

## LETTER OF TRANSMITTAL

**PORT of OLYMPIA**  
**606 Columbia St NW, Suite 300**  
**Olympia, Washington 98501**  
**(360)-528-8000**

**DATE: June 27, 2019**

**TO: Washington State Department of Ecology**

**Attn: Mohsen Kourehdar**

**RE: Port of Olympia Cascade Pole remediation Site: NPDES Permit WA 0040533 Renewal Application.**

**TRANSMITTED BY: Port of Olympia: Don J Bache**

COPIES	DATE	DESCRIPTION
1	6-26-19	EPA Application for NPDES permit Form 1
1	6-26-19	EPA Application for NPDES permit Form 2C
1	6-26-19	Attachment 1 - Vicinity Map
1	6-26-19	Attachment 2 - Site Map
1	6-26-19	Attachment 3 – Treatment System Building Location and Layout
1	6-26-19	Attachment 4 – Process Flow Diagram
1	6-26-19	Attachment 5 – Treatment System Layout
1	6-26-19	Attachment 6 – Analytical Report of Acute and Chronic Toxicity

**Items are transmitted as checked below:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> For Signature/Approval | <input type="checkbox"/> Approved as submitted/noted | <input type="checkbox"/> Returned for changes/resubmit                                    |
| <input type="checkbox"/> For Your Use           | <input type="checkbox"/> As Requested                | <input checked="" type="checkbox"/> For review and comment <input type="checkbox"/> Other |

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Don J Bache, Cascade Pole Site Manager  
360-528-8062  
[donb@portolympia.com](mailto:donb@portolympia.com)

June 26, 2019

Mohsen Kourehdar  
Department of Ecology  
PO Box 47775  
Olympia WA 98504-7775

RE: NPDES permit WA 0040533 renewal application  
Port of Olympia Cascade Pole Site

Mr. Kourehdar,

Enclosed is the signed Port of Olympia Cascade Pole Site, NPDES renewal application package, including EPA Form 1, Form 2C, and other supporting attachments.

As part of this renewal application the Port is requesting Ecology modify the Discharge Limits section, S1 A. of the Permit, to remove the pentachlorophenol 99.5 percent removal efficiency discharge limit. That limit becomes unattainable with the combination of decreasing influent PCP concentrations over time and the analytical matrix interferences experienced by the laboratory that reduce the ability to demonstrate low treatment system effluent PCP concentrations.

Furthermore, it is not valid to require a numeric removal percentage when the effluent is below an accurately quantifiable level (the established analytical method quantitation level [QL]). Therefore, at a minimum, in order to properly clarify the applicability of that discharge limit, the Port requests that the text be changed from "99.5 percent Removal Efficiency at All Times" to "99.5 percent removal efficiency when the treatment system effluent concentration exceeds the established laboratory quantitation level (QL) of 1.0 µg/L".


Please feel free to contact me at (360) 528-8062 if you have any questions or concerns regarding these documents.



Don J. Bache  
Cascade Pole Site Manager

Enclosures:

CC: Rachael Jamison, Director of Planning, Public Works & Environmental Programs  
Consent Decree Library

EPA Identification Number WA 0040533		NPDES Permit Number WA0040533		Facility Name Port of Olympia, Cascade Pole		Form Approved 03/05/19 OMB No. 2040-0004		
Form 1 NPDES		<b>U.S. Environmental Protection Agency</b> <b>Application for NPDES Permit to Discharge Wastewater</b> <b>GENERAL INFORMATION</b>						
<b>SECTION 1. ACTIVITIES REQUIRING AN NPDES PERMIT (40 CFR 122.21(f) and (f)(1))</b>								
Activities Requiring an NPDES Permit	1.1	<b>Applicants Not Required to Submit Form 1</b>						
	1.1.1	Is the facility a new or existing <b>publicly owned treatment works</b> ? If yes, STOP. Do NOT complete Form 1. Complete Form 2A. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			1.1.2	Is the facility a new or existing <b>treatment works treating domestic sewage</b> ? If yes, STOP. Do NOT complete Form 1. Complete Form 2S. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
	1.2	<b>Applicants Required to Submit Form 1</b>						
	1.2.1	Is the facility a <b>concentrated animal feeding operation</b> or a <b>concentrated aquatic animal production facility</b> ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2B. <input checked="" type="checkbox"/> No			1.2.2	Is the facility an <b>existing</b> manufacturing, commercial, mining, or silvicultural <b>facility</b> that is <b>currently discharging process wastewater</b> ? <input checked="" type="checkbox"/> Yes → Complete Form 1 and Form 2C. <input type="checkbox"/> No		
	1.2.3	Is the facility a <b>new</b> manufacturing, commercial, mining, or silvicultural <b>facility</b> that has <b>not yet commenced to discharge</b> ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2D. <input checked="" type="checkbox"/> No			1.2.4	Is the facility a <b>new or existing</b> manufacturing, commercial, mining, or silvicultural <b>facility</b> that <b>discharges only nonprocess wastewater</b> ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2E. <input checked="" type="checkbox"/> No		
	1.2.5	Is the facility a <b>new or existing facility</b> whose discharge is composed entirely of <b>stormwater associated with industrial activity</b> or whose discharge is composed of <b>both stormwater and non-stormwater</b> ? <input type="checkbox"/> Yes → Complete Form 1 and Form 2F unless exempted by 40 CFR 122.26(b)(14)(x) or (b)(15). <input checked="" type="checkbox"/> No						
<b>SECTION 2. NAME, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(f)(2))</b>								
Name, Mailing Address, and Location	2.1	<b>Facility Name</b>						
		The Port of Olympia, Cascade Pole Site						
	2.2	<b>EPA Identification Number</b>						
		WA 0040533						
	2.3	<b>Facility Contact</b>						
		Name (first and last) Don Bache		Title Cascade Pole Site Manager		Phone number (360) 528-8062		
	Email address DonB@portolympia.com							
2.4	<b>Facility Mailing Address</b>							
	Street or P.O. box 606 Columbia St NW, Suite 300							
	City or town Olympia		State WA		ZIP code 98501			

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Name, Mailing Address, and Location Continued	2.5	<b>Facility Location</b>					
	Street, route number, or other specific identifier 1503 Marine Drive Northeast						
	County name Thurston County		County code (if known)				
	City or town Olympia		State WA		ZIP code 98501		
<b>SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(f)(3))</b>							
SIC and NAICS Codes	3.1	<b>SIC Code(s)</b>		<b>Description (optional)</b>			
				Model Toxics Control Act Site			
	3.2	<b>NAICS Code(s)</b>		<b>Description (optional)</b>			
				Model Toxics Control Act Site			
<b>SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(f)(4))</b>							
Operator Information	4.1	<b>Name of Operator</b>					
	Don Bache						
	4.2	Is the name you listed in Item 4.1 also the owner? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
	4.3	<b>Operator Status</b> <input type="checkbox"/> Public—federal <input type="checkbox"/> Public—state <input checked="" type="checkbox"/> Other public (specify) <u>Port</u> <input type="checkbox"/> Private <input type="checkbox"/> Other (specify) _____					
Operator Information Continued	4.4	<b>Phone Number of Operator</b> (360) 528-8062					
	4.5	<b>Operator Address</b> Street or P.O. Box 606 Columbia St NW, Suite 300 City or town    State    ZIP code Olympia    WA    98501 Email address of operator DonB@portolympia.com					
<b>SECTION 5. INDIAN LAND (40 CFR 122.21(f)(5))</b>							
Indian Land	5.1	Is the facility located on Indian Land? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					



