Received 10.5.21
Revised 11.30.21
Revised 01.24.22
Complete 02.07.22
Updated 9.12.23

EXPERIMENTAL LEASE APPLICATION

1. APPLICANT CONTACT INFORMATION

Applicant	Restorative Aquaculture LLC
Contact Person	Angel Wilson
Address	P.O. Box 10304
City	Portland
State, Zip	ME 04101
County	Cumberland
Telephone	207-837-5279
Email	angel@runningtide.com
Payment Type	☒ Check (included) ☐ Credit Card

***Note**: The email address you list here will be the primary means by which we will contact you. Please provide an email address checked regularly. If you do not use email, please leave this blank.*

2. PROPOSED LEASE SITE INFORMATION

Location of Proposed Lease Site	
Town	Portland
Waterbody	Casco Bay
General Description (e.g. south of B Island)	WSW of Mackworth Island
Lease Information	
Total acreage (4-acre maximum) and lease term (3-year maximum) requested	3.38 Acres 3 year term
Type of culture (check all that apply)	☒ Bottom (no gear) ☒ Suspended (gear in the water and/or on the bottom) ☐ Net Pen (finfish)
Is any portion of the proposed lease site above mean low water?	☐ Yes ☒ No

Note: If you selected yes, you need to complete the steps outlined in the section titled: "17. Landowner/Municipal Permission Requirements".

(1)

3. GROWING AREA DESIGNATION

Directions: Information for growing area designations can be found here: https://www.maine.gov/dmr/shellfish-sanitation-management/closures/index.html

Growing Area Designation (e.g. "WL"):	Prohibited
Growing Area Section (e.g. "A1"):	WI

Note: If you are proposing to grow molluscan shellfish in waters classified as anything other than open/approved, you will need to contact the Bureau of Public Health to discuss you plans at the following email: DMRPublicHealthDiv@maine.gov

4. GENERAL LEASE INFORMATION

A. Please complete the table below and add additional rows as needed.

Name of species to be cultivated (*include both common and scientific names*)**:**	**Name and address of the source of seed stock or juveniles**	**Maximum number (or biomass) of organisms you anticipate on the site at any given time**
1. Atlantic Surf Clam Spisula Solidissima	Running Tide Harpswell, ME and DEI	1,000,000
2. Sugar Kelp-Saccharina Latissima Skinny Kelp-Saccarina Lattisima Forma Angustissima	Running Tide, all from within Maine Coastal Waters	10 lines each 350' long seeded with various kelp species listed
3. ~~Winged Kelp-Alaria~~ Esculenta Hard Clam Mercenaria Mercenaria	Running Tide, Harpswell, ~~ME~~	1,000,000
4. Soft Shelled Clam Mya Arenaria	Running Tide Harpswell, ME	1,000,000
5.S American Oysters-Crassostrea virginica	Running Tide Harpswell, ME	1,000,000

B. Do you intend to possess, transport, or sell whole or roe-on scallops? ☐ Yes ☒ No

If you answered "yes" please contact the Bureau of Public Health to discuss your plans at the following email: DMRPublicHealthDiv@maine.gov

Note: If you are proposing to grow molluscan shellfish, this application also serves as your written operational plan as required in the National Shellfish Sanitation Program (NSSP) Model Ordinance Chapter 2, and must be maintained in your files. If you wish to submit an operational plan separate from this application, please contact: DMRPublicHealthDiv@maine.gov

5. VICINITY MAP

Note: You may embed the maps within the document, or attach the maps to the end of your application. If you attach the maps, please label them according to the instructions provided below. If you attach the map, please label it: 'Vicinity Map'.

Directions: Using a NOAA Chart or USGS topographic map, show the area within a minimum of one-half mile of the proposed lease site.

The map needs to display the following:

- The waters, shore lands, and lines of mean high and mean low water within the general area of the lease
- An arrow indicating true north
- A scalebar
- The approximate lease boundaries

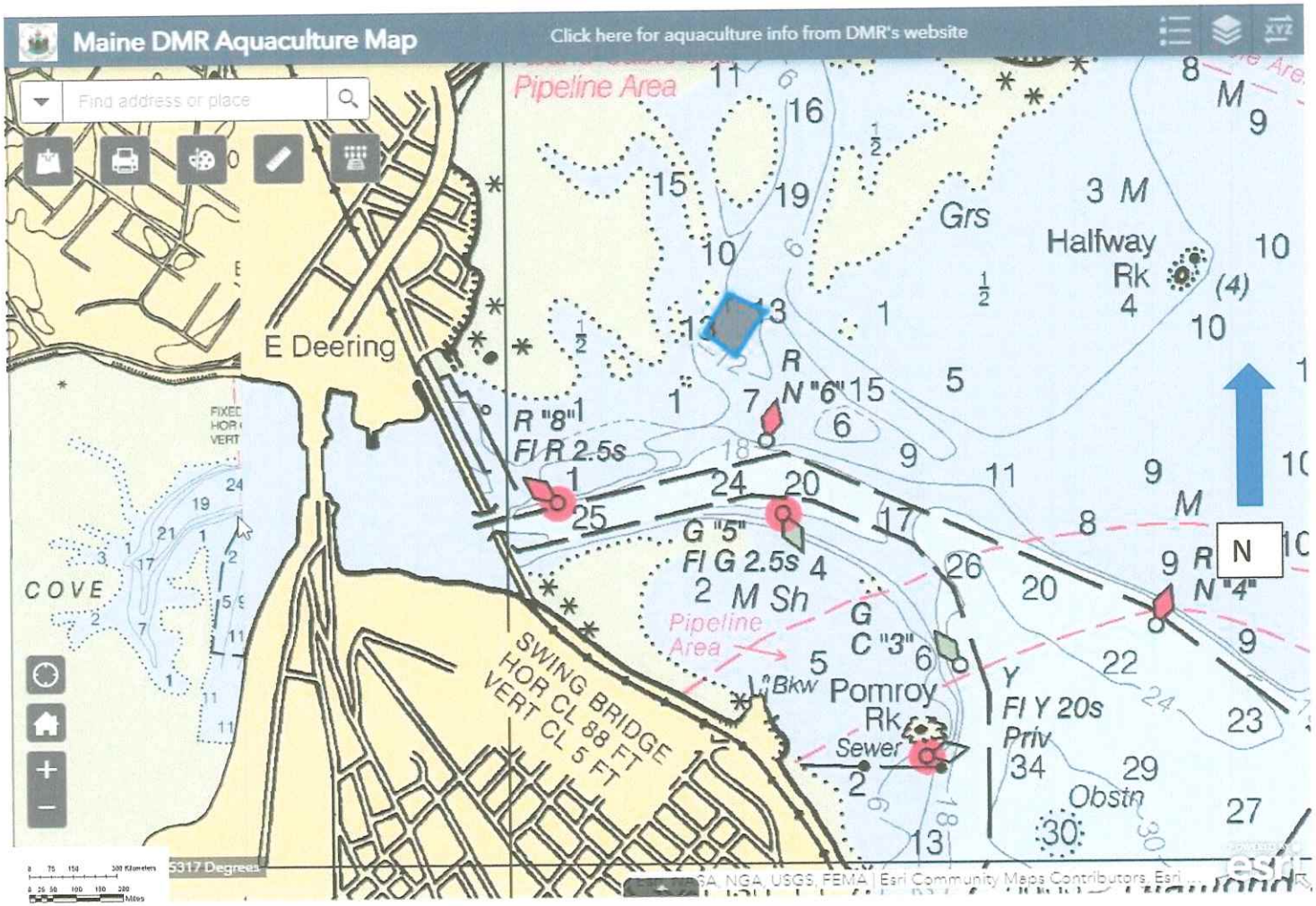
6. BOUNDARY DRAWING

Note: If you attach a drawing, please label it 'Boundary Drawing'.

Directions: Depict the boundaries of the proposed lease site. Provide a drawing with all corners, directions, and distances labeled. Provide coordinates for each corner as follows:

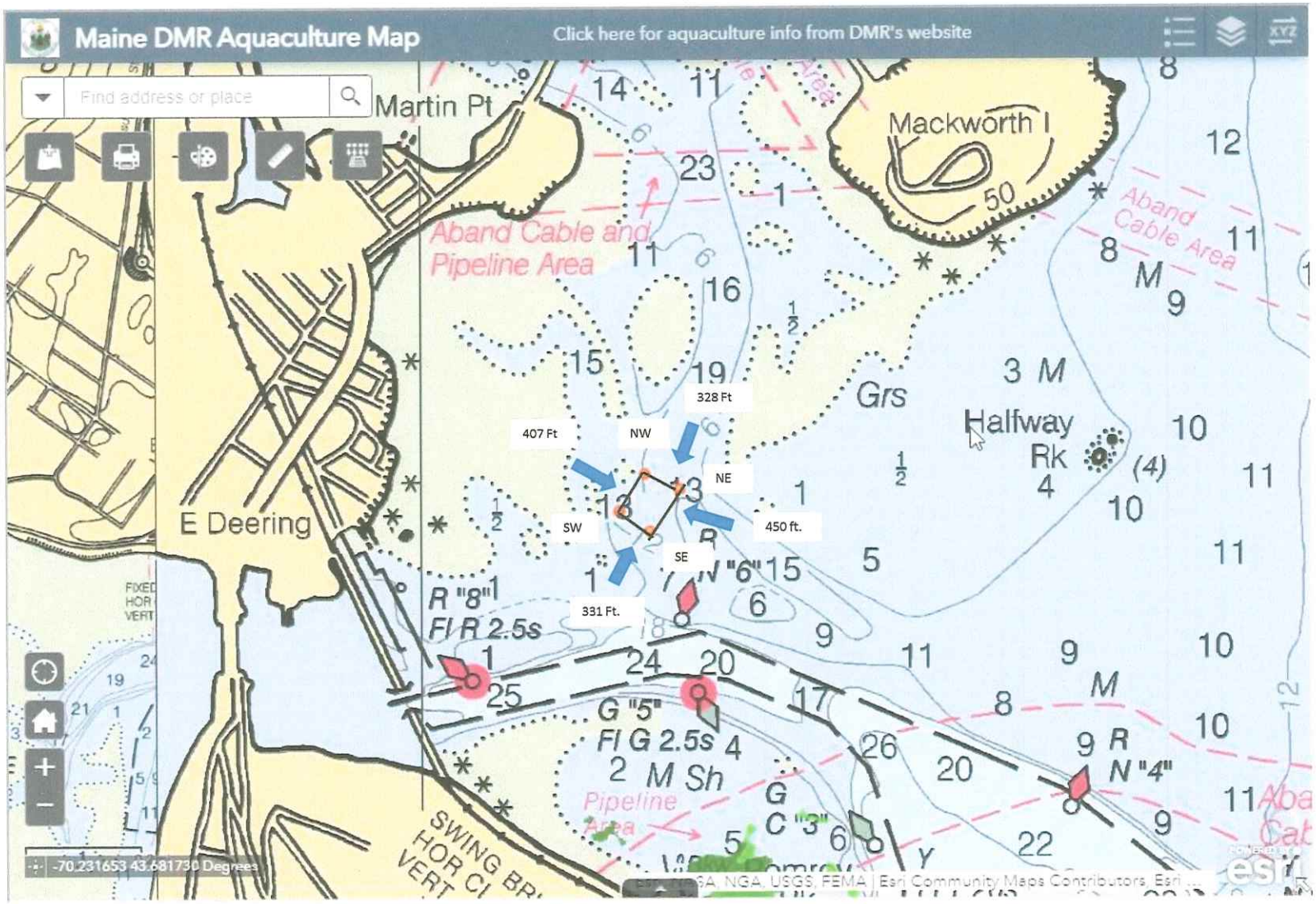
- Coordinate Description
  Provide geographic coordinates for each corner of the lease site in latitude and longitude as accurately as possible (e.g., to the nearest second or fraction of a second). Identify the datum from the map, chart, or GPS unit used to develop these coordinates. The datum will be shown on the map or chart you are using. The Coordinate Description may be provided separately from the Boundary Drawing.

