

**From:** [Ralph Riccio](#)  
**To:** [BrownScott, Jennifer](#)  
**Cc:** [Kelly Toy](#); [schitwood@jamestowntribe.org](mailto:schitwood@jamestowntribe.org)  
**Subject:** Shellfish Farming Methods  
**Date:** Friday, December 4, 2015 2:00:45 PM  
**Attachments:** [Dungeness Project Drawings final.pdf](#)  
[NWP 48 PCN Dungenesslease2015 final.pdf](#)  
**Importance:** High

---

Hello Jennifer,

I received your message this afternoon and wanted to get back to you before the weekend. I am attaching a copy of the Nationwide Permit 48 application and Project Drawings that have been submitted to the Army Corps of Engineers on November 10th. Any comments from the Refuge will be taken into consideration as we move forward with the standard process for attaining a Nationwide Permit 48.

I hope you are having a festive holiday season.

Ralph

Ralph Riccio

Jamestown S'Klallam Tribe

1033 Old Blyn Hwy

Sequim WA, 98382

Shellfish Biologist/DSO

Office: 360-681-4630

Fax: 360-681-4611

Cell: 360-460-3240

[rriccio@jamestowntribe.org](mailto:rriccio@jamestowntribe.org)

# **Nationwide Permit 48-Project Drawings Oyster Aquaculture Location and Methods**

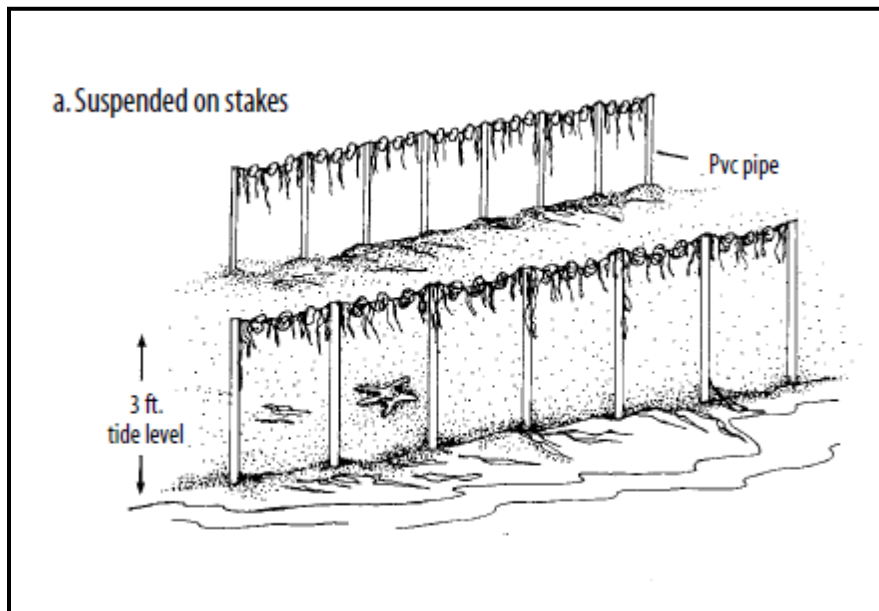
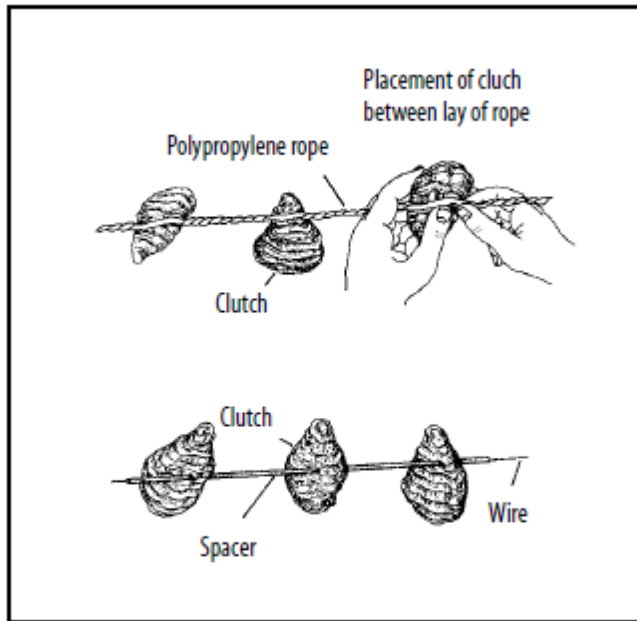
## **On-bottom Beach Culture**



