of [redacted] and [redacted], Marine specialists who worked with the lobster fishers and citizens of Port Mouton Bay to prove that the Bay could not sustain the impact of a mega salmon farm due to shallow waters and poor flushing. Jordan Bay had the same limitations.

	Six years after that loan was made and Glenn Cooke praised Premier Darrell Dexter and DFA Minister Sterling Belliveau in front of a hopeful crowd in Shelburne, all optimism has been shattered because there"? is no processing plant and no jobs. With no processing plant, $16 million of the loan remains outstanding. Furthermore, the concern about the unsuitability of Jordan Bay for large fish farms has been proven on three occasions. Firstly, a catastrophic mortality of salmon due to disease more than likely was due to overcrowding and stagnant waste. Secondly, the mass mortality due to superchill in February of 2015 was likely due to shallow waters with no escape for the fish. Thirdly the cage failure due to hurricane force winds this past winter resulted in escapes and mortality, leaving much debris to get washed up on shorelines. Three disasters at one location. Washington State in the U.S. banned Cooke from operations there on ONE failure. As were many residents of the Shelburne/Queens area, I was disappointed, more like appalled, to read your comments that “it’s the same few people complaining”, and passing off the failure and debris as being insignificant on the word of Cooke spokespersons and “monitoring” by your staff. That brings us to this current application. You were quoted on radio to the effect that all submissions should be directed to the Review Board. You must get the full story first. One thing is for certain, it’s not “the same people complaining all the time”. Cooke went through the “check the box” routine on the way to seeking approval for expansion by hosting the South Queens Chamber of Commerce, making a presentation to the Mayor and Councillors and hosting an open house at the Queens Place Emera Centre. Approximately 170 to 175 people attended the open house, likely 95% opposed, and well prepared to challenge and question the Cooke representatives. I noted on your comment on radio that Cooke was required to provide feedback to Fisheries and Aquaculture about the meeting. VP of Public Relations had already made a statement that this was “the highest attendance of such a meeting in years”. I’m certain that this is the “feedback” you will get on the “only meeting that they are required to have”. A positive spin by a shrewd PR man. Check another box, “held a public meeting, heard the concerns”. Now I will provide you with the REAL feedback. Cooke representatives were on a hot seat for two hours from 170 well qualified citizens who challenged their freedom to deposit thousands of tons of fecal waste into the ocean, their history of sea lice treatment and use of illegal pesticides, the lobster kill in New Brunswick, the “free” money from the Previous government, their disasters in Jordan Bay, their expulsion from Washington State, and their processing and marketing of 250,000 terminally diseased fish from the Coffin Island site just before they would have died of the disease. Consumers bought these ISA infected salmon with no identification of the virus. All representatives, including the VP of Public Relations, Marketing, and both Dalhousie and Company scientists were at a loss to provide anything to refute the knowledge of the people and resorted to evasion, derisive laughter and refusal to answer. All the time the salmon samples lay untouched and drying on the trays. Knowledgeable people do not consume open net pen farmed salmon.

	On November 22, in Liverpool, approximately 100 citizens viewed the documentary Salmon Wars by Silver Donald Cameron. (As Fisheries Minister this is certainly compulsory information so I'm sure you have watched it). On Nov. 26, about 130 citizens gathered at a rally at Fort Point to protest the application for expansion, and a contingent of about 30 questioned Mayor David Dagley outside the RQM offices. At the same time, about 30 citizens of both the South Shore, Eastern Shore and even the Annapolis Valley protested outside government House. This should give you insight that this is not "the same people complaining all the time". You have suggested that comments be deferred to the Review Board. I am not familiar with the makeup of this board. First of all is the board voluntary? If the members are paid for their services by the government, it immediately ensures that it is not independent. Does the board consist of Marine biologists, familiar with all the negative impacts of open net pen fish farms? If not, will they become educated as I am to the reality of this industry. Are they familiar with the growing catastrophes of this industry in Scotland, Norway, New Zealand, Tasmania and Chile as well as in B.C., Newfoundland and as I have outlined here in Nova Scotia. If all of these criteria are not satisfied, the board review is just another box to be checked on the way to a rubber stamp. In no way can the board be considered INDEPENDENT. This letter is lengthy but unavoidable because of all the significant history and current priority. It is of utmost importance for you as Minister of Fisheries and Aquaculture, and because of this industry's irreversible negative environmental and ecological effects, with the support of the Minister of Environment, to DENY ALL APPLICATIONS FOR EXPANSION OF OPEN NET PEN FISH FARMS IN LIVERPOOL BAY AND/OR ANYWHERE IN QUEENS COUNTY. If it is possible to stop the process now that would be preferable. Please acknowledge receipt and confirm reading of this letter at your earliest convenience. I will call your office on Friday if no response has been received.
16-Jan-19	"Hello Joel, I am writing to you to formally submit my voice to sopt the expansion of the fish farm where I have my home. I and my spouse and dogs enjoy the area and specifically chose it because it was pristine (no salmon farms at the time). When we got word about the expansion of something we are vehemently opposed to, I had to write to you and your company. I have educated myself on the topic and risks and am deeply concerned. I also frankly worry about property values and that of our community will suffer with fewer tourists and seasonal renters, once the word gets out how ugly, and smelly our coast line has become. I see no upside to the risk. Thank you,"

Date	Correspondence
16-Jan-19	"To whom it may concern, I do not support the expansion of the fish farm in Liverpool Bay, NS Regards, "
16-Jan-19	“Please be advised that I do not support the expansion of the fish farm in Liverpool Bay, Nova Scotia. Sincerely,”
16-Jan-19	“I DO NOT SUPPORT THE EXPANSION OF THE FISH FARM IN LIVERPOOL BAY, Ns
16-Jan-19	"Dear Mr. Richardson, As a property owner at Beach Meadows, I am NOT in support of any expansion to Cooke Aquaculture’s fish farm in Liverpool Bay. If it is so necessary to increase your business profit and thereby diminish my quality of life, please do so where the negative impacts of your fish farm are confined to a more controllable environment, like on land, and not on vulnerable waters and beaches. We trust this letter will be forwarded to the Aquaculture Review Board. Sincerely, "
16-Jan-19	"Hello Joel. Why expand more? This paradise that we live here in Beach Meadows is already at risk from contamination from the open water fish farms. Why make it worse with putting in more. Their are alternatives. In land fish farms are safer. I am not going to go all over the scientific evidence that shows that open water fish farms are unhealthy and and hazardous to the environment. Lets do the right thing and stop with the expanding. When is enough ...enough. Please do the right thing and let the paradise that we live in remain a paradise.
23-Jan-19	"I am writing to plead with you not to expand a fish farm at Beach Meadows and the Liverpool Bay area generally. Beach Meadows is a national treasure with its dunes and boardwalk and piping plovers. My family has spent part of every summer for the last few years at Beach Meadows and would hate to have to find another spot to visit. The pollution, chemicals, smell and discoloration of the water would be an ear (and nose) sore by itself. But the risk to the environment is even greater. "
28-Jan-19	"Having recently discovered Beach Meadows our family has enjoyed holidaying there for the past couple years and were planning to do so in the future. I am alarmed at the news of a fish farm expansion even being considered in the area. The effects on the ecology will be devastating as will the effects on tourism. The negative history of fish farms speak for themselves. Just think of the cost of cleaning it up when the fish farm has gone and that an area of such natural beauty will have been ruined forever.

Date Question Posed	Correspondence
4-Feb-19	"To whom it may concern, Joel Richardson I do no support expansion in Liverpool Bay. You need to think about land based farms and organic. Respectfully, "
29-Jan-19	"I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. We purchased our home in Eagle Head (just outside of Liverpool) 5 years ago and it has been our refuge on weekends and through the summer months. We are in the process of moving here permanently and can't wait to have this view every day. Part of the reason for choosing this location was the fact it looked out on a beautiful little bay and we could step outside and find ourselves on a tidal beach in under 2 minutes and a five-minute car ride would have us at Beach Meadows. I attended the information session held at the Emera Centre this fall. I asked questions, I listened, and I came away feeling quite unsettled. Since then, I have read a great deal about the long-term concerns people in other parts of Canada and the world have with open-pen fish farming. This also included the move in many jurisdictions to ban this form of fish farming. I have lived in Nova Scotia my whole life, with many of those years being spent living in coastal communities. The beauty of our coastline, the wonderful seafood and our pristine beaches are the reasons many visitors come to Nova Scotia every year. They are also the reasons I have chosen to live here. As a result, I believe that the long-term environmental and aesthetic risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. For these reasons, I will continue to voice my concerns to all those who will listen.
31-Jan-19	"Mr. Richardson Spin Doctor Cooke Aqua Had a chance to read your whine in today's local paper. Poor guy, all the people picking on you and telling lies. When have you ever answered a question or told the truth. Did you tell the Mayor of Queens about your tack record in Washington State, USA? How about the $500,000 fine for killing lobsters in NB? What about the $500,000 fine in Maine for killing lobsters? Surely you told the Mayor about selling sick fish from the Coffin Island site without telling the public that the salmon were sick with Infectious Salmon Anemia (ISA)? Then again I'm confident that you told Mayor Dagley about the three failed grow out efforts in Jordan Bay? In 2015 all salmon died (smothered to death) by Super Chill, 2017 all died from ISA and trucked away to the landfill and 2018 all escaped or were crushed to death by the January 4, 2018 winter hurricane. I'm unable to confirm the numbers for 2018 because you refuse to share the numbers with the Premier and/or Ombudsman. Mr. Richardson, instead of proposing to expand sites in Liverpool Bay, I recommend you remove the Coffin Island site and return the garbage to Blacks Harbour, NB

	Finally, I suggest you tag along with Keith Colwell on his junket to Tasmania. Not sure why the Minister is going, however, I hear the wine is good and maybe a couple of feeds of Kangaroo* You and Keith stay behind and make Atlantic Canada a better place. Chester, NS * Any Wolf Blass Red will pair with Kangaroo."
Date Question Posed	Question/Concern
2-Nov-18	This map is not consistent with the information you provided at the recent open house Cook Ind held in Liverpool. Why does this map not show the addition of the two new proposed sites you are also requesting? This is misleading the public into believing you are merely exploring an expansion of the existing site.
28-Nov-18	What are you going to do about the thousands of tons of waste? Will you continue to process and sell diseased fish to unsuspecting consumers? What chemical will you use to control sea lice? How do you expect the provincial government to approve expansion when your company still owes $16 million? How do you explain that essentially ALL of those attending your “dog and spamon” show are strongly opposed to another feedlot in the Bay?
7-Dec-18	Employment opportunities Digby area
8-Dec-18	Hi im Scalloper from digby looking for new job [redacted]
14-Dec-18	Very opposed to fish farms, don't buy the product and am not happy with what they do to our shores...we all have eyes, we've lived here and frequented the beaches all our lives..and the negative impact is very evident. Please vote this down Region of Queen's.
17-Dec-18	I am a Liverpool resident, strongly opposed to the fish feed pens presently in our waters and any future expansion in the Liverpool area or the entire province. There is plenty of science on the books that prove this needs to stop, risk out weighs rewards massively! Cooke has not been open and honest with all of the facts. New Brunswick's coastline has suffered. Nova Scotia's coast is being exploited! Leave Nova Scotia alone.
17-Dec-18	Please stop reporting that there are few people against your hopeful fish farm expansion in Liverpool, N.S. Many are against it. This is my second contact to you! I’m horrified by your proposal to expand!
17-Dec-18	In this time of rampant climate change driven storms and warming waters the idea of placing fish farming facilities along the coast of NS is irresponsible at the least. No matter what is said the ability to adequately control disease and the fish themselves as well as the offal they produce is not possible. Develop an onshore facility and if it is run properly you will have support but I will never support your presence in Liverpool Bay or any tidal water of Nova Scotia.

Date Question Posed	Question/Concern
2-Jan-19	"Dear Cooke Aquaculture, I attended the Open House at Queens Emera Center, Liverpool on October 30,2018. I made every attempt to talk with the various persons managing the booths and found the information useful. However, I continue to have questions that I hope you will provide responses to help with clarification. 1. What is the circumference and depth of one pen at Coffin Island site 1205? How many pens are presently in place and what number is the future expectation ? 2. What is the distance regulated from Pen Outer Edge to Shoreline? 3 What is the distance between the bottom of Pens and the OceanFloor? 4.How frequently Is an Environmental Assessment done and when was the last completed on Site 1205 5. How many persons do you expect to directly employ in our local area ? 6. Will you consider a Land Based Aquaculture Fish Farm in the near future? I appreciate your time and thank you for responses
11-Jan-19	This letter is being sent to oppose the proposed expansion of finfish aquaculture in Queens county and especially Liverpool bay and Beach Meadows Beach. Smelly, oily skum on our beaches. Breeding with wild salmon, using chemicals, Cooke should address the fact that the new process is making their company name a bad word when really it is the Provincial government people are upset with. The way the process is written puts the applicant in the line of public fire instead of the government. Shameful for you guys. I know you do some good things but this is not a good thing. Stop open pen farming in Queens so you do not get any more public demonization because the residents do not want you here. Sorry guys.
14-Jan-19	This is my second request for this clarification. I find the above information (on website) very unclear about what the intentions of this exploratory process are. You state this process is only for an Option to Lease, which I had to research on the NSDFA website to determine that means it pertains to a new site, not an existing. But below your statement you have indicated on the map a proposed increase in size to the existing site, and nothing else, there is no words or indiction on this website that the Option you are exploring in this process is for a potential additional new site(s). Your statement and map leave one to believe the proposed increased site size of the existing lease is the "expansion" you are referring to. However, this alone would be categorized as an 'amendment' not an Option to Lease. If your requirement is to collect feedback from the public re your intentions, the partial information you are sharing here is very misleading and will most likely not raise any concerns about an additional site(s) but only expansion of the existing. Please clarify if this scoping process is for an Option to Lease (additional site/s) or an Amendment to existing, or both? If your intent is to collect relevant feedback, disclosing this information would be critical to that purpose.

Date Question Posed	Question/Concern
15-Jan-19	"I would like to add my voice to the list of others against the Cooke Aquaculture expansion in Beach Meadows, Queens County. I hear of little to no economic benefits to Queens County and even if there were economic benefits, I still believe that the cost is too expensive to our oceans, beaches and waters. As we see 17 fish farms begin the decommissioning process in BC to restore the oceans and wild salmon populations, here in Queens County we can mitigate the damage before we end up in the same situation. I am sure the cost to decommission came at a much higher price that the building of these farms. We all know that we need to protect our resources that are so precious to us all and the future. This expansion not only threatens our environment but the livelihood that many of us rely on here in Queens County through the tourism and fishing industries. Did you know? Tourism Nova Scotia Snap Shot: Tourism Revenues totalled $2.7 Billion in 2017 $1.18+ Billion came from non resident visitors Generates $300 Million in tax revenues annually 2.2 Million visitors came to NS in 2017 Tourism Employs 40,000+Nova Scotians 1 out of 3 Nova Scotians work in Tourism as their first job Our fisheries, I would guess are likely one of the pillars of employment that Queens County residents rely on for a living. I believe that by protecting these waters we can do much better by investing in responsible tourism and fishing industries that would provide much more economic benefit without destruction. Thank you for your attention to this matter. "
15-Jan-19	"Message: Please NO open pen fish farms in Liverpool Bay! You need to look into the very negative repercussions of such a terrible artificial practice!"
15-Jan-19	I was born in Liverpool and live on the West coast now where we have been fighting fish farms for decades. It is only now we see the upcoming closer of some of them and hopefully the rest will be closed soon or moved to landbase systems. Bacteria and disease should not be released in pristine waters.
15-Jan-19	As a Canadian, I deserve to know that the best practice is used in producing fish for consumption. Your company is not thinking of our country With your fish farms! Please stop!

Date Question Posed	Question/Concern
15-Jan-19	"I've read about your interest in expanding your operations in the Liverpool Bay. I wish to express my concern about the impact this will have on the wetlands and on Beach Meadows Beach. The wetlands are a pristine area containing wildlife, while the beach at Beach Meadows is a beautiful, clean, sandy beach enjoyed by both wildlife and humans alike. To operate a fish farm near this area, having fish feces and other waste materials washing up on shore, would endanger wildlife and contaminate the beach, rendering it basically unfit to be used and enjoyed as it is now. I would ask you to please reconsider expanding operations in this area. "
16-Jan-19	"Cooke Aquaculture: I do NOT want you to expand your operations ANYWHERE in Queens County. Your word cannot be trusted: 1. You do NOT provide JOBS. 2. You dirty and poison the oceans around fish pens. This is a PROVEN COPPER TAINTED fact. 3.in Queens County you will NOT find humans willing to EAT tainted ""salmon. "
16-Jan-19	Do not put your stinkin' fish farms in Nova Scotia! We don't want your business here. You are destroying the world with your methods. You should be ashamed. You leave a trail of destruction behind. How can you justify not cleaning up after yourself? You deliver diseases salmon to the plates of your patrons. Shame, shame. All you do is take from the ocean. How can you do that? Nova Scotia does not want your initial phase or your secondary phase. We don't want your fish farms! You have blood on your hands from the whales and fish you have killed. Your company is the most destructive in the world. Can you not see beyond your own life? We need the ocean to be healthy so everyone on the planet will be healthy. Everyone of your employees have a stake in the destruction of the ocean. Your company is the most disgusting. Stay away from Nova Scotia!!! Stop these fish farm methods now! STOP creating dead zones in the bays! Stop pollution!!!
16-Jan-19	Hello Cooke Aquaculture. I am writing in response to your proposal to expand the open water fish farms in Liverpool Bay. As home owners that have a vested interest in our beautiful beach and environment that we look upon we feel that an expansion of the fish farms will have a detriment affect on this pristine beach and surrounding areas. Why set up fish farms in a paradise. I know Cooke does not have to live by them. They are not in their backyard. Please do the right thing. As a moral company and supporter i hope of a healthy environment lets stop any more expansion. Thank you.
16-Jan-19	I live in Liverpool and operate two vacation rental properties locally. Having followed the question of this enlarged lease, It is my conclusion that potential benefits are heavily weighted towards private profit at the expense of both the short and long-term interests of the environment, of the local population and of visitors to the area. I strongly oppose this.
	I do want to let you know that I am opposed to the expansion of the fish farm in Liverpool Bay, NS. Sincerely,

Date Question Posed	Question/Concern
	Please let it be noted, that for many reasons, we are NOT in support of any expansion to Cooke Aquaculture's fish farm in Liverpool Bay. This is a beautiful area of Nova Scotia, and the pristine waters of Beach Meadows, and its long, white, sandy beach, draw many visitors, both locals and tourists alike. Many come from afar, just to spend the day at this beach, and swim in the clear waters. The surrounding environmentally significant wetlands, are also home to much wildlife, including species at risk, and many migratory birds. The destructive impacts of fish farms, including ecological and environmental damage, and disease, are well documented in the reams of scientific literature. We trust this letter will be forwarded to the Aquaculture Review Board.
	Hello Joel, I am writing to you to formally submit my voice to stop the expansion of the fish farm where I have my home. I and my spouse and dogs enjoy the area and specifically chose it because it was pristine (no salmon farms at the time). When we got word about the expansion of something we are vehemently opposed to, I had to write to you and your company. I have educated myself on the topic and risks and am deeply concerned. I also frankly worry about property values and that our community will suffer with fewer tourists and seasonal renters, once the word gets out how ugly, and smelly our coast line has become. I see no upside to the risk. Thank you,
	Dear Mr. Richardson, I am a long-time vacationer to your magnificent province and I have family in the area where you are expanding your fish farms. I look forward to my annual sojourn to Liverpool every summer to spend time with my family and enjoy the sweet breezes on the beach. Please don't expand the farm, it is destroying the environment. Find another location for your enterprise and leave the pristine ocean and natural environment for us, the weary city dwellers who come from away to experience a little bit of heaven on earth. I implore you to reconsider your expansion plans for the well-being of the people of Liverpool, my family and all the vacationers who flock to your shores. Sincerely,

Date Question Posed	Question/Concern
	Re: Cooke Aquaculture exploring expansion opportunities in Liverpool Bay Bear Cove Resources has been collecting sea wrack, seaweeds washed ashore by storm action, from the shoreline of Liverpool Bay in East & West Berlin and Eagle Head since 1993 under licence from NS Dept. of Lands and Forestry (formerly Natural Resources). The wrack is composted, processed, and packaged at our facility in East Berlin and marketed as Storm-cast – composted seaweed fertilizer and soil amendment. Storm-cast is a100% mixture of wrack seaweeds and companion organisms mixed with shell and sand by wave action. All components of Storm-cast are listed as acceptable inputs in the Canadian General Standards Board (CAN/CGSB-32.311-2006) Organic Production System Permitted Substances Lists (ICS 67.040). Our customers include organic gardeners and farmers, Halifax Regional Municipality including the Halifax Public Gardens, and The Historic Gardens in Annapolis Royal. The collection of wrack seaweeds in the quantities we require depends on a high energy marine environment with large waves which scour the ocean bottom, tear the marine algae loose from their growth sites, and deposit them in deep windrows along the shoreline. As long-time observers of the sea conditions and its impact in the area we think that any proposed expansion into the mouth of Liverpool Bay with its full exposure to the brunt of North Atlantic storms is ill-considered. It is our opinion that locating containment pens anywhere within the Options Line between Western Head and Blueberry Point raises the high probability (if not inevitability) of equipment damage and failure causing the release of fish and debris into the surrounding marine ecosystem. Western Head and Blueberry Point 'The Wall' are well-known to elite surfers for their challenge and danger. However, surfers have the wisdom to not venture out in the teeth of the storm but rather wait until it abates. We can only hope that Cooke Aquaculture has the wisdom to agree that this location is not a suitable home for their fish pens. Sincerely,
	When you have been operating this site since at least 2012 in violation of the regulations concerning all equipment being on the lease it is rather evident that you believe you will be allowed to do anything you want in our harbours with impunity. This process is an exercise in deceit, conflict of interest on the part of our government and what looks like collusion. The people of Nova Scotia do not want fish feedlots in their or around their province! You offer our communities nothing that is of benefit. You are in this province because you need some clean areas to raise your diseased and lice riddled fish. It is all about what benefits COOKE!

Date Question Posed	Question/Concern
16-Jan-19	I do not support the expansion of the Fish Farm in Liverpool Bay. In fact, I am opposed to all open pen fish framing. If it were up to me I'd have you remove the ones that are already there.
16-Jan-19	Dear Mr. Richardson, I visit my sister and her family in the area where you are expanding your fish farms. I travel to Liverpool every year as a tourist from Mississauga, Ontario and enjoy the beach and surrounding town immensely. My understanding is that Beach Meadows is a provincially protected shoreline and I find it difficult to believe that you cannot find a more suitable location away from residents and protected land. Please consider my request to halt expansion of the farm as it is destroying the environment and quite honestly an eye sore. I understand your desire to farm your products; but ask that you consider a location away from populated areas. I often enjoy a hamburger but do not want to look at a slaughterhouse from my window. Can you move the farm so to lesson the environmental impact to the region? Sincerely yours,
16-Jan-19	Please be advised I am writing this letter to state my opposition to finfish farms in Liverpool Bay, Queens county, Nova Scotia. I disagree with this practise. It is bad for the environment, the ocean, the wild salmon, our coast line, our beaches.
17-Jan-19	I wish to express my concern over Cooke Aquaculture's planned expansion of their open fish farm in Liverpool Bay. As a resident in Beach Meadows, I can clearly see the farm from my home. The farm is in close proximity to Beach Meadows beach which is one of Nova Scotia's most beautiful beaches. The fish farm negatively impacts the beauty of the area as well as threating the nearby shore as debris from the farm often impacts the shore. Beach Meadows is an environmentally sensitive area as it is a nesting habitat for endangered shore birds. It is irresponsible of Cooke Aquaculture to place a fish farm so close to a municipal beach. Please reconsider your expansion of the existing site and consider removing the existing site.
17-Jan-19	I am writing to advise you of my objection to any expansion to any fish farms in Liverpool Bay. I frequently walk in the winter and use Beach Meadows Beach for recreation in the summer. An expansion there as proposed would put your pens on the beach! The raw sewage left by your current practice is already too much. We have a beautiful coastal resource that will be financially impinged by expanding any fin fish farming. Thank you.. Respectfully

Date Question Posed	Question/Concern
18-Jan-19	I am a resident of West Berlin and I do not support open pen fish farms any where but especially in the Liverpool bay area. I do not buy your products now or ever. When I drive to Liverpool I love looking at the ocean pure and boats on the horizon, as it should be; not man made farms that destroy our bays and fishing. I also oppose any expansion to the existing site at Coffin Island. The untreated waste such as fish feces and fish food that lay on the ocean floor not to mention the chemicals and antibiotics released into the water, antibiotic resistant bacteria that has been proven to exist in the sediment under fish cages, and the use of pesticides when sea lice issues arise, the cage failures and escaped fish, diseased fish, the detriment to the existing wild species. I have family in BC and they have urged me to fight against and fish farms as they have destroyed the fisheries out there. Upset resident
18-Jan-19	The time has come for the world to wake up and stop the fish farming industry from causing untold environmental degradation to our oceans. It is predicted that by 2048 there will be no wild fish left in the oceans. Fish farming directly contribute towards the depletion of our oceans. Governments know what is happening but they choose to support them instead of listening to the very people who put them in office. We have had enough of this filthy polluting industry.
18-Jan-19	To the management of Cooke Aquaculture, I, as a user of Beach Meadows Beach, and a future resident of the south shore, wish to express my concern at your proposal to expand your facility in the waters off Beach Meadows. I fully support ethically practiced sustainable aquaculture, and recognise its importance to our economy, but I much express my concern at your expanded facility's potential impact on the surrounding shoreline and ocean. The existing facility, open pen in ocean, is a method that is not favoured by the advocates of sustainable aquaculture because of the waste generated, the use of antibiotics, and fish escapes. I am sure you are aware of these concerns. The existing facility clearly leaves waste on the ocean floor, as it impacts the surrounding beach. I would urge Cooke to consider other approaches to aquaculture that are proven to have little impact on the surrounding environment, and to consider your ocean and land environment in your business practices. Respectfully,
18-Jan-19	open pen fish farms are detrimental to the environment ,, it sickens wild fish .. and causes losses in lobster fishery and other migrating fish species..there are better , cleaner ,, ways to farm fish like salmon take an example from Hagen stehr in australia who tuna farm s successfully with inland pens .. ther e is a locatopn on bowater property suitabel to large fish farm opperation with allt he system s for waste filtration partially intact ... antibiotics are not just making uis sick but the fish sick and attracting sharks.. please keep our bay s clean and our fish safe to eat .. ..example norway s salmonis so fullof chemicals we might as well drink the sewage from the out pour than eat your farme d salmon

Date Question Posed	Question/Concern
18-Jan-19	I am formally writing you to express my concern about fish farming in Beach Meadows. I spend my summers in the area and enjoy the beach, the native flora and fauna of the area. Please consider the beauty and wonder of this special place. Untouched natural environments are becoming fewer and fewer and are precious. We must protect them.
18-Jan-19	I am opposed to your company expanding their fish farming operation in Liverpool Bay. The practice of off shore fish farming by your company is not environmentally safe and I do not wish to see our Ocean and the existing sea life further compromised.
18-Jan-19	Please include all correspondence from me since October in your submissions to the Aquaculture Review Board.
20-Jan-19	Stop farming fish
21-Jan-19	Hello, i`m looking for a Job in Canada - Nova Scotia. I want to live in Canada in the future. I am a professional deep-sea fisherman and over 30 jears professional air diver. My specialy is Welding steel under water and over water, inspektions under water and by my Job as a Deep sea fisherman i can also do Network repair perfectly. I would like to send you my CV by E-Mail and i would be glade to hear from you - Regards
21-Jan-19	I do not support the expansion of the fish farm in Liverpool Bay, N.S.
21-Jan-19	Fish farming is unnecessary and unhealthy.I never eat farmed fish and I believe that no one else should either
22-Jan-19	Writing today on behalf of the Queens County Fair in Caledonia, Queens County. We are in dire need of raising funds. We are planning on having a salmon supper on February 23 2019. We were hoping that we might be able to procure some Salmon from Cooke Aquaculture. Would this be something you could do?.

Date Question Posed	Question/Concern
23-Jan-19	I am reaching out stop the fish farms in the Beach Meadows/ Liverpool area. I am a tourist from out of province with family living in the area where you are expanding the fish farms. I really want to be able to enjoy the area in the future as we have in the past and I am very concerned with the disease, lice and pollution that the fish farms create. Please stop this.
24-Jan-19	Hello, We have a huge demand on horse mackerel, and we're shopping for better prices than we already have. We get them in all sizes, and we buy millions of dollars worth and export them. We are looking for great prices from others sources. Would you be able to offer us great prices? Please let me know. Thank you.
28-Jan-19	Hi there, I'm a researcher at Dalhousie University, and my group (led by Dr Jon Grant) are partners (and funded) by Cooke. We've come under a lot of public scrutiny recently. So I'm making a video to better inform the public about the importance of aquaculture to food security and the economy, and the important relationship between Dalhousie and Cooke in helping make salmon farming more sustainable and environmentally friendly. I would love some stock video footage of Cooke's fish farm operations. Can you get me in touch with anyone at Cooke who can help? Cheers!

Date Question Posed	Question/Concern
29-Jan-19	Dear Mr. Richardson, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. We purchased our home in Eagle Head (just outside of Liverpool) 5 years ago and it has been our refuge on weekends and through the summer months. We are in the process of moving here permanently and can't wait to have this view every day. Part of the reason for choosing this location was the fact it looked out on a beautiful little bay and we could step outside and find ourselves on a tidal beach in under 2 minutes and a five-minute car ride would have us at Beach Meadows. I attended the information session held at the Emera Centre this fall. I asked questions, I listened, and I came away feeling quite unsettled. Since then, I have read a great deal about the long-term concerns people in other parts of Canada and the world have with open-pen fish farming. This also included the move in many jurisdictions to ban this form of fish farming. I have lived in Nova Scotia my whole life, with many of those years being spent living in coastal communities. The beauty of our coastline, the wonderful seafood and pristineness of our beaches are the reasons many visitors come to Nova Scotia every year. They are also the reasons I have chosen to live here. As a result, I believe that the long-term environmental and aesthetic risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. For these reasons, I will continue to voice my concerns to all those who will listen. Sincerely,
30-Jan-19	I would like to go on record that I largely oppose any expansion, now and in the future, in Liverpool Bay. I have watched the degradation of Beach Meadows beach and the stench from the pens. I value the health of our beaches and coastlines and will stand with others in opposition. Trusting you will ensure my concerns are captured during the public consultation.
30-Jan-19	Mr. Richardson had a huge whine in the Lighthouse Now/Progress Bulletin about the public's opposition to the proposed caged feedlot salmon pens in Liverpool Bay. Poor guy can't see the forest for the trees or the cages for the storm waves. Maybe he should go to Tasmania with Keith Colwell and they both stay behind. Nova Scotia would be a better place. Keep the pollution out of Liverpool Bay.
8-Feb-19	I'm a newcomer in Canada,I'm looking for a job,but I don't have a legally status here,I am here with a visitor visa,it is possible to work for you legally? Thank you

Date Question Posed	Question/Concern
13-Feb-19	*24 Questions submitted to Kelly Cove Salmon Ltd. By Council
13-Feb-19	We are not interested in any expansion of your polluting Open Pen Fish Farm operation in Liverpool Bay. You have already expanded it once, none transparent to the public. You have already damaged pristine Beach Meadows beach in numerous ways, including the stench, dead birds, dead fish and much, much more. We are amazed that they would even consider giving you permission in this very environmentally sensitive area. In fact, get rid of the eyesore that is already there, and take your fish farms to land
16-Feb-19	As a private citizen and a supporter of Protect Liverpool Bay, I believe the evidence against open pen fish farms will cause irreparable damage to the natural fish stock and the surrounding shore line. Any system that can not manage its waste products is not acceptable. 1) Carrying capacity of Liverpool Bay is critical especially regarding nutrient loading levels. We believe any daily waste created by the existing fin fish pens and any proposed expansion or new locations is harmful and unacceptable. 2) The flushing rates of the bay in locations near existing and proposed pens, tidal flows, speeds, and directions during 12 hour cycles throughout all months of the year are unpredictable and varied. 3) Any uneaten food loss is a contributor to oxygen depletion and sediment buildup and is unacceptable. The electronic feeding system that has been installed, could actually increase the amount of uneaten food. 4) We know that human errors and breakdowns will occur in the process and management of electronic feeding equipment and the controls in place will not stop the imminent disaster. Any breakdown or error will have catastrophic consequences. 5) Unknown ingredients of the fish feed to be utilized at fin fish pens in Liverpool bay is not acceptable. 6) The future probability of a sea lice infestation at pens in Liverpool Bay, will have a devastating effect on the native fish stock. 7) Any usage of all chemicals, pesticides, hormones, antibiotics, or other compounds to be utilized in Liverpool Bay which are not naturally occurring in Liverpool Bay will be consider a violation of the criminal code and environmental law. 8) Any diseased or dead fish in pens, and the process of removal of those fish, could damage and infect the natural fish stock outside the pens. 9) Any deterioration in the water quality, at fin fish pens and adjacent areas, both present and planned, in Liverpool Bay will limit the recreational use of the water and land around the pens. 10) Extreme thermocline occurrence are unpredictable and no mitigating procedures will be able to resolve the damage caused. 11) Storm impact modeling can not predict the destructive impacts to any current pens, or new pens to be situated within Liverpool Bay. Damage can result from all potential storms from all directions, at all wind speeds and wave heights, during all periods of the year. Predictions cannot also exist as to where destroyed or damaged gear would be expected to end up within the Bay after all such storms. 12) There is no Policy, Plan or Procedure that can clearly identify and ensure how all lost aquaculture related materials, fish moralities or escapees will be located and recovered in a timely manner. 13) There is no Policy, Plan or Procedure that can clearly identify and ensure that any aquaculture causing negative beach impact to Beach

	Meadows Beach or the shoreline in the Bay will be immediately rectified. 14) Coastal lands of Coffin Island and Beach Meadows Beach area have both been previously identified by the Province of Nova Scotia as being Environmentally Significant Wetlands, during their Provincial coastal mapping efforts. Disregarding this proves negligence's and a callous disregard for the environment. 15) Any area that will be removed from access to commercial, recreational, divers or Indigenous users pertaining to fishing, boating or other usage is unacceptable. 16) All fish farm areas reduces the commercial fishing value which is no longer accessible to commercial fishers, as well as that of any proposed expansion. 17) The Brooklyn Marina is home to many recreational boaters of all types including sailboats and kayaks. Significant surface area removed from their recreational usage may become more prominent, impact membership, and eventually cause fundraising to become a problematic issue. 18) Bear Cove Resources operates in East Berlin, Queens County, N.S. harvesting local washed up seaweeds under a license issued by the Nova Scotia Department of Lands and Forestry. That material is then composted, processed and packaged at their site. It is marketed as a soil amendment or seaweed fertilizer, under the trade name Storm-cast. Organic growers are primary customers and demand clean, chemical free products. There is no way this product can be certified as organic and stated as chemically free.
24-Feb-19	2019-01-21 Cooke Aquaculture [redacted] [redacted], N. B. [redacted] ATTENTION: JOEL RICHARDSON, VP COMMUNICATIONS Dear Mr. Richardson: RE: LIVERPOOL BAY EXPANSION As a local business owner, health care provider, recreational boater and property owner directly impacted by the proposed, open-pen fish farm expansion in Liverpool Bay by Cooke's Aquaculture, I would like to express my deep concern and my opposition to the proposal. The negative impact on the pristine coastline, the risk to homeowners, and the predictable negative impact on economic prosperity would be a monumental blow to South Queens. My physical access to the proposed areas to be developed would be directly affected as would be the visual, acoustic, and the highly probable/inevitable pollution of debris and feces on my property and others, due to the shallow water and increasingly violent storms. As a boater, I oppose the obstruction to navigation and to popular recreational fishing areas. The Coffin Island site has already restricted access due to the fish farm's present size. Any expansion will reduce the number of recreational boaters in Liverpool Bay and, most certainly, negatively impact the prosperity of Brooklyn Marina. Opposition to Cooke's proposed expansion is overwhelming and increasing every day. Please reconsider your proposed expansion plans and concentrate your efforts on farming fin fish in a more appropriate area and by more sustainable and desirable methods. Respectfully yours,

4.0 Municipal Council

4.1 Feedback from Council Presentation

On October 23rd, Jeff Nickerson (Regional Manager N.S. for Cooke Aquaculture) and Andrew Lively (Director of Public Affairs for Cooke Aquaculture) met with the Region of Queens Municipality and presented a presentation on "Cooke – From Family Farm to Seafood Industry"; Expansion Opportunities in Regional Municipality of Queens Leader (See Appendix H for presentation). This session gave the municipal councillors a chance to ask questions about the possible expansion in the Liverpool Bay.