Vicinity Map



Boundary Drawing

Lat	Long
NW43.6806	-70.242479
NE43.680227	-70.24132
SW43.6797	-70.243337
SE43.679203	-70.242307



7. RESEARCH PROGRAM AND OPERATIONS

Directions: If you are cultivating more than one species, you will need to provide the below information for <u>each</u> species. Please attach a separate page if needed.

A. Type of study **(check one):** ☒ Scientific Research ☐ Commercial Research

Please note:
a) Scientific research is not kept confidential.
b) Experimental leases for commercial research are not renewable. Results of commercial research are kept confidential.

B. What is the purpose of the study? If scientific, please include a detailed study design.

Excess nitrogen in estuarine and coastal environments may cause an overabundance of nutrients, which in turn can generate excessive plant growth and algal blooms, including harmful algal blooms from microalgae and cyanobacteria. This process is called eutrophication. The short life cycles of such microalgae and bacteria causes massive die-offs that result in low-oxygen zones, thereby affecting other aquatic life and the industries that depend on it (fisheries, aquaculture, tourism). The primary purpose of this study is to evaluate the cost effectiveness of growing kelp and shellfish to remove excess nitrogen. To this end, we will quantify the nitrogen content of outplanted kelp and clams as a function of grown biomass. See Attached for additional details.

C. Describe the general culture process for each species proposed.

Shellfish seed for all proposed species will be placed inside the seepa socks sleeves then placed inside the cages on the ladder configuration, and/or there will be one row of bottom bags that will have shellfish seed from all species listed inside as well to test the difference in growth patterns. Kelp will be grown on longlines. Seeded lines will be put in place no earlier than October 1st annually and removed by May 30th annually. Shellfish will be seeded in May into the bags and removed prior to reaching the maximum allowed sizes for shellfish in closed waters per DMR Chapter 2 regulation 2.95 (A)(4)(a) (.50"-.75" dependent on species) See question G for details of movement.

D. What months will the proposed activities (i.e. seeding, tending, and harvesting) occur?

Shellfish seeding will begin in May annually and will be tended 2x a month to check growth rates, fouling tending, etc. Kelp lines will be seeded in no earlier than October 1st annually, minimal to no tending occurs once seeding is done.
There will be no harvest of any product for human consumption, only periodic small sampling for testing purposes, after which the product would be destroyed/composted.

Additional Information:

B. This proposal is for scientific purposes, so please include additional details specific to the design of the study. Additional questions include:
• What specific question(s) is the study trying to answer?

Nutrient pollution is highlighted in the Casco Bay Plan 2016-2021 (CBEP's current Comprehensive Conservation and Management Plans [CCMP]) as one of four high priority Goals in the Plan. Goal 2 of the CCMP is "Reduce nutrient pollution and its impacts, including coastal acidification." This reflects the concern that portions of Casco Bay (especially waters near Portland, Maine) are approaching a nutrient tipping point, where negative impacts of nutrient loads on water quality, fisheries, and ecosystem services can grow in frequency and severity.

Nitrogen represents the primary nutrient of concern in Casco Bay, especially in the waters near the city of Portland. Twenty-two million gallons per day of treated wastewater enter Portland Harbor from the East End Wastewater Treatment Facility (EEWTF) and the nearby South Portland facility. Thirty eight combined sewer overflow (CSO) outfalls and dozens of stormwater outfalls, drain hundreds of acres of urban land discharged into local waters.

Discharges from both point and nonpoint sources contribute to excess nitrogen in Casco Bay that algae can use to fuel growth, leading to harmful algal blooms (HABs). Casco Bay has a history of HABs caused by red tide (e.g., Alexandrium fundyense). Recent years have seen an increase in other types of HABs. Frequency and duration of overgrowth of tidal flats by filamentous algae appear to have gone up. Two bloom-forming species, Karenia mikimotoi andPseudo-nitzschia sp. (both new to Maine) first bloomed in Casco Bay in 2017. Both species flourish in the presence of excess nitrogen. These species can generate low dissolved oxygen conditions and release phytotoxins hazardous to humans, fish and wildlife and birds. Therefore, nitrogen reduction strategies in Maine waters ensure a lower risk of HAB events and serve to protect livelihoods that depend on fully functioning ecosystems that underpin Maine's wild-capture and aquaculture-based fisheries.

The data obtained by this study will be used to evaluate the relative cost effectiveness of aquaculture to reduce excess nitrogen pollutant loading in Casco Bay. The marginal costs of nitrogen removal by our aquaculture-based method will be compared against costs of other currently available technologies (e.g., stormwater management/filtration with green infrastructure, wastewater treatment plant upgrades). This analysis is intended to evaluate infrastructure costs of aquaculture methods and provide context for decisions related to watershed nitrogen management expenditures that will achieve nitrogen reduction targets.

• What factors led to the proposed site being in a prohibited classification (i.e. Is that an intentional part of the design)?

Our study is intended to quantify nitrogen removal at the site of the EEWTF discharge pipe. We wanted to site our project as close to the dilution zone as possible and consulted with the Portland Harbor Master and local stakeholders to identify a site that satisfied this requirement **and** did not interfere with navigation channels, underwater cables, as well as recreational and industry users.

• What is meant by "cost effectiveness" and how will that be measured?

We will use the data obtained from this study to determine a cost per kilogram of nitrogen removed. We will compare this cost with unit costs of other nitrogen removal technologies.

• How long do you anticipate the study lasting and what will happen with the results of the study?

This study will be completed in July 2024. Kelp will be removed from site in May 2024.

Our goal is to establish a transferable model for use of kelp/shellfish for environmental remediation. Remediation of nutrient pollution via aquaculture has not previously been demonstrated in this region, with its large tides and cool waters. Co-management of kelp and shellfish offers year-round nutrient uptake, as kelp grows over the winter, while shellfish grow most during the summer. Marine-based aquaculture has strong nationwide potential as a component of nutrient trading markets for improved water quality.

This project has implications for nutrient trading, a market-based policy instrument using the same principles as cap-and-trade for air quality, to improve or maintain water quality. Trading is possible because controlling a specific pollutant has different costs associated with the method used. Nutrient trading involves exchanging pollution reduction credits from sources with low costs of pollution control to those with higher costs. We will document cost effectiveness by calculating both gross and net cost per unit nitrogen sequestered by kelp/oysters as price per kilogram of nitrogen (i.e., $USD/kg N).

The driver of pollution credit trading is a regulatory requirement, such as Total Maximum Daily Load (TMDL) under the Clean Water Act, which limits allowable discharges. No regulatory framework currently prescribes the maximum allowable nutrient load in Casco Bay. However, strong circumstantial evidence suggests Casco Bay is close to the limits of nutrient overload, as evidenced by more frequent algal blooms. Nutrient loads are expected to increase with continued development and population growth. In response, the Maine Department of Environmental Protection is developing nutrient thresholds. Combined with the regulatory flexibility in Portland's Integrated Water Resources Plan, that lays the groundwork for consideration of nutrient trading within the region.

We hope that this project will influence conversations and impact local and state regulatory regimes by demonstrating an innovative approach to nutrient remediation, which could be incentivized via nutrient trading. We will present our findings to local regulators, policy makers, and other leaders. We will also engage in media outreach, publishing articles detailing our findings in local newspapers and national media outlets.

E. What is the final disposition of the compost containing marine algae cultivated in a prohibited area? Please note that the site is very close to the boundary of a 300:1 dilution zone.

We will donate our kelp to a local producer of fertilizer and compost.

E. How often will you be at the site during seeding and harvesting periods?

We expect to be on site on average 2 times per month to check growth rates of shellfish for removal prior to exceeding size limits. Seeded kelp lines will be placed no earlier than October 1st and require little to no maintenance through the season. We expect to be on site up to 5 days per week for two weeks for the seeding and harvesting of kelp. Kelp will be harvested for testing on or before May 30th annually and destroyed/composted after testing.

F. How frequently will you visit/tend the site for routine maintenance (i.e. flipping cages, etc.)?

We anticipate very minimal routine maintenance as the shellfish as it will only be onsite for we anticipate a few months before reaching the size to where it has to be removed per regulation, and we have no plans to flip the bottom bags. Estimate on site for measuring shellfish 2X per month. Kelp requires very little tending.

G. Describe the harvesting techniques you will use. If you plan on using a drag, please provide the dimensions.

Kelp will be hauled onto a vessel by hand and winch and cut for sampling. Shellfish ladder cages will be pulled up out of the water, and shellfish seed removed as it reaches maximum allowed sizes per regulation specifics. Seed will then be moved to current LPAs NMER121, NMER221, NMER321, NMER421 and/or MAND 121, MAND221, MAND321, MAND421 or on current lease MID WCx as allowed, in open approved areas in Harpswell for remainder of grow out, minimum of 6 months. If any seed exceeds the maximum allowed sizes it would be destroyed rather than moved to open water.

H. Describe any overwintering or "off season" plans for the site. For example, will you remove gear from the site and/or deploy gear in different areas within the proposed site? Please include where gear or product will be located if moved from the site.

Kelp lines will be removed from the site from May 30th through October 1st annually and stored at our facility in either Portland or Harpswell. Shellfish cage racks will be on site from May 1st through September 30th annually. When gear is removed it will be stored on land at our facility in Portland.

I. What type of machinery (e.g. generator, drag, grading equipment, etc.) will you be using on the site? When and how often will the machinery be used?
Outside of harvesting using the winch on the boat, there will be no machinery on the site.

J. Please provide details on any predator control techniques you plan to employ, including the use of bird deterrents. Will you use commercially available or custom equipment? If commercially, available equipment, please include the brand and model names. If custom equipment, please attach a detailed schematic that includes the dimensions, materials, and function of the equipment.
None.

8. EXISTING USES

Directions: Describe the existing uses of the proposed area. Please include the amount of activity, the time of year the activity occurs, frequency, and proximity to the lease site.

A. Describe the existing uses of the proposed area in questions A.1 through A.5 below. Please include the a) type b) time of year c) frequency, and d) proximity to the lease site for each existing use.
1. Commercial Fishing
None observed during site visits and observations made throughout the summer of 2021.
2. Recreational Fishing
None observed, recreational fishing occurs closer to Mackworth Island, more then 2900' from the proposed site, as observed during multiple site visits during the summer of 2021.
3. Boating Activities (please also include the distance to any navigable channel(s) from your proposed site at low water)
None observed near proposed site. The nearest boats observed were more than 700' from the proposed site.

