

## **ACKNOWLEDGMENTS**

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## **Pollution Source Identification and Correction: Protocol Manual**

### **INTRODUCTION**

Fecal coliform in surface water provides an early warning for determining whether land use, development and human activities are being managed to effectively protect public health and the environment.

Fecal waste from warm-blooded animals can contain pathogenic bacteria and viruses that cause human diseases such as shigellosis, campylobacter enteritis, viral gastroenteritis, giardiasis, and cryptosporidiosis. Fecal contamination of surface waters is caused by human and animal waste discharged or leaked to the ground or surface waters. During rain events, flowing surface water picks up pollutants, such as fecal waste, and transports them to local streams, bays, and lakes. Additionally, as impervious surfaces are increased in watersheds, pollutants are transported rapidly to receiving waters.

Shellfish beaches are an important resource in Kitsap County. Kitsap Public Health works in partnership with Washington State Department of Health (DOH) to protect and restore shellfish harvesting in Kitsap County.

The Water Quality Standards for Surface Waters of the State of Washington (Chapter 173-201A Washington Administrative Code [WAC]; hereafter referred to as “water quality standards”), and the beach classification criteria set forth in Recreational Shellfish Beaches (Chapter 246-280 WAC) and Sanitary Control of Shellfish (Chapter 246-282 WAC) currently use surface water fecal coliform (FC) concentrations to determine whether or not surface waters and shellfish tissue are safe for human contact and consumption, respectively. Fecal coliform (FC) and *Escherichia coli* (EC) bacteria are indicators used to assess the presence and level of fecal waste in surface and ground waters.

### **Background**

The Kitsap Public Health District has monitored major streams and marine waters for FC on a routine basis since 1996. This extensive monitoring program has resulted in the listing of many Kitsap County marine and freshwater bodies for FC pollution on Washington State’s 303(d) List of impaired or threatened waters. Elevated levels of fecal pollution are responsible for posting of selected streams with warning signs that guard against contact with the water. Additionally, documented FC pollution or the threat of pollution has caused the closure and restricted use of commercial shellfish beds in Burley Lagoon, Dyes Inlet, Hood Canal, Liberty Bay, Port Orchard Bay, Port Gamble Bay, Sinclair Inlet, and Yukon Harbor. Monitoring has also provided a feedback mechanism for water cleanup projects and has provided evidence of water quality improvements including removal of warning signs and upgrades of shellfish harvest areas.

FC pollution may come from point or nonpoint sources. Point sources like wastewater treatment plants are regulated by the Environmental Protection Agency’s (EPA) National Pollution Discharge Elimination System (NPDES) permitting program.

Nonpoint pollution is a combination of discharges from many activities on many land parcels and as such is more difficult to identify and control. The identification and correction of nonpoint pollution is primarily the responsibility of local jurisdictions in Washington State. The Kitsap County Surface and Storm Water Management Program (SSWM) was developed and implemented locally to provide a

framework for organizing and funding surface water assessment, protection, and restoration efforts related to nonpoint source pollution. SSWM program activities are carried out by Kitsap County Public Works, Kitsap County Health District (Kitsap Public Health), Kitsap Conservation District, Washington State University Kitsap Extension, and Kitsap County Department of Community Development.

Kitsap Public Health is the primary agency responsible for monitoring, identifying, and prioritizing nonpoint fecal pollution correction programs in Kitsap County. In response to the fecal pollution problem, Kitsap Public Health developed a SSWM-funded Pollution Identification and Correction (PIC) program, an Onsite Sewage System (OSS) Monitoring and Maintenance program, and a Water Protection Complaint Response program. These programs utilize existing local regulations and authority to address FC pollution sources and enforce correction when necessary. The programs incorporate a strong educational element to prevent future fecal pollution.

Kitsap Public Health developed the PIC program to prioritize and address water quality problem areas in Kitsap County. FC pollution problem areas are thoroughly assessed for land uses and ranked by water quality data and public accessibility. Door-to-door PIC inspections are conducted in top-priority areas to identify and correct fecal pollution sources. PIC inspectors provide free technical assistance to guide property owners through the process of correcting identified pollution sources. The inspection is designed to help property owners and residents prevent fecal pollution of surface waters and get the most life possible from their OSS investment.

Kitsap Public Health PIC projects utilize community participation by proactively educating owners and residents while identifying and correcting FC sources. The Kitsap PIC program has been responsible for performing FC source identification projects at the watershed and sub-watershed scale resulting in documented improved water quality in streams, lakes, marine waters as well as upgrades of shellfish harvest areas, including Dogfish creek, Burley Lagoon, Cedar Cove, Dyes Inlet, and Yukon Harbor.

#### Purpose

The purpose of this document is to explain in detail how Kitsap Public Health investigates and identifies major FC nonpoint pollution sources.

## GOALS

The goals of the Pollution Identification and Correction (PIC) program are to:

- Assess fecal pollution of Kitsap County surface waters.
- Protect the public from waterborne illness related to fecal pollution of surface waters, storm water, and shellfish.
- Address or assist with federal, state and county water quality mandates as required.

## OBJECTIVES

- Determine fecal pollution levels in streams and marine waters.
- Prioritize Kitsap water bodies for PIC projects.
- Determine fecal pollution water quality improvements or declines in Kitsap surface waters.
- Determine water quality improvements or declines in Kitsap lakes.
- Identify and correct FC pollution sources in high priority areas.
- Investigate citizen complaints and reports related to failing onsite sewage systems (OSS).
- Correct FC pollution sources pursuant to local OSS and solid waste regulations.
- Prevent failing OSS by promoting and providing education on the use of OSS to residents, the OSS industry, realtors, developers, builders, lenders, etc.
- Support financial options for Kitsap County residents to promote voluntary correction of failing onsite sewage systems.
- Assist Kitsap County with tracing and correcting storm water system illicit discharges or connections.
- Provide public education and advisories on water quality related health hazards.
- Assist Kitsap County with Federal Clean Water Act Section 303(d) compliance and implementation of associated Total Maximum Daily Load studies.
- Assist Kitsap County with response to Washington State Department of Health commercial shellfish harvest classification changes.
- Coordinate with other agencies to ensure that monitoring efforts are not duplicated.

## **CHAPTER 1 PROJECT PREPARATION**

### **Project Area Evaluation**

Project area evaluation is an important tool to gain a thorough understanding of an area. The steps of this evaluation include:

- ✓ Evaluate information related to the project area.
- ✓ Conduct an initial project area visit.
- ✓ Conduct an evaluation of water quality data.

#### Evaluate information related to the project area

Before visiting a project area, or conducting a parcel inspection, an evaluation of the project area shall be conducted to review available data and background information. A list of information sources that may be used for this evaluation is found in **Appendix A**.

Determine whether the project is grant funded. If it is, there will be a project scope of work and Quality Assurance Project Plan (QAPP). These documents specify the project components, commitments, timeline, field and laboratory methodologies.

Once sufficient background information is gathered, the information should be organized into project file(s) *e.g.*, property parcel information organized by road, water quality monitoring data, maps, project QAPP, grant, etc. This information will be needed during the project for the preparation of public notification, meetings, door-to-door surveys, press releases, and the final report.

#### Conduct initial project area visit (a.k.a “ground truthing”)

An initial project area visit should be conducted. It is used as a tool to determine the following:

- Confirm storm water drainage patterns of the PIC area.
- Identify surface waters (drainage in roadside ditches, pipe discharges, streams, and marine water) for FC “impact” monitoring to assist in identifying priority areas. This is conducted in coordination with other program monitoring activities.
- Determine project boundaries and note road segments to be inspected, along with property addresses.
- Look for potential fecal sources in the area, including pet or livestock waste, grease, and food waste.

#### Conduct an evaluation of water quality data

Gather and evaluate available water quality monitoring data for the area to determine general areas with elevated FC or EC levels. Work with the project lead or program manager and consult the QAPP to determine which indicator organism to use for investigations. Water quality data is used to determine where water quality problem areas are located and to delineate and refine the project area.

### Public Notification & Information

Public notification is key to informing and engaging Kitsap County residents about PIC projects. After the office evaluation, initial project area visit, and water quality evaluation are complete, the public within the PIC boundary will be notified of Kitsap Public Health's intent to conduct a PIC project.

Public notification is accomplished using the following resources and/or methods: hosting public meetings, press releases, direct mailings to households, door hangers, project fact sheets, articles in local news media and/or publications. The information presented should be direct, concise, and complete.

It should contain the following items:

- Why and where the PIC project is being conducted;
- Applicable water quality results;
- Who is doing the PIC project, and by what authority;
- How and when the PIC project be conducted;
- Possible sources of fecal pollution;
- Who to contact for answers to questions.

Developing the format and content of PIC project information and the choice of how to distribute the information to the public is made in consultation with the Field Supervisor or Program Manager. Specific information regarding public notification will also be found in a project's QAPP (if applicable), e.g. the number of public meetings, workshops, development of Fact Sheets etc.

Examples of a Press Release and a fact sheet, are found in **Appendix C**. These are also kept electronically and accessible to staff in the PIC Common directory. Typically these documents are organized in folders based on project areas.

All press releases must comply with Kitsap Public Health's press release policy, and must be approved by the Program manager or Field supervisor and the Public Information Officer prior to dissemination.

A short informational fact sheet about area water quality is an effective way to introduce and provide information to area residents about the project. It is recommended that a health educator review the flyer for optimal effectiveness. Submit to field supervisor or program manager for approval.

### Public Meetings and/or OSS Workshops

Public meetings are held to launch a new project, provide an update on an existing project, and/or host an OSS Onsite Sewage System workshop.

The public meeting is held at a convenient and comfortable location as close as possible to the project area. The elements of the public meeting include a short presentation about the FC pollution problem, project information such as water quality data, the goals and objectives for the project, etc. Sufficient time should be allotted to enable the public to ask questions. Invite project partners, e.g. Kitsap Conservation District, Department of Ecology (Ecology), Department of Health, Environmental Protection Agency, Kitsap County Surface and Stormwater Management. Identify community groups in the project area to determine and address local concerns. It may be useful to hold your public meeting



at a regularly scheduled meeting of a community group. Consult the Field Supervisor or Program Manager for guidance.

Members of the public that should be invited to these public meetings include: residents of the project area, local government representatives, the Kitsap Board of Health, and grant officers.

**Table 1. Guidelines for Public Meeting Preparation**

| Timing                                   | Preparation Chore  | Tips  |
|--|--|---|
| 1-3 months in advance of meeting         | Choose a meeting location and make reservations<br><br>Choose meeting time(s)                          | Find a comfortable meeting space within the project area. Review cost, seating capacity, available chairs and tables, audiovisual equipment access, and if setup will be needed or provided. Meeting times can vary with project areas. |
| 1 – 3 months in advance of meeting       | Arrange light refreshments in accordance with grant policies   | Some meeting locations will require that they provide the refreshments at additional cost.  |
| 1 month in advance of meeting            | Mailing List   | Using the PIC property list, make mailing labels using mail merge. Seek assistance from clerical staff as needed.   |
| 1 month in advance of meeting            | If applicable, fill out and submit light refreshments form & prepare or obtain Ecology attendance form | Contact the Ecology grant administrator for these forms.<br>Otherwise, prepare a Sign In sheet on Kitsap Public Health letterhead.  |
| 1 month in advance of meeting            | Prepare maps to be used for presentation   | Request maps from Kitsap Public Health staff trained in ArcView.  |
| 1 month to 3 weeks in advance of meeting | Complete meeting notice mailer   | Use the templates that the Health Educator created for a uniform design for all meeting materials.  |
| 2-3 weeks in advance of meeting          | Coordinate with Clerical staff to send mailers   |   |
| 2 weeks in advance                       | Press release to newspapers. Notify Board of Health and other key stakeholders                         | Submit draft presentation to program manager for review.  |
| 1 week in advance                        | Prepare presentation   | Submit draft presentation to program manager for review.  |
| 1 week in advance                        | Gather materials for tabletop displays and maps  | See the table of meeting supplies that follows.   |

Consider partnering with other agencies/staff to assist with meeting preparation.

*Kitsap Conservation District* is contracted under some grants to help with meetings. They can provide useful GIS information and maps. They have a presentation on agricultural best management practices (BMPs), and can arrange for agricultural property owners who have implemented BMP's to speak at meetings.

*Clerical Support* staff can also provide assistance with making labels, mailers etc.

### GIS Maps and Powerpoint

Get help with experienced staff for any technical elements or software you may not be familiar with. Make sure to plan ahead. It's also helpful to make sure your documents and software are compatible with that used by other presenters if you're going to share resources. It is also helpful to ensure that the software is compatible with the equipment, e.g. laptop has updated software.

### Meeting Supplies

It's helpful to have a plastic box dedicated to brochures and materials that you'll take to your public/project meetings. It is useful to gather supplies well in advance of the meeting so that items can be added to the box as they are ready. Some suggested supplies include:

| Equipment   | Supplies/Handout materials   | Items for refreshments  |
|---|--|---|
| Scotch Tape<br>Stapler<br>Extension cord<br>Easels or tacks for directional signs<br>Projector screen | Directional signs to meeting place and room<br>Audiovisual equipment<br>Laser pointer<br>Business cards for speakers and other programs<br>Brochures/Fact Sheets<br>Sign-in sheets/Pens<br>For speakers: Gum or mints, drinking water, cough drops | Coffee filters<br>Coffee pot<br>Creamer<br>Sugar<br>Tea bags<br>Bottled water<br>Napkins<br>Spoons<br>Tablecloth(s) |

### Field Preparation & Safety

Personal safety in the field is extremely important. Health District inspectors should always adhere to the guidelines herein when conducting field inspections and investigations. Refer to a description of property access and consent. Safety equipment/supplies that each field staff should carry includes; cell phone, pepper spray, dog treats, gloves, reflective vest, Kitsap Public Health identification badge, and business cards. A complete list of field equipment is found in **Appendix B**.

Before setting out into the field for the initial project area visit or individual parcel inspections, it is essential to be mentally prepared, properly equipped, and organized.

Inform project lead and note field work locations on the water quality calendar on the intranet. Coordinate with other inspectors in the area. Inspectors are encouraged to ask another inspector to "ride along" if they are uncomfortable visiting a particular property alone or if they want another "set of eyes" to assess a possible problem or violation. However, there are certain circumstances where "ride alongs" are probably not necessary, including consecutive visits (with owner/renter permission) to a property undergoing a dye test, etc. Use your best professional judgment in determining where and when to ask for a "ride along" – safety is our first concern but we also need to consider financial impacts. Contact the project lead, field supervisor, or the program manager if you are unsure.



TIP: Park your vehicle in a manner that does not interfere with the movement of other vehicles and provides you with the opportunity for a quick exit.

Cut the interview short if the homeowner shows any signs of hostility. If an individual makes threats or threatening gestures towards you, leave the property immediately.

Do not inspect the property in this situation. Drive away and find a safe location to note the details on the survey form. Inform your project lead, field supervisor or program manager immediately.

### Handling Dogs

Dogs can be a major threat in the field. Dog treats are an essential tool to make friends with dogs in a project area, but always carry pepper spray to protect yourself. Contact the field supervisor or program manager to arrange for the required training to use pepper spray.

When entering a property, look for signs of dogs e.g. barking, doghouses or leashes. Stay in the car when dogs are present to assess whether the dogs are friendly or aggressive.

If you do not immediately see a dog or dogs, stay near the car with the door open momentarily or rattle a fence or gate and/or call out your name and affiliation several times to draw attention to yourself and listen for dog barking. If you feel confident that there is no immediate threat, continue to follow the main path to the front door.

If there is a dog on the property, use your best professional judgment to decide if the dog is friendly or not. If the dog is friendly, continue with your approach to the front door. If not, wait a few minutes to give the resident time to notice the dog barking and come to the door. Note the address of the home, and if possible, the homeowner's name, and contact the homeowner/occupant by phone to schedule an appointment. You can also leave your business card or door hanger at the door or gate with the date and time you were there.

### Field Equipment List

A list and description of the standard and specialized equipment necessary to conduct inspections and investigations is located in **Appendix B**. Ordering new equipment and making repairs to existing equipment are handled through the field supervisor program manager. Report all instances of equipment breakage or loss as soon as possible.

## CHAPTER 2 SAMPLE COLLECTION & TESTING

### Quality Assurance and Quality Control

Procedures for the collection, labeling and transport of water samples shall follow the *Kitsap County Health District Water Quality Monitoring Plan*, also known as the *Trend Plan*. Details regarding the collection, labeling and transport of water samples is also described below.

### Collecting water samples

Water sampling is conducted for shoreline surveys, performing impact and trend sampling and responding to water quality complaints. Samples may be analyzed for either FC or E.Coli bacteria. The type of analysis will be determined by the purpose for the sampling as well as any associated QAPPs. When collecting samples, wear nitrile gloves. You may want to wear two sets of gloves when working on rough shorelines or terrain.

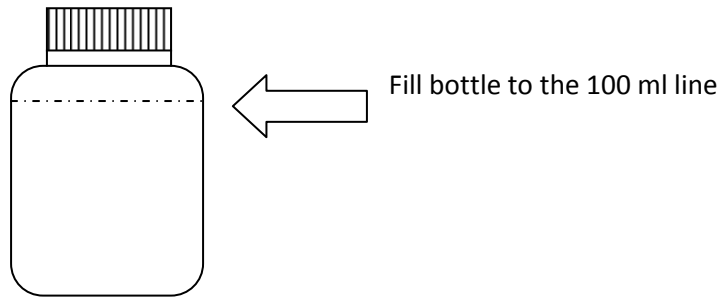
During shoreline surveys collect water samples from all flowing discharge points including storm water outfalls, yard drains, bulkhead drains, pipes, drainage ditches, seeps, and sheet flow.



When sampling in streams and lakes, use the “U” scoop method

- Reach out with the wand and slowly plunge the bottle straight down into the water, approximately to the middle of the water column, and scoop in a smooth, semicircular “U-shaped” motion back up to the surface.
- The scooping motion helps to ensure that the sample will not be biased with bacteria from the surface micro-layer.
- Also take care not to scoop up any sediment in the sampling bottle. If this occurs, use a fresh bottle or empty the bottle, rinse it with clear water from the sampling site and resample.

It is important to leave some airspace in the bottle. If the bottle contains water above the 100ml line, slowly pour out the excess. Replace and tighten the cap, again taking care to avoid touching the neck of the bottle and the inside of the cap. The bottle should be filled to the line shown below.



Note any unusual odors, matting, vegetative growth, laundry lint, food waste, temperature, animal tracks, animal waste, or any other characteristics that may indicate a sewage or laundry source at or near the water sample.

Once the sample is collected and the bottle secured, place the bottle in a cooler with ice packs. The bottles should be kept below 10 degrees Celsius (Holding time and temperature from *APHA Standard Methods*, 20<sup>th</sup> edition pg 9-21).

Wash hands as soon as possible after sampling and before you eat.

#### Labeling and Recording samples:

- Use a black permanent marker (or regular pen) to label the 100 milliliter sample bottle with the sample identifier, date, and time the sample was collected on the label.
- Clearly record the sample name, collection time, location, drainage size, pipe diameter, and pipe material (if applicable) in the field notebook.
- Record detailed parcel-oriented sample descriptions in the field notebook so that outfalls can be re sampled by different staff, if necessary.

