GUIDANCE AND MONITORING PROTOCOL FOR BRIDGE AND FERRY TERMINAL ROUTINE MAINTENANCE CLEANING AND WASHING

APPROACH

The Bridge and Ferry Terminal Washing General Permit (Permit) was developed to allow regular maintenance cleaning, preparatory (pre-painting) washing, and painting of bridge and ferry terminals and associated metal structures over waters of the state. Cleaning, washing, and painting prolong the integrity and safety of these structures, and the permit allows both the Washington State Department of Transportation (WSDOT) and local jurisdictions to conduct those activities.

WSDOT maintains over 200 bridge structures and 19 ferry terminals throughout the state. The Bridge and Ferry Terminal Washing General Permit requires WSDOT to follow this monitoring protocol for routine maintenance washing of bridges and ferry terminals. Edits have been made to the March 2010 protocol for bridge maintenance so it includes ferry terminals and requirements of the 2017 version of this general permit. This protocol covers the sampling of routine maintenance washing of bridges and ferry terminals.

Bridges in Washington are inspected on a routine basis and are periodically washed to allow for visual inspection and to maintain structural integrity. The water generated during the washing process that comes into contact with paint and accumulated debris (dirt, moss, sediments, bird nests and associated fecal material, marine growth, etc.) on the structures can pick up contaminants that have the potential to affect the quality of receiving waters. This NPDES General Permit requires the Permittee to annually obtain samples of the wash water from one representative ferry terminal routine maintenance washing project and 10% of representative bridge maintenance washing projects (or 5 total bridges, whichever is highest, per S5B of the NPDES General Permit) for testing and characterization of the metals in the discharge. Ecology will use the data from this and other maintenance washing projects to evaluate whether the discharge of wash water presents a reasonable potential to exceed water quality standards.

Wastewater is generated by two separate actions during the washing effort. The first is generated during the scraping and vacuuming (dry cleaning) of debris. Only a small amount of water is discharged during this part of the process because most is vacuumed directly into the vactor truck. The second source of wastewater is from rinsing the structure after the scraping and vacuuming. This represents almost all of the wastewater that enters the receiving water. Due to the lack of water generated during the first cleaning step, it is not practical or necessary to collect samples of these sources. As will be described below, the final wash water samples collected will be a mix of both parts of the cleaning process.

Wash Water Composite Sample

Due to the nature of the maintenance cleaning and washing work, the composite sample is neither time nor flow proportioned. Instead, the composite sample is a combination of the aliquots (subsamples) collected from collection points along the terminal or bridge.

Representative Sample Locations

Since all collected wash water is composited into one sample, WSDOT staff or the contractor should select representative collection locations, and then document how the collection locations were selected in the field notes. The wash water collection areas should represent the overall type of wash water coming off the bridge or terminal. For example, maintenance washing includes both the bridge deck and the wing walls. Collection devices, such as hanging buckets, should be placed to capture water from both of these surfaces.

The basic procedure laid out in this protocol is to collect three wash water samples from different locations along the structure. Samples will be collected from the wash water above the waterbodies by lowering the sample container(s) over the bridge/ferry terminal structure before cleaning begins, tying it off, and leaving it there during the washing. In some cases, it may be possible to place the bucket on the structure below the area being washed to collect wash water samples. The only potential difficulty related to this sampling is ensuring an adequate volume of water is collected at each of the three locations. Therefore it is recommended that the sample container used has a large opening (e.g., a five-gallon bucket) and that two buckets are hung off the bridge or ferry terminal at each of the three locations. If two containers are used per location, they should be hung next to each other and at the same elevation from the structure. Try to locate the sampling containers under structural connection points where debris will have built up and under vertical support structures that would concentrate effluent into a single stream. Selecting three locations along the structure and collecting separate samples is recommended as a means of accounting for field variability in pollutant concentrations. If not enough water is collected or samples are spilled, then just prepare one or two samples that are a blend of all the water collected.

The following sections describe specific steps for collecting samples in more detail.