Table 4.1.1 Questions and responses from council presentation

Question	Factor to be considered	Response
What about on land fish farming, processing, does it really come down to the economics? What is better for the planet?	Other	Farming at sea, you don't need the electricity, it uses a lot of electricity, you would need to bring in oxygen on land. You need a lot of level ground, cut down a lot of trees, so the economics of it would not be great, but also the environmental carbon footprint would not be advantageous to land base farms. We are the largest land-based salmon farmers in Atlantic Canada. There is a possibility that there is an opportunity for some smaller niche players to do some full grow out, but to do what needs to be done on any capacity, it is going to require a lot of electricity and a lot of water.
It is very common in Europe to have land-based fish farms, correct?	Other	No, it is not. Nobody has done a full market grow-out successfully. There is a company that said they were successful in Denmark, they tried to do some operations in Maine, and they have since gone under. There is a company in Florida that is working on it, but nobody had done it successfully commercially. There is a small company in Nova Scotia that does a small amount of production, but they do not produce anything of any volume.
What is your proposal after 6 months, after public consultation, what is your expansion plan for Liverpool Bay?	a, b,	We would like to have a new sea site in Liverpool Bay. We are also working at a new hatchery over on Digby Neck and we are working on out feed production facility, and we are looking at other sites further up the coast.

Question	Factor to be considered	Response
As far as another fish farm site in Liverpool Bay, are you looking to duplicate what you already have there?	a, b	Yes
Another 14 cages?	a	A lot of it depends on during the scoping session, when we meet with the people and when we do oceanographic research in that area. I think that is what is really going to dictate what we would want to see. We want to base our decision on the application of science, as well as public engagement. It is difficult for us to say right now that the twenty-cage model works for us, maybe the science will tell us no the fourteen or sixteen cage model will be better. We need to base it on the science that we are doing during this option and scoping period.
Looking at expanding the current and a new site?	a	Both, moving the moorings out on the existing site and looking at another site.
How many tanks do you have there now?	Other	14
14 Tanks 400 thousand fish, have you ever considered doing it on land??	Other	All of our freshwater is on land. Everything we do for the first eighteen months is on land. We operate freshwater hatcheries, the largest land-based aquacultures manufacturer in Atlantic Canada. The majority oft fish we grow to 100-gram size before they go out to the ocean. They go to their natural environment. We do keep all the broodstock in the freshwater facility. Al the fish that we can us to spawn in subsequent years is kept in the freshwater facility. We do know what it would take to do our entire production on land, it's about 100 football fields. It takes a lot of water and a lot of energy.
The choice to put the fish in the sea water is quality?	Other	I would say quality of the product and the heath of the fish. They are in their natural environment.

Question	Factor to be considered	Response
What chemicals are used in the salmon, what chemicals are going in the fish?	Other	Sometimes there are antibiotics that are used in the feed, but it is veterinary prescribed and not used very often. Luckily in Nova Scotia we don't have sea lice, there are lice in other jurisdictions but not here. They treat with green technologies. We have invested a lot of money into these practices. So now there is hot water baths and pressure spray to treat the sea lice.
So there are no chemicals that go into the fish farms?	Other	No, everything that we sell is certified by the CFIA and the food and drug administration; every ounce of product that we sell had to be certified by them. We don't give them any chemicals. We want the fish to grow to the appropriate size, we sell fish by the pound, so we want to five them the healthiest diet that they can possibly have so they can grow to a larger size. We do not use growth hormones, legally we can not use growth hormones to get them to size, but what we do give them is a perfect diet. Every vitamin, mineral that they need to grow naturally we provide for them in their diet at our own feed production facility in Truro, so there are no chemicals in the fish.
You were the owners of the Port Mouton fish farm, what happened?	Other	We acquired a company that owned that farm. We raised the fish to market size, harvested them and did not restock. We did a lot of work with the friends of Port Mouton right up until the time that the farm was purchased, and we transferred ownership.
The location is the correct location because of the water temperature and the current. So, if utilizing the harbour is there any opportunity to possibly look at a processing plant of some sort here that you may consider?	Other	If you build it they will come, that doesn't apply to fish process plants. We need to have the fish to process before you can build a processing plant. You don't build a thing to squeeze apples if you don't have any apples. So that is kind of where we are today. We need to have the fish to be able to process and once we have that, we've kind of gotten bitten by that before. So we're working on sea sites, we're working on hatcheries and we're working on feed, all the things that produce fish, we need to have the fish and then look at the possibility of a processing facility.

Question	Factor to be considered	Response
What are sea lice?	Other	It is a parasite, sort of like a mosquito, sometimes you go camping and there are mosquitos and other places there aren't any. We are lucky here there are no sea lice. It is monitored for the lice. They do use lump fish which is a natural predator to the sea lice who attach to the fish and eat the lice without any harm to the fish.
You said you have been in Liverpool Bay for 9 years?	Other	Since 2011
So that location has been fallow. You said it takes 3 years to raise the salmon and then it goes fallow for 3 months?	Other	Three years from egg, so you are in a hatchery for about 18 months and then at sea for about 18 months.
You fill it up with fish for 18 months and then once you farm the fish is lays fallow for three months.	Other	Three months to 1 year
So currently there are fish in Liverpool bay? How long have they been there?	Other	Those fish went in May of 2017. We are going to start harvesting late December 2018 to early Jan 2019. Once the fish are harvested, the site will be fallow until June, and we hope to restock again.
My concern is the fish grow, do you separate them into larger cages, they seem like that many fish it would be very crowed?	a	This is called stocking density. Schooling fish only use about 2% of the water volume. The number is 12kg per cubic meter of water is what the stocking density should be. So that is what we want, it produces less stress on the fish as possible. We want to give them the best environment possible for maximum growth. If they grow beyond the 12kg per cubic meter, then we do separate them into larger spaces, but this is carefully monitored.

Question	Factor to be considered	Response
What about the sludge that is under the sites that is affecting the lobster fisherman and washing up on our shores and beaches?	c, d, e,	What we try to do in our operations is that when we use an area that is a common resource, we don't own it, we get permission from the governments Provincial and Federal to use this area. Everything that we do is monitored and regulated by the Government and we have done a lot of work with Dalhousie University with the Government of Canada with the province of Nova Scotia researching the benthic areas that are the area underneath the site. This is something that some our critics would bring up, impact on the benthic area. We have done a lot of research on this and if you see lobster fisherman out there you see they set a lot of traps out around our sites. They are doing well around our sites. But we need to have a clean benthic area under out sites for our operations as well. If you have a dirty area underneath your site it produces gas. Salmon are not bottom feeders, they are fairly high up on the scale of fish, again, we sell by the pound, we need out fish to be healthy. We do a lot to make sure that the benthic area at the site is clean, that goes into our feeding system. The feed is developed for proper digestion, the feed is used for maximum growth. Fallowing is when the fish are harvested, and the site is left empty. The microalgae impact the bottom, so it is very hard to notice that we were even there. One of the things with Atlantic Salmon is that they are cold blooded, they don't need extra feed to create energy. 1.1 pounds of feed to make 1 pound of Salmon. The benefits of being a integrated company is we have our own feed mill, but we also have nutritionists on staff, so they can ensure digestibility of the feed and the quality. We have the control over that.
You said you have been approved by the Provincial Government for 6 months, what does that allow you to do?	Other	We have six months to consult with the community and the users of Liverpool bay to see if we could put another site out there. Then we apply for the site and that goes to a panel.

Question	Factor to be considered	Response
What would you say to dispel bad press? We see the pictures on Facebook of these dying, maimed and disfigured fish, that really sticks in everyone's mind about aquaculture giving it a bad name?	Other	I would say that we have met with other organizations that have labeled or tried to slow down aquaculture and I've said that the reality is now that 50% of the seafood consumed in North America Aquaculture raised. The demand continues to grow. The industry has grown up and changed so the effort to stop the demand for our product had really gone. Our demand is there, the demand for our product is certainly out there. The fact that we have been operating for 30 years shows that we can sustainably operate here.

4.2 Response to Region of Queens Municipal Council Letter

On February 15th, Kelly Cove Salmon Ltd. received a list of twenty-four questions which were compiled by the Region of Queens Municipality Council from public gallery comments and submitted letters and e-mails from citizens and seasonal visitors. A response has been compiled to address these questions and will be submitted to the Region of Queens Municipality Council. See Appendix I for Letter submitted by Major David Dagley.

Table 4.2.1 Response to Region of Queens Municipality Council Letter

Question	Factor to be considered	Response
(Question 1) Carrying capacity of Liverpool Bay is critical especially regarding nutrient loading levels. Please identify the expected wild fish contribution to nutrient loading in Liverpool Bay as well as the projected daily waste created by the existing fin fish pens and any proposed expansion or new locations. A chart providing this information from a juvenile fish size to adult market size held in pens on a quarterly projected basis from 2015 going forward to the present, would be a suitable minimum projection.	c, d	In accordance to the federal regulations, site-specific oceanographic data and production data are inserted into an aquaculture waste deposition model to generate a map of the predicted depositional footprint of biochemical oxygen demanding matter (BOD). The model applied to the Liverpool Bay sites indicates that the footprint follows the boundary of the cages and does not disperse much beyond. The depositional modelling for each site will be presented in the baseline report to meet the requirements of the federal regulations. Nova Scotia Department of Fisheries and Aquaculture's Environmental Monitoring Program requires annual environmental monitoring. The primary objective is to maintain Oxic conditions in the marine environment where aquaculture is carried out. Monitoring at the Liverpool (#1205) site occurs close to the cages at the location of highest particulate input demonstrating an Oxic rating, thus the sediment can assimilate the unused nutrients. Reference samples outside of the farm also show an Oxic rating. Please refer to the response provided to Question #3 for additional details.

(Question 2) Determination of the flushing rates of the bay in locations near existing and proposed pens, including providing tidal flows, speeds, and directions during 12 hour cycles throughout all months of the year would be expected.	c, d	Hydrographic current meters were deployed at potential site locations in accordance with Provincial & Federal regulations. The boundary amendment at Liverpool (#1205) and new site applications requires a submission of a development plan. Within this development plan, tides, current speeds and current directions are evaluated in accordance to Nova Scotia Department of Fisheries and Aquaculture's requirements. In addition, environmental parameters such as currents are components inserted into the depositional model as described in response to Question #1. There is additional hydrographic information collected and analyzed by Dalhousie University researchers. They used the current data collected to construct a numerical circulation model for Liverpool Bay that was groundtruthed with their current meter records.
(Question 3) Uneaten food loss also is a contributor to oxygen depletion and sediment buildup. Please provide an historical record of projected uneaten food loss for the last 5 years, which will also cover the recent years when the electronic feeding system has been installed, which is expected to have reduced uneaten food loss. Any impact change experienced with the newer feeding delivery should also be clearly identified in the data.	c, d	Benthic monitoring of the seafloor below the aquaculture site assess the direct impact from all biochemical oxygen demanding matter (BOD) which includes the small percentage of uneaten feed. Nova Scotia Department of Fisheries and Aquaculture's Environmental Monitoring Program Framework focuses on benthic marine habitat in the immediate vicinity of the aquaculture site. Although sediment sulphide concentration is the key indicator for this environmental monitoring program, a suite of sediment variables are used to validate sulphide data. In addition, benthic video collected at each monitoring station is required and is used to evaluate a site's performance. Kelly Cove Salmon follows the guidelines and procedures outlined in the Nova Scotia Department of Fisheries and Aquaculture's Environmental Monitoring Program Framework and Standard Operating Procedures for all aquaculture sites

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<td>in Nova Scotia. Annual environmental monitoring occurs between July 1st to October 31st. In addition to the Provincial program, the site is also required to complete peak-feeding/production monitoring once per production cycle under the Federal Aquaculture Activities Regulation Monitoring Standard.

The current Liverpool #1205 site has returned Oxic classifications or passed under the hard/mixed bottom protocols since 2013, indicating this site is managed sustainably. The remote feeding system became operational on June 2018, the feeding and monitoring principles remain the same even though the equipment is modernized

<table>
<tr><th>Year</th><th>EMP Sampling Date</th><th>Site Classification</th></tr>
<tr><td>2013</td><td>25-Jun</td><td>Oxic</td></tr>
<tr><td>2014</td><td>15-Jul</td><td>Oxic</td></tr>
<tr><td>2015</td><td>13-Jul</td><td>Oxic</td></tr>
<tr><td>2016</td><td>5-Jul</td><td>Pass</td></tr>
<tr><td>2017</td><td>11-Oct</td><td>Oxic</td></tr>
<tr><td>2018</td><td>10-Jul</td><td>Oxic</td></tr>
</table>
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<tr>
<td>(Question 4)
Clarify and summarize the process and management of electronic feeding equipment and the controls in place for operation of the equipment. Identify the manpower utilized to deliver feed to the site and the frequency, as well as those numbers of employees necessary to maintain and repair the pens.</td>
<td>b, c</td>
<td>Feeding systems are controlled and monitored by qualified personnel. Every cage has an underwater camera, which allows the feed operator to observe the fish behavior and ensures that only the correct amount of feed is delivered to each cage. Feed operators are trained in feeding practices which includes fish behavior observations using underwater camera technology, and other environmental sensors used to monitor water quality conditions (oxygen, temperature). These tools allow the feed operators to manage feeding rates to minimize waste and maximize fish growth. Feeding systems are routinely calibrated.</td>
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(Question 5) Please identify the value of all purchases and expenditures in Queens County by the Proponent in 2018, which supported local business as well as the total number of company employees who work in Queens. Please also identify the projected future increases applicable to these two items should an expansion be proposed in Liverpool Bay.	b	Cooke Aquaculture spent $231 million for supplies and services with 1,269 small and medium size local suppliers from all over Atlantic Canada in 2017/18 and we purchase tens of millions of dollars worth of goods and services in Nova Scotia each year from hundreds of other local businesses. Kelly Cove Salmon works with local suppliers whenever possible. Types of suppliers used by KCS in Nova Scotia include divers, mechanics, boat repair facilities, hardware providers, welders, heavy equipment operators, crane operators, marine supplies, fuel distribution companies, environmental consultants, electricians, boat brokers, boat builders, engine suppliers, hotels, restaurants, and ferries. Increased production from the Liverpool area will proportionally increase this number in the future. We also pay significant taxes on vessel and transport truck fuel. Our annual payroll is over $10 million in Nova Scotia. We have 208 full time employees with benefits who live and work in NS – many of whom work in Queens and across the South Shore. Figures 1 and 2 illustrate the location of Cooke Aquaculture's suppliers in Atlantic Canada and Nova Scotia, respectively.

Fig. 1

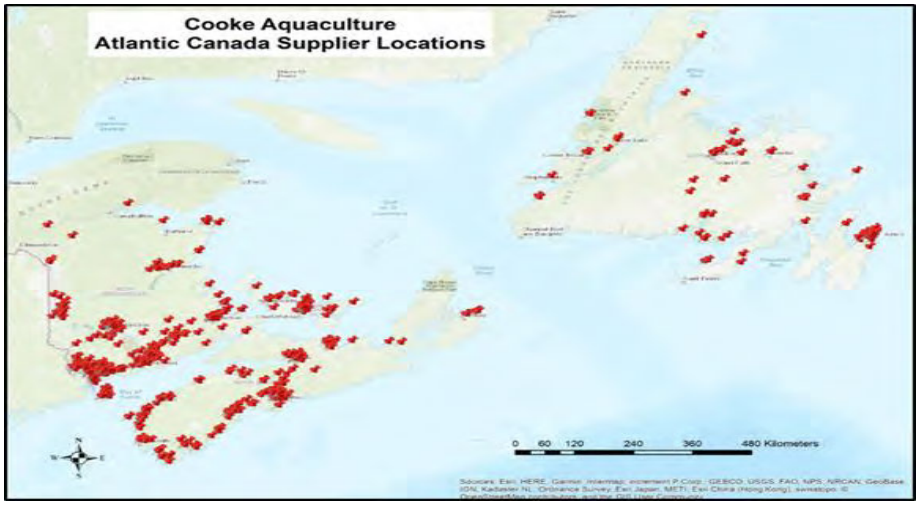
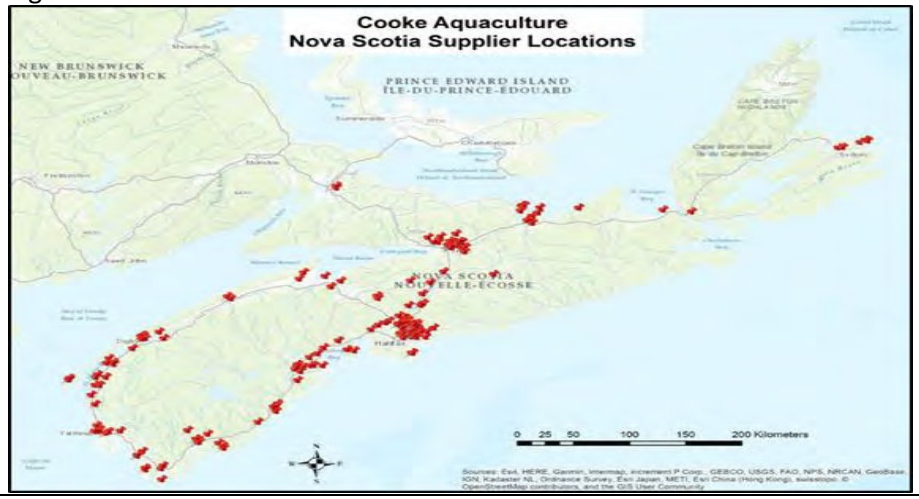

Cooke Aquaculture
Atlantic Canada Supplier Locations
0 60 120 240 360 480 Kilometers

Fig. 2


Cooke Aquaculture
Nova Scotia Supplier Locations
NEW BRUNSWICK
NOUVEAU-BRUNSWICK
PRINCE EDWARD ISLAND
ÎLE-DU-PRINCE-ÉDOUARD
NOVA SCOTIA
NOUVELLE-ÉCOSSE
0 25 50 100 150 200 Kilometers

(Question 6) Identify the component ingredients of the fish feed to be utilized at fin fish pens in Liverpool Bay.	Other	All our salmon are reared using feeds that are manufactured in compliance with the Canadian Feeds Act and the Canadian Feed Regulations. Our fish feeds are sourced from approved suppliers and are produced using high quality manufacturing procedures and ingredients as specified and reviewed by our nutrition experts. These ingredients include marine, plant, and animal proteins and fats, grains, minerals and vitamins, as well as carotenoids. All ingredients used are safe, Canadian Food Inspection Agency approved, processed fresh, and are of excellent quality
(Question 7) Identify the history and future probability of a sea lice infestation to be anticipated at pens in Liverpool Bay, and the future methods to be utilized to mitigate any future sea lice impacts.	c, g	There has never been a sea lice infestation at farms in Southern Nova Scotia, which includes Liverpool Bay. Monitoring results are sent to NSDFA as per regulations. If there was ever the need to treat for sea lice, Kelly Cove Salmon has the infrastructure and expertise to administer approved treatments. These treatments include green technologies (no active substances).
(Question 8) Identify the current and potential future usage of all chemicals, pesticides, hormones, antibiotics, or other compounds to be utilized in Liverpool Bay which are not naturally occurring in Liverpool Bay.	c, g,	Kelly Cove Salmon does not use hormones in our farming operations. Any therapeutants to be utilized in Liverpool Bay would have to be government approved and prescribed by a veterinarian. To date, no chemicals or pesticides have been used in Liverpool Bay by Kelly Cove Salmon.
(Question 9) Provide a Policy or Plan which states the procedure to be followed to help prevent fish loss and to identify any diseased or dead fish in pens, the inspection frequency, removal of those fish, as well as their disposal location.	c, g	The Farm Management Plans has specific policies and procedures related to disease surveillance that operators must adhere to. Under this program each stocked site must have six provincial surveillance veterinary visits per calendar year with at least two of these visits performed by the Chief Aquatic Animal Health Veterinarian or Veterinary Designate from the Provincial Fish Health Service. As per regulations each salmon aquaculture site must complete a weekly subsurface inspection and removal of mortalities. Mortalities are sent to a certified rendering and/or composting facility.

(Question 10) Clarify the frequency, purpose, and testing criteria for all water quality sampling and testing conducted presently, as well as testing expected to occur in the future, at fin fish pens and adjacent areas, both present and planned, in Liverpool Bay.	c	Good water quality is essential to ensure a successful farming operation. Kelly Cove Salmon monitors water quality daily, and parameters include oxygen, temperature and turbidity. As well, seasonal sampling for algae (identification and counts) is conducted weekly around the farm. Water quality monitoring requirements and mitigation strategies are contained in the site-specific Farm Management Plan (FMP) which is reviewed annually by Kelly Cove Salmon and approved by Nova Scotia's Department of Fisheries and Aquaculture (NSDFA).
(Question 11) Provide storm impact modeling to predict the destructive impacts to any current pens, or new pens to be situated within Liverpool Bay, resulting from all potential storms from all directions, at all wind speeds and wave heights, during all periods of the year. Predictions should also exist as to where destroyed or damaged gear would be expected to end up within the Bay after all potential storms	e, g	Kelly Cove Salmon has spent 30 years researching all mooring, grid and cage components that will be used on these aquaculture sites. Kelly Cove Salmon has also contracted experts for modeling and engineering analysis of these components to ensure that they can withstand the conditions within Liverpool Bay.
(Question 12) Provide a Policy, Plan or Procedure that clearly identifies and ensures how all lost aquaculture related materials, fish mortalities or escapees will be located by the proponent and recovered in a timely manner.	e, g	As per the Farm Management Plan, we have NSDFA approved policies and procedures related to breach of containment. We have a Fish Containment plan which focuses on the control of escapes under the BAP (Best Aquaculture Practices) certification. Please see https://www.bapcertification.org/Standards for standards. As part of our certification programs, Farm Management Plans, and as part of being a good neighbor, we are required to ensure proper storage and handling of any waste created at the farm. We are also involved in the communities in which we operate and in the rare event aquaculture debris is dislodged from the site, this can be communicated to us and we will ensure prompt removal and disposal.

(Question 13) Please create and maintain an ongoing log book system, if one does not presently exist, to record the times of each visit to the fin fish pen site, employees or others present, the purpose of the visit, and any items of interest which were observed by those present.	e, g	Employee hours are managed by the site manager. All visitors to each site are required to sign a site-specific visitor log book which records the date, name, and the purpose of visit as well as other sites recently visited.
(Question 14) Please clarify the process and locations to be utilized to repair, maintain and store local aquaculture equipment in Queens.	e, g	Kelly Cove Salmon has acquired warehouse capacity at Port Mersey (the former Bowater facility) for storage of equipment and maintenance repairs.
(Question 15) Provide a Policy, Plan or Procedure that clearly identifies the ability to predict and/or monitor an extreme thermocline occurrence prior to it actually occurring, and the mitigating procedures which will be followed, as well as the applicable timeframes.	b,	Please refer to Question #10.
(Question 16) Provide a Policy, Plan or Procedure that clearly identifies and ensures that any aquaculture caused negative beach impact to Beach Meadows Beach or the shoreline in the Bay will be immediately rectified.	e	We have several approved plans and procedures in our Farm Management Plan. However, we have not seen a negative impact to the beach since we started farming in the area in 2011. We will continue to monitor the beach and be an active participant in mitigating any potential negative impact aquaculture related or not.

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<td>(Question 17)
Coastal lands of Coffin Island and Beach Meadows Beach area have both been previously identified by the Province of Nova Scotia as being Environmentally Significant Wetlands, during their Provincial coastal mapping efforts. We would ask that all due consideration be given to this fact when completing aquaculture research and related planning efforts.</td>
<td>e</td>
<td>Kelly Cove Salmon will take this into consideration during the scoping process as well as during the routine operations of our aquaculture sites.</td>
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<td>(Question 18)
Identify the area in square meters of the bottom area occupied by the current fin fish farm lease, and the size of any new proposed lease application space, which has been or will be removed from access to commercial, recreational, divers or Indigenous users pertaining to fishing, boating or other usage</td>
<td>c, e, f</td>
<td>The lease areas of the amended Liverpool (#1205) and proposed sites (Mersey Point and Brooklyn) identified below does not preclude access by other water users. Depending on the nature of the activity, the majority of the lease area is accessible, with the exception of the grid area. The grid area, both above and below the water, may not be accessed especially to above water users due to concerns relating to damage to the user’s vessel and the farm’s containment system. The existing Liverpool (#1205) grid area is 52,025.7 m2. The proposed grid area is 74,322.4 m2 , therefore the addition of six (6) cages will expand the grid area by 22,296.7 m2. The grid area for the proposed Brooklyn and Mersey Point sites are the same as the proposed Liverpool (#1205) site. KCS provides detailed maps and diagrams of their sites to fishermen when requested. These maps and diagrams show the location of all above and underwater infrastructure, thus aiding in fishing efforts in and around the lease.

<table>
<tr><th>Site</th><th>Existing Grid Dimensions (m)</th><th>Existing Grid Area (m²)</th><th>Proposed Grid Dimensions (m)</th><th>Proposed Grid Area (m²)</th></tr>
<tr><td>Liverpool (#1205)</td><td>426.72 x 121.92</td><td>52,025.7024</td><td>609.6 x 121.92</td><td>74,322.432</td></tr>
<tr><td>Brooklyn (Proposed)</td><td>N/A</td><td>N/A</td><td>609.6 x 121.92</td><td>74,322.432</td></tr>
<tr><td>Mersey Point (Proposed)</td><td>N/A</td><td>N/A</td><td>609.6 x 121.92</td><td>74,322.432</td></tr>
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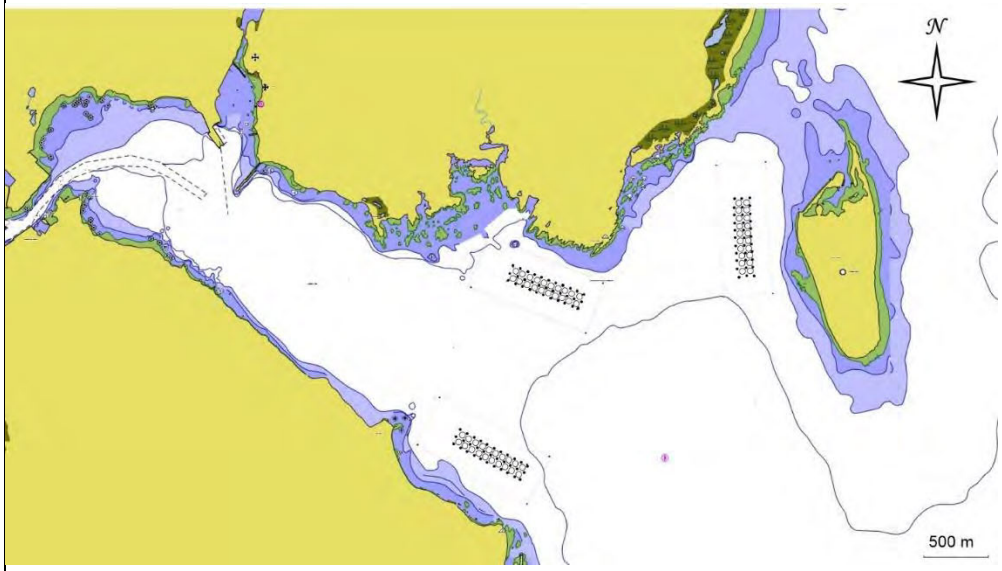
		
(Question 19) Please identify the projected commercial fishing value of the size of the area which is no longer accessible to commercial fishers, as well as that of any proposed expansion.	c	The Department of Fisheries and Oceans provided landing quantities for Fisheries Statistical District 38, which encompasses the waters between the Queens County boundary lines. Fishing effort and associated value in Liverpool Bay is unavailable and cannot be reported. Since Kelly Cove Salmon has operated in Liverpool Bay, lobster catches in Nova Scotia have increased significantly. Kelly Cove Salmon encourages fishermen to fish within the lease area, provided they stay outside of the grid area to avoid entanglement. Kelly Cove Salmon provides detailed maps and diagrams of their sites when requested. These maps and diagrams show the location of all above and underwater infrastructure, thus aiding in fishing efforts in and around the lease.

(Question 20) The Brooklyn Marina is home to many recreational boaters of all types including sailboats and kayaks. Significant surface area removed from their recreational usage may become more prominent, impact membership, and eventually cause fundraising to become a problematic issue. How can this concern be successfully mitigated and incorporated into future planning to maintain suitable recreational boating space to continue for the benefit of Marina members?	e	Kelly Cove Salmon has successfully been operating in areas in Atlantic Canada with intensive recreational usage. Sites will be marked as per the Transport Canada (TC) Navigation Protection Program (NPP). Kelly Cove Salmon looks forward to continuing our close relationship with the Brooklyn Marina. In the past, Kelly Cove Salmon has helped to install and remove floating docks and has leased a land lot close to the Brooklyn Government Wharf. Brooklyn Government Wharf and the Port Mersey wharf are the only wharves utilized by our operations in the Liverpool area, Kelly Cove Salmon does not use the recreational marina.
(Question 21) Shipping lanes in Liverpool Bay are important to Port Mersey and all users of Liverpool Bay, and would be expected to become critically important in the future should new tenants at Port Mersey require increased ocean access and transportation of goods. In view of the storm potential in the main harbour, pens are not anticipated to become a conflicting issue, however this future need is identified for your planning consideration.	e, f	We recognize Port Mersey is a critically important port for the region of Queens. We will follow all Transport Canada requirements for any potential new farms in the area. The Navigation Protection Act protects the public right of navigation in the waters of Canada. Transport Canada requires a Notice of Works form in order to notify the Navigation Protection Program (NPP) regarding a proposed or existing work, such as an aquaculture site, in navigable waters. A registered surveyor and professional engineer generates site development plans for each site which are also submitted to Transport Canada with the signed Notice of Works. The plans will include: a. Proposed navigation aid limits to demonstrate the extent of the marine aquaculture site as well as adjacent parcels of land. Property identification number (P.I.D. #) with corresponding owner names and addresses are also outlined in the plans; b. Depiction of the basic seafloor topography within the proposed lease boundaries;

		c. Demonstration of anchors, cages, and grid/mooring configuration location within the proposed lease boundaries; d. Lateral and longitudinal cross sections demonstrating cage infrastructure, anchor blocks, mooring lines and seafloor profile; and e. Proposed navigational and marking plan. Transport Canada's mandate is to maintain public right of navigation, including shipping lanes in an area of proposed or expanded sites.
(Question 22) The location of the existing fish pens site and any new pens should be marked with buoys to identify the outer boundaries, and be clearly visible to all marine users both night and day. A shipping lane must remain open to ensure that safe and easy travel access to Coffin Island remains.	e, f	Transport Canada evaluates each aquaculture site to maintain public right of navigation. If the site placement is approved, Transport Canada provides instruction on placement and type of navigational and marking aids to ensure the boundaries are clearly indicated day and night. Kelly Cove Salmon will follow the Transport Canada approved marking plan. See the response to Question #22 for additional details regarding the NPP program and required submission package.
(Question 23) Bear Cove Resources operates in East Berlin, Queens County, N.S. harvesting local washed up seaweeds under a license issued by the Nova Scotia Department of Lands and Forestry. That material is then composted, processed and packaged at their site. It is marketed as a soil amendment or seaweed fertilizer, under the trade name Storm-cast. Organic growers are primary customers and demand clean, chemical free products. Please address the potential of an increased aquaculture operation negatively impacting that commercial operation,	c	A clean environment is essential for a successful salmon growing operations free from commercial residential and Industrial pollution. Both Scotia Garden Seafood and Bear Cove Resources have co-existed with the existing Liverpool (#1205) site without any known negative interactions. Scotia Garden Seafoods sells and markets their product as organic certified.

and if so, what those potential impacts may be, and what steps Kelly Cove Salmon would be able to implement to mitigate potential impacts.		
(Question 24) We look forward to continued dialog with both the queen's regional municipality and the concerned citizens.	Other	We welcome the opportunity to discuss the concerns and questions from the municipality and look forward to building a solid working relationship in the future.

5.0 Indigenous Outreach

On February 12th, Chief Carol Potter's office in Bear River was contacted and an e-mail sent stating Kelly Cove Salmon would like to meet with the band to discuss plans for a possible expansion in Liverpool Bay. An e-mail was received back on February 19th stating "I'll be in touch with a date as soon as one becomes available. I will say that right now we are quite busy with the end of the fiscal year fast approaching".

A phone call was made to Chief Deborah Robison on February 12th with the Acadia First Nation band, our number was left to return the call. A second call was made February 14th and the office told us they didn't have any operations in Liverpool to reach out to the Native Council based out of Truro NS.