4. Ingress and egress (i.e. coming and going) of shorefront property owners within 1,000 feet of the proposal (e.g. docks, moorings, landing boats on shore, etc.)
The proposed site is more than 1800' from shoreline, no moorings or boat landings observed on or near the proposed site.
5. Other uses (kayaking, swimming, etc.)
None observed.

B. Are there private docks, moorings, or other access points within 1,000 feet of the proposed lease? If yes, please include approximate distance from proposed lease.
None, the nearest dock is more than 1500' from the proposed site.

C. Are there public beaches, parks, or docking facilities within 1,000 feet of the proposed lease site. If yes, please describe and include approximate distances from proposed lease.
None

D. Are there any Limited Purpose Aquaculture (LPA) licenses or aquaculture leases within 1,000 feet of your proposed lease site? If yes, please list their acronyms below. Current and pending aquaculture leases and active LPA licenses may be found here: https://www.maine.gov/dmr/aquaculture/leases/index.html
None

9. CURRENT OPERATIONS

Directions: If a question does not pertain to your proposed operations, please write **"not applicable"** or "N/A."

A. Describe your existing aquaculture operations, including the acronyms of all active leases and/or licenses.
MID WCx- Wilson Cove Oysters LLC- current experimental lease in Harpswell MID GIx2- Goose Island Oysters LLC-current experimental lease in Harpswell MODL318, MODL418, MODL518, MODL618- Current LPA's located in Yarmouth

B. What are your plans for any existing leases and/or Limited Purposed Aquaculture (LPA) licenses if the lease is granted? Will any existing leases and/or Limited Purpose Aquaculture (LPA) licenses be relinquished if the lease is granted? If so, please indicate which ones.
All listed above will continue as they are.

10. EXCLUSIVE USE

If your lease is granted, what activities would you request be excluded from occurring within the boundaries of the lease site? In your answer please address applicable commercial and recreational fishing, boating activities, and other activities you listed in the 'Existing Uses' section of this application.
No dragging within the lease boundaries. All other activities would be allowed, as long as they didn't interfere with proposed experimental activities.

11. ENVIRONMENTAL CHARACTERIZATION

Directions: Using your knowledge of the area, describe the environment of the proposed lease site. Be sure to include units of measurement in your answers (i.e. feet, cm/s).

A. What are the approximate depths at mean low water?
13 feet

B. What are the approximate depths at mean high water?
23 feet

C. Provide the approximate current speed and direction during the ebb and flow.
The approximate current speed is approximately 1-2 knots and flows SE to NW through the proposed lease application area.

D. The following questions (D.1 through D.6) may be answered in writing or by submitting a video. If you plan to submit a video, please contact the Department prior to video collection.
1. What are the bottom characteristics (mud, sand, gravel, rock, ledge or some mix, etc.)?
Soft mud bottom throughout, as observed by several dives of the site during August and September of 2021.

2. Describe the bottom topography (flat, steep rough, etc.).
Generally flat.
3. Describe marine organisms by species or common names. Based on your personal observations or other sources of information, are these species abundant, common, or rare?
A few small crabs and small fish observed during underwater observations in September 2021. All rare. Observations were made by diving as well as an underwater camera run through the site multiple times to collect video surveillance for review.
4. Are there shellfish beds or fish migration routes in the surrounding area? If so, please describe.
None.
5. Describe the presence and extent of submerged aquatic vegetation, i.e. eelgrass, within the proposed lease area. Please include the date of this observation along with the method of observation. If submerged aquatic vegetation is observed, please also describe the abundance below and sketch the limits of the beds in the vicinity map.
The nearest eelgrass bed is more than 1000' away from the proposed site as observed during a site visit via boat, and underwater camera observations in August of 2021.

6. Describe the general shoreline and upland characteristics (rocky shoreline, forested, residential, etc.)
Industrial shoreline, populated with businesses, residential, etc.

E. Is your proposed lease located within a Maine Department of Inland Fisheries and Wildlife designated Essential Habitat?

☐ Yes ☒ No

Note: The location of Essential Habitats in the State of Maine, along with information on how projects within these areas are reviewed, can be found here: https://www.maine.gov/ifw/fish-wildlife/wildlife/endangered-threatened-species/essential-wildlife-habitat/index.html

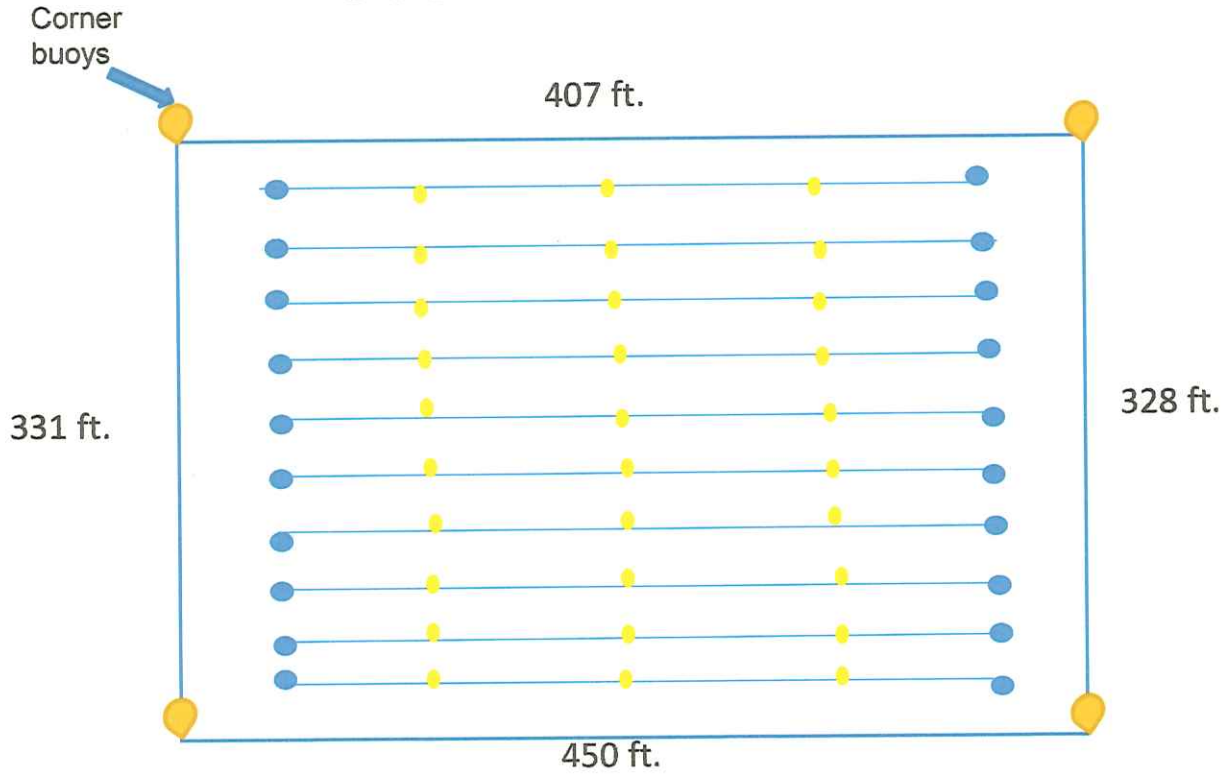
If a project is located within an Essential Habitat, applicants are strongly encouraged to contact the MDIFW Environmental Review Coordinator (John.Perry@maine.gov, phone: 207-287-5254) prior to application submission.

F. Will your operations discharge anything into the water such as feed (pellets, kelp, etc.) or chemical additives (therapeutants, chemical treatments, etc.)?

☐ Yes ☒ No

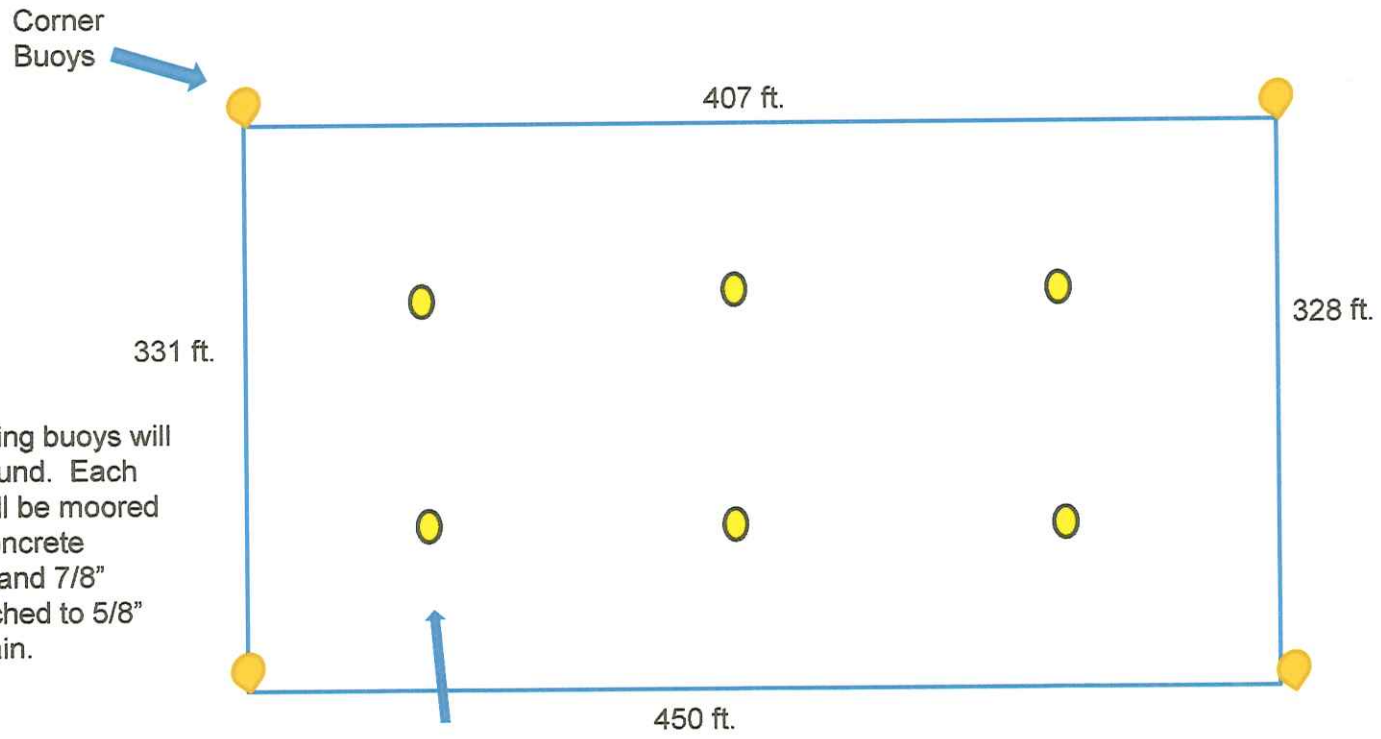
Note: If you answered yes, you must submit a video of the bottom using a method prescribed by the Department. **The video must be filmed between April 1 and November 15.** If a discharge is proposed you will also need to obtain a Maine Department of Environmental Protection (DEP) discharge permit. For information on this permit please contact DEP's Wastewater Licensing Program (Gregg.wood@maine.gov, 207-287-7693). Further sampling may be required by DMR, or DEP, depending on the characteristics of the site or the proposed activities.

