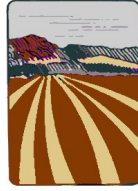


Live Molluscan Shellfish Tank at Retail Packet Contents

1. Contents Page
2. Variance Application
3. Molluscan Shellfish Tank (MST) Variance at Retail
4. Live Molluscan Shellfish Tank Checklist
5. Live Molluscan Shellfish Tanks Manual
6. HACCP Plan- *Example*
7. Sanitation Items Checklist for Tanks and Cooler- *Example*
8. Receiving Record- *Example*
9. Daily Records and Corrective Action Log for Tank Water and Cooler Storage- *Example*
10. Weekly Thermometer Accuracy Log: Tank and Cooler- *Example*
11. Procedures for Stem Thermometer Accuracy Testing
12. Tank Water Quality Record- *Example*
13. Tank Maintenance Log- *Example*
14. Molluscan Shellfish Tank Set Up Procedures



Oregon
Department
of Agriculture

Food Safety Program Variance Application

Website: <https://oda.direct/FoodSafety>

Please send the completed variance application form to the Oregon Department of Agriculture's Food Safety Program. Please submit a separate application form for each variance request, using additional pages if necessary.

Date: _____

Name of Applicant / Owner/ Operator: _____

Name of Establishment: _____

Mailing: _____

Physical Address: _____

Statewide Chain Establishment: _____ Independent: _____

Telephone: _____

Email: _____

Signature: _____

Product or Process Requested: _____

Request for Variance: (OAR 603-25-0030 Section 8-103.11):

1. Describe the proposed Code variance being requested, citing the relevant Code section numbers.
2. Explain specifically how your proposed procedure will adequately control the public health hazards addressed in the Code. Please include supporting documentation.
3. Include a HACCP plan if required as specified under OAR 603-25-0030 Section 8-201.13(A), including the information specified under OAR 603-25-0030 Section 8-201.14.

OAR 603-25-0030 Food Code Website:

<https://www.oregon.gov/oda/Documents/Publications/FoodSafety/FoodCode.pdf>

Oregon Department of Agriculture
Food Safety Program
635 Capitol Street NE, Salem, OR 97301-2532
Phone:(503) 986-4720 and Fax: (503) 986-4729

Molluscan Shellfish Tank (MST) Variance at Retail

Facility DBA Name:		
Physical Address:		
Tank (circle one):	New	Existing
		Remodel

Live holding tanks have complex operation and maintenance requirements. If a safe product is to be maintained, an approved operation and variance must be followed. The approved variance, HACCP plan, SOPs, and associated documents and records must be present at the establishment at all times, available for use by staff responsible for maintenance of the unit, and followed.

Prerequisite Programs:

Firm agrees to follow the PIC training, establishment construction, maintenance, sanitation and product handling procedures as outlined in the ODA 2013 Retail Food Code and ORS 603, ORS 619, and OAR 603-028-0005 - 0865.

8 Specific Sanitation Operating Procedures (SSOP):

Firm agrees to monitor and comply with the following Big 8 Specific Sanitation Operating Procedures:

1. **Safety of the water that comes into contact with food or food contact surfaces or is used in the manufacture of ice.**
2. **Condition and cleanliness of food contact surfaces, including utensils, gloves, and outer garments.**
3. **Prevention of cross-contamination from insanitary objects to food, food packaging material, and other food contact surfaces, including utensils, gloves, and outer garments, and from raw product to cooked product.**
4. **Maintenance of handwashing, hand sanitizing, and toilet facilities.**
5. **Protection of food, food packaging material, and food contact surfaces from adulteration with lubricants, fuel, pesticides, cleaning compounds, sanitizing agents, condensate, and other chemical, physical, and biological contaminants.**
6. **Proper labeling, storage, and use of toxic compounds.**
7. **Control of employee health conditions that could result in the microbiological contamination of food, food packaging materials, and food contact surfaces.**
8. **Exclusion of pests from the food plant.**

***Note:** Variance approvals require a firm to have prerequisite programs and SSOP's in place and monitored.

**The following information specific to your firm is required for review
(See specific details on MST Requirements):**

1. **Tank and Filtering System Design**
2. **HACCP Plan**
3. **SOPs including consumer advisory**
4. **Monitoring records and logs for both HACCP and SOPs**
5. **Procedure Review Questionnaire below**

Procedure Review Questionnaire:

Standard Operating Procedures (SOP)s shall include the following information. A list of questions below will assist you in providing all the required information. Additional information and requirements are provided in the section Molluscan Shellfish Tank Requirements.

Training & Policies

- Who will be your person(s) in charge?
- What is your Employee Hygiene Policy?
- How are food workers excluded or restricted who are who are sick or have infected cuts and lesions? What are your training requirements?
- What are your handwashing and bare hand contact policies?
- How do you check your thermometer for accuracy?
- What is your Supervisory Employee and Food Employee Training Plan regarding:
 - Contamination Prevention Procedures
 - Equipment Use and Maintenance
 - Monitoring Procedures
 - Corrective Actions Procedures
 - Recordkeeping Procedures

Record System for Shellfish Tags

- What system will you use to maintain shellfish tags, for how long, and where?