On February 14th a discussion was had with Tim Martin of the Native Council explaining Kelly Cove Salmon's possible plans for possible expansion in Liverpool Bay and request for a meeting. Mr. Tim Martin suggested we speak to Roger Hunka who is the Director of Intergovernmental Affairs with the Maritime Aboriginal Peoples Council. We spoke with Mr. Hunka that day and requested a meeting to sit and discuss the proposal. He was directed to the website www.aquaculturegrowsns.ca to view the option area and to get a better understanding of Kelly Cove Salmon's proposal. He requested we reach back out in early March to set up a meeting to meet in person.

During the conversation we were informed that there is an Indigenous food, social and ceremonial and communal fishing taking place in Liverpool bay by the Native Council members. There is no reserve in the area however there are members living off the reserve around the area.

Kelly Cove Salmon look forward to meeting with the group in the near future, we have both worked in Liverpool Bay since 2011 with no issues between the two groups and we look forward to building a relationship as we move forward.

6.0 Medway River Salmon Association

On February 20th Kelly Cove Salmon met with President Michael Fralic, Vice President Raymond Alexander and Secretary Jo-Ann Holden of the Medway River Salmon Association (MRSA). This meeting was requested by the MRSA in hopes of forming a partnership and developing a salmon recovery project like the Fundy Salmon Recovery Project that has taken place in New Brunswick.

Kelly Cove Salmon expressed great interest in being a partner in the project and had provided contact information to the members for other organizations that would need to be involved for a project of this nature to be successful. Plans have been made to meet again the end of March with this group and members of both the Provincial and Federal Government.

7.0 Other Community Outreach

August 30th, 2018 - Cooke representatives met with Member of Parliament South Shore St. Margaret's.

October 23rd, 2018 - Cooke representatives met with local MLA for Queens - Shelburne constituency staff and presented Cooke Aquaculture operations summary and expansion plans.

October 23rd, 2018 - Cooke representatives met with approximately 35 members of local chamber and presented a presentation on "Cooke – From Family Farm to Seafood Industry Leader Expansion Opportunities in Regional Municipality of Queens (See Appendix G for presentation). This gave the chamber members an opportunity to ask questions about Cooke's expansion proposal moving forward in an open setting. The luncheon was advertised to the chamber members approximately three weeks before the meeting.

October 29th, 2018 - Meeting was held between Cooke Aquaculture and local elected officials who requested meetings.

January 9th-10th, 2019 – Cooke Aquaculture representatives met with provincial Liberal and Progressive Conservative MLA's in Halifax to discuss Cooke Aquaculture operations in Nova Scotia.

January 30th, 2019 - Cooke Representative attended Chamber of Commerce luncheon attend by local businesses, elected officials and representatives of Provincial Athletic tourism group. Meeting was held to discuss World Junior Curling championships being held in Liverpool.

January 30th, 2019 - Cooke representative visited local store front business in Liverpool, met informally with owner operators to discuss aquaculture in Liverpool area.
Cooke representative visited Moose Harbour wharf, closest fishing wharf outside Liverpool harbour, and discussed Cooke expansions with fishermen at port.
As a follow up to these meetings, other members of the community called Cooke representatives to ask question and offer support.

February 1st, 2019 - Kelly Cove Salmon representatives visited Scotia Garden Seafoods in Yarmouth and spoke with owner Tim Kaiser. Scotia Garden Seafoods have a licence to harvest rock weed in the scoping area around Liverpool Bay. Mr. Kaiser was shown the proposed site locations on a map. He pointed out their seaweed product is organically certified, and we have been co-habituating in the Liverpool Bay area with lease #1205 since 2011.

February 20th, 2019 - Cooke representatives met with local owner operator businesses to discuss Cooke operations and expansion in Liverpool Bay.

March 1st, 2019 – Representatives from Kelly Cove Salmon met with local fisherman [redacted] (Harbour Authority for Moose Harbour) and local fisherman [redacted]. A map of the proposed new sites was reviewed. Comments were:

- Fisherman in Moose Harbour are strongly opposed of the expansion.
- They have to get the moose harbor dredged each year and they are afraid that the sediments from a fish farm will end up in their harbor and if it's toxic the cost to have toxic material dredged would be quite substantial.

- They feel if the fish farm was approved by Moose Harbour that fisherman would loose lucrative fishing grounds and it would cause a competition among themselves throughout the Bay.
- There is also a recreational and commercial fishing in the area for mackerel and herring that could be effective.
- [redacted] passed along 42 signed letters sent to Kim Masland's office opposing the expansion near Moose Harbour. See appendix J for copies of the letters.

March 1st, 2019 - Representatives from Kelly Cove Salmon met with local fisherman [redacted] who currently holds a mackerel trap licence for Liverpool Bay. He stated that he no longer traps mackerel and that the salmon expansion would not affect his trapping if he did start to use it again.

Appendix A

Progress in Sustainable Fish Farming through Collaborative Research

Jon Grant
NSERC-Cooke Industrial Research Chair in Sustainable Aquaculture
Dept. of Oceanography, Dalhousie University
jon.grant@dal.ca

A partnership supported by **Cooke Aquaculture**,
Natural Sciences & Engineering Research Council of Canada
Dalhousie University

Research topics for coastal ecosystems

Epidemiology of disease with PEI Vet College → Fish health management

Ocean bottom mapping → Co-existence with lobster fisheries

Studies of bottom impacts from cage wastes → NSDFA compliance, minimizing impacts

Husbandry, stocking, fallow, site selection decisions and management

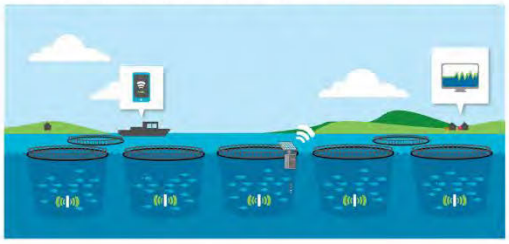
Sustainable salmon farming through an ecosystem approach

Increased resources for aquaculture research

New Professor in Dalhousie Marine Affairs Program - Dr. Ramon Filgueira
Specialist in ecological modelling, ecophysiology, shellfish and finfish culture
Working closely with IRC, joint training of students and other highly qualified personnel for the aquaculture industry

The new **Ocean Frontier Institute** – largest marine science initiative in Canadian history, located at Dalhousie.
Fish farming is a major emphasis, Cooke is a partner

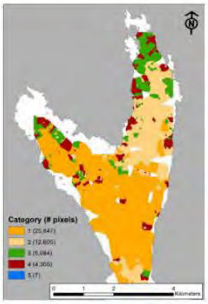
New Partnership – Cooke and Vemco (Bedford NS)
Realtimeaquaculture.com monitoring of every cage



Fish Health Management

Extensive collaborations with the **Atlantic Veterinary College** – specialists in fish health to supplement veterinary capacity in Nova Scotia

Coexistence with Capture Fisheries

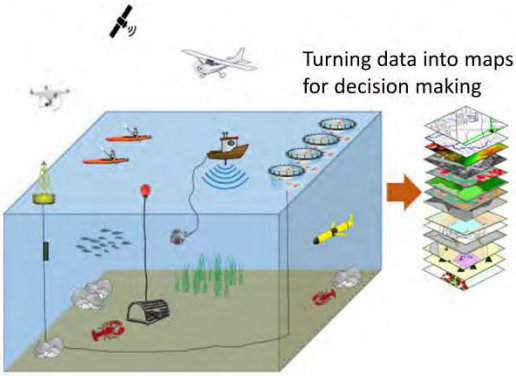


Mapping bottom type with echosounding and video; predicting lobster habitat to avoid conflicts (Example from Shelburne Bay)

Cooperation with Regulators

Working with NS Dept. Fisheries and Aquaculture to detect bottom effects – thresholds and standards

Management via Marine Spatial Planning



Turning data into maps for decision making

Sustainable Fish Farming – Comprehensive Research

Training the next generation – Highly qualified personnel at BSc, MSc, PhD, and postdoctoral levels to work in industry, academia, & government

Healthy fish – Reducing disease risk through epidemiological models; surveillance of pathogens through environmental DNA

Healthy oceans – Minimizing benthic impacts through site selection, feed management, & advanced monitoring techniques

Community engagement – Marine spatial planning & co-existence of aquaculture with other coastal resource users

Precision fish farming – Marine technology & software to monitor the environment & fish welfare, manage feeding, stocking, & harvesting

Research cooperation – Collaboration with experts worldwide; Cooke-NSERC IRC, the Ocean Frontier Institute, & Atlantic SuperCluster

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Appendix B

Community Engagement Record

Meeting	Date	Place
Kelly Cove Salmon Ltd. Open House	October 30, 2018	Queens Place Emera Centre, Liverpool

Meeting description

This was a public meeting, organized in an open house format, held by Kelly Cove Salmon Ltd regarding an Option to Lease (AO#1417) in Liverpool Bay, Queens County. The Option to Lease was granted September 7, 2018.

Attendees included Tom Smith, Executive Director of the Aquaculture Association of Nova Scotia, and Ken Donnelly, Community Engagement Consultant.

What we heard

Nearby residents

- Nearby residents expressed concern about the bright lights at the existing lease that were installed for automatic feeding
- Nearby residents expressed concern about potential fouling of "the best beach in Nova Scotia"
- Some felt that the operation should be hidden from view from the condominiums
- Some were concerned about property values, particularly the people in the condominiums
- Several were interested in job opportunities provided, either for themselves or for others in the community

General attendees

- Some are against open-pen salmon farming in general, for several reasons, including:
  - pollution of bottom
  - potential for disease spreading
  - threat to biodiversity

- belief that on-land operations are better, cleaner
- Several people said they don't eat Atlantic Salmon because it is all farmed and doesn't taste good. A few others won't eat it because they are opposed to open-pen farming
- There were attendees who spoke in support of the expansion and opportunity for economic development and jobs
- Some expressed concern about Cooke's past operations and/or activities
- Some people said they were disappointed that there was not a Town Hall meeting
- Some people said they liked the Open House format because they could gather more information and get their questions answered than they could in a Town Hall format

Process

- Many people were uninformed about the new regulations and the lease option process
- A few felt that the operation was a foregone conclusion, just requiring a "rubber stamp"
- Quite a few were pleased to learn about the new process, and encouraged that written comments they made on the available forms would go to the adjudicative panel to be considered
- A few people were skeptical of the process, saying it would be a political decision
- It would be beneficial to have an information display panel that showed the regulatory process in an easily-understood graphic (one of the booths had process information but it was text-heavy and lacked clarity)

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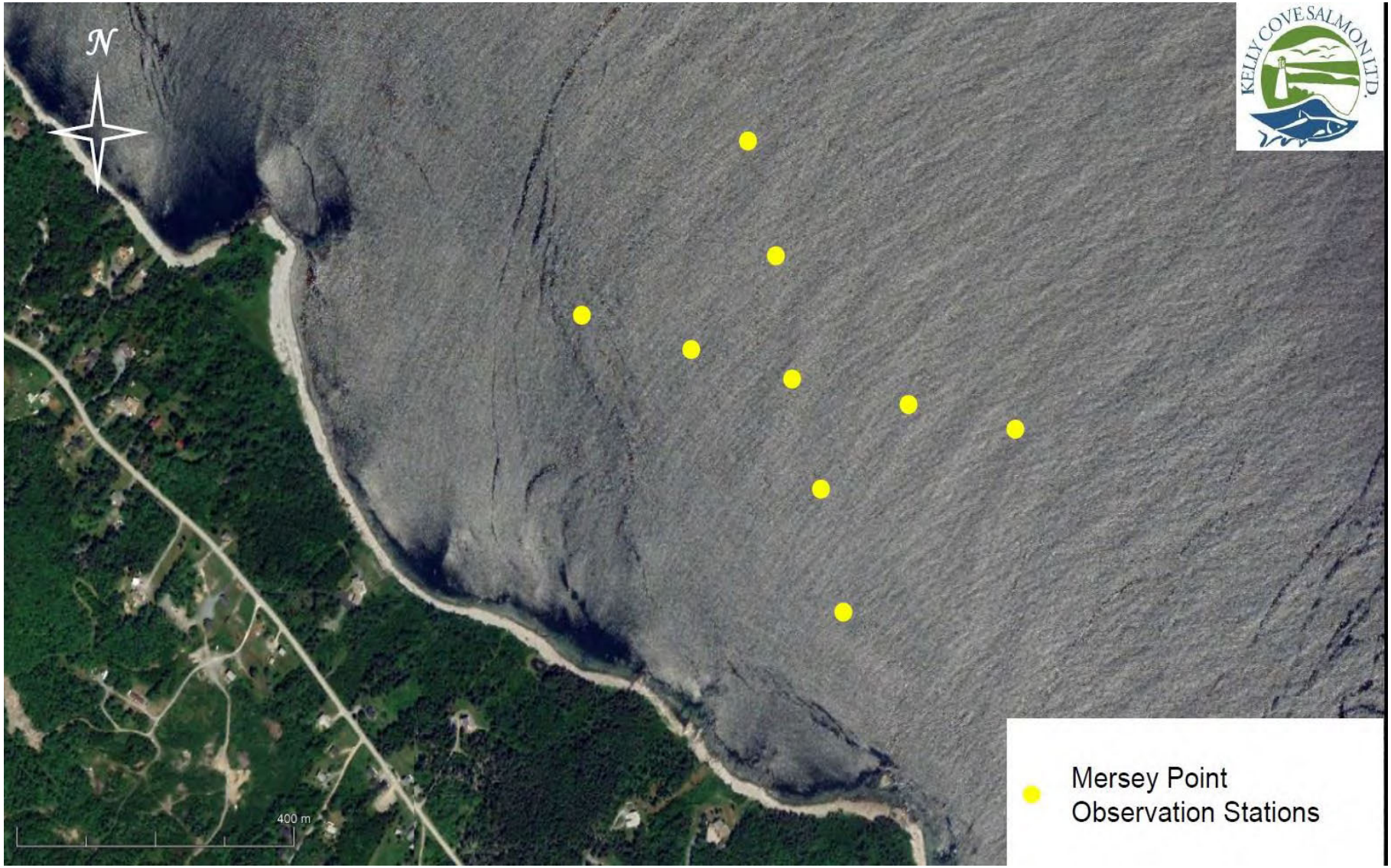
Appendix C


N
400 m
Mersey Point
Observation Stations

Mersey Point

Area Information

A preliminary assessment of environmental conditions in the waters off of Mersey Point, between Black Point and Moose Point, indicates suitability for aquaculture. This area is approximately 2.4 km southwest of Kelly Cove Salmon Ltd.'s Liverpool aquaculture site #1205.

Figure 1: Prospective area of interest – Mersey Point

Currents

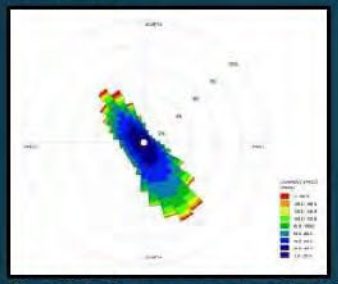


Figure 2: Depth average current speed and direction

Depth averaged current speed and direction demonstrates that the majority of water flow is towards the north northeast (Fig. 2). The depth averaged current speed of all recorded profiles at this site was 5.31 cm/s. The direction of current flow remains relatively consistent throughout the water column, with a bi-directional flow travelling NW and SE.

Bathymetry

Side scan-based, depth profiling indicated water depth within the survey area ranged from approximately 13-m along the shore to 21-m near the northeast. The profiled area exhibited a steady downward slope of the seafloor from south to north (Fig. 3).

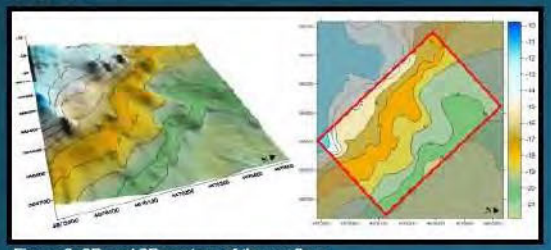


Figure 3: 3D and 2D contour of the seafloor

Benthic Conditions

Benthic conditions were examined at nine (9) - stations within the area of Mersey Point (Fig. 4). The predominant sediment type in the area is hard packed coarse sand, pebble and cobble. Seaweed and coralline algae were common, while fish and invertebrates were scarce (Table 1).

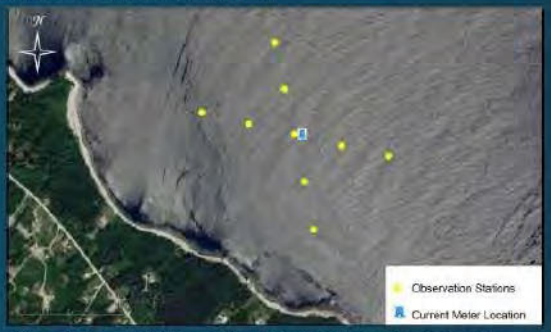
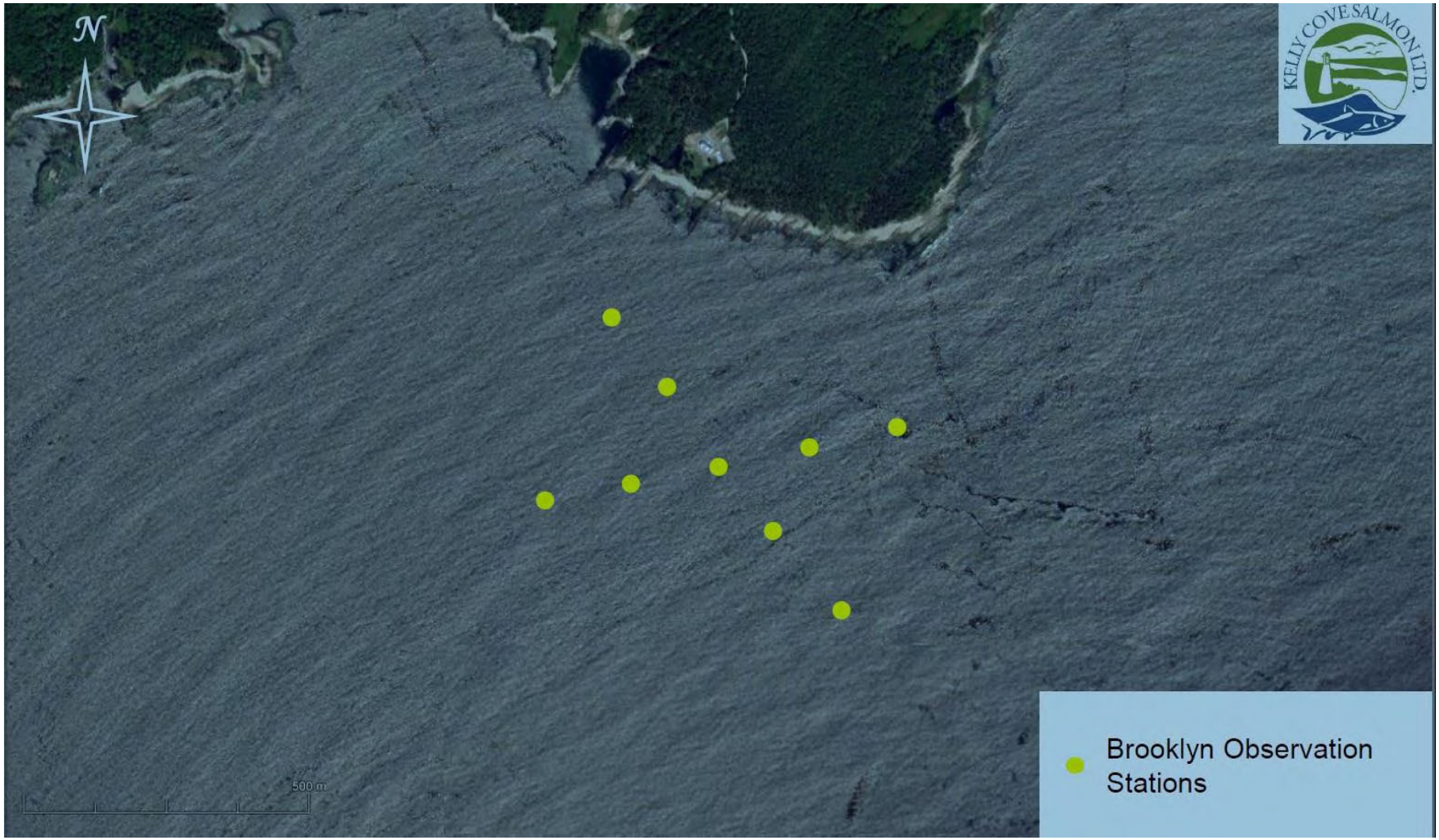


Figure 4: Mersey Point sampling stations and current meter location

Table 1: Benthic Conditions

Station	Bottom Type	Flora/Fauna
BP-1	Hard packed coarse sand, pebble	Seaweed
BP-2	Hard packed coarse sand, pebble, cobble, boulders	Coralline algae, seaweed
BP-3	Hard packed coarse sand, pebble, cobble, shell debris	Coralline algae, seaweed
BP-4	Hard packed coarse sand, pebble	Detritus, seaweed
BP-5	Hard packed coarse sand, pebble, cobble	Coralline algae, seaweed, sponge, sand dollar
BP-6	Hard packed sand, pebble, cobble	Coralline algae, sand dollar, seaweed
BP-7	Hard packed coarse sand, pebble, cobble	Coralline algae, seaweed
BP-8	Hard packed coarse sand, pebble, cobble, ledge	Coralline algae, anemones, seaweed, sponge
BP-9	Hard packed coarse sand, pebble, cobble, ledge	Coralline algae, fish, seaweed


N
500 m
Brooklyn Observation Stations

Brooklyn

Area Information

A preliminary assessment of environmental conditions in the waters off of the northern shore of Liverpool Bay indicates suitability for aquaculture. This area, referred to as Brooklyn, is located approximately 1.3 km southwest of Kelly Cove Salmon Ltd.'s Liverpool aquaculture site #1205.

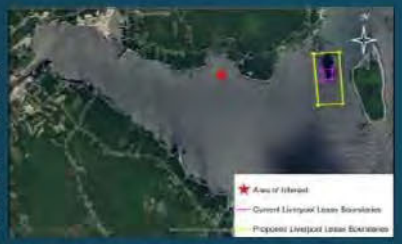
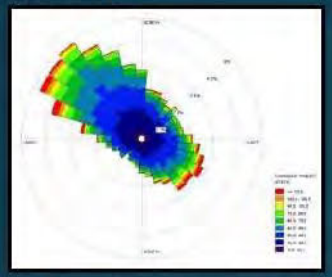


Figure 1: Prospective area of interest – Brooklyn

Currents



Depth averaged current speed and direction demonstrates that the majority of water flow is towards the northwest (Fig. 2). The depth averaged current speed of all recorded profiles at this site was 4.2 cm/s. Lower speeds were recorded at the bottom, flowing towards the NW. Bi-directional flow in the WNW and SE were observed near the surface, at higher speeds than the water at the seafloor.

Figure 2: Depth average current speed and direction

Bathymetry

Side scan-based, depth profiling indicated water depth within the survey area ranged from approximately 17-m along the shore to 23-m near the southeast. The profiled area exhibited a steady downward slope of the seafloor from north to south (Fig. 3).

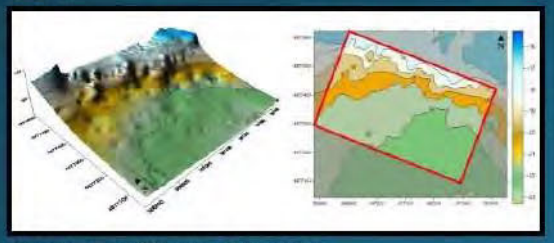


Figure 3: 3D and 2D contour of the seafloor

Benthic Conditions

Benthic conditions were examined at nine (9) - stations within the Brooklyn area (Fig. 4). The predominant sediment type in the area is hard packed sediment, consisting mostly of hard packed sand with some cobble, boulders and ledges throughout. Seaweed and coralline algae were common, while fish and invertebrates, with the exception of sea urchins, were scarce (Table 1).

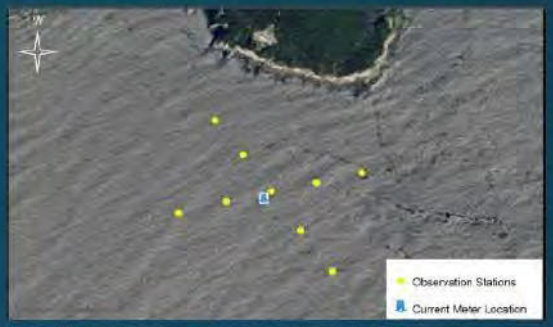
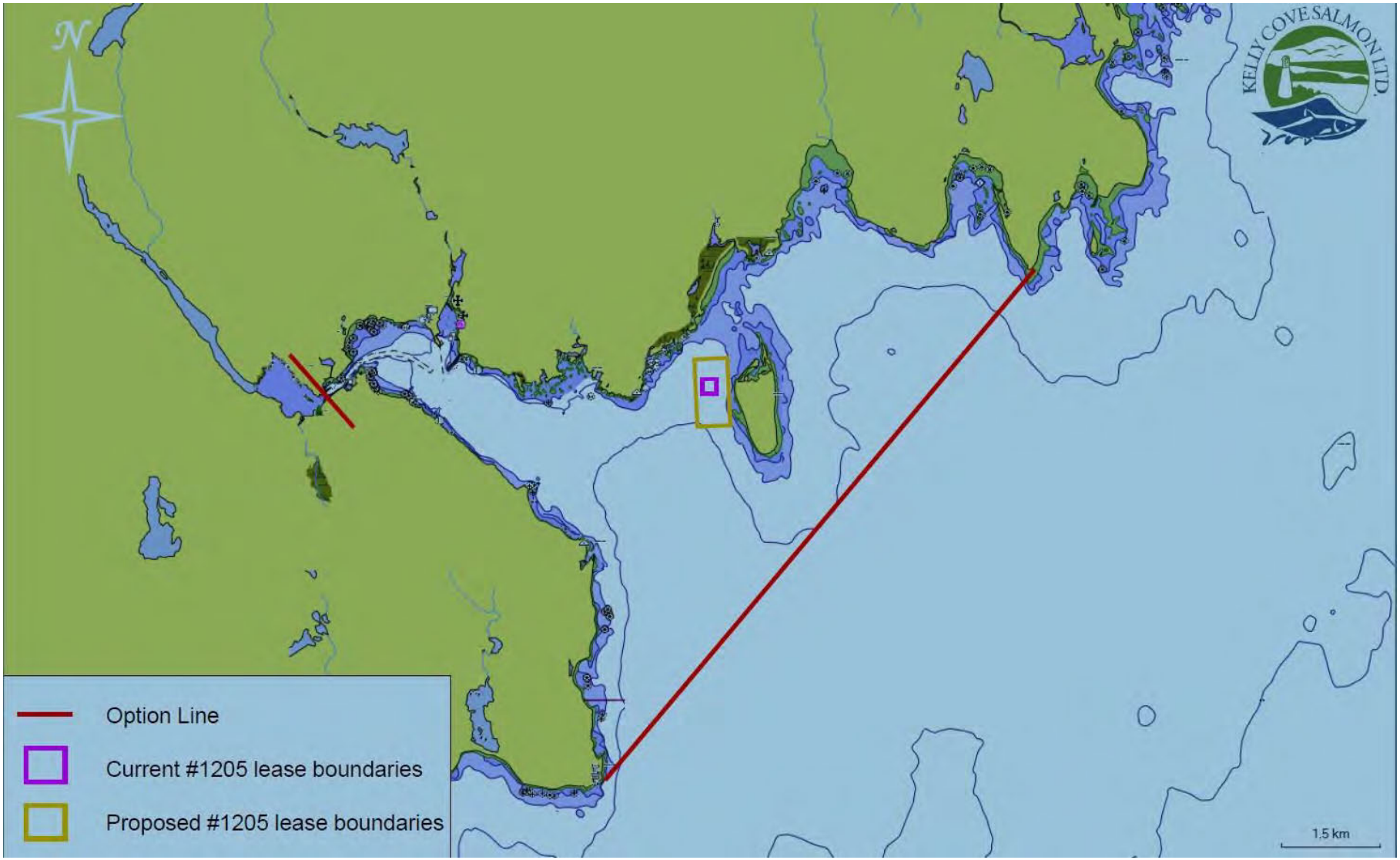


Figure 4: Brooklyn sampling stations and current meter location

Table 1: Benthic Conditions

Station	Bottom Type	Flora/Fauna
EP-1	Hard packed, cobble, boulders, shell debris	Coralline algae, seaweed, sand dollar, sea urchin
EP-2	Boulder, ledge	Coralline algae, seaweed, mussel, sea urchin
EP-3	Hard packed sand	Seaweed
EP-4	Hard packed medium sand	Seaweed
EP-5	Hard packed medium sand, cobble, pebble	N/A
EP-6	Hard packed medium sand	Seaweed
EP-7	Hard packed medium sand	Seaweed
EP-8	Hard packed medium sand, shell debris, boulder, ledge	Coralline algae, crab
EP-9	Hard packed medium sand	N/A


N
KELLY COVE SALMON LTD.
Option Line
Current #1205 lease boundaries
Proposed #1205 lease boundaries
1.5 km

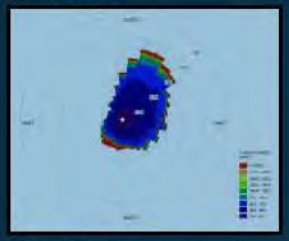
Liverpool (#1205)

Site Information

Liverpool aquaculture site #1205 was acquired by Cooke Aqua in 2011 and has been in production since 2011. The proposed changes to the lease incorporates all below and above water gear within the lease boundary. The proposed boundary amendment also includes six (6) additional cages.

Figure 1: Current and proposed lease

Currents



Depth averaged current speed and direction demonstrates that the majority of water flow is toward the north northeast (Fig. 2). The depth averaged current speed of all recorded profiles at this site was 5.07 cm/s. Both the average and maximum current velocities increased with increased distance from the seafloor.

Figure 2: Depth average current speed and direction

Bathymetry

Side scan-based, depth profiling indicated water depth within the survey area ranged from approximately 12-m in the northeast to 21-m near the southwest. The profiled area has relatively flat bathymetry with a gradual slope from north to south (Fig. 3).

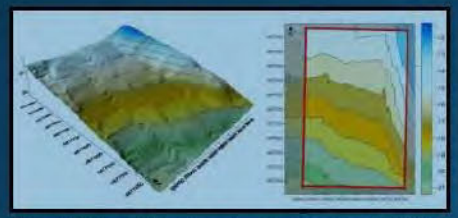


Figure 3: 3D and 2D contour diagram of Liverpool (#1205)

Benthic Conditions

Benthic conditions were examined at four (4) - stations within the proposed lease with two (2) - reference stations upstream and downstream from the lease (Fig. 4). Due to the sediment type which was predominantly comprised of hard packed sand, some of the stations were not sampled for sediment chemistry (Table 1, Fig. 4). Benthic conditions indicated high biodiversity of flora and fauna species with low sediment sulphide concentration.

Figure 4: Boundary amendment lease boundaries and sampling stations

Figure 5:
a) Depiction of benthic floor
b) Typical grab contents

Table 1: Benthic Conditions

Station	Visual Observations	Redox (mV^{NHE})	Sulphide (µM)	Grain Size (%)
LVP-A	Shell debris, kelp, worm tubes, cumacea	562.9	0	Gravel – 0.3 Sand – 97.0 Mud – 2.7
LVP-B	Shell debris, crab, shells	593.9	0	Gravel – 3.5 Sand – 95.0 Mud – 1.5
LP1	Shell debris, lobster, kelp, worm tubes, cumacea	582.4	0	Gravel – 0.1 Sand – 97.3 Mud – 2.6
LP2	Shell debris, lobster, sand dollar	578.4	1	Gravel – 0.8 Sand – 98.0 Mud – 1.2
LP3	Colander, kelp, macroalgae, shell debris	No Sample	No Sample	No Sample
LP4	Shell debris, lobster	565.4	0	Gravel – 2.2 Sand – 96.3 Mud – 1.5

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Appendix D

Liverpool Option

During the Option Period, Kelly Cove Salmon Ltd. will be scoping the area of Liverpool Bay to determine potential locations to establish aquaculture sites. This investigation may lead to future applications for specific sites.

Please visit the NSDFA page to learn more about the option to lease in NS: https://novascotia.ca/fish/aquaculture/public-information/public-notice/1417_Public_Notice_and_Maps.pdf

An *Option to Lease* is not an aquaculture licence or lease, so no aquacultural products will be introduced during this period. A regulatory requirement of this process is for Kelly Cove Salmon Ltd. to hold at least one public information session in Liverpool, Queens County.

Liverpool NS 1205

BOUNDARY AMENDMENT

A boundary amendment for Liverpool is required to ensure that the moorings for the site are within the leased area – previously the lease considered surface gear only.

Kelly Cove Salmon would like the boundary amendment to increase the capacity of the lease by adding an additional 6 cages.

Environmental Performance

Each year, Liverpool undergoes benthic environmental monitoring underneath the cages and the surrounding area following the current provincial and federal regulations.

Since acquiring the Liverpool lease in 2011 KCS has introduced technologies and management practices to minimize the impact on the sea bed.

KCS continuously evaluates & improves practices to ensure minimal environmental impacts under and around the cages.

Regulatory Requirements

Aquaculture in Nova Scotia requires a Licence from the Province, and those who conduct aquaculture in the marine environment, also require a lease from the Province for the use of the Crown waterway and bottom. NSDFA is the primary regulator of Aquaculture in Nova Scotia, the Aquaculture Division works in concert with a variety of Federal Regulators which include Fisheries and Oceans Canada (DFO), Transport Canada (TC), Environment Canada (EC), and the Canadian Food Inspection Agency (CFIA). Numerous other Departments and Agencies of the Government of Nova Scotia also provide advice to the Aquaculture Division in relation to Aquaculture applications.

LEASE & LICENCE

NS1205 | Kelly Cove Salmon Ltd. | April 2015 – 2020

The Liverpool (NS1205) lease has been operating under Kelly Cove Salmon management since 2011. In 2015 our lease of a 4-hectare area located in Liverpool was renewed for a 5-year lease.

Although the site is licensed to produce Rainbow trout, Kelly Cove Salmon will only raise Atlantic salmon – Saint John River strain.

FARM MANAGEMENT PLAN (FMP)

An aquaculture licence holder must prepare a Farm Management Plan in accordance with the provincial regulations and submit it to the Minister for approval prior to initial stocking. The FMP must cover:

- Fish Health Management
- Containment Management
- Farm operations
- Environment Monitoring

Appendix E

Provincial Fish Health Surveillance Program

Disease surveillance is vital for strengthening and supporting the aquaculture industry in Nova Scotia.

Surveillance of the marine farms will enable the Nova Scotia Department of Fisheries and Aquaculture to oversee the industry and react in a timely manner when issues arise.