#### Transporting samples

When water samples are collected they should be transported in coolers with ice packs. The recommended temperature, according to *APHA Standards Method* is 10 degrees Celsius.

#### Chain of custody

Water samples are analyzed at Lab/Cor Inc. Following the collection of all water samples, a chain of custody form must be completed. Check the QAPP, or ask the project lead or the Field Supervisor to verify whether samples should be analyzed for FC or EC. A chain of custody form is also submitted when additional analytical sampling is needed, e.g. ammonia, nutrients etc.

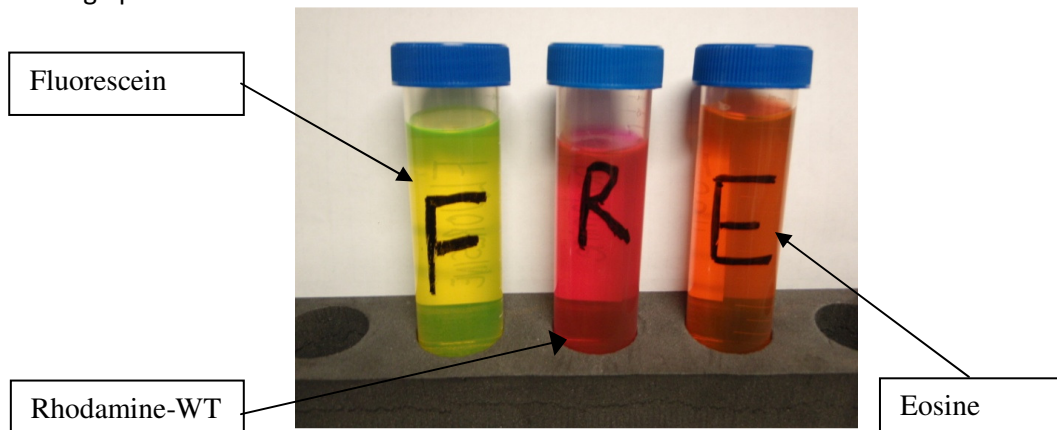
## Dye Testing procedures

Kitsap Public Health utilizes methods developed by Dr. Tom Aley, of Ozark Underground Laboratories (OUL). Reference documentation regarding the procedures for the analysis of dye testing may be found at the OUL website, <http://ozarkundergroundlab.com>.

Kitsap Public Health purchases three fluorescent dyes from OUL to dye-test OSS: Fluorescein (a green-yellow dye), Rhodamine WT (a purple-red dye) and Eosine (a pink-green dye). By using three different colored dyes, dye testing a large survey area can be accomplished more efficiently since up to three homes can be dye tested simultaneously.

When dye testing two homes concurrently, it is recommended to use Fluorescein and Rhodamine-WT. This is due to the wavelength difference between FI and Rh-WT.

Select dye in consultation with the project lead and/or program manager. Charcoal packs (packs) utilize activated charcoal to adsorb dye and are used to confirm a hydraulic connection between the OSS and the discharge point.



To meet the goals and objectives of the PIC project, dye testing shall be conducted in the sequence outlined below:

### Checklist for conducting a dye test

\_\_ Develop a plan in advance for dye testing. This should include the type of dye to be used, locations of packs, and how to secure and camouflage the packs. Project water quality improvements depend, in part, on the effectiveness of dye testing plans. The inspector should consult with the project lead or Field Supervisor if they are unsure how to proceed.

\_\_ Place a control sample charcoal pack one week prior to introducing the dye to determine whether any of the dyes are present in the background. It has been shown that fluorescein may appear in tap water, or fluids leaked from vehicles will contain the color of certain dyes (antifreeze contains fluorescein and transmission fluid has a pink color similar to rhodamine). In areas with these potential sources, it is advisable to analyze the control packs before determining which dye to use.

The control should be placed in an outfall pipe, or area that has shown elevated (FC or EC levels).

In lakes, you may want to establish charcoal floats in priority areas where you plan to dye test.



Two charcoal packs

\_\_\_ Wear gloves when handling or introducing dye. Dispose of gloves and used dye bottles in a manner that will prevent cross contamination of dye testing materials. For example, after introducing dye into fixtures in a house, place empty dye bottle along with gloves into the Ziploc bag that was used to store the dye bottle.

\_\_\_ Use two charcoal packs to make up each sampler. The duplicate can be stored frozen and sent to OUL for spectrofluorometric analysis as necessary.

\_\_\_ Charcoal packs should be placed in the same location as the control and in one or more locations down gradient of the potential source. Remember that the sample locations in flowing water must be in areas where the water samples results exceeded 200 FC/100ml or 160 EC/100ml. To protect yourself when placing charcoal packs in a location that has yielded high bacteria counts gloves may be worn.

\_\_\_ Prior to introducing dye into the OSS, retrieve the controls and seal them into Whirl-Pak™ bags clearly labeled in black permanent marker with sampler address, location, and dates and times placed and retrieved.

\_\_\_ Store retrieved charcoal packs away from dye supplies and out of the sun. A clean cooler and ice packs are used to transport the retrieved charcoal packs to the office. Store them in a dedicated freezer until elution is performed. The retrieved packs are stored frozen to prevent algal growth that interferes with dye identification.

\_\_\_ After retrieving the controls, place another set of charcoal packs in the same location. Note the date and time the controls were retrieved and the new packs replaced on the PIC survey form.

\_\_\_ Map charcoal sampler locations in a field notebook or on the PIC survey form.



\_\_Cover charcoal packs with a rock, board, or other object to prevent sun exposure, algae growth, and disturbance. Make sure, especially along marine shorelines or within creeks, that they are secured (i.e. heavy gauge wire, fishing line, cinder blocks, or stakes, washers, and/or cricket cage). Carefully describe and/or mark locations on the map and/or PIC survey form.

\_\_Note which dye you used on the PIC survey form. Fluorescein is generally easier to see and is the least expensive. Before introducing dye, make sure the owner/occupant hasn't experienced any recent backups. Carefully introduce a total of 500 milliliters of the prepared dye solution equally into all toilets, the kitchen sink, and a laundry sink.



**TIP:** Flush the toilet first, before introducing dye, to be sure it is working properly!

\_\_After introducing the dye, flush the toilet twice, or more if necessary, to flush residual dye from the bowl. Clean up any splashes with toilet paper. Replace the dye bottle lid, place used gloves and bottle back into the resealable plastic bag, and close the bag tightly. Keep used bottles away from all other dye testing supplies.

\_\_When you return to work, dispose of used gloves in the appropriate receptacle in the lab and return the used bottles in their plastic bags to the dedicated used-bottle storage area for reuse. Do not bring dye bottles into the office to prevent cross-contamination.

\_\_Retrieve the first set of dye-packs approximately one week after dye introduction using the procedures specified above for retrieving controls. Replace with another set of charcoal packs. Note the retrieval and replacement information on the survey form. Elute the charcoal pak in the laboratory to determine the presence or absence of dye. If visual dye is present, then the test is POSITIVE, and the dye test may be stopped.

\_\_Retrieve the second and third set of dye-packs one week following placement using the procedures specified above.

\_\_Typically dye testing is conducted over a three week period. However if you suspect low water flow in the residence or intermittent failure, the dye test can be extended additional weeks by placing additional charcoal sets, as needed, on a weekly basis.

The following provides a description for interpreting the results from dye testing.

### **Positive Dye Test**

A dye test is considered to be positive when either there is visual dye that appears at the property, e.g. surfacing in the drainfield, coming out of a pipe, bulkhead etc. OR when the charcoal pack is eluted and there is presence of visual dye in the elution vial.

### **Suspect Dye Test**

A dye test is suspect, when there is no visual dye either at the property site, or in the elution vial, however, the laboratory analysis of the charcoal indicates a detectable level of dye.

### **Negative Dye Test**

A dye test is negative when there is no visual dye present either at the property, in the elution vial and the laboratory analysis indicates that dye was not detected in the sample(s).

### **Mixing and Handling of Dye Tracers**

Prior to handling dye, refer to the Material Safety Data Sheets provided in the laboratory for health and safety information.

Kitsap Public Health purchases dye mixing supplies from OUL and follows their mixing protocol. Fluorescein and Eosine dye are stored in dry-powdered form in one (1) pound containers and Rhodamine WT is stored in liquid form in one (1) pound containers. Do not move these dyes from their location until you are prepared to conduct dye mixing.

Dye mixing instructions are specific to the type of dye being used, and are described below.

#### Fluorescein Dye

While wearing proper protective equipment (e.g. gloves, safety glasses) mix 1 lb. fluorescein powder with 9,078 ml (2.4 gallons) of tap water. This will yield 18 bottles (500ml) for use in the field, and result in a 5% mixture.

#### Eosine Dye

While wearing proper protective equipment (e.g. gloves, safety glasses), mix 1 lb. of eosine powder with 6,052 ml (1.6 gallons) of tap water.

NOTE: In order to have a similar volume of eosine dye mixture e.g., 500 ml bottle, of dye for each mixture, 1.5 times more eosine is needed.

This will yield 12 bottles (500ml) for use in the field, and result in a 7.5% mixture.

#### Rhodamine WT

While wearing proper protective equipment (e.g. gloves, safety glasses) mix one 16 oz bottle of RhWT with 4,085 ml (1.1 gallons) of tap water

This will yield 8 bottles (500ml) for use in the field, and result in a 10% mixture.

Each mixed dye is poured into a dedicated 500-milliliter Nalgene™ bottles. Clearly mark each bottle with black permanent marker: FL for Fluorescein, Rh for Rhodamine, or Eo for Eosine. Dye pouring should occur in an outdoor location where any dye spills can be easily contained or cleaned up without public exposure or interference with dye tests in progress. Make a fresh batch of 1:10 bleach and water solution for decontamination.

Once poured, rinse the exterior of the 500-ml Nalgene bottle with a bleach solution to remove dye, then air dry or wipe with a disposable clean paper towel and place into a new resealable bag. Prevent cross-contamination by keeping the bags away from dye during the pouring and sealing process.

To prevent cross-contamination, the powdered and liquid dye is stored in the metal supply cabinet in the lab. Charcoal packs are stored in the metal supply cabinet located in the 3<sup>rd</sup> floor environmental health storage room.

Inspectors store dye bottles out of the sun in a dedicated and separate container from packs and other materials in their vehicles. Opaque, waterproof containers, such as plastic tubs, are excellent vessels for containing dye bottles.

Verify the absence of dye in the laboratory area where dye packets are eluted in November and March of each year as follows:

- Wipe the hood, interior and exterior, with paper towel wetted with alcohol.
- Add elution solution to the paper towel in a 50 ml conical vial.
- Observe for visual dye after one and 48 hours.
- Record the result in the elution notebook.
- Send the 50 ml conical vial with the paper towel/elution solution to OUL for non-visual range analysis.

If visual or non-visual dye is detected, the laboratory will be thoroughly cleaned and retested until visual and non-visual dye is absent from the samples. To prevent this from occurring, it is required that the hood and vent system be cleaned with bleach solution at least once per quarter.

#### Mixing and Handling of Elution Solution

Dye elution solution consists of 5% aqua ammonia and 95% isopropyl alcohol solution and sufficient potassium hydroxide flakes to saturate the solution. The isopropyl alcohol is 70% alcohol and 30% water. The aqua ammonia solution is 29% ammonia. The potassium hydroxide is added until a super-saturated layer is visible in the bottom of the container. This super-saturated layer is not used for elution.

The elution solution is used to release absorbed dye from charcoal packs. The proper laboratory procedures for the preparation of the elution solution includes:

\_\_Before handling chemicals, refer to the Material Safety Data Sheets provided in the laboratory for health and safety information.

\_\_Under the vented hood, wearing eye protection and gloves, measure 950 ml of isopropyl alcohol solution in the 1000 ml graduated cylinder and pour into the 1000-ml clear glass Erlenmeyer flask with rubber stopper used for mixing the solution.

\_\_Measure 50 ml of aqua ammonia into the 100 ml graduated cylinder and pour into the flask.

\_\_Potassium hydroxide flakes are added until a super-saturated layer is visible in the bottom of the flask. It is not necessary to add additional potassium hydroxide flakes if a super-saturated layer is already visible at the bottom of the flask.

\_\_Stir with a 25 ml pipette and keep the flask sealed to avoid evaporation. Elution solution is stored in the vented hood located in the laboratory.

\_\_\_ Label the Erlenmeyer flask with the date the elution solution was mixed.

**IMPORTANT NOTE: Avoid using the super-saturated layer when eluting charcoal.**

#### Checklist for Performing an Elution and Analysis of Charcoal packs

Charcoal packs should be eluted following the first week they are collected. There may or may not be visual dye, but if visual dye is present, the dye test can be stopped.

\_\_\_ Wear latex gloves when eluting charcoal packs to determine presence/absence of dye.

\_\_\_ Label a clean 50 ml plastic elution vial with charcoal sample identification and date placed and retrieved.

\_\_\_ Remove one of the charcoal packs from the Whirl-Pak™ for the elution. Keep the other sampler in the Whirl-Pak™ and return it to the freezer. This duplicate is stored in a dedicated freezer and sent to OUL for spectrofluorophotometric analysis if necessary.

\_\_\_ Rinse the charcoal pack with tap water.

\_\_\_ Using scissors or a utility knife, cut open the charcoal pack and transfer the charcoal into the 50 ml elution vial. The scissors and/or knife should be immersed in 1:10 bleach solution and rinsed with water before and after use. Rinse and store scissors open.

\_\_\_ Turn on the vent in the hood.

\_\_\_ Add the elution solution to the 50 ml elution vial containing the charcoal inside the hood.  
Add approximately 25 ml of elution solution to the vial. **Do not use the super-saturated layer.**

\_\_\_ Tighten the vial cap firmly, mix for about 20 seconds and store in the dark with the cap side up to prevent leaks.

After one hour, observe the solution for the presence of dye. In a dark room, beam a non-fluorescent light source into the vial. Aim the light at 90 degrees to the viewing angle. Dye is most visible in the light beam. Note the results. Repeat observation 24 hours later, and note the results on the PIC survey form. In some cases, it is difficult to determine if dye is present, ask another PIC staff member to view the vial to help determine presence/absence of dye. If you have difficulty, discuss the observations with the Field supervisor, or program manager.

Keep positive samples labeled and stored in a dedicated container in a darkened room or storage area. These stored samples are sorted quarterly and are set aside in the dedicated waste disposal locker in the lab when OSS repair is complete. Disposal occurs as needed by Kitsap Public Health's hazardous waste coordinator.

### Sending Charcoal Packs to Ozark Underground Laboratory (OUL)

Charcoal packs are sent to OUL for spectrofluorophotometric analysis. Typically this is done when there is an absence of visual dye in the charcoal, and the OSS has suspect or non conforming conditions.

Send the duplicate charcoal sampler to OUL for analysis. Pack packs in a plastic bag with a cold pack, and ship to arrive within two business days. Expedited shipping prevents algae growth that could obscure dye results. You can also send eluted charcoal vials to OUL for analysis. Contact Kitsap Public Health's shipping coordinator to request shipment.

A chain of custody form must be included in the package containing the charcoal sampler(s). Several packs may be shipped at the same time. The chain of custody form is available from OUL. A blank template is also stored in the PIC common directory under Ozark Laboratories.

### Optical Brightener Procedure

Optical brightener testing is another tool used to assess fecal hotspots, or when the discharge of graywater is suspected. Optical brighteners are fluorescent white dyes found in laundry soaps and detergents that absorb ultraviolet light and emit visible blue light. They are removed by adsorption onto soil and organic materials. Recovery of optical brighteners indicates that graywater is being discharged and/or wastewater is not being adequately treated. This makes optical brighteners useful to trace wastewater and graywater discharges. Kitsap Public Health conducts optical brightener sampling in accordance with protocols developed by Ozark Underground Laboratories.

Optical brightener packs consist of cotton-test fabrics which have not been optically brightened. The packs adsorb optical brighteners present in laundry detergent and are used to indicate a graywater or sewage connection to the discharge point. Packs must be deployed as close as possible to the potential discharge in order to absorb the optical brighteners.

Store optical brightener packs in new re-sealable plastic bags isolated from potential sources of laundry soaps and detergents.

### **To perform optical brightener testing follow these steps:**

- Wear disposable gloves when handling optical brightener pads.
- Place cotton packs in locations where either visual evidence indicates a discharge and/or
- in locations in which elevated water sample results were collected. Place packs in a location where they are not likely to be seen or hide them with rocks.
- Anchor the packs with sturdy copper, galvanized wire, or plastic garden ties to a large
- rock or brick, leaving at least an inch of space between the sampler and the anchor. Ensure
- they are placed in a location where they are well-exposed to the water flow. Do not use iron
- wire or old galvanized wire which may leave rust stains that could interfere with the
- analysis.
- Carefully describe, map, and/or mark cotton sampler locations, and record dates and times
- placed and retrieved on the PIC survey form.

- Retrieve optical brightener pads after one week of placement, briefly rinse in water flow,
- squeeze out excess water (do not wring), and place in new re-sealable plastic bag. Label bag with sampling station, date and time sampler was placed and recovered. Do not put any label or used anchoring wire inside the bag. Use a permanent black pen to label the bag.
- Refrigerate or freeze the optical brightener pads until shipment.

The pads do not need to be shipped overnight, but it is advisable to ship them so that they arrive within a few business days. Include the chain of custody form from OUL along with a letter requesting sample analysis.

## **FLUOROMETER**

The fluorometer is used for both optical brighteners and fluorescein dye. Instructions for the calibration and use of the fluorometer are found in the lab with the unit.

### **CHAPTER 3 CONDUCTING SHORELINE SURVEYS**

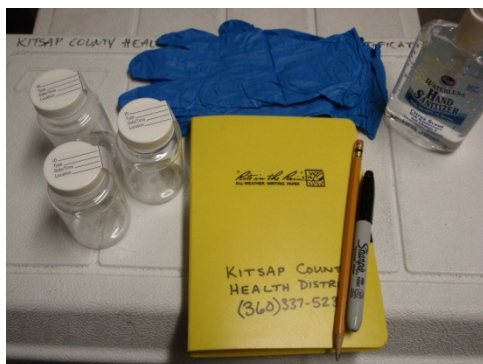
A shoreline survey is the inventory and bacterial assessment of all flowing discharges to the project area. Most project areas that include a QAPP require both wet and dry weather shoreline surveys. Wet weather season surveys are conducted from Oct. 1 through April 30. Dry weather season occur surveys from May 1 through Sep 30.

Dry weather events can identify problems in areas where storm water masks FC sources or where residences are only occupied in the summer. Wet weather assessments can identify OSS failures caused by high seasonal groundwater and surface water drainage issues. Wet weather conditions are met when water is flowing off parcels and stormwater is flowing in roadside ditches or storm systems.

Check with the Project Lead and/or Program Manager if you have questions regarding any of these items. The checklist should be used to ensure staff are prepared for shoreline surveys and have gathered the necessary equipment and supplies. A complete equipment/supply list is found in **Appendix B**.