Overhead View- October to May



There will be (10) 3/8" x 350' longlines for kelp, spaced 25' apart. There will be a minimum of a 30' buffer between the first row and last row of kelp lines and outer lease boundaries. Marine algae longlines will be suspended on average 7' below the surface. Surface buoys at each end, for a total of 20 surface buoys. Go deep buoys will be three per line to keep the kelp at 7' below the surface, total of 30 go deep buoys.

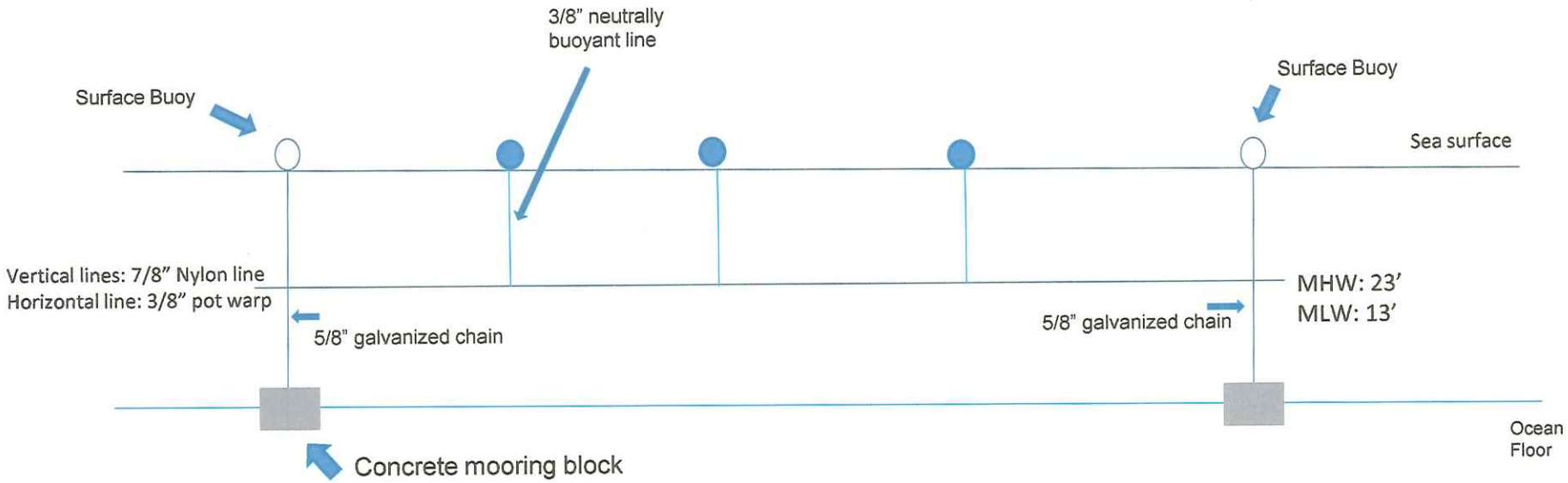
Overhead View May - October



4- corner marking buoys will remain year-round. Each corner buoy will be moored with a 600lb concrete mooring block and 7/8" nylon line attached to 5/8" galvanized chain.

18

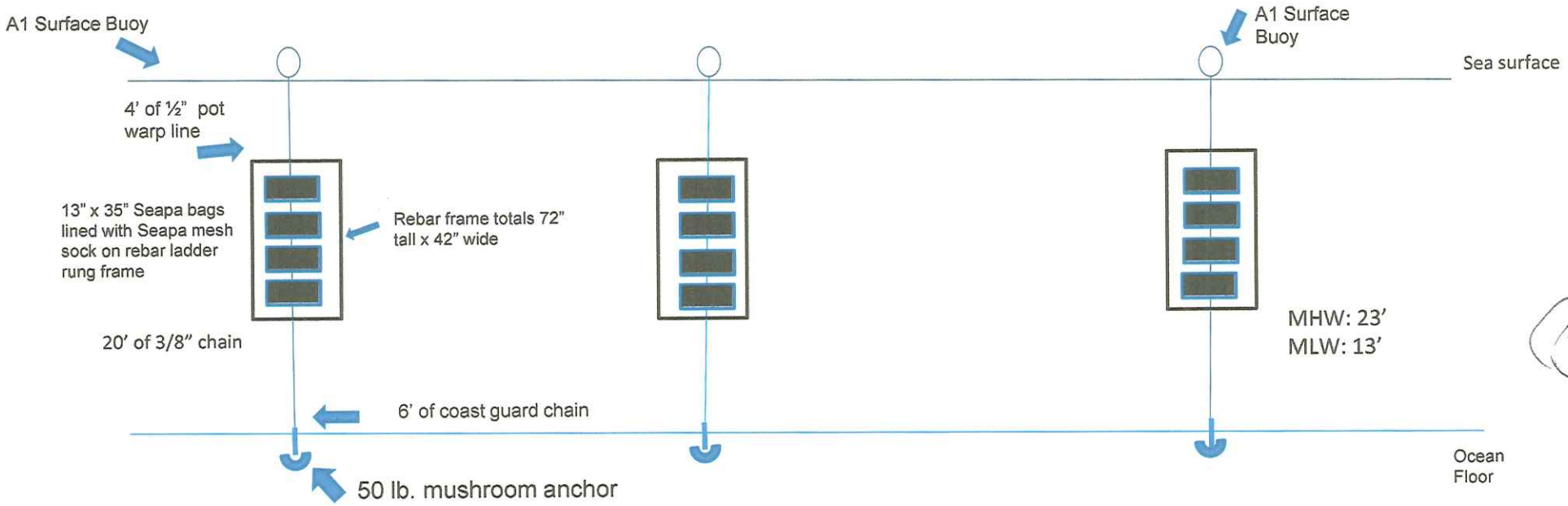
Cross Section View of Marine Algae Gear



=8" x 14" go deep buoys

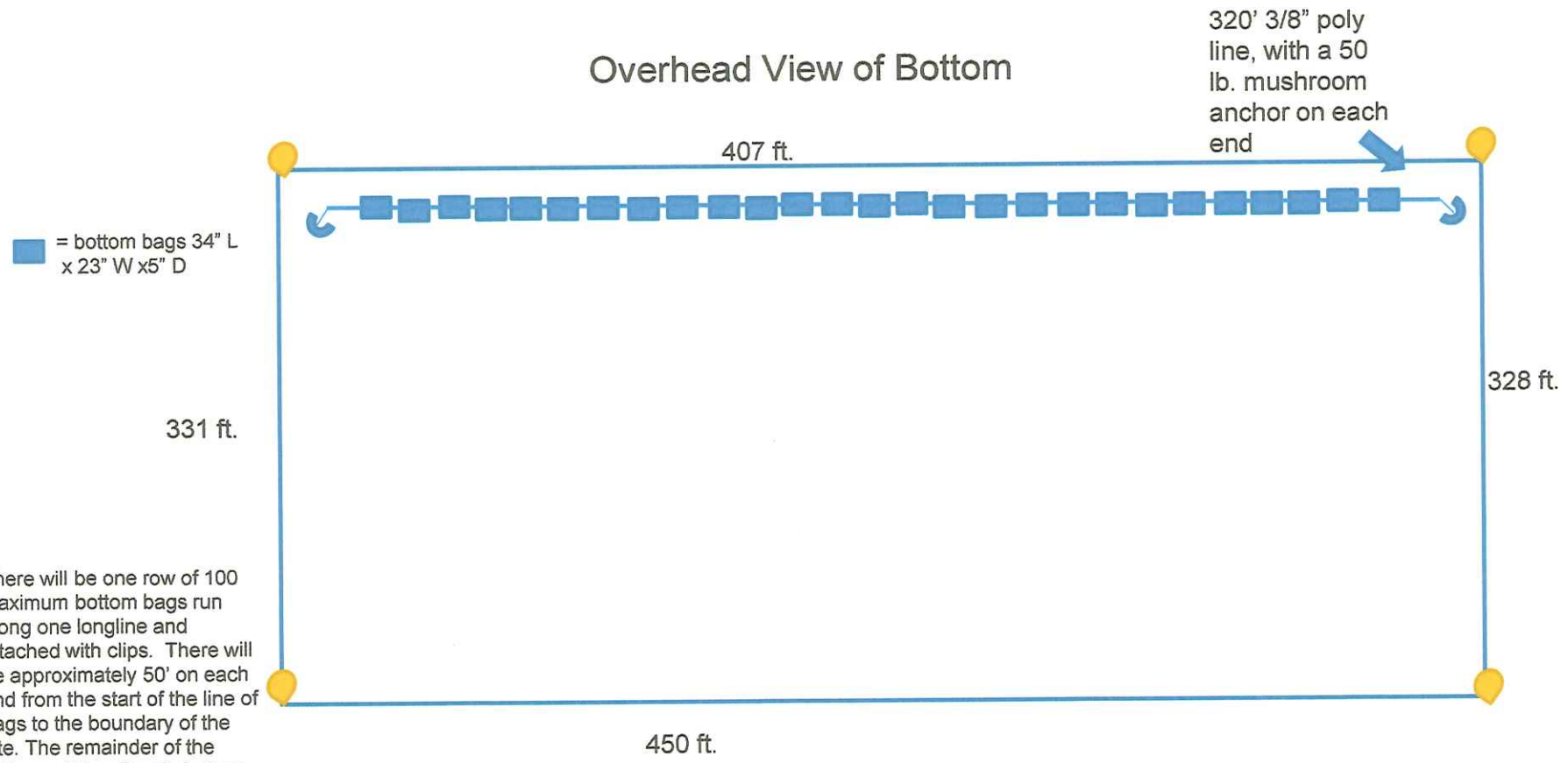
There will be a 600 lb. concrete mooring block at each end of each 350-foot-long line, total of (20). Long lines will be 7' below the surface. There will be a go deep buoy attached at equal intervals, 3 per 350' line. (30 total)

Cross Section View of Shellfish Gear



There will be a 50 lb. mushroom anchor holding down each of the 6 sets of shellfish bags in a ladder rung formation.

Overhead View of Bottom



There will be one row of 100 maximum bottom bags run along one longline and attached with clips. There will be approximately 50' on each end from the start of the line of bags to the boundary of the site. The remainder of the bottom will be directly bottom planted into the substrate all shellfish species randomly scattered.

12. STRUCTURES *(if applicable)*

If your operations require the use of cages, nets, ropes, trays, or any object (structure) other than the organism to be grown directly on the bottom or buoys to mark the corners of the lease site, you must submit an **Overhead View** and **Cross-Section View** of your gear plans. It is important to note that, unlike Limited Purpose Aquaculture (LPA) Licenses, experimental and standard leases require that all gear, including moorings, must be located within the proposed lease boundaries.

Note: You may embed the gear plans, or attach them to the end of your application. If you attach the plans, please label them according to the instructions provided below.