Fish health monitoring is comprised of "**Provincial Surveillance**" visits and "**clinical**" visits to marine farms throughout the year.

A **clinical** visit involves an initiation of fish monitoring protocols that are acted on by the site management and a veterinary service team.

A **Provincial Surveillance** visit, though it includes fish monitoring by a veterinary service team, is an on-going process of regulated health monitoring which is scheduled and meets the criteria of a pre-determined health monitoring program.

Provincial Surveillance Sampling Regime

A marine aquaculture site must have **six** *Provincial Surveillance* veterinary visits per calendar year (January to December).

At least **two** of these visits will be performed by the Chief Aquatic Animal Health Veterinarian or Veterinary Designate from the Provincial Fish Health Service.

The remaining four visits may be performed by a veterinary service other than provided by the Province.

A *Provincial Surveillance* visit, on average, will occur **every 6 weeks for each marine farm**.

A sample size of **20** individual moribund animals is the goal for testing.

Appendix F

Copy and Production

Todays Date: 10/31/2018		Station:	CKBW & COUNTRY 100.7
Client:	COOKE AQUACULTURE	Account Rep:	GL
Announcer:	DL	Air Dates:	NOV 2-3
Length:	30”	Cart #:	5J5Y
Writer:	[redacted]	Producer:	[redacted]
Completed:	cm		

Cooke Aquaculture is an Atlantic Canadian family owned and managed company that has operated a *sustainable aquaculture* business for over 30 years.

Cooke has been a part of Nova Scotia *since 1999* and has been granted the option of exploring *expansion opportunities* in Liverpool Bay.

This is an *exciting opportunity* for growth in this province’s sea farming industry.

***To learn more about this process,* Cooke’s operations in Nova Scotia, or to submit comments and questions, visit aquaculturegrowsns.ca**

Appendix G

Analytics aquaculturegrowsns ca
All Web Site Data

Go to report

Location

ALL » COUNTRY Canada

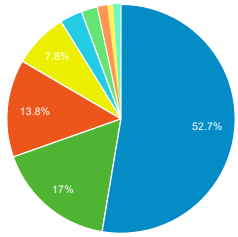
Oct 11, 2018 - Feb 25, 2019

All Users
78 37% Users

Map Overlay

Summary

Region	▼ 558 % of Total: 78.37% (712)	Users 558 % of Total: 78.37% (712)	Contribution to total: ▼
1. Nova Scotia	298	52.65%	
2. Ontario	96	16.96%	
3. New Brunswick	78	13.78%	
4. Quebec	44	7.77%	
5. Newfoundland and Labrador	18	3.18%	
6. British Columbia	13	2.30%	
7. Prince Edward Island	8	1.41%	
8. Alberta	5	0.88%	
9. Manitoba	3	0.53%	
10. (not set)	2	0.35%	

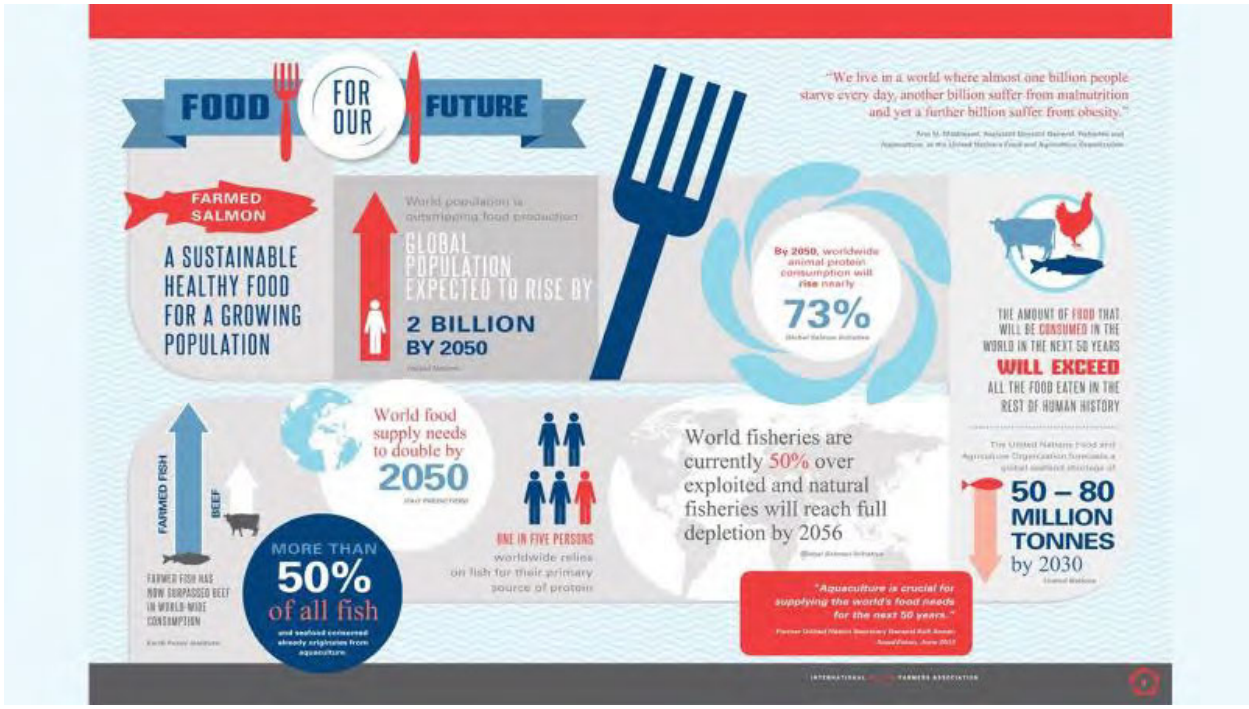


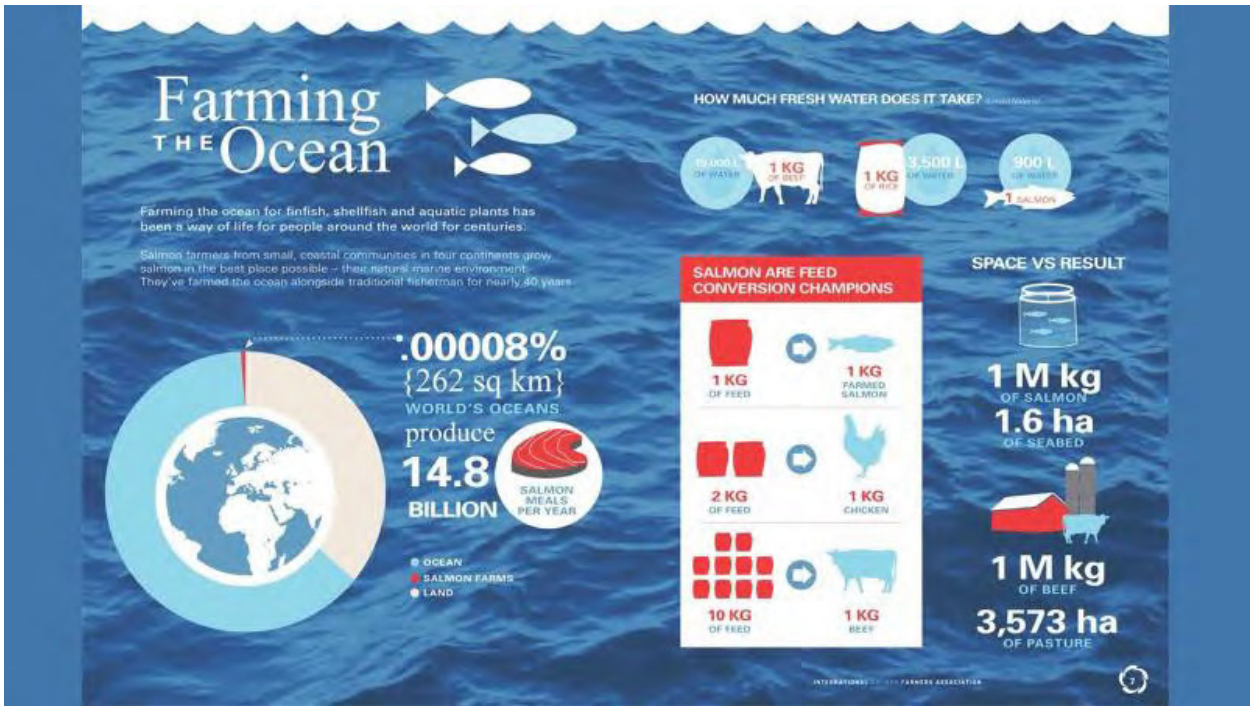
Rows 1 - 10 of 11

Appendix H


Cooke
FROM FAMILY FARM TO
SEAFOOD INDUSTRY LEADER
Expansion Opportunities in Regional
Municipality of Queens
CANADA'S BEST MANAGED COMPANIES
Platinum member


SALMON BY THE NUMBERS
17.5 BILLION MEALS
PER YEAR
52,000
DIRECT JOBS
80,600
INDIRECT/
INDUCED JOBS
$15.4
BILLION
(USD)
GLOBAL SALMON
PRODUCTION
$360
MILLION
50 KM
OCEAN IN
THE WORLD
ONLY
288
50 KM
OCEAN USED
FOR
SALMON
FARMING
UNPRECEDENTED OPPORTUNITY
The growth of salmon farming has brought opportunity and prosperity to many of the world's coastal and remote areas, while producing one of the healthiest foods for a growing population.
Salmon farming is the world's fastest growing food producing sector, employing thousands of people in many countries and generating billions of dollars in revenue in local economies.
Our sector has made fresh, healthy salmon readily available all year round in markets around the world.


FOOD FOR OUR FUTURE
FARMED SALMON
A SUSTAINABLE HEALTHY FOOD FOR A GROWING POPULATION
World population is outstripping food production
GLOBAL POPULATION EXPECTED TO RISE BY
2 BILLION BY 2050
"We live in a world where almost one billion people starve every day, another billion suffer from malnutrition and yet a further billion suffer from obesity."
By 2050, worldwide animal protein consumption will rise nearly
73%
THE AMOUNT OF FOOD THAT WILL BE CONSUMED IN THE WORLD IN THE NEXT 50 YEARS
WILL EXCEED
ALL THE FOOD EATEN IN THE REST OF HUMAN HISTORY
FARMED FISH
BEEF
FARMED FISH HAS NOW SURPASSED BEEF IN WORLD-WIDE CONSUMPTION
World food supply needs to double by
2050
MORE THAN
50%
of all fish
and seafood consumed already originates from aquaculture
ONE IN FIVE PERSONS
worldwide relies on fish for their primary source of protein
World fisheries are currently 50% over exploited and natural fisheries will reach full depletion by 2056
50 – 80 MILLION TONNES
by 2030
"Aquaculture is crucial for supplying the world's food needs for the next 50 years."


Farming THE Ocean
Farming the ocean for finfish, shellfish and aquatic plants has been a way of life for people around the world for centuries.
Salmon farmers from small, coastal communities in four continents grow salmon in the best place possible – their natural marine environment. They've farmed the ocean alongside traditional fishermen for nearly 40 years.
.00008%
{262 sq km}
WORLD'S OCEANS
produce
14.8 BILLION
SALMON MEALS PER YEAR
OCEAN
SALMON FARMS
LAND
HOW MUCH FRESH WATER DOES IT TAKE?
1 KG OF BEEF
1 KG OF BEEF
3,500 L OF WATER
900 L OF WATER
1 SALMON
SALMON ARE FEED CONVERSION CHAMPIONS
1 KG OF FEED
1 KG FARMED SALMON
2 KG OF FEED
1 KG CHICKEN
10 KG OF FEED
1 KG BEEF
SPACE VS RESULT
1 M kg OF SALMON
1.6 ha OF SEABED
1 M kg OF BEEF
3,573 ha OF PASTURE


SALMON:
A HEALTHY
PROTEIN
REDUCE THE RISK OF coronary death by 36%
INCREASE life expectancy by 2.2 years
OMEGA 3
LOW FAT
LOW CAL
LEAN PROTEIN
VITAMIN D
IRON
ZINC
P
VITAMIN A
VITAMIN B12
ISFA

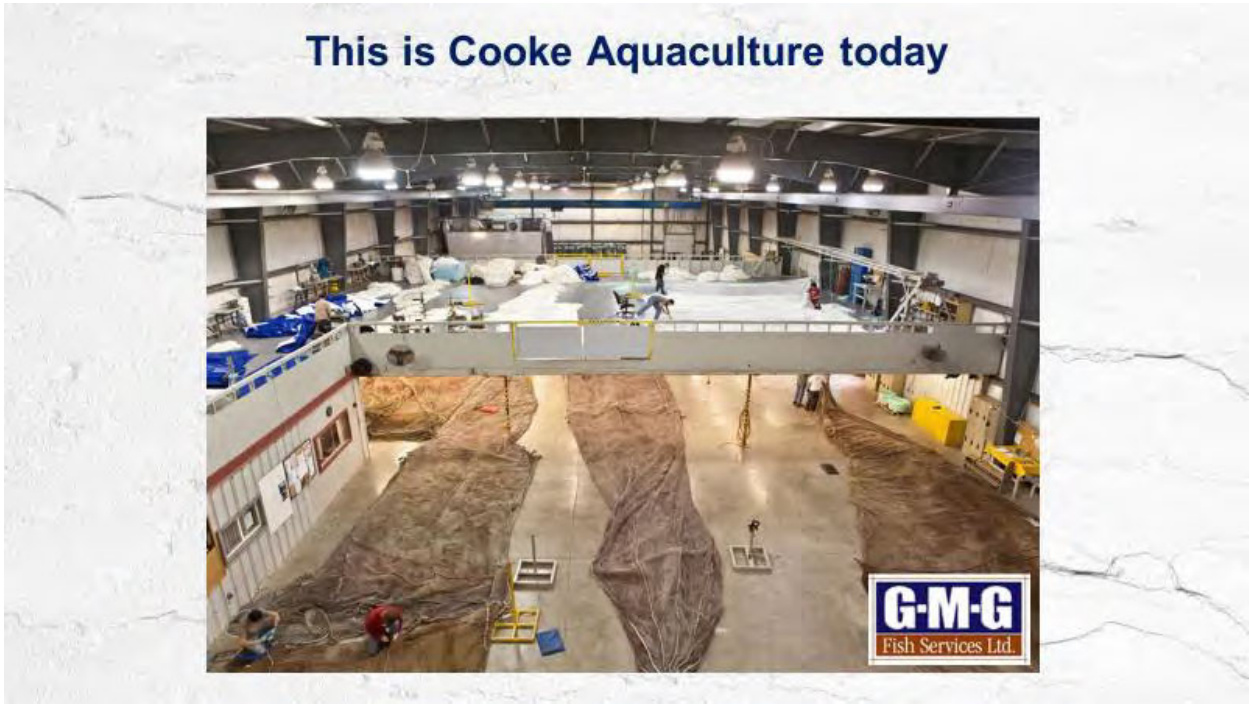

From Humble Beginnings to Global Leader
Original cages at Kelly Cove, NB, 1986

Our early history

This is Cooke Aquaculture today


$231 MILLION SPENT IN ATLANTIC CANADA.
1,269 LOCAL BUSINESSES SUPPORTED.
1 SHARED SUCCESS STORY.


This is Cooke Aquaculture today
Sept-Iles
Matane
Gaspe
Rimouski
Bathurst
Edmundston
New Brunswick
Moncton
Fredericton
Saint John
Maine
Bangor
Yarmouth
Halifax
Nova Scotia
Truro
New Glasgow
Sydney
Summerside
Gulf of St Lawrence
Corner Brook
Newfoundland
St. John's
St Pierre et Miquelon
Hatchery
Grow out site
Processing plant
Image: Google Maps


This is Cooke Aquaculture today
G-M-G
Fish Services Ltd.


This is Cooke Aquaculture today
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WE'RE EXPERTS AT
KEEPING THINGS CHILL.
Fast, fresh deliveries for less.
Shoreland Transport has proudly served the fresh and frozen seafood industry throughout Eastern Canada and the U.S. since 2002. When you need it fast, fresh, and affordable, we deliver.
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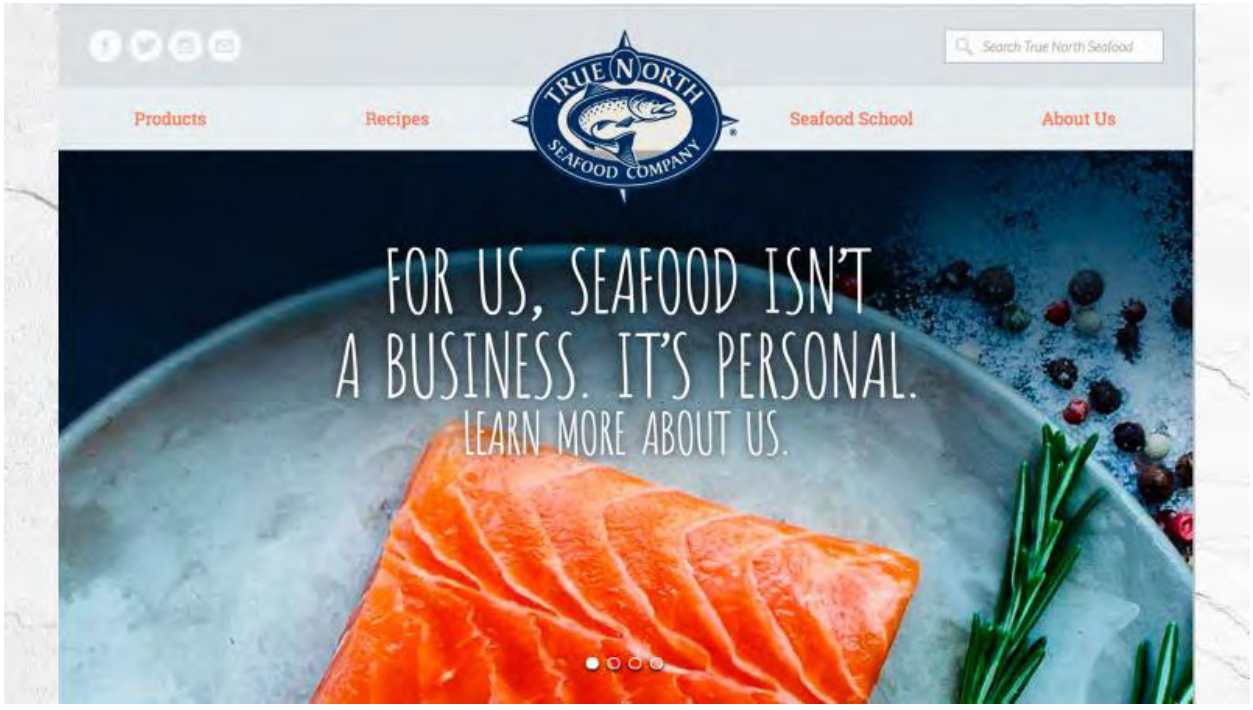
northeast nutrition
charlottefeed Inc.


This is Cooke Aquaculture Today


This is Cooke Aquaculture Today
coverts
GET HOOKED ON SEAFOOD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Red Cross names humanitarian award winners

Telegraph-Journal

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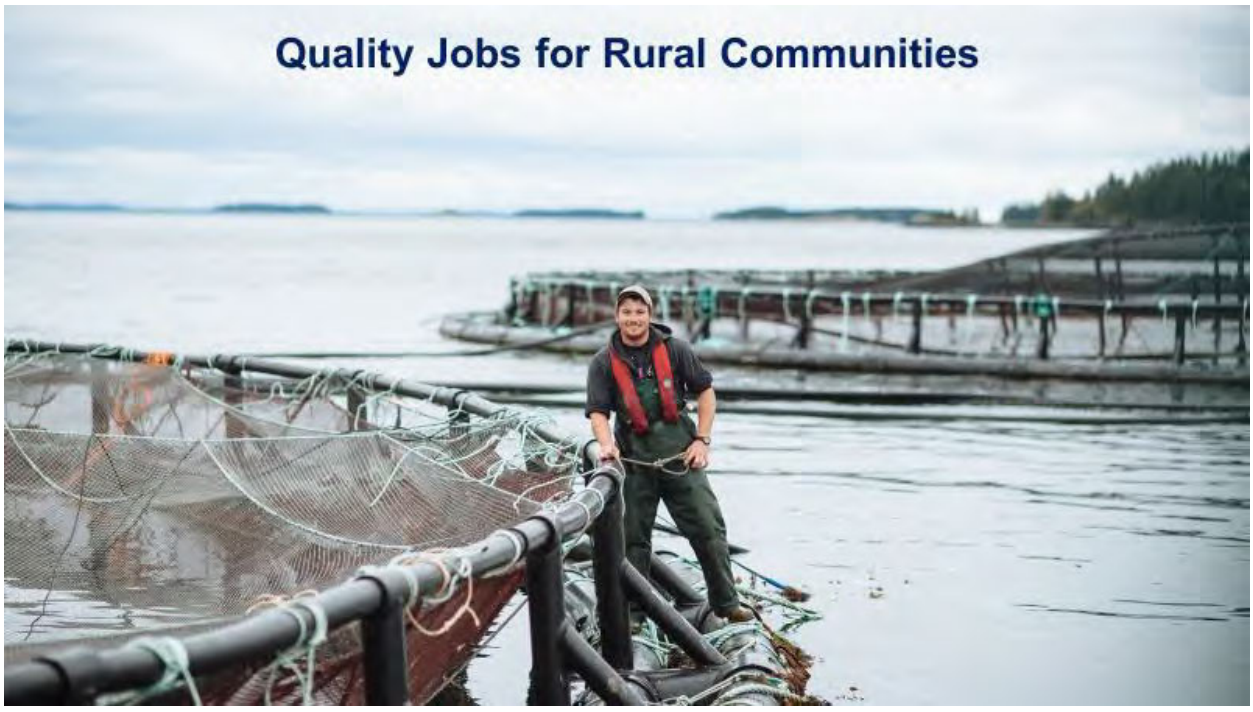
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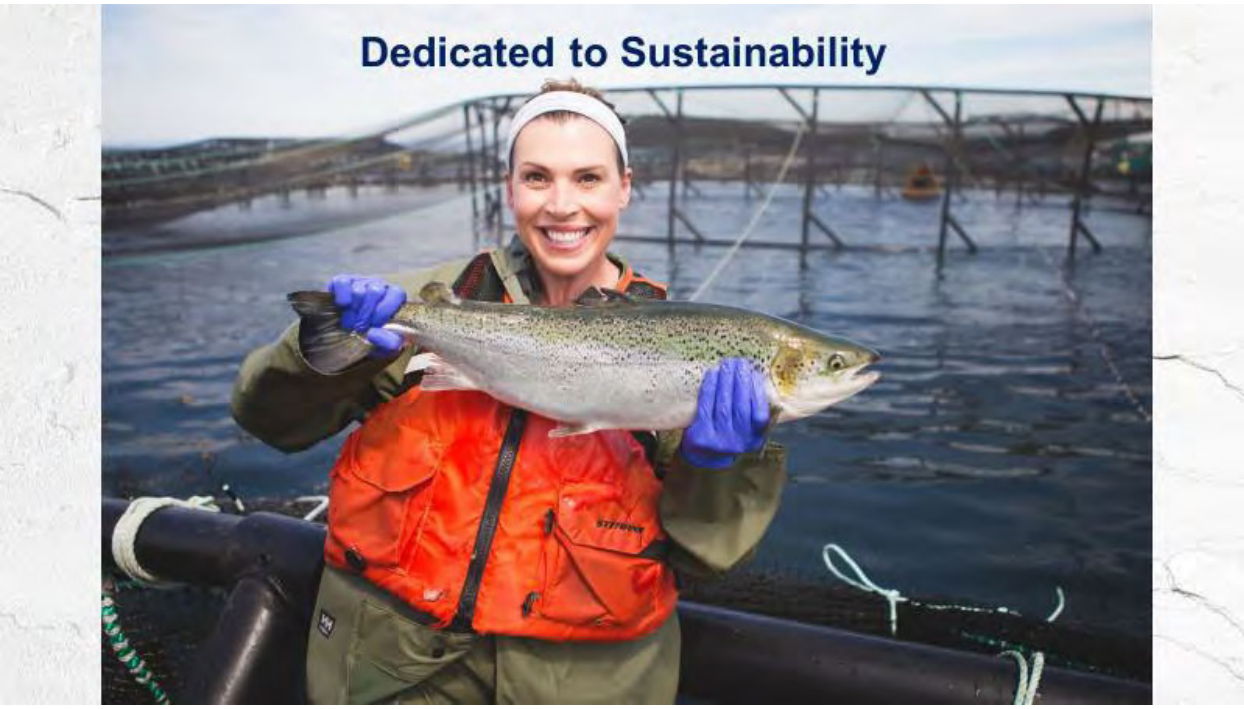
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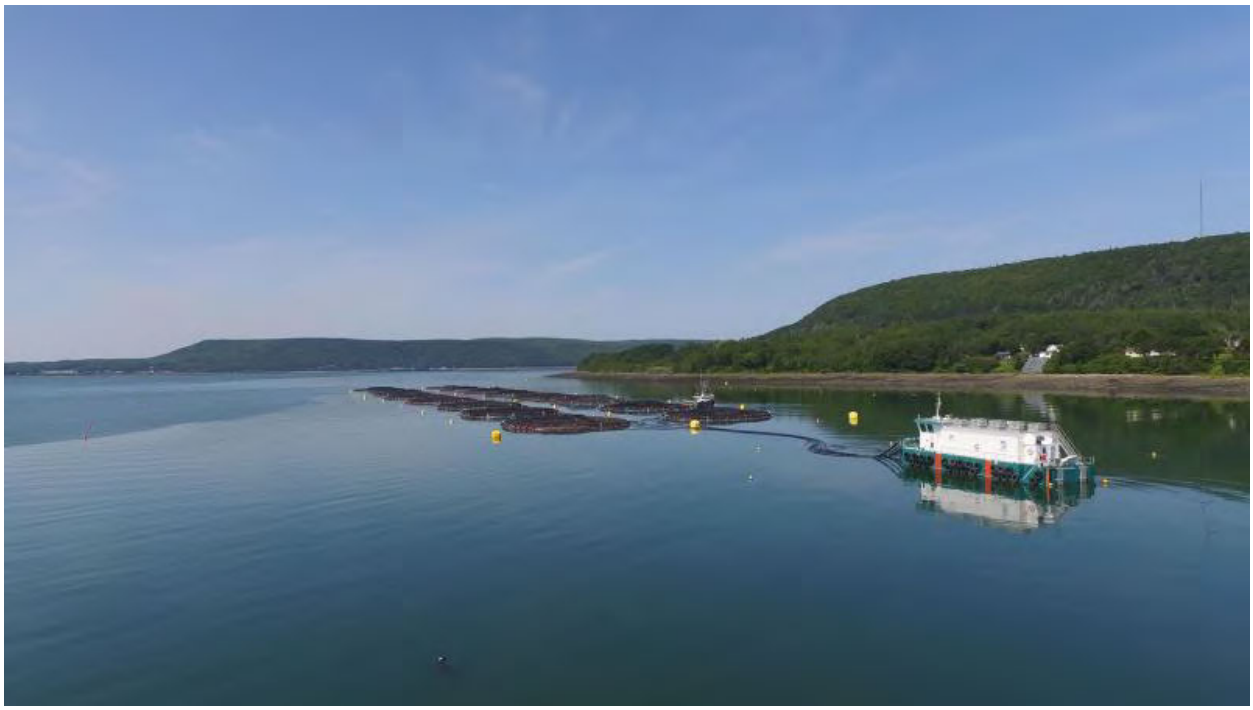
It's All About the Food!




Cooke
FROM FAMILY FARM TO
SEAFOOD INDUSTRY LEADER
CANADA'S BEST MANAGED COMPANIES
Platinum member

Appendix I

Region of Queens Municipality

249 White Point Road P.O. Box 1264 Liverpool, NS BOT 1KO Phone 902- 354-3453 Fax 902-354-7473 E-mail: dbdagley@regionofqueens.com website: www.regionofqueens.com Toll Free: 1-800-655-5741

Hcgion of Queens Municipality

February 13, 2019

Kelly Cove Salmon Ltd.
669 Main St.
Blacks Harbour
New Brunswick
ESH lKl

Cooke Aquaculture Inc.
874 Main St.
Blacks Harbour
New Brunswick
ESH 1E6

Attention: Joel Richardson; Jeff Nickerson; Andrew Lively

Gentlemen:

Kelly Cove Salmon Ltd. applied for and received a six month scoping Option for Liverpool Bay from the Nova Scotia Department of Fisheries and Aquaculture on September 7, 2018.

On behalf of Council of Region of Queens Municipality, you will find listed below a number of issues which Kelly Cove Salmon/Cooke Aquaculture are hereby being asked to research and address during that Option period. Scientific and other data compiled during the scoping Option process in Liverpool Bay, as well as this correspondence, is expected to also accompany an aquaculture application, should you decide to request an expansion or new aquaculture site in Liverpool Bay.

These items have been compiled from comments provided to Council from the public gallery, including letters and e-mails received from local citizens, as well as from individuals with seasonal properties located in Queens.
It is our expectation that all scientific data, research, and public consultation information and reports will be available to the public on your website or other suitable location, in a timely manner after an aquaculture application is filed with the Province, should you decide to submit an application.

1) Carrying capacity of Liverpool Bay is critical especially regarding nutrient loading levels. Please identify the expected wild fish contribution to nutrient loading in Liverpool Bay as well as the projected daily waste created by the existing fin fish pens and any proposed expansion or new locations. A chart providing this information from a juvenile fish size to adult market size held in pens on a quarterly projected basis from 2015 going forward to the present, would be a suitable minimum projection.
2) Determination of the flushing rates of the bay in locations near existing and proposed pens, including providing tidal flows, speeds, and directions during 12 hour cycles throughout all months of the year would be expected.
3) Uneaten food loss also is a contributor to oxygen depletion and sediment buildup. Please provide an historical record of projected uneaten food loss for the last 5 years, which will also cover the recent years when the electronic feeding system has been installed, which is expected to have reduced uneaten food loss. Any impact change experienced with the newer feeding delivery should also be clearly identified in the data.
4) Clarify and summarize the process and management of electronic feeding equipment and the controls in place for operation of the equipment. Identify the manpower utilized to deliver feed to the site and the frequency, as well as those numbers of employees necessary to maintain and repair the pens.
5) Please identify the value of all purchases and expenditures in Queens County by the Proponent in 2018, which supported local business as well as the total number of company employees who work in Queens. Please also identify the projected future increases applicable to these two items should an expansion be proposed in Liverpool Bay.
6) Identify the component ingredients of the fish feed to be utilized at fin fish pens in Liverpool Bay.
7) Identify the history and future probability of a sea lice infestation to be anticipated at pens in Liverpool Bay, and the future methods to be utilized to mitigate any future sea lice impacts.
8) Identify the current and potential future usage of all chemicals, pesticides, hormones, antibiotics, or other compounds to be utilized in Liverpool Bay which are not naturally occurring in Liverpool Bay.

Provide a Policy or Plan which states the procedure to be followed to help prevent fish loss and to identify any diseased or dead fish in pens, the inspection frequency, removal of those fish, as well as their disposal location

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Appendix J

Harbour Authority of Moose Harbour
PO Box 1724
Liverpool, NS B0T 1K0

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

Our organization represents 11 vessels fishing out of Moose Harbour/Liverpool Bay. We lease Moose Harbour from the Federal Department of Fisheries, Small Craft Harbours.

We are writing today in opposition to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. We believe that the long-term environmental risks of open-pen fish farms, far outweigh any temporary economic advantages.

We feel it may impact the operations of our Fishing Harbour as well. There is concern that the pesticides/chemicals/fish feces/waste that is going to accumulate in the area will be washed into our harbour and will not be flushed out. Our harbour does not flush well and materials accumulate easily. We have been trying to have our harbour dredged for a few years now. The harbour bottom is sampled before dredging, and we are concerned that these new chemicals will change our sampling test results. The higher the chemical levels, the more it will cost to have the dredge materials removed and then treated.

Is Cooke Aquaculture going to help with the future cost of dredging Moose Harbour? Is the Provincial Department of Fisheries and Aquaculture going to assist with the long term effects of chemicals settling in our harbour? If the cost of dredging becomes prohibitive it will affect the viability of our Harbour Authority and the livelihoods of many captains, their crew and their families.

Please keep us informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Peter Stewart, President,
Victor Westhaver, Vice President
Stephen Scobey, Treasurer

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jake MacLeay, Area Manager, Small Craft Harbours, DFO
Cc Bernadette Jordan, MP South Shore-St. Margaret's

[redacted]

[redacted]
Greenfield NS
B0T 1G0
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Queens County, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

I am very concerned about the pesticides/chemicals being used to control sea lice in this industry. I believe these chemicals will harm the juvenile lobster and other sea creatures along our shore line. I am concerned about the chemicals ending up in the salmon that people eat.

I am concerned about the cleanliness and appearance of our shore line/beaches for residents and for tourism.

I would strongly encourage all levels of government to be involved in creating a moratorium on open pen aquaculture and request that all future finfish aquaculture sites be only closed containment, land based facilities.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

[redacted]
2455 Eastern Shore Road
RR#1 Brooklyn Queens
Co. N.S.
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of West Berlin, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Robert M. McDonald
[redacted]
Mersey PT.
LIVERPOOL, [redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Mersey PT., I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Terry Conrad
[redacted]
Queens Co N.S
B0J 1H0

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of West Berlin, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Jennifer Clatterbuck
[redacted]
Liverpool NS
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Western Head, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Elizabeth Rawie
[redacted]
Liverpool
N.S.

November 26, 2018.

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Liverpool Queens, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Elise Johnston
[redacted]
Hunts Point NS
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Liverpool-Hunts Point, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year. ≠ for a few.

I am very concerned about the pesticides/chemicals being used to control sea lice in this industry. I believe these chemicals will harm the juvenile lobster and other sea creatures along our shore line. I am concerned about the chemicals ending up in the salmon that people eat.

I am concerned about the cleanliness and appearance of our shore line/beaches for residents and for tourism.

I would strongly encourage all levels of government to be involved in creating a moratorium on open pen aquaculture and request that all future finfish aquaculture sites be only closed containment, land based facilities.

Please keep me informed on this matter, and on your position regarding it.

more points against than for. Do what's right!

Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Norma Lenco
[redacted]
16 Main St.
Liverpool, N.S

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Liverpool, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted],

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Deborah Caldwell
[redacted]
Liverpool N.S. B0T 1K0

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Summerville Cres, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Yours truly,
[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Susan Hunt
[redacted]
Liverpool, NS [redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Mersey Point, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

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Yours truly,
[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Gordon D. Levy
[redacted]
RR#1 Liverpool N.S.
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Audrey Levy
[redacted]
Port Levy NS
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Liverpool NS, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

November 25, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

[redacted]
Queens co.
Nova Scotia
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Mersey Point, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

I am very concerned about the pesticides/chemicals being used to control sea lice in this industry. I believe these chemicals will harm the juvenile lobster and other sea creatures along our shore line. I am concerned about the chemicals ending up in the salmon that people eat.