### Field Preparation checklist

- \_\_\_ Check tides (<http://www.protides.com/washington>) and weather conditions.
- \_\_\_ Determine access location(s) to shoreline and length of shoreline to be surveyed.
- \_\_\_ Get a partner.  
Determine whether you will need a shoreline survey partner and confirm with the project lead or program manager. Partners are strongly recommended when the area is unknown or unusually soggy, muddy or marshy. Always err on the side of caution, while using resources carefully and wisely. When working in pairs, park one vehicle at the “start” access point and one at the “end” point.
- \_\_\_ Estimate the number and type of samples to be collected.  
Check the monthly laboratory schedule (common Water Quality calendar) and add the number and type of samples you will be collecting. Become familiar with the sample holding time, and be sure that the samples will be delivered either personally or by the courier. The courier schedule is periodically updated and found in the PIC Common folder.
- \_\_\_ Gather field supplies:
  - Personal protective equipment: boots, rain gear, hat, gloves, mudders (if needed)
  - Sampling wand, bottles, cooler, ice packs,
  - Field notebook pen(s) (a permanent marker) or pencil(s), wrist watch or stop watch
  - GPS, camera, cell phone
  - First Aid Kit & hand sanitizer
  - Fact sheet about the project/shoreline area being surveyed
  - Business cards, identification badge
  - Dog treats, pepper spray



*Sample bottles, Field book, gloves and Hand sanitizer*



*Sampling wand with empty sample bottle*

- \_\_\_ In the office, map the “start” and “end” access points at the shoreline.  
Visit these sites to determine accessibility. These points can be a public access area like a public boat launch, or a property parcel where consent has been granted to access the shoreline. You can access



Kitsap County's Assessor database and Washington State Department of Ecology's shoreline aerial photos to determine potential access points.

\_\_\_ Work out a sampling strategy and nomenclature system for labeling the samples ahead of time with the project lead.

There are several ways to name the sampling stations. It is important to choose carefully because you will need to track data collected from each sampling station over the course of the project. Examples from previous PIC shoreline surveys are shown in the following table.

| Project Area            | Naming Description  | Sampling Station Identifier*     |
|-------------------------|---|----------------------------------|
| Sinclair Inlet          | Sinclair, abbreviated SN<br>Shoreline area divided into sections, A,B,C etc.<br>Sample locations numbered | SN A 1,2,3....<br>SN B 1,2,3.... |
| Colvos Passage          | Colvos Passage abbreviated Col, area was not divided into sections, sample locations numbered             | Col 1,2,3....                    |
| Jump off Joe/Hood Canal | Jump Off Joe Hood Canal 1 followed by sequential number   | JHC1-1,2,3....                   |

\*There is a 6 character limit in the water quality database for station identifier.

NOTE: During an initial shoreline survey there will be x number of stations. On a subsequent survey of the same area (typically during wet weather), additional flows may be observed. To keep the nomenclature constant, use a letter of the alphabet as an extension to the name.

For example during a shoreline survey along Colvos passage, Col 1, and Col 2.. three additional flows are observed. Name these new stations, Col 1A, Co 1B and Col1C etc.

#### Conducting the shoreline survey

When you arrive at the "starting" access point, park your vehicle safely, so that it will not obstruct other traffic. Place your business card either on the dashboard or inside the driver's side window, to provide contact information. Inspectors are responsible for knowing the rules for property access and consent.

Proper technique for collecting, labeling, and transporting samples is critical to ensure that sampling data is valid. To be representative, water samples should be collected from freefalling surface water flow. Sediments and surface bacteria can skew results.

Collecting water samples:

- Wear nitrile gloves. You may want to wear two sets of gloves (or heavier duty gloves) when working on rough shorelines or terrain.
- Collect water samples from all flowing discharge points including storm water outfalls, yard drains, bulkhead drains, pipes, drainage ditches, seeps, and sheet flow.

NOTE: If necessary, a composite sample may be collected when there are multiple small discharges that appear to emanate from one parcel and/or are close together.

Sometimes discharges are too small to sample without capturing underlying sediment. This is not a significant problem - simply try to minimize the amount of sediment collected.

- Note any unusual odors, matting, vegetative growth, laundry lint, food waste, temperature, animal tracks, animal waste, or any other characteristics that may indicate a sewage or laundry source at or near the water sample.
- Wash hands as soon as possible after sampling and before you eat.

#### Labeling and Recording samples:

- Use a black permanent marker (or regular pen) to label the 100 milliliter sample bottle with the sample identifier, date, and time the sample was collected on the label.
- Clearly record the sample name, collection time, location, drainage size, pipe diameter, and pipe material (if applicable) in the field notebook.
- Record detailed parcel-oriented sample descriptions in the field notebook so that outfalls can be resampled by different staff, if necessary.
- Note any characteristics that will help distinguish the property when accessed from upland so that the outfall can be easily found for resampling and the associated property address can be identified, if necessary.
- Record latitude and longitude of the discharge with a GPS unit and take digital photographs.
- Photographs are helpful for re-identification of sample stations during subsequent surveys.
- Generally one partner will collect the water sample and photo and the other will record field notes and GPS coordinates.
- Enter the sample information in the field notebook.
- Print the Project Name at the top of the page, the start/end locations, include the date, staff initials and the weather and tide conditions. An example of the field notebook entry is shown below:

#### **SAMPLE ENTRY IN FIELD NOTEBOOK**

| Hood Canal Shoreline Survey                                      |       | Staff Initials | DATE      |                                 |                             |
|--|-------|----------------|-----------|---------------------------------|-----------------------------|
| Weather conditions, <i>e.g. Rain, Temp 50F, wind S at 10 mph</i> |       |                |           |                                 |                             |
| Start: Address and/or public access and approximate distance     |       |                |           |                                 |                             |
| Sample ID  | Time  | Latitude       | Longitude | Description                     | Comments                    |
| HC 1   | 10:15 | xx.xxxxx       | xx.xxxxx  | 6 in black flex in bulkhead     | Matting at base of bulkhead |
| HC 2   | 10:25 | xx.xxxxx       | xx.xxxxx  | Beach seep                      | Raccoon tracks              |
| HC 3   | 10:43 | xx.xxxxx       | xx.xxxxx  | 4 in pvc pipe under dock        | Suds                        |
| HC 4   | 11:02 | xx.xxxxx       | xx.xxxxx  | Stormwater diffuser on hillside |                             |

**REMEMBER:** A **replicate** water sample (or duplicate sample) should be collected for every 10<sup>th</sup> sample. Include the letter **R** at the end of the sample identifier to distinguish it as the replicate.

- Record the GPS coordinates at the sampling location. Enter the sample identifier into the GPS unit. This information can be downloaded to the computer at the office, and added to a parcel map to match the sample site to a property parcel if needed. Entering the sampling station to the GPS also facilitates relocating the sample site on subsequent shoreline surveys.
- Take a photograph of the sampling location. Be sure to include a distinguishing feature in the area that will help identify the location, e.g. for example if the sample location is a beach seep next to a house, be sure to include a portion of the house in the photograph. In some instances more than one photo may be necessary.

#### Transporting samples

When water samples are collected they should be transported in coolers with ice packs. The recommended temperature, according to *APHA Standards Method* is 10 degrees Celsius. When samples are brought back to the Kitsap Public Health office, they should be stored in the designated sample refrigerator. Place the samples in this refrigerator and attach the completed chain of custody form to the front of the refrigerator. The courier from the contract laboratory, Twiss Analytical, picks up samples twice daily.

#### Chain of custody

Water samples are analyzed at Lab/Cor Inc. Following the collection of all water samples, a chain of custody form must be completed. Check with the Program manager and/or Quality Assurance Project Plan to verify whether samples should be analyzed for FC or EC. A chain of custody form is also submitted when additional analytical sampling is needed, e.g. ammonia, nutrients, etc.

#### Sample results and data organization

Water quality sample results are reported by Lab/Cor Inc. and sent to staff either electronically or via hard copy. Sample results will be reported according to the turnaround time checked on the chain of custody, and can range from 24, 48 or 96 hrs.

Water quality sample results are entered into the Water Quality Database or in an Excel spreadsheet. The Water Quality database is a Microsoft Access database developed by Kitsap Public Health Information Technology and water quality staff. **Appendix D** provides a description of the water quality data entry procedures. An example from the data entry page of the water quality database is shown below.

**Figure 1. Water quality database entry page for shoreline survey results**

The screenshot shows the 'WATER QUALITY MAIN MENU' software interface. At the top, there's a date 'December 22, 2010' and a window title bar. Below the title bar, there's a navigation bar with tabs for 'Stream', 'Marine', 'Lake-Swimming Beach', and 'Shoreline'. The 'Shoreline' tab is selected. The main form area contains several input fields: 'Date' (09/08/2010), 'Staff1' (EMC), 'Staff2' (AF), 'Tide Time' (Low/High), 'Feet' (190/70), 'Edit a specific visit' (9/8/2010), 'Result Date' (09/10/2010), and 'QA completed' (checkbox). There's also a 'Notes' field with '1ST DRY WEATHER' and an 'Import Twiss Data' button. Below the form, there's a table with columns: Station, Event, Dup, Time, FC, E. Coli, Temp, pH, Tide Cycle, and Notes. The table contains 16 rows of data, with the first row highlighted. The bottom status bar shows 'v 1011.2'.

| Station | Event | Dup                                 | Time  | FC | E. Coli | Temp | pH | Tide Cycle | Notes |
|---------|-------|-------------------------------------|-------|----|---------|------|----|------------|-------|
| COL27   | Shore | <input type="checkbox"/>            | 11:26 |    | 190     |      |    |            |       |
| COL28   | Shore | <input type="checkbox"/>            | 11:30 |    | 70      |      |    |            |       |
| COL29   | Shore | <input type="checkbox"/>            | 11:38 |    | 60      |      |    |            |       |
| COL29   | Shore | <input checked="" type="checkbox"/> | 11:38 |    | 80      |      |    |            |       |
| COL30   | Shore | <input type="checkbox"/>            | 11:45 |    | 60      |      |    |            |       |
| COL31   | Shore | <input type="checkbox"/>            | 11:49 |    | 40      |      |    |            |       |
| COL32   | Shore | <input type="checkbox"/>            | 11:55 |    | 120     |      |    |            |       |
| COL33   | Shore | <input type="checkbox"/>            | 12:00 |    | 340     |      |    |            |       |
| COL34   | Shore | <input type="checkbox"/>            | 12:03 |    | 100     |      |    |            |       |
| COL35   | Shore | <input type="checkbox"/>            | 12:07 |    | 50      |      |    |            |       |
| COL36   | Shore | <input type="checkbox"/>            | 12:29 |    | 120     |      |    |            |       |
| COL37   | Shore | <input type="checkbox"/>            | 12:35 |    | 240     |      |    |            |       |
| COL38   | Shore | <input type="checkbox"/>            | 12:41 |    | 5       |      |    |            |       |
| COL39   | Shore | <input type="checkbox"/>            | 12:45 |    | 40      |      |    |            |       |
| COL39   | Shore | <input checked="" type="checkbox"/> | 12:45 |    | 70      |      |    |            |       |
| COL40   | Shore | <input type="checkbox"/>            | 12:46 |    | 5       |      |    |            |       |
| COL41   | Shore | <input type="checkbox"/>            | 12:50 |    | 760     |      |    |            |       |

Water quality data for monitoring of lakes, beaches, marine monitoring, stream trend monitoring, and shoreline surveys are entered into this database.

### Confirmation sampling

All sampled discharges with FC results exceeding 200 FC/100ml or EC results exceeding 160 EC/100ml shall be re-sampled to confirm whether or not they may be categorized as “hot-spots.” When the calculated geometric mean of three samples from a discharge is greater than 200 FC or 160 EC it is considered a “hot spot” and needs further investigation.

Re-sampling should occur as soon as possible. Samples must be collected within the same sampling season, e.g. if the samples were collected as part of a wet weather event, then confirmation samples must also be collected during the wet season. Work with the project lead or program manager if you have questions. This is required because a discharge can be a “hot spot” during the dry season, or during the wet season, or during both seasons.

Discharges determined to be “hot spots” are investigated for potential fecal sources. It is recommended to rank the “hot spots” according to geomean, those with the highest GMV should be investigated first, etc. An investigation package (or file folder) is assembled for each hot spot, including drainage

tracking, segment sampling when applicable, and building and OSS records for nearby residences. It is very useful to make these individual folders for each hot spot so that the inspector can collect and organize all the data and activities conducted related to this hot spot. Photos and maps of the hot spot drainage should also be included in this folder. This also facilitates the transfer of hot spot investigations to other inspectors, when needed.

Potential fecal pollution sources are evaluated and identified through property surveys, and segment (or impact) sampling using the FC “Hot Spot” Response Process that follows. This applies to both shoreline and stream sampling.

### FC Bacteria “Hot Spot” Response Process

#### *Applies to Stream Impact Sampling and Shoreline Survey “Hot Spots”*

|        |   |
|--------|---|
| STEP 1 | Confirm “hot spot” during dry or wet season by collecting a minimum of three samples for GMV calculation.   |
| STEP 2 | Create map of “hot spot” area with 200 foot buffer  |
| STEP 3 | Conduct recon to assess # of homes, proximity to drainage, presence of livestock, possible access points for segment sampling, etc.   |
| STEP 4 | If # homes $\leq 10$ , review onsite sewage system (OSS) records for all homes and inspect them.  |
| STEP 5 | <p>If # homes <math>&gt; 10</math>, conduct segment sampling. Collect minimum 3 sampling events and calculate geometric mean for each segment. Note that segment sampling must occur during the same season that “hot spot” was proved.</p> <ul style="list-style-type: none"> <li>✓ if drainage is “hot” throughout, conduct OSS record search for all homes within 200 feet of the segment and inspect according to matrix below.</li> <li>✓ if drainage is not “hot” throughout, conduct OSS record search for all homes within 200 feet of the “hot” segments, then inspect all homes according to matrix below.</li> </ul> |

### Property Inspection Prioritization Process

#### *Consider Distance of OSS or Livestock Activity to Surface Water as the most Critical Factor*

|            |  |
|------------|--|
| PRIORITY 1 | Homes with no OSS records and livestock present.   |
| PRIORITY 2 | Homes with no OSS records  |
| PRIORITY 3 | Homes with gravity OSS $\geq 25$ years old   |
| PRIORITY 4 | Homes with gravity OSS and livestock present   |
| PRIORITY 5 | Homes with gravity OSS 10 – 24 years old   |
| PRIORITY 6 | Homes with alternative OSS with deficient report   |
| PRIORITY 7 | All other gravity OSS, and homes with alternative OSS but no current maintenance contract. |
| PRIORITY 9 | Homes with alternative OSS and current maintenance contract                                |

## **CHAPTER 4 CONDUCTING PROPERTY INSPECTIONS**

### **Property Parcel Inspection Preparation**

PIC staff coordinate with support staff to prepare PIC inspection forms, assessor records, OSS records, applicable monitoring and maintenance (M&M) records, and other correspondence for each individual property parcel in the project area before the property inspections.

In some cases, project areas include residential properties served by sewer. Sewer billing departments can confirm properties served by sewer. Inspectors may make a courtesy site visit to sewer properties and let them know about the FC pollution problem and potential sources. Look for potential FC sources including sewage leaks, pet and livestock waste, and grease and food waste.

#### Property parcel inspections consist of:

- Contacting the property owner/occupant to conduct the informational interview.
- Obtaining access and consent to perform a field inspection of the property including an inspection of the onsite septic system and animal waste management practices.
- Evaluating discharges leaving the property during wet weather conditions.
- Making any site specific recommendations to reduce stress to the onsite septic system.

#### Conducting the property inspection:

Kitsap Public Health inspectors must follow the Property Access and Consent Policy when visiting a property. This policy follows:

#### Property Access and Consent

##### Site Entry and Searches

While conducting inspections or surveys, Health District inspectors must enter private property. Because the state and federal constitutions prohibit unreasonable searches, inspectors must decide whether they may enter a particular property to conduct an inspection. There are no blanket rules regarding allowable searches. In all cases, an inspection can occur only after obtaining consent from a responsible party (owner or tenant), or by making observations from a location where the inspector may legally be without consent. To assist you in determining whether you may enter a property some basic constitutional doctrines are listed below:

Reasonable Expectation of Privacy: There are two components to a reasonable expectation of privacy. The first is a subjective component: Does the person have a subjective expectation of privacy in a particular object or location? The second is an objective component: Is this expectation one that society recognizes as reasonable? Generally, a person has a reasonable expectation of privacy in his home, in the area immediately adjacent to the home, and in areas where he/she has taken steps to exclude the public and shield the area from the public's view.

Residence: A person always has a reasonable expectation of privacy in his/her home. You may not enter a person's home, except with the resident's consent.

Curtilage: The land immediately surrounding and associated with the home, i.e., that area associated with the intimate activity of a home and the privacies of life. Curtilage receives the highest level of protection under both the federal and state constitutions. You may not enter the curtilage without a resident's consent, except as explained below. To help determine if an area is within the curtilage, answer these questions:

Q: How close is the area you want to inspect to the house?

A: *The closer the area you want to inspect is to the house, the more likely it will be considered within the curtilage.*

Q: Is there a fence or other enclosure that surrounds the house *and* the area you want to inspect?

A: *A fence that surrounds the house suggests the limits of the curtilage. Accordingly, where a house is situated on a standard lot and the lot is fenced, that is the limit of the curtilage. On a larger piece of property there may be a fence around the perimeter of the property, and an inner fence enclosing the house. In that case, the interior fence would indicate the limits of the curtilage. A clearing or maintained area has the same effect. Thus, on a larger piece of property that is forested, the cleared area surrounding the house would indicate the limits of the curtilage.*

Q: What is the area you want to inspect used for?

A: *The concept of the curtilage is to protect those activities normally associated with the home and the privacies of life. Thus, if an area near the house is used for family or personal activities (e.g., play area, patio, garage), then it is probably within the curtilage. However, if the area is used for activities not associated with home life, especially illegal activities, then it probably will not be considered within the curtilage. You may use evidence you observe from the road or a neighbor's property, or information a neighbor gives you, to determine if an area is being used for an activity associated with the home or some other activity.*

Q: Has the resident taken any steps to protect the area you want to inspect from observation of passersby?

A: *If a fence -- especially a sight-obstructing fence -- or hedge shields the view of the house from the street and neighboring properties, then the area within the fence or hedge will probably be considered within the curtilage.*

Q: Can an inspector ever enter the curtilage?

A: *Yes. You may enter the curtilage to contact the resident. In doing so, however, you may use only a recognizable access route, such as a driveway, walkway, or path. Approach the house as any reasonably respectful citizen would. Normally, you should not enter a side or back yard. You may, however, call out or try to get someone's attention if you see or hear something that leads you to believe the resident is in a side or back yard.*

Other factors to consider when conducting an inspection of private property:

No Trespassing Signs: A "No Trespassing" or "No Solicitors" sign does not prohibit you from approaching a residence using a recognized access route for the purpose of contacting the resident.