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SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(f)(6))

Existing Environmental Permits	6.1	<b>Existing Environmental Permits</b> (check all that apply and print or type the corresponding permit number for each)		
		<input checked="" type="checkbox"/> NPDES (discharges to surface water) WA 0040533	<input type="checkbox"/> RCRA (hazardous wastes)	<input type="checkbox"/> UIC (underground injection of fluids)
		<input type="checkbox"/> PSD (air emissions)	<input type="checkbox"/> Nonattainment program (CAA)	<input type="checkbox"/> NESHAPs (CAA)
		<input type="checkbox"/> Ocean dumping (MPRSA)	<input type="checkbox"/> Dredge or fill (CWA Section 404)	<input type="checkbox"/> Other (specify)

SECTION 7. MAP (40 CFR 122.21(f)(7))

Map	7.1	Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.)  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> CAFO—Not Applicable (See requirements in Form 2B.)
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SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(f)(8))

Nature of Business	8.1	Describe the nature of your business.  The Port of Olympia Cascade Pole Site, formerly a wood treatment site, is currently under active remediation. The site is located at the northern end of the peninsula that extends into Budd Inlet. The Port of Olympia owns the property, adjacent parcels and adjacent in-waterway sediments area. Site remediation consists of capping, containment walls, surface water collection and treatment, and as needed ground water extraction and treatment. This application pertains to the groundwater extraction and remediation system (NPDES Permit No. WA 0040533) that consists of 11 extraction wells for a combined flow rate between 0-10 gpm. Treated water is discharged to Budd Inlet via LOTT's outfall.  This system has been modified since the last permit renewal by adding an external backflush holding tank.
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SECTION 9. COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(f)(9))

Cooling Water Intake Structures	9.1	Does your facility use cooling water?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 10.1.
	9.2	Identify the source of cooling water. (Note that facilities that use a cooling water intake structure as described at 40 CFR 125, Subparts I and J may have additional application requirements at 40 CFR 122.21(r). Consult with your NPDES permitting authority to determine what specific information needs to be submitted and when.)

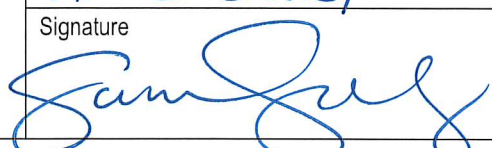
  

SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(f)(10))

Variance Requests	10.1	Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(m)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)
		<div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Fundamentally different factors (CWA Section 301(n))         </div> <div style="width: 50%;"> <input type="checkbox"/> Water quality related effluent limitations (CWA Section 302(b)(2))         </div> <div style="width: 50%;"> <input type="checkbox"/> Non-conventional pollutants (CWA Section 301(c) and (g))         </div> <div style="width: 50%;"> <input type="checkbox"/> Thermal discharges (CWA Section 316(a))         </div> <div style="width: 50%;"> <input type="checkbox"/> Not applicable         </div> </div>

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SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))			
Checklist and Certification Statement	11.1	In Column 1 below, mark the sections of Form 1 that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.	
		Column 1	Column 2
	<input checked="" type="checkbox"/>	Section 1: Activities Requiring an NPDES Permit	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 2: Name, Mailing Address, and Location	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 3: SIC Codes	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 4: Operator Information	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 5: Indian Land	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 6: Existing Environmental Permits	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 7: Map	<input checked="" type="checkbox"/> w/ topographic map <input checked="" type="checkbox"/> w/ additional attachments
	<input checked="" type="checkbox"/>	Section 8: Nature of Business	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 9: Cooling Water Intake Structures	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 10: Variance Requests	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 11: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	11.2	<b>Certification Statement</b> <i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i>	
	Name (print or type first and last name)	Official title	
	SAM GIBBNEY	EXECUTIVE DIRECTOR	
	Signature	Date signed	
		6.26.19	

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Form 2C NPDES		<b>U.S. Environmental Protection Agency</b> <b>Application for NPDES Permit to Discharge Wastewater</b> <b>EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURE OPERATIONS</b>
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SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

<b>Outfall Location</b>	1.1	Provide information on each of the facility's outfalls in the table below.			
		<b>Outfall Number</b>	<b>Receiving Water Name</b>	<b>Latitude</b>	<b>Longitude</b>
		001	Budd Inlet	47°    3'    30"	122°    54'    9"
				°    '    "	°    '    "
				°    '    "	°    '    "

SECTION 2. LINE DRAWING (40 CFR 122.21(g)(2))

<b>Line Drawing</b>	2.1	Have you attached a line drawing to this application that shows the water flow through your facility with a water balance? (See instructions for drawing requirements. See Exhibit 2C-1 at end of instructions for example.)  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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SECTION 3. AVERAGE FLOWS AND TREATMENT (40 CFR 122.21(g)(3))

<b>Average Flows and Treatment</b>	3.1	For each outfall identified under Item 1.1, provide average flow and treatment information. Add additional sheets if necessary.		
		<b>**Outfall Number**</b> 001		
		<b>Operations Contributing to Flow</b>		
		<b>Operation</b>	<b>Average Flow</b>	
		Groundwater well extraction system	0.0072 mgd	
			mgd	
			mgd	
			mgd	
		<b>Treatment Units</b>		
		<b>Description</b> (include size, flow rate through each treatment unit, retention time, etc.)	<b>Code from Table 2C-1</b>	<b>Final Disposal of Solid or Liquid Wastes Other Than by Discharge</b>
		Equalization tank, sedimentation/floatation	1-U	
		Oil-water separation/floatation	1-H	
		Filtration (bag filters)	1-M	
		Granular activated carbon adsorption	2-A	

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Average Flows and Treatment Continued	3.1 cont.	<b>**Outfall Number**</b> 001					
		<b>Operations Contributing to Flow</b>					
		<b>Operation</b>			<b>Average Flow</b>		
		Stormwater sump pump (during rainfall only)			0.0072 mgd		
		(same treatment as above and continued below)			mgd		
					mgd		
					mgd		
		<b>Treatment Units</b>					
		<b>Description</b> (include size, flow rate through each treatment unit, retention time, etc.)			<b>Code from Table 2C-1</b>		<b>Final Disposal of Solid or Liquid Wastes Other Than by Discharge</b>
		(continued) Oily waste, <10 gal/mo, offsite management			2-A		Offsite treatment by others
		Spent GAC is returned to the supplier for regeneration			N/A		Offsite treatment by others
		Ocean discharge to outfall			4-B		
		<b>**Outfall Number**</b>					
		<b>Operations Contributing to Flow</b>					
		<b>Operation</b>			<b>Average Flow</b>		
					mgd		
					mgd		
					mgd		
					mgd		
		<b>Treatment Units</b>					
		<b>Description</b> (include size, flow rate through each treatment unit, retention time, etc.)			<b>Code from Table 2C-1</b>		<b>Final Disposal of Solid or Liquid Wastes Other Than by Discharge</b>
System Users	3.2	Are you applying for an NPDES permit to operate a privately owned treatment works? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 4.					
	3.3	Have you attached a list that identifies each user of the treatment works? <input type="checkbox"/> Yes <input type="checkbox"/> No					

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SECTION 4. INTERMITTENT FLOWS (40 CFR 122.21(g)(4))

Intermittent Flows	4.1	Except for storm runoff, leaks, or spills, are any discharges described in Sections 1 and 3 intermittent or seasonal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.						
	4.2	Provide information on intermittent or seasonal flows for each applicable outfall. Attach additional pages, if necessary.						
		Outfall Number	Operation (list)	Frequency	Flow Rate		Duration	
				Average Days/Week	Average Months/Year	Long-Term Average	Maximum Daily	
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days
				days/week	months/year	mgd	mgd	days