FIELD PREPARATION

WSDOT staff will select and order supplies from an accredited laboratory under contract with WSDOT to perform environmental analytical laboratory services. It is important that you explain to the lab the tests and detection limits that are required under the permit (see Table 1). The following link includes a list of accredited laboratories (lab should be under contract with WSDOT) Analytical Laboratory Services List. WSDOT staff will also pick up sample equipment that has been cleaned by the laboratory prior to sampling.

A. Collect the following equipment:
    1. Six laboratory-cleaned five-gallon buckets with lids and handles.
    2. Nylon rope cut into appropriate lengths for hanging the buckets or poles, if needed. (Note: Confirm length through a quick trip to the bridge/ferry terminal site or with photos. In most cases, hang the buckets from the lowest horizontal support directly under the deck).
    3. Three (3) 2.5-gallon glass sample jars.
    4. Field notebook and monitoring form (Appendix C).
    5. Camera.
    6. Sharpie/pencils/pens.
    7. Sample labels.
    8. Cooler(s) with ice.
    9. Bubble wrap.
    10. Safety equipment (nitrile gloves, goggles, reflective clothing, hardhat, earplugs, work boots, flashlight).
B. Put on safety goggles and gloves, and keep sample buckets covered with plastic lids to prevent contamination until collecting a sample.
C. Composite sample jars should be organized and labeled (for example, Skookumchuck Bridge, Site #1, date, analytes). It may also help to write numbers on the sample buckets to correspond to the sampling locations.
D. Fill out the monitoring form at the end of this protocol (Appendix C).
E. Call the contracted laboratory and coordinate sample pick-up or delivery. Samples should be received by the laboratory as soon as possible after collection (within 24 hours).

Sample Collection

Follow the safety procedure in Appendix B. The following procedures should be implemented during bridge/ferry terminal routine maintenance washing activities:

Bridge Wash Water

A. Select at least three monitoring locations for sample collection (be sure to clearly document the selection strategy and sampling locations in field notes). They should be in areas likely to receive a significant amount of rinse water (e.g. directly under vertical support structures or in areas with heavy buildup of debris).
B. WSDOT staff or the contractor should always wear clean nitrile gloves when handling laboratory cleaned equipment or when collecting samples. Change gloves as necessary to eliminate potential for contaminating the samples.
C. Use nylon rope to lower at least two sample buckets over the bridge deck for each monitoring location. Using two buckets per location should ensure that an adequate amount of water is collected.
D. Upon completion of the washing effort in the sample collection areas, raise up the sample buckets at each location to the deck. The rinse water collected in the buckets at each location should be mixed together (i.e. “composited”) into a 2.5-gallon glass

sample jar to create one composite sample for each location. (This should result in a final count of three containers; one composite sample for each location along the bridge structure.)

E. Transfer samples into coolers and put on ice for delivery to the laboratory (samples should be ≤ 6° C upon arrival at the laboratory) (Refer to Appendix A if samples will need to be split and filtered in the field).
F. Complete all fields on the chain of custody form in pen (see example in Appendix D).
G. Deliver sample bottles and the chain of custody form to the laboratory or lab courier. Include the chain of custody form with cooler(s).
H. Record additional notes and observations.

Ferry Terminal Wash Water

Here are instructions for collecting a sample from a ferry terminal:

A. Select at least three monitoring locations for sample collection (be sure to clearly document the selection strategy and sampling locations in field notes). They should be in areas likely to receive a significant amount of rinse water.
    a. If collecting samples from a transfer span, angle the transfer span down to influence the direction of water flow. Select one location under the grating of each wing wall and two points beneath the joint near the end of the transfer span as sample locations.
B. WSDOT staff or the contractor should always wear clean nitrile gloves when handling laboratory cleaned equipment or when collecting samples. Change gloves as necessary to eliminate potential for contaminating the samples.
C. Use a nylon rope to attach two sample containers under each sample location. If it is not feasible to hang a bucket with a rope, use a pole with a hook or some other means to safely hold the sample container to collect wash water.
D. Begin washing the structure with a continuous stream of water.
E. Upon completion of the washing effort in the sample collection areas, raise the sample buckets at each location to the deck or transfer span.
F. The rinse water collected at each sample location should be mixed together (i.e., "composited") into a 2.5-gallon glass sample jar to create one composite sample for each location. (This should result in a final count of three containers; one composite sample for each location along the ferry terminal structure.)
G. Transfer samples into coolers and put on ice for delivery to the laboratory (samples should be ≤ 6° C upon arrival at the laboratory) (Refer to Appendix A if samples will need to be split and filtered in the field).
H. Complete all fields on the chain of custody form in pen (see example in Appendix D).
I. Deliver sample bottles and the chain of custody form to laboratory or lab courier. Include the chain of custody form with cooler(s).
J. Record additional notes and observations.