Open Fields: Areas that are outside the curtilage are considered "open fields" and do not always receive the same high level of constitutional protection that the curtilage does. In an urban area, you may not



find any open fields. In outlying areas, however, you are likely to encounter them. An open field doesn't need to be either "open" or a "field." It could be a thickly wooded area or a beach. Generally, an open field is any unoccupied or undeveloped area outside the curtilage.

In many instances, you will be able to enter open fields without the permission of the owner. However, you need to consider whether the owner has manifested an "expectation of privacy" in the area you want to enter. Some manifestations of an expectation of privacy are: 1) a long driveway; 2) "No Trespassing" signs; 3) fences, especially sight-obstructing fences, or maintained hedges; 4) a locked gate; or 5) the area cannot be seen from a road or neighboring property.

Each situation is different, so it is not possible to provide a blanket rule for entering open fields. It may be best to consult with a supervisor before entering.

Open View: If you are in a place you may legally be, such as a roadway, public property, a neighboring property that you have permission to be on, or are approaching the residence via a recognized access route, then you can base an enforcement action on anything you can see from that vantage point. Accordingly, if a person allows you in his/her backyard, and you can see illegally stored solid waste on the neighbor's patio, you can write a notice and order to correct the violation or a notice of civil infraction, based on what you can see from the neighbor's property. As long as you remain on the property you have permission to be on, you can climb a ladder to see over a fence, or use binoculars. You may take photographs from a place you may legally be.

Plain View: The plain view doctrine applies when you have entered a property with the resident's consent. The plain view doctrine allows you to use anything that you see inadvertently as you walk through the area. The object must be in plain view; you may not move anything. You may not remove a lid on a trash container to see inside. Plain view works the same way when the resident has given you permission to look around. If you want to see inside or under something, ask the resident if it's okay.

Implied Consent: An inspector obtains valid consent to inspect when he or she asks the resident for permission to conduct an inspection and receives an affirmative response through words or action. An inspector need not inform a person of his/her right to refuse an inspection but, if the person asks whether he/she may refuse, the inspector must tell the person that he/she may refuse.

Statements such as "I'm going to look around," or "I have to inspect the property," should be avoided. A person who submits to an inspection after such a statement has not given his/her consent to the inspection and a court could suppress anything that is found during the inspection.

Although Health District inspectors have the legal right to access a property marked "No Trespassing," PIC inspectors offer a higher level of respect to the property owner by leaving a door hanger at a gate or fence post. Bring plastic bags and rubber bands to secure door hangers especially in windy or wet weather. Do not place door hangers in or on mailboxes. Mailboxes are legally reserved for U.S. Postal Service only.

When conducting the property inspection it is very important that the inspector be confident, cordial, well-organized, and professional. The job of inspecting private properties to identify pollution sources is

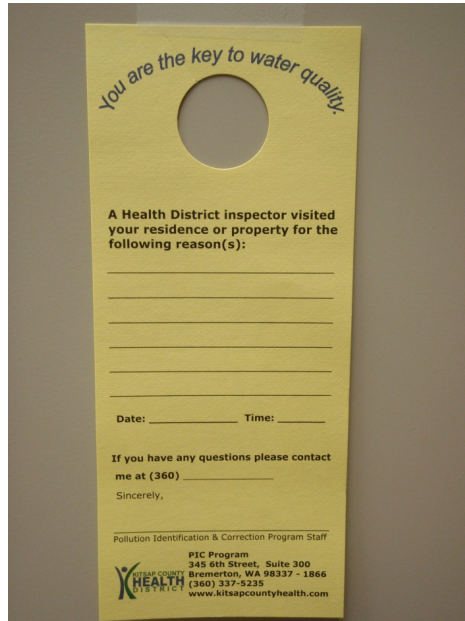
much easier when the public perceives the inspector as an objective and trustworthy professional. Developing a good relationship and trust with the owner/occupant is the key to a successful survey.

When approaching a property, it is recommended to call out a friendly greeting and enter a property along the main access route to the front door. Following no response at the front door, it is also acceptable to follow the main access route to the back door. Call out a greeting in case someone is working outside and knock on a side or back door, provided this does not infringe on the curtilage of the property.

## Door Hangers

When property owners/occupants are not home, inspectors leave door hangers with a brief description for the purpose of the visit and their contact information.

The door hangers used at Kitsap Public Health are pre-printed with the following text:



**TIP :** It is recommended that inspectors staple their business cards to the bottom portion of the door hanger. This saves time, & provides complete contact information.



**TIP:** When leaving a door hanger associated with a PIC project the following verbiage may be used to describe the purpose for your visit: *"The Liberty Bay Restoration project and your onsite septic system. Please contact me. Thank you!"*

Keep track of address, location, and contact information for properties that have received door hangers. PIC inspectors should make three attempts to contact each property owner/occupant by door hangers left at the door. One of these attempts should be on a Saturday. Note dates and results of contact attempts on the PIC inspection form, or when responding to complaints the information should be entered on the complaint form.

After the three attempts have been made to contact the resident with no response from them, a letter is sent to the property owner. An example of this letter may be found in **Appendix G**.

### Meeting the owner/occupant

If the owner or occupant (must be over 18) is there, provide a brief introduction about your visit, whether it be the reasons for the PIC project, the problem alleged in a public complaint, or deficiencies noted in the certified pumpers or maintenance specialists report.

The PIC inspection form includes a checklist of topics that the inspector should address when performing the property inspection for a PIC project. Using this form, provide the owner or occupant with a copy of their OSS records (when available). This is used to provide an overview of their system. Ask whether they have been experiencing problems with odors, soggy spots, or water backing up into the house. Make site-specific suggestions to protect their OSS investment (i.e. conserve water, route surface or ground water away from OSS components, reduce waste strength, do not use harmful chemicals, and prevent physical damage to the system like driving on or storing heavy equipment on the drainfield).

It is important that the inspector walk over the drainfield during PIC project inspections since this will enable the inspector to assess its condition. Use this as an opportunity to educate the owner/occupant about the signs of septic system problems/failure, as well as what a properly functioning drainfield should look like.



The purpose for the PIC property inspection is to provide education to the owner/occupant about their septic system including an inspection of the OSS (walk over the drainfield to assess its condition and rate the system based on this inspection). Inspectors use their best judgment regarding access to the drainfield, in some situations if it is heavily overgrown with dense vegetation such as blackberry bushes, they may not be able to assess the drainfield and should note this on the PIC inspection form.

During the property inspection, PIC staff should also assess other land use practices during their conversation with the owner/occupant, *e.g.* pet waste disposal, if livestock are present, how is manure managed, the use of fertilizers, composting and any other practices that could impact surface waters.

This is a good time to identify whether the property is upland, streamside, on a marine shoreline, drains to stormwater systems, or has potential FC sources. The information from the property inspection should be recorded on the PIC inspection form. Following the inspection, PIC staff will assign a rating to the OSS. Table 2 provides the criteria for rating the onsite septic system.

Table 2. Criteria for rating OSS inspection results

| Rating Classification                   | Criteria for Meeting Classification <sup>1</sup>   |
|---|--|
| <b>No Apparent Problems<sup>1</sup></b> | <ul style="list-style-type: none"> <li>• Completed/signed Sewage Disposal Permit on file at Health District, or available from owner.</li> <li>• No illegal repairs or alterations have been performed on OSS.</li> <li>• All applicable setbacks and conditions in effect at the time of permitting are in place.</li> </ul>  |
| <b>No Records<sup>1</sup></b>           | <ul style="list-style-type: none"> <li>• No completed/signed Sewage Disposal Permit on file at the Health District, or in possession of the owner/occupant.</li> <li>• No Non-Conforming, Suspect or Failure criteria were observed .</li> </ul>   |
| <b>Non-Conforming<sup>2</sup></b>       | <ul style="list-style-type: none"> <li>• Repairs or alterations have been performed on OSS without a permit</li> <li>• Additional bedrooms have been added to the home (or business) without a permit. Additional living units have been connected to the OSS without a permit.</li> <li>• Non-conforming conditions exist (such as insufficient setbacks from surface waters or wells, non-conforming use of dedicated reserve area, vehicular traffic on the drainfield).</li> </ul> |
| <b>Denied Access</b>                    | <ul style="list-style-type: none"> <li>• Owner has denied access to PIC inspector.</li> </ul> <p>Those parcels draining to surface waters are investigated during wet weather conditions by collecting FC or EC water samples leaving the property. If elevated levels are found and/or the inspector has other evidence to show there may be a problem with the OSS, a search warrant may be obtained to gain access and also conduct a dye test.</p>                                 |
| <b>Did Not Participate</b>              | <p>Three site visits were made and a letter sent without any response from the owner. Non-participating properties are evaluated by reviewing OSS records, noting other potential FC sources, and determining the proximity of surface waters to the property.</p>   |
| <b>Suspect<sup>2</sup></b>              | <ul style="list-style-type: none"> <li>• Drainfield area is saturated.</li> <li>• Collected water sample results from bulkhead drains, curtain drains, or other pipes or seeps, at or above 500 FC/100 ml (or 400 EC/100ml) <b>and</b> a negative dye-test.</li> <li>• Collected water sample results from bulkhead drains, curtain drains, or other pipes or seeps, less than 500 FC/100 ml (or 400 EC/100ml) <b>and</b> positive dye-test.</li> </ul>                                |

|                                |   |
|--------------------------------|---|
| <b>Failure</b> <sup>2, 3</sup> | <ul style="list-style-type: none"> <li>●Sewage on the surface of the ground</li> <li>●Sewage discharged directly to surface water or upon the surface of the ground unless the discharge is under permit from WA DOE.</li> <li>●Sewage backing up into, or not draining out of a structure caused by slow soil absorption of septic tank effluent.</li> <li>●Sewage leaking from a septic tank, pump tank, holding tank, or collection system. Any component of an onsite sewage system or public sewer connection found to be broken, in disrepair, or not functioning as intended.</li> <li>Inadequately treated sewage effluent contaminating ground or surface water.</li> <li>●Collected water sample result from bulkhead drains, curtain drains, or other pipes or seeps, at or above 500 FC/100 ml (or 400 EC/100ml) <b>and</b> positive dye-test results.</li> <li>●Cesspools or seepage pits where evidence of ground water or surface water quality degradation exists, or inadequately treated effluent contaminating ground or surface water</li> <li>●Non compliance with standards stipulated on the permit, with the regulations in effect at the time the system was approved for use, or with the regulations in effect at the time the structure was constructed or modified.</li> <li>●Straight discharge (greywater or blackwater) from any indoor plumbing, including recreational vehicles, is observed and documented.</li> </ul> |
|--------------------------------|---|

<sup>1</sup> All of the criteria in each rating classification must be met.

<sup>2</sup>One of the criteria must be met.

<sup>3</sup> As defined in the Kitsap County Board of Health (KCBH) Ordinance 2008-01 "Sewage Regulations."

#### Assessment of Non-OSS FC Pollution Sources (PET WASTE)

State and local regulations require that pet waste not be discarded in areas where it may pollute surface or ground water. Kitsap County's solid waste regulations require that pet owners pick up pet waste at least weekly, or more often as necessary, double bag, and dispose in a sealed trash container. During PIC property inspections, staff review the proper disposal of pet waste with owners (as it applies). A pet waste brochure is also available to provide to residents.

#### Assessment of Non-OSS FC Pollution Sources (FARMS)

Kitsap Public Health's solid waste regulations require that " animal manure shall not be deposited, or allowed to accumulate, in any ditch, gulch, ravine, river, stream, lake, pond, marine water or upon the surface of the ground, or on any highway or road right of way, where it may become a nuisance or menace to health or pollution of water." Animal waste includes manure from livestock.

Kitsap Public Health has an interlocal agreement and memorandum of understanding for agricultural and livestock sites with the Kitsap Conservation District (KCD). KCD often works as a partner in PIC projects. They can conduct an agricultural inventory and generate a list of high priority farms for investigation. KCD offers and provides free technical assistance for animal waste management and other agricultural challenges. KCD is a great information source for best management practice cost shares and ideas for livestock and mud management.

It is recommended to start agricultural PIC inspections early in a project since the investigation and correction can be time consuming and challenging.

## PIC property inspections involving FARMS

When performing PIC inspections involving agricultural properties follow the same procedure as described in conducting the property inspection section and add the following items:

\_\_Walk the property parcel boundaries to identify, map, and sample any flowing surface waters that leave the property.

\_\_Photograph potential fecal pollution sources to the sampling points such as:

- Accumulated animal waste (pets and livestock);
- Non-vegetated, heavily used or muddy pastures or animal holding areas draining to surface waters;
- Animals with uncontrolled access to surface waters;
- Discharge pipes or ditches;
- Stormwater systems; and
- Inadequate grease or food waste management which can attract wildlife.



\_\_Include a sketch on the PIC form, with a map showing the sampling locations.

Include information in the map or PIC form regarding surface waters marine water, lakes and ponds, streams, wetlands, and storm water originating on or running through or contiguous to the parcel; outfall material and diameter; number and locations of animals or birds at time of inspection; animal waste observed; Curtain drains or outfalls to surface water; stormwater system components; stream access points for livestock; fencing.

\_\_Collect three (3) water samples from the same location(s) on different days to best represent field conditions. Sampling during wet weather conditions is recommended. When the geometric mean (GMV) for these samples is equal to, or exceeds, 200 FC /100 ml or 160 EC/100ml, across the property, source correction will be needed.

\_\_Inform the owner/resident of the fecal pollution and ask if a KCD staff member can contact them to help them develop and implement a waste management plan. Document this information on the PIC inspection form.

\_\_In the event the owner/resident refuses assistance from the Kitsap Conservation District, and/or does not want to address/correct the fecal pollution issue, PIC staff will need to enforce the Solid Waste Regulations.

#### Assessment of Non-OSS FC Pollution Sources (WILDLIFE)

Wildlife can be a serious FC source, especially in areas where outdoor pet feeding occurs. PIC staff should inform residents about this issue, and encourage them to keep sources of food inaccessible to wildlife. For example, during a routine shoreline “hotspot” investigation, PIC staff found a large raccoon latrine adjacent to a shellfish growing area.

Investigate discharges at least three times, ideally within a one month period, from a property where human activity is attracting wildlife. Look for grease and food waste management or evidence of feeding. The property owner/occupant may choose to work with KCD to mitigate fecal pollution sources.

The information from the property inspection, including the rating is then entered into the PIC database. An example of the PIC inspection form is found in **Appendix F**.

The PIC database was developed to track PIC inspections and associated information. All properties in the project area should be selected for that project in the PIC database at the beginning of the project for tracking purposes. Completed inspections should be entered into the database as soon as possible. The database is a powerful tool that provides information necessary for quarterly and annual reporting. Procedures for entering information in the PIC database are found in **Appendix E**.

The following figures provide illustrations of a data entry page from the PIC database, as well as an example of one of the report forms available from the database.



Kitsap Public Health District  
Pollution Source Identification and Correction: Protocol Manual

Figure 2. PIC inspection database entry page

Thursday, December 23, 2010

**POLLUTION IDENTIFICATION AND CORRECTION**

RP\_ACCT\_ID: 2114833 Owner: FERRIS TIM J & NOREEN L Owner Phone: SEWER: N  
 ACC\_NO: 112302-1-055-2006 Address: 10632 SE CISCO RD 769-2638 Zip: 98367

Project Area: Colvos/EPA: shoreline Remove from Project Area Priority:

Mail To: Copy Site Address to Mail Mail Address: Mail City: Mail State: Mail Zip:  
 FERRIS TIM J & NOREEN L 10632 SE CISCO RD Port Orchard WA 98367

| Occupancy Type  | System Type      | Records on file | #Bedrooms | OSS Design Flow (GPD) | Marine Shoreline                    | Fresh Shoreline          | Upland                   |
|-----------------|------------------|-----------------|-----------|-----------------------|-------------------------------------|--------------------------|--------------------------|
| + Single Family | Standard Gravity |                 | 4         | 480                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Property related comments  
 seasonal stream located along north side of property. Owners have noticed a boat collecting water samples interested in the results. OK to access beach from owner's property, there are stairs down to beach.

| Survey Date                                | Staff | Inspection Status | OSS Rating | Farm Rating | Last Pump FollowUp Insp Due | FollowUp For    | Completed?               |
|--|-------|-------------------|------------|-------------|-----------------------------|-----------------|--------------------------|
| + 11/12/10                                 | EC    | Completed         | No records | NA          | 2008                        | marine sampling | <input type="checkbox"/> |
| Type of failure: Repaired? Type of repair: |       |                   |            |             |                             |                 |                          |
| * +  |       |                   |            |             |                             |                 | <input type="checkbox"/> |
| Type of failure: Repaired? Type of repair: |       |                   |            |             |                             |                 |                          |

[Link to Kitsap County Parcel Search](#) 1000222.9

Figure 3. PIC database OSS failure report

| OSS FAILURE REPORT for the period of 01/01/12 through 12/31/12 |                      |                       |                        |                       |                        |                |      |              |              |       |                   |   |                 |                |                    |                  |               |              |                      |       |   |    |  |  |
|--|----------------------|-----------------------|------------------------|-----------------------|------------------------|----------------|------|--------------|--------------|-------|-------------------|---|-----------------|----------------|--------------------|------------------|---------------|--------------|----------------------|-------|---|----|--|--|
| Failure Type   |                      |                       |                        |                       |                        |                |      |              |              |       |                   | Repair Type   |                 |                |                    |                  |               |              |                      |       |   |    |  |  |
|  | Scum<br>into<br>Surf | Disch<br>into<br>Surf | Disch<br>into<br>water | Illeg<br>con<br>coll. | X-can<br>grnd<br>wdrng | Seep<br>in Riv | Gywr | Other<br>Sew | None<br>Entd | Total | New<br>At<br>Site | New<br>grnd<br>S/S  | Minor<br>repair | Temp<br>repair | Com<br>to<br>sewer | Phased<br>repair | Struc<br>void | None<br>Entd | Same<br>Year<br>Repr | Total |   |    |  |  |
| Bainbridge Island/<br>Shoreline                                | 0                    | 2                     | 6                      | 1                     | 2                      | 2              | 0    | 1            | 0            | 0     | 14                | Bainbridge Island/E<br>Shoreline                            | 4               | 0              | 2                  | 0                | 0             | 0            | 0                    | 8     | 8 | 14 |  |  |
| Burley/Minter<br>Shoreline                                     | 2                    | 1                     | 0                      | 0                     | 0                      | 0              | 0    | 0            | 0            | 0     | 3                 | Burley/Minter<br>Shoreline                                  | 0               | 2              | 0                  | 0                | 0             | 0            | 0                    | 1     | 3 | 3  |  |  |
| Colvos/EPA<br>Prospect Point<br>shoreline                      | 0                    | 0                     | 0                      | 1                     | 0                      | 1              | 0    | 0            | 0            | 0     | 2                 | Colvos/EPA<br>Prospect Point<br>shoreline                   | 0               | 0              | 0                  | 0                | 0             | 0            | 2                    | 0     | 2 |    |  |  |
| Dyes Inlet<br>Caston Bay Creek                                 | 1                    | 0                     | 0                      | 0                     | 0                      | 0              | 0    | 0            | 0            | 0     | 1                 | Dyes Inlet<br>Caston Bay Creek                              | 0               | 0              | 0                  | 0                | 0             | 0            | 0                    | 1     | 0 | 1  |  |  |
| Hood Canal/EPA<br>shoreline                                    | 0                    | 0                     | 1                      | 0                     | 0                      | 0              | 0    | 0            | 0            | 0     | 1                 | Hood Canal/EPA<br>shoreline                                 | 0               | 0              | 0                  | 0                | 0             | 0            | 0                    | 1     | 0 | 1  |  |  |
| Kingston/EPA<br>shoreline                                      | 0                    | 0                     | 0                      | 0                     | 1                      | 0              | 0    | 0            | 0            | 0     | 1                 | Kingston/EPA<br>shoreline                                   | 0               | 0              | 0                  | 0                | 0             | 0            | 0                    | 1     | 0 | 1  |  |  |
| Liberty Bay<br>Big Scanda<br>Daniels Creek<br>Dogfish Creek    | 4                    | 0                     | 1                      | 2                     | 0                      | 1              | 0    | 0            | 1            | 0     | 9                 | Liberty Bay<br>Big Scanda<br>Daniels Creek<br>Dogfish Creek | 2               | 0              | 4                  | 0                | 0             | 0            | 3                    | 5     | 9 |    |  |  |

## Property Inspection Evaluation Tool

Property inspection effectiveness can be evaluated to assess the knowledge gained, behavior change, and perceived value of the property inspection. One to two weeks after the property inspection, the PIC staff sends a prepaid follow-up inspection postcard, containing approximately five questions, to the property owner/occupant. Coordinate printing and postage with the project lead and clerical staff. The number of postcards needed will depend upon the number of PIC inspections planned. Returned postcards are delivered to the project lead. Results are compiled in a spreadsheet and are reported at the conclusion of the project.