Handling of shellstock in the Molluscan Shellfish Tank

- What is your policy for the use of tanks for finfish or crustacean shellfish prior to use for molluscan shellfish?
- What is your policy regarding commingling of shellstock?
- What is your culling procedure?
- What is your first in/ first out information?
- What is your customer self-service policy?

Protection from Contamination

- What is your policy to protect shellstock from biological contamination?
- What is your policy to protect shellstock from chemical contamination?
- What is your policy to protect shellstock physical contamination?
- Explain the requirements for storage and handling of toxic chemicals and cleaners?

Statement: I hereby affirm that the above information is correct and I fully understand that any deviation from the above without prior permission from the Oregon Department of Agriculture may nullify final approval.

Signature(s) of Owner(s) or responsible representative(s):

_____ Date _____

Live Molluscan Shellfish Tank Checklist

In order to review your request for a Variance to operate a live molluscan shellfish life-support system tank used to display and store shellfish for human consumption, you must provide the following information to the Oregon Department of Agriculture Food Safety and Animal Health Program:

- 0 Variance Application (form is in information packet)
- 0 Molluscan Shellfish Tank (MST) Variance at Retail (form is in information packet)
- 0 List of each species of molluscan shellfish to be held in live tanks
- 0 Flow diagram for each species of molluscan shellfish to be held in live tanks
- 0 HACCP Plan (see manual and example of HACCP plan for specifics and modifiable HACCP plan in packet) that addresses the following:
 - ___ Critical Control Points (CCP's) – Receiving (2 parts), Cooler Storage, Tank Water Temperature and Tank Water Quality
 - ___ Critical Limits for each CCP
 - ___ Monitoring of CCP's (what, how, frequency, & who)
 - ___ Corrective Actions for each CCP
 - ___ Records to be kept for each CCP
 - ___ Verification for each CCP
- 0 Supervisory Employee and Food Employees Training Plans that address the food safety issues of concern relating to Live Molluscan Shellfish Tank operation:
 - ___ Contamination prevention procedures
 - ___ Equipment use and maintenance
 - ___ Monitoring procedures
 - ___ Corrective action procedures
 - ___ Recordkeeping procedures
- 0 Employee Hygiene Policy Relating to Live Molluscan Shellfish Tank operation:
 - ___ Training and reporting requirements
 - ___ Exclusion and restriction requirements for ill food employees
 - ___ Handwashing and Bare Hand Contact Policies
- 0 Thermometer Accuracy Procedures (e.g. stem thermometer – ice point method)
- 0 Record System for Retention of Shellfish Tags (describe the system that you use to maintain the tags in chronological order for 90 days after the container is empty)
- 0 Example of Consumer Advisory
- 0 Operating Procedures relating to Molluscan Shellfish Tanks
 - ___ Handling of Shellstock
 - ___ Use of tanks for fin fish/crustacean shellfish prior to use for molluscan shellfish protocol
 - ___ Commingling Protocol
 - ___ First in First Out
 - ___ Culling Procedures (dead and cracked shellfish discarded)
 - ___ Consumer Self-service policy (no self-service)
 - ___ Protection from Contamination Policy (biological, chemical, physical)
 - ___ System Design and Operation (Tank Specifications/Manufacturers Instructions & Operational Manual)
 - ___ System Maintenance Plan (Tank and UV Disinfection System)
- 0 Toxic Chemical and Cleaners Handling and Storage Requirements
- 0 Standard Operating Procedures (SOP's) – the Big 8
- 0 Example of Sanitation Items Checklist (Big 8 SSOP's – see information packet for example of form)
- 0 Examples of all Monitoring Records (see information packet for examples)

Molluscan Shellfish Tanks (MST) Requirements Manual

2013 ODA Retail Food Code (OAR 603-025-0030) -

4-204.110 Molluscan Shellfish Tanks

(B) Molluscan shellfish life-support system display tanks that are used to store and display shellfish that are offered for human consumption shall be operated and maintained in accordance with a variance granted by the regulatory authority as specified in §8-103.10 and a HACCP plan that:

- (1) Is submitted by the permit holder and approved as specified under §8-103.11; and
- (2) Ensures that:
 - (a.) Water used with fish other than molluscan shellfish does not flow into the molluscan tank,
 - (b.) The safety and quality of the shellfish as they were received are not compromised by the use of the tank, and
 - (c.) The identity of the source of the shellstock is retained as specified under §3-203.12.