## **Oyster Fence**

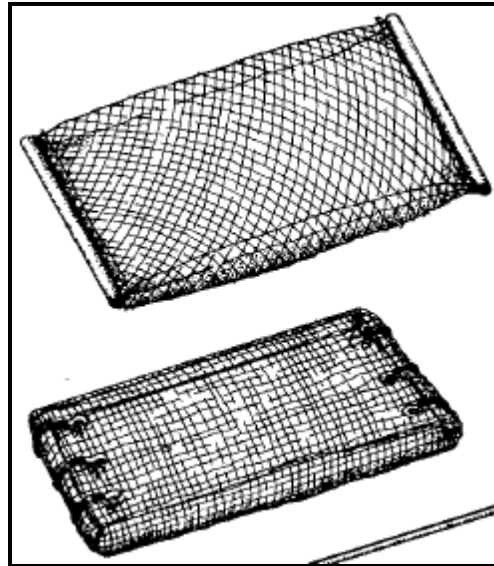


## Long Line Culture





## Bag Culture



## On-bottom Bag Culture



### Rack and Bag



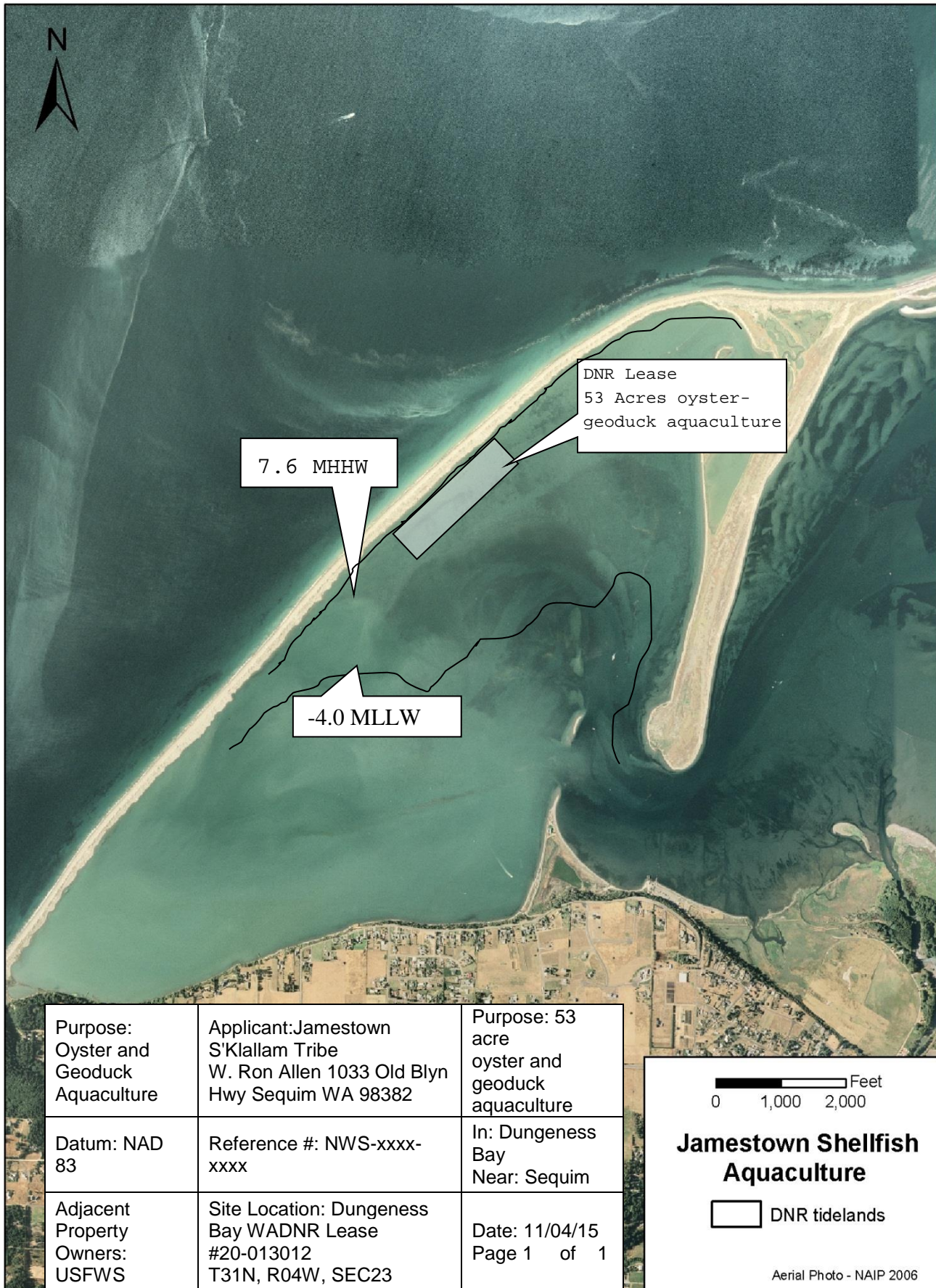
### Tumble Culture





**Geoduck Culture (with tubes and predator nets)**







US Army Corps  
of Engineers®

Seattle District

# Nationwide Permit 48

## Pre-construction Notification Form (V.7.7.09)

### For Existing Commercial Shellfish Aquaculture Activities

#### Part 1 – Applicant

NWS-xxxx-xxxx

Agency Use Only#

1a. Name (Last, First, Middle) and Organization (if applicable)

Jamestown S'Klallam Tribe

1b. Mailing Address (Street or Post Office Box)

1033 Old Blyn Highway

1c. City, State, Zip

Sequim, WA 98382

1d. Phone (day)

360-681-4600

1e. Phone (cell)

1f. E-mail

ktoy@jamestowntribe.org

#### Part 2 – Authorized Agent or Contact (if applicable)

2a. Name (Last, First, Middle) and Organization

Toy, Kelly, Ann Jamestown S'Klallam Tribe

2b. Mailing Address (Street or Post Office Box)

1033 Old Blyn Highway

2c. City, State, Zip

Sequim, WA 98382

2d. Phone (day)

360-681-4641

2e. Phone (cell)

2f. E-mail

ktoy@jamestowntribe.org

#### Part 3 – Property Owner (if same as applicant skip)

3a. Name (Last, First, Middle) and Organization (if applicable)

WA Department of Natural Resources

3b. Mailing Address (Street or Post Office Box)

5310 Eaglemount Rd,

3c. City, State, Zip

Chimacum, WA 98325

3d. Phone (day)

(360) 732-0938

3e. Phone (cell)

3f. E-mail

[sean.carlson@dnr.wa.gov](mailto:sean.carlson@dnr.wa.gov)



## Part 4 – Project Area

☐ Check here if there are multiple project areas. For each project area, include the following information in an attachment or use a separate form, as appropriate.

4a. Street Address (if applicable)

Dungeness Spit

4b. City, State, Zip (If project is not in a city or town, please provide the name of the nearest city or town.)

Sequim, WA 98382

4c. County

Clallam

4d. Waterway

Dungeness Bay

4e. Latitude and longitude of the project area (e.g. 47.03922 N lat. / -122.89142 long) with datum (if known)

48.02465N 123.004031W NAD83