SECTION 5. PRODUCTION (40 CFR 122.21(g)(5))

Applicable ELGs	5.1	Do any effluent limitation guidelines (ELGs) promulgated by EPA under Section 304 of the CWA apply to your facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 6.		
	5.2	Provide the following information on applicable ELGs.		
		ELG Category	ELG Subcategory	Regulatory Citation

Production-Based Limitations	5.3	Are any of the applicable ELGs expressed in terms of production (or other measure of operation)? <input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 6.			
	5.4	Provide an actual measure of daily production expressed in terms and units of applicable ELGs.			
		Outfall Number	Operation, Product, or Material	Quantity per Day	Unit of Measure



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### SECTION 6. IMPROVEMENTS (40 CFR 122.21(g)(6))

Upgrades and Improvements	6.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?			
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 6.3.			
	6.2	Briefly identify each applicable project in the table below.			
		Brief Identification and Description of Project	Affected Outfalls (list outfall number)	Source(s) of Discharge	Final Compliance Dates
					Required      Projected
6.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (optional item)				
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not applicable				

### SECTION 7. EFFLUENT AND INTAKE CHARACTERISTICS (40 CFR 122.21(g)(7))

Effluent and Intake Characteristics	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.			
	<b>Table A. Conventional and Non-Conventional Pollutants</b>			
	7.1	Are you requesting a waiver from your NPDES permitting authority for one or more of the Table A pollutants for any of your outfalls?		
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.3.		
	7.2	If yes, indicate the applicable outfalls below. Attach waiver request and other required information to the application.		
		Outfall Number _____ Outfall Number _____ Outfall Number _____		
	7.3	Have you completed monitoring for all Table A pollutants at each of your outfalls for which a waiver has not been requested and attached the results to this application package?		
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; a waiver has been requested from my NPDES permitting authority for all pollutants at all outfalls.		
	<b>Table B. Toxic Metals, Cyanide, Total Phenols, and Organic Toxic Pollutants</b>			
	7.4	Do any of the facility's processes that contribute wastewater fall into one or more of the primary industry categories listed in Exhibit 2C-3? (See end of instructions for exhibit.)		
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.8.			
7.5	Have you checked "Testing Required" for all toxic metals, cyanide, and total phenols in Section 1 of Table B?			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			
7.6	List the applicable primary industry categories and check the boxes indicating the required GC/MS fraction(s) identified in Exhibit 2C-3.			
	Primary Industry Category	Required GC/MS Fraction(s) (Check applicable boxes.)		
		<input type="checkbox"/> Volatile	<input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide	
		<input type="checkbox"/> Volatile	<input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide	
		<input type="checkbox"/> Volatile	<input type="checkbox"/> Acid <input type="checkbox"/> Base/Neutral <input type="checkbox"/> Pesticide	

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Effluent and Intake Characteristics Continued	7.7	Have you checked "Testing Required" for all required pollutants in Sections 2 through 5 of Table B for each of the GC/MS fractions checked in Item 7.6? <input type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	7.8	Have you checked "Believed Present" or "Believed Absent" for all pollutants listed in Sections 1 through 5 of Table B where testing is not required? <input checked="" type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	7.9	Have you provided (1) quantitative data for those Section 1, Table B, pollutants for which you have indicated testing is required or (2) quantitative data or other required information for those Section 1, Table B, pollutants that you have indicated are "Believed Present" in your discharge? <input checked="" type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	7.10	Does the applicant qualify for a small business exemption under the criteria specified in the instructions? <input type="checkbox"/> Yes → Note that you qualify at the top of Table B, then SKIP to Item 7.12. <span style="margin-left: 50px;"><input checked="" type="checkbox"/> No</span>	
	7.11	Have you provided (1) quantitative data for those Sections 2 through 5, Table B, pollutants for which you have determined testing is required or (2) quantitative data or an explanation for those Sections 2 through 5, Table B, pollutants you have indicated are "Believed Present" in your discharge? <input checked="" type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	<b>Table C. Certain Conventional and Non-Conventional Pollutants</b>		
	7.12	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed on Table C for all outfalls? <input checked="" type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	7.13	Have you completed Table C by providing (1) quantitative data for those pollutants that are limited either directly or indirectly in an ELG and/or (2) quantitative data or an explanation for those pollutants for which you have indicated "Believed Present"? <input checked="" type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	<b>Table D. Certain Hazardous Substances and Asbestos</b>		
	7.14	Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table D for all outfalls? <input checked="" type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	7.15	Have you completed Table D by (1) describing the reasons the applicable pollutants are expected to be discharged and (2) by providing quantitative data, if available? <input checked="" type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
	<b>Table E. 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD)</b>		
	7.16	Does the facility use or manufacture one or more of the 2,3,7,8-TCDD congeners listed in the instructions, or do you know or have reason to believe that TCDD is or may be present in the effluent? <input type="checkbox"/> Yes → Complete Table E. <span style="margin-left: 100px;"><input checked="" type="checkbox"/> No → SKIP to Section 8.</span>	
	7.17	Have you completed Table E by reporting <i>qualitative</i> data for TCDD? <input type="checkbox"/> Yes <span style="margin-left: 200px;"><input type="checkbox"/> No</span>	
<b>SECTION 8. USED OR MANUFACTURED TOXICS (40 CFR 122.21(g)(9))</b>			
Used or Manufactured Toxics	8.1	Is any pollutant listed in Table B a substance or a component of a substance used or manufactured at your facility as an intermediate or final product or byproduct? <input type="checkbox"/> Yes <span style="margin-left: 200px;"><input checked="" type="checkbox"/> No → SKIP to Section 9.</span>	
	8.2	List the pollutants below.	
	1.	4.	7.
	2.	5.	8.
	3.	6.	9.

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SECTION 9. BIOLOGICAL TOXICITY TESTS (40 CFR 122.21(g)(11))

Biological Toxicity Tests	9.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made within the last three years on (1) any of your discharges or (2) on a receiving water in relation to your discharge? <input checked="" type="checkbox"/> Yes <span style="margin-left: 100px;"><input type="checkbox"/> No → SKIP to Section 10.</span>			
	9.2	Identify the tests and their purposes below.			
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?	Date Submitted
		Acute Toxicity	NPDES Condition S9	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	01/14/2019
		Chronic Toxicity	NPDES Condition S10	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	01/15/2019
			<input type="checkbox"/> Yes <input type="checkbox"/> No		

SECTION 10. CONTRACT ANALYSES (40 CFR 122.21(g)(12))

Contract Analyses	10.1	Were any of the analyses reported in Section 7 performed by a contract laboratory or consulting firm? <input checked="" type="checkbox"/> Yes <span style="margin-left: 100px;"><input type="checkbox"/> No → SKIP to Section 11.</span>		
	10.2	Provide information for each contract laboratory or consulting firm below.		
		Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
	Name of laboratory/firm	Spectra Laboratories		
	Laboratory address	2221 Ross Way, Tacoma, WA 98421		
	Phone number	(253) 272-4850		
	Pollutant(s) analyzed	total suspended solids, pentachlorophenol, naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo		

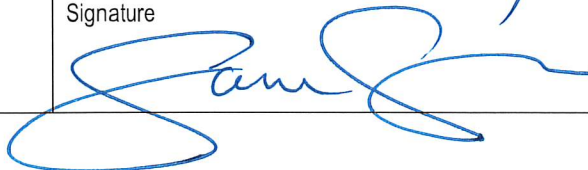
SECTION 11. ADDITIONAL INFORMATION (40 CFR 122.21(g)(13))

Additional Information	11.1	Has the NPDES permitting authority requested additional information? <input type="checkbox"/> Yes <span style="margin-left: 100px;"><input checked="" type="checkbox"/> No → SKIP to Section 12.</span>		
	11.2	List the information requested and attach it to this application.		
		1.	4.	
		2.	5.	
		3.	6.	