Quality Assurance & Quality Control

In order to maintain a high-level of data quality, the contract laboratory will clean field equipment with non-phosphate detergent and hot water. Then rinse the equipment with deionized water, followed by a rinse with a 10% hydrochloric acid solution, before a final triple rinse with deionized water. The equipment should be air dried in a clean area free of contaminants.

WSDOT staff or the contractor will collect composite field duplicates at an approximate rate of 10% of the total samples collected each sample year. Field duplicates can be requested for each composite sample in which it is determined you have enough extra volume for additional analyses. Be sure to use nitrile gloves and EPA clean hands/dirty hands techniques to avoid contamination.

WSDOT staff or the contractor will collect field blanks once per sample year using deionized water obtained from a contracted laboratory. Field blanks are used to determine whether contamination may have occurred during sampling. Equipment rinsate blanks consist of laboratory-supplied, contaminate-free water that is swirled in the sampling containers and then split. A filter blank, if necessary, should also be obtained in the field by running deionized water through a clean filter to fill a dissolved metals bottle. A filter blank will not be necessary if the lab processes your samples.

Type	Interval	Definition
Cleaning	All sample containers and churners between events	Contract lab cleans sample equipment between events, wraps the equipment in foil, if necessary, and bags the equipment in contaminant-free plastic for transport to the field.
Duplicates	10% of overall samples	Samples taken from the same sample water and submitted as regular samples.
Blanks	Once per field season	Rinse sampling equipment with lab supplied deionized water to check for contamination.

Laboratory Procedures

Chain of Custody

Chain of custody (COC) procedures are necessary to ensure thorough documentation of handling for each sample, from field collection to laboratory analysis. The purpose of this procedure is to minimize errors, maintain sample integrity, and protect the quality of data collected. WSDOT staff or the contractor will submit a COC form (see Appendix D) with each sample event. Individuals who manipulate or handle samples are required to log their activities on the form in pen.

Definitions of custody from the Lab User's Manual (MEL, 2008) are described below:

A sample is considered to be under a person's custody if it is:

- In the individual's physical possession,
- In the individual's sight,
- Secured in a tamper-proof way by that person, or
- Secured by the person in an area that is restricted to authorized personnel.
- Information included in a COC include:
    1. Sample identification
    2. Security procedures
    3. Chain of custody (COC) record
    4. Field log book

When the laboratory receives samples, it assumes responsibility for the samples and maintenance of the COC forms. The laboratory then conducts its procedures for sample log-in, storage, holding time, tracking, and submittal of final data to the responsible parties.

Laboratory Selection and Coordination

The information found in Table 1 must be provided to the laboratory to ensure the appropriate tests are performed with the required detection limits.

- The laboratory selected must be accredited under the provisions of Accreditation of Environmental Laboratories, Chapter 173-50 WAC.
- Should be under contract with WSDOT.
- Will perform internal Quality Assurance checks.

The lab data package should include, but not be limited to:

- A case narrative including date samples were collected, received, filtered, extracted, and analyzed.
- Practical quantitation limits and sample results.
- Methods blanks.
- Spike levels, blanks, and percent recovery.
- Laboratory duplicates and relative percent difference between duplicates.

TABLE 1. PARAMETERS AND SAMPLE ANALYTICAL METHODS (Freshwater).