4f. Section, Township, and Range for the project area (1/4 Section, Section, Township, Range)

T 31N, R 04W, S23

## Part 5 – Project Description

Nationwide Permit 48 authorizes existing aquaculture operations. An existing operation is one that has been granted a permit, license or lease from a state or local agency specifically authorizing commercial aquaculture activities and which has undertaken such activities prior to **March 12, 2007**. Attach a copy of the permit, license, or lease authorizing aquaculture activities at the project area described below.

☒ **Attached. (If you do not qualify for review under Nationwide Permit 48, please contact the U. S. Army Corps of Engineers (Corps) for information on alternative permits, such as an individual permit.)**

5a. Acreage of project area that was planted as of March 12, 2007: 10 acres.

5b. Acreage of project area that was fallow (area that is left unplanted as part of a normal rotation or farming practice, but that has not been abandoned) as of March 12, 2007: 35 acres.

5c. Acreage of project area in which there has been no previous aquaculture activity as of March 12, 2007: 8 acres.

5d. Total acreage of project area: 53 acres. If 5a.–5c. does not equal 5d., please provide an explanation.

NA

5e. Please check the status of any attendant features that are within the project area or part of the project (X).

	None	Existing	Proposed
Piers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat ramps	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stock piles	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staging areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Berms (e.g., sand bags, excavated material)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Booms	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reefs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (list) <input type="text"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If applicable, please provide information on the existing structures or proposed work to include dimensions, material, construction methodology, etc. (attach additional pages as necessary).