4-204.110 Annex

"Shellfish are filter feeders allowing concentration of pathogenic microorganisms that may be present in the water. Due to the number of shellfish and the limited volume of water used, display tanks may allow concentration of pathogenic viruses and bacteria. Since many people eat shellfish either raw or lightly cooked, the potential for increased levels of pathogenic microorganisms in shellfish held in display tanks is of concern. If shellfish stored in molluscan shellfish tanks are offered for consumption, certain safeguards must be in place as specified in a detailed HACCP plan that is approved by the regulatory authority. Opportunities for contamination must be controlled or eliminated. Procedures must emphasize strict monitoring of the water quality of the tank including the filtering and disinfection system."

Information regarding Requirements for:

1. Tank and Filtering System Design
2. HACCP Plan
3. Standard Operating Procedures (SOPs) including consumer advisory statement
4. Monitoring records and logs for both HACCP and SOPs (see examples document)

Tank and Filtering System Design

Prior to the construction and use of a live molluscan shellfish tank, the operator should seek the advice and services of a company familiar with the design and installation of live molluscan shellfish tanks

Plans shall be: drawn to scale, show the design construction and operational plans, include the monitoring parameters, flow chart. Add any additional scientific data or other information, if required by the Regulatory Authority, supporting the determination that food safety is not compromised by the proposal.

1. Construction of the tanks shall be from food grade materials. Equipment and utensils shall be durable, smooth, nonabsorbent, non-toxic, and easily cleanable.
2. Equipment shall be easily accessible for cleaning and repair.
3. Equipment shall be of adequate capacity for the amount displayed for sale (e.g. 100 gallons water/75 pounds of shellstock)
4. There shall be no permanently capped plumbing "dead legs" or cross-connections.
5. Hoses or other Influent lines shall not be below the overflow level of the tank.
6. Water used in the tank must be from an approved water source.
7. Containers, mesh bags, tank dividers shall be durable, easily cleanable and nonabsorbent. Shellstock shall be submerged in water. In a cascading system, the maximum depth of shellstock in the trays shall not exceed 3".
8. Plumbing shall be food grade materials and compatible for use in salt-water applications.
9. The tank shall have an accurate in-system temperature-measuring device (thermometer).
10. The tank shall have an aeration unit.

11. The filtration System shall be designed for use in salt-water applications and shall have:
 - a. In-line cartridge or similar mechanical filter to filter large particles & solid waste out of the water.
 - b. Activated carbon filter to remove dissolved organics, color, odor, & toxic gases from the water.
 - c. Biological filter (aerobic non-pathogenic bacteria adhering to granular media) to break down animal waste, ammonia and help maintain pH balance. The filter shall be "seeded" with the beneficial bacteria when setting up the system to allow them to become established on the filter. Manufacturer's instructions shall be followed.
12. A chiller unit shall be provided to keep the tank water temperature $\leq 41^{\circ}\text{F}$ (5°C).
13. The pump shall be designed for use with potable water systems & resistant to corrosive effects of salt water. The flow rate (e.g. 5 turn-overs per hour) shall correlate with the UV light specifications.
14. There shall be no exchange of water from molluscan shellfish tank systems & tanks used for any other species.
15. The system shall contain an appropriate UV disinfection unit to kill bacteria and viruses as water circulates through the UV light source prior to introduction into the live molluscan shellfish tank. The UV system shall work with the pump to produce a minimum of 30,000 microwatt/second/cm² minimum killing dose, and shall have an indicator (e.g. glow cap) to show that the light is on and be on at all times when shellstock is present in the live tanks. The UV unit shall have a tag with the following information: the date of the last replacement & the next replacement due date.
16. All components of the live tank system shall be color-coded or numbered and marked with arrows to indicate the direction of water flow.

HACCP PLAN shall include the following:

1. List of each species of molluscan shellfish to be held in the live tanks
2. Flow diagram for each species
3. HACCP Plan needs to identify:
 - A. Each Critical Control Point
 - i. Receiving
 - a. Approved Source
 - b. Receiving Temperature
 - ii. Cooler Storage
 - iii. Water Temperature of Tank
 - iv. Water Quality of Tank
 - B. Significant Hazards (i.e. at Receiving – physical, chemical, biological, microbiological pathogen growth and at Cooler Storage, Tank Water Temp. and Tank Water Quality - microbiological pathogen growth)
 - C. Critical Limits for each Critical Control Point
 - i. Receiving
 - a. Approved Source (with complete tag information)
 - b. Receiving - Ambient Air Temp. $\leq 45^{\circ}\text{F}$
 - ii. Cooler Storage – Ambient Air Temp. $\leq 41^{\circ}\text{F}$
 - iii. Tank Water Temperature to be $\leq 41^{\circ}\text{F}$
 - iv. Tank Water Quality
 - a. Approved Water Source
 - b. Total coliform MPN (0 MPN or Absence of or Negative)
 - D. Monitoring Method and Frequencies for each Critical Control Point by food employee designated by the Person in Charge
 - E. Corrective Actions to be taken by the Person in Charge if the Critical Limits for each Critical Control Points are not met
 - F. Records (HACCP/SOP) to be Maintained by the Person in Charge
 - i. Receiving Record (Adequate Tag information and Receiving Temperature to be $\leq 45^{\circ}\text{F}$)
 - ii. Cooler Storage Record – temperature to be $\leq 41^{\circ}\text{F}$