Parameter	**Method Number**	**Detection Limit(3)**	***Quantitation Level* (µg/L)**	**Holding Time**
Total Hardness	SM2340B(1)		200 as $CaCO_3$	6 months
Total and Dissolved Copper	200.8(2)	0.4 µg/L(5)		6 months
Total and Dissolved Lead		0.1 µg/L		
Total and Dissolved Zinc		0.5 µg/L		

(1) Standard Method 2340B

(2) U.S. Environmental Protection Agency (EPA) Method 200.8.

(3) The minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B

(4) The smallest detectable concentration of analyte greater than the Detection Limit where the accuracy (precision & bias) achieves the objectives of the intended purpose.

(5) µg/L = micrograms/liter

Final Monitoring Report

WSDOT will submit a single report that addresses the requirements of the *Bridge and Ferry Terminal Washing General Permit* by February 28th of the following year. Submit the test results, pictures, field notes, a diagram of the structure showing where the samples were taken, and the Bridge/Ferry Terminal Routine Maintenance Washing Monitoring Form to the Permit Streamlining and HPA Lead at ESO within six weeks after the sample is collected. The Permit Streamlining and HPA Lead will coordinate with WSDOT staff to write a report and submit it to the Department of Ecology per permit requirements in sections S5 and S8. These requirements may include the following:

- The date, including year, and time of day samples were collected.
- The location where samples were collected (all effluent samples).
- The river flow at the time of the project, reported in cubic feet per second (cfs) if freshwater.
- The total volume of water discharged to surface waters, reported in gallons (get from the washing crew).
- The number of hours spent actually washing the structure (get from the washing crew).
- The specific detection limits provided to the lab for analysis (provided in table above).
- Copies of any field notes.

The attached monitoring form (Appendix C) can be modified and used in the field to ensure all the necessary information is collected and documented. Be sure to document the steps taken to identify representative sampling locations in field notes.

Consider for All Reports:

Include an aerial photograph showing the location of the terminal, painting locations, and sampling locations. Consider taking photographs of the work area, wash water collection process, and any best management practices (BMPs) used. These photographs are very beneficial when included in the report and will provide Ecology with a clear understanding of the work/monitoring performed under this permit.

Glossary

accreditation – A certification process for laboratories, designed to evaluate and document a lab's ability to perform analytical methods and produce acceptable data. For Ecology, it is "Formal recognition by (Ecology)…that an environmental laboratory is capable of producing accurate analytical data" (WAC 173-50-040) (Kammin, 2010).

best management practices (BMPs) – The schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State (Ecology, 2009).

blank – A sample prepared to contain none (or as little as possible) of the analyte of interest. For example, in water analysis, pure water is used for the blank. In chemical analysis, a blank is used to estimate the analytical response to all factors other than the analyte in the sample. In general, blanks are used to assess possible contamination or inadvertent introduction of analyte during various stages of the sampling and analytical process (USGS, 1999).

duplicate samples (split samples) – Two samples taken from and representative of the same population, and carried through the steps of the sampling and analytical procedures in an identical manner. Duplicate samples are used to assess the variability of all method activities, including sampling and analysis (USEPA, 1997).

National Pollutant Discharge Elimination System (NPDES) – The national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington State Department of Ecology (Ecology, 2009).

quality assurance (QA) – A set of activities designed to establish and document the reliability and usability of measurement data (Kammin, 2010).

representativeness – The state or quality of being accurately representative of something. Expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at the sampling point, or an environmental condition (USEPA, 2006).

Literature Cited

Ecology. 2009. *Washington State Department of Transportation Municipal Stormwater Permit, National Pollution Discharge Elimination System and State Waste Discharge Permit for Large and Medium Municipal Separate Storm Sewer Systems.* Washington State Department of Ecology. Olympia, WA. Permit No. WAR043000A. Issuance Date February 6, 2009.

Kammin. 2010. *Ecology Quality Assurance Glossary*. Definition developed or extensively edited by William Kammin. Washington State Department of Ecology, Olympia, WA.

MEL (Manchester Environmental Laboratory). 2008. *Lab User's Manual*, Ninth Edition. Manchester Environmental Laboratory, Washington State Department of Ecology, Manchester, WA.

USEPA. 1997. *Glossary of Quality Assurance Terms and Related Acronyms*. Quality Assurance Division, National Center for Environmental Research and Quality Assurance, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C.