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**SECTION 12. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))**

<b>Checklist and Certification Statement</b>	12.1	In Column 1 below, mark the sections of Form 2C that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		<b>Column 1</b>	<b>Column 2</b>
	<input checked="" type="checkbox"/>	Section 1: Outfall Location	<input checked="" type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 2: Line Drawing	<input checked="" type="checkbox"/> w/ line drawing <input checked="" type="checkbox"/> w/ additional attachments
	<input checked="" type="checkbox"/>	Section 3: Average Flows and Treatment	<input type="checkbox"/> w/ attachments <input type="checkbox"/> w/ list of each user of privately owned treatment works
	<input checked="" type="checkbox"/>	Section 4: Intermittent Flows	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 5: Production	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 6: Improvements	<input type="checkbox"/> w/ attachments <input type="checkbox"/> w/ optional additional sheets describing any additional pollution control plans
	<input checked="" type="checkbox"/>	Section 7: Effluent and Intake Characteristics	<input type="checkbox"/> w/ request for a waiver and supporting information <input type="checkbox"/> w/ small business exemption request <input type="checkbox"/> w/ Table A <input type="checkbox"/> w/ explanation for identical outfalls <input type="checkbox"/> w/ Table C <input type="checkbox"/> w/ other attachments <input type="checkbox"/> w/ Table D <input type="checkbox"/> w/ Table B <input type="checkbox"/> w/ Table E <input type="checkbox"/> w/ analytical results as an attachment
	<input checked="" type="checkbox"/>	Section 8: Used or Manufactured Toxics	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 9: Biological Toxicity Tests	<input checked="" type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 10: Contract Analyses	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 11: Additional Information	<input type="checkbox"/> w/ attachments
	<input checked="" type="checkbox"/>	Section 12: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments
	12.2	<b>Certification Statement</b> <i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i>	
	Name (print or type first and last name)	Official title	
	SAM GIBBONEY	EXECUTIVE DIRECTOR	
	Signature	Date signed	
		6.26.19	

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**TABLE A. CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(iii))<sup>1</sup>**

	Pollutant	Waiver Requested (if applicable)	Units (specify)	Effluent			Intake (Optional)	
				Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Long-Term Average Value	Number of Analyses
<input type="checkbox"/>	Check here if you have applied to your NPDES permitting authority for a waiver for all of the pollutants listed on this table for the noted outfall.							
1.	Biochemical oxygen demand (BOD <sub>5</sub> )	<input type="checkbox"/>	Concentration	mg/L	≤160 (a, b)		114 (b)	39.3 (b)
			Mass					
2.	Chemical oxygen demand (COD)	<input type="checkbox"/>	Concentration	mg/L	≤290 (a, b)		114 (b)	84.5 (b)
			Mass					
3.	Total organic carbon (TOC)	<input type="checkbox"/>	Concentration	mg/L	≤176 (a, b)		114 (b)	27.3 (b)
			Mass					
4.	Total suspended solids (TSS)	<input type="checkbox"/>	Concentration	mg/L	15		34	8.9
			Mass					
5.	Ammonia (as N)	<input type="checkbox"/>	Concentration					
			Mass					
6.	Flow	<input type="checkbox"/>	Rate	gpm	9.5	5.8	1125	
7.	Temperature (winter)	<input type="checkbox"/>	°C					
	Temperature (summer)	<input type="checkbox"/>	°C					
8.	pH (minimum)	<input type="checkbox"/>	Standard units	s.u.	6.91		34	
	pH (maximum)	<input type="checkbox"/>	Standard units	s.u.	7.86		34	

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

- (a) Samples were collected at the intake only, there is no process in operation that is expected to increase the parameter concentration. Therefore, the effluent value was assumed to be less than or equal to the intake value.
- (b) Historic data, sampled between 9/2003 - 9-2012.
- (c) Historic data, sampled between 1/2021 - 12/2013.

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**TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>**

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
<input type="checkbox"/> Check here if you qualify as a small business per the instructions to Form 2C and, therefore, do not need to submit quantitative data for any of the organic toxic pollutants in Sections 2 through 5 of this table. Note, however, that you must still indicate in the appropriate column of this table if you believe any of the pollutants listed are present in your discharge.										
<b>Section 1. Toxic Metals, Cyanide, and Total Phenols</b>										
1.1 Antimony, total (7440-36-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.2 Arsenic, total (7440-38-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.3 Beryllium, total (7440-41-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.4 Cadmium, total (7440-43-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.5 Chromium, total (7440-47-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.6 Copper, total (7440-50-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.7 Lead, total (7439-92-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.8 Mercury, total (7439-97-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.9 Nickel, total (7440-02-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.10 Selenium, total (7782-49-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.11 Silver, total (7440-22-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

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**TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>**

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
1.12 Thallium, total (7440-28-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.13 Zinc, total (7440-66-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.14 Cyanide, total (57-12-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
1.15 Phenols, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	0.4 (b)		0.1 (b)	42 (c)	90 (b)	41 (b)

**Section 2. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)**

2.1 Acrolein (107-02-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.2 Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.3 Benzene (71-43-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.4 Bromoform (75-25-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.5 Carbon tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.6 Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.7 Chlorodibromomethane (124-48-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.8 Chloroethane (75-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
2.9 2-chloroethylvinyl ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.10 Chloroform (67-66-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.11 Dichlorobromomethane (75-27-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.12 1,1-dichloroethane (75-34-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.13 1,2-dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.14 1,1-dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.15 1,2-dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.16 1,3-dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.17 Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.18 Methyl bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.19 Methyl chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.20 Methylene chloride (75-09-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.21 1,1,2,2-tetrachloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						



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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
2.22 Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.23 Toluene (108-88-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.24 1,2-trans-dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.25 1,1,1-trichloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.26 1,1,2-trichloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.27 Trichloroethylene (79-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2.28 Vinyl chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
Section 3. Organic Toxic Pollutants (GC/MS Fraction — Acid Compounds)										
3.1 2-chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.2 2,4-dichlorophenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.3 2,4-dimethylphenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.4 4,6-dinitro-o-cresol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.5 2,4-dinitrophenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
3.6 2-nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.7 4-nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.8 p-chloro-m-cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.9 Pentachlorophenol (87-86-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	1.160		0.157	34	65	55
3.10 Phenol (108-95-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3.11 2,4,6-trichlorophenol (88-05-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

## Section 4. Organic Toxic Pollutants (GC/MS Fraction—Base/Neutral Compounds)

4.1 Acenaphthene (83-32-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	1.00		0.127	34		55
4.2 Acenaphthylene (208-96-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	1.00		0.126	34		55
4.3 Anthracene (120-12-7)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	0.149		0.103	34		55
4.4 Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.5 Benzo (a) anthracene (56-55-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	≤0.1 (ND)		≤0.1 (ND)	34		55
4.6 Benzo (a) pyrene (50-32-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	≤0.1 (ND)		≤0.1 (ND)	34		55