A) Overhead View (please label this "Overhead View"):

Directions: All dimensions need to labeled with the appropriate units (i.e. 10ft, 10in)

- Show maximum layout of gear including moorings.
- Show dimensions of entire gear layout
- Show approximate spacing between gear.
- Show lease boundaries and the location of proposed markers on all drawings.

B) Cross-Section View (please label this "Cross Section View"):

Directions: The cross-section view must show the following:

- The sea bottom
- Profile of gear in cross-section as it will be deployed
- Label gear with dimensions and materials
- Show mooring gear with mooring type, scope, hardware, and line type and size
- Water depth at mean high and mean low water

Note: Please include an additional Cross Section View, depicting the elements listed above, if there will be seasonal changes to gear layout (i.e. over wintering).

C) Gear Description

Directions: List and describe each individual gear type that you will use in the table below.

Specific Gear Type *(e.g. soft mesh bag)*	**Dimensions** *(e.g. 16"x20"x2")*	**Time of year gear will be deployed** *(e.g. Spring, Winter, etc.)*	**Maximum amount of this gear type that will be deployed on the site** *(i.e. 200 cages, 100 lantern nets, etc.)*	**Species that will be grown using this gear type**
HDPE Oyster mesh bottom bags Seapa 15liter Basket cages	34" L x 23" x 5" H w/sock liner 13"D x 35"L	Year Round April-October	100 Bags 24 Cages total	All shellfish species listed
Yellow A3 Corner Buoys Polyform	22"(L) x 18" D	Year Round	4	
Polyform A-1 Yellow Marine buoy	11" diameter x 15" tall	20- October 1-May 30th 6- summer months for shellfish	26	all kelp listed
3/8" poly Line Mushroom Anchors	320' 50lb.	year round year round	2-One on each end of long line connecting bottom bags 6- for ladder cages	
Kelp Longline 600 lb.Mooring weights Go Deep Buoys	3/8" x 350' 30" x 10" 8" x 14"	October 1-May 30th October 1-May 30th October 1-May 30th	10 lines-350' each 20 total 30 Total	all kelp listed

D) Gear Drawing (please label this "Gear Drawing").

Directions: Include a drawing of an individual piece of gear for each of the gear type(s) you plan to use. The drawing(s) needs to depict the length, width, and height of each gear type with appropriate units referenced (i.e. 10in, 10ft, etc.).

13. MARKING

Will you be able to mark your site in accordance with DMR regulations, Chapter 2.80? In part, this requires marker buoys which clearly display the lease ID and the words SEA FARM to be located at each corner of the lease.

☒ Yes ☐ No

If you answered no, explain why and suggest alternate markings.

Note: If a lease is granted, you will also be required to mark the site in accordance with appropriate US Coast Guard Regulations. If you have questions about US Coast Guard regulations contact: 1st Coast Guard District, Aids to Navigation Office.

HDPE Oyster mesh bottom bags 34" L x 23" W x 5" H

Bag Clips to attach each bag end to end

Yellow A3 Corner Buoys Polyform 22" (L) x 18" (D)

Polyform A-1 Yellow Marine buoy 11" diameter x 15" tall

50 lb. Mushroom anchors

Go Deep buoys Yellow 8" x 14"

Utilising SEAPA 'Blank' Streamline Doors.

- Perfectly fits the oval shape of the 15L basket
- No creases or lock up points for oysters to gather or grow into
- Suits intertidal and subtidal use with 1mm and 1.6mm size mesh
- Extra security on Blank End Caps using Zip Tie feature

Seapa socks

Seapa shellfish Basket cages on rebar ladder rung design

14. RIPARIAN LANDOWNERS AND SITE ACCESS

A. If your lease is within 1,000ft of shorefront land **(which extends to mean low water or 1,650 ft. from shore, whichever is less, according to NOAA charts)**, the following supporting documents are required:

1. A labeled copy of a tax map(s) depicting the location of the proposed lease site and including the following elements:
   - Label the map "Tax Map: Town of (name of town)."
   - Legible scale
   - Tax lot numbers clearly displayed
   - The boundaries of the proposed lease

2. Please use the Riparian Landowner List (included on the next page) to list the name and address of every shorefront landowner within 1,000ft of the proposed lease site. Have the tax collector or clerk of the municipality certify the list. Refer to the riparian determination guidance document to ensure all riparian landowners are included: https://www.maine.gov/dmr/aquaculture/forms/documents/RiparianDetermination.pdf

3. If any portion of the site is intertidal you need to complete the steps outlined in "17. Landowner/Municipal Permission Requirements".

B. Will your access to the lease area be across riparian land?

☐ Yes X☒ No

Note: If you selected yes, you will need to complete the landowner permission requirements included in "17. Landowner/Municipal Permission Requirements" of this application.

C. How will you access the proposed site?

Vessels based out of Portland

STATE OF MAINE
DEPARTMENT OF MARINE RESOURCES
21 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0021

JANETT. MILLS
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

– RIPARIAN OWNERS LIST –

*THIS LIST MUST BE **CERTIFIED** BY THE TOWN CLERK*

On this list, please include the map number, lot number, and the current owners' names and mailing addresses for all shorefront parcels within 1,000 feet of the lease site. It is the applicant's responsibility to assemble the information for the Town Clerk to certify. The Town Clerk *only* certifies that the information is correct according to the Town's records. Once you have completed the form, ask the Town Clerk to complete the certification section below. If riparian parcels are located within more than one municipality, provide a separate, tax map and certified riparian list for each municipality.

TOWN OF: FALMOUTH

MAP #	LOT #	Landowner name(s) and address(es)
R02	012	MAINE, STATE OF - GOVERNOR BAXTER STATE
		74 STATE HOUSE STATION, AUGUSTA, ME 04333

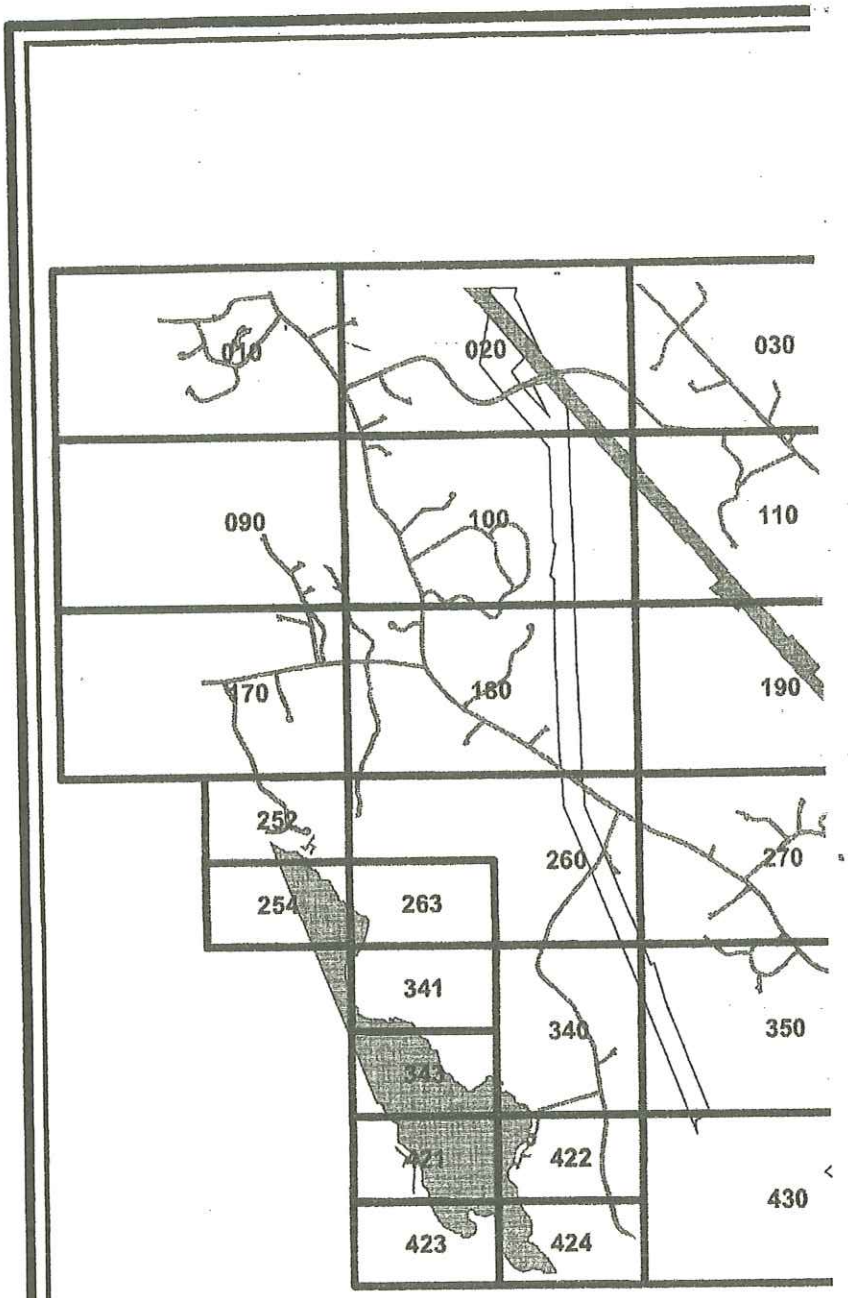
MAP #	LOT #	Landowner name(s) and address(es)

Please use additional sheets if necessary and attach hereto.

CERTIFICATION

I, Ellen Planer, Town Clerk for the Town of Falmouth, certify that the names and addresses of the property owners listed above, as well as the map and lot numbers, are those listed in the records of this municipality and are current as of this date.