_____. 2006. *Guidance on Systematic Planning Using the Data Quality Objectives Process*. Office of Environmental Information, U.S. Environmental Protection Agency, Washington, D.C.

USGS. 1999. *Principles and Practices for Quality Assurance and Quality Control*. Open-File Report 98-636. Office of Surface Water, U.S. Geological Survey, Marlborough, MA.

APPENDIX A – FIELD SAMPLE SPLITTING/FILTERING

If it is determined that samples will need to split and filtered in the field, WSDOT staff or the contractor will need to select and order the following additional sampling supplies from an accredited laboratory under contract with WSDOT. These supplies are in addition to the supplies already listed in the Field Preparation section of this protocol.

A. The order should include (assumes three sample locations, and one extra bottle each for backup and field duplicate):
    1. Five (5) - 250 ml bottles preserved with H_2SO_4 if required by the lab for hardness.
    2. Five (5) - 250 ml bottles preserved with HNO_3 if required by the lab for total copper, lead, and zinc.
    3. Five (5) - 250 ml bottles without preservative
    4. Labels for bottles
    5. Disposable 0.45µm glass fiber filters
    6. Filtration apparatus (peristaltic or hand pump)
    7. Small Funnel (laboratory cleaned) for filling sample bottles
    8. HNO_3 (if required to preserve dissolved metals in the field)
    9. Chain of custody forms

Sample Preparation

Verify with the lab performing the analysis the actual quantities of wash water needed to perform each of the tests. Also, verify whether any samples need to be filtered in the field, or placed in containers with preservatives. These requirements are typically dependent on how long it will take to deliver the samples to the lab for processing.

The following procedures will need to be completed after the procedures already listed in step A through D of the Sample Collection portion of this protocol. These steps can be completed on-site or at a more convenient location, but dissolved metal samples should be filtered as soon as possible (if samples need to be filtered in the field refer to the sample filtration instructions at the end of this appendix):

Wash Water

A. Select the first sample container and swirl gently to ensure wash water sample is well mixed.
B. Using a small funnel, carefully pour water from the bucket into the sample bottles. Fill to approximately the "shoulder" of the sample bottle. DO NOT OVERFILL. Fill pre-labeled sample bottles as follows:
    1. One (1) 250 ml bottle preserved with H_2SO_4 (for hardness)
    2. One (1) 250 ml bottle with no preservative (for dissolved copper, lead, and zinc) (filter sample water and preserve with HNO_3, if required by the lab)
    3. One (1) 250 ml bottle preserved with HNO_3 (for total copper, lead, and zinc)
C. Repeat above steps for the remaining samples
D. If possible, fill an additional set of sample bottles from one of the composite samples. This will serve as a field duplicate.

E. Wrap sample bottles in bubble wrap and place on ice in cooler (≤ 6° C).
F. Complete all fields on chain of custody (COC) in pen (see example in Appendix D).
G. Deliver sample bottles and COC form to laboratory or lab courier. Include COC form with cooler(s).
H. Record additional notes and observations.

Field Sample Filtration

Samples for dissolved metals need to be filtered through a disposable 0.45 µm glass-fiber filter using vacuum pressure created by a peristaltic or hand pump. Prior to filtering the sample, a small amount of sample water is rinsed through the filter and container. After rinsing and discarding the rinse water, the filter kit is filled with sample water and filtered. Filtered samples are then transferred into the appropriate laboratory sample bottle and preserved HNO_3. New glass fiber filters must be used for each sample requiring filtration, discard filters after each use.

APPENDIX B – SAFETY

Personnel Safety

Personal Protective Equipment (PPE)

Check in with the washing crew on site-specific PPE requirements and safety requirements for collecting the water samples. Minimal safety equipment for collecting water samples include:

- ANSI Class 2 or 3 retro-reflective vests
- Safety goggles
- Nitrile gloves

Chemical Handling

The samples collected under this protocol are preserved with nitric acid or sulfuric acid. Safety Data Sheets (SDSs) for all applicable chemicals should be reviewed by staff prior to handling them (https://www.msdsonline.com/msds-search).