I am concerned about the cleanliness and appearance of our shore line/beaches for residents and for tourism.

I would strongly encourage all levels of government to be involved in creating a moratorium on open pen aquaculture and request that all future finfish aquaculture sites be only closed containment, land based facilities.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Marie (Bauer)
[redacted]
NS [redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Beach Meadows I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Carsa Purdy
[redacted]
Greenfield NS.
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Queens Co., I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Deborah Scartinelli
[redacted]
Queens Co N.S.
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Summerville, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

I am very concerned about the pesticides/chemicals being used to control sea lice in this industry. I believe these chemicals will harm the juvenile lobster and other sea creatures along our shore line. I am concerned about the chemicals ending up in the salmon that people eat.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Jamie Stewart
[redacted]
Box 1355, Liverpool, NS
[redacted]

November 30, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Mersey Point, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

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Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Cole Harbour
[redacted]
Nova Scotia

November 26th, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce.

I am very concerned about the pesticides/chemicals that will harm the juvenile lobster along our shore line.

Also, the proposed expansion sites in Liverpool Bay are the area traditionally used to set Lobster gear in the Winter/Spring. That area of Liverpool Bay is fished for Mackerel in Summer/Fall and sometimes Herring as well.

I hope that you will bring my concerns to your caucus, and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]
Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc [redacted]an, MP South Shore-St. Margaret's

Richard Mansfield
[redacted]
Liverpool NS
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Liverpool Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]
Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Danny Wolfaard
[redacted]
Greenfield NS
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Moose-e Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce.

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I hope that you will bring my concerns to your caucus, and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,
[redacted]
Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Kyle Rudderham
[redacted]

November 25, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Mose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]
Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Ryan Cantwell

[redacted]

November 25, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]
Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

ROBERT ATWOOD
[redacted]

November 25, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of MOOSE Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

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Yours truly,

[redacted]

Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Liverpool Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

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Yours truly,

[redacted]

Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

[redacted]

November 26th, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

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Yours truly,

[redacted]

Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

M. Wynot

[redacted]

November 25, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

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Yours truly,

[redacted]

Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Randy Karlsen

[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Mose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Z. Whynot
Liverpool, N.S

November 25, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

William Scobey
[redacted]

November 16, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a part of the Crew of a lobster vessel fishing out of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay. There are hundreds of families that are relying on the continued success of lobster fishery ever year.

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Also, the proposed expansion sites in Liverpool Bay are the area traditionally used to set Lobster gear in the Winter/Spring. That area of Liverpool Bay is fished for Mackerel in Summer/Fall and sometimes Herring as well.

I hope that you will bring my concerns to your caucus, and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Crew on the [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Samantha Sabey
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As a resident of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce. There are hundreds of families that are relying on the continued success of the lobster fishery ever year.

I am very concerned about the pesticides/chemicals being used to control sea lice in this industry. I believe these chemicals will harm the juvenile lobster and other sea creatures along our shore line. I am concerned about the chemicals ending up in the salmon that people eat.

I am concerned about the cleanliness and appearance of our shore line/beaches for residents and for tourism.

I would strongly encourage all levels of government to be involved in creating a moratorium on open pen aquaculture and request that all future finfish aquaculture sites be only closed containment, land based facilities.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

PLS Fisheries Limited
[redacted]
Liverpool, NS B0T 1K0
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As the owner/operator of a lobster vessel fishing out of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce.

I am very concerned about the pesticides/chemicals that will harm the juvenile lobster along our shore line.

Also, the proposed expansion site beside Moose Harbour is the area that I traditionally set Lobster gear every Winter and Spring. I fish that area of Liverpool Bay for Mackerel every Summer/Fall and have fished for Herring there as well.

I hope that, you will bring my concerns to your caucus, and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Peter Stewart,
Captain/President
[redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

D.S. Whynot Fisheries Limited
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As the owner/operator of a lobster vessel fishing out of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce.

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I hope that you will bring my concerns to your caucus, and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,
[redacted]

Donald Whynot,
President/Captain of Blue Chip

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As the owner/operator of a lobster vessel fishing out of Mose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce.

I am very concerned about the pesticides/chemicals that will harm the juvenile lobster along our shore line, not to mention the waste fish farms create. Any change to the sea floor will have a negative impact on all creatures that live and breed in that, and surrounding area, with potentially grave, long-term environmental and financial consequences.

Also, the proposed expansion sites in Liverpool Bay are the area traditionally used to set Lobster gear in the Winter/Spring. That area of Liverpool Bay is fished for Mackerel in Summer/Fall and sometimes Herring as well.

I hope that you will bring my concerns to your caucus, and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]
Captain of [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Claws Up Fisheries Limited
[redacted]

November 26, 2018

Kim Masland, M.L.A.
279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

As the owner/operator of a lobster vessel fishing out of Moose Harbour, I am writing to add my voice to those opposed to the proposed expansion of Cooke Aquaculture Inc.'s fish farming operation in Liverpool Bay.

I believe that the long-term environmental risks of this project, and the danger it would present to the existing lobster industry, far outweigh any temporary economic advantages it might produce.

I am very concerned about the pesticides/chemicals that will harm the juvenile lobster along our shore line.

Also, the proposed expansion site beside Moose Harbour is the area that I traditionally set Lobster gear every Winter and Spring. I have fished that area of Liverpool Bay for Mackerel in Summer/Fall and have fished for Herring there as well.

I hope that you will bring my concerns to your caucus and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,

[redacted]

Richard Clattenburg, President
Captain of Offshore Detour

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Westhaver Fisheries Limited
[redacted]

November 26, 2018

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,
[redacted]
Victor Westhaver,
President/Captain of Jessica E

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Darren Westhaver
[redacted]

November 26, 2018

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279 Main Street
P.O. Box 1206
Liverpool, NS B0T 1K0
Kim.maslandmla@gmail.com

Dear Ms. Masland:

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Please keep me informed on this matter, and on your position regarding it.

[redacted]

Darren Westhaver,
Captain of [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Gordon Levy
[redacted]

November 26, 2018

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I hope that, you will bring my concerns to your caucus and to your party's Fisheries Critic.

Please keep me informed on this matter, and on your position regarding it.

Yours truly,
[redacted]
Gordon Levy,
Captain of [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Carl Levy
[redacted]

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,

Carl Levy,
Captain of [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

S.W. Scobey Fisheries Limited
[redacted]

November 26, 2018

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Please keep me informed on this matter, and on your position regarding it.

Yours truly, [redacted]

Stephen Scobey,
President,
Captain of [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

Brian King
[redacted]

November 26, 2018

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Please keep me informed on this matter, and on your position regarding it.

Yours truly,
[redacted]
Brian King,
Captain of [redacted]

Cc Mayor Dagley and Councillors, Region of Queens Municipality
Cc Keith Colwell, Minister of Fisheries and Aquaculture
Cc Jean McKenna, Chair, Aquaculture Review Board
Cc Bernadette Jordan, MP South Shore-St. Margaret's

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Kelly Cove Salmon Ltd.
134 North Street, Bridgewater, NS B4V 2W6

Section 5

Site Development Plans

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NS1205 Liverpool

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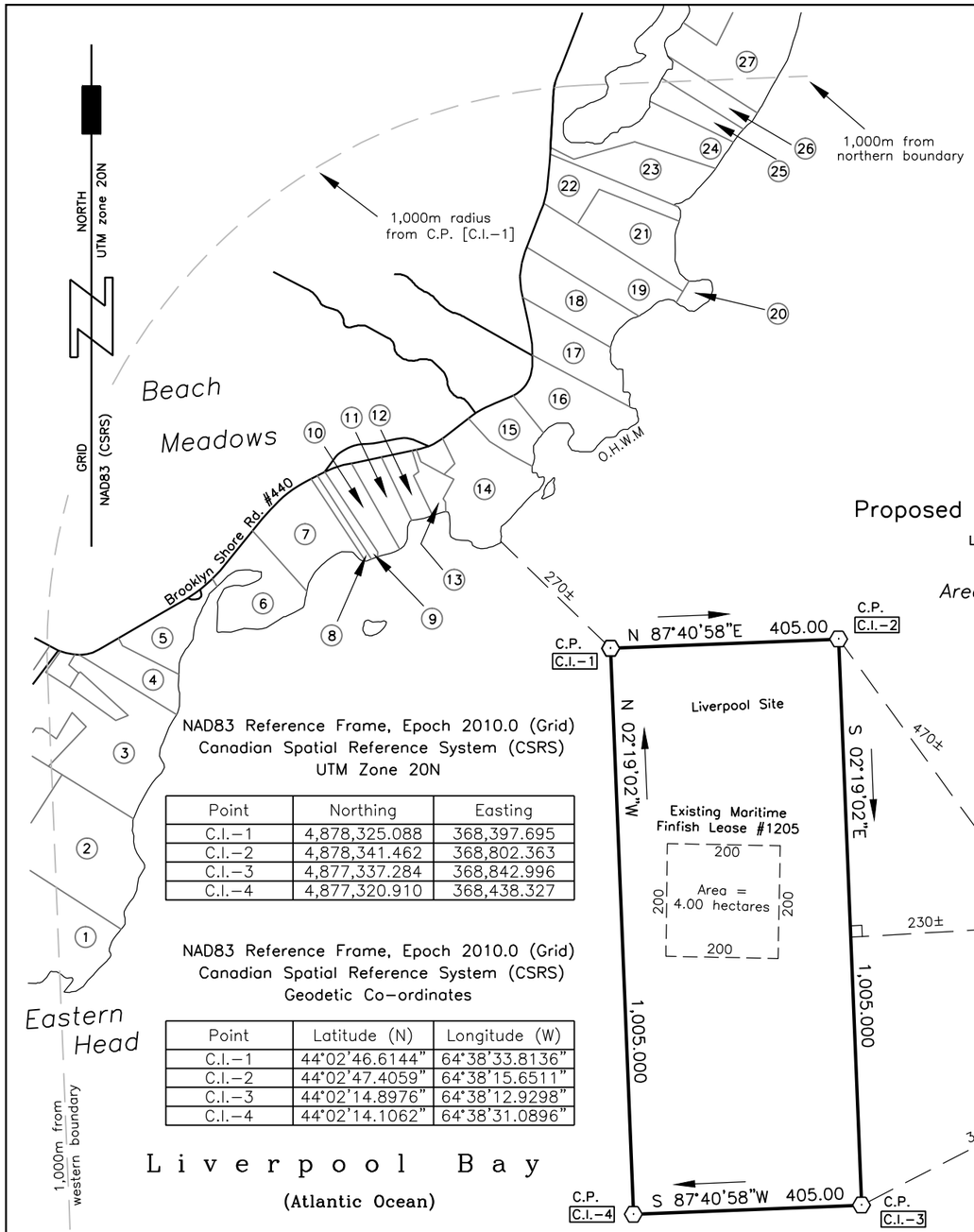

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

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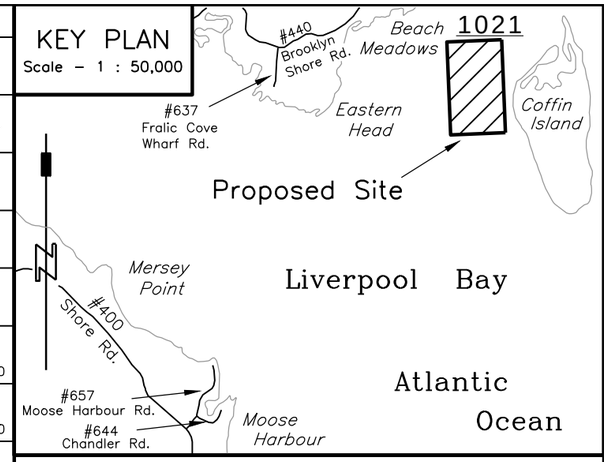
C.I.–3	44°02'14.8976"	64°38'12.9298"
C.I.–4	44°02'14.1062"	64°38'31.0896"

Proposed Marine Aquaculture Site

Liverpool Aquaculture Site
Kelly Cove Salmon Ltd.
Area = 40.703 hectares

#	P.I.D. #	OWNER / ADDRESS
1	70100946	Dennis Conrad RR #1, Brooklyn, N.S. B0J 1H0
2	70100672	Wilhelmina R. Conrad et.al. RR #1, Brooklyn, N.S. B0J 1H0
3	70100656	Hazel M. Mouzar P.O. Box 173, Liverpool, N.S. B0T 1K0
4	70100599	Donald T. Fralic et.ux. RR #1, Brooklyn, N.S. B0J 1H0
5	70100086	Wilhelmina R. Conrad et.al. RR #1, Brooklyn, N.S. B0J 1H0
6	70100540	Andrew R. Godfrey et.al. RR #1, Brooklyn, N.S. B0J 1H0
7	70100615	Rosalie E. Fralic et.al. RR #1, Brooklyn, N.S. B0J 1H0
8	70231675	Owners Unknown
9	70168976	Rosalie E. Fralic et.al. RR #1, Brooklyn, N.S. B0J 1H0
10	70100532	John T. Cumbler et.ux. 380 Old Chequessett Neck Rd. Wellfleet, MA., USA., 02667
11	70100524	Joel Gerrett Connor 4997 Prospect Lake Rd. Victoria, B.C., Can., V9E 1J5
12	70167093	Thomas P. Marian 14759 Niagara Pky, RR #1 Niagara, ON., Can., L0S 1J0
13	70168984	Beach Meadows Cemetery RR #1, Brooklyn, N.S. B0J 1H0
14	70100474	Patrick J. Smith 950 Brooklyn Shore Rd. Beach Meadows, N.S., B0J 1H0
15	70100433	Stanley A. Wentzell et.ux. RR #1, Brooklyn Beach Meadows, N.S., B0J 1H0
16	70100342	Stanley A. Wentzell 174 Pretoria Ave, Ottawa, Ont. K1S 1X2
17	70100326	Ricardo A. Rendon et.al. 6265 Oakland Rd., Halifax, N.S. B3H 1P4
18	70100318	Elizabeth D. Bush et.al. RR #1, Brooklyn, N.S. B0J 1H0
19	70100268	Mary L. White et al. 1022 Brooklyn Shore Rd. Beach Meadows, N.S., B0J 1H0
20	70100383	Region of Queens Mun. P.O. Box 1264 Liverpool, N.S., B0T 1K0
21	70160288	Eric d. Goulden et.al. 7 Hutt Cre. Aurora, Ont., L4G 0T3
22	70100201	Susan M. Smith 4 306 Sackville St. Toronto, Ont., M5A 3G2
23	70100227	Susan M. Smith 4 306 Sackville St. Toronto, Ont., M5A 3G2
24	70100219	Queens Condominium Corp. Liverpool, N.S., B0T 1K0
25	70100102	Kenneth M. Hirsch 4807 42 Street, Beaumont AB, T4X 1H2
26	70099965	Warren Wismer et.al. 931 Shawnee Dr. SW Calgary, AB T2Y 2G8
27	70099759	Region of Queens Mun. P.O. Box 1264 Liverpool, N.S., B0T 1K0
28	70268289	Owners Unknown
29	70089354	Crown Land (D.N.R.) P.O. Box 698 Halifax, N.S., B3J 2T9
30	70245832	Crown Land (D.N.R.) P.O. Box 698 Halifax, N.S., B3J 2T9



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
- NORTHING / EASTING . . . N. / E.
- LOCAL REGISTRY NUMBER . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING . . . □
- SHOVEL ANCHOR . . . ⚓

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

PROPOSED BOUNDARY AMENDMENT TO LEASE #1205

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

_____ [redacted] _____
Jeff Nickers

A&D JOB #300–18–1205

SHEET 1 OF 6 | DATE: JAN. 9, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 1 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND AS WELL AS ADJACENT PARCELS OF LAND, FOR ADDITIONAL SITE INFORMATION, REFER TO SHEETS 2–6.

200 0 200 400 600

SCALE – 1 : 10,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors &
Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
B0W 3M0

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0

Phone: (902) 648–2186
www.adsurveying.ca

Phone: (902) 875–2110
info@adsurveying.ca

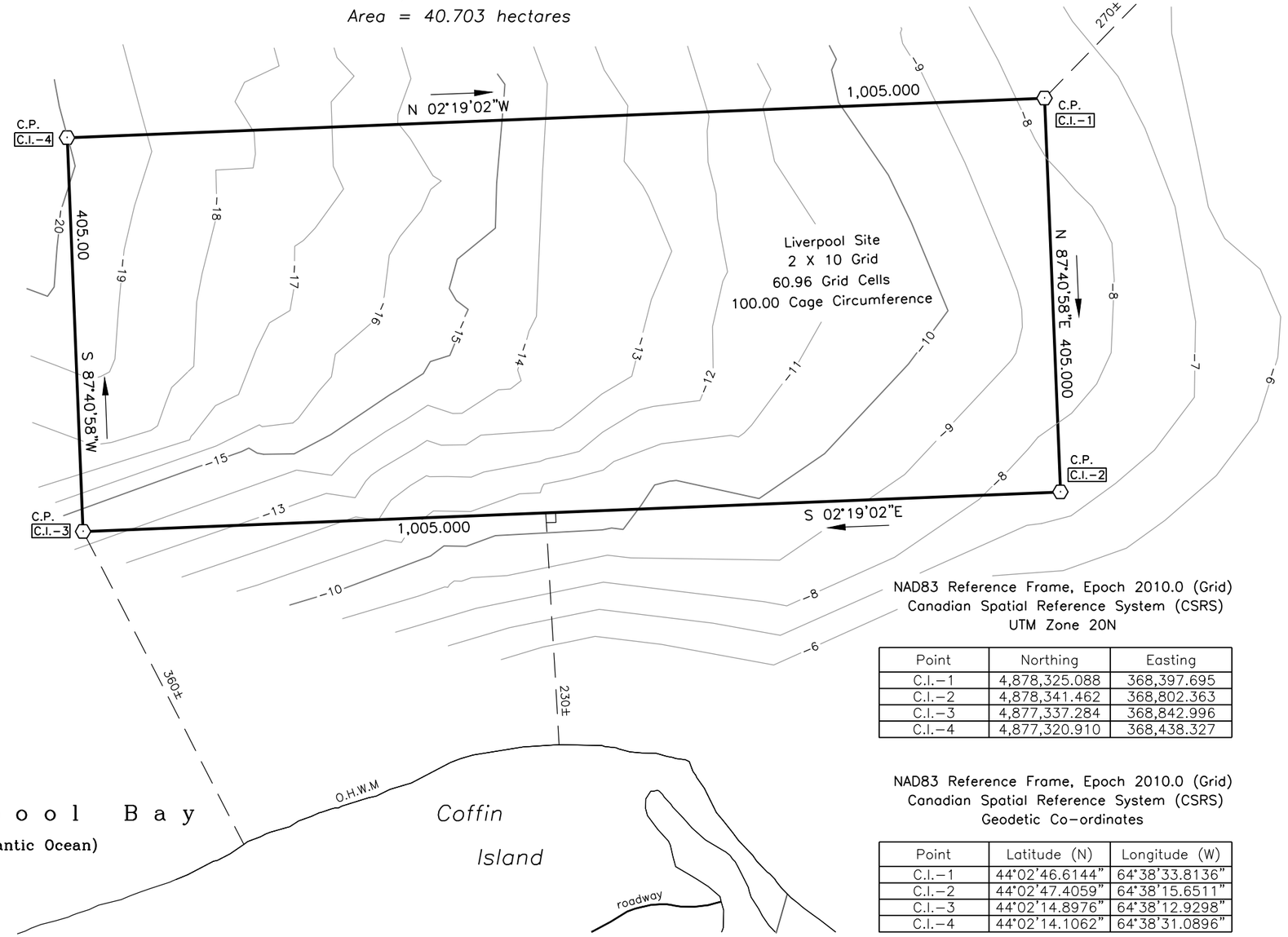
Proposed Marine Aquaculture Site

Liverpool Aquaculture Site

Kelly Cove Salmon Ltd.

Area = 40.703 hectares

GRID NAD83 (CSRS) — NORTH UTM zone 20N



NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

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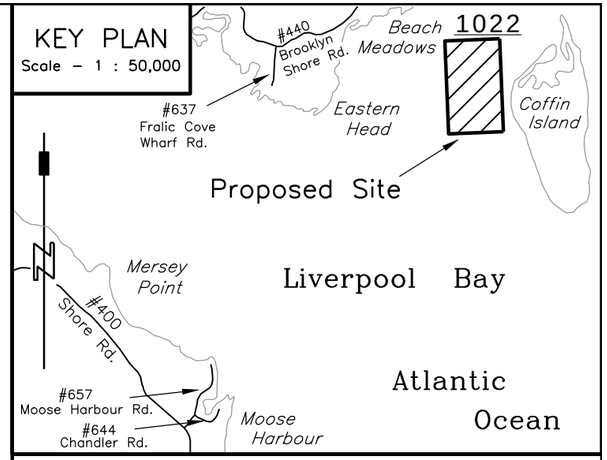
KEY PLAN
Scale – 1 : 50,000



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- CONCRETE MOORING
- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

BASIC SEAFLOOR TOPOGRAPHY

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

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Jeff Nickerson

A&D JOB #300–18–1205

SHEET 2 OF 6 | DATE: JAN. 9, 2019

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THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

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100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.

Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
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Phone: (902) 648–2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0

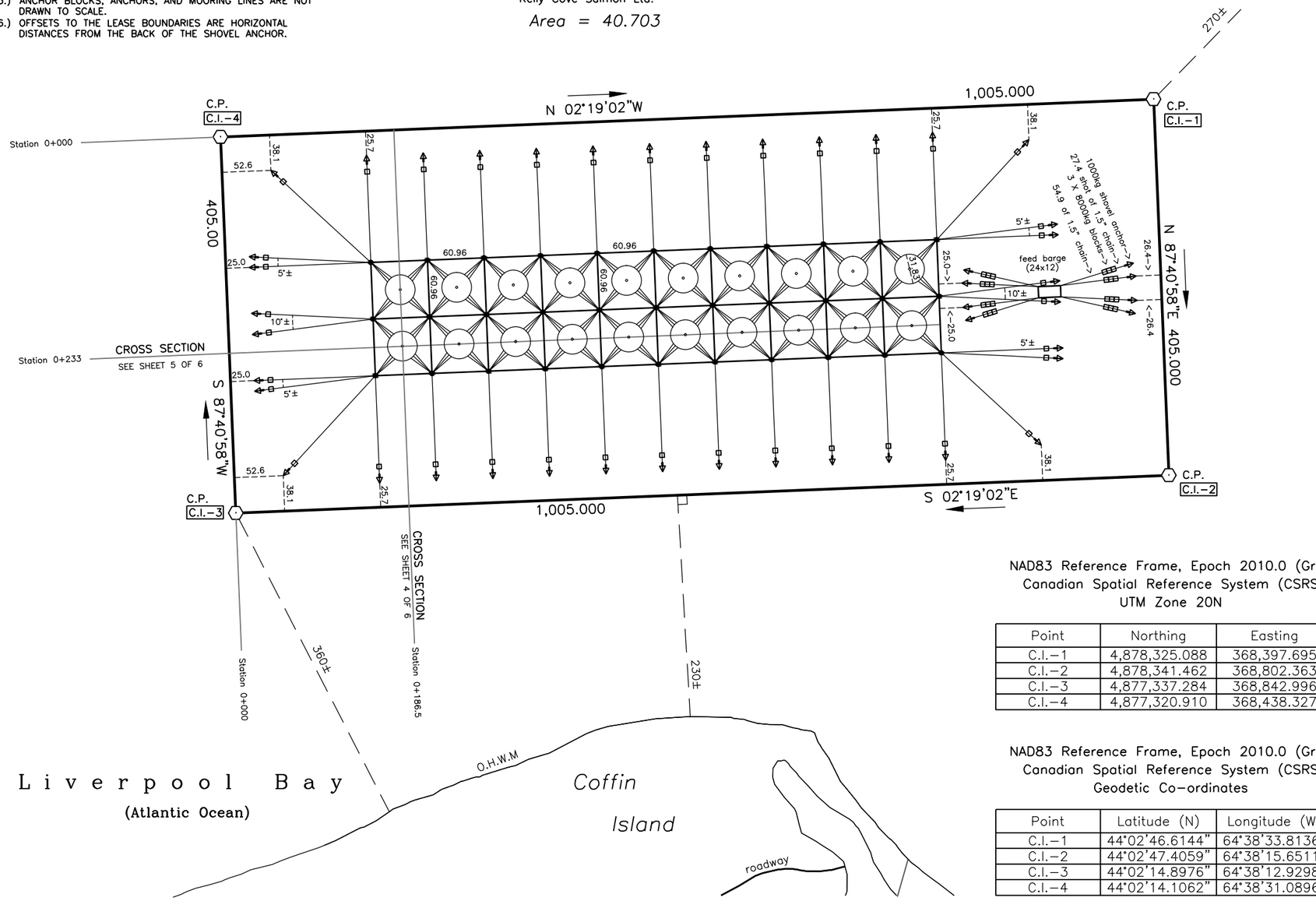
Phone: (902) 875–2110
info@adsurveying.ca

SHEET 3 OF 6 NOTES:
(1.) 14 PROPOSED CAGES IN A 2x10 SUNKEN GRID LAYOUT.
(2.) CAGE DIAMETER IS 31.83m.
(3.) GRID SIZE IS 60.96m x 60.96m (200'x200').
(4. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.
(5.) ANCHOR BLOCKS, ANCHORS, AND MOORING LINES ARE NOT DRAWN TO SCALE.
(6.) OFFSETS TO THE LEASE BOUNDARIES ARE HORIZONTAL DISTANCES FROM THE BACK OF THE SHOVEL ANCHOR.

Proposed Marine Aquaculture Site

Liverpool Aquaculture Site
Kelly Cove Salmon Ltd.
Area = 40.703

GRID: NAD83 (CSRS) — NORTH: UTM zone 20N



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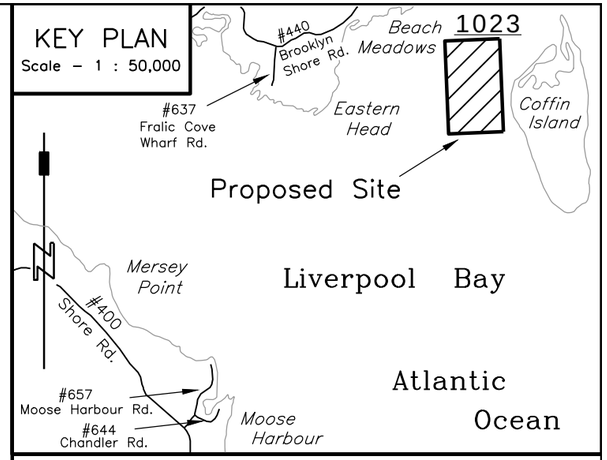
KEY PLAN
Scale – 1 : 50,000



Legend:
CALCULATED POINT . . . C.P.
CALCULATED . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
NORTHING / EASTING . . . N. / E.
LOCAL REGISTRY NUMBER . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . + 00.0
CONCRETE MOORING
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING
AQUACULTURE CAGE CONFIGURATION
KELLY COVE SALMON LTD. / LIVERPOOL SITE
LOCATED AT:
COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

[redacted]
Jeff Nickerson

A&D JOB #300–18–1205

SHEET 3 OF 6 | DATE: JAN. 9, 2019

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA.
(5.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(6.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(7.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 3 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATIONS OF ALL ANCHORS, CAGES, AND THE GRID/MOORING CONFIGURATION RELATIVE TO THE LEASE BOUNDARIES.

100 0 100 200 300
SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
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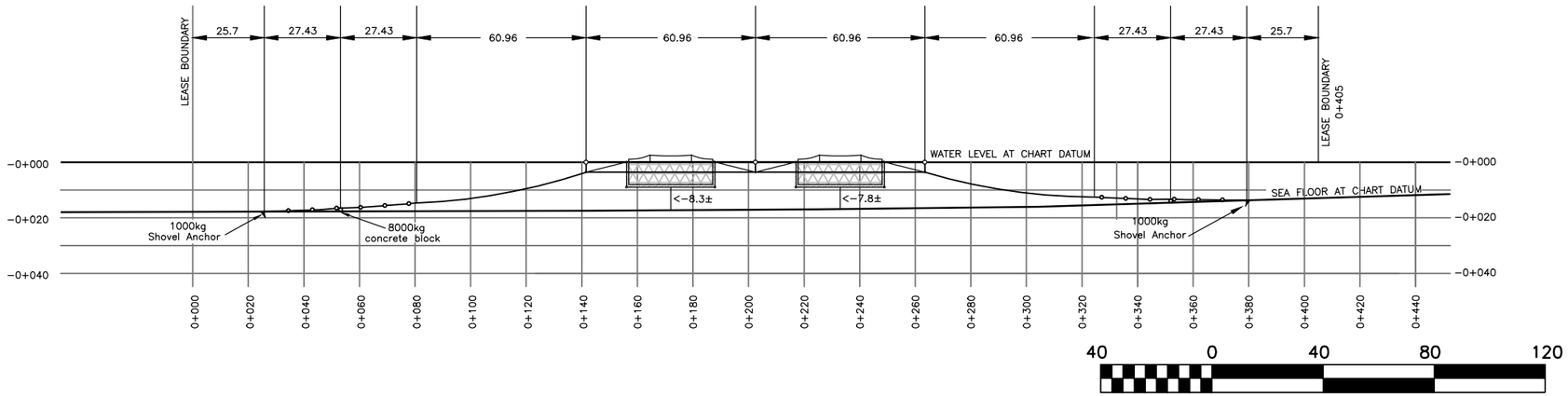
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+186.5

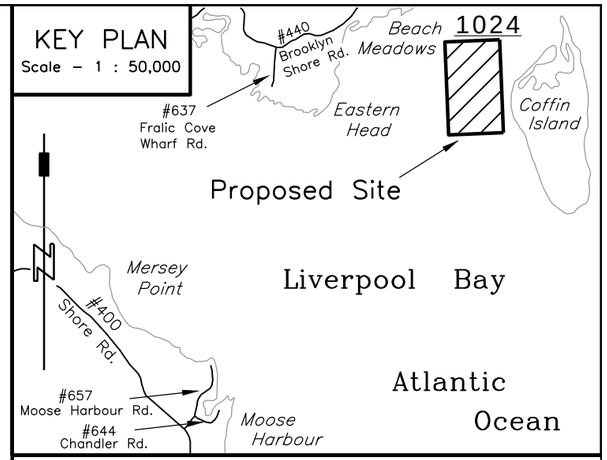
HORIZONTAL SCALE – 1 : 2,000 (METRIC)
VERTICAL SCALE – 1 : 2,000 (METRIC)



SCALE – 1 : 2,000 (METRIC)

KEY PLAN

Scale – 1 : 50,000

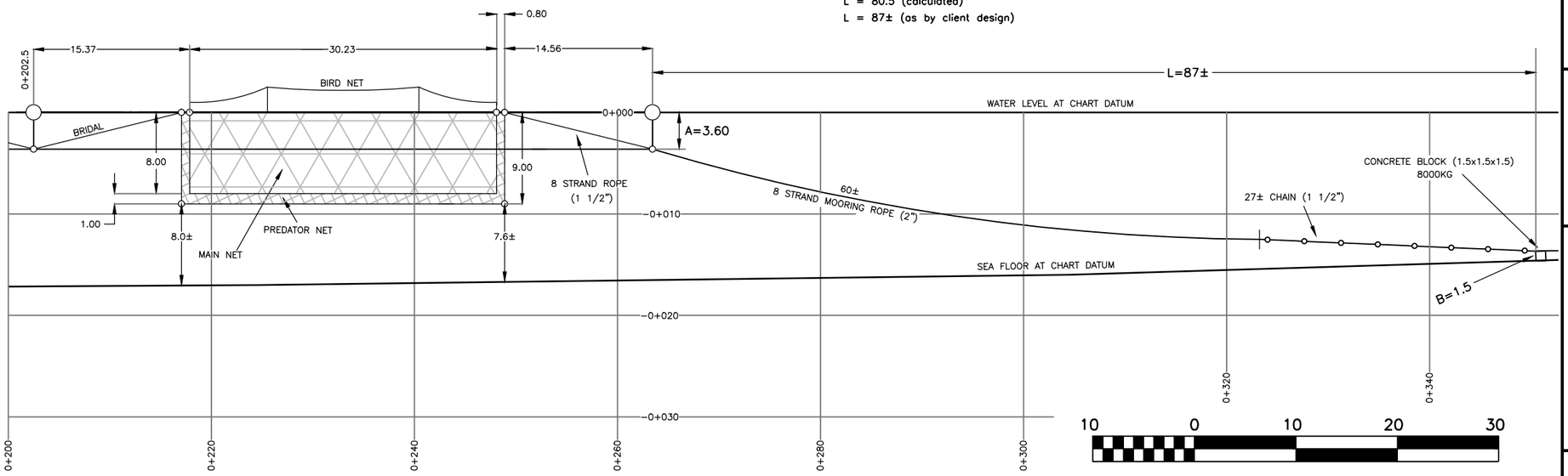


Legend:

- CALCULATED POINT . . . . . C.P.
- CALCULATED . . . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
- NORTHING / EASTING . . . . . N. / E.
- LOCAL REGISTRY NUMBER . . . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . . . + 00.0
- CONCRETE MOORING . . . . . □
- SHOVEL ANCHOR

DETAILED CROSS SECTION – STATION 0+186.5

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)



SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 87± (as by client design)

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LATERAL CROSS–SECTION

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–1205

SHEET 4 OF 6 | DATE: JAN. 9, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA.
(5.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(6.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(7.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 4 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LATERAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 6.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

Acker & Doucette Surveying Inc.
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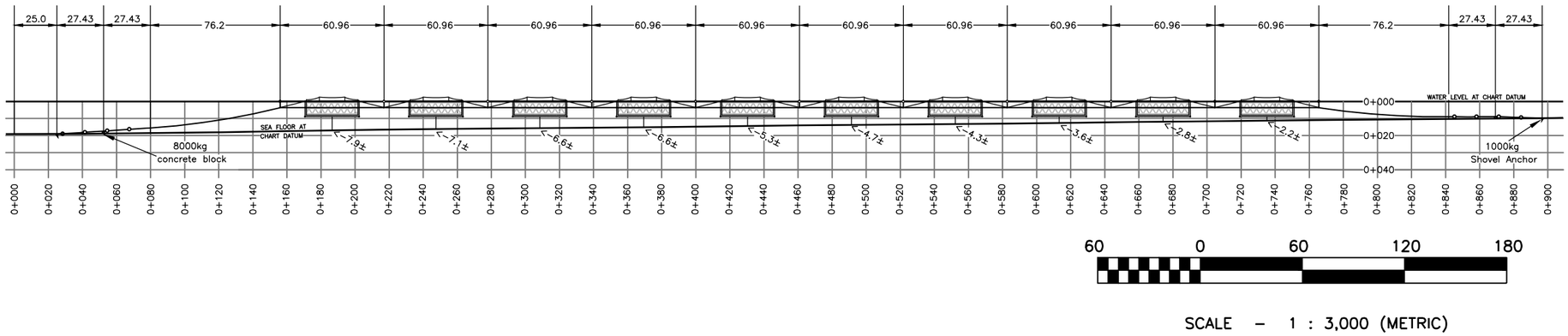
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 3,000 (METRIC)
VERTICAL SCALE – 1 : 3,000 (METRIC)

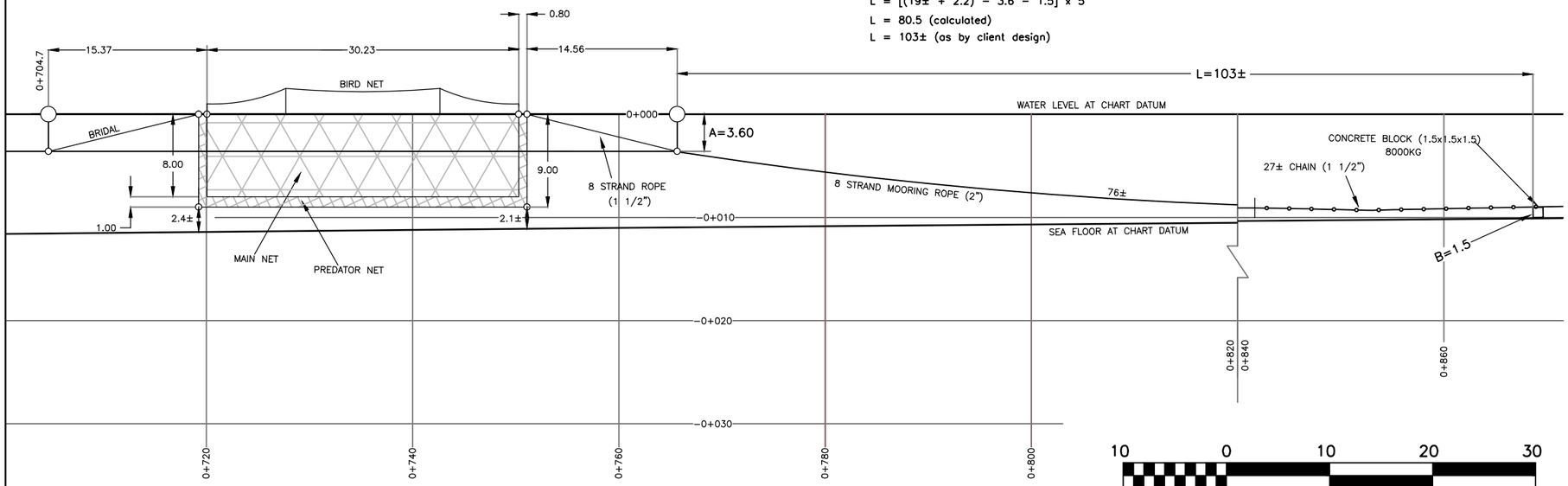


SCALE – 1 : 3,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)

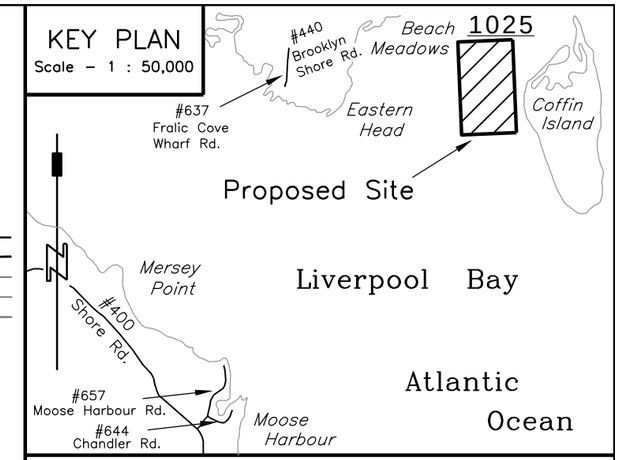
5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 103± (as by client design)



SCALE – 1 : 500 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . . . C.P.
- CALCULATED . . . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
- NORTHING / EASTING . . . . . N. / E.
- LOCAL REGISTRY NUMBER . . . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . . . + 00.0
- CONCRETE MOORING . . . . . □
- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LONGITUDINAL CROSS-SECTION

KELLY COVE SALMON LTD. / LIVERPOOL SITE

LOCATED AT:

COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019.