NA

5f. The applicant must give a description of the proposed project sufficiently detailed to allow the district engineer to determine that the adverse impacts will be minimal and determine the need for compensatory mitigation. We find that sketches make this requirement easier to comply with and expedite the review of the application. Sketches should include size, location, and approximate length of the project site. Examples are enclosed. You can submit a written description if you wish, but it must give a representative depiction of your project that is detailed enough so the Corps can validate the description in the field. Photos are also helpful in depicting a project.

☒ **Sketches are attached.**

5g. Project purpose: (e.g., provide mussels for human consumption)

Provide shellfish for human consumption.

5h. Describe any proposed or existing fill, excavation or structures necessary to redirect water flow (if applicable):

NA

5i. Describe the amount (e.g., cubic yards, acreage, etc.) of any material placed for “graveling or frosting” that occurs or is proposed to occur (if applicable):

NA
----

5j. Are predator exclusion nets being used? No ☐ Yes ☒

How many acres of canopy nets?  Time period in place?

How many acres of individual Geoduck tube nets?  Time period in place?

Description of how nets are secured:

Any other types of nets:

5k. Names of species, acres being cultivated and cultivation method (attach separate pages as needed):

Name (species)	X	Acres Planted as of March 12, 2007*	Cultivation Method
Pacific littleneck clam ( <i>Protothaca staminea</i> )			
Manila clam ( <i>Venerupis philippinarum</i> )			
Butter clam ( <i>Saxidomus giganteus</i> )			
Geoduck ( <i>Panopea abrupta</i> )	x		Tube and net experimental
Pacific oyster ( <i>Crassostrea gigas</i> )	x		Primarily on-bottom
Kumamoto oyster ( <i>Crassostrea sikamea</i> )			
Eastern oyster/American oyster ( <i>Crassostrea virginica</i> )			
Olympia oyster ( <i>Ostrea conchaphila</i> )			
European flat oyster ( <i>Ostrea edulis</i> )			
Blue mussel ( <i>Mytilus trossulus</i> )			
Mediterranean/Gallo mussel ( <i>Mytilus galloprovincialis</i> )			
Pink scallop ( <i>Chlamys rubida</i> or <i>Chlamys hastata</i> )			
Other			



\* Total acres planted may be greater than the project area due to multiple-species being cultivated on same acreage.

51. Description of the culture and harvesting method for each species:

**Oyster Farming Methods:** There are 4 main techniques for raising oysters in Puget Sound; Beach or Bottom Culture, Bag Culture, Long-line Culture and Suspended Tumbling Culture. Jamestown has used several of these methods in Dungeness. The harvest cycle for oysters is usually 1 to 3 years, with the exception of tumbled which is less than 2 years. The following link contains more information and pictures of the methods described below;

<https://wsg.washington.edu/wordpress/wp-content/uploads/publications/Small-Scale-Oyster-Farming.pdf>.

**On-Bottom or Beach Cultured Oysters:** Beach/Bottom Cultured Oysters, also called Intertidal Cultured Oysters, are oysters which are raised on tidal beaches with sandy or rocky bottoms. Spat (very small seed attached to shell or “cultch”) or seed oysters are distributed over existing oyster beds and left to mature naturally. Planting seed oysters (>1”) involves staking down a small mesh net over the oysters to prevent the seed from being washed away. The net is removed when the oysters reach a larger size, generally a few months later depending on the growth rate. Growth plots will be surrounded by a 14 inch, orange or black plastic barrier fence which will act as a wave barrier to stop oysters from leaving the project site.

**Bag Cultured Oysters:** Rack & Bag cultured oysters or On Bottom Flip Bags are grown in mesh cages or bags which are generally staked about one to two feet off the bottom or attached to a line on the bottom. Oysters raised by the bag method are protected from predators and do not become cramped for space as they grow. They also do not have to filter as much sand & mud in order to get nutrients, thus they grow faster. They develop a deeper cup than beach cultured oysters.

**Long-line Cultured Oysters:** Long-line culture is a variation of off bottom culture where long ropes with seedling oysters attached are suspended. This suspension method is usually done horizontally and staked about one to two feet above the bottom in an intertidal region. But sometimes the lines are suspended vertically in deep water.

**Tumbling:** Some oysters which are raised by the suspension method are put through an additional step where they are periodically tumbled. This strengthens their shells and adds firmness to the meats. It also adds a distinctive look to the shell as it becomes smoother from tumbling.