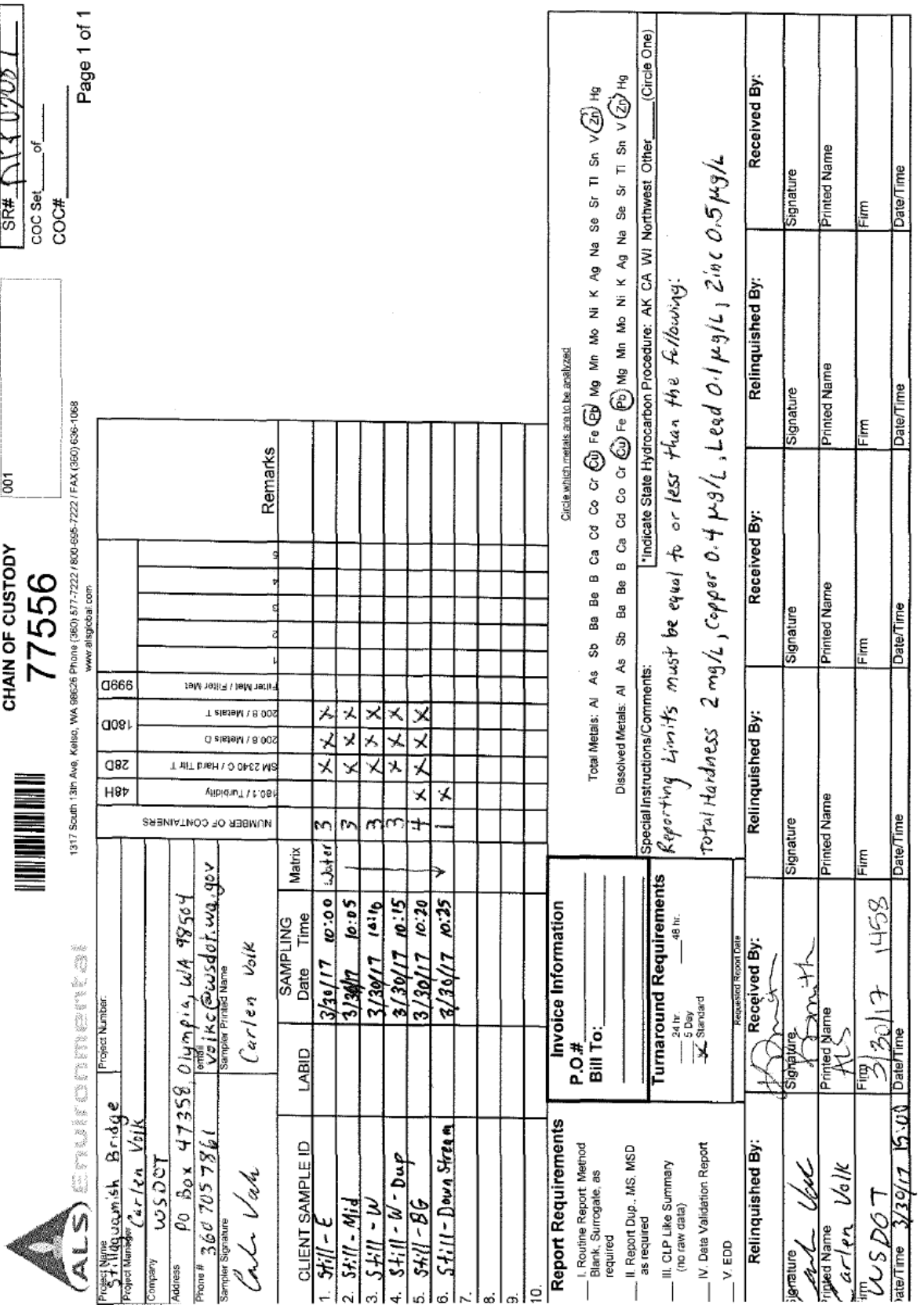
The sample bottles received from the lab may already contain these acids. The sampler should be aware of this when handling the bottles. Inhalation or contact with eyes, clothing or skin will cause severe burns.