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)		Effluent				Intake (optional)	
		Believed Present	Believed Absent			Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
4.7 3,4-benzofluoranthene (205-99-2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration µg/L		≤0.1 (ND)		≤0.1 (ND)	34	≤10 (ND)	55
4.8 Benzo (ghi) perylene (191-24-2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration µg/L		≤0.1 (ND)		≤0.1 (ND)	34	≤10 (ND)	55
4.9 Benzo (k) fluoranthene (207-08-9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration µg/L		≤0.1 (ND)		≤0.1 (ND)	34	≤10 (ND)	55
4.10 Bis (2-chloroethoxy) methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.11 Bis (2-chloroethyl) ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.12 Bis (2-chloroisopropyl) ether (102-80-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.13 Bis (2-ethylhexyl) phthalate (117-81-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.14 4-bromophenyl phenyl ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.15 Butyl benzyl phthalate (85-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.16 2-chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.17 4-chlorophenyl phenyl ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass							
4.18 Chrysene (218-01-9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration µg/L		≤0.1 (ND)		0.1	34	10	55
4.19 Dibenzo (a,h) anthracene (53-70-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration µg/L		≤0.1 (ND)			34	<10	55

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**TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>**

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
4.20 1,2-dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.21 1,3-dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.22 1,4-dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.23 3,3-dichlorobenzidine (91-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.24 Diethyl phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.25 Dimethyl phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.26 Di-n-butyl phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.27 2,4-dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.28 2,6-dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.29 Di-n-octyl phthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.30 1,2-Diphenylhydrazine (as azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.31 Fluoranthene (206-44-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration µg/L	≤0.1 (ND)		≤0.1 (ND)	34	16	55
4.32 Fluorene (86-73-7)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration µg/L	≤0.1 (ND)		≤0.1 (ND)	34	54	55

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WA 0040533	WA 0040533	Port of Olympia, Cascade Pole Site	

TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.33 Hexachlorobenzene (118-74-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.34 Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.35 Hexachlorocyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.36 Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.37 Indeno (1,2,3-cd) pyrene (193-39-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	≤0.1 (ND)		≤0.1 (ND)	34	10	55
4.38 Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.39 Naphthalene (91-20-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	34.0		3.61	34	2842	55
4.40 Nitrobenzene (98-95-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.41 N-nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.42 N-nitrosodi-n-propylamine (621-64-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.43 N-nitrosodiphenylamine (86-30-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4.44 Phenanthrene (85-01-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	0.220		0.109	34	52	55
4.45 Pyrene (129-00-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	≤0.1 (ND)		≤0.1 (ND)	34	13	55



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**TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>**

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long- Term Average Value	Number of Analyses
4.46 1,2,4-trichlorobenzene (120-82-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
<b>Section 5. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)</b>										
5.1 Aldrin (309-00-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.2 α-BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.3 β-BHC (319-85-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.4 γ-BHC (58-89-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.5 δ-BHC (319-86-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.6 Chlordane (57-74-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.7 4,4'-DDT (50-29-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.8 4,4'-DDE (72-55-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.9 4,4'-DDD (72-54-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.10 Dieldrin (60-57-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.11 α-endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

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TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>

Pollutant/Parameter (and CAS Number, if available)	Testing Required	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
		Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
5.12 β-endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.13 Endosulfan sulfate (1031-07-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.14 Endrin (72-20-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.15 Endrin aldehyde (7421-93-4)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.16 Heptachlor (76-44-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.17 Heptachlor epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.18 PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.19 PCB-1254 (11097-69-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.20 PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.21 PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.22 PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.23 PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5.24 PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

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**TABLE B. TOXIC METALS, CYANIDE, TOTAL PHENOLS, AND ORGANIC TOXIC POLLUTANTS (40 CFR 122.21(g)(7)(v))<sup>1</sup>**

Pollutant/Parameter (and CAS Number, if available)	Presence or Absence (check one)		Units (specify)	Effluent				Intake (optional)	
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
5.25 Toxaphene (8001-35-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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**TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))<sup>1</sup>**

Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)	
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
<input type="checkbox"/> Check here if you believe all pollutants on Table C to be <b>present</b> in your discharge from the noted outfall. You need <i>not</i> complete the "Presence or Absence" column of Table C for each pollutant.									
<input type="checkbox"/> Check here if you believe all pollutants on Table C to be <b>absent</b> in your discharge from the noted outfall. You need <i>not</i> complete the "Presence or Absence" column of Table C for each pollutant.									
1. Bromide (24959-67-9)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
2. Chlorine, total residual	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
3. Color	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
4. Fecal coliform	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
5. Fluoride (16984-48-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
6. Nitrate-nitrite	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	mg/L -N ≤64 (a, b)			114 (b)	4.4 (b)	
7. Nitrogen, total organic (as N)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
8. Oil and grease	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	mg/L ≤131 (a, b)			114 (b)	9.6 (b)	
9. Phosphorus (as P), total (7723-14-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	mg/L ≤9.2 (a, b)			114 (b)	0.5 (b)	
10. Sulfate (as SO <sub>4</sub> ) (14808-79-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
11. Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

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**TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))<sup>1</sup>**

Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)	
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
12. Sulfite (as SO <sub>3</sub> ) (14265-45-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
13. Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
14. Aluminum, total (7429-90-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
15. Barium, total (7440-39-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
16. Boron, total (7440-42-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
17. Cobalt, total (7440-48-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
18. Iron, total (7439-89-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
19. Magnesium, total (7439-95-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
20. Molybdenum, total (7439-98-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
21. Manganese, total (7439-96-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
22. Tin, total (7440-31-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
23. Titanium, total (7440-32-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

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TABLE C. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(g)(7)(vi))<sup>1</sup>

Pollutant	Presence or Absence (check one)		Units (specify)	Effluent				Intake (Optional)	
	Believed Present	Believed Absent		Maximum Daily Discharge (required)	Maximum Monthly Discharge (if available)	Long-Term Average Daily Discharge (if available)	Number of Analyses	Long-Term Average Value	Number of Analyses
24. Radioactivity									
Alpha, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
Beta, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
Radium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						
Radium 226, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass						

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).



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**TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))<sup>1</sup>**

Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
	Believed Present	Believed Absent		
1. Asbestos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
2. Acetaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3. Allyl alcohol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4. Allyl chloride	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
5. Amyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
6. Aniline	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7. Benzonitrile	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
8. Benzyl chloride	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
9. Butyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
10. Butylamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
11. Captan	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
12. Carbaryl	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
13. Carbofuran	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
14. Carbon disulfide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
15. Chlorpyrifos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
16. Coumaphos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
17. Cresol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
18. Crotonaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
19. Cyclohexane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))<sup>1</sup>

Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
	Believed Present	Believed Absent		
20. 2,4-D (2,4-dichlorophenoxyacetic acid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
21. Diazinon	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
22. Dicamba	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
23. Dichlobenil	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
24. Diclhone	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
25. 2,2-dichloropropionic acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
26. Dichlorvos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
27. Diethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
28. Dimethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
29. Dinitrobenzene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
30. Diquat	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
31. Disulfoton	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
32. Diuron	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
33. Epichlorohydrin	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
34. Ethion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
35. Ethylene diamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
36. Ethylene dibromide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
37. Formaldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
38. Furfural	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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**TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))**

Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
	Believed Present	Believed Absent		
39. Guthion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
40. Isoprene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
41. Isopropanolamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
42. Kelthane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
43. Kepone	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
44. Malathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
45. Mercaptodimethur	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
46. Methoxychlor	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
47. Methyl mercaptan	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
48. Methyl methacrylate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
49. Methyl parathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
50. Mevinphos	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
51. Mexacarbate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
52. Monoethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
53. Monomethyl amine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
54. Naled	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
55. Naphthenic acid	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
56. Nitrotoluene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
57. Parathion	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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**TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii))**

Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
	Believed Present	Believed Absent		
58. Phenolsulfonate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
59. Phosgene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
60. Propargite	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
61. Propylene oxide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
62. Pyrethrins	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
63. Quinoline	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
64. Resorcinol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
65. Strontium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
66. Strychnine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
67. Styrene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
68. 2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
69. TDE (tetrachlorodiphenyl ethane)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
70. 2,4,5-TP [2-(2,4,5-trichlorophenoxy)propanoic acid]	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
71. Trichlorofon	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
72. Triethanolamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
73. Triethylamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
74. Trimethylamine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
75. Uranium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
76. Vanadium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

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TABLE D. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(g)(7)(vii)) <sup>1</sup>				
Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
	Believed Present	Believed Absent		
77. Vinyl acetate	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
78. Xylene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
79. Xylenol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
80. Zirconium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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**TABLE E. 2,3,7,8 TETRACHLORODIBENZO P DIOXIN (2,3,7,8 TCDD) (40 CFR 122.21(g)(7)(viii))**

Pollutant	TCDD Congeners Used or Manufactured	Presence or Absence (check one)		Results of Screening Procedure
		Believed Present	Believed Absent	
2,3,7,8-TCDD	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

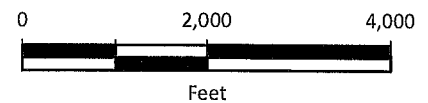
## Attachment 1 - Vicinity Map

G:\Projects\021\041\010\017\F01 FacilityLocationMap.mxd 4/4/2019 NAD 1983 StatePlane Washington South FIPS 4602 Feet



**Note**

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



Data Source: National Geographic Society, 2013



LANDAU  
ASSOCIATES

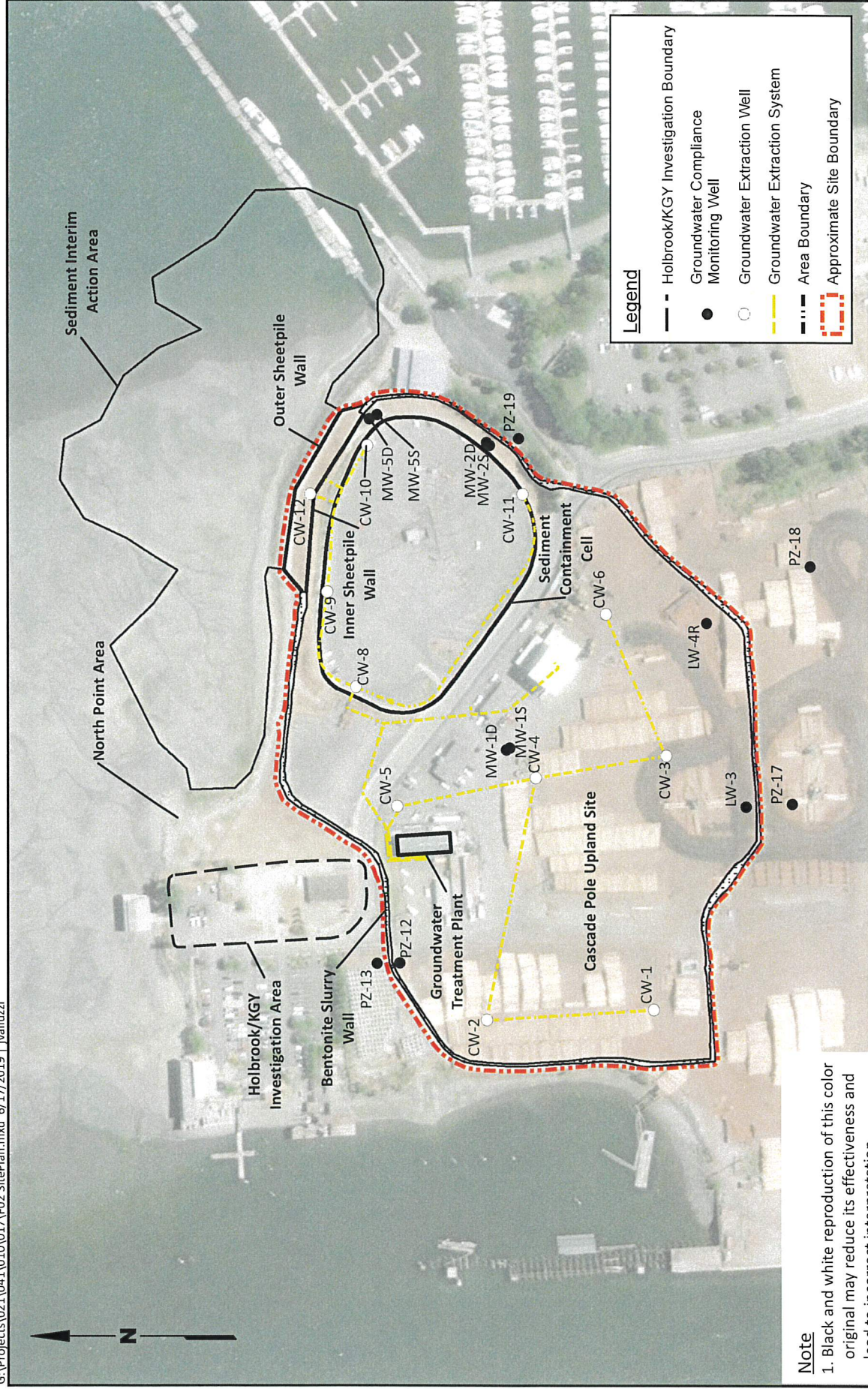
Cascade Pole Site  
Olympia, Washington

**Facility Location Map**

Figure  
**1**

## Attachment 2 - Site Map





Data Source: Esri World Imagery.