- iii. Weekly Thermometer Accuracy Record with Procedures on File
- iv. Tank Cleaning and Maintenance Record
- v. Daily Tank Water Temperature Record
- G. Verification Method and Frequency to routinely verify that the food employee is following the standard operating procedures & is monitoring the Critical Control Points of the HACCP plan

Standard Operating Procedures (SOP)s shall include the following:

- 1. Handling practices of Molluscan Shellfish
- 2. Shellstock receiving, storage, and sales policies
 - A. Including the record system for shellfish tags
 - B. A copy of the consumer advisory notice that will be posted.
- 3. System Operations including Manufacturer Instructions and Operational Manuals
- 4. Employee Hygiene Policy (see questionnaire section MST Variance at Retail)
- 5.
- 6. Supervisory and Food Employees Training Plan (see questionnaire section MST Variance at Retail)
- 7. Protection from contamination policies (see questionnaire section MST Variance at Retail)

Handling Molluscan Shellfish

- 1. Dead, cracked, and weak molluscan shellfish shall be removed daily
- 2. Molluscan shellfish (clams, oysters, mussels) shall not be held in the same live holding tank system with crustacean shellfish (lobsters, crabs, shrimp).
- 3. Different lots of molluscan shellfish with different shipper's tags, harvest dates, or harvest areas shall not be commingled. Different lots of molluscan shellfish may be displayed in the same live holding tank system provided they are in separate containers such as mesh bags to prevent commingling and are identifiable so they can be traced back to the harvest area through their shellfish tags.
- 4. Shellstock shall be rotated (First-In-First Out).
- 5. Shellstock shall be refrigerated/placed into tanks immediately upon receipt.
- 6. Shellstock shall be kept refrigerated or in the display tanks at the appropriate temperatures.
- 7. If the tank system was used previously for crustaceans/other species, the entire tank system shall be washed, rinsed and sanitized before using for molluscan shellfish.

Shellstock Receiving and Storage

- 1. Receiving Shellfish and Tag Information
 - A. Shellstock shall be received under refrigeration ($\leq 45^{\circ}\text{F}$) and sanitary conditions
 - B. Shellstock shall be from a certified interstate shipper or an approved in-state dealer.
 - C. Containers of live shellstock shall be properly tagged and contain:
 - i. Dealer's name and address and certification number (e.g. OR ##### SS)
 - ii. Harvest Date
 - iii. Harvest location identification with the abbreviation of the name of the state or country
 - iv. Type and quantity of shellfish (clams, oysters, mussels)
 - v. Statement requiring the tag to be attached to the container until emptied and then retained for 90 days
 - D. Shellstock shall be rejected if required information is not on the tags &/or the shellstock comes from an unapproved source &/or is muddy.
- 2. **Shellstock Storage**
 - A. Shellstock shall be refrigerated/placed into shellfish tanks immediately on receipt.
 - B. Shellstock shall be kept at $\leq 41^{\circ}\text{F}$ during storage and $\leq 41^{\circ}\text{F}$ in the live tanks.
 - C. Shellstock in cooler storage facilities shall be kept off the floor and the containers stacked to allow for good air circulation.
 - D. Shellstock shall not be stored below foods that may drip or leak onto shellfish.

- E. Shellstock shall be separated from raw animal foods during storage & display.
- 3. **Shellstock Sales and record keeping system**
 - A. A Consumer Advisory shall be displayed.
 - i. A copy of the consumer advisory needs to be provided for review.
 - B. Shellstock on display shall be able to be identified through a record keeping system required to preserve the source identification
 - C. Shellstock tags shall be maintained for 90 days after the container is empty and in chronological order. The date when the last shellstock is sold or served shall be recorded on the associated tag or label.
 - D. There shall be no consumer self-service from shellfish tanks.