If a chemical comes into contact with eyes or skin, immediately rinse the area with plenty of water for at least 15 minutes. If a chemical is inhaled, move to fresh air. If this does not improve the condition, seek immediate medical attention.

APPENDIX C - BRIDGE/FERRY TERMINAL ROUTINE MAINTENANCE WASHING –MONITORING FORM

Ferry terminal/bridge name & number (if bridge):
Name of waterbody:
County & WRIA:
Project date (month and year):
Sampling date(s) & time of day:
Number of pressure washer used: (get from washing crew)
Total number of hours spent washing the structure: (get from washing crew)
Total volume of wash water discharged into the waterbody: (get from washing crew)
River flow in cubic feet per second (cfs) (if freshwater, N/A for ferry terminals):
□
Duration of the washing operation:
Total volume (gallons) used for the operation and estimated average flow rate (gallons per minute) of water discharged during the operation. (get from washing crew)
Effluent (wash water) samples taken for: □ Total metals (zinc, copper, and lead): □ Total dissolved metals (zinc, copper, and lead): □ Hardness
Locations where the effluent samples were taken (attach a diagram of the bridge/ferry terminal):
Field notes taken? If YES, attach copy to Monitoring Report. Pictures taken? If Yes, include in field notes with description.
Is lab(s) accredited?
EPA approved methods for samples the lab will use: Hardness – Standard Method 2340B Total and Dissolved Metals – 200.8
Detection limits requirements provided to lab: Hardness - 2 mg/L Total and Dissolved Copper – 0.4 µg/L Total and Dissolved Lead - 0.1 µg/L Total and Dissolved Zinc – 0.5 µg/L
NOTES:

APPENDIX D – EXAMPLE CHAIN OF CUSTODY



CHAIN OF CUSTODY
77556

001

SR# KX220821

COC Set____ of ____

COC#_____

Page 1 of 1

ALS Environmental
1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Stillaguamish Bridge
Project Number:
Project Manager: Carlen Volk
Company: WSDOT
Address: PO Box 47358, Olympia, WA 98504
Phone #: 360 705 7861
email: volkc@wsdot.wa.gov
Sampler Signature: Carlen Volk
Sampler Printed Name: Carlen Volk

CLIENT SAMPLE ID	LABID	SAMPLING Date	Time	Matrix	NUMBER OF CONTAINERS	48H 160.1 / Turbidity	28D SM 2340 C / Hard Tot T	180D 200.8 / Metals D	200.8 / Metals T	999D Filter Met / Filter Met				Remarks
1. Still-E		3/30/17	10:00	water	3		X	X	X					
2. Still-Mid		3/30/17	10:05		3		X	X	X					
3. Still-W		3/30/17	10:10		3		X	X	X					
4. Still-W-Dup		3/30/17	10:15		3		X	X	X					
5. Still-BG		3/30/17	10:20		4	X	X	X	X					
6. Still-Down Stream		3/30/17	10:25	↓	1	X								
7.														
8.														
9.														
10.														

Report Requirements
- I. Routine Report: Method Blank, Surrogate, as required
- II. Report Dup., MS, MSD as required
- III. CLP Like Summary (no raw data)
- IV. Data Validation Report
- V. EDD

Requested Report Date

Invoice Information
P.O.#
Bill To:

Turnaround Requirements
- 24 hr.
- 5 Day
- 48 hr.
- X Standard

Circle which metals are to be analyzed:
Total Metals: Al As Sb Ba Be B Ca Cd Co Cr (Cu) Fe (Pb) Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V (Zn) Hg
Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr (Cu) Fe (Pb) Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V (Zn) Hg

Special Instructions/Comments:
Reporting limits must be equal to or less than the following:
Total Hardness 2 mg/L, Copper 0.4 µg/L, Lead 0.1 µg/L, Zinc 0.5 µg/L

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____ (Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name Carlen Volk	Printed Name ALS	Printed Name	Printed Name	Printed Name	Printed Name
Firm WSDOT	Firm	Firm	Firm	Firm	Firm
Date/Time 3/30/17 15:00	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time