## CHAPTER 5 WATER QUALITY COMPLAINTS

PIC staff are responsible for responding to water quality complaints. These complaints are prioritized based on the immediate impact to public health. The response to these complaints will vary depending upon their severity and complexity. PIC staff also coordinate the response with other Kitsap Public Health staff, particularly staff in the Onsite Sewage System and Solid and Hazardous Waste programs. A list of the types of complaints PIC staff respond to and the associated response follows.

### Types of complaints:

Onsite septic system (OSS) failure

Other connection to municipal storm water system (illicit discharge)

OSS Monitoring & Maintenance


OSS other

Sewage from recreational vehicles (RV)

Sewage from side sewer

Sewage odors

Water quality

| Type complaint may lead to one or more of the following actions<br> | Phone call to complainant by PIC staff | Site Visit by PIC staff | Notice and Order to Correct Violation letter | Ticket* | Other action                                     |
|--|--|-------------------------|--|---------|--|
| Onsite septic system failure   | X                                      | X                       | X  | X       | Coordinate with OSS program if failure confirmed |
| Other connection to municipal stormwater system (illicit discharge)  | X                                      | X                       | X  | X       | Coordinate with SSWM, municipality and SHW       |
| OSS Monitoring & Maintenance (when in PIC project areas)   | X                                      | X                       |  |         | X<br>Coordinate with OSS repair staff            |
| Sewage from recreational vehicles (RV)   | X                                      | X                       | X  | X       |  |
| Sewage from side sewer   | X                                      | X                       |  |         | X<br>Refer/inform municipality                   |
| Sewage odors   | X                                      | X                       | X  | X       | Coordinate with OSS Program if failure confirmed |
| Water quality: direct sewage discharge   |  | X                       |  | X       |  |

\*A Ticket (Citation) may be issued immediately when there is threat to public health from a deliberate release of sewage onto the surface of the ground or to the water observed by the inspector, or when the conditions of the Notice and Order to Correct Violation have not been met. Refer to Chapter 6 Enforcement for details.

#### Responding to complaints

PIC staff or other Kitsap Public Health staff may receive a call from the public regarding a water quality complaint. Using the Kitsap Public Health Complaint form, fill out the following information:

- Date and time
- Caller's name and telephone number; ask the complainant if they wish to remain anonymous. If the complainant indicates that they wish to remain anonymous, and/or indicates that disclosure of their name may endanger their life, physical safety, or property, check the "YES" box following the question "DO YOU WANT TO REMAIN CONFIDENTIAL?" on the complaint form.
- The name and location/address of the violator (if known)
- Statement of the problem; include the location of the problem and request information about access
- Directions to the place of the problem/incident

NOTE: Complaints of sewage discharging to the ground surface, surface waters or ground waters are investigated (within 24 hours) as are plumbing back-ups.

\_\_\_ Gather information from Kitsap Public health records e.g. OSS records, M&M reports, property parcel information.

\_\_\_ Check the Complaint database to determine whether there is an open and/or other complaints related to the property

\_\_\_ Check the PIC database to determine whether the parcel is located in a current project area and inform project lead.

#### ***Site Visit by PIC staff:***

Once the necessary information is gathered regarding a complaint, PIC staff will visit the property to assess the situation. Visits should be conducted as soon as possible, however the response time will vary depending upon the type of problem, e.g. immediate visit for spills to surface waters.

When responding to a complaint, and other issues are observed at the property, such as solid waste, junk vehicles, boats, or recreational vehicles, consult with the Solid and Hazardous Waste (SHW) program staff. SHW staff has access to the Washington's Department of Licensing system to get vehicle registration information from automobile and boat license numbers. This can be helpful to determine the registered owner's name and phone number, if this information is not readily available from the property records.

Field equipment and/or supplies that PIC staff should have when responding to complaints include at a minimum; identification badge, door hangers, pen, digital camera, field book, pepper spray, dog treats, nitrile gloves, sample bottles, dye, charcoal packs and hand sanitizer.

When conducting a complaint investigation and approaching a property, use good judgment and consider your safety first and foremost.

**BE SAFE:** Do not proceed to the property if the situation appears to be unsafe, or you feel uncomfortable. Coordinate a return visit with a co-worker, the Field Supervisor, or the Program Manager.

If there does not appear to be a safety concern, call out a friendly greeting and enter the property along the main access route to the front door. Following no response at the front door, it is also acceptable to follow the main access route to a side or back door, provided this does not infringe on the curtilage of the property.

Meet with the owner/occupant to assess the situation. Provide records or other information gathered prior to visiting the site as necessary. It is important to take photographs to document observations, and to document the conditions at the property. Record these observations on the complaint form (typically this is done either when you return to the vehicle or in the office).

When PIC staff encounter properties with surfacing effluent, or other surface water flows that may be sources of fecal bacteria, a water sample should be collected.

When the sample(s) equals or exceeds 500 FC/100ml (or 400 EC/100ml) the owner/occupant should be notified. Depending upon the situation, the following actions may be taken:

| Initial water sample results >500FC, or > 400 EC and..... | Action following initial water sample   |
|---|---|
| Suspect OSS failure                                       | Conduct a dye test to confirm a failing OSS.*   |
| Sewage from recreational vehicles (RV)                    | Issue a Notice and Order to Correct Violation.  |
| Sewage from side sewer                                    | Issue a Notice and Order to Correct Violation letter. Notify the public sewer purveyor.                   |
| Sewage odors  | If suspect source is from OSS, conduct dye test. If source not evident, collect two confirmation samples. |

\*NOTE: If consent is not given to perform a dye test then a search warrant may be obtained. However, PIC staff must contact the Program Manager before taking any action regarding a search warrant (see chapter 6 Enforcement).

If the owner or occupant is not home, leave a door hanger with your business card, the date and time, and a brief description regarding the purpose for your visit.



**TIP:** Conduct a visual inspection of public access areas, when approaching or leaving a property to identify potential FC sources, and take a photo. Document your observations on complaint form.

### Assessment of OSS Performance

If the house has OSS records, use the records to help identify the location of the OSS components. If the house has no permit records, check the parcel assessor's building information for the residence date. Kitsap's sewage regulations were originally developed in 1961. OSS records will not be available for properties that pre-date these regulations.

You can ask the owner/occupant if they know the location of the septic system and whether a permit was obtained. Ask the owner/occupant for the name of previous owners. This may be helpful in locating records.

If OSS information is unavailable, locate the system by doing the following:

- Look for very lush, green grass growing in obvious stripes. Stripes generally indicate the location of drainfield laterals. Other indicators that may show the location of a drainfield include depressions, dead or dying grass, or no grass growth at all.
- Locate the plumbing vent pipe on the roof to identify where the plumbing leaves the house. Generally, the largest of these pipes is often directly above the point where the wastewater drain passes through the foundation. The drain location can also be determined by observing a clean-out or the house plumbing may be visible through a crawl space or basement.
- The septic tank is usually down-gradient of the house, near the kitchen and bathrooms, in a straight line from the plumbing about five to ten feet from the foundation. The drainfield is usually in a direct line down slope from the septic tank.
- Review the sewage disposal permit, as-built and plot plan with the owner/occupant to identify the likely locations of the system components. Check for and note any changes since the OSS was installed. Check the distance between components and surface water, drainage ditches, curtain drains, wells, and other structures both on the subject property and properties adjacent. Check to see if the dedicated reserve area and associated setbacks have been maintained. Look for any non-conforming conditions in the drainfield and reserve areas such as parking, driving, building, burning, or pasturing livestock.
- Observe the topography of the site to determine drainage of the property and whether surface water flows towards OSS components. Pay particular attention to the location and daylight of curtain drains. Drainage or transport lines may cross-connect septic effluent to surface waters. Curtain drains do not function as designed when the outlet is plugged.
- If the house is near a slope, channel, lake, or marine shoreline, look for drainage pipes or other discharges. Draw a rough sketch of the discharge location and photograph if possible. If pipes are flowing, ask the property owner/occupant for consent to take a water sample and note the date, discharge type and size, and any unusual features on
- the inspection form. If pipes are not flowing, ask the owner/occupant if you may sample during wet weather.

- Evaluate the area over the septic tank, pump chamber (if applicable), and drainfield area with a walk-over/visual assessment. Check the tank area for signs of overflow. Check to ensure that roof drains are diverted away from the tank area.

The following may be used to identify symptoms of a failing drainfield:

**Hydraulic Failure** --- effluent ponding or breakout. The presence of lush green grass over the drainfield area can be evidence of upward capillary movement of water. Lush green vegetation associated with wet, soggy, soil is indicative of an OSS failure. Collect a sample of any standing or flowing water in the drainfield area or down gradient of the drainfield area. You may need to collect samples when the residents are using water. Note any animal or bird waste present in the drainfield area.

**Odors** --- noticeable sewage odor emanating from the OSS area may be an indication of failure but must be distinguished from decaying vegetation odor. **Odor alone is not sufficient to determine a failure.** Odor can be caused by normal OSS venting or unusual wind conditions.

**Damage** --- observe any indications of damage that may have occurred either before, during, or after the OSS was installed. Examples of damage to the OSS are soil removal, new or widened road cuts, landscaping (including rock walls and other cut banks in or near the drainfield area); patio installation, driveway construction, structures over the OSS, excessive soil backfilling over the OSS, or ruts caused by vehicular traffic or livestock.

**Unusual Surface Features** --- features such as eroded soils, evidence of digging, soil settling depressions, or added features such as sand, bark, or rock over the top of the drainfield area.

**Greywater Discharge** --- ask the property owner/occupant if all kitchen sink, laundry and bathroom sink and shower water goes into the septic tank. Walk all the way around the house to look for discharges. Laundry soap/bleach odors, clothing fibers and lint associated with a pipe discharge indicates a greywater discharge. Collect a sample if possible and take a photograph. Greywater can have high levels of fecal and other bacterial pollution. State and local regulations do not allow it to be disposed of on the ground surface or to surface or ground waters. Documented greywater discharges must be connected to the interior house plumbing. If this is not possible, it must be connected to the sewer pipe before it enters the septic tank. A follow-up dye test can be conducted to determine OSS functional status. Optical brightener testing is a tool that can identify some laundry discharges.

**Dye Testing** --- dye testing is a tool used in association with water sample results to confirm a failing OSS. Kitsap Public Health uses methods and materials developed by Dr. Tom Aley, Ozark Underground Laboratories. Dye testing should only be used when the preponderance of the evidence you've collected suggests that a test is necessary, such as high bacteria counts, sewage odor, visual signs of sewage.

**Optical Brighteners** – optical brightener sampling can be conducted to screen for wastewater and suspected greywater discharges. Optical brightener tracing is used in association with water sample results to determine whether laundry wash water is discharging to surface waters. Kitsap Public Health uses methods developed by Dr. Tom Aley, Ozark Underground Laboratories .

## Non-OSS Fecal Pollution Sources

When complaints include non-OSS fecal pollution sources PIC staff should refer to the Kitsap County Board of Health Ordinance Number 2010-1, "Solid Waste Regulations," effective July 6, 2010.

### Animal Waste (e.g. Farms)

Examples of enforceable solid waste violations include, but are not limited to, uncontrolled run-off from manure piles, pasture areas, heavy use areas, and other areas where manure is inadequately managed. Agricultural and livestock fecal pollution sources in Kitsap County are often corrected through an Interlocal Agreement and Memorandum of Understanding with Kitsap Conservation District concerning investigation and correction procedures for livestock waste handling violations.

If you are unsure if the violation(s) meet the criteria of a solid waste violation consult the project lead or program manager.

### Spills, Illicit Discharges or Connections to a Municipal Stormwater System

When responding to a complaint involving a spill, illicit discharge or illicit connection into or from a municipal stormwater system, PIC staff must notify the County via Kitsap One, and the local municipality to inform them of the situation and gather any available information from the municipality.

For illicit discharges or connections from a commercial property PIC staff should contact the property owner and conduct the initial site visit. Spills, illicit discharges or connections may originate from a residential property or a commercial property. As with other water quality complaints, photographs should be taken and an assessment of the situation thoroughly documented.

If water samples are collected, and results are above 500 FC/100 ml or 400 EC/100 ml, there is a potential illicit discharge or connection. Additional measurements may be needed for pH, temperature, conductivity, and/or detergents per Illicit Discharge, Detection and Elimination (IDDE) guidance manual for program development and technical assistance by the Center for Watershed Protection and Robert Pitt, the University of Alabama.

Common FC contaminated illicit connections and discharges include sewer line breaks, improper plumbing connections, failing OSS, illegal dumping of solids or liquids, spills of grease and vehicle fluids to paved areas, outdoor washing activities that create flow to a storm drain, and uncontrolled grease and food waste that attracts urban wildlife.

The correction of the illicit discharge must be made as soon as possible. Illicit connections, which are direct piped connections to the storm drain system, are required to be corrected within 6 months of confirmation according to NPDES Phase II permit requirements for the county and cities. PIC staff will follow up the site visit with a Notice and Order to Correction Violation (NOCV), or in certain cases tickets may be issued immediately depending upon the intent and severity of the illicit discharge.

In July 2011, Kitsap County Public Works (KCPW) and Kitsap Public Health entered into an agreement to perform efficient and effective coordination of investigation, confirmation and removal of illicit discharges, spills, and illicit connections which are confirmed to enter the Kitsap County municipal storm



sewer drainage system. Staff from both KCPW and Kitsap Public Health will follow the protocol described in this document referred to as the Stormwater Illicit Detection and Correction protocol.

## **CHAPTER 6 ENFORCEMENT**

### **Notice and Order to Correct Violation (NOCV)**

PIC staff will write and issue a Notice and Order to Correct Violation (NOCV) letter when:  
there is a confirmed OSS failure, illicit connection to stormwater, sewage from a recreational vehicle,  
OR any other water quality issue that warrants this letter.

The content of a written NOCV must conform to items described in Section 19 of the Kitsap County Board of Health Ordinance 2008A-01 (Jun 2011) Onsite Sewage System and General Sewage Sanitation Regulations, and/or Section 950(5) of the solid waste regulations.

Examples of standard enforcement letters (NOCV), that cite the most commonly used regulations located in the PIC common directory, PIC enforcement folder. An example of some of the common compliance measures and associated regulations include:

Surfacing sewage:

- Section 6.B.2 “sewage shall not be discharged to the surface of the ground”
- Section 6.D “correction of insanitary or nuisance conditions”

Non-permitted OSS:

- Section 6.B.3 “sewage shall not be discharged into an onsite sewage system installed, repaired, or maintained in violation of these regulations.”

Trailer added to OSS

- Section 6.B.3 “sewage shall not be discharged into an onsite sewage system installed, repaired, or maintained in violation of these regulations.”

Greywater discharge:

- Section 6.B.2 “sewage shall not be discharged to the surface of the ground”

Failure to Follow NOCV:

- Section 6.D “correction of insanitary or nuisance conditions, or violations of these regulations.”

Bootleg OSS: (use one or more of these):

- Section 14.B.11 “permit required”
- Section 14.A.4 “building site application required”
- Section 6.J “installer credentials

For a failing OSS, the NOCV requires the owner/operator to contact a licensed designer or professional engineer within an appropriate time period - typically 30 days, although a 7 or 14 day time period may be used for imminent health threats. PIC staff may issue a pump-out order for properties with failing OSS, as part of the NOCV. A pump-out order means that the tank is pumped as often as is necessary to keep sewage off the surface of the ground and/or from backing up in the residence. The

owner/occupants are required to conserve water to prevent untreated sewage from surfacing and flowing into surface, ground, or storm water.

The NOCV must be served on the person to whom it is directed by mailing the order via certified and regular mail to such person at his/her last known address. We can also deliver it in person. An example of an NOCV letter is provided in **Appendix G**.

After the deadline specified in the written notice has been reached, the status of the violation must be determined. If a violation still exists, other enforcement options may be appropriate. Under normal circumstances, failure to comply with an NOCV is followed by a Notice of Civil Infraction (ticket).

#### Notice of Civil Infraction (Ticket)

The notice of civil infraction procedures, also known as the “ticket writing” procedures, are referenced in Section 19(4)(2) of the onsite sewage regulations and Section 950(6)(b) of the solid waste regulations and described in Chapter 7.80 Revised Code of Washington (RCW), Civil Infractions. An example of a completed ticket is provided in **Appendix H**.

In most cases, tickets are issued following failure to comply with the NOCV. However, an NOCV is not required prior to issuing a ticket. A ticket can be issued to a defendant during the initial site inspection or any other time the inspector has reasonable cause to believe that the person has violated the regulations.

