

# **EHL Submission Manual (rev. 4-2020)**



## **Sample Submission Manual**

Alaska State Environmental Health Laboratory (EHL)

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## **Introduction**

### **Food Safety and Animal Health for the 21<sup>st</sup> Century**

The Alaska State Environmental Health Laboratory (EHL) is a modern 20,000 square foot laboratory facility dedicated to food safety, environmental concerns, and animal health. The laboratory uses advanced building systems and equipment to protect its employees and ensure sample integrity.

In addition to housing laboratory staff, our facility is also the home of the Office of the State Veterinarian. The laboratory incorporates an advanced necropsy facility that enables the State Veterinarian to perform detailed examinations of animals in a controlled environment. With immediate access to advanced testing equipment and laboratory scientists, the State Veterinarian is able to provide a high level of customer service.

### **Accreditations**

The EHL is the State entity responsible for regulatory analyses of manufactured foods, shellfish, dairy, environmental samples, marine toxins, and marine waters. The EHL is accredited by and subject to regular audits by agencies such as the U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA). Routinely demonstrating proficiency is a critical aspect of the EHL's rigorous quality assurance (QA) program. EHL scientists routinely analyze performance evaluation samples to maintain certifications and ensure test results meet the highest standards of accuracy and precision.

In January 2017, the EHL received ISO 17025 accreditation. By achieving this international accreditation, the EHL has demonstrated a rigorous QA system on par with national FDA laboratories, as well as the ability to produce high-quality, legally defensible scientific test results. This achievement expands the ability of the State of Alaska to provide regulatory food testing in compliance with FDA requirements, quickly respond to foodborne illness outbreaks, and allows closer collaboration with other accredited public health partners nationwide.

## **Capabilities**

### **Microbiology**

Classical microbiological techniques remain the "Gold Standard" for determination of many pathogens that impact food safety and public health. The EHL employs a team of microbiologists and technicians with extensive experience in the isolation of dangerous organisms from food and

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water. Examples of organisms isolated by EHL microbiologists include fecal coliforms, *E. coli*, *Listeria* spp., *Vibrio parahaemolyticus*, *Salmonella* spp., *Staphylococcus aureus*, and other pathogenic organisms.

## Shellfish Testing

The Alaskan shellfish industry is a major supplier of fresh shellfish to markets around the world. The EHL supports this industry by providing rapid turnaround time analyses for known marine toxins such as Paralytic Shellfish Toxin (also known as PST), Domoic Acid (amnesic shellfish toxin), as well as the *Vibrio parahaemolyticus* bacterium.

## Dairy

Helping ensure the wholesomeness of our state's dairy industry is a part of the EHL's mission. The EHL is certified by the FDA to ensure our testing program meets the highest standards. Our dairy testing program includes analysis of various dairy products for a variety of bacterial and chemical contaminants. These testing services are provided to the Office of the State Veterinarian for regulatory and investigative purposes.

EHL staff also certify dairy labs across the state.

## Analytical Chemistry

Measurement of trace levels of heavy metals, and methylmercury in seafood is a routine activity for the EHL. Technologies such as Inductively Coupled Plasma (ICP), Mass Spectrometry (MS), and High Performance Liquid Chromatography (HPLC) are used at the EHL to ensure that the seafood we eat is safe and wholesome.

The EHL has implemented novel techniques to create highly specific, analytical capabilities. LC coupled with ICP and Mass Spectrometry (LC-ICP-MS) measures ultra-low levels of toxic materials such as methylmercury in fish tissue. Speciation of mercury in foods and the environment allow food safety experts to monitor the health of our seafood industry. LC coupled with diode array detection provides the capability to test for Domoic Acid, a shellfish toxin.

## Animal Health

The EHL supports animal health programs by facilitating testing for Brucellosis, Chronic Wasting Disease (CWD), Avian Influenza (AI), Parasite Identification, and others as requested by the State Veterinarian.

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The EHL facilities also include a sophisticated necropsy laboratory that enables the State Veterinarian to perform detailed examinations to reveal disease mechanisms and cause of death. These capabilities help the State protect the health of our wild and domestic animal population.