_____ [redacted] _____
Jeff Nickerson

A&D JOB #300-18-1205

SHEET 5 OF 6 | DATE: JAN. 9, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
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(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 5 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LONGITUDINAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 6.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
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(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

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Nova Scotia, Canada
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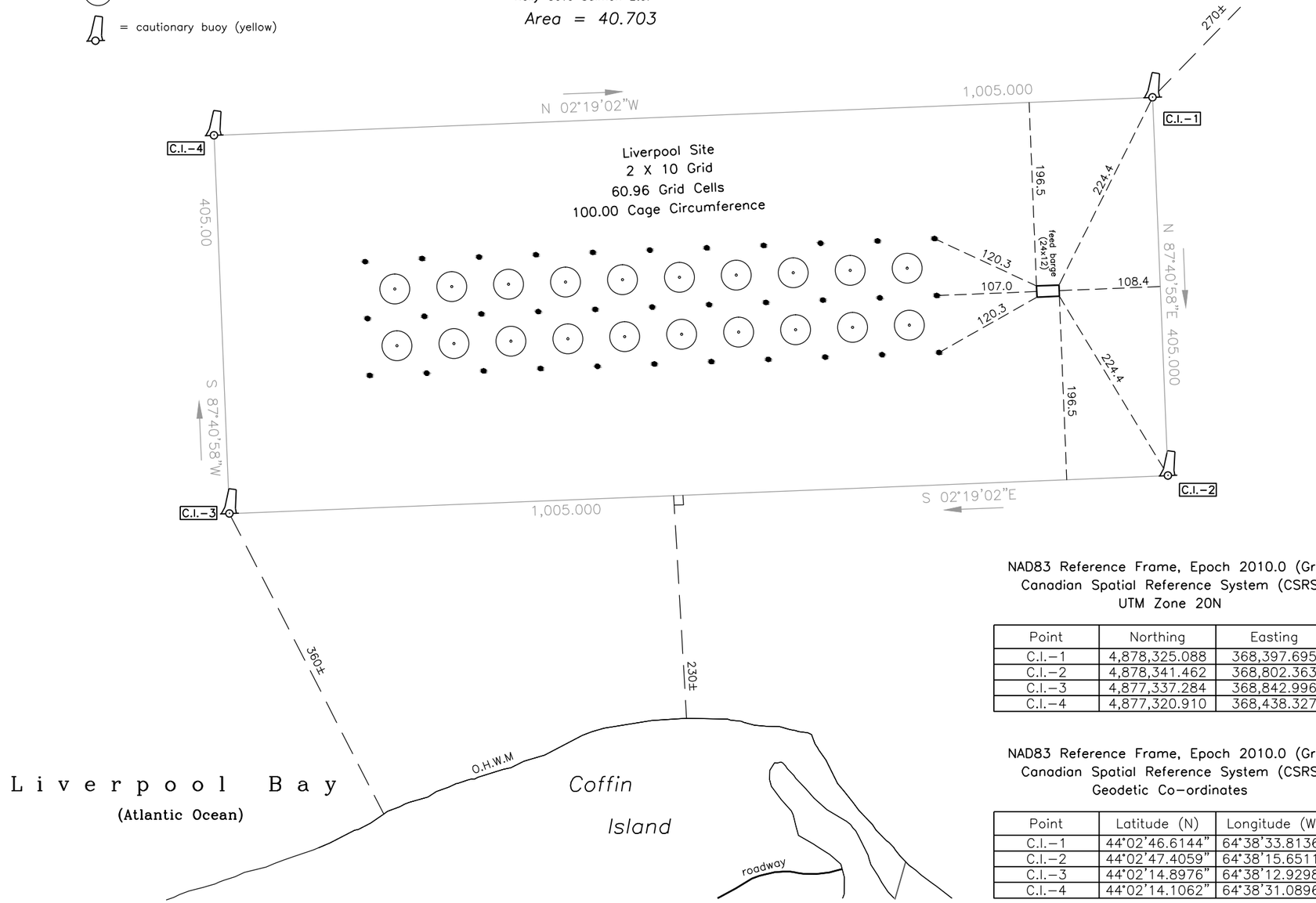
Phone: (902) 875-2110
info@adsurveying.ca

Proposed Navigational Aids Marking

Liverpool Aquaculture Site
Kelly Cove Salmon Ltd.
Area = 40.703

● = compensator buoys (yellow)
⊙ = aquaculture cages (31.83m diameter)
= cautionary buoy (yellow)

GRID NAD83 (CSRS) — NORTH UTM zone 20N



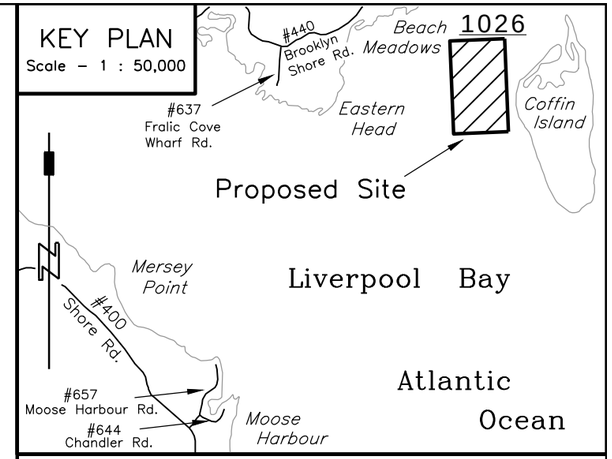
NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
C.I.–1	4,878,325.088	368,397.695
C.I.–2	4,878,341.462	368,802.363
C.I.–3	4,877,337.284	368,842.996
C.I.–4	4,877,320.910	368,438.327

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
C.I.–1	44°02'46.6144"	64°38'33.8136"
C.I.–2	44°02'47.4059"	64°38'15.6511"
C.I.–3	44°02'14.8976"	64°38'12.9298"
C.I.–4	44°02'14.1062"	64°38'31.0896"

KEY PLAN
Scale – 1 : 50,000



Legend:

CALCULATED POINT . . . . . C.P.
CALCULATED . . . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
NORTHING / EASTING . . . . . N. / E.
LOCAL REGISTRY NUMBER . . . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . . . + 00.0
CONCRETE MOORING . . . . . □
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING
PROPOSED NAVIGATIONAL AIDS MARKING PLAN
KELLY COVE SALMON LTD. / LIVERPOOL SITE
LOCATED AT:
COFFIN ISLAND, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 9th day of January, 2019

_____ [redacted] _____
Jeff Nickers

A&D JOB #300–18–1205

SHEET 6 OF 6 | DATE: JAN. 9, 2019

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
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(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
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(5.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(6.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 6 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATION AND TYPES OF ALL NAVIGATIONAL AIDS RELATIVE TO THE PROPOSED LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

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B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

Mersey Point

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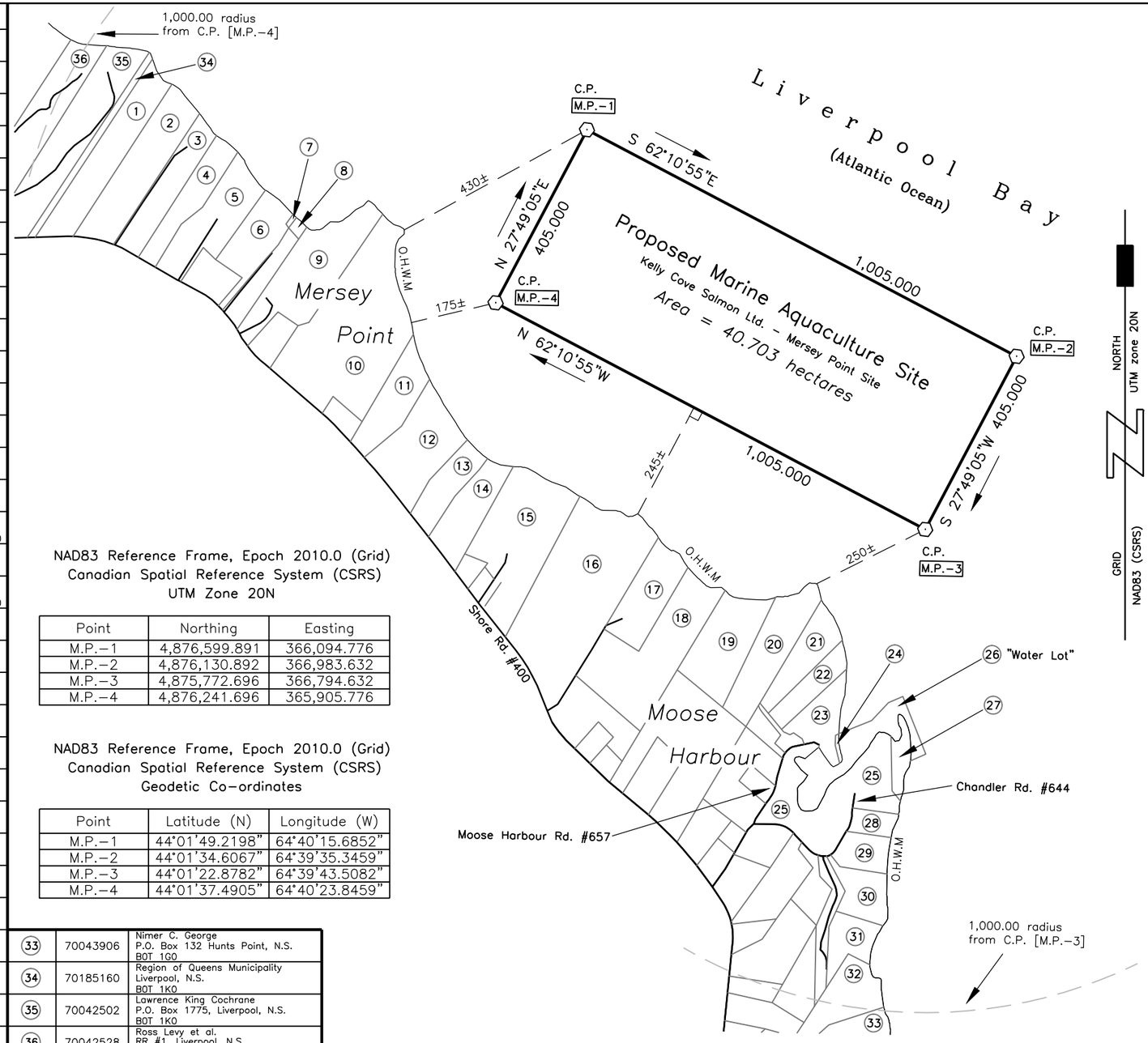
#	P.I.D. #	OWNER / ADDRESS
1	70042551	Cindy Lorene Hartlen 2 Dresden Ct., Lower Sackville, N.S. B4C 3W8
2	70042577	Gordon Levy RR #1, Liverpool, N.S. B0T 1K0
3	70042619	John P. Doucette et al. P.O. Box 1752, Liverpool, N.S. B0T 1K0
4	70216825	Ann Louise Levy P.O. Box 751, Liverpool, N.S. B0T 1K0
5	70228986	Peter Lee Stewart et ux. RR #1, Liverpool, N.S. B0T 1K0
6	70042684	Carey McKiel P.O. Box 353, Yellowknife, N.T. X1A 2N3
7	70042692	Carey McKiel P.O. Box 353, Yellowknife, N.T. X1A 2N3
8	70230677	Kenneth Andrews et ux. P.O. Box 1661, Liverpool, N.S. B0T 1K0
9	70229133	Thomas H. Randall et ux. P.O. Box 910, Liverpool, N.S. B0T 1K0
10	70042783	Michael Kenneth Lohnes et ux. RR #1, Liverpool, N.S. B0T 1K0
11	70245204	Dr. R. Myers Professional Corp. 569 Shore Rd., Liverpool, N.S. B0T 1K0
12	70245212	David R. Myers 130 Whitecap Ridge, Black Point, N.S., B0J 1B0
13	70245220	Dr. R. Myers Professional Corp. 569 Shore Rd., Liverpool, N.S. B0T 1K0
14	70042890	Roger V. Savage et ux. 611 Shore Rd., Liverpool, N.S. B0T 1K0
15	70043013	Ronald Henry Miller et ux. RR #1, 643 Shore Rd., Liverpool, B0T 1K0
16	70163027	Angus William Smyth et ux. 163 GB 13, Site 5, RR #1 Sand Beach Rd., Liverpool, B0T 1K0
17	70261284	David Thomas Wright et al. 695 Shore Rd., Mersey Point, N.S. B0T 1K0
18	70043054	Angus William Smyth et ux. 163 GB 13, Site 5, RR #1 Sand Beach Rd., Liverpool, B0T 1K0
19	70043286	Phillip Irwin Brooklyn, N.S. B0J 1H0
20	70043294	Donald Whynot P.O. Box 948, Liverpool, N.S. B0T 1K0
21	70043633	Victor A. Frank et ux. 76 Clouser Rd., Littlestown, PA., U.S.A., 17340-9541
22	70043625	Michael T. Ashcroft et al. 28 Tremaine Ter, Cobourg, ON., K9A 5A8
23	70043617	John O'Brien et ux. 10 RR #4, Hill Country Dr., Stouffville, Ont., L4A 7X5
24	70247960	H.M. in right of Canada (D.F.O.) P.O. Box 698, Halifax, N.S. B3J 2T9
25	70043682	Mersey Seafoods Limited P.O. Box 1290, Liverpool, N.S. B0T 1K0
26	70247952	H.M. in right of Canada (D.F.O.) P.O. Box 698, Halifax, N.S. B3J 2T9
27	70043690	H.M. in right of Canada P.O. Box 1724, Liverpool, N.S. B0T 1K0
28	70043666	Wayne F. Rafuse et ux. P.O. Box 204, Liverpool, N.S. B0T 1K0
29	70043609	Bettina Herdt 37 AM Wiesengrund Offenbach Germany, D-63075
30	70043641	Sheila A. Rear et ux. 3049 Gavin Pl., Duluth, GA., U.S.A. 30096
31	70189972	Matthew P. Kuruc et ux. 340 Cresent, Leonia, N.J., U.S.A. 07605
32	70043914	2220092 Ontario Inc. 2489 Bloor St., Toronto, Ontario M6S 1R6
33	70043906	Nimer C. George P.O. Box 132 Hunts Point, N.S. B0T 1G0
34	70185160	Region of Queens Municipality Liverpool, N.S. B0T 1K0
35	70042502	Lawrence King Cochrane P.O. Box 1775, Liverpool, N.S. B0T 1K0
36	70042528	Ross Levy et al. RR #1, Liverpool, N.S. B0T 1K0



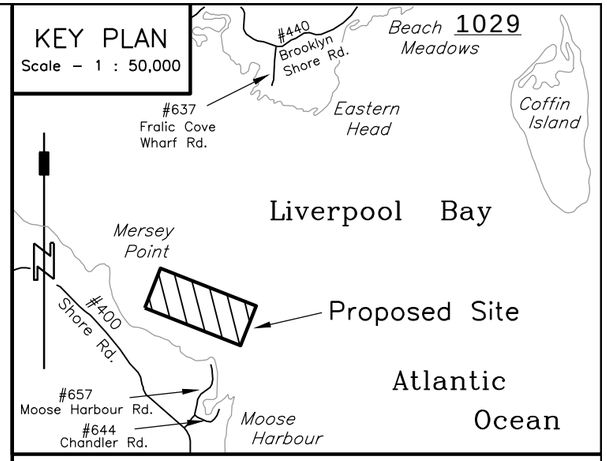
NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
M.P.-1	4,876,599.891	366,094.776
M.P.-2	4,876,130.892	366,983.632
M.P.-3	4,875,772.696	366,794.632
M.P.-4	4,876,241.696	365,905.776

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co-ordinates

Point	Latitude (N)	Longitude (W)
M.P.-1	44°01'49.2198"	64°40'15.6852"
M.P.-2	44°01'34.6067"	64°39'35.3459"
M.P.-3	44°01'22.8782"	64°39'43.5082"
M.P.-4	44°01'37.4905"	64°40'23.8459"

KEY PLAN
Scale - 1 : 50,000



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
- NORTHING / EASTING . . . N. / E.
- LOCAL REGISTRY NUMBER . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING
- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

AQUACULTURE SITE APPLICATION

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019

[redacted]

Jeff Nickerson

A&D JOB #300-18-MERSEY POINT

SHEET 1 OF 6 | DATE: January 18, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 1 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND AS WELL AS ADJACENT PARCELS OF LAND, FOR ADDITIONAL SITE INFORMATION, REFER TO SHEETS 2-6.

200 0 200 400 600

SCALE - 1 : 10,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
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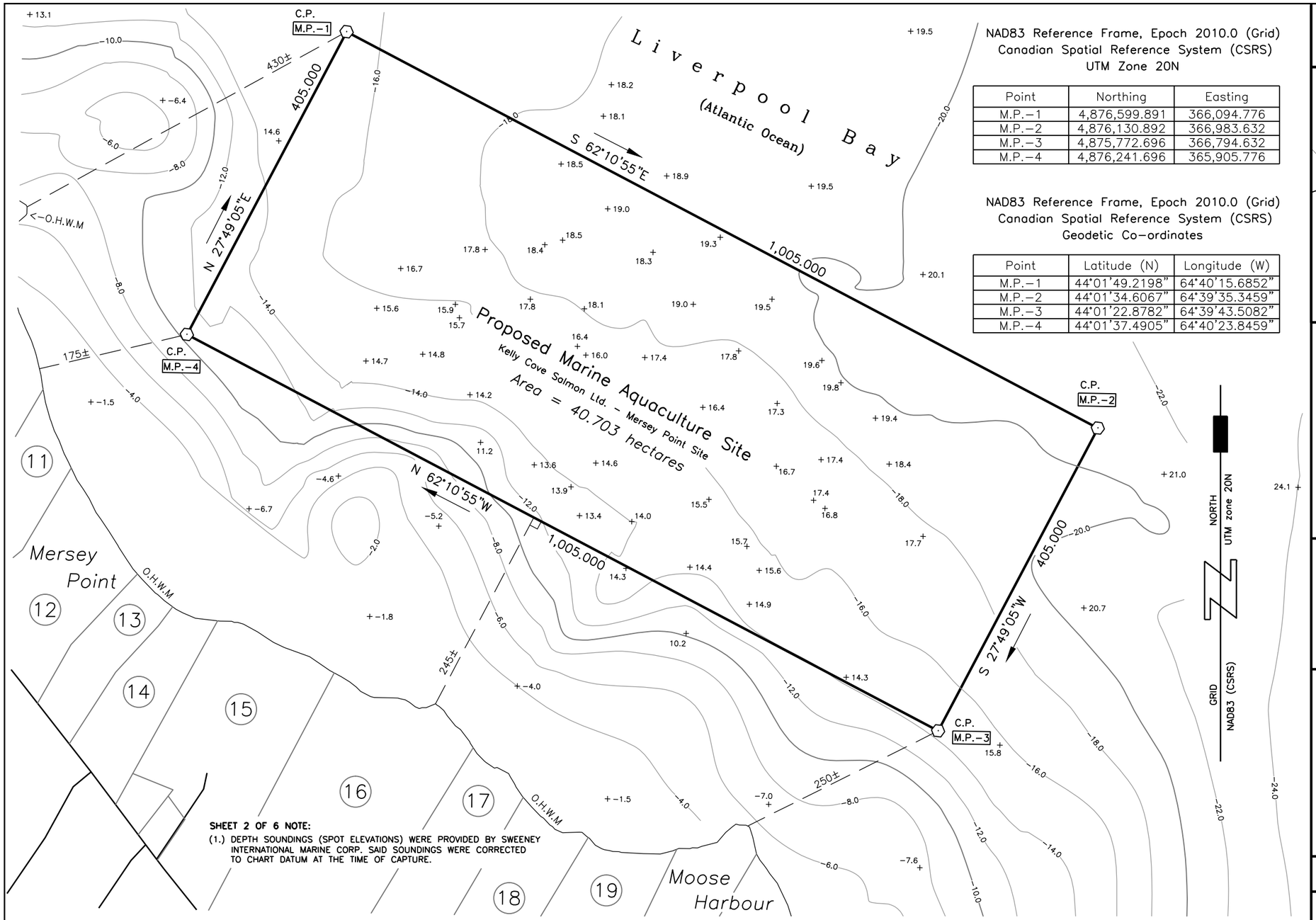
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875-2110
info@adsurveying.ca



NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

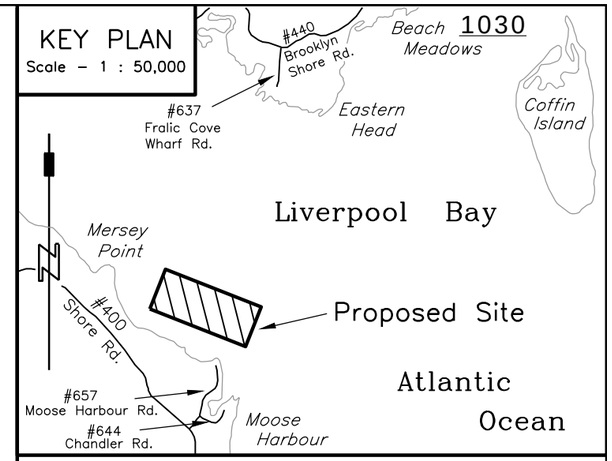
Point	Northing	Easting
M.P.–1	4,876,599.891	366,094.776
M.P.–2	4,876,130.892	366,983.632
M.P.–3	4,875,772.696	366,794.632
M.P.–4	4,876,241.696	365,905.776

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
M.P.–1	44°01'49.2198"	64°40'15.6852"
M.P.–2	44°01'34.6067"	64°39'35.3459"
M.P.–3	44°01'22.8782"	64°39'43.5082"
M.P.–4	44°01'37.4905"	64°40'23.8459"

SHEET 2 OF 6 NOTE:
(1.) DEPTH SOUNDINGS (SPOT ELEVATIONS) WERE PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM AT THE TIME OF CAPTURE.

KEY PLAN
Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P.
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	
OTHER BOUNDARY	
TIE LINES	
NOT TO SCALE	
MAJOR CONTOURS	
MINOR CONTOURS	
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	
SHOVEL ANCHOR	

AQUACULTURE SITE DEVELOPMENT PLANS
SHOWING
BASIC SEAFLOOR TOPOGRAPHY
KELLY COVE SALMON LTD. / MERSEY POINT
LOCATED AT:
MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

_____ [redacted] _____
Jeff Nickers

A&D JOB #300–18–MERSEY POINT

SHEET 2 OF 6 | DATE: January 18, 2019

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
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(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
Stephen D.F. Acker
N.S.L.S.
639
MEMBER

PURPOSE OF PLAN (SHEET 2 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND BASIC SEAFLOOR TOPOGRAPHY, FOR ADDITIONAL ADDITIONAL SITE INFORMATION, REFER TO SHEETS 1, 3–6.

100 0 100 200 300
SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors &
Professional Engineers

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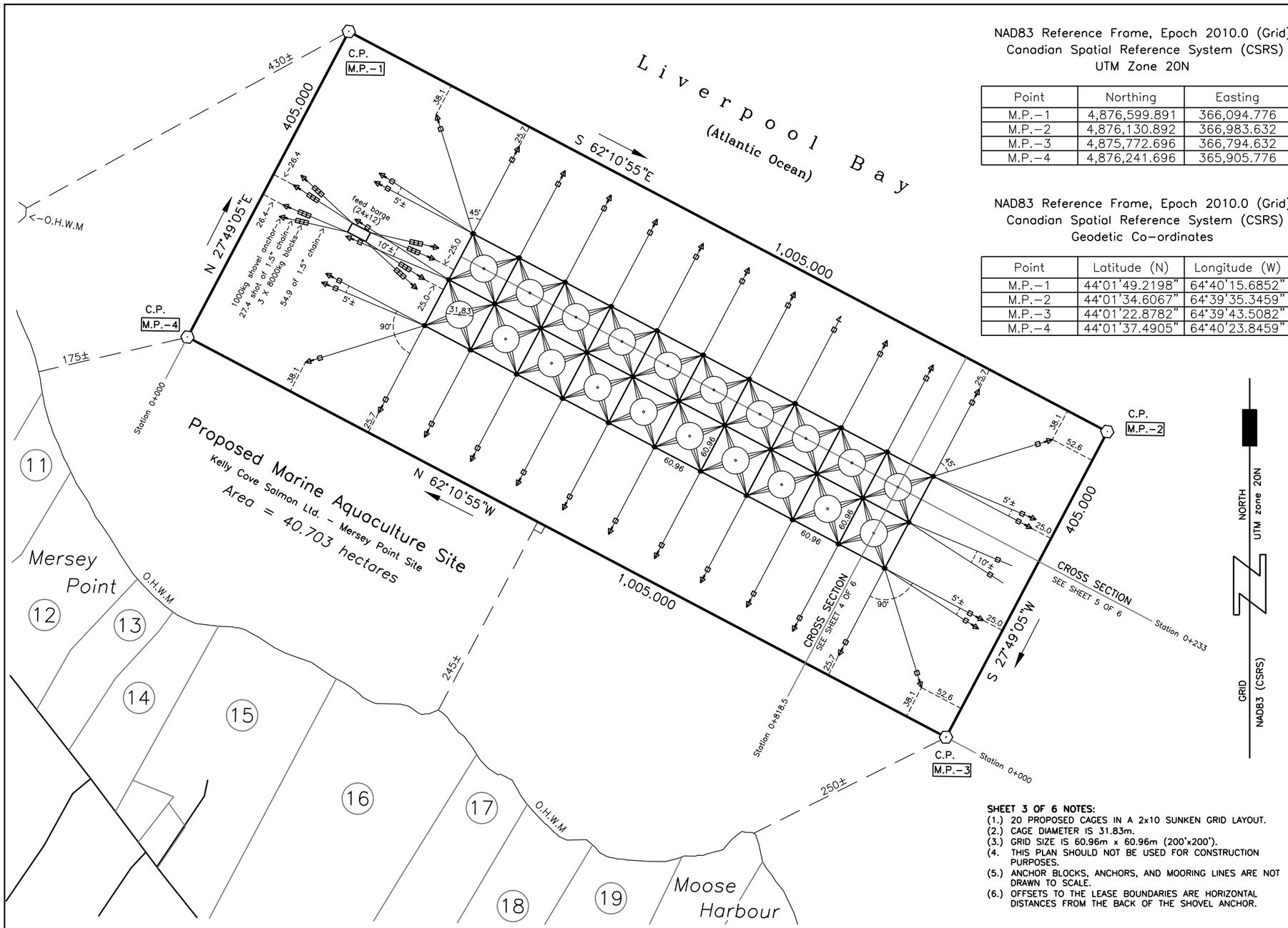

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
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NAD83 Reference Frame, Epoch 2010.0 (Grid)
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Geodetic Co–ordinates

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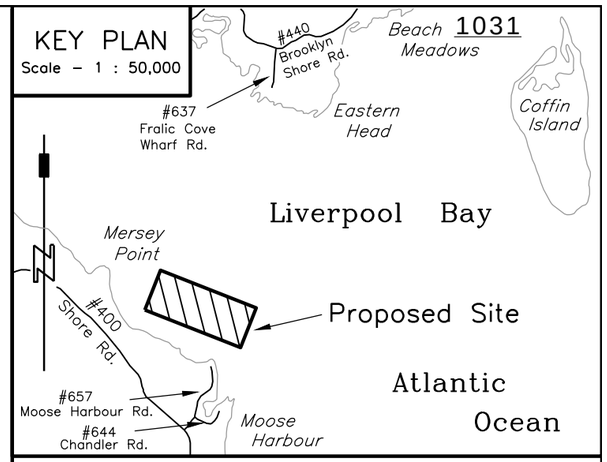
M.P.–3	44°01'22.8782"	64°39'43.5082"
M.P.–4	44°01'37.4905"	64°40'23.8459"

SHEET 3 OF 6 NOTES:
(1.) 20 PROPOSED CAGES IN A 2x10 SUNKEN GRID LAYOUT.
(2.) CAGE DIAMETER IS 31.83m.
(3.) GRID SIZE IS 60.96m x 60.96m (200'x200').
(4. THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.
(5.) ANCHOR BLOCKS, ANCHORS, AND MOORING LINES ARE NOT DRAWN TO SCALE.
(6.) OFFSETS TO THE LEASE BOUNDARIES ARE HORIZONTAL DISTANCES FROM THE BACK OF THE SHOVEL ANCHOR.