System Operation including Manufacturer Instructions and Operation Manuals:

- 1. The Food Establishment shall provide the following:
 - A. An Operation Manual including individual equipment manuals and manufacturer instructions for each component and/or tank (e.g. pump, chiller, thermometer, UV light, etc. with model numbers, specifications, etc.), and a flow chart to show how the system works
 - B. Maintenance Instructions
 - C. Maintenance Logs
- 2. Tank load limits shall be established so filters and disinfection unit are not overloaded, and the amount of shellstock stored in the unit shall not exceed the tank load limits.
- 3. Prior to selling shellstock, the following shall be required: After the physical system setup is complete, and prior to seeding the bio-filter and adding shellstock, the tank water shall be tested for the presence of total coliform bacteria. When the test result shows the absence of fecal coliform bacteria, the UV light shall be turned off; the bio-filter shall be seeded with bacteria, and the tanks stocked with shellstock. After the bio-filter bacteria are established (3-6 weeks), the UV light shall be turned on. **No shellstock can be sold from the tanks until the bio-filter has been established (per manufacturer guidelines or minimum 3 weeks after seeding and/or re-seeding).**
- 4. The operating water temperature requirements shall be followed: $\leq 41^{\circ}\text{F}$ (5°C).
- 5. De-foamers shall be food grade.
- 6. Tank water shall be changed whenever necessary (if total coliform > 0 MPN or Presence of total coliform)
- 7. Tank water temperatures ($\leq 41^{\circ}\text{F}$) shall be checked twice daily at frequencies no less than 6 hours apart.
- 8. Cooler storage temperatures ($\leq 41^{\circ}\text{F}$) shall be checked twice daily at frequencies no less than 6 hours apart.
- 9. Tank water quality shall be tested:
 - A. Initially before Shellstock is placed in the Tank(s).
 - B. Public Water -at least once a quarter for systems using public water.
 - C. Growing Water - If the system is using water from approved growing areas, the tank water shall be tested at least monthly.
 - D. Private Water - for systems using water from private water systems (wells), the tank water shall be tested at least quarterly.

Personal Hygiene information

Employees shall report to the Person-In-Charge if they are feeling ill with symptoms of diarrhea, vomiting, fever, jaundice, sore throat with fever, lesions containing pus on hand, wrist or any exposed body part or if diagnosed with a medical disease that is transmissible through food.

- Employees shall wash their hands before & after handling shellstock.
- Employees shall not stick their bare hands into the molluscan shellfish tanks.

Monitoring Records and Logs for both SOPs and HACCP (see examples packet)

- 1. Designated Employee(s) shall receive training in the use of the display tank, record-keeping, and safety precautions.

2. Maintenance manual/checklist shall be maintained:
3. Source of shellstock shall be kept in an approved record keeping system – tags or labels kept in chronological order according to dates during which the shellstock are sold or served. For each 1 lot number, the required information or shellfish tag shall be maintained.
4. Tags shall be kept for a minimum of 90 days after the container is empty.
5. All HACCP records shall be kept on file at the physical facility for a minimum of 2 years.
6. The UV light shall be checked daily to ensure that it is functioning.
7. The UV disinfection system shall be cleaned at least once a year, or according to the manufacturer or maintenance company specifications.
8. The UV bulbs shall be changed at least once a year, or according to the manufacturer's recommendations.
9. A spare UV light shall always be available.
10. The activated carbon filter shall be refreshed as needed.
11. Algae shall be removed by wiping or scraping.
12. If any water sample result shows the presence of total coliform, the following procedures shall be implemented:
 - A. Shellstock – the shellstock shall be destroyed -AND-
 - B. Tank System
 - i. The entire tank and system shall be cleaned and sanitized (including spray nozzles filtration unit, tank and water lines) according to tank manufacturer's procedures using only food grade cleaning products – OR –
 - ii. 100% of the tank water will be changed and the UV sterilizer quartz sleeve shall be cleaned, and the filter medium shall be replaced (pads, carbon filter), and the UV light operation shall be verified.
 - C. Water sample - A second water sample shall be tested prior to use (0 MPN or Absence of total coliform results).
 - D. Positive second sample - If the second test shows the presence of total coliforms, the UV sterilizer quartz sleeve shall be replaced, and a new UV light shall be installed. The tank water shall be sampled and must show a 0 MPN result prior to use.

Definitions:

Commingle - to combine shellstock harvested on different days or from different growing areas without adequate separation/segregation as identified on the tag or label.

Consumer - a person who is a member of the public, takes possession of food, is not functioning in the capacity of an operator of a food establishment or food processing plant, and does not offer the food for resale.

Critical Limit - the maximum or minimum value to which a physical, biological, or chemical parameter must be controlled at a critical control point to minimize the risk that the identified Food Safety hazard may occur.

HACCP Plan - a written document that delineates the formal procedures for following the hazard analysis critical control point principles developed by The National Advisory Committee on Microbiological Criteria for Foods.

Hazard - a biological, chemical or physical property that may cause an unacceptable consumer health risk.

Molluscan Shellfish - any edible species of fresh or frozen oysters, clams, mussels, and scallops or edible portions thereof, except when the scallop product consists only of the shucked adductor muscle.

Public Water System - stated in 40 CFR 141 National Primary Drinking Water Regulations.

Regulatory Authority - the local, state, or federal enforcement body or authorized representative having jurisdiction over the Food Establishment.

Risk - the likelihood that an adverse health effect will occur within a population as a result of a hazard in a food.