## **Drinking Water**

Safe drinking water is fundamental to public health. The EHL offers EPA-certified drinking water testing for chemical and microbiological parameters to State and Federal agencies. Typical parameters include Total Coliforms, Fecal Coliforms, *E.coli*, Heterotrophic Plate Count, and lead. These services are provided as a courtesy to government agencies to assist in investigations or provide capacity in the event that private sector capacity is not available. All EHL drinking water methods comply with the EPA's rigorous guidelines for drinking water laboratories.

EHL staff also certify commercial labs, both intra and interstate, to support the testing needs of water systems providing drinking water across the state.

## **Terms and Conditions**

### **Alaska State Environmental Health Lab Terms and Conditions for Providing Lab Services**

The EHL serves the state government and members of the public. Customers seeking to use EHL services must agree to these standard Terms and Conditions, comply with the EHL Sample Submission Manual, submit an appropriate submission form that is signed and dated by the Customer, and submit payment prior to testing, as applicable.

At the EHL's sole discretion, preliminary results may be given in advance of an EHL report. Such preliminary results are tentative, subject to confirmation and final review by the EHL. The Customer's use of preliminary results in any manner shall be at the Customer's sole risk.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of three-quarters of a percent (3/4%) monthly or a portion thereof. The Customer shall also be responsible for the costs of collection. The prices, unless stated, do not include any sales, use, or other taxes.

The Customer represents and warrants that any sample delivered to the EHL will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by the Customer. The Customer further warrants that any sample containing any hazardous substance, which is to be delivered to the EHL, will be packaged, labeled, transported,

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and delivered properly and in accordance with applicable laws and in conformance with the current EHL Sample Submission Manual, as required in the last paragraph of this section.

The customer obtains and submits samples accompanied by an appropriate sample submission form provided by the EHL. The Customer is responsible for the cost of shipping samples to the EHL. Samples may be returned to the Customer for an additional charge to cover shipping and handling costs. The EHL retains samples that were not consumed during testing for a minimum of 30 calendar days after sample testing with the following exceptions:

- Samples tested for methods with a holding time shorter than 30 calendar days may be disposed earlier.
- Clients requesting return of unused sample volume within the 30-day period are not subject to this requirement.
- Sample retention beyond the 30-day calendar period may be at lab discretion or upon specific written request by a client. Such retention requests may have additional charges associated.

The EHL reserves the absolute right, exercisable at any time, to refuse to receive delivery, refuse to accept, or revoke acceptance of any sample in the sole judgment of the EHL for any reason. Reasons may include that the sample (a) is of unsuitable volume, (b) may be or may become unsuitable for, or may pose a risk in handling, transport or processing for any health, safety, environmental or other reason, whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to the EHL by the Customer; or (c) has been delivered to the EHL and one half or more of the recommended holding time for the analysis has lapsed.

## **Alaska Public Records Act**

The EHL is subject to the Alaska Public Records Act (AS 40.25.100 - AS 40.25.350) which may require the EHL to release records upon request. In the event of such a request for information, the Customer has the burden of claiming privilege from disclosure and is responsible for procuring counsel and for any related court actions, fees and costs.

## **Fees and Payment Information**

### **Analysis**

### **Price per Sample (USD)**

#### **Marine Toxins**

Paralytic Shellfish Poisoning (includes all species)

\$125

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Domoic Acid	\$100
Other Marine Toxins	\$54/hour

## Microbiology

Aerobic/Heterotrophic/Standard Plate Count	\$30
Coliform (MPN)	\$17
<i>E.coli</i> (non- <i>O157:H7</i> )	\$17
<i>E.coli O157:H7</i>	\$17
<i>E.coli</i> Sponge Test (HACCP)	\$17
<i>Staphylococcus aureus</i>	\$50
<i>Salmonella spp.</i>	\$70
<i>Listeria spp.</i> (negative or presumptive positive)	\$35
<i>Listeria spp.</i> (confirmed with identification) additional	\$15
<i>Vibrio spp.</i>	\$75

## Chemistry

Water Activity	\$10
Water Phase Salt	\$30
Total Metals by ICP/MS	\$50 (+\$10 for each element)
Mercury (total)	\$75
Methylmercury	\$Call
pH	\$20
Organoleptic	\$50/hour
Adulteration	\$50/hour

## Animal Health

Avian Influenza Virus Screen	\$Call
Equine Infectious Anemia	\$Call
Brucellosis	\$Call
Johne Disease	\$Call
Chronic Wasting Disease	\$Call

Dairy	\$Call
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## Drinking Water

If you are a State of Alaska agency interested in water testing, please contact the lab for more information.