KEY PLAN
Scale – 1 : 50,000



Legend:
CALCULATED POINT . . . C.P.
CALCULATED . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
NORTHING / EASTING . . . N. / E.
LOCAL REGISTRY NUMBER . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . + 00.0
CONCRETE MOORING . . . □
SHOVEL ANCHOR . . . ⊿

AQUACULTURE SITE DEVELOPMENT PLANS
SHOWING
AQUACULTURE CAGE CONFIGURATION
KELLY COVE SALMON LTD. / MERSEY POINT
LOCATED AT:
MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019

_____
Jeff Nickerson

A&D JOB #300–18–MERSEY POINT

SHEET 3 OF 6 | **DATE: January 18, 2019**

NOTES:
(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
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(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 3 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATIONS OF ALL ANCHORS, CAGES, AND THE GRID/MOORING CONFIGURATION RELATIVE TO THE LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
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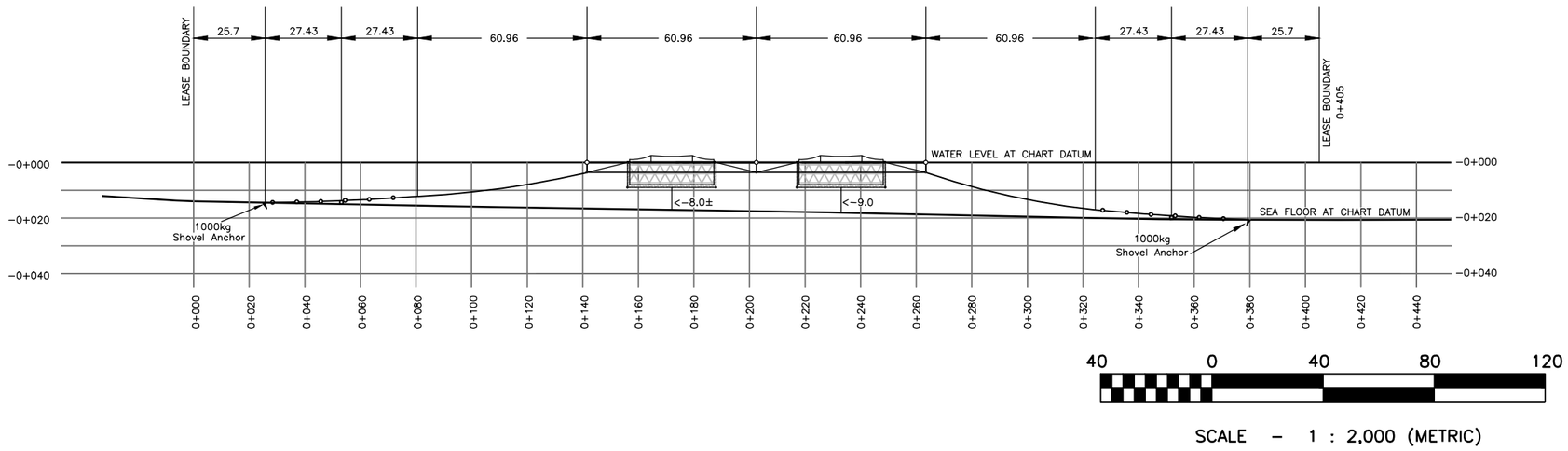
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 2,000 (METRIC)
VERTICAL SCALE – 1 : 2,000 (METRIC)

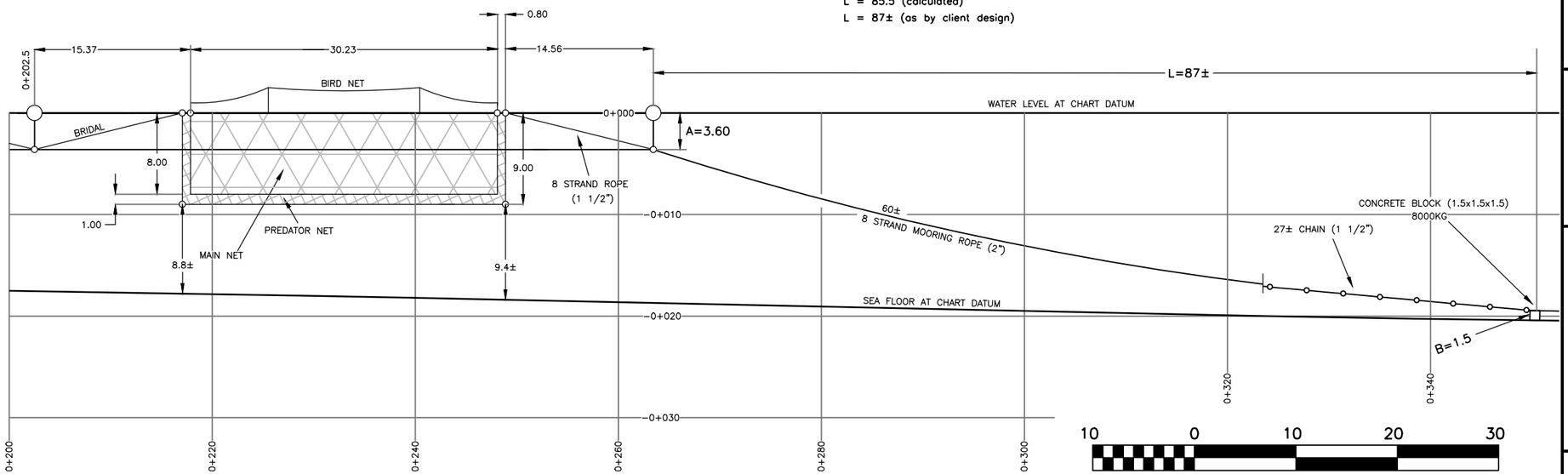


40 0 40 80 120

SCALE – 1 : 2,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)



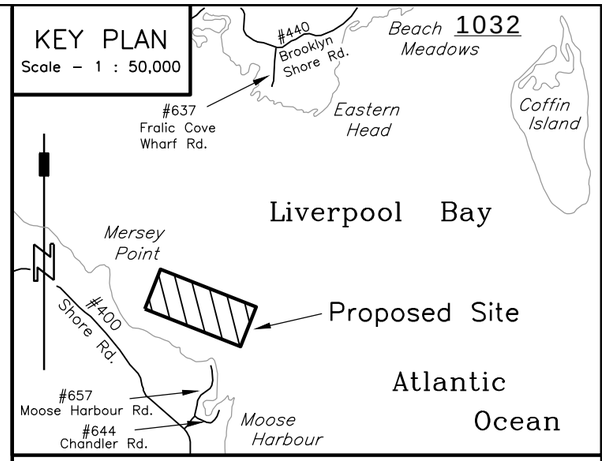
10 0 10 20 30

SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(20± + 2.2) – 3.6 – 1.5] x 5
L = 85.5 (calculated)
L = 87± (as by client design)

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P.
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	
OTHER BOUNDARY	
TIE LINES	
NOT TO SCALE	
MAJOR CONTOURS	
MINOR CONTOURS	
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	□
SHOVEL ANCHOR	

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LATERAL CROSS–SECTION

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

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Dated this 18th day of January, 2019.

_____ [redacted] _____
Jeff Nicke

A&D JOB #300–18–MERSEY POINT

SHEET 4 OF 6 | DATE: January 18, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 4 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LATERAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 5.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

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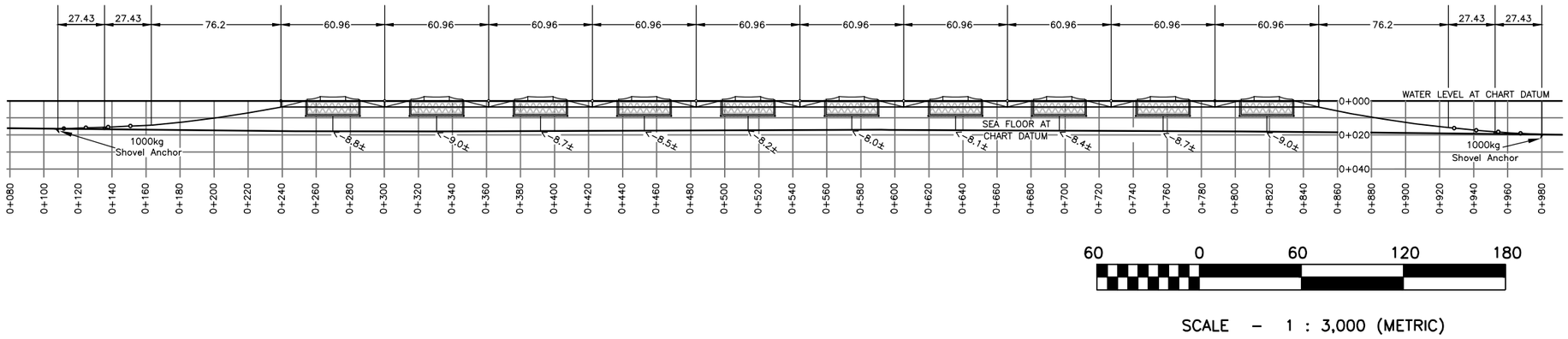
Phone: (902) 648-2186
www.adsurveying.ca

Phone: (902) 875-2110
info@adsurveying.ca

CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 3,000 (METRIC)
VERTICAL SCALE – 1 : 3,000 (METRIC)



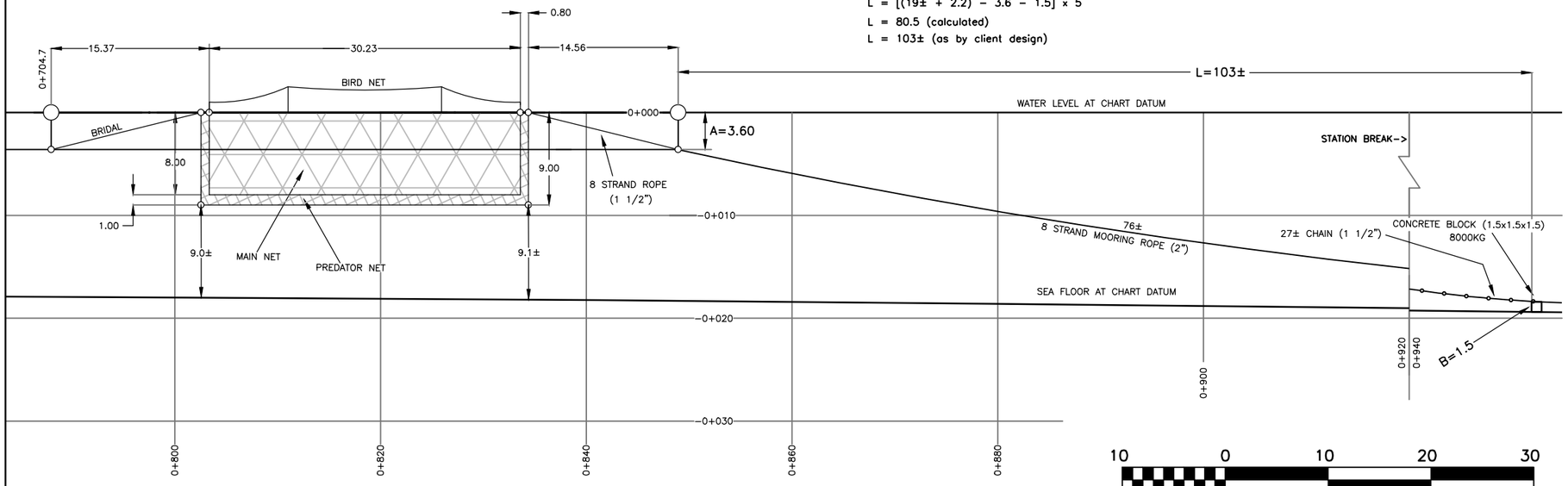
60 0 60 120 180

SCALE – 1 : 3,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 103± (as by client design)

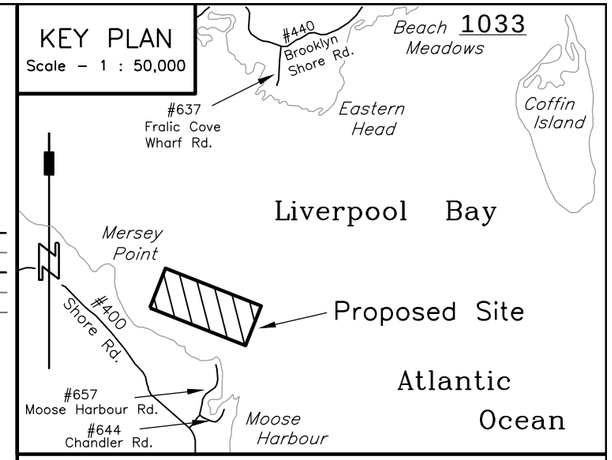


10 0 10 20 30

SCALE – 1 : 500 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . . . C.P.
- CALCULATED . . . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
- NORTHING / EASTING . . . . . N. / E.
- LOCAL REGISTRY NUMBER . . . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
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- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . . . + 00.0
- CONCRETE MOORING
- SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LONGITUDINAL CROSS-SECTION

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

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Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300-18-MERSEY POINT

SHEET 5 OF 6 | DATE: January 18, 2019

NOTES:

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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S.
639
MEMBER

PURPOSE OF PLAN (SHEET 5 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LONGITUDINAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 5.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

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Nova Scotia, Canada
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www.adsurveying.ca

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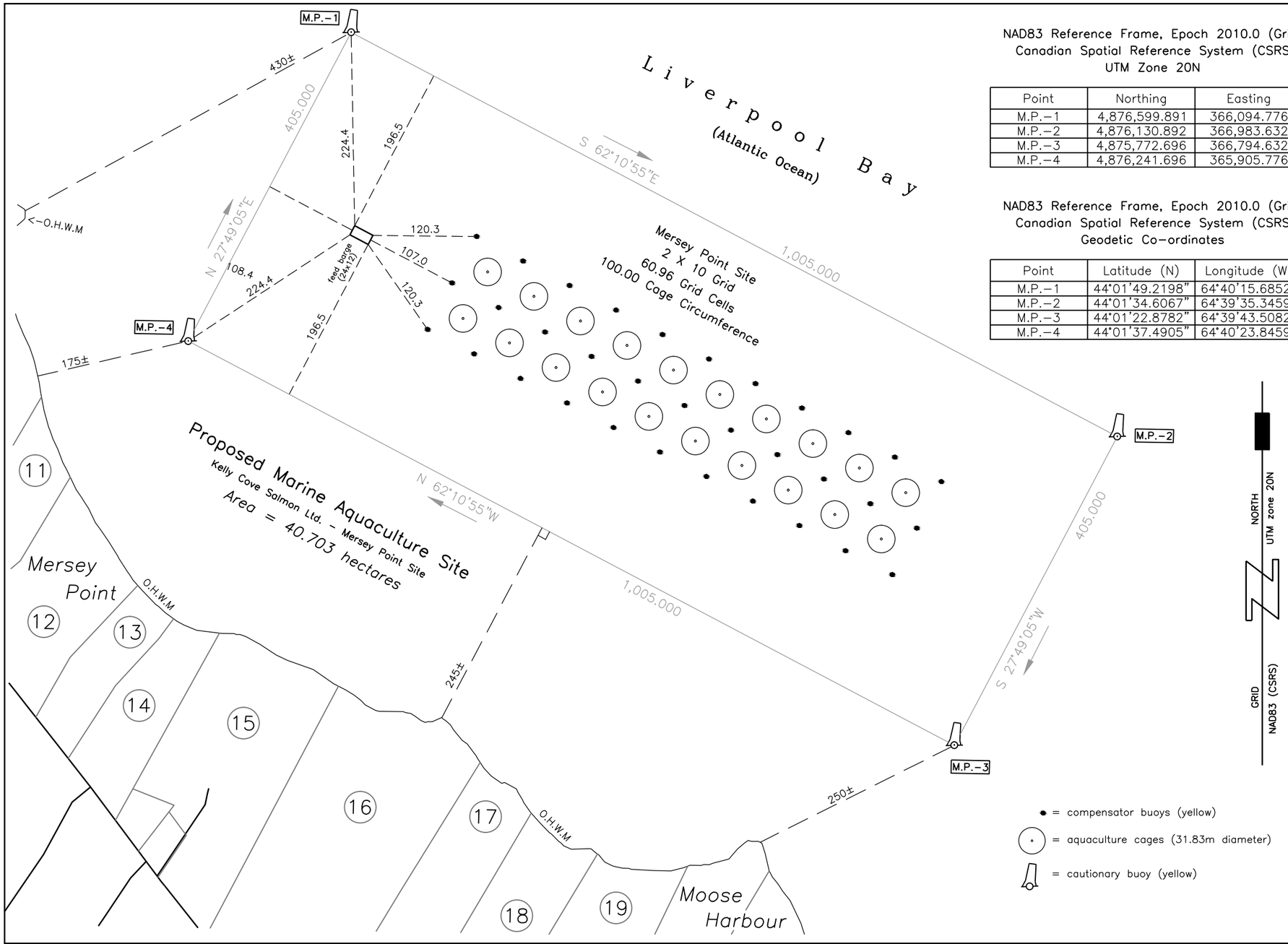
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875-2110
info@adsurveying.ca



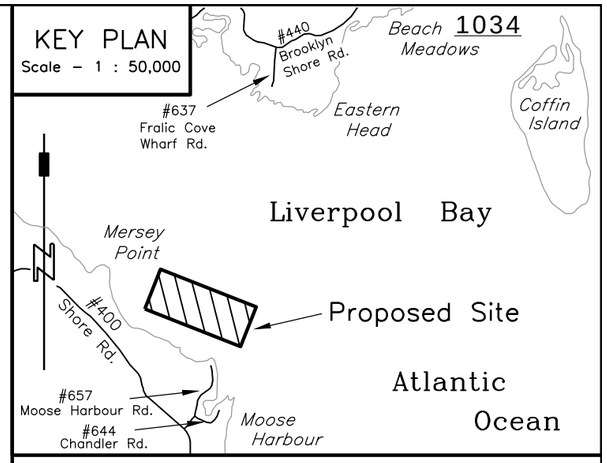
NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
M.P.–1	4,876,599.891	366,094.776
M.P.–2	4,876,130.892	366,983.632
M.P.–3	4,875,772.696	366,794.632
M.P.–4	4,876,241.696	365,905.776

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
M.P.–1	44°01'49.2198"	64°40'15.6852"
M.P.–2	44°01'34.6067"	64°39'35.3459"
M.P.–3	44°01'22.8782"	64°39'43.5082"
M.P.–4	44°01'37.4905"	64°40'23.8459"

KEY PLAN
Scale – 1 : 50,000



Legend:

CALCULATED POINT . . . . . C.P.
CALCULATED . . . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
NORTHING / EASTING . . . . . N. / E.
LOCAL REGISTRY NUMBER . . . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . . . + 00.0
CONCRETE MOORING . . . . . □
SHOVEL ANCHOR . . . . . ⛏

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

PROPOSED NAVIGATIONAL AIDS MARKING PLAN

KELLY COVE SALMON LTD. / MERSEY POINT

LOCATED AT:

MERSEY POINT, LIVERPOOL BAY (ATLANTIC OCEAN),
QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 18th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–MERSEY POINT

SHEET 6 OF 6 | DATE: January 18, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S.
639
MEMBER

PURPOSE OF PLAN (SHEET 6 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATION AND TYPES OF ALL NAVIGATIONAL AIDS RELATIVE TO THE PROPOSED LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

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Nova Scotia, Canada
B0T 1W0
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info@adsurveying.ca

Brooklyn

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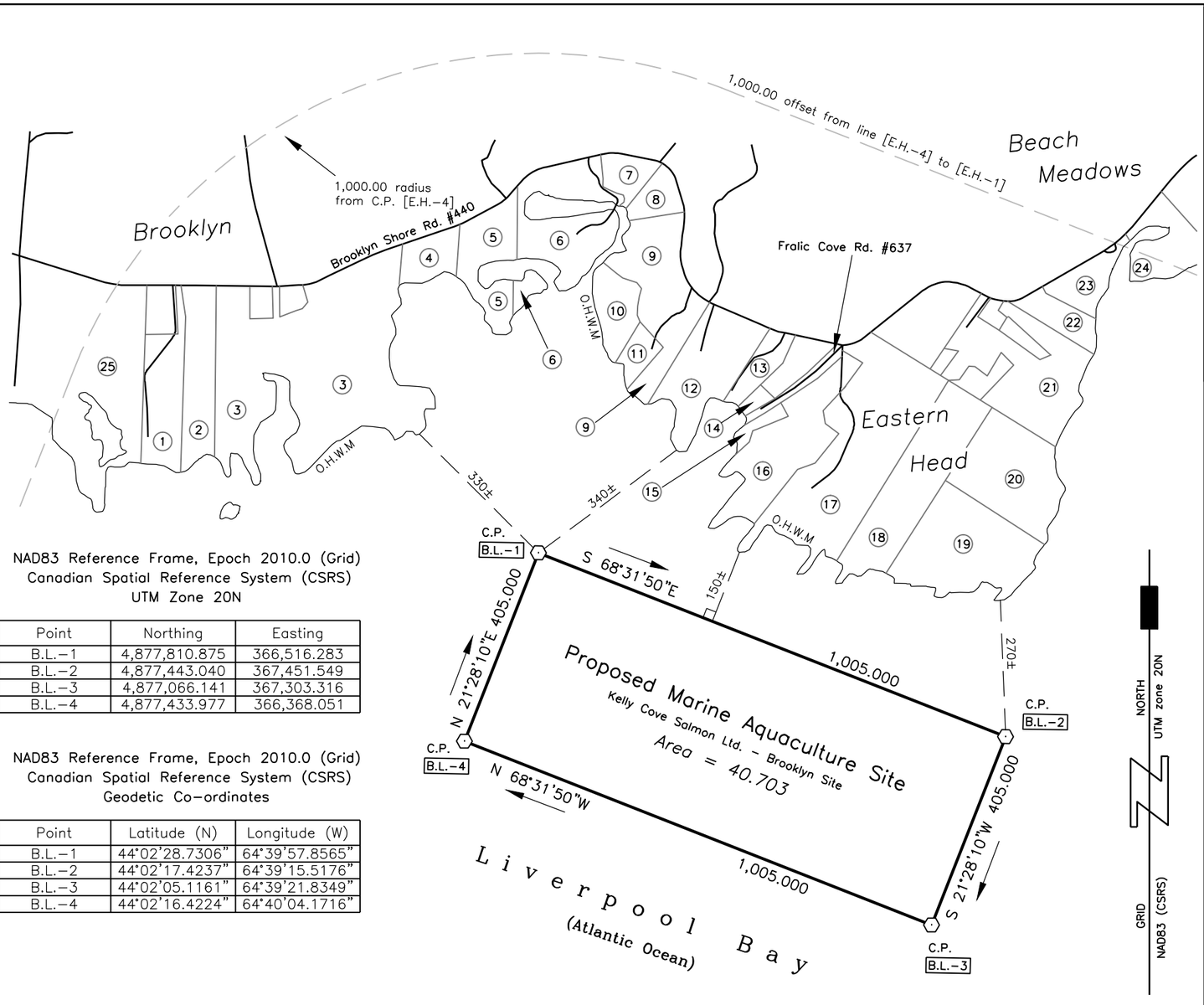
#	P.I.D. #	OWNER / ADDRESS
1	70089073	Paul Shot et ux. RR #1, Brooklyn, N.S. B0J 1H0
2	70089081	Krista C. Decker et al. 22 Odell Dr., Dartmouth, N.S. B2W 3T4
3	70089099	James F. Mitton et al. RR #1, Brooklyn, N.S. B0J 1H0
4	70089131	Delphine Dexter 89 Shore Rd., Brooklyn, N.S. B0J 1H0
5	70089164	Ian D. Kent et al. RR #1, Brooklyn, N.S. B0J 1H0
6	70089172	Barry S. Anthony et ux. 532 Brooklyn Shore Rd., Brooklyn, N.S., B0J 1H0
7	70089222	Jason Pendragon Finck 580 Brooklyn Shore Rd., Brooklyn, N.S., B0J 1H0
8	70089255	Ryan Mullen 592 Brooklyn Shore Rd., RR #1 Brooklyn, N.S., B0J 1H0
9	70089305	John E. Conrad et ux. P.O. Box 32, Brooklyn, N.S. B0J 1H0
10	70089313	Allen Harrington P.O. Box 55, Brooklyn, N.S. B0J 1H0
11	70089321	John E. Conrad et ux. P.O. Box 32, Brooklyn, N.S. B0J 1H0
12	70089339	Gary P. Roberton et ux. 31 Oak Street, Oak Hill, N.S. B4V 0C5
13	70100797	Garry Marsh et al. P.O. Box 790, Liverpool, N.S. B0T 1K0
14	70205646	Garry Marsh et al. P.O. Box 790, Liverpool, N.S. B0T 1K0
15	70100755	Garry Marsh et al. P.O. Box 790, Liverpool, N.S. B0T 1K0
16	70100789	Gary Morash et ux. P.O. Box 790, Liverpool, N.S. B0T 1K0
17	70100748	Gary Morash et ux. P.O. Box 790, Liverpool, N.S. B0T 1K0
18	70100714	Reynold Fralic et al. RR #4, Site 19, Comp 10 New Glasgow, N.S., B2H 5C7
19	70100946	Dennis Conrad RR #1, Brooklyn, N.S. B0J 1H0
20	70100672	Wilhelmina R. Conrad et al. RR #1, Brooklyn, N.S. B0J 1H0
21	70100656	Hazel M. Mouzar P.O. Box 173, Liverpool, N.S. B0T 1K0
22	70100599	Donald T. Fralic et ux. RR #1, Brooklyn, N.S. B0J 1H0
23	70100086	Wilhelmina R. Conrad et al. RR #1, Brooklyn, N.S. B0J 1H0
24	70100540	Andrew R. Godfrey et ux. RR #1, Brooklyn, N.S. B0J 1H0



NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

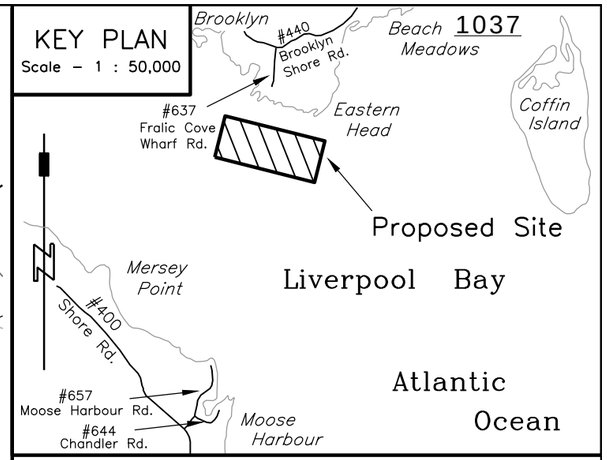
Point	Northing	Easting
B.L.–1	4,877,810.875	366,516.283
B.L.–2	4,877,443.040	367,451.549
B.L.–3	4,877,066.141	367,303.316
B.L.–4	4,877,433.977	366,368.051

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
B.L.–1	44°02'28.7306"	64°39'57.8565"
B.L.–2	44°02'17.4237"	64°39'15.5176"
B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

#	P.I.D. #	OWNER / ADDRESS
25	70261698	Randall N. Fralic et al. RR #1, Brooklyn, N.S. B0J 1H0

KEY PLAN
Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
- NORTHING / EASTING . . . N. / E.
- LOCAL REGISTRY NUMBER . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING . . . □
- SHOVEL ANCHOR . . . ⚓

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING
AQUACULTURE SITE APPLICATION
KELLY COVE SALMON LTD. / BROOKLYN SITE
LOCATED AT:
BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019

[redacted]

Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 1 OF 6 | DATE: JAN. 14, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
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(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 1 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND AS WELL AS ADJACENT PARCELS OF LAND, FOR ADDITIONAL SITE INFORMATION, REFER TO SHEETS 2–6.

200 0 200 400 600

SCALE – 1 : 10,000 (METRIC)

Acker & Doucette Surveying Inc.
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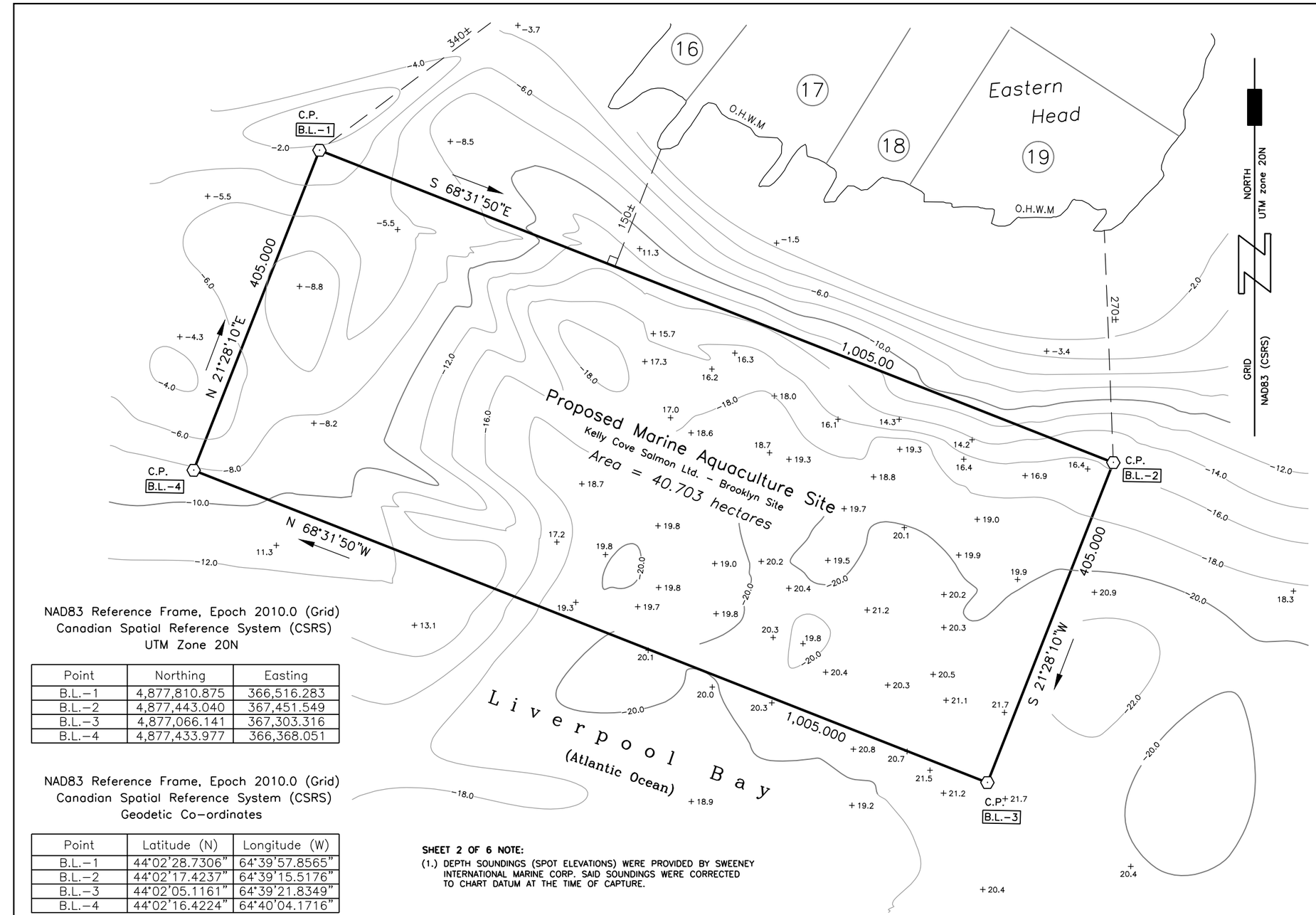

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
B.L.–1	4,877,810.875	366,516.283
B.L.–2	4,877,443.040	367,451.549
B.L.–3	4,877,066.141	367,303.316
B.L.–4	4,877,433.977	366,368.051

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
B.L.–1	44°02'28.7306"	64°39'57.8565"
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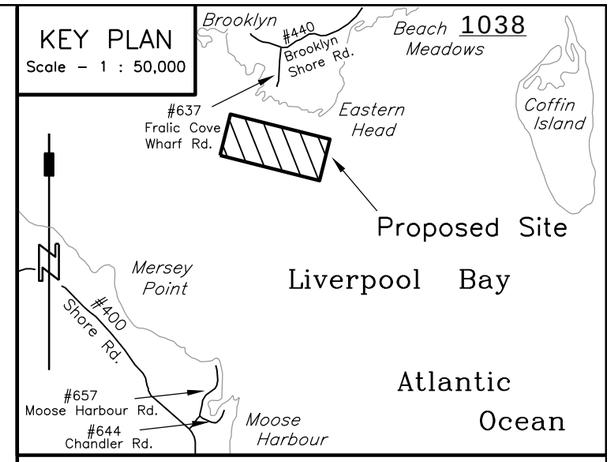
B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

SHEET 2 OF 6 NOTE:

(1.) DEPTH SOUNDINGS (SPOT ELEVATIONS) WERE PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM AT THE TIME OF CAPTURE.

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT	C.P.
CALCULATED	(c.)
N.S. PROPERTY IDENTIFICATION NUMBER	P.I.D. #00000000
NORTHING / EASTING	N. / E.
LOCAL REGISTRY NUMBER	Book: / Page:
ORDINARY HIGH WATER MARK	O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN	
OTHER BOUNDARY	
TIE LINES	
NOT TO SCALE	
MAJOR CONTOURS	
MINOR CONTOURS	
DEPTH SOUNDINGS	+ 00.0
CONCRETE MOORING	□
SHOVEL ANCHOR	

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

BASIC SEAFLOOR TOPOGRAPHY

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019.

_____ [redacted]
Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 2 OF 6 | DATE: JAN. 14, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 2 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE EXTENTS OF THE PROPOSED MARINE AQUACULTURE SITE AND BASIC SEAFLOOR TOPOGRAPHY, FOR ADDITIONAL ADDITIONAL SITE INFORMATION, REFER TO SHEETS 1, 3–6.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

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Nova Scotia Land Surveyors & Professional Engineers

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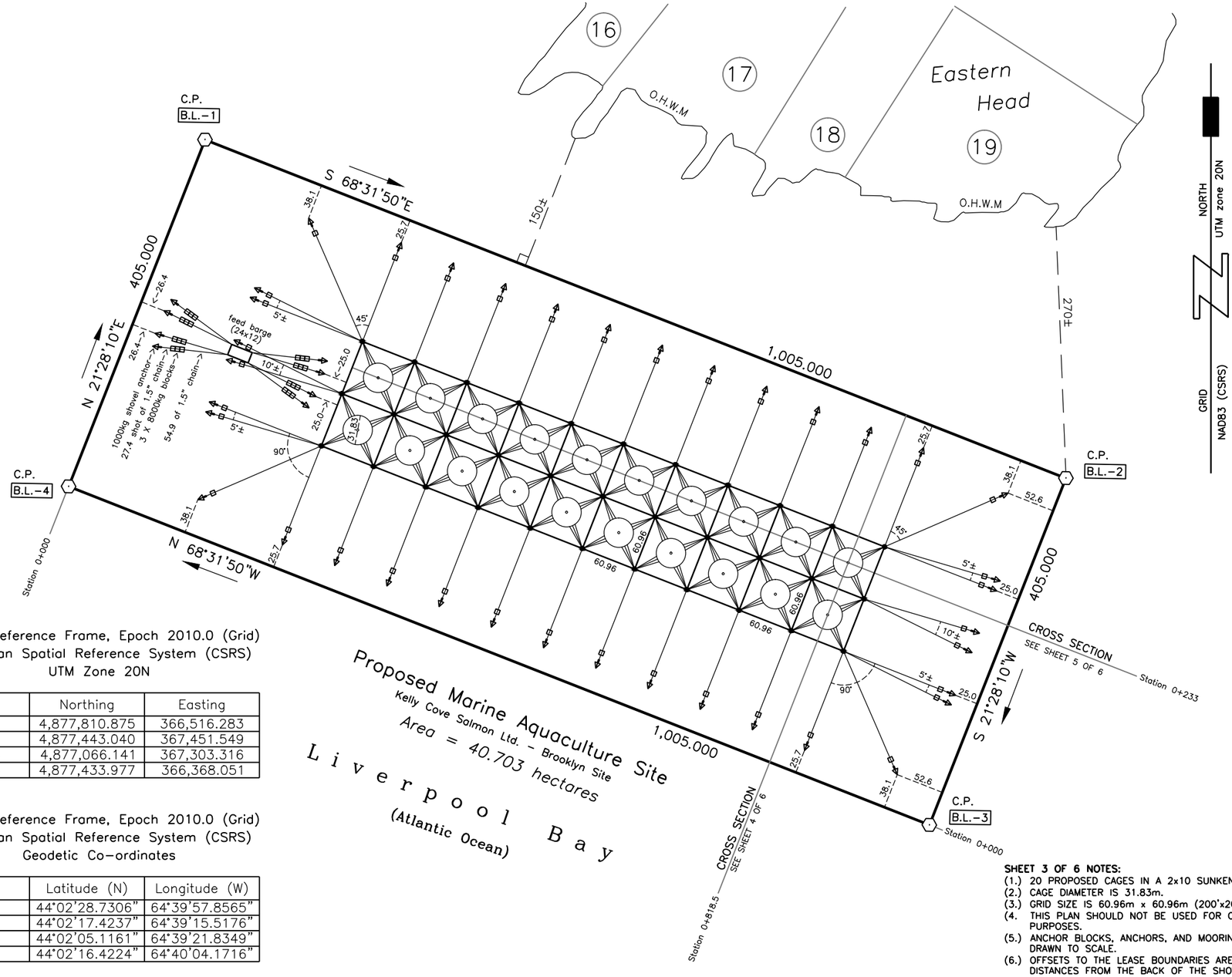

NAD83 Reference Frame, Epoch 2010.0 (Grid)
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UTM Zone 20N

Point	Northing	Easting
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B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

SHEET 3 OF 6 NOTES:
(1.) 20 PROPOSED CAGES IN A 2x10 SUNKEN GRID LAYOUT.
(2.) CAGE DIAMETER IS 31.83m.
(3.) GRID SIZE IS 60.96m x 60.96m (200'x200').
(4.) THIS PLAN SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.
(5.) ANCHOR BLOCKS, ANCHORS, AND MOORING LINES ARE NOT DRAWN TO SCALE.
(6.) OFFSETS TO THE LEASE BOUNDARIES ARE HORIZONTAL DISTANCES FROM THE BACK OF THE SHOVEL ANCHOR.