Kitsap Public Health District  
Pollution Source Identification and Correction: Protocol Manual

Writing a Ticket

2811 MICRO DATA OLYMPIA (360) 570-8400

**INFRACTION** ☐ **TRAFFIC** ☐ **NON-TRAFFIC** **I 202728**

IN THE ☒ DISTRICT ☐ MUNICIPAL COURT OF KITSAP COUNTY  
☐ STATE OF WASHINGTON PLAINTIFF VS. NAMED DEFENDANT  
☐ COUNTY OF KITSAP HEALTH DISTRICT  
☐ CITY/TOWN OF \_\_\_\_\_

C.E.A. ORI #: WA0180000 COURT ORI #: WA018013J

**THE UNDERSIGNED CERTIFIES AND SAYS THAT IN THE STATE OF WASHINGTON**

DRIVER'S LICENSE NO. \_\_\_\_\_ STATE \_\_\_\_\_ EXPIRES \_\_\_\_\_ PHOTO I.D. ON PERSON ☐ YES ☐ NO

NAME: LAST \_\_\_\_\_ FIRST \_\_\_\_\_ MIDDLE \_\_\_\_\_

ADDRESS \_\_\_\_\_ IF NEW ADDRESS ☐  
☐ PASSENGER LOCATION \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_ EMPLOYER \_\_\_\_\_

DATE OF BIRTH \_\_\_\_\_ RACE \_\_\_\_\_ SEX \_\_\_\_\_ HEIGHT \_\_\_\_\_ WEIGHT \_\_\_\_\_ EYES \_\_\_\_\_ HAIR \_\_\_\_\_

RESIDENTIAL PHONE NO. \_\_\_\_\_ CELL / PAGER NO. \_\_\_\_\_ WORK PHONE NO. \_\_\_\_\_

VIOLATION DATE MONTH \_\_\_\_\_ DAY \_\_\_\_\_ YEAR \_\_\_\_\_ TIME \_\_\_\_\_ 24 HOUR \_\_\_\_\_ INTERPRETER NEEDED ☐  
 ON OR ABOUT \_\_\_\_\_ LANG. \_\_\_\_\_  
 AT LOCATION \_\_\_\_\_ M.P. \_\_\_\_\_ CITY / COUNTY OF \_\_\_\_\_

**DID OPERATE THE FOLLOWING VEHICLE/MOTOR VEHICLE ON A PUBLIC HIGHWAY AND**

VEHICLE LICENSE NO. \_\_\_\_\_ STATE \_\_\_\_\_ EXPIRES \_\_\_\_\_ VEH. YR. \_\_\_\_\_ MAKE \_\_\_\_\_ MODEL \_\_\_\_\_ STYLE \_\_\_\_\_ COLOR \_\_\_\_\_

TRAILER #1 LICENSE NO. \_\_\_\_\_ STATE \_\_\_\_\_ EXPIRES \_\_\_\_\_ TR. YR. \_\_\_\_\_ TRAILER #2 LICENSE NO. \_\_\_\_\_ STATE \_\_\_\_\_ EXPIRES \_\_\_\_\_ TR. YR. \_\_\_\_\_

OWNER/COMPANY # OTHER THAN DRIVER \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

ACCIDENT ☐ COMMERCIAL ☐ YES ☐ NO HAZARD ☐ YES ☐ NO EXEMPT ☐ FARM ☐ FIRE ☐  
 NO NR R I F VEHICLE ☐ NO PLACARD ☐ NO VEHICLE ☐ R.V. ☐ OTHER ☐

**DID THEN AND THERE COMMIT EACH OF THE FOLLOWING OFFENSES**

1. VIOLATION/STATUTE CODE \_\_\_\_\_ VEHICLE SPEED \_\_\_\_\_ IN A \_\_\_\_\_ ZONE \_\_\_\_\_ ☐ SMD ☐ PACE ☐ AIRCRAFT

2. VIOLATION/STATUTE CODE \_\_\_\_\_

3. VIOLATION/STATUTE CODE \_\_\_\_\_

WITHOUT ADMITTING TO HAVING COMMITTED EACH OF THE ABOVE OFFENSE(S), BY SIGNING THIS DOCUMENT I ACKNOWLEDGE RECEIPT OF THIS NOTICE OF INFRACTION AND PROMISE TO RESPOND AS DIRECTED ON THIS NOTICE.

☒ I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF WASHINGTON THAT I HAVE ISSUED THIS ON THE DATE AND AT THE LOCATION ABOVE, THAT I HAVE PROBABLE CAUSE TO BELIEVE THE ABOVE NAMED PERSON COMMITTED THE ABOVE OFFENSE(S), AND MY REPORT WRITTEN ON THE BACK OF THIS DOCUMENT OR ATTACHED TO THIS INFRACTION IS TRUE AND CORRECT.

OFFICER \_\_\_\_\_ # \_\_\_\_\_

DEFENDANT'S SIGNATURE \_\_\_\_\_

**INFRACTION**

| INF            | RESPONSE | DISPOSITION | PENALTY | SUSPENDED | SUB-TOTAL | FND/JUDGT DATE          |
|----------------|----------|-------------|---------|-----------|-----------|-------------------------|
| 1              | C NC     | C NC D P DF | \$      | \$        | \$        | ABSTRACT MLD TO OLYMPIA |
| 2              | C NC     | C NC D P DF | \$      | \$        | \$        |                         |
| 3              | C NC     | C NC D P DF | \$      | \$        | \$        |                         |
| TOTAL COSTS \$ |          |             |         |           |           |                         |

WASHINGTON UNIFORM COURT DOCKET - COURT COPY January 2003  
 WASHINGTON UNIFORM COURT DOCKET - DOL COPY January 2003  
 WASHINGTON UNIFORM COURT DOCKET - DEFENDANT COPY January 2003  
 WASHINGTON UNIFORM COURT DOCKET - LEA COPY January 2003

- ✓ Check Non-Traffic
- ✓ County of Kitsap Health District

Complete as much information as available. Be sure it is accurate.

DO NOT FILL IN THIS BOX

Include the Kitsap County Board of Health Ordinance and associated sections regarding the violation(s).

- ✓ Include the Penalty
- ✓ Date Issued
- ✓ Your name
- ✓ Inspector number
- ✓ Your signature

IT IS IMPORTANT TO COMPLETELY AND ACCURATELY FILL OUT INFORMATION WHEN WRITING A TICKET. The following is a list of all the information that must be completed:

- Check the following boxes on the top portion of the ticket: “INFRACTION,” “NON-TRAFFIC,” and “COUNTY OF HEALTH DISTRICT DISTRICT.”
- In the spaces provided, complete as much information about the defendant as possible.
  - The defendant’s name and address are required at a minimum.
  - If the defendant is present while you are writing the ticket, request to see his/her driver’s license or state identification card. Confirm that the information is current and copy to the ticket.
  - The residential phone number is needed to notify the defendant of a change in the court date or time.
- Indicate the infraction DATE in the space provided below the personal information. The time of all infractions should be noted in military time.
- Indicate the LOCATION of the infraction. This could be an address or tax account number. When written in this space, the term “situs” indicates that the infraction occurred at the defendant’s address as listed on the top of the ticket.
- DO NOT complete any of the information in the large box (motor vehicle section) in the center of the ticket.
- In the next section, describe the specific section(s) of the regulations violated and provide a brief narrative describing the infraction.
- Indicate the penalty amount in the “PENALTY” box. The penalty for one infraction is \$524.00. The penalty for two infractions is \$1048.00. When a second ticket is issued, it should not be done until after a judgment has been reached on the first. If a violation remains after a judgment has been reached on a second ticket, consult with a program manager on how to proceed with the case.
- Indicate the date the infraction was written in the “DATE ISSUED” box. The ticket should be written as soon as possible after the infraction has been observed (and/or as necessary after an infraction has not been corrected as required).
- Sign your name in the “OFFICER” box and write your officer number next to your name.
- If the defendant is present when the ticket is written, show them the ticket and explain what the ticket is being issued for. The response instructions are explained on the back of the defendant’s (green) copy. Review each of these options with the defendant. If the defendant refuses to sign or is not present when the ticket is written, write the word “INVESTIGATION” in the signature box.
- DO NOT complete the “ABSTRACT OF JUDGMENT” section of the ticket.
- Provide a narrative of case events on the reverse side of the original copy, and then sign it on the bottom. This narrative is the only testimony the court will see from the inspector if he/she is not present for a hearing. The general guideline for completing this section is to be thorough enough to describe and prove your case. Include a description of all infractions observed in your narrative, even though you

may have written the ticket for only one or two. When completed, the copy of the ticket with the narrative will be forwarded to the court. The inspector should make a photocopy of the narrative for their records. If the ticket is completed at the site, the narrative may be completed after returning to the office.

**IMPORTANT:** The inspector must never give legal advice to the defendant or attempt to predict what the District Court judge will do if the case goes to court.

Route copies of the completed ticket as follows:

- Top 3 forms to District Court
- Photocopy the back of the top White copy that contains the narrative and keep with the Inspector's file
- Retain the last white copy for the Inspector's file

The court's copies must be filed in District Court within 48 hours of writing the ticket, excluding Saturdays, Sundays and holidays. The inspector should attach a business card and note to the court's copies requesting notification of the court date and location. Court copies should be delivered in person to the District Court at 614 Division Street, MS-25, Port Orchard, Washington.

When a ticket is issued, the defendant has 15 days to respond to the court. Instructions for this response are on the back of the defendant's copy (green form).

Additional questions about filling out the ticket should be directed to an experienced staff member or the program manager.

### Dismissal Order

The defendant should be informed that the ticket can be dismissed by the inspector if the infraction is corrected prior to the court date (when one has been requested). The court can evaluate reduced fee requests as appropriate. To dismiss a case, complete and sign a "Motion, Certification, and Order to Dismiss" form (Dismissal Order). The Dismissal Order is then forwarded to the Prosecuting Attorney's Office, Civil Division, to be signed. The inspector or Deputy Prosecuting Attorney must then forward the signed Dismissal Order to the court for the judge to sign. A copy of the Dismissal Order must also be sent to the defendant after all appropriate signatures are obtained. This process should begin a minimum of one week prior to a hearing date. The inspector may also verbally request dismissal during a hearing.

The inspector may dismiss any ticket pending against a first time violator if the violator complies with Health District's NOCV prior to the court date. A Stipulated Order can be filed with the court prior to the court date, where the defendant agrees that the violation was committed and agrees to a set of required conditions.

### Search Warrants

It may be necessary to obtain an administrative search warrant to conduct a dye test of an OSS if data shows the OSS may be polluting fresh or marine waters of the state. Administrative search warrants to address suspected OSS failures are only used after all other options are exhausted. The decision to

pursue an administrative search warrant will be made in coordination with the Program Manager, Environmental Health Director, the Health Officer, and the Kitsap County Prosecuting Attorney's Office.

## **CHAPTER 7 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

Stormwater drainage systems are constructed in developed areas to reduce localized flooding and provide limited water quality treatment. Drainage systems include roads, ditches, ponds, pipes, swales, catch basins, and underground facilities. These systems provide a rapid pathway for pollutants to be transported to receiving waters.

Kitsap County and cities are required in their National Pollution Discharge and Elimination System (NPDES) Phase II Stormwater Permit to assess the outfalls discharging to receiving waters for non-stormwater connections and discharges. FC or EC sampling of dry weather flowing stormwater outfalls is one of the components of the assessment program. This is commonly called the Illicit Discharge Detection and Elimination (IDDE Program).

FC contamination in stormwater drainage system flows come from two sources: 1) flowing contaminated water from paved areas or 2) fecal contaminated sediments in the storm facilities. These pollutants, both discharges and sediments, are carried to local receiving waters causing significant impacts. Recent studies show that unmaintained stormwater systems build up excessive sediments, transport the fecal contaminated sediments during intense storm events downstream to receiving waters, and reduce the designed storm event storage capacity of the facilities. Reduced storage capacity limits the water quality benefits of these facilities.

Kitsap Public Health initiated stormwater pollution source identification and correction in 2007 in partnership with Kitsap County Public Works. Emphasis is placed on inter-agency partnership to educate property owners and businesses about stormwater system maintenance, Best Management Practices (BMPs) to reduce FC sources, and illicit connections.

Commercial property PIC inspections are conducted in coordination with the stormwater utility. The inspection focuses on stormwater system maintenance, clean runoff areas, and the presence of illicit connections or business practices causing illicit discharges. Property owners are given an informational packet showing their stormwater facilities, maintenance requirements for those facilities, and BMPs to prevent illicit discharges.

Dye testing is a useful tool used to confirm illicit connections from building floor drains and to confirm corrections.

### **Sewer Evaluation**

Some areas are served by older sewer collection systems that are beyond their functional lifespan. These areas can be further challenged by surface, ground, and storm waters. Kitsap Public Health will conduct sewer investigations, in partnership with sewer utilities, pursuant to the IDDE Manual and the U.S. Environmental Protection Agency handbook "Sewer System Infrastructure Analysis and Rehabilitation," 1991.



Effective evaluation of sewer infrastructure includes, but is not limited to:

- Evaluating existing infrastructure maps, field truthing existing maps, or creating new maps.
- FC /EC data needs to be collected from drainage segments to determine areas with fecal pollution.
- Ammonia and optical brightener sampling can be used to indicate sewage leaks when located near the source.
- IDDE dry weather screening can also be useful to determine sewer infrastructure integrity.
- The sewer utility can conduct an infiltration and inflow analysis that may include side sewer lateral issues.
- Other investigation tools include dye testing, video inspection, smoke testing, etc.

Sewer lines experiencing infiltration during high groundwater conditions, especially those that are pressurized, can potentially leak sewage during low groundwater conditions. Sewer infrastructure problems need to be addressed by the sewer utility but can be investigated in partnership with Kitsap Public Health.

## **CHAPTER 8 REPORTING**

PIC project reporting is part of Kitsap Public Health's semi-annual and annual KCSSWM stormwater program reports. The program manager and field supervisor are responsible for submitting these reports.

Grant funded PIC projects also having reporting requirements. The frequency for reporting will be specified in the grant contract, but generally, reports are required on a quarterly basis throughout the duration of a project. The format and/or elements to be included for regular reports are specified by the agency requiring the report. Check with the project lead or program manager for details.

Project leads are responsible for ensuring that reports are submitted to the funding agency per the contract. When several staff are involved in working on a project, the project lead needs to solicit input from staff regarding their activities so that they can compile the report. Project leads should send the report to the field supervisor for review and submission.

A final and comprehensive report detailing the project scope, methods, results, conclusions, and recommendations of a PIC project is prepared at the end of the project.

Develop a timeline for the submission of the final report, e.g. collection of all data, completion of data analysis, draft report, submission of the draft report to PIC staff for peer review, and submission of the draft report to the field supervisor and program manager. Incorporate comments/changes as needed and re-submit to program manager for final review. The report will be sent to funding agency for approval then released to project partners and posted on the website.

### **PIC Project Follow-up**

A comprehensive follow-up program for non-participating properties is essential to maintain and build the trust and associated cooperation of the community. Non-participating properties are evaluated by analyzing water quality data to determine whether there is a seasonal or rainfall pattern to elevated fecal results. Areas are evaluated by sampling any surface water entering and leaving the property. Wet weather and conditions are useful for identifying OSS failures due to seasonal high water table, surface water intrusion, and transports surfacing sewage to discharge points. Dry weather and conditions are used for identifying direct discharges or seeps that may be masked by rain or illicit discharges into storm waters.

Vacant property parcels, those with OSS systems categorized as suspect (see **Table 3**), and parcels classified as high or medium priority (see **Table 4**) should be flagged in Kitsap Public Health's Logger database for follow-up during any future permit submissions.

APPENDIX A: Information sources for PIC Project Evaluations

| Information                                     | Source(s)   | Reference   |
|---|---|---|
| Water quality data                              | Kitsap Public Health,<br>Washington State<br>Departments of Ecology and<br>Health                     | <a href="http://www.ecy.wa.gov/water.html">www.ecy.wa.gov/water.html</a>  |
| OSS sanitary survey data                        | Kitsap Public Health  | PIC database  |
| OSS Building Site<br>Applications & Permits     | Kitsap Public Health  | Online RME  |
| Farm inventories & parcel<br>priority lists     | Kitsap Conservation District  | KCD.org   |
| Project area soil conditions                    | <i>Soil Survey of Kitsap County<br/>Area, Washington</i> (USDA,<br>September 1980)                    | <i>Soil Survey of Kitsap County Area,<br/>Washington</i> (USDA, September 1980)   |
| Project area topography                         | USGS topography maps, Kitsap<br>County ARC View/GIS data  |   |
| Complaint information                           | Kitsap Public Health,<br><br>Kitsap County Department of<br>Community Development and<br>Public Works | Kitsap Public Health Complaint database<br>Kitsap One   |
| Property parcel information                     | Kitsap County Geographic<br>Information System  | <a href="http://www.kitsapgov.com/gis/">http://www.kitsapgov.com/gis/</a>   |
| Aerial photographs                              | Google Earth  | Google Earth software   |
| Washington Coastal Atlas<br>(aerial photos)     | Department of Ecology   | <a href="http://www.ecy.wa.gov/programs/sea/sma/atlas_home.html">www.ecy.wa.gov/programs/sea/sma/atlas<br/>_home.html</a> |
| Watershed Action Plans and<br>characterizations | Kitsap Public Health  |   |
| Stormwater drainage<br>patterns                 | Jurisdiction Stormwater Utility   |   |
| Stormwater outfall maps                         | Jurisdiction Stormwater Utility   |   |

## APPENDIX B: Field Equipment List

### Sampling/Testing Equipment

**100ml sterile plastic water sample bottles.** Used to collect water samples for FC or EC analysis.

**Sample wand.** Telescoping wand used to collect water samples.

**Cooler with ice and/or ice pack(s).** Used to store samples until delivered to lab.

**Digital camera.** Used to document violations/items of interest. All inspectors are issued a digital camera in the Pollution Identification and Correction Program.

**GPS unit;** used for shoreline surveys, trend and impact monitoring.

**Dye tracers.** Ready-for-use individual liquid dye mixtures in 500 ml Nalgene® bottles stored separately from other PIC supplies in a water proof container. Used to dye-test OSS.

**Charcoal packs.** Used during dye tests to “catch” dye. Packs are available in the storage cabinet located in the office and in a separate location from the dye tracers.

**Whirl-Pak™ bags.** Used for storage of individual control and dye packs retrieved from sampling sites.

**Water proof markers, e.g. “Sharpie”.** Used to write on water sampling bottles for identification purposes.

**Rubber bands and plastic bags.** Used to post and protect written materials left for property owners/occupants.

**Butane Torch.** Used to “flame-off” spigots to prior to collecting drinking water samples.

### Required Paperwork

**OSS permit records.** Used to assist inspectors locate the OSS on a specific property.

**OSS operation and maintenance records.** Used to determine if the alternative OSS on the property has been properly maintained through the monitoring and maintenance program.

**PIC survey form.** Used to record needed information regarding the property being inspected.

**PIC door hanger.** Used to inform area residents that a Health Inspector visited that property, and to provide information regarding the purpose of this visit.

**Home Owners Guide to On-site Sewage Systems.** Used to provide basic information about various types of onsite sewage systems, and what home owners/occupants should do to maintain these systems.

**Onsite Sewage System Repair brochure.** Used to assist residents with failing OSS.

**“Rite-in-the-Rain” notebook.** Used to map sampling locations.

### Safety Equipment

**Kitsap Public Health District identification badge.** Used to identify yourself to property owners. Badges are issued to the inspector.

**Kitsap Public Health Business card.** Used in conjunction with badge to identify yourself to property owners. Cards are issued to the inspector.

**Cellular phone.** Inspectors are issued a cellular phone for use while conducting Health District business, or they may use a personal cell phone.

**Pepper spray.** Used for self-defense. Inspectors are trained annually in the use of pepper spray. Pepper spray containers are issued by the Health District after completion of the training.