Jamestown’s oyster culture method will primarily be on-bottom culture, but will also experiment with long-line, bag and tumble culture. Oysters will be harvested by hand or with the use of a shallow dredge, and be placed into large totes. Totes will then be removed at high tide using a barge. Jamestown would like to determine the most optimal culture methods as soon as possible and the types of culture methods used will be dependent on the market and other economic factors.

**Geoduck Farming Methods:**

Jamestown plans to continue with geoduck test farming in up to five acres of the project site. PVC tubes four or six inch in diameter, and up to 10” in length will be stomped into the mud at a density of 1 per sq. foot. Three to four geoduck seed will be planted in the each tube. 15 x 45 foot predator exclusion nets will be used to cover the tubes and will be held in place by rebar stakes. Tubes will be removed approximately 2 years after planting an area and geoduck will be sampled periodically for growth rate and quality.

5m. The district engineer determines whether an activity may affect threatened or endangered species. To streamline the Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultation process, the Corps worked closely with National Marine Fisheries Service (NMFS) and U. S. Fish and Wildlife Service (USFWS) on developing programmatic consultations for NWP 48. The programmatic consultations for NWP 48 are completed and ESA and EFH requirements are met for that activity as long as it complies with the terms and conditions of the programmatic consultations. Individual consultation between the Corps and USFWS and NMFS is not required for activities covered by programmatic consultations; however, streamlined coordination or reporting may be required. Activities covered by programmatic ESA and EFH consultations must still comply with Corps notification and permitting requirements. As part of your verification, you will be notified of any terms and conditions that may apply.

5n. Are vegetated shallows\* present in the project area? ☒ No ☐ Yes

If yes, please describe the location, species, and density in the project area. You must submit a delineation (description) of the submerged aquatic vegetation present. This can be included in the project area sketches (5f). Photos can also be submitted.

NA

*\*Vegetated shallows are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, i.e., eelgrass (Zostera marina).*

5o. Will any dredge harvesting, tilling, or harrowing be conducted in areas considered vegetated shallows?  
☒ No ☐ Yes

5p. Describe work being conducted in areas considered vegetated shallows:

NA

5q. Describe any use of nursery/seed grow-out structures (e.g., plastic pools).

NA

## Part 6 – Historical/Cultural Resources

6a. Describe any historical knowledge of what the property was used for in the past, including how long the project area has been used for aquaculture activities:

### Oyster Farming in Dungeness Bay

The Jamestown S’Klallam Tribe purchased the assets of an existing oyster farm in Dungeness Bay in 1990. The history of oyster farming prior to that time has been derived from various documents currently available.

**1953:** The oyster farm operation was owned by a succession of private owners prior to 1953. The first lease of tidelands for the purpose of oyster farming occurred in 1953. At that time oyster seed was brought from Japan (*Crassostrea gigas*) Olympia oysters had been harvested out of Washington waters.

**1964:** In 1964 Mr. Joe Engman of Sequim became the owner, under the name D.C Oyster Farms. (The Tribe purchased the assets of this company in 1990.)

**1968:** Oysters were grown as “bottom culture”, using seed naturally spawned and set on oyster shell in Quilcene and Dabob Bays. The mature oysters (2 to 3 years) were harvested by hand or by an oyster “dredge”, sometimes referred to as a shallow dredge, on a barge-like boat.

**1970-71:** In 1970-71, according to a letter to the editor by Mr. Engman, the Washington State Department of Fisheries conducted a study of the impact of oyster farming on Dungeness crab, clams, and soil erosion. He states that there were no harmful effects from 17 years of oyster farming.

**1972:** D.C. Farm began growing oysters by “long-line”, meaning the oyster shell containing oyster seed is hung from a line about 4 feet off the ground, strung on pvc pipe set into the substrate. They strung 100,000 shells with seed on them according to Mr. Engman. They also continued with bottom culture.

**1988:** WA Department of Natural Resources did not renew Mr. Engman’s lease, pending Mr. Engman conducting an official survey of the tideland lease boundaries.

**February 1990:** Nancy Curry, Refuge Manager, Coastal Refuge Office, US FWS, wrote a letter to the State Department of Natural Resources stating they had no objection to renewing the tideland lease to the Tribe. However they requested several conditions – that the restriction of oyster culture to landward of eel grass beds be retained in the new lease; and that the operation be conducted in such a manner as to minimize interference with waterfowl, and that harvest be by hand or shallow dredge. The letter repeats that it is imperative that no eelgrass beds be lost.