Sanitation - the application of cumulative heat or chemicals on cleaned Food Contact Surfaces that, when evaluated for efficacy, is sufficient to yield a reduction of 5 logs (equal to a 99.999%) reduction of representative disease microorganisms of public health importance.

Shellstock - live molluscan shellfish in the shell.

Shellfish Control Authority - a state, federal, foreign, tribal, or other government entity legally responsible for administering a program that includes certification of molluscan shellfish.

Temperature Measuring Device (TMD) - a thermometer, thermocouple, thermistor, or other device that indicates the temperature of food, air, or water.

Variance - a written document issued by the regulatory authority that authorizes a modification or waiver of one or more requirements of this Code if, in the opinion of the regulatory authority, a health hazard or nuisance will not result from the modification or waiver.

Firm Name:			Product Description: Live Molluscan Shellfish						
Firm Address:			Method of Storage and Distribution: Live Molluscan Shellfish Tank						
			Intended Use and Consumer: Retail Sales Only, General Public, May be Consumed Raw or Cooked						
(1) Critical Control Points	(2) Hazards	(3) Critical Limits	Monitoring				(8) Corrective Action(s)	(9) Records	(10) Verification
			(4) What	(5) How	(6) Frequency	(7) Who			
CCP# 1 (a) Receiving	Physical Chemical (biotoxin) Biological (pathogens)	Approved Source from Certified Dealer (on ICSSL or state list) & Complete Tags	Approved Source & Tags on Every Container	Visual Check on Source and Tags for Complete Information	Each Shipment	Food Employee Designated by PIC	Reject if from unapproved source &/or untagged &/or incomplete tag information	Receiving Record with Corrective Action Record	Weekly Record Review
CCP# 1 (b) Receiving	Microbiological Pathogen Growth	Receiving Temp. of $\leq 45^{\circ}\text{F}$ - OR - Adequate Ice	Ambient or Internal Temperature - OR - Presence of Adequate Ice	TMD (Temp. Measuring Device) - OR - Visual	Each Shipment	Food Employee Designated by PIC	Immediately evaluate time/ temperature abuse Reject if Ambient temp $> 45^{\circ}\text{F}$ - OR - Reject if internal temp is $> 50^{\circ}\text{F}$	Receiving Record with Corrective Action Record TMD Accuracy Log	Weekly Record Review Weekly Accuracy Check of TMD

Firm Name: Firm Address:			Product Description: Live Molluscan Shellfish Method of Storage and Distribution: Molluscan Shellfish Tank HACCP Intended Use and Consumer: Retail Sales Only, General Public, May be Consumed Raw or Cooked						
(1) Critical Control Points	(2) Hazards	(3) Critical Limits	Monitoring				(8) Corrective Action(s)	(9) Records	(10) Verification
			(4) What	(5) How	(6) Frequency	(7) Who			
CCP# 2 Cooler Storage	Microbiological Pathogen Growth	Cooler Ambient Air Temp. $\leq 41^{\circ}\text{F}$	Cooler Temp.	Visual Check of TMD	Twice (2x) Daily –at least 6 hours apart when product in cooler	Food employee	Immediately evaluate time/temperature abuse – Then - Add ice - OR - Move product to working cooler - OR - Destroy	Cooler Storage Temp. Log with Corrective Action Record Therm. Accuracy Log	Weekly Record Review Weekly Accuracy Check of TMD
CCP# 3 Molluscan Shellfish Tank Water Temp.	Microbiological Pathogen Growth	Tank Water Temp. $\leq 41^{\circ}\text{F}$	Temp. of Tank Water	Visual Check of TMD	Twice Daily no less Than 6 hours apart when product in tank	Food Employee	If $> 41^{\circ}\text{F}$ Immediately evaluate time/temperature abuse – Then - Move to Functioning Cooler /Tank -OR- Destroy –& Adjust system to Correct Temperature	Tank Water Temp. Log with Corrective Action Record TMD Accuracy Log	Weekly Record Review Weekly Accuracy Check of TMD

Firm Name: Firm Address:			Product Description: Live Molluscan Shellfish Method of Storage and Distribution: Molluscan Shellfish Tank HACCP Intended Use and Consumer: Retail Sales Only, General Public, May be Consumed Raw or Cooked						
(1) Critical Control Points	(2) Hazards	(3) Critical Limits	Monitoring				(8) Corrective Action(s)	(9) Records	(10) Verification
			(4) What	(5) How	(6) Frequency	(7) Who			
CCP# 4 Molluscan Shellfish Tank Water Quality	Microbiological Pathogen Growth	Absence of Total coliform -Or- 0 MPN	Total coliform (TC) Results	Water Sample Tested at State Certified Lab	Initial Test before Shellstock in Tanks -And- Public Water – Quarterly - or – Private Water – Quarterly - or – Growing Water – Monthly	Food Employee	Presence of Total coliform (or TC >0 MPN) Destroy Product - And – a. Clean & sanitize entire system – OR – b. Change 100% of water, replace pad and carbon filters, clean quartz sleeve - And - Resample Prior to Use If second sample shows presence of total coliform, replace the UV light and the Quartz sleeve on the UV light - And – Resample water –Must have absence of total coliform or 0 MPN prior to use	Laboratory Results Records Logs with Corrective Actions Documented	Record Review As Completed Review Laboratory Results as Received