NOTES:
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(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

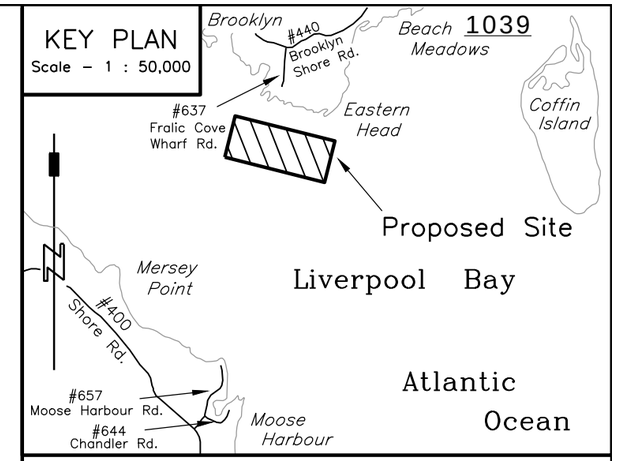
KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 3 OF 6)
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATIONS OF ALL ANCHORS, CAGES, AND THE GRID/MOORING CONFIGURATION RELATIVE TO THE LEASE BOUNDARIES.

100 0 100 200 300
SCALE – 1 : 5,000 (METRIC)

KEY PLAN
Scale – 1 : 50,000



Legend:
CALCULATED POINT . . . C.P.
CALCULATED . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
NORTHING / EASTING . . . N. / E.
LOCAL REGISTRY NUMBER . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . + 00.0
CONCRETE MOORING
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING
AQUACULTURE CAGE CONFIGURATION
KELLY COVE SALMON LTD. / BROOKLYN SITE
LOCATED AT:
BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019.

[redacted]
Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 3 OF 6 | DATE: JAN. 14, 2019

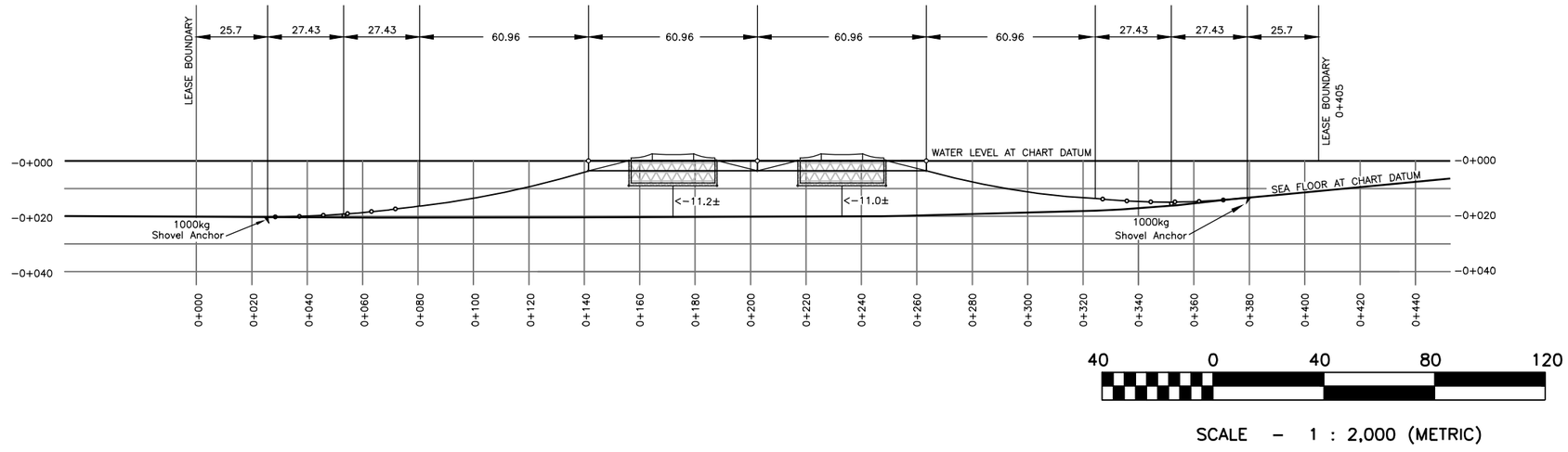
Acker & Doucette Surveying Inc.
Nova Scotia Land Surveyors & Professional Engineers

4083 Highway #308, P.O. Box 64
Tusket, Yarmouth County
Nova Scotia, Canada
B0W 3M0
Phone: (902) 648–2186
www.adsurveying.ca

80B Ohio Road, P.O. Box 367
Shelburne, Shelburne County
Nova Scotia, Canada
B0T 1W0
Phone: (902) 875–2110
info@adsurveying.ca

CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 2,000 (METRIC)
VERTICAL SCALE – 1 : 2,000 (METRIC)

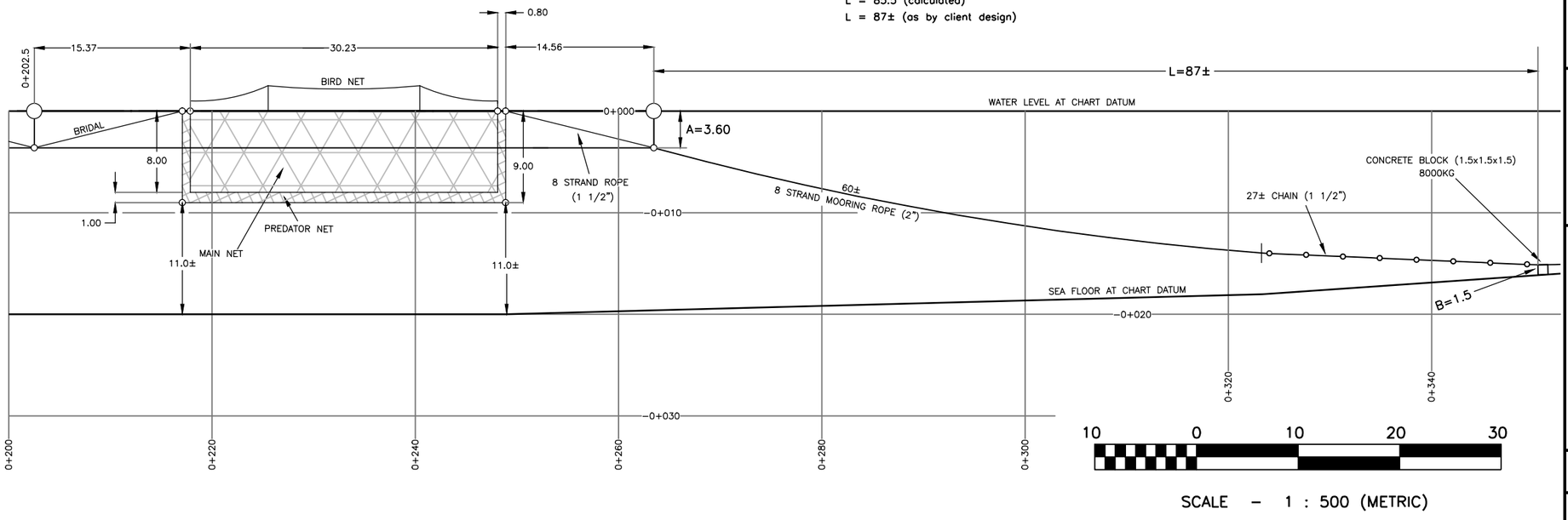


40 0 40 80 120

SCALE – 1 : 2,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+818.5

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)



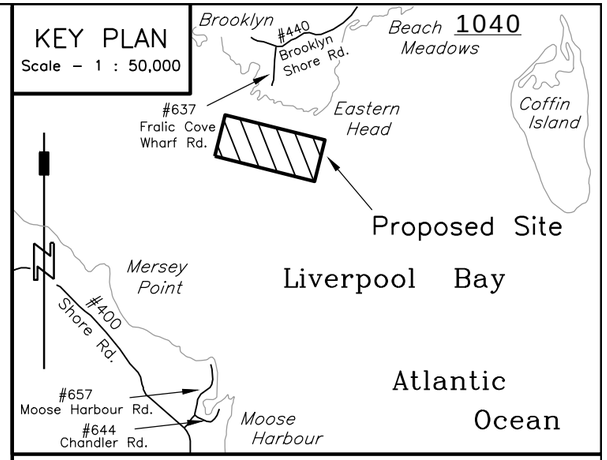
10 0 10 20 30

SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(20± + 2.2) – 3.6 – 1.5] x 5
L = 85.5 (calculated)
L = 87± (as by client design)

KEY PLAN

Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
- N.S. PROPERTY IDENTIFICATION NUMBER . . . P.I.D. #00000000
- NORTHING / EASTING . . . N. / E.
- LOCAL REGISTRY NUMBER . . . Book: / Page:
- ORDINARY HIGH WATER MARK . . . O.H.W.M.
- BOUNDARY DEALT WITH BY THIS PLAN
- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING . . . □
- SHOVEL ANCHOR . . . ⚓

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LATERAL CROSS–SECTION

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 4 OF 6 | DATE: JAN. 14, 2019

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
(2.) THIS PLAN IS A COMPILATION OF THIRD PARTY DATA. DATA WAS PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. ACKER & DOUCETTE SURVEYING INC. HAS COMPLETED THIS PLAN IN ACCORDANCE WITH THE "GUIDE TO MARINE FINFISH AQUACULTURE SITE REQUIREMENTS", DATED NOVEMBER 2007.
(3.) ALL DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).
(4.) DEPTH CONTOUR DATA IS BASED ON GARMIN MARINE MAPSOURCE DATA AND BATHYMETRIC SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP.
(5.) SPOT SOUNDINGS ARE BASED ON SOUNDING DATA PROVIDED BY SWEENEY INTERNATIONAL MARINE CORP. SAID SOUNDINGS WERE CORRECTED TO CHART DATUM FROM G.N.S.S. OBSERVATIONS.
(6.) NATURAL FEATURES WERE DETERMINED BY NOVA SCOTIA PROPERTY ONLINE MAPPING AND GEONOVA DATA LOCATOR GEOGRAPHIC INFORMATION.
(7.) ONSHORE PROPERTY DATA IS BASED ON NOVA SCOTIA PROPERTY ONLINE MAPPING.
(8.) ALL BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83 CSRS) USING THE UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 20 NORTH (UTM Z20N).

KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 4 OF 6)

THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE A LATERAL CROSS SECTION AS SHOWN ON SHEET 3 OF 6, TO DEMONSTRATE DETAILS ASSOCIATED WITH THE CAGE INFRASTRUCTURE, ANCHOR AND MOORING LINES, AND SEAFLOOR PROFILE.

CROSS SECTION NOTES:

(1.) THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.
(2.) FOR HORIZONTAL LOCATION OF EACH CROSS SECTION SEE SHEET 3 OF 5.
(3.) DISTANCES FROM SEA FLOOR MAY VARY DEPENDING ON TIDE AND CURRENT.
(4.) DISTANCES FROM SEA FLOOR ARE APPROXIMATE ONLY.
(5.) DEPTHS ARE REFERENCED TO CHART DATUM (LOWER LOW WATER, LARGE TIDE).

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Phone: (902) 875–2110
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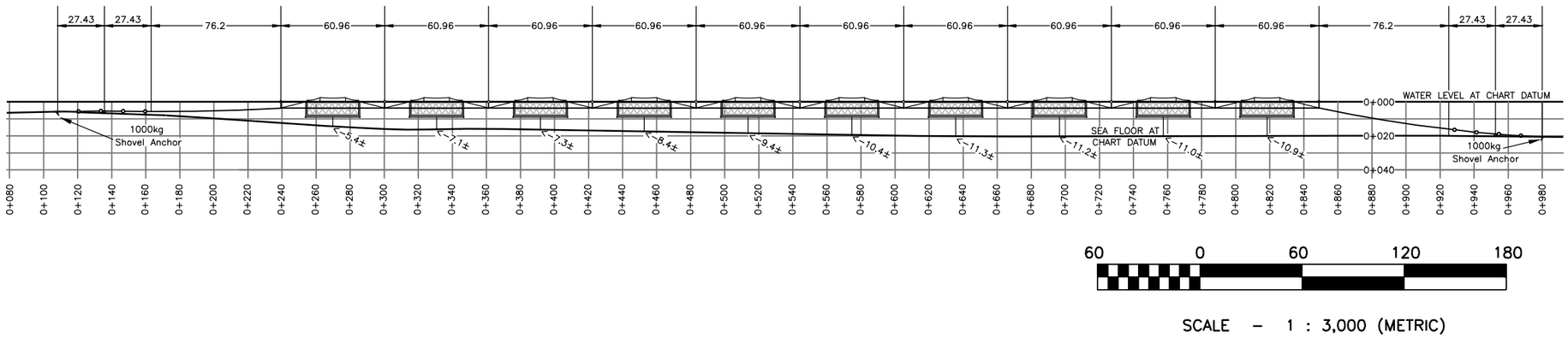
CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 3,000 (METRIC)
VERTICAL SCALE – 1 : 3,000 (METRIC)



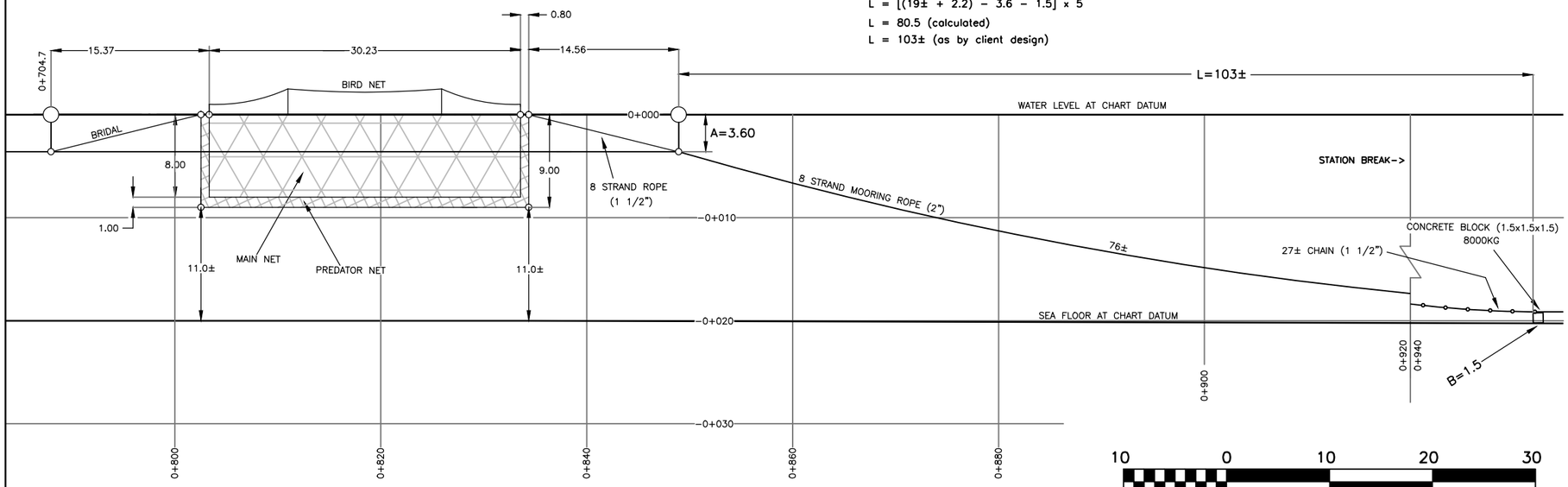
60 0 60 120 180

SCALE – 1 : 3,000 (METRIC)

DETAILED CROSS SECTION – STATION 0+233

HORIZONTAL SCALE – 1 : 500 (METRIC)
VERTICAL SCALE – 1 : 500 (METRIC)

5:1 Mooring Scope Calculation
L = [(max depth + max tide range) – A – B] x 5
L = [(19± + 2.2) – 3.6 – 1.5] x 5
L = 80.5 (calculated)
L = 103± (as by client design)

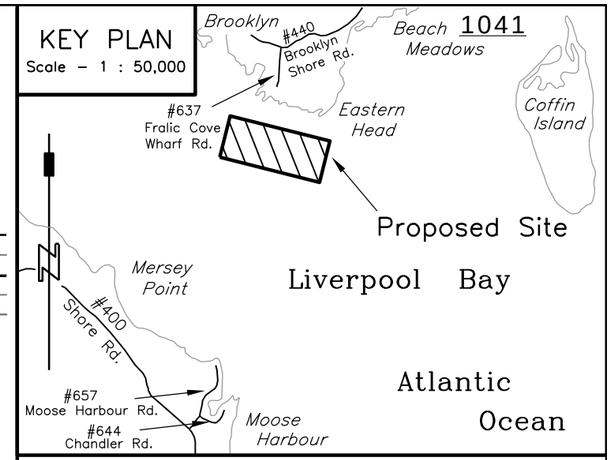


10 0 10 20 30

SCALE – 1 : 500 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

- CALCULATED POINT . . . C.P.
- CALCULATED . . . (c.)
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- OTHER BOUNDARY
- TIE LINES
- NOT TO SCALE
- MAJOR CONTOURS
- MINOR CONTOURS
- DEPTH SOUNDINGS . . . + 00.0
- CONCRETE MOORING . . . □
- SHOVEL ANCHOR . . . ⚓

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

LONGITUDINAL CROSS-SECTION

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

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Dated this 14th day of January, 2019.

[redacted]

Jeff Nickerson

A&D JOB #300-18-BROOKLYN

SHEET 5 OF 6 | DATE: JAN. 14, 2019

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KELLY COVE SALMON LTD.

THE ASSOCIATION OF NOVA SCOTIA LAND SURVEYORS
FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

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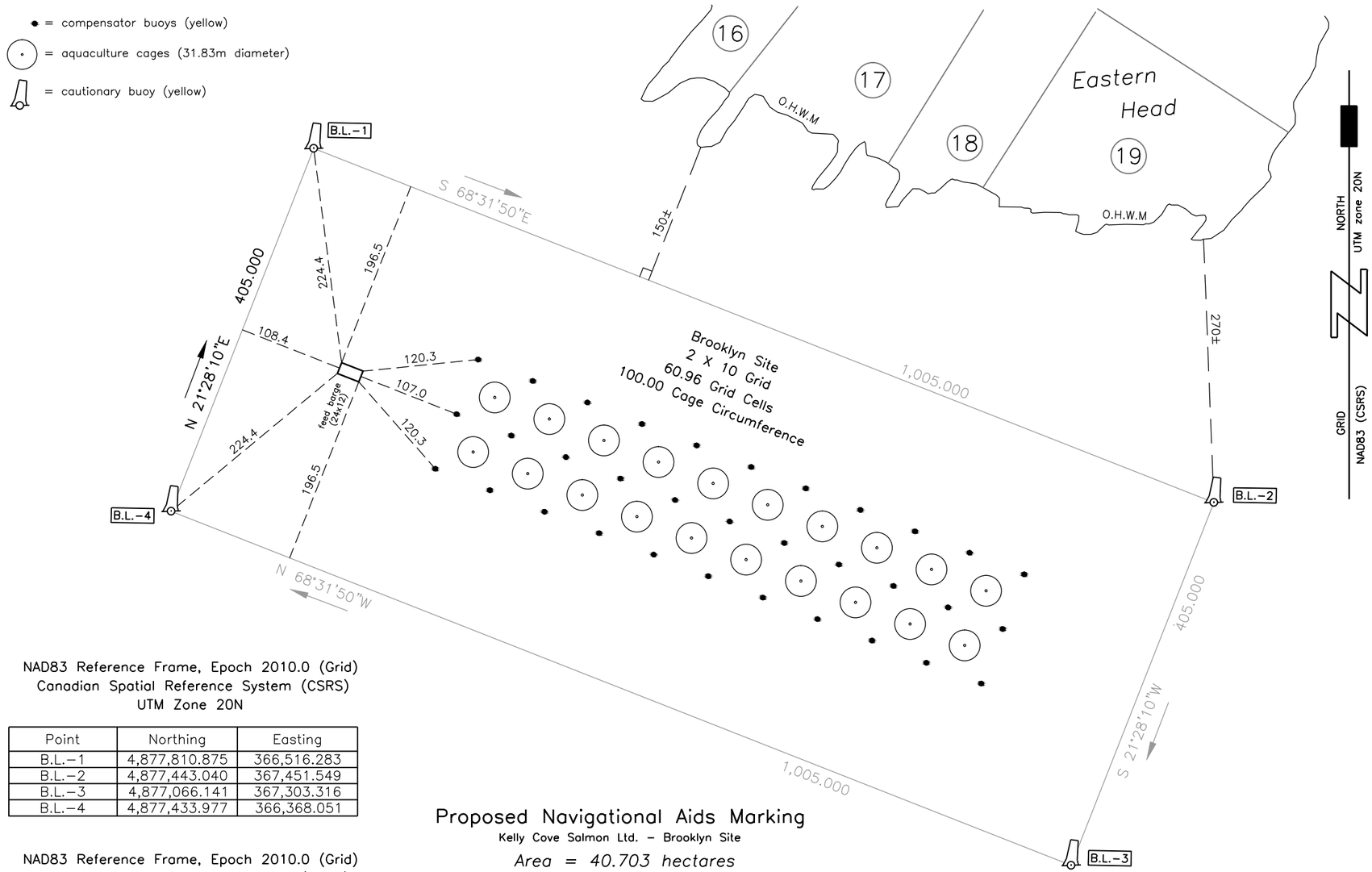

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
UTM Zone 20N

Point	Northing	Easting
B.L.–1	4,877,810.875	366,516.283
B.L.–2	4,877,443.040	367,451.549
B.L.–3	4,877,066.141	367,303.316
B.L.–4	4,877,433.977	366,368.051

NAD83 Reference Frame, Epoch 2010.0 (Grid)
Canadian Spatial Reference System (CSRS)
Geodetic Co–ordinates

Point	Latitude (N)	Longitude (W)
B.L.–1	44°02'28.7306"	64°39'57.8565"
B.L.–2	44°02'17.4237"	64°39'15.5176"
B.L.–3	44°02'05.1161"	64°39'21.8349"
B.L.–4	44°02'16.4224"	64°40'04.1716"

Proposed Navigational Aids Marking

Kelly Cove Salmon Ltd. – Brooklyn Site

Area = 40.703 hectares

L i v e r p o o l B a y

(Atlantic Ocean)

NOTES:

(1.) ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
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FOUNDED 1951
Stephen D.F. Acker
N.S.L.S. 639
MEMBER

PURPOSE OF PLAN (SHEET 6 OF 6)

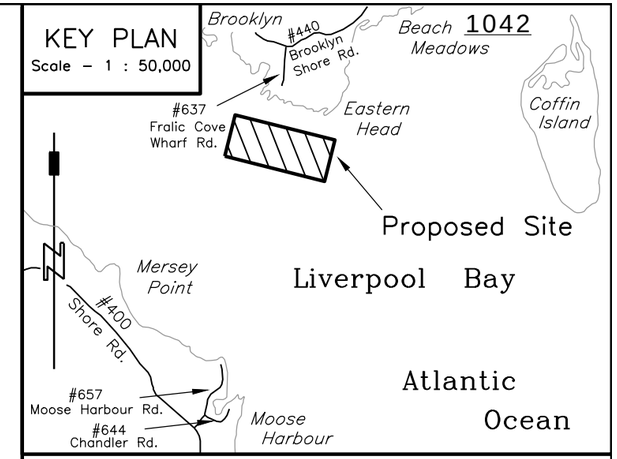
THE PURPOSE OF THIS PLAN IS TO DEMONSTRATE THE LOCATION AND TYPES OF ALL NAVIGATIONAL AIDS RELATIVE TO THE PROPOSED LEASE BOUNDARIES.

100 0 100 200 300

SCALE – 1 : 5,000 (METRIC)

KEY PLAN

Scale – 1 : 50,000



Legend:

CALCULATED POINT . . . . . C.P.
CALCULATED . . . . . (c.)
N.S. PROPERTY IDENTIFICATION NUMBER . . . . . P.I.D. #00000000
NORTHING / EASTING . . . . . N. / E.
LOCAL REGISTRY NUMBER . . . . . Book: / Page:
ORDINARY HIGH WATER MARK . . . . . O.H.W.M.
BOUNDARY DEALT WITH BY THIS PLAN
OTHER BOUNDARY
TIE LINES
NOT TO SCALE
MAJOR CONTOURS
MINOR CONTOURS
DEPTH SOUNDINGS . . . . . + 00.0
CONCRETE MOORING . . . . . □
SHOVEL ANCHOR

AQUACULTURE SITE DEVELOPMENT PLANS

SHOWING

PROPOSED NAVIGATIONAL AIDS MARKING PLAN

KELLY COVE SALMON LTD. / BROOKLYN SITE

LOCATED AT:

BROOKLYN (EASTERN HEAD), LIVERPOOL BAY
(ATLANTIC OCEAN), QUEENS COUNTY, NOVA SCOTIA

Client's Statement

I, Jeff Nickerson of Kelly Cove Salmon Ltd. acknowledge and confirm that Acker & Doucette Surveying Inc., make no representations or warranties with respect to the adequacy or the integrity of the proposed cage and mooring design of system depicted.

Dated this 14th day of January, 2019

[redacted]

Jeff Nickerson

A&D JOB #300–18–BROOKLYN

SHEET 6 OF 6 | DATE: JAN. 14, 2019

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Phone: (902) 875–2110
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Section 6

Application Fee

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1045

Kelly Cove Salmon Ltd.

To: Minister of Finance NS DAFA MIFINS0008

Check Number: **000044711**

Date: 02/26/2019

Number	Date	Invoice Number	Amount	Discount	Paid Amount
Prepayment	02/26/2019		$0.00	$0.00	$2,000.00
TOTALS:			$0.00	$0.00	$2,000.00

THIS DOCUMENT CONTAINS SECURITY FEATURES - SEE REVERSE

Kelly Cove Salmon Ltd.
669 Main Street
Blacks Harbour, NB E5H 1K1
Canada

Bank of Montreal
2 King Street
Saint John, NB E2L 1G2
Canadian Account

000044711
00114

DATE
Feb 26, 2019

AMOUNT
$2,000.00

Pay Two Thousand Dollars And 00 Cents

[redacted]

to the Order of: Minister of Finance NS DAFA
1575 Lake Road
Shelburne, NS B0T 1W0
Canada

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Kelly Cove Salmon Ltd.
134 North Street, Bridgewater, NS B4V 2W6

ADDENDUM 1 – ADDITIONAL INFORMATION

A1.1 BASELINE ENVIRONMENTAL MONITORING VIDEO

Note: Baseline environmental monitoring video was recorded for each application to support the Development Plan. The initial submission of baseline videos has been provided to the Aquaculture Review Board on an external hard drive. The titles for the video files are listed below:

AQ#1205x
1205 LP Base LP1
1205 LP Base LP2
1205 LP Base LP3 Tran Cont
1205 LP Base LP3 Tran
1205 LP Base LP3
1205 LP Base LP4(2)
1205 LP Base LP5
1205 LP Base LVP REF

AQ#1432
BL Base BL REF
BL Base BL1
BL Base BL2
BL Base BL3
BL Base BL4 Tran
BL Base BL4
BL Base BL5 Tran
BL Base BL5

AQ#1433
MP Base MP REF2
MP Base MP1
MP Base MP2
MP Base MP3 Tran
MP Base MP3
MP Base MP4
MP Base MP5
MP Base MP REF

A1.2 FISH AND FISH HABITAT SURVEY VIDEO

Note: A Fish and Fish Habitat Survey for each application was conducted to support the Development Plan. The initial submission of survey videos has been provided to the Aquaculture Review Board on an external hard drive. The titles for the video files are listed below:

AQ#1205x	LPFH19	LPFH38
LPFH1	LPFH20	LPFH39
LPFH2	LPFH21	LPFH40
LPFH3	LPFH22	LPFH41
LPFH4	LPFH23	LPFH42
LPFH5	LPFH24	LPFH43
LPFH6	LPFH25	LPFH44
LPFH7	LPFH26	LPFH45
LPFH8	LPFH27	LPFH46
LPFH9	LPFH28	LPFH47
LPFH10	LPFH29	LPFH48
LPFH11	LPFH30	LPFH49
LPFH12	LPFH31	LPFH50
LPFH13	LPFH32	LPFH51
LPFH14	LPFH33	LPFH52
LPFH15	LPFH34	LPFH53
LPFH16	LPFH35	LPFH54
LPFH17	LPFH36	LPFH55
LPFH18	LPFH37	

AQ#1432	BLFH19	BLFH38
BLFH1	BLFH20	BLFH39
BLFH2	BLFH21	BLFH40
BLFH3	BLFH22	BLFH41
BLFH4	BLFH23	BLFH42
BLFH5	BLFH24	BLFH43
BLFH6	BLFH25	BLFH44
BLFH7	BLFH26	BLFH45
BLFH8	BLFH27	BLFH46
BLFH9	BLFH28	BLFH47
BLFH10	BLFH29	BLFH48
BLFH11	BLFH30	BLFH49
BLFH12	BLFH31	BLFH50
BLFH13	BLFH32	BLFH51
BLFH14	BLFH33	BLFH52
BLFH15	BLFH34	BLFH53
BLFH16	BLFH35	BLFH54
BLFH17	BLFH36	BLFH55
BLFH18	BLFH37	

AQ#1433
MPFH1
MPFH2
MPFH3
MPFH4
MPFH5
MPFH6
MPFH7
MPFH8
MPFH9
MPFH10
MPFH11
MPFH12
MPFH13
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MPFH55

3.0 SCOPING REPORT

Note: The Scoping Report, titled “Report on Liverpool Public Engagement” was submitted as part of the Applicant’s Development Plan and can be found in Section 4, “Community Engagement”.

ADDENDUM 2 - ADDITIONAL INFORMATION

A2.1 ADDENDUM TO SCOPING REPORT

1056

2022

Public Engagement - Liverpool Addendum

Kelly Cove Salmon
Public Engagement Addendum

Since submitting our application in March of 2019, Kelly Cove Salmon (KCS) has sought opportunities to engage with the public and increase awareness of both our current operations and growth plans in Nova Scotia. While pandemic regulations did pose a challenge to our efforts over the course of the last few years, we have remained in contact with our stakeholders in Queens County and across the province to create open dialogue and build relationships.

Medway River Salmon Association

KCS had an initial meeting with the executive of the Medway River Salmon Association on February 20th, 2019. From that meeting a partnership evolved with the focus to help replenish the Medway River wild salmon stock. Over the course of the past 4 years KCS has financially contributed to the project by purchasing a smolt wheel to be used for wild salmon retention and sponsored students through a Mitacs grant from Acadia University to complete water quality analysis on the river stream. The partnership has progressed to now include Freemans' Lumber, Acadia University and Acadia First Nations.

Liverpool Beach Clean-Up

August 14, 2019, Kelly Cove Salmon partnered with Clean Nova Scotia and organized a beach clean-up throughout the coastline of the Brooklyn community. KCS provided hamburgers, hot dogs, and drinks to the participants. Two trailer loads of debris was removed from the coast and sent to the appropriate recycling/landfill facility.

Acadia First Nations

On April 13, 2022, KCS held an information session at the Milton Community Center with the Acadia First Nations council and band members to discuss the Liverpool expansion submitted to the Department of Fisheries and Aquaculture. Meeting attendees also included two representatives from the KMKNO and archaeologist Sara Beanlands. Discussion included the Food, Social and Ceremonial (FSC) Fishery and archeology of the Mersey corridor.

July 6, 2022, KCS, Acadia First Nations, representatives from KMKNO and Sara Beanlands from Boreas Heritage consulting met to discuss a path forward to complete an archeology assessment of the Liverpool Bay area focusing on the locations of our current and proposed marine sites.

The archology assessment which included a site tour was completed by Boreas Heritage and submitted to Acadia First Nations and KMKNO by KCS on October 19, 2022. The second phase of the assessment which incudes core samples of the sediment underneath proposed anchors is currently ongoing and will be completed before ARB hearing.

Government and Industry Relations

KCS works to engage with municipal and provincial governments to ensure that elected officials and senior staff are informed and up-to-date on our work in Nova Scotia. In the summer of 2022, KCS representatives met with the Regional Council of Shelburne. Over the last year company representatives

have also met with the Leader of the Provincial Opposition, Fisheries and Aquaculture critic, and provincial Liberal caucus.

Through our membership in the Aquaculture Association of Nova Scotia, KCS also regularly updates and interacts with other groups and associations working within the sector.

Ongoing Engagement

KCS continues to proactively engage with provincial media outlets as a conduit to keeping the public informed. An email inbox specific for Nova Scotia-related queries – aquaculturegrowns@cookeaqua.com – is monitored daily for questions or comments from the public. KCS has also dedicated resources, including print and broadcast advertising, hiring full-time human resources personnel, and regularly hosting job fairs, to promote career opportunities with our company in Nova Scotia.