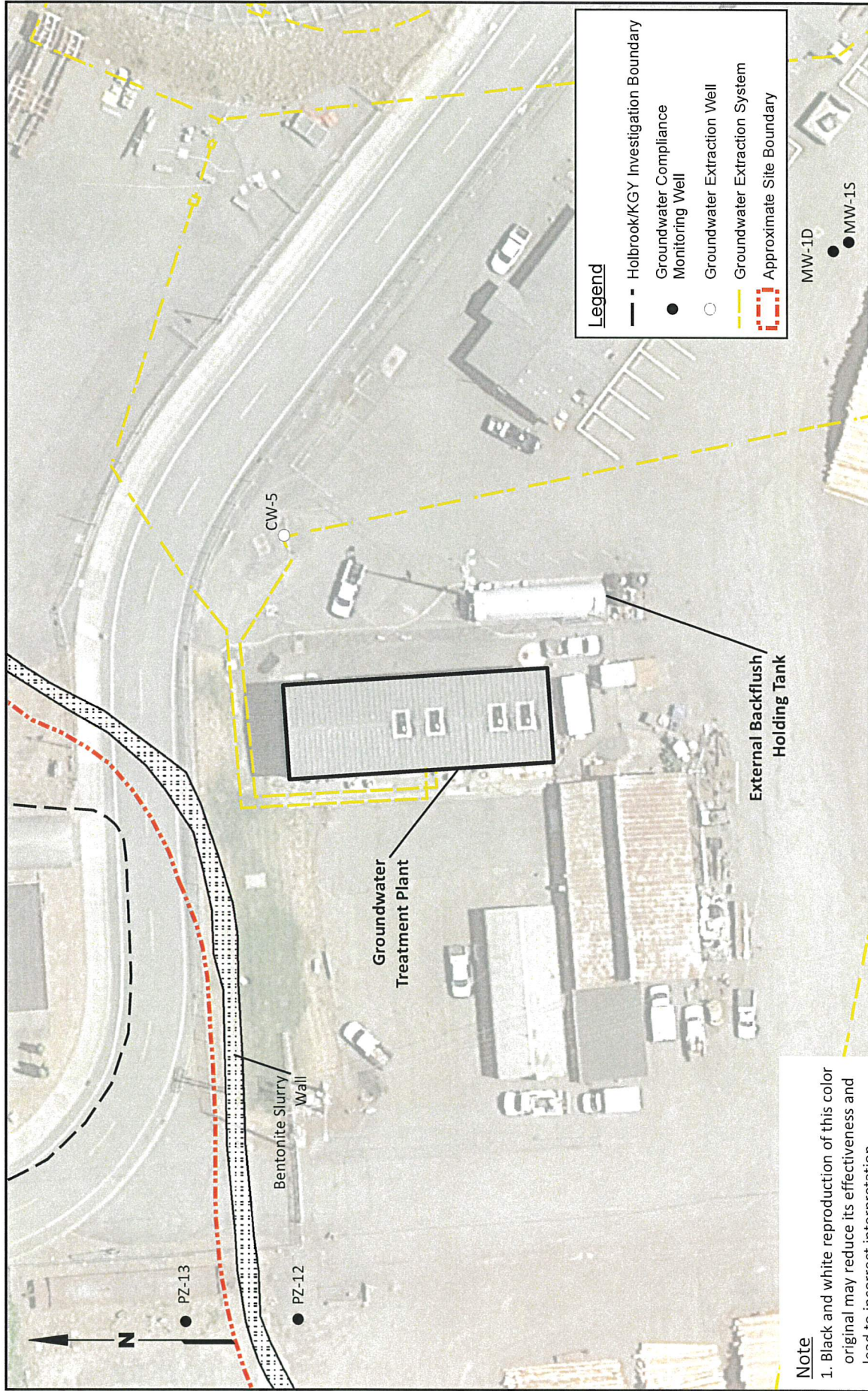
Cascade Pole Site  
Olympia, Washington

Site Plan

Figure  
**2**

## Attachment 3 - Treatment System Building Location and Layout





Data Source: Esri World Imagery.

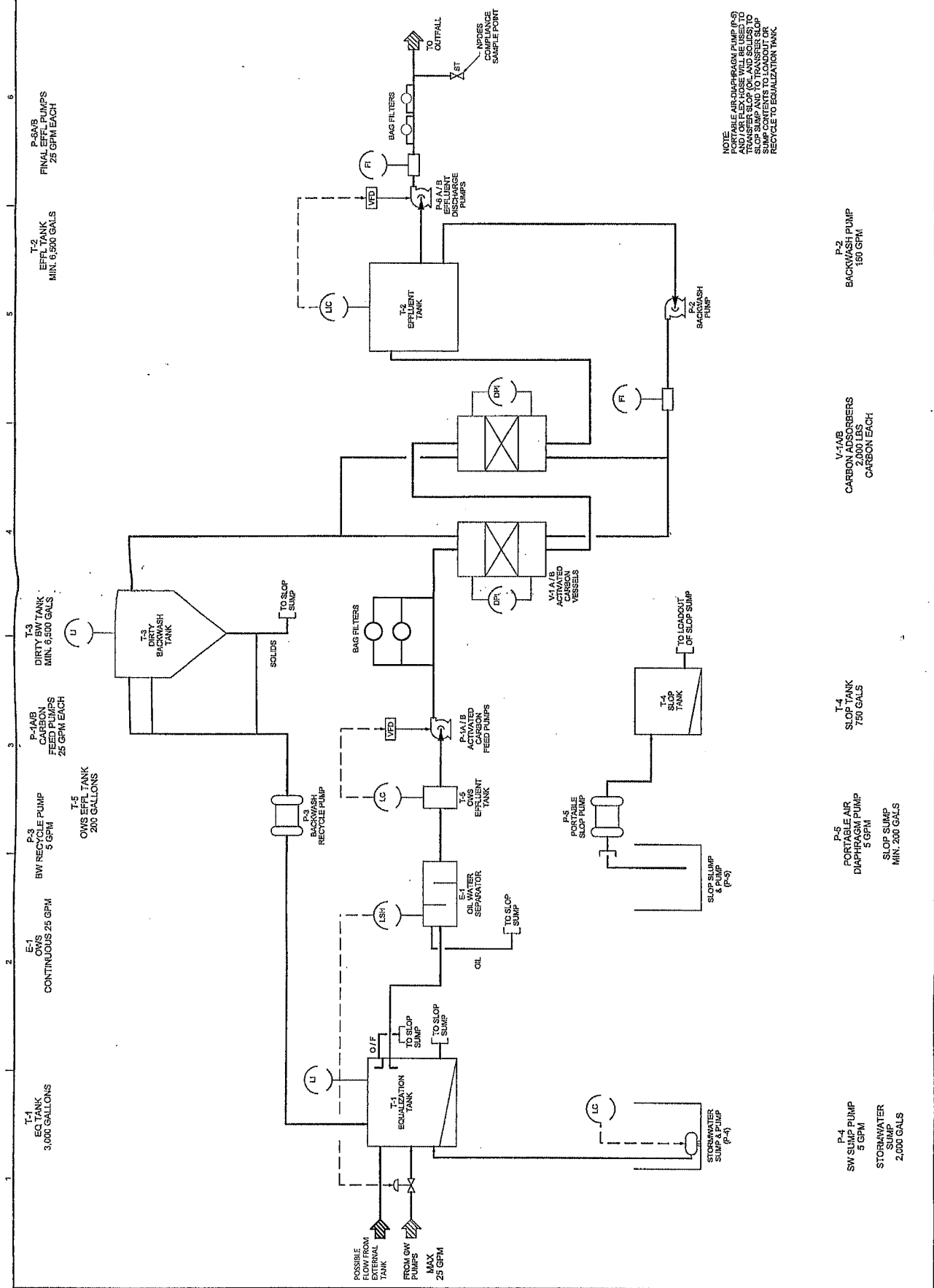
Cascade Pole Site  
Olympia, Washington

### Treatment System Building Location and Layout

Figure  
**3**



## Attachment 4 - Process Flow Diagram



## Attachment 5 - Treatment System Layout



### Sample Point Location and Designation



## Treatment System Layout

Figure 5

## Attachment 6 - Analytical Report of Acute and Chronic Toxicity



**Whole Effluent Toxicity Test Report:  
Port of Olympia**

**January 2019**

**Report date: February 1, 2019**

**Submitted to:**

**Port of Olympia  
915 Washington St NE  
Olympia, Washington 98501**

*Rainier Environmental*  
5013 Pacific Hwy East  
Suite 20  
Tacoma, WA 98424

## 1.0 INTRODUCTION

Acute and chronic toxicity tests were conducted using effluent samples collected from the Port of Olympia's groundwater treatment system in January 2019. Acute bioassays were conducted using the test organisms *Ceriodaphnia dubia* (*Ceriodaphnia*) and *Pimephales promelas* (fathead minnow), and chronic testing was conducted using *Atherinops affinis* (Pacific topsmelt) and *Americamysis bahia* (mysid shrimp). Testing was performed at Rainier Environmental Laboratory located in Fife, Washington.