For all other agencies and individuals, we recommend utilizing the services of a private laboratory certified for analysis of drinking water. For laboratories certified to perform chemical analyses, please visit <https://dec.alaska.gov/eh/lab/chem-lab-cert-status/>. For laboratories

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certified to perform microbiological analyses, please visit <http://dec.alaska.gov/eh/lab/micro-lab-cert-status.aspx>.

## Payment

The EHL accepts MasterCard®, Visa, and checks for payment of laboratory fees. Contact our Administrative Assistants at (907) 375-8200 to process your transaction.

## Driving Directions

From Anchorage International Airport, take International Airport Road to Old Seward Highway, turn left onto Old Seward, travel 2 blocks and turn right on East Tudor Road. Travel approximately 3 miles, turn right onto Dr. Martin Luther King Jr. Avenue. Follow the avenue around the curve past the Public Health Laboratory (1 block) and turn right into the EHL.

If you need directions from a different location, or have any questions, please feel free to contact us at [DEC.EH-Lab-ShippingReceiving@alaska.gov](mailto:DEC.EH-Lab-ShippingReceiving@alaska.gov) or call us at (907) 375-8231.

We are located at 5251 Dr. Martin Luther King Jr. Avenue. Our hours of operation are from 8 AM to 4:30 PM, Monday through Friday, excluding State and Federal Holidays.

For general information, please enter through the front doors. For sample drop off, deliveries, or contractor access, please enter through the rear entrance using the driveway to the right of our laboratory.

## General Sample Shipping and Submission Guidelines

### Submission Paperwork

The EHL requires that all specimens include a properly completed submission form. This ensures that your specimens are accurately accessioned, analyzed, and reported. For your convenience the EHL's submission forms are available online at <http://dec.alaska.gov/eh/lab/lab-submission-manual-forms/>.

- Clearly print or type the sample submission form information so that it is fully legible to our staff.
- Fill out all applicable fields on the form appropriate for your sample type. If you are unsure how to fill out the form properly, please contact the EHL Shipping & Receiving department for assistance.



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- Each sample must be clearly labeled, and be uniquely identified.
- Check that the lot # of the sample packaging matches your submission paperwork.
- Ensure that your submission form is signed and dated.
- Samples received without proper documentation may be rejected.

## Packaging and Shipping Information

To help guide you through the maze of regulations, the EHL staff have created guidelines for properly preserving, packaging, and shipping some of the more common categories of samples that the EHL handles. Not surprisingly, each sample category has its own distinct sample preservation, packaging, temperature, and shipping requirements. On the following pages you will find guidelines for properly handling each sample category. The EHL staff is available to provide you with information on how to safely package and ship your samples.

These requirements for packaging of each type of sample are given in the following sections, but in general, proper packaging of diagnostic specimens includes four basic requirements:

- Watertight primary receptacle
- Watertight secondary receptacle
- Absorbent material
- Sturdy outer packaging with proper labeling.

Liquid specimens must be leak-proof. To prevent contact between multiple fragile primary containers individually wrap or separate each and place inside a leak-proof secondary receptacle. Place absorbent material between the primary and secondary receptacle, making sure that multiple primary receptacles are individually wrapped to prevent contact. Use enough absorbent material to absorb the entire contents of all primary receptacles.