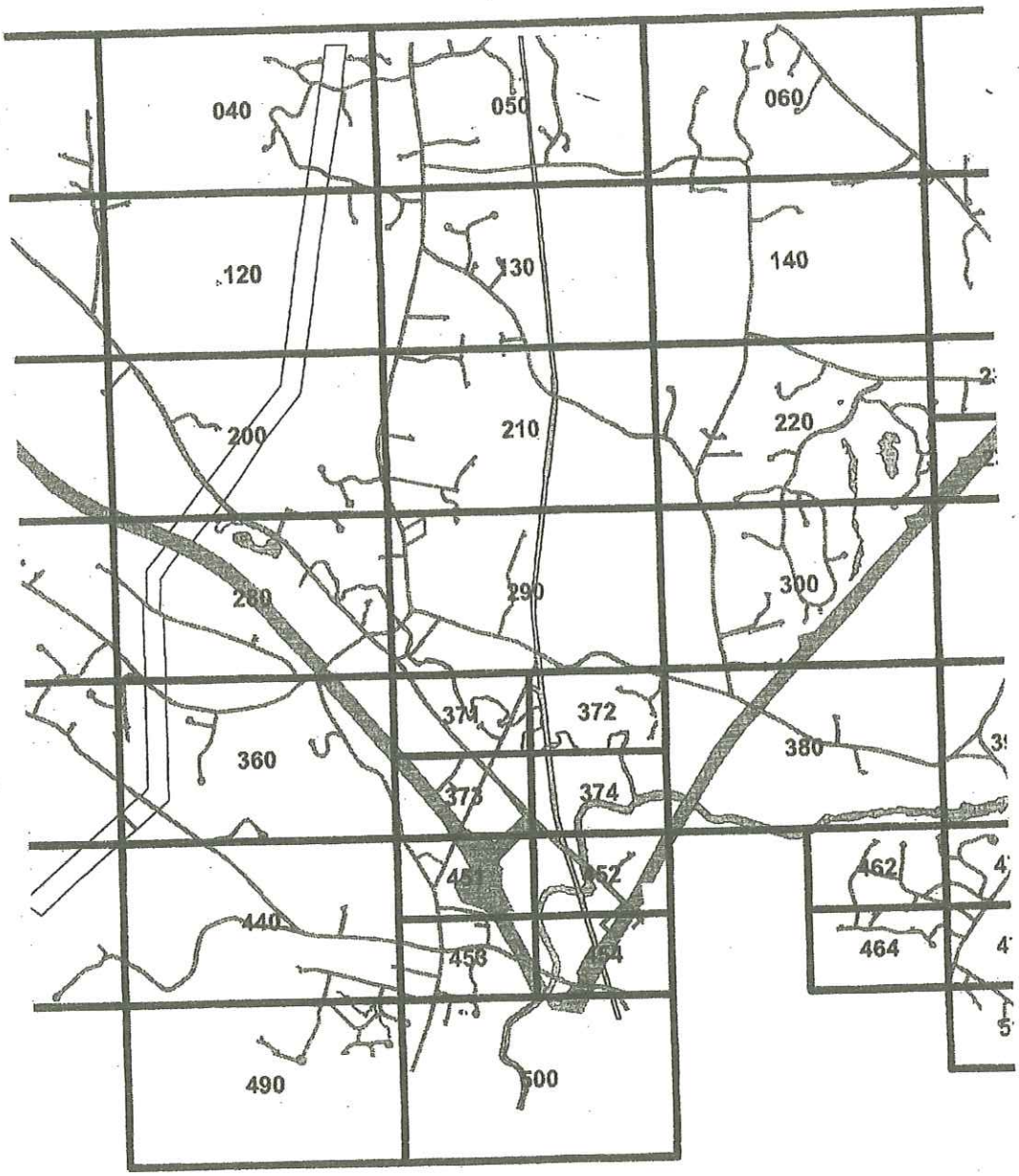
SIGNED: Ellen Planer DATE: 11-15-2021



Maps Prepared by: Spatial Alternatives
207.846.2355
www.spatialalternatives.com

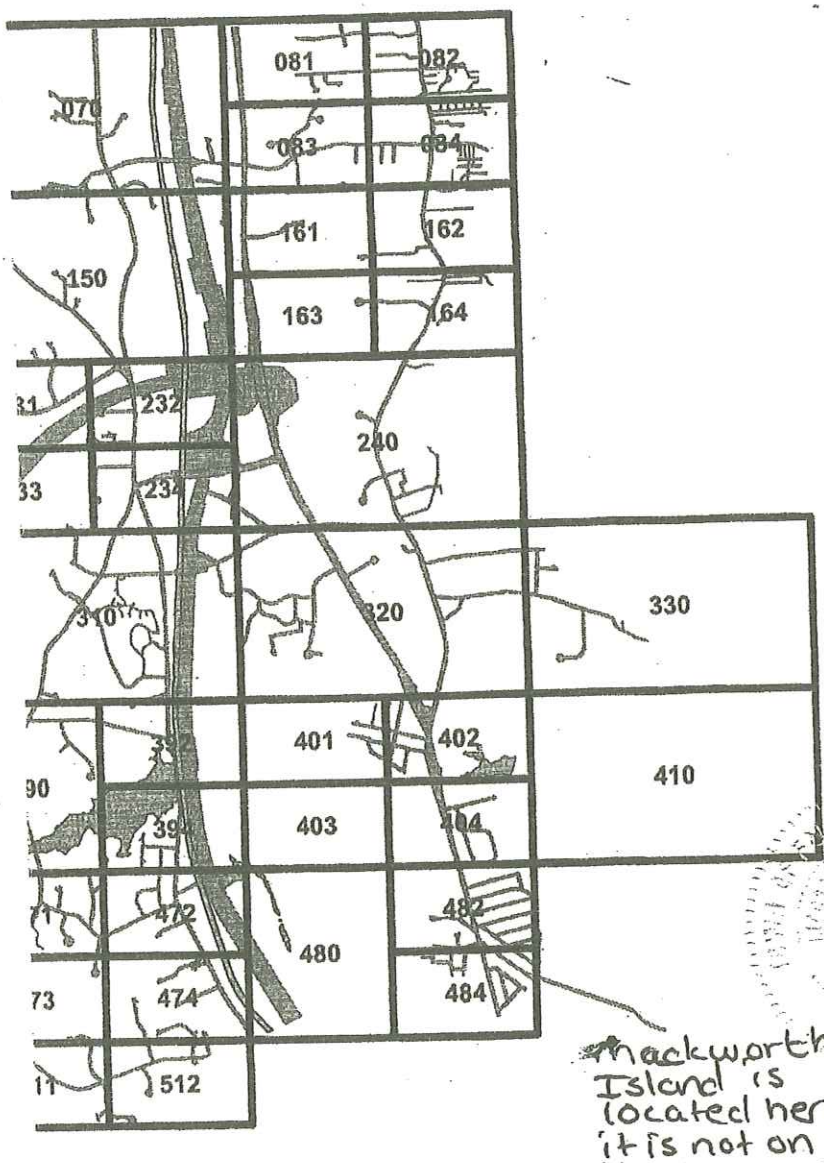
Tax Sheets are intended for assessing purposes only.
Boundary locations are approximate and
should not be used for conveyance of property.

Legend
Parcels
Roads
Railroad
Water



Town of Falmouth, Maine

0 0.5 1 Miles



161 Red numbers represent tax sheet designation. Limits of tax sheets are represented by the red grid lines.

U16 Blue numbers represent the original tax map numbers. Limits of the original tax maps are distinguished by the various colors.

Falmouth Tax Sheet

Index

Map updated to: April 1, 2020

RIPARIAN LANDOWNER LIST

*THIS LIST MUST BE **CERTIFIED** BY THE TOWN CLERK*

On this list, please include the map number, lot number, and the current owners' names and mailing addresses for all shorefront parcels within 1,000 feet of the lease site. It is the applicant's responsibility to assemble the information for the Town Clerk to certify. The Town Clerk *only* certifies that the information is correct according to the Town's records. Once you have completed the form, ask the Town Clerk to complete the certification section below. If riparian parcels are located within more than one municipality, provide a separate, tax map and certified riparian list for each municipality.

TOWN OF: Portland

MAP #	LOT #	Landowner name(s) and address(es)
		See Attached List

Please use additional sheets if necessary and attach hereto.

CERTIFICATION

I, _____,Town Clerk for the Town of _____ certify that the names and addresses of the property owners listed above, as well as the map and lot numbers, are those listed in the records of this municipality and are current as of this date.

SIGNED: _____ **DATE:** _____

RIPARIAN LANDOWNER LIST

*THIS LIST MUST BE **CERTIFIED** BY THE TOWN CLERK*

On this list, please include the map number, lot number, and the current owners' names and mailing addresses for all shorefront parcels within 1,000 feet of the lease site. It is the applicant's responsibility to assemble the information for the Town Clerk to certify. The Town Clerk *only* certifies that the information is correct according to the Town's records. Once you have completed the form, ask the Town Clerk to complete the certification section below. If riparian parcels are located within more than one municipality, provide a separate, tax map and certified riparian list for each municipality.

TOWN OF: Portland

MAP #	LOT #	Landowner name(s) and address(es)
		See Attached List
434	C001001	Martins Point Health Care, PO Box 9746, Portland, ME 04104
434	C003001	Atlantic Properties, LLC, 190 US Route 1 #122, Falmouth, ME 04105

Note: Parcels C001001 and C003001 added by DMR after consultation with City of Portland.

Please use additional sheets if necessary and attach hereto.

CERTIFICATION

I, Katherine Jones, Town Clerk for the Town of Portland certify that the names and addresses of the property owners listed above, as well as the map and lot numbers, are those listed in the records of this municipality and are current as of this date.

SIGNED: Katherine Jones City Clerk **DATE:** 11/23/2021

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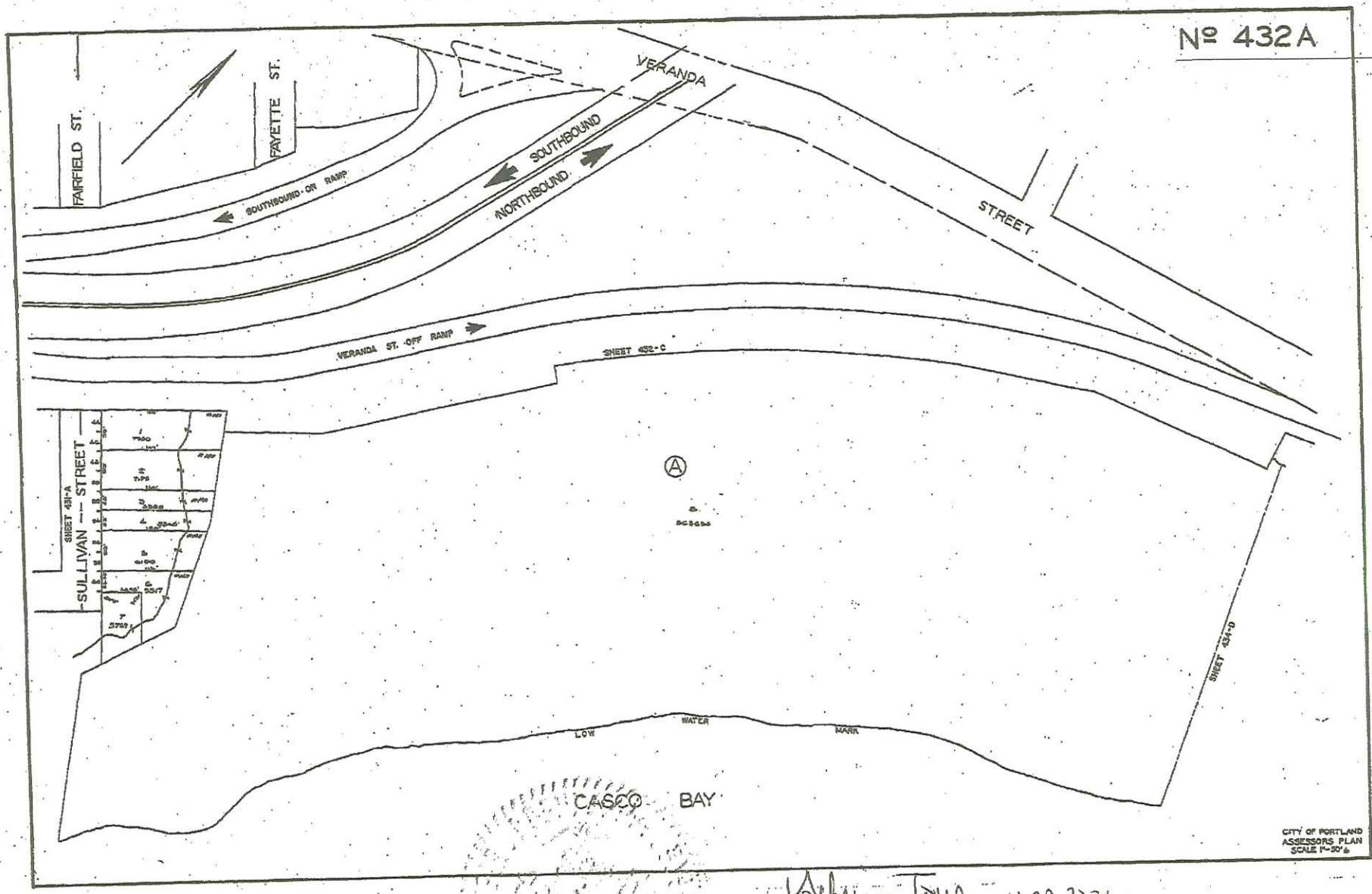
Riparian List - Portland