**August 1990:** The Tribe purchased the assets of the company and continued bottom culture and the shucking operation. We formed a company called JKT Oyster Company, Dungeness Oyster House. Harvesting was done by hand and by dredge, of the oysters already on the tidelands. We planted bottom culture. We gradually expanded the long-line culture area on the inside of the main Dungeness Spit.

**Water Quality in Dungeness Bay:** The Washington Department of Health Shellfish Program was responsible for insuring that the water in which shellfish for human consumption are grown meets rigorous federal and state standards. The standards are based primarily on levels of fecal coliform bacteria, either found in the water are highly likely to be there due to upland conditions. Multiple years of data were collected (30 sample dates, taken either monthly or bi-monthly) and analyzed. Water samples were collected throughout the inner and outer Bay



**1995:** the State Department of Health (DOH) warned that water quality was deteriorating in the Bay. The Tribe initiated monitoring of fresh water inputs to the Bay, to identify potential sources of fecal coliform. Over the years the Tribe has been joined by Clallam County, Clallam Conservation District, Washington Department of Ecology, Washington Department of Health and Battelle Marine Laboratory to conduct a robust series of monitoring and assessments of pollution sources, controls and fixes.

**1997:** DOH closed shellfish harvesting at NW Corner due to fecal coliform levels. They issued a warning that water quality elsewhere in the Bay was close to failing the standards.

**1999:** DOH closed shellfish harvest in front of the dock and shucking plant, and on Graveyard Spit due to water monitoring data failing fecal coliform standards. The Tribe stopped planting oysters. The shucking plant and retail store had already been closed.

**2003:** The State Department of Health closed shellfish harvest in the inner Bay from November through January, based on analysis that those months were the ones contributing to the failing fecal coliform levels. This compromised a business which relies on good sales for Thanksgiving and Christmas.

**2005:** The oyster farm was closed, and remnant PVC pipe and rope were removed from the inner Bay tidelands.

6b. Has a historical/cultural resource survey been performed on the project area?

No ☒ Yes ☐

*The Survey is scheduled for daylight tides in Spring 2016.*

6c. Explain from where the project area will be accessed (e.g. boat, road, shoreline).

Boat access only.

6d. Will any upland construction be required for your project to function? No ☒ Yes ☐  
If yes, please add to your sketches or fully describe.

## Part 7 – Authorizing Signatures

Signatures required before submitting the NWP 48 pre-construction notification form.

### 7a. Applicant Signature (required)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities.

I hereby authorize the agent named in Part 2 of this application to act on my behalf in matters related to this application \_\_\_\_\_(initial)

By initially here, I state that I have the authority to grant access to the property. I also give my consent for the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project \_\_\_\_\_(initial)

\_\_\_\_\_  
Applicant

\_\_\_\_\_  
Date

### 7b. Authorized Agent Signature

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities.

\_\_\_\_\_  
Authorized Agent

\_\_\_\_\_  
Date

### 7c. Property Owner Signature (if not applicant)

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

\_\_\_\_\_  
Property Owner

\_\_\_\_\_  
Date

18 U.S.C. § 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes a false, fictitious, or fraudulent statements or representations or makes or used any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.

## **Part 8 – Submitting the Completed NWP 48 Pre-construction Notification Form**

Please mail the completed NWP 48 Pre-Construction Notification Form and project sketches and photos to the following address:

Seattle District Corps of Engineers  
CENWS-OD-RG – NWP 48  
Post Office Box 3755  
Seattle, Washington 98124-3755

For each project area, please include a copy of the permit, license or lease granted from a state or local agency specifically authorizing aquaculture activity prior to March 12, 2007.

If you have any questions, please call (206) 764-6904 or (206) 764-3495.

## **Part 9 – Requirements for an Additional Pre-construction Notification Form.**

If any of the following changes are proposed to occur, then a new pre-construction notification is required to be submitted to the district engineer as early as possible before they occur:

1. The project area is greater than 100 acres.
2. There is any reconfiguration of the aquaculture activity, such as relocating existing operations in to portions of the project area not previously used for aquaculture activities.
3. There is a change in species being cultivated.
4. There is a change in culture methods (e.g., from bottom culture to off-bottom culture).
5. Dredge harvesting, tilling, or harrowing is conducted in areas inhabited by submerged aquatic vegetation.

Include a copy of the original verification letter with sketches. Providing updated sketches would also facilitate a faster review of the changes.

These existing operations may be authorized by this NWP after the district engineer has reviewed the pre-construction notification and determined that the new activity complies with the terms and conditions of the NWP, and will have minimal adverse effects.