All samples submitted to the EHL are received within the EHL Shipping & Receiving department. Our Receiving Staff require the following information as soon as your samples are shipped so they may arrange for a courier or staff to pick-up and deliver to the lab:

- Date shipped
- Your name and contact telephone number
- Number of pieces (coolers, boxes, etc.)
- Content of shipment
- Time of sample collection
- Test(s) requested
- Freight carrier
  - Name of carrier

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- The waybill number (or other carrier tracking number)
- Flight number, if available
- Date and time expected for arrival in Anchorage

**Prior arrangement must be made before shipping samples** due to the sensitive nature of samples, holding times, and shipping regulations. Please notify EHL Shipping & Receiving by phone at (907) 375-8231 (**note:** this phone is not staffed 24 hours a day; please leave a detailed message), or email the above information to [DEC.EH-Lab-ShippingReceiving@alaska.gov](mailto:DEC.EH-Lab-ShippingReceiving@alaska.gov) to make arrangements for your sample delivery needs.

Address all sample shipping labels as follows:

**ADEC – EH Laboratory  
5251 Dr. Martin Luther King Jr. Ave.  
Anchorage, AK 99507-1293  
NOA 375-8231**

The following links are for your convenience and do not constitute an endorsement of the business listed or a complete listing of possible couriers:

[Alaska Airlines Cargo Services](#)

[FedEx](#)

[UPS](#)

If you have questions, our laboratory staff is available to assist you. To contact our Shipping & Receiving department call (907) 375-8231 or send an email to [DEC.EH-Lab-ShippingReceiving@alaska.gov](mailto:DEC.EH-Lab-ShippingReceiving@alaska.gov). Our staff will be happy to guide you through the process.

## **Marine Toxins**

### **Clams, Oysters, Mussels, Scallops, Snails, Geoducks, and Crabs**

For PST analysis of clams, oysters, and mussels for regulatory purposes, each sample should contain a minimum of 100g-150g and a minimum of 12 animals. Samples with a weight of less than 100g may not be used for regulatory purposes. If domoic acid analysis is also required, an additional 75-80 grams is needed. Generally, a full 6-ounce cup (10oz if domoic acid analysis is needed) of drained meat gives sufficient sample volume and, in most instances, covers for any loss of liquid through leakage during transportation to the laboratory.

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For more information regarding the requirements for non-regulatory samples, or species other than clams, oysters, and mussels, please contact the EHL Shipping & Receiving department.

## **Preparation - Clams, Oysters, Mussels**

1. Thoroughly clean the outside of the shellfish with fresh water.
2. Open the shell by cutting the adductor muscles. (Caution: DO NOT use heat or anesthetics before opening shell--product must be raw for testing.) Rinse the inside with fresh water to remove sand or other foreign material.
3. Shuck the meat from the shell, being careful not to cut or damage the body of the mollusk.
4. Without layering, collect approximately 150 grams (about 6oz.) meat on a No. 10 sieve.
5. Let it drain for 5 minutes. Discard pieces of shell, and discard the drained liquids.

## **Packaging and Shipping**

1. Place each drained sample into a heavy duty (freezer) Ziploc® type bag.
2. Double bag the sample using another Ziploc® bag.
3. Label each bag with farm name, permit number, species, and lot number. Improperly marked or unmarked samples may be rejected for analysis.
4. Complete the sample submission form for each sample type. Forms can be found at <http://dec.alaska.gov/eh/lab/lab-submission-manual-forms/>.
5. Place the submission form in a separate Ziploc® bag.
6. Freeze the sample prior to packaging.
7. Wrap the samples in newspaper or other absorbent material.
8. Place the samples and submission form in a sturdy, leak-proof box. A small Coleman cooler (or equivalent) works well for this purpose. Packaging the samples in envelopes or other non-sturdy, non-leak-proof containers is not acceptable (or legal!) and may result in the samples being rejected by the shipper or laboratory.
9. Add sufficient frozen gel packs or gel ice to keep the samples cool during transport. Samples received at or above 10°C and/or decomposed may be rejected at the EHL's discretion.
10. Ship the samples for next day delivery.
11. Request that the shipper hold the sample in a refrigerator or freezer, if this service is available.

## **Marine Growing Water**

### **Shellfish Growing Water**

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This protocol is for commercial shellfish operators who have been authorized by the Alaska Department of Conservation to collect shellfish growing water samples. The frequency and sampling schedule is determined by the Alaska Department of Environmental Conservation (DEC) Shellfish Specialist in your approved sampling plan.