431	G003001	BONARRIGO LISA & CHRISTOPHER BRUNI JTS	32 LENNOX ST	PORTLAND	ME	4103
430	A010001	ZUKOWSKI TODD J & LISA M ESPOSITO JTS	52 BERWICK ST	PORTLAND	ME	4103
431	C015001	ENGEBRETH AARON & KATHERINE CALDWELL JTS	69 MORNING ST # A	PORTLAND	ME	4101
432A	A006001	WOODHEAD JOHN M	1276 N WAYNE ST # 707	ARLINGTON	VA	22201
430	A023001	STATE OF MAINE		AUGUSTA	ME	4333
430	B010001	FLAHERTY MICHAEL	45 BERWICK ST	PORTLAND	ME	4103
431	B001001	ARKEL ADAM H	7015 MEADOW LN	CHEVY CHASE	MD	20815
431	B002001	PEREDY TAMAS R & MARY FRANCES FOURNET PEREDY JTS	227 COLONY POINT RD S	SAINT PETERSBURG	FL	33705
431	B007001	FOURNET MARY FRANCES TRUSTEE	227 COLONY POINT RD S	SAINT PETERSBURG	FL	33705
432A	A007001	VICKERSON CARL D & HEATHER L VICKERSON JTS	62 SULLIVAN ST	PORTLAND	ME	4103
431	B005001	MILLER NINA A & MICHAEL J MILLER JTS	76 WATSON ST	PORTLAND	ME	4103
431	G001001	STARK RICHARD IRVING JR TRUSTEE	11 KENDALL ST	PORTLAND	ME	4103
431	G002001	YOUNG GREGORY A	5 KENDALL ST	PORTLAND	ME	4103
447	A001001	HERITAGE ACQUISTION CORP	4 GATEHALL DR STE 110	PARSIPPANY	NJ	7054
432A	A007001	VICKERSON CARL D & HEATHER L VICKERSON JTS	62 SULLIVAN ST	PORTLAND	ME	4103
431	O001001	State OF MAINE		AUGUSTA	ME	4333
432	A008001	STATE OF MAINE		AUGUSTA	ME	4333
431	B006001	ALBERT MONIQUE + PHILLIP ALAN WHITE JTS	4 ISLAND STREET	PORTLAND	ME	4103
431	C014001	THOMAS J. REPETA	75 WATSON ST.	PORTLAND	ME	4103
431	F009001	DAWN L. GAUDREAU	14 KENDALL ST	PORTLAND	ME	4103
430	F001001	STATE OF MAINE		AUGUSTA	ME	4333
430	A009001	STEPHEN ANDREW R. + E.J. HILARY JTS	25 MIDDLE STREET	PORTLAND	ME	4101
431	G004001	LISA BONARRIGO + BRUNI CHRISTOPHER JTS	32 LENNOX STREET	PORTLAND	ME	4103
430	B015001	MAINE YACHT CENTER LLC	100 KENSINGTON ST	PORTLAND	ME	4103
430	B013001	MAINE YACHT CENTER LLC	100 KENSINGTON ST	PORTLAND	ME	4103
430	B017001	STATE OF MAINE		AUGUSTA	ME	4333
447	A002001	HERITAGE ACQUISITION CORP	4 GATEHALL DR. STE 110	PARSIPPANY	NJ	7054

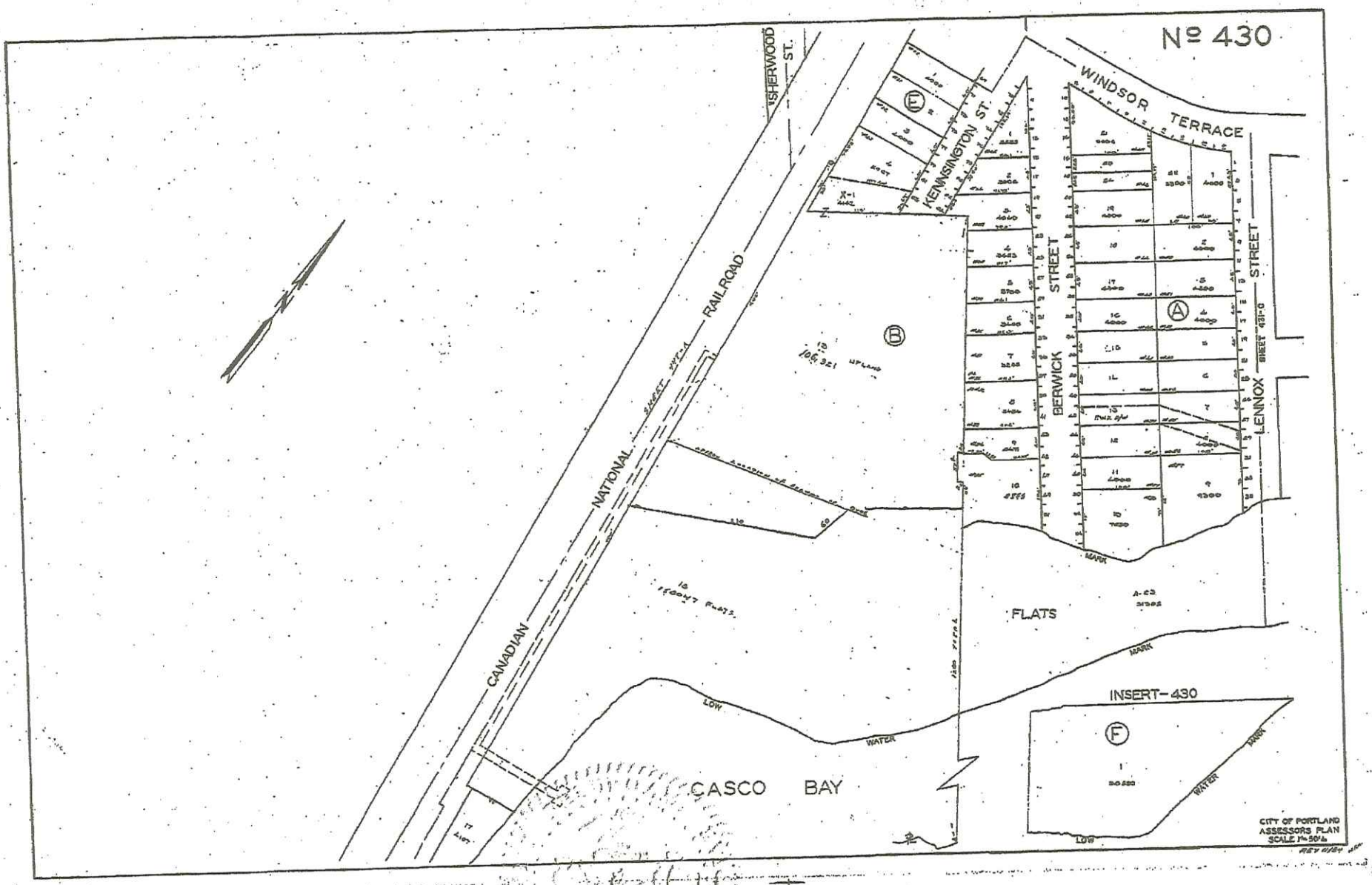
(52)

Katherine Jones City Clerk 11-23-2021

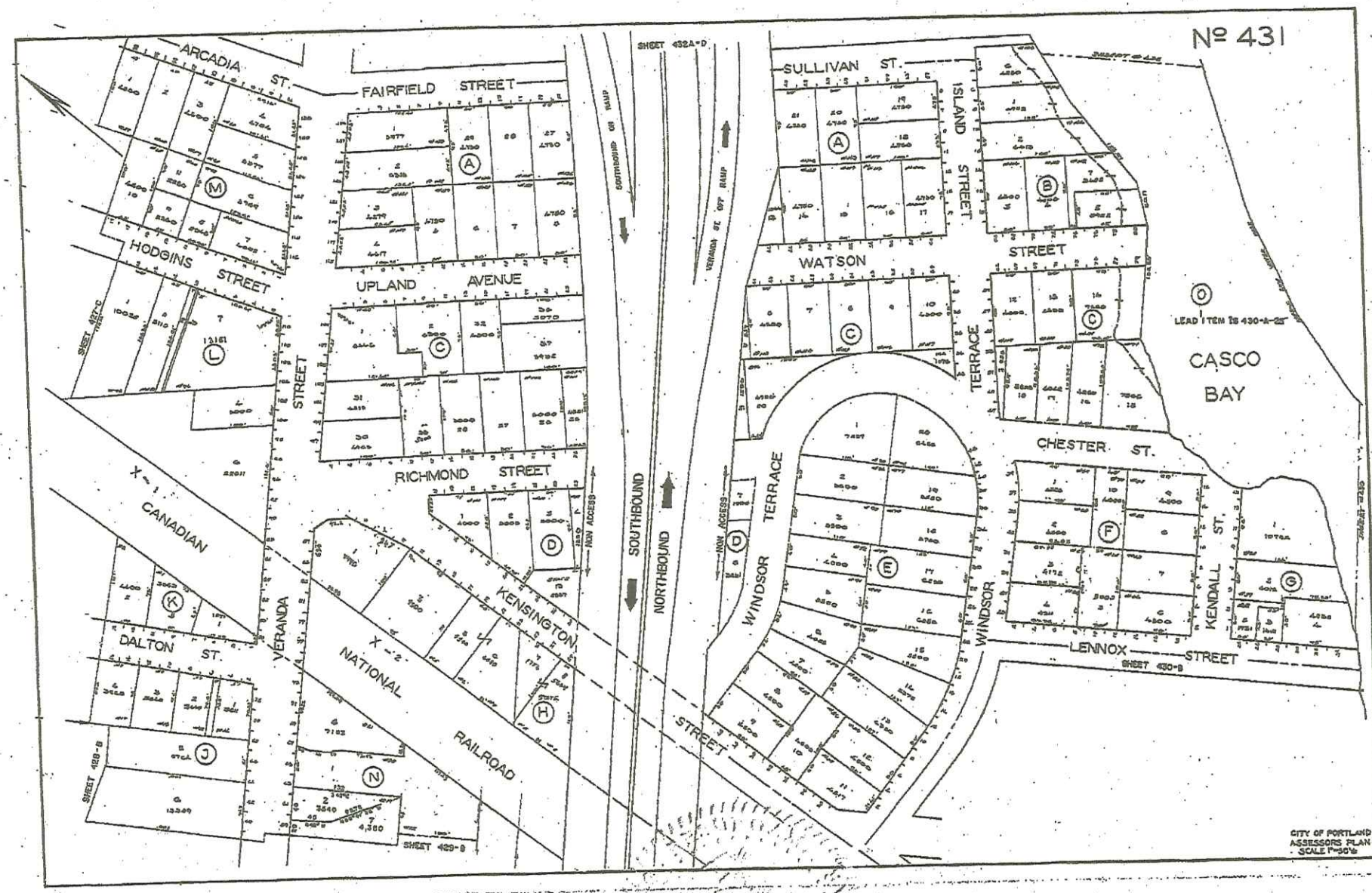


Katherine Jones
City Clerk 11-23-2024

20



Kathryn Jones City Clerk 11-23-2024



Katherine L. Jones 11-23-2024
City Clerk

(86)

15. ESCROW ACCOUNT OR PERFORMANCE BOND

Check the category that describes your operation:

Check Here	Lease Category	Amount of Required Escrow or Performance Bond
☐	**No gear/structure, no discharge**	None
☐	**No gear/structure, discharge**	$500.00
☐	**≤ 400 square feet of gear/structure, no discharge**	$1,500.00
☒	**>400 square feet of gear/structure, no discharge**	$5,000.00*
☐	**Gear/Structure, discharge**	$25,000.00

*DMR may increase the bond/escrow requirements for leases with more than 2,000 feet of structure.