Signature and Date: _____

SANITATION ITEMS CHECKLIST - for Molluscan Shellfish Tanks and Cooler

Company Name & Address: _____

Date of Daily Monitoring: _____

Sanitation Item/Area	Time	Acceptable Y or N	Corrective Actions	Ini- tials
1 - Safety of Water & Ice Production ✓ Private system testing adequate (if applicable) ✓ Cross connections/backflow devices ✓ Ice from approved source				
2 – Condition and Cleanliness of FCS	NA	NA	NA	NA
3– Prevention of Cross Contamination ✓ Protection of Food (General) ✓ Employee Practices – Hand-washing & Hand-sanitizing ✓ Equipment Stored Protected				
4 – Maintenance of Hand-washing, Hand-sanitizing, and toilet facilities. ✓ Hand Wash Stations w/ Warm Water & Mixing Valve Faucet ✓ Toilet Facilities Adequate in Number & w/ Toilet Paper ✓ Sewage Disposal Proper				
5 – Protection from Adulterants ✓ Food Protected from Adulterants ✓ Ice Protected from Adulterants ✓ Lights Shielded ✓ No Condensation into Ice, Food, FCS				
6 – Labeling, Storage, & Use of Toxics ✓ Storage of Toxic Compounds • Only toxics required on site • No toxics above FCS or Food • Separate Storage for: Insecticides/rodenticides, Cleaners, Sanitizers, Caustic Acids, Polishes ✓ Use of Toxic Compounds • Pesticides Applied Correctly • All Toxic Substances Used Correctly ✓ Labeling of all Toxic Compound				
7 - Employee Health Conditions ✓ No Employees w/ communicable diseases transmissible through food ✓ Infected Wounds Properly Covered				
8– Exclusion of Pests ✓ Pests are excluded from Facility				

Signature of person reviewing SOP records _____ Date _____

RECEIVING RECORD – MOLLUSCAN SHELLSTOCK FOR LIVE TANKS CCP #1

COMPANY NAME: _____

COMPANY ADDRESS: _____

Month _____ Year _____

Receiving Date & Time	Tags – Complete Information Y/N	Shellfish Supplier's Certification #	Receiving Temp. ° F - or - Adequate Ice Y/N	Quantity Pounds(lb) Dozen(dz.)	Product Clams(C) Mussels(M) Oysters(O)	Corrective Actions Taken (Include date and time)	Initials

Reviewed by (Signature) _____ Date _____

DAILY RECORDS

Firm Name and Address _____

TANK WATER TEMPERATURE**Molluscan Shellfish Tank #** _____**CCP # 3**(Min. 2x daily) Displayed $\leq 41^{\circ}\text{F}$ – Take temps. more than 6 hours apart when shellstock in tank

Date	#1 Time Am/Pm	Temp °F	Corrective Actions Y/N (See Page 2)	Initials	# 2 Time Am/Pm	Temp ° F	Corrective Actions Y/N (See page 2)	Initials

COOLER STORAGE TEMPERATURE**Shellstock for Live Tanks****CCP # 2**(Min. 2x daily) Stored $\leq 41^{\circ}\text{F}$ – Take temps. more than 6 hours apart when shellstock in cooler

Date	#1 Time Am/Pm	Temp °F	Corrective Actions Y/N (See page 2)	Initials	# 2 Time Am/Pm	Temp ° F	Corrective Actions Y/N (See page 2)	Initials

UV LIGHT LOG

Date	Time Am/Pm	UV Light On Y/N	Corrective Actions	Initials

Signature of Reviewer _____ Date _____

Corrective Action Log for Tank Water & Cooler Storage

[illegible]

WEEKLY THERMOMETER (TMD) ACCURACY LOG - TANK & COOLER

CCP #1, 2 & 3

(See attached thermometer calibration procedures)

Company Name & Address:

Product Identity: Live Molluscan Shellfish

[illegible]

Procedures for Stem Thermometer Accuracy Testing

Ice Point Method

- 1) Fill up a cup with 5" or more w/ ice
- 2) Add water to fill the cup
- 3) Allow the water temperature to stabilize (at 32°F) for about 4 -5 minutes
- 4) Insert thermometer, make sure the dimple in the stem is immersed and the stem stays away from the sides.
- 5) Let the thermometer come down to 32° F (about 1 minute)
- 6) Adjust the needle by turning the nut (w/ a 7/16" wrench) to exactly 32° F (close one eye and look directly at the 32° mark)
- 7) Keep checking and adjusting until it stays at 32°F.