We can only accept water samples Monday – Wednesday, 8:00 a.m. - 4:30 p.m., and Thursday 8:00 am to 12:00 pm, except on holidays or posted/notified closures. Samples submitted outside of this timeframe without prior approval from the laboratory may be rejected. Samples must be analyzed within 30 hours of collection.

## Sampling Kit

When requested, the EHL will provide a sampling kit to include:

- Sample containers, one per sampling station, one temperature blank, and a couple extra containers;
- Cooler, packing material, gel packs;
- Customized Shellfish Water Survey Form;
- Ziploc® bag for survey form.

## Obtaining a kit and making arrangements for sampling

- Collect the samples only per the approved schedule or upon receiving a request from the DEC.
- Request that the laboratory prepare and ship a sampling kit to you by calling us at (907) 375-8231 or sending an email to [DEC.EH-Lab-ShippingReceiving@alaska.gov](mailto:DEC.EH-Lab-ShippingReceiving@alaska.gov).
- Check the sampling kit to ensure sufficient containers have been provided and the Shellfish Water Survey Form was included and matches your approved sampling plan.
- Make sure that all containers remain in the cooler during storage and store the kit in a clean, dry location away from any possible sources of contamination.
- Coordinate with EHL personnel by telephone or email as soon as possible if sampling needs to be postponed due to weather or other hazardous conditions.

## Sampling Procedure

Marine water sampling instructions are available from the EHL. Contact us for more information.

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## **Manufactured Food**

### **Manufactured Food Microbiology**

The EHL offers microbial testing of manufactured foods (ready-to-eat, native-style smoked fish, and shelf-stable foods). Available tests include *Listeria spp.*, *Listeria monocytogenes*, *Salmonella spp.*, fecal coliforms/*E. coli*, and *Staphylococcus aureus*. A minimum of 8 ounces/0.5 pounds/227 grams of product is required for testing.

Samples should be shipped to the laboratory in a manner consistent with their packaging, meaning that samples requiring refrigeration should arrive at the laboratory between 1-5°C, samples meant to be stored frozen should arrive frozen, and shelf-stable samples can be shipped either at ambient temperature, or refrigerated.

## **Cottage Food Testing Program**

The EHL provides testing for the public in support of the DEC's Cottage Food Exemption program (<http://dec.alaska.gov/eh/fss/food/cottage-food-facts/>). Tests offered include water activity, pH, and water phase salt. The required sample size and temperature requirements are dependent on the type of sample being submitted, and the testing that will be performed. Please contact the EHL Shipping and Receiving department prior to shipping your samples for more information.

## **Animal Health**

### **General Information**

Biological specimens must be packaged and shipped in accordance with US Department of Transportation and International Air Transport Association regulations. Specimens include any animal material, including blood and its components, tissue, and tissue fluids. Please contact the Office of the State Veterinarian for sample collection, shipment, and test request protocols.

## **Environmental Samples**

### **Water, Soil, Sediment, Food, Etc.**

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Environmental samples requiring chemical analyses should be collected and shipped utilizing the following guidelines:

Parameter	Food or Solid	Aqueous
Total Mercury	4oz CWM/Cool 4°C	250ml HDPE/pH<2 HNO <sub>3</sub> /Cool 4°C
Methylmercury	4oz CWM/Cool 4°C	250ml HDPE/Cool 4°C
ICP/MS Metals Scan	4oz CWM/Cool 4°C	500ml HDPE/pH<2 HNO <sub>3</sub> /Cool 4°C
Water Phase Salt	4oz CWM/Cool 4°C	NA
pH	4oz CWM/Cool 4°C	1L HDPE/Cool 4°C
Moisture Determination	4oz CWM/Cool 4°C	NA
Water Activity (a w)	4oz CWM/Cool 4°C	NA

NOTE:

Amb Amber

CWM Clear Wide Mouth

HDPE High Density Polyethylene

NA Not Applicable

For more information about the testing available and shipping requirements for your particular samples, please contact the EHL Shipping & Receiving department.

## Drinking Water

### Guidelines for Submitting Drinking Water Samples

All sample submissions must be pre-authorized by the EHL prior to sample collection. Please contact the EHL at (907) 375-8200 prior to sample collection to discuss sample collection, shipment and test request protocols.