I, (*printed name of applicant*) ___Matthew Odlin_____ have read DMR Aquaculture Regulations 2.64(10) (D) and if this proposed lease is granted by DMR I will either open an escrow account or obtain a performance bond, depending on the category of lease.

Matthew Odlin President

Applicant Signature

1/14/2022

Date

Note: *Add title if signing on behalf of a corporate applicant.*

ADDITIONAL APPLICANTS: Each applicant must sign this section indicating that they will open an escrow account or obtain a performance bond. Use the space below for additional persons listed on the application. You may attach additional pages, if necessary.

16. APPLICANT SIGNATURE PAGE

I hereby state that the information included in this application is true and correct. I have also read and understand the requirements of the Department's rules governing aquaculture and the application instructions pertaining to the experimental lease process.

Printed name: Matthew Odlin

Title (*if corporate applicant*): President

Signature: _____ Date: 1/14/2022

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Note:

- All applicants must sign and date this page. Please use the space below, if additional signatures are required.
- Corporate applicants, please be sure to include the title (i.e. President, Treasurer, etc.) of the individual(s) signing on the company's behalf.

CITY OF PORTLAND
Housing and Economic Development Dept.

September 28, 2021

Commissioner Keliher
Department of Marine Resources
21 State House Station
Augusta, ME 04333

Re: Letter of Support for Restorative Aquaculture LLC's experimental aquaculture lease for scientific research

Dear Commissioner Keliher,

I am pleased to submit this letter of support for Restorative Aquaculture LLC's experimental aquaculture lease application in Portland Harbor, to study the potential of bivalves and kelp to remove nitrogen in Casco Bay.

The City of Portland Housing and Economic Development Department houses the Waterfront Coordinator program for the city in recognition of the importance of maritime issues to the economic wellbeing of the City. Water quality is the foundation of Portland's marine economy in seafood and recreation, as well as the overall quality of life for all Portlanders. Finding innovative pathways to improve water quality, including the removal of excess nitrogen, is critical to our economy moving forward. Likewise, the innovation itself holds tremendous promise for our economic future. By supporting new thinking and new technology, we support new exportable industries that will keep Portland viable as a maritime community engaged in maritime enterprise for future generations.

The New England Environmental Finance Center, Casco Bay Estuary Partnership, and Restorative Aquaculture LLC, are partnering on a grant to study the potential of aquaculture crops to remove nitrogen and reduce the likelihood of harmful algal blooms in Casco Bay. The City of Portland is supportive of these efforts, and supports Restorative Aquaculture LLC's application for an experimental lease site in Portland Harbor to carry out this research.

This project aligns with the objectives of the City of Portland and South Portland's combined climate action plan, *One Climate Future*, and Maine's climate action plan, *Maine Won't Wait*, to take steps to mitigate climate change effects and adapt to changes using nature-based solutions whenever possible.

Restorative Aquaculture LLC has conducted outreach to local stakeholders as well as the Portland Harbor Master to select co-ordinates that will minimize user conflict, and has adopted a

growing schedule that takes place in the lobstering off-season, to further diminish the risk of user conflict. The City of Portland supports the lease siting and hopes that this application sees its way smoothly through the leasing process.

The results of this project will add one more option to the menu of solutions to reduce harmful algal blooms in Maine waters and will be invaluable information that will help us comply with possible future regulations that may limit nitrogen loading to the Bay. The City of Portland supports this project's innovative approach to prepare for a more resilient future.

Sincerely,

William B. Needelman
Waterfront Coordinator
City of Portland, Maine

MAINE DEPARTMENT OF MARINE RESOURCES
Aquaculture Division, 21 State House Station, Augusta, ME 04333-0021 (207) 624-6567

CORPORATE APPLICANT FORM
For Standard and Experimental Aquaculture Lease Applications

Corporations or partnerships that apply for aquaculture leases in the State of Maine must complete this form. Corporations must submit information as requested under A. Corporate Applicant. Partnerships must submit information as requested under B. Partnership Applicant.

A. Corporate Applicant
Note: You must attach a copy of the Articles of Incorporation (Inc.) or Certificate of Formation (LLC) to your application.

1. Name of Corporation: Restorative Aquaculture LLC

2. Date of incorporation: – October 21, 2020 State of incorporation: Maine

3. List the names, addresses, and titles of all officers:

Name	Address	Title
Matthew Odlin	P.O. Box 10304 Portland, ME	Owner

Please use additional sheets if necessary and attach to the application.

4. List the names and addresses of all directors/members:

Name	Address

Please use additional sheets if necessary and attach to the application.

5. Has the corporation, or any stockholder, director, or officer applied for an aquaculture lease for Maine lands in the past? ☒ Yes ☐ No MID WCx Active Experimental lease, MID GIx2 Active Experimental Lease, Current pending application for Standard lease for Restorative Aquaculture, in Harpswell

If you selected "yes," please indicate who applied for the lease and the status of the application or lease.

6. List the names and addresses of all stockholders who own or control at least 5% of the outstanding stock and the percentage of outstanding stock currently owned or controlled by each stockholder.

Name	Address	Percentage of Owned Stock
Matthew Odlin	P.O. Box 10304 Portland ME	100

Please use additional sheets if necessary and attach to the application.

7. List the names and addresses of stockholders, directors, or officers owning an interest, either directly or beneficially, in any other Maine aquaculture leases, as well as the quantity of acreage from existing aquaculture leases attributed to each such person. If none, write, "None."

Name	Address	Lease Acronym	Acreage
Matthew Odlin	P.O Box 10304 Portland ME	MID GIx2	3.28 Acres
Matthew Odlin	P.O. Box 10304 Portland, ME	MID WCx	3.2 acres

Please use additional sheets if necessary and attach to the application.

8. Has the corporation or any officer, director, member, or shareholder listed in item 5 above ever been arrested, indicted, convicted of, or adjudicated to be responsible for any violation of any marine resources or environmental protection law, whether state or federal?

☐ Yes ☒ No

If you selected "yes", please provide details.

File No. 20213141DC Pages 2
Fee Paid $ 175
DCN 2202967900009 DLLC
-----FILED----------
10/21/2020

Julie L. Flynn
Deputy Secretary of State

A True Copy When Attested By Signature
Julie L. Flynn
Deputy Secretary of State

MAINE
LIMITED LIABILITY COMPANY

STATE OF MAINE

CERTIFICATE OF FORMATION

Pursuant to 31 MRSA §1531, the undersigned executes and delivers the following Certificate of Formation:

FIRST: The name of the limited liability company is:

Restorative Aquaculture, LLC

(A limited liability company name must contain the words "limited liability company" or "limited company" or the abbreviation "L.L.C.," "LLC," "L.C." or "LC" or, in the case of a low-profit limited liability company, "L3C" or "l3c" – see 31 MRSA 1508.)

SECOND: Filing Date: (select one)

☑ Date of this filing; or
☐ Later effective date (specified here): _____

THIRD: Designation as a low profit LLC (Check only if applicable):

☐ This is a low-profit limited liability company pursuant to 31 MRSA §1611 meeting all qualifications set forth here:

A. The company intends to qualify as a low-profit limited liability company;

B. The company must at all times significantly further the accomplishment of one or more of the charitable or educational purposes within the meaning of Section 170(c)(2)(B) of the Internal Revenue Code of 1986, as it may be amended, revised or succeeded, and must list the specific charitable or educational purposes the company will further;

C. No significant purpose of the company is the production of income or the appreciation of property. The fact that a person produces significant income or capital appreciation is not, in the absence of other factors, conclusive evidence of a significant purpose involving the production of income or the appreciation of property; and

D. No purpose of the company is to accomplish one or more political or legislative purpose within the meaning of Section 170(c)(2)(D) of the Internal Revenue Code of 1986, or its successor.

FOURTH: Designation as a professional LLC (Check only if applicable):

☐ This is a professional limited liability company* formed pursuant to 13 MRSA Chapter 22-A to provide the following professional services:

_____
(Type of professional services)

45

FIFTH: The Registered Agent is a: (select **either** a Commercial or Noncommercial Registered Agent)

☐ Commercial Registered Agent CRA Public Number: _____

_____
(Name of commercial registered agent)

☑ Noncommercial Registered Agent

David E. Schneider, Esq.
(Name of noncommercial registered agent)

100 Middle Street, Portland, ME 04101
(physical location, not P.O. Box – street, city, state and zip code)

PO Box 9729, Portland, ME 04104-5029
(mailing address if different from above)

SIXTH: Pursuant to 5 MRSA §105.2, the registered agent listed above has consented to serve as the registered agent for this limited liability company.

SEVENTH: Other matters the members determine to include are set forth in the attached Exhibit _____, and made a part hereof.

****Authorized person(s)**

Dated October 20, 2020

_____
(Signature of authorized person)

Justin Gifford
(Type or print name of authorized person)

_____
(Signature of authorized person)

_____
(Type or print name of authorized person)

***Examples** of professional service limited liability companies are accountants, attorneys, chiropractors, dentists, registered nurses and veterinarians. (This is not an inclusive list – see 13 MRSA §723.7)

****Pursuant to 31 MRSA §1676.1.A, Certificate of Formation **MUST** be signed by at least one authorized person.

The execution of this certificate constitutes an oath or affirmation under the penalties of false swearing under 17-A MRSA §453.

Please remit your payment made payable to the Maine Secretary of State.

Submit completed form to:

Secretary of State
Division of Corporations, UCC and Commissions
101 State House Station
Augusta, ME 04333-0101
Telephone Inquiries: **(207) 624-7752** Email Inquiries: CEC.Corporations@Maine.gov

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