Note: Each line on the dial represents 2°F and the ice point method is considered the most accurate method for checking the accuracy of stem-type thermometers.

Procedures for Comparing Standard (stem thermometer) Thermometer with Refrigeration Unit and Tank Water Thermometers

Test the stem thermometer for accuracy using the ice point method. Take the standard thermometer into the walk-in cooler and leave it there for 10 minutes. Compare the refrigeration unit thermometer with the standard thermometer.

If you are testing the accuracy of the tank water thermometer of the molluscan shellfish tanks, take the standard thermometer and insert the stem end into the tank water. Wait several minutes and then compare the standard thermometer with the tank water thermometer.

MOLLUSCAN SHELLFISH WATER QUALITY RECORD

TANK # _____

CCP # 4

(Minimum Samples: Quarterly for public or private water & Monthly sample if using Growing Waters)

Target for Total coliform: 0 MPN or Absence of

Company Name: _____

Company Address: _____

Product Identity: Shellstock For Live Tanks

Date #1 Sample	Results of Total coliform Test	Corrective Actions Y/N (See Second Page)	Initials	If Positive Test - Date of Second Sample	Results of Second Sample Total coliform Test	Corrective Actions Y/N (See Second Page)	Initials

Reviewed by (Signature) _____ **Date** _____

Reviewed by (Signature) _____ **Date** _____

Reviewed by (Signature) _____ **Date** _____

Reviewed by (Signature) _____ **Date** _____

Note: Procedures to follow if test results are Positive for Total coliform Bacteria:

- 1. Destroy Shellstock – AND – Clean & Sanitize Entire System (see # 3 & 4) – OR –**
- 2. Destroy Shellstock - AND - Change 100% Tank Water; Clean UV Quartz Sleeve; Replace Carbon and Pad Filters; Verify UV Light Operation
- AND -**
- 3. A second water sample shall be tested within 48 hours**
- 4. If the second test results are positive for total coliform bacteria: Replace the UV quartz sleeve & install a new UV light**

CORRECTIVE ACTION LOG

(Molluscan Shellfish Tank Water Quality)

Firm Name & Address: _____

Date & Time AM/PM	Corrective Action(s) Taken	Initials

Reviewed by (Signature) _____ Date _____

Reviewed by (Signature) _____ Date _____

Reviewed by (Signature) _____ Date _____

Reviewed by (Signature) _____ Date _____

MAINTENANCE LOG – LIVE MOLLUSCAN SHELLFISH

TANK # _____

Company Name & Address: _____

Product Identity: Shellstock for Live Tank

Date	Time Am/Pm	Tank Water Changed	UV System Cleaned (Manufacturers Recommended or as needed)	UV Bulbs Changed (Manufacturers Recommended or as needed)	Activated Carbon Media Refreshed (as needed)	Mechanical Filter Changed (as needed)	Biological Filter Cleaned and Reseeded (after system cleaned & sanitized)	Signature of Person Performing Activity

Molluscan Shellfish Tank (MST) Procedures



Procedures to Follow Prior to Selling Shellstock from the Molluscan Shellfish Tank

1. Set up the MST system (tank, filters, aeration unit, chiller, etc.)
2. Turn on the UV light (disinfection)
3. Test the tank water for total coliform. Test must indicate 0 MPN, Absence of, or Negative
4. Turn off the UV light

After the test results show absence of, negative, or 0 MPN total coliform:

5. Add the bio-filter bacteria ("seed" the tank)
6. Add a test batch of shellstock
Let the system work for at least 3 weeks or follow bio-filter manufacturer's instructions (you cannot sell shellstock until the bio-filter has been established)
7. Then, discard the shellstock in the tank.
8. Turn on the UV light and let the tank run for at least 24 hours
9. Add the new Shellstock
10. Now you can sell the shellstock from your tank

Procedures to Follow After a Positive Water test

1. Remove and destroy all shellstock from the tank
2. Tank System:
 - a. Clean and sanitize the entire tank and system (spray nozzles, filtration unit, tank, water lines, etc.) according to manufacturer's procedure with food-grade cleaning products
– OR –
 - b. Change 100% of the tank water, clean the UV sterilizer quartz sleeve, replace the filter medium (pads, carbon filter) and verify the operation of the UV light
3. A second water sample shall be tested prior to use. Test results must show absence of, 0 MPN, or negative for total coliform.
4. If the second water sample shows total coliform, replace the UV sterilizer quartz sleeve and install a new UV light.
5. And take another water sample of the tank water. Test results must show absence of, 0 MPN, or negative for total coliform.

Procedures to Follow If Tank was Used for Other Species

1. Wash, rinse and sanitize the entire tank and system before using for molluscan shellfish
2. Test the tank water for total coliform. Test must indicate 0 MPN, Absence of, or Negative for total coliform.