**Disposable latex gloves.** Used to protect an inspector from pathogenic organisms that are associated with sewage.

**Personal Protective clothing** includes; steel toe or safety toe boots and rain gear (jacket and rain pants). These items are provided to staff according to the Collective Bargaining Agreement.

**Hand-wipes/sanitizer.** Used to clean hands. Always use a hand-wipe after collecting water samples or charcoal packs.

**Chlorine bleach solution.** Used for cleaning-up spilled dye. Wear gloves while handling.

APPENDIX C : Example of Press Release and Fact Sheet

## ***News Release***

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**FOR IMMEDIATE RELEASE**  
February 3, 2011

CONTACT: Eva Crim  
(360) 337-5621

### **Health District to Kick Off Shellfish Restoration & Protection Project and offer Onsite Septic System workshop**

Indianola- The Kitsap County Health District will hold a public meeting on Wednesday February 9<sup>th</sup>, 2011, from 7:00 p.m. to 8:30 p.m., at the Indianola Clubhouse, 20446 Indianola Road, Indianola. The purpose for the meeting is to present information about the Shellfish Restoration and Protection project and provide education about septic systems.

The goal for the project is to restore and protect shellfish growing areas by identifying and correcting sources of fecal pollution through a routine shoreline monitoring program. Attendees will also learn about septic systems and what they can do to help maximize the life of their systems. A wide variety of printed information will be available, including Health District homeowner's manuals for septic systems. Kitsap Conservation District staff will also be present to share information about best management practices for livestock waste, and rain gardens. Water conservation items, such as low-flow shower heads will also be made available upon request.

The Health District will be working with the Kitsap Conservation District, Kitsap County Surface and Stormwater Management Program, to conduct this project which is being funded through a grant by the Environmental Protection Agency.

For more information, please contact Eva Crim at (360) 337-5621 or [crimeva@health.co.kitsap.wa.us](mailto:crimeva@health.co.kitsap.wa.us)

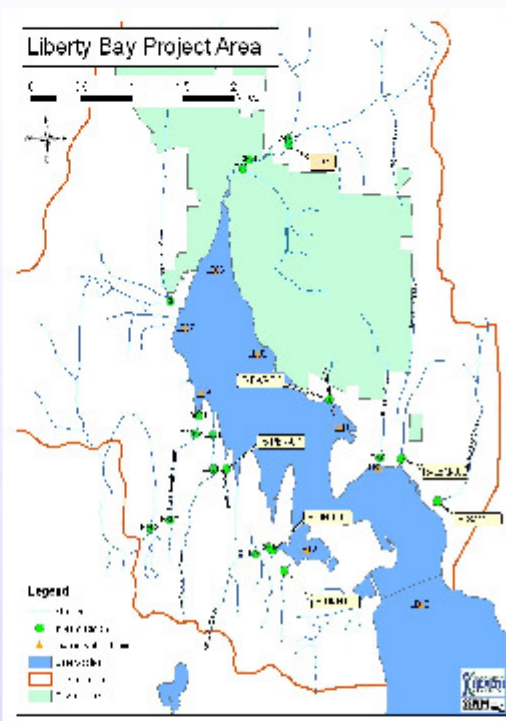


## Liberty Bay Watershed Restoration Project

*Protecting Public Health and Improving Water Quality*

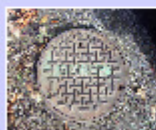
### Background

- ◆ Liberty Bay is 4 miles long and includes approximately 15 miles of shoreline with numerous streams that drain into the Bay. It is listed on the WA State Department of Ecology list of impaired waters for elevated fecal bacteria.
- ◆ Freshwater streams monitored by the Health District that do not meet water quality standards include: Dogfish Creek (south fork), Big Scandia, Little Scandia, Bjorgen and Daniels creek.
- ◆ Fecal pollution is an indicator of the presence of bacteria and viruses that can make people sick, impair water quality and adversely affect marine life. To reduce this pollution, the Health District received a grant from the Washington State Department of Ecology to conduct a pollution identification and correction project in Liberty Bay from 2009-2014.



### Pollution Identification and Correction

The purpose for this project is to identify and correct sources of fecal pollution. These sources may include failing onsite sewage systems, public sewer systems, pet waste & livestock waste and inadequate management of storm water systems.



APPENDIX D: Water Quality database entry procedures

Importing electronic data files from Lab/Cor Inc.

A new section has been added to the chain of custody form. If the box is checked to “send data electronically”, results for each sampling event should be sent to the person listed in the “Results to:”. The data will be sent in an Excel file via email, which must be saved to the following directory: PIC Common\Electronic Sampling Data.

To import data from the Excel file into the Water Quality database, use the following steps.

- A. Open the Water Quality database.
- B. At the top of the data entry form, enter the field data information beginning with Date and Staff, and Notes.
- C. Once this information has been entered, click on the “Import Twiss Data” button.
- D. Select the file to import.
- E. Enter event type, (1) for Trend or (2) for PIC Impact.
- F. See section 5 of this document for instructions on QAQC.

General procedures for manually entering new data

- A. Only Trend monitoring data, PIC impact data and Shoreline survey data are entered into the WQ database. Complaint investigations, shoreline investigative sampling and other types of data are not entered.
- B. New data will be entered and filed by date in the current water year (October 1 to September 30) file location in the main WQ files. The monitoring data is filed by monitoring area and type of water (fresh or marine), which are grouped as follows:

FRESH WATER Monitoring areas and associated watersheds

|                  |  |
|------------------|--|
| <b>Central</b>   | Dyes Inlet, Port Orchard / Burke Bay   |
| <b>North</b>     | Upper Hood Canal, Foulweather Bluff/Appletree Cove, and Liberty Bay/Miller Bay   |
| <b>Southeast</b> | Sinclair Inlet, partial Colvos Passage/Yukon Harbor  |
| <b>Southwest</b> | Upper Hood Canal, Burley/Minter, Coulter Creek/Rock Creek, partial Colvos Passage/Yukon Harbor and Tahuya/Union Rivers |

MARINE WATER Monitoring areas and associated watersheds

|                         |  |
|-------------------------|--|
| <b>Upper Hood Canal</b> | Monitored by DOH   |
| <b>East marine</b>      | Liberty Bay/Miller Bay & Port Orchard/Burke Bay & Colvos/Yukon |
| <b>Dyes/Sinclair</b>    | Dyes and Sinclair Inlets                                       |

- B. Open the database - the default screen is the Stream Data Entry Mode.



- C. Using the tabs at the top left of the screen, select the appropriate matrix (i.e. Marine, Stream, Shoreline etc.)

#### Fresh Water

- A. Enter the field data information beginning with “date” and “staff”. The date format is: MM/DD/YEAR. If you enter a visit date that is identical to an existing visit date in the database, the program will ask if you are sure you want to proceed with this entry. This occurs to prevent duplicate entries of the same data. Click on the drop down lists next to the “staff” fields to select the appropriate staff member who collected the samples.
- B. In the fresh water data entry process, if you enter a visit date that is identical to an existing visit date in the database the program will ask if you are sure you want to proceed with this entry. This occurs to prevent duplicate entries of the same data. Ensure that the data you are entering is not already in the database.
- C. Enter the noted weather conditions or other field information from the field notebook in the notes field.
- D. Enter or select the station from the pull down list. The database will only allow data to be entered for stations that are activated in the database. If the sampled station is not shown, it needs to be either activated or added to the ‘Stations’ table.
- E. Specify the type of sampling event. Enter either “trend” or “PIC” in the event field. The default value is “trend”.
- F. Enter the time, using the 24 hr. clock format (i.e., 14:00 for 2:00 PM), you must enter a “0” at the beginning of the field for times prior to 12:00 PM. (i.e. 09:00)
- G. Enter the “FC” values for the entire event prior to entering the data for the other sample parameters.
- H. Fecal coliform (FC) values:  
Prior to January 2010, all FC samples were analyzed using the MPN method.  
This data was entered as follows:  
For any FC value reported as < 2, enter as ‘1’ in database.  
For any FC value reported as  $\geq 1600$ , enter as ‘1601’.  
For other results, enter actual reported value.

After January 2010, FC samples were analyzed using membrane filtration (MF), and the data is entered as follows:

**For STREAM data:** (with 1/10 dilution)

For any result reported as <10 FC/100ml, enter ‘4’.

For any result reported as  $\geq 2000$ , enter ‘2001’.

For other results, or those beyond 2000, enter actual reported value.

**For MARINE data:** (with no dilution)

For any value reported as  $< 1$  FC/100ml, enter '0.5'

For any value reported as  $\geq 200$ , enter '201'.

For other results, or those beyond 200, enter actual reported value.

- I. Duplicate samples – check the “Dup” box in the shaded column next to time after selecting the Station ID. The same time as the duplicated sample will automatically be entered. An FC value must be entered in the database for the duplicate sample, there is no need to add any of the associated conventional parameter data for the duplicate station entry.
- J. For sampling events where there are **no results** for a parameter you must assume that the parameter was not monitored and leave the field blank.
- K. If a mistake is made and you wish to delete a complete record, click in the gray column to the left of the Station and press the delete key. If you begin to enter a Station and then do not complete the entry, the database will give you an error message about a null value in the field. Click “OK” on the error message and then hit the “Esc” key to move out of the field.
- L. Once all Station, time, and FC values are entered, move to the first Station entered and begin entering the other parameter data associated with each Station. One decimal place (i.e., 10.1) is used for each value and either the Tab key, Return key, or the mouse can be used to move from field to field. When moving to the next Station, the database will provide an error message if any of the parameter values are outside the accepted range of values for the parameter.
- M. The “TDS” column is left blank as this data is no longer collected by the Health District.
- N. Proceed to the QA/QC section on Page 5.

Marine Water (DOH data also)

- A. Using the tabs at the top left of the screen, select the marine matrix.
- B. Follow the same data entry procedures as fresh water. Additional marine water data entry procedures are listed below.
- C. In the tide table at the top of the entry screen, enter the high and low tide information in the tide table, using the 24 hour time format (i.e., 14:00 for 2:00 PM). This information will be found on the first page of the copied field notes or in the local tide tables. As there are two high and low tides each day, enter the values for the tides that occurred closest to the sampling event.
- D. Although unlikely when entering marine water data, specify the type of sampling event. Enter either “trend” or “PIC” in the event field.

- E. DOH data entry: DOH submits marine water monitoring data to the Health District for use in trend analysis for the Upper Hood Canal and Colvos Passage areas. When received, the FC data must be entered for the corresponding KCHD monitoring station in the database. In the data entry information, a spreadsheet of the DOH/KCHD stations will provide the necessary matches. Make sure to enter the data by date for each monitoring event, then follow the QA/QC procedures. **For values reported as “<1.8” or “1.7” enter “1”. For values reported as “1.8” enter “2”. For all larger numbers, round to the nearest whole number when entering the DOH FC data.** File the DOH data with the appropriate watershed in the WQ data files.
- F. For marine monitoring, salinity will be entered instead of specific conductivity.
- G. During the sample value entry, click on the pull down menu in the “Tide Cycle” column for entering the appropriate tide. Flood tides are tides moving from low to high, ebb tides are tides moving from high to low, and slack tides are either peak low or peak high tides. Tides are considered slack tides for 45 minutes on either side of a high or low tide.
- H. Proceed to the QA/QC section on Page 5.

#### Lake – Swimming Beach

- A. Select the “Lake – Swimming Beach” tab to open the data entry screen.
- B. In the swimming beach data entry process, if you enter a visit date that is identical to an existing visit date in the database the program will ask if you are sure you want to proceed with this entry. This occurs to prevent duplicate entries of the same data. Ensure that the data you are entering is not already in the database.
- C. For all of the data, “beach” will be the type of sampling event that will be selected.
- D. Follow the same data entry procedures as marine and fresh water, note that only time and E. Coli values will be entered. The swimming beach samples are typically collected at sites with similar station names, so pay careful attention as the station ID is entered .
- E. Proceed to the QA/QC section on Page 5.

#### Shoreline Surveys

- A. Prior to entering shoreline survey sample results, the station identifier has to be entered into the WQ database. Item 5.D describes how to enter a new station. If the station already exists continue to step B.

- B. In the fresh water data entry process, if you enter a visit date that is identical to an existing visit date in the database the program will ask if you are sure you want to proceed with this entry. This occurs to prevent duplicate entries of the same data. Ensure that the data you are entering is not already in the database.
- C. Enter the noted weather conditions or other field information from the field notebook in the notes field.
- D. Enter or select the station from the pull down list. The database will only allow data to be entered for stations that are activated in the database. If the sampled station is not shown, it needs to be either activated or added to the 'Stations' table
- E. Specify the type of sampling event. Enter "PIC" for shoreline surveys.
- F. Enter the time, using the 24 hr. clock format (i.e., 14:00 for 2:00 PM), you must enter a "0" at the beginning of the field for times prior to 12:00 (i.e., 09:00).
- G. Enter the "FC" OR "EC" values for the entire event prior to entering the data for the other sample parameters.

Fecal coliform (FC) values:

**For freshwater data:** (with 1/10 dilution)

For any result reported as <10 FC/100ml, enter '4'.

For any result reported as  $\geq 2000$ , enter '2001'.

E. coli (EC values)

**For freshwater data :**(no dilution)

For any result reported as < 1 EC/100 ml, enter '0.5'

For any result reported as < 10 EC/100 ml, enter '4'

For any result reported as > 2419 EC/100 ml, enter '2420'

Shoreline survey Confirmation sampling. When entering confirmation sample results from shoreline survey, you must associate the confirmation with the date the original sample was taken. Check the box for "confirmation" and enter the date in the next field that the original sample was collected, i.e. 02/24/2011. This will associate the confirmation sample with the date the original sample was collected, and then calculate the geometric mean for that station.

Editing Existing Data

- A. Select the desired matrix (marine, fresh, shoreline, lake – swimming beach) to make the necessary editing changes.

- B. To edit existing data click on the “Data Entry Mode” drop down button and select “Edit a Specific Visit”. Select the date of the visit to edit using the pull down list in the left field below the “Edit a Specific Visit” field. Sampling dates are listed chronologically with the most recent events listed last.
- C. If a range of dates must be edited, select the second date in the field to the right of the first date field mentioned in Step B above. When the records appear after the date selections, they will be ordered by the date and the record buttons above the data entry area must be used to scroll through the selected records.

#### Database QA/QC

- A. Once all the data has been entered for the sampling event, click the forward arrow in the record area above the Station column. This will record the data and move to a new blank data entry form. Click the record back arrow to move to the page you just recorded. The “**Print QA/QC**” button in the upper right portion of the screen will now be active. Print the record for review.
- B. Compare the printed data report to that information on the lab data report and in the field notebook pages.
- C. Note all discrepancies on the printed QA/QC report and return to the database to make the appropriate edits. If necessary, print the newly corrected data report.
- D. Once the data comparison is complete and any necessary edits have been performed, check the “QA Completed” box in the database above the “**Print QA/QC**” button.
- E. On the printed report, note the initials of the person who entered the data and quality control checked the data, and the date that they occurred. List comments, especially what edits may have been performed, as needed.
- F. Put the field notes, the database report (edited copy if necessary), and the original lab data report together. These are then filed in the main files.

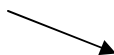
#### APPENDIX E: PIC Database entry procedures

Open the PIC database. It will appear as shown below:

*Kitsap Public Health District  
Pollution Source Identification and Correction: Protocol Manual*

At the top right corner, there are 4 icons; Select a form; Select a Report; Search; Access internet. Choose the **Search icon (binoculars)** and type in the address of the property surveyed. (If you do not have a site address, you can also search on Tax ID, Owner Name, RP account, or Project Area.)

Enter the information for your search criteria, e.g. house number, then OK. If there is more than one address with the same house number you will see a list as shown below:  
To select the property of interest, click on the yellow arrow.



| Site Search |       |               |                            |                     |  |
|-------------|-------|---------------|----------------------------|---------------------|--|
| HP ACCT ID  | Last  | Address       | Owner                      | Start               |  |
| 1           | TRACY | 10000-415-000 | TRACY LEAN RO NE           | TRACY LEAN TRACY    |  |
| 2           | TRACY | 10000-415-000 | TRACY POINT WINDFIRE DR NE | SHIPLEY JEFFREY W A |  |

The PIC database is linked to the Kitsap County LIS system. The Owner name, RP\_Acct\_ID, Acct\_No and Address are automatically populated into the PIC database. This information appears at the top of the screen, and in the shaded cells. Information in shaded cells cannot be altered. Information can be added to cells that are white/blank.

Thursday, August 16, 2018 1:00 PM

**POLLUTION IDENTIFICATION AND CORRECTION**

RP-ACCT\_ID#: 1354983 Owner: ROOGERS TRACY Owner Phone: SEWER N  
 ACC\_NO#: 342601-0-06-2005 Address: 15702 LEVIN RD NE Zip: 981370

**> Project Area: Liberty Bay, Perry**

 Priority:

Mail To:  Mail Address:  Mail City:  Mail State: WA Mail Zip:

Economy Type:  System Type:  Record on file:  #Bldg/rooms:  OSS Design Flow (GPD):  Marine Shoreline:  Fresh Shoreline:  Upland:

Display related comments:

Survey Date:  Staff:  Inspection Status:  OSS Rating:  Firm Rating:  Last Pump Failure/Up Issue Due:  FollowUp For:  Completed?:

Type of failure:  - Reported?  - Type of repair:

[Link to Ednap County Parent Survey](#)

**DATA ENTRY FIELDS & INSTRUCTIONS:**

1. **Owner's Phone:** Add the owner's telephone number, (if available).
2. **Project Area:** Select the Project Area for the property you surveyed from the drop down menu. This is REQUIRED!!! If you do not see the area in the list contact the Project Lead, OR, you can add an area to the Project Area list. To add an area, click on the Select a form icon, go to Project Area, scroll down to the bottom of the list and select the water body, then type in the area to be added to this water body.
3. **Priority:** Select low, medium, high.
4. **Copy Site Address to Mail:** If the site address is the same as the mailing address, click on the copy button. It will auto fill the fields. If the mailing address is NOT the same, simply type it into the "Mail to" cells.
5. **Occupancy Type:** Use the drop down menu to choose the occupancy type. The choices include: Commercial, Community, Multi-family or Single family.
6. **System Type:** Use the drop down menu to choose the system type. The choices include; alternative, cesspool, holding tank, pit privy, pump to gravity, seepage bed, sewer, standard gravity, unknown.

- 7. Records on File:** If records are on file, CHECK this box. If there are no records, do not check the box.
- 8. #Bedrooms:** Type in the number of bedrooms.
- 9. OSS Design Flow:** Type in the design flow, based on 120 GPD per bedroom *e.g.* 3 bedrooms =  $120 \times 3 = 360$  GPD
- 10. Marine shoreline:** Check if applicable.
- 11. Fresh shoreline:** Check if applicable.
- 12. Upland:** Check if applicable.
- 13. Property Related Comments:** Type in pertinent property related comments, *e.g.* property is vacation home, there are 7 people living in this 3 bedroom home, cars observed parked on reserve etc.
- 14. Survey Date:** Type in the date the survey was completed.
- 15. Staff:** Select your initials from the drop down menu.
- 16. Inspection Status:** Select the inspection status from the drop down menu. The choices include: Assigned, Completed, Denied Access, Did Not Participate, Vacant.  
**NOTE:** If a property is VACANT do not add an OSS rating.
- 17.** Using the "Assigned" status may be chosen at the beginning of and/or during a project, to Assign properties to staff for tracking purposes.
- 18. OSS Rating:** Select the OSS rating from the drop down menu. The choices include: Failure, Failure-grey, No Apparent Problems, No Records, Non-Conforming, Suspect. NOTE: if the property is Vacant do not assign an OSS rating. This is a required field.
- 19. Farm Rating:** If the property is a Farm, select a rating from the drop down menu. The choices are: High, Medium, Low, NA.
- 20. Last Pump Out:** Type in the date of the last pump out for the system, if available.
- 21. Follow up Inspection Due:** Type in a date, if you plan on doing some follow up for the property.
- 22. Follow Up For:** Type in the reason for the follow up.
- 23. Completed:** When follow up is complete, CHECK this box.

GO BACK TO THE BEGINNING OF THE DATA ENTRY LINE THAT STARTS WITH SURVEY DATE TO CONTINUE ENTERING INFORMATION.



Kitsap Public Health District  
Pollution Source Identification and Correction: Protocol Manual

Click on the arrow. ►

THEN click on the + It will expand the page to show the following:

The screenshot shows a web application titled "POLLUTION IDENTIFICATION AND CORRECTION". At the top, it displays the date "Monday, August 30, 2010". The interface includes several input fields and buttons. Key fields include "RP\_ACCT\_ID" (1339290), "Owner" (BURNING DAVID C), "Address" (19138 VIKING WAY NW), "City" (Poulsbo), "State" (WA), and "Zip" (98370). There are also fields for "Project Area" (Liberty Bay: Shoreline), "Priority" (Medium), and "Occupant #". A table lists various characteristics with checkboxes, including "Postcard Mailed", "Livestock Present", "OSS Altered", "Pets Present", "WC Distributed", and "WC Kit". A "Comments" section is visible, containing the text "5/21/10 postcard mailed". At the bottom, there is a link to "Kitsap County Parcel Search" and a "UNDO" button.

**Occupant #:** Type in the number of occupants. Be sure to do this FIRST, otherwise you will not be able to enter in the characteristics, or comments.

**Select all characteristics that apply:** Select all that apply from the drop down menu. The choices include; dye test, livestock present, OSS altered since install, Pets present, Postcard mailed, WC Distributed (water conservation kit).

**Comments (if livestock/pets present or OSS altered please explain):** Type in comments as applicable, e.g. 4 camels, 3 dogs, 2 cats and a partridge in a pear tree...

When you are finished entering data, click on the box with the — sign. This will minimize the screen.

## FOR COMMERCIAL PROPERTY INSPECTIONS

Follow the DATA ENTRY steps # 1-6 stated previously.  
Click on the arrow. ►

THEN click on the + It will expand the page to show the following:

Monday, August 30, 2010

POLLUTION IDENTIFICATION AND CORRECTION

RP\_ACCT\_ID: 1162288 Owner: KAUFMAN STEVEN C & YONG M Owner Phone: SEWER: Y  
ACC\_NO: 252401-4-046-2006 Address: 2601 SE MILE HILL DR Zip: 98366

Project Area: Remove from Project Area Priority:

Mail To: Copy Site Address to Mail Mail Address: Mail City: Mail State: Mail Zip: WA

Occupancy Type: Commercial System Type: Records on file: #Bedrooms: DSS Design Flow (GPD): Marine Shoreline: Fresh Shoreline: Upland:

Business Name: Business Type (if Other, please specify): Referred From: Referred To: Source Control:

Comments:

# Tenants: Tenants:

Survey Date: Staff: Contact Person: Contact Phone:

[Link to Kitsap County Parcel Search](#) v. 100222.0

### DATA ENTRY FIELDS:

1. **Business Name:** Type in the name of the business
2. **Business Type** (if Other, specify): Select the type of business from the drop down menu. The choices include: Automotive, Dry Cleaners, Food, Manufacturing, Medical/Dental, Nursery, Other, Retail.
3. **Referred From:** Select the jurisdiction from the drop down menu.
4. **Referred To:** Select the jurisdiction from the drop down menu.
5. **Source Control:** Select the type of source control from the drop down menu. The choices are: bio-swale, catch basin, O/W sep (oil/water separator), Other, pond, vaults.
6. **Comments:** Type in pertinent comments about the business/property inspection.
7. **# Tenants:** Type in the number of tenants.
8. **Tenants:** This feature is NOT active (as of 8/30/10). IT is working on this.
9. **Survey Date:** Enter the survey date (MM/DD/YYYY)
10. **Staff:** Select staff initials from drop down menu.
11. **Contact Person:** Type in the name of the business contact person.
12. **Contact Phone:** Type in the telephone number.

Click on the arrow. ►

THEN click on the + It will expand the page to show the following:

*Kitsap Public Health District  
Pollution Source Identification and Correction: Protocol Manual*

Monday, August 30, 2010

### POLLUTION IDENTIFICATION AND CORRECTION

RP\_ACCT\_ID: 1334176 Owner: WESTBAY POLLSBO LLC Owner Phone: SEWER Y  
 ACC\_NO: 152601-1-005-2001 Address: 20530 VIKING AVE NW Zip: 98370

Project Area: Kitsap Stormwater IDDE: Poulsbo Remove from Project Area Priority:

Mail To: Copy Site Address to Mail Mail Address: Mail City: Mail State: Mail Zip:

WESTBAY POLLSBO LLC 20530 VIKING AVE NW Poulsbo WA 98370

| Occupancy Type | System Type | Records on file | #Bedrooms | DSS Design Flow (GPD) | Marine Shoreline | Fresh Shoreline | Upland |
|----------------|-------------|-----------------|-----------|-----------------------|------------------|-----------------|--------|
| Commercial     | Sewer       |                 |           |                       |                  |                 |        |

Business Name: Star Palace Business Type (if Other, please specify): Food Referred From: Referred To: Source Control: Catch Basin

Comments:

# Tenants: 3 Tenants:

2/9/2010

Notes

| Stormwater Rating | Type of Deficiency | Deficiency Corrected | Discharge Corrected |
|-------------------|--------------------|----------------------|---------------------|
| Deficient         | Sediment           |                      |                     |
|                   |                    |                      |                     |

[Link to Kitsap County Parcel Search](#)

**DATA ENTRY FIELDS:**

**NOTES:** Type in notes about the property as needed.

**Stormwater Rating:** Select the rating from the drop down menu. The choices are Deficient, Illicit Discharge or No Apparent Problem.

**Type of Deficiency:** Select the type of deficiency (if applicable).

**Illicit Discharge:** Select the type of illicit discharge (if applicable).

**Discharge Corrected:** Check this box, when the discharge has been corrected.

When all the data has been entered, you can enter another property by selecting the search function (binocular icon), or simply close the program to end. The information will be saved automatically.

Kitsap Public Health District  
Pollution Source Identification and Correction: Protocol Manual

APPENDIX F: Pollution Identification & Correction (PIC) Inspection Form

**TAX ID:**

|                      |                |
|----------------------|----------------|
| <b>PROJECT AREA</b>  | <b>ADDRESS</b> |
| <b>OWNER NAME</b>    | <b>PHONE</b>   |
| <b>OCCUPANT NAME</b> |                |

**PROPERTY SURVEY INFORMATION:**

|   |   |  |                                     |  |
|---|---|--|-------------------------------------|--|
| <u>Occupancy type</u><br><input type="checkbox"/> Commercial<br><input type="checkbox"/> Single family<br><input type="checkbox"/> Multi-family | <u>System type</u><br><input type="checkbox"/> Standard gravity<br><input type="checkbox"/> Pressure<br><input type="checkbox"/> Drip irrigation<br><input type="checkbox"/> Glendon<br><input type="checkbox"/> Other _____<br><input type="checkbox"/> M & M contract | <u>Records on file</u><br><input type="checkbox"/> BSA<br><input type="checkbox"/> Permit<br><input type="checkbox"/> As built | <u>#Bedrooms</u>                    | <input type="checkbox"/> Marine shoreline<br><input type="checkbox"/> Fresh shoreline<br><input type="checkbox"/> Upland<br><u>Distance to OSS</u> |
| <u>Survey date(s)</u>   | <u>Staff</u>  | <u>OSS rating</u>  | <u>Farm rating</u>                  | <u>Date last pumping</u>   |
| <u>Roof drains</u><br><input type="checkbox"/> OK<br><input type="checkbox"/> needs improvement   | <u>Curtain drains</u><br><input type="checkbox"/> OK<br><input type="checkbox"/> needs improvement  | <u>Bulkhead drains</u><br><input type="checkbox"/> OK<br><input type="checkbox"/> needs improvement                            | <u>Pets present</u><br>(# and type) | <u>Livestock present</u><br>(# and type)   |

Animal waste management: ☐ OK ☐ Needs improvement ☐ Violation

|  |
|--|
| Notes/Comments on OSS and/or other property conditions |
|--|

**OSS EDUCATION CHECKLIST:**

- ☐ Water usage: (Hydraulic Loading, Plumbing leaks, laundry, use of low flow fixtures, runoff, sprinklers)
- ☐ Waste strength: (Use of Additives, Chemical drain cleaners Bleach, Fabric softener, Meds, Fats/Oils/Greases)
- ☐ Physical damage: (Driving over drainfield, bldgs/structures, heavy equipment etc.)
- ☐ Inspect system regularly (pump/inspect frequency, warning signs of failing OSS)
- ☐ Educational materials provided circle 1 or more (Fact Sheet, OSS manual, Repair brochure, Pet waste)

**ANIMAL WASTE CHECKLIST:**

*Kitsap Public Health District*  
*Pollution Source Identification and Correction: Protocol Manual*

\_\_\_ Pet waste  
 \_\_\_ Manure from livestock  
 \_\_\_ Referral to Kitsap Conservation District \_\_\_\_\_

**Complete the Following:**

In the box below, indicate sources/areas of animal waste, surface water flows, locations of OSS and where samples/dye tests were collected/placed on the property. For consistency, indicate distances and directions on the drawing (Not To Scale).

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

| Dye Test Date:  |               |           | Dye Used: |                   |           |        |                   |           |        |                   |           |        |
|-----------------|---------------|-----------|-----------|-------------------|-----------|--------|-------------------|-----------|--------|-------------------|-----------|--------|
| Location Number | Control (BAC) |           |           | Pack Week #1 (F1) |           |        | Pack Week #2 (F2) |           |        | Pack Week #3 (F3) |           |        |
|                 | Placed        | Retrieved | Result    | Placed            | Retrieved | Result | Placed            | Retrieved | Result | Placed            | Retrieved | Result |
| 1               |               |           |           |                   |           |        |                   |           |        |                   |           |        |
| 2               |               |           |           |                   |           |        |                   |           |        |                   |           |        |
| 3               |               |           |           |                   |           |        |                   |           |        |                   |           |        |

| WATER SAMPLE DATA:  |             |                  |               |                 | (FC per 100mL) |
|---------------------|-------------|------------------|---------------|-----------------|----------------|
| Water Sample Taken: | Date: _____ | Inspector: _____ | Result: _____ | Location: _____ |                |
| Water Sample Taken: | Date: _____ | Inspector: _____ | Result: _____ | Location: _____ |                |
| Water Sample Taken: | Date: _____ | Inspector: _____ | Result: _____ | Location: _____ |                |
| Water Sample Taken: | Date: _____ | Inspector: _____ | Result: _____ | Location: _____ |                |

APPENDIX G: Notice and Order to Correct Violation

SENT REGULAR AND CERTIFIED MAIL

DATE

ADDRESSEE

**RE: SEPTIC SYSTEM FAILURE AT ADDRESS, TAX ID XXXXXXXXXX**

Dear

A violation of Kitsap County Board of Health Ordinance 2008-01 "Onsite Sewage System and General Sewage Sanitation Regulations" has been identified at the above referenced property owned or occupied by you.

On **SPECIFIC DATE**, an authorized representative of the Health Officer determined that sewage effluent was discharging onto the surface of the ground from the above referenced property. This determination was made by visual observation of the sewage on the ground and subsequent testing of a sample from the discharge. Discharging sewage effluent to the surface of the ground or to waters of the State violates the following provisions of said regulations:

2008-01 Sections 6.B.2 - "Discharge of Sewage Effluent" ; and  
2008A-01 Section 6.C, 6.D - "Insanitary Conditions"

The Health District hereby gives you notice to correct the violations identified above within **thirty days** of receiving this notice by doing the following:

**Immediately prevent sewage from discharging to the ground surface and becoming a public health nuisance. To protect public health**, hire a licensed designer to evaluate the system as soon as possible.  
STATE ANY OTHER ITEMS/ACTIONS THE OWNER NEEDS TO TAKE

**By SPECIFIC DATE**; Submit a building site application developed by an Onsite Wastewater Treatment Designer licensed under Chapter 18.210 RCW, or a Professional Engineer licensed under Chapter 18.43 RCW, and;

Obtain a Sewage Disposal Permit from the Health District pursuant of Section 6.F of said regulations.

**Failure to comply with this notice and order to correct violation will result in the issuance of a civil infraction notice to you pursuant to section 19.B of said regulations. The civil infraction notice may result in a fine of up to \$524.00 per violation per day to be assessed to you.**

Please note that pursuant to Section 20.A. of the above regulations that any person aggrieved by the contents of a notice and order to correct violation issued under this regulation, or by any inspection or enforcement action conducted by the Health District under this regulation, may submit a completed

application for appeal with the applicable fee to the Health Officer within 10 business days of the action appealed.

Please call me at (360) 337-xxxx, Monday through Friday from 8 a.m. to 4:30 p.m. if you have any questions or comments regarding this matter.

Sincerely,

Name, Title of Inspector  
Pollution Identification and Correction Program

Kitsap Public Health District  
Pollution Source Identification and Correction: Protocol Manual

APPENDIX H: Example of completed Notice of Civil Infraction (Ticket)

3811 MICRO DATA OLYMPIA (360) 570-8400

**INFRACTION** ☐ TRAFFIC ☒ **NON-TRAFFIC** **I 202728**

IN THE ☒ DISTRICT ☐ MUNICIPAL COURT OF KITSAP COUNTY, WASHINGTON  
☐ STATE OF WASHINGTON, PLAINTIFF VS. NAMED DEFENDANT  
☒ COUNTY OF KITSAP HEALTH DISTRICT  
☐ CITY/TOWN OF

L.E.A. OR # WA0180000 COURT OR # WA018013J

**THE UNDERSIGNED CERTIFIES AND SAYS THAT IN THE STATE OF WASHINGTON**

DRIVER'S LICENSE NO. STATE EXPIRES PHOTO I.D. ON PERSON  
☐ YES ☐ NO

NAME: LAST DOE FIRST JOHN MIDDLE  
 ADDRESS 123 MAIN ST ☐ IF NEW ADDRESS  
☐ PASSENGER  
 CITY POULSBORO STATE WA ZIP CODE 98370 EMPLOYER LOCATION  
 DATE OF BIRTH RACE SEX HEIGHT WEIGHT EYES HAIR  
 RESIDENTIAL PHONE NO. CELL / PAGER NO. WORK PHONE NO.  
 VIOLATION DATE MONTH DAY YEAR TIME 24 HOUR 02 01 2011 13:10 ☐ INTERPRETER NEEDED  
 ON OR ABOUT AT LOCATION 123 MAIN ST CITY/COUNTY OF POULSBORO KITSAP LANG.

**DID OPERATE THE FOLLOWING VEHICLE/MOTOR VEHICLE ON A PUBLIC HIGHWAY AND**

VEHICLE LICENSE NO. STATE EXPIRES VEH. YRL MAKE MODEL STYLE COLOR  
 TRAILER #1 LICENSE NO. STATE EXPIRES TR. YRL TRAILER #2 LICENSE NO. STATE EXPIRES TR. YRL  
 OWNER/COMPANY IF OTHER THAN DRIVER  
 ADDRESS CITY STATE ZIP CODE  
 ACCIDENT ☐ YES ☐ NO HAZARD ☐ YES ☐ NO EXEMPT ☐ FARM ☐ FIRE  
 NO NR R I F VEHICLE ☐ NO PLACARD ☐ NO VEHICLE ☐ R.V. ☐ OTHER

**DID THEN AND THERE COMMIT EACH OF THE FOLLOWING OFFENSES**

1. VIOLATION/STATUTE CODE VEHICLE SPEED IN A ZONE ☐ SMD ☐ PACE ☐ AIRCRAFT  
KCHD ORDINANCE 2008-1

2. VIOLATION/STATUTE CODE SECTION 6.B.2 "DISCHARGE OF SEWAGE"  
SECTION 6.D "UNSATURATED CONDITIONS"

3. VIOLATION/STATUTE CODE

RELATED # PENALTY U.S. \$ 524.00  
 DATE ISSUED 02/02/11

WITHOUT ADMITTING TO HAVING COMMITTED EACH OF THE ABOVE OFFENSE(S), BY SIGNING THIS DOCUMENT I ACKNOWLEDGE RECEIPT OF THIS NOTICE OF INFRACTION AND PROMISE TO RESPOND AS DIRECTED ON THIS NOTICE.

☒ **INVESTIGATION** DEFENDANT'S SIGNATURE OFFICER EVA CRIM 23

**INFRACTION**

| INF.           | RESPONSE | DISPOSITION | PENALTY | SUSPENDED | SUB-TOTAL | FIND/GUDT DATE          |
|----------------|----------|-------------|---------|-----------|-----------|-------------------------|
| 1              | C NC     | C NC D P OF | \$      | \$        | \$        | ABSTRACT MLD TO OLYMPIA |
| 2              | C NC     | C NC D P OF | \$      | \$        | \$        |                         |
| 3              | C NC     | C NC D P OF | \$      | \$        | \$        |                         |
| TOTAL COSTS \$ |          |             |         |           |           |                         |

WASHINGTON UNIFORM COURT DOCKET - COURT COPY  
 WASHINGTON UNIFORM COURT DOCKET - DOL COPY  
 WASHINGTON UNIFORM COURT DOCKET - DEFENDANT COPY  
 WASHINGTON UNIFORM COURT DOCKET - LEA COPY

January 2003  
 January 2003  
 January 2003  
 January 2003



On the reverse side of the ticket there is space for the Officer Report. This is the section that should be used to provide a narrative of case events. Include a description of all infractions observed in the narrative, even though the ticket was written for only one or two.

For example:

- Jan. 17, 2011. Site visit to property. Observed surfacing effluent, took water sample from drainfield area, and conducted dye test.
- Jan. 18, 2011 Results from water sample = 2419 fecal coliform/100ml. conducted second site visit, and observed dye. Due to positive water sample and positive dye test, confirmed failing septic system. Sent NOCV to property owner.
- Jan 18, 2011 Spoke to property owner and instructed them to have OSS pumped immediately, cover the area with lime and sand, conserve water. OSS needs to be repaired by Jan 31, 2011.  
Feb. 1, 2011 Site visit, owner has not taken any action to repair the OSS. Observed surfacing effluent. Issued citation.