## 2.0 METHODS

### 2.1 Sample Collection and Transport

Effluent samples were collected into LDPE cubitainers by Port of Olympia personnel. The cubitainers were packed into coolers containing ice and transported to Rainier Environmental the day of collection. Appropriate chain-of-custody procedures were employed during collection and transport.

### 2.2 Sample Receipt

Upon arrival at Rainier Environmental, the coolers were opened, samples inspected, and the contents verified against information provided on the chain-of-custody forms. Receipt temperature was measured and recorded on the chain-of-custody form for each sample. Standard water quality parameters were measured and recorded on sample check-in sheets (Appendix F). The samples were stored at 4°C in the dark until used for testing.

### 2.3 Test Methods

Acute toxicity tests were conducted using *Ceriodaphnia* and fathead minnows according to procedures presented by USEPA (2002a), and summarized in Tables 1 and 2, respectively. Chronic toxicity tests were conducted according to USEPA (2002b) procedures for mysid shrimp, and USEPA (1995) procedures for Pacific topsmelt. These methods are summarized in Tables 3 and 4, respectively.



**Table 1. Summary of methods for the 48h *Ceriodaphnia* acute survival test.**

Test initiation date and time	1/14/2019; 1345h
Test termination date and time	1/16/2019; 1320h
Test type	Static
Test organism	<i>Ceriodaphnia dubia</i>
Test organism source	In-house cultures
Test organism age	< 24 hours
Test duration	48 hours
Feeding	50:50 mixture YTC:algal suspension during organism holding time. No feeding during test.
Test chamber	30 mL plastic cup
Test solution volume	15 mL
Test temperature	20 ± 1°C
Dilution water	Moderately Hard Synthetic Water
Test concentrations (% sample)	100, 50, 25, 12.5, 5.46, laboratory control
Number of organisms/chamber	5
Number of replicates	4
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test protocol	EPA-821-R-02-012
Test acceptability criterion for controls	≥ 90% survival
Reference toxicant	Copper sulfate

**Table 2. Summary of methods for the 96h fathead minnow acute survival test.**

Test initiation date and time	1/15/2019; 1400h
Test termination date and time	1/19/2019; 1335h
Test type	Static renewal
Test organism	<i>Pimephales promelas</i>
Test organism source	Aquatic BioSystems; Fort Collins, CO
Test organism age	5 days post hatch
Test duration	96 hours with solution renewal at 48 hours
Feeding	<i>Artemia</i> nauplii during holding time and 2 hours prior to solution renewal
Test chamber	250 mL plastic cup
Test solution volume	200 mL
Test temperature	20 ± 1°C
Dilution water	Moderately Hard Synthetic Water
Test concentrations (% sample)	100, 50, 25, 12.5, 5.46, laboratory control
Number of organisms/chamber	10
Number of replicates	4
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test protocol	EPA-821-R-02-012
Test acceptability criterion for controls	≥ 90% survival
Reference toxicant	Sodium chloride

**Table 3. Summary of methods for the mysid shrimp 7-day survival and growth test.**

Test initiation date and time	1/15/2019; 1430h
Test termination date and time	1/22/2019; 1500h
Test Type	Static renewal
Endpoint	Survival and growth at 7 days
Test organism	<i>Americamysis bahia</i>
Test organism source	Aquatic BioSystems; Fort Collins, CO
Test organism age	7 days post-hatch
Feeding	<i>Artemia</i> nauplii, twice daily
Test chamber and solution volume	250 mL plastic cup
Test solution volume	200 mL
Test temperature	26 ± 1°C
Dilution water	Crystal Sea Marine Mix artificial seawater
Salinity	30 ± 2 ppt
Test concentrations (% sample)	100, 50, 25, 12.5, 5.46, laboratory control
Number of organisms/chamber	5
Number of replicates	8
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test protocol	EPA-821-R-02-014
Test acceptability criteria for controls	≥ 80% survival; average dry weight ≥ 0.20 mg
Reference toxicant	Copper chloride

**Table 4. Summary of methods for the Pacific topsmelt 7-day survival and growth test.**

Test initiation date and time	1/15/2019; 1440h
Test termination date and time	1/22/2019; 1435h
Test Type	Static renewal
Endpoint	Survival and growth at 7 days
Test organism	<i>Atherinops affinis</i>
Test organism source	Aquatic BioSystems; Fort Collins, CO
Test organism age	10 days post-hatch
Feeding	<i>Artemia</i> nauplii, twice daily
Test chamber	1-liter plastic cups
Test solution volume	500 mL
Test temperature	20 ± 1°C
Dilution water	Crystal Sea Marine Mix artificial seawater
Salinity	30 ± 2 ppt
Test concentrations (% sample)	100, 50, 25, 12.5, 5.46, laboratory control
Number of organisms/chamber	10
Number of replicates	4
Photoperiod	16 hours light/8 hours dark
Aeration	None
Test protocol	EPA/600/R-95/136
Test acceptability criteria for controls	≥ 80% survival; average dry weight ≥ 0.85 mg
Reference toxicant	Copper chloride

### 3.0 RESULTS

Details of standard water quality measurements conducted upon receipt of the samples are provided in Table.

**Table 5. Sample information.**

Sample ID	BACT 11419	BACT 11619	BACT 11819
Rainier log in ID	19-009	19-015	19-018
Collection date and time	1/14/2019; 0805h	1/16/2019; 0840h	1/18/2019; 0950h
Receipt date and time	1/14/2019; 0955h	1/16/2019; 0950h	1/18/2019; 1109h
Receipt temperature (°C)	5.2	5.5	5.6
Dissolved oxygen (mg/L)	5.1	5.1	5.2
pH	7.04	7.09	7.17
Conductivity (µS/cm)	1223	1406	1377
Salinity (ppt)	0.6	0.7	0.7
Hardness (mg/L CaCO <sub>3</sub> )	420	540	480
Alkalinity (mg/L CaCO <sub>3</sub> )	540	460	540
Total chlorine (mg/L)	0.03	<0.03	<0.03
Total ammonia (mg/L)	2.3	1.8	2.0

#### 3.1 Acute Tests

Survival was evaluated in the acute toxicity tests after 48 and 96 hours of exposure for *Ceriodaphnia* and fathead minnows, respectively. Results are summarized in Table 6. Mean survival in 100 percent effluent was 100 percent for *Ceriodaphnia* and 97.5 percent for fathead minnows. There was no statistically significant difference in the response of either organism in the Acute Critical Effluent Concentration (ACEC) of 5.46 percent sample compared to the control.

**Table 6. Summary of results for the acute toxicity tests.**

Species	Concentration (%)	Survival (%)	NOEC <sup>a</sup> (% effluent)	LOEC <sup>b</sup> (% effluent)	LC <sub>50</sub> <sup>c</sup> (% effluent)
<i>Ceriodaphnia</i>	0.00	100	100	>100	>100
	5.46	100			
	12.5	100			
	25.0	100			
	50.0	100			
	100	100			
Fathead minnows	0.00	97.5	100	>100	>100
	5.46	100			
	12.5	97.5			
	25.0	100			
	50.0	97.5			
	100	97.5			

<sup>a</sup>No Observed Effect Concentration, <sup>b</sup>Lowest Observed Effect Concentration, <sup>c</sup>Predicted lethal concentration for 50% of test organisms

### 3.2 Chronic Tests

Results for the chronic toxicity tests are summarized in Table 7. The mysid shrimp and Pacific topsmelt tests involved a 7-day static-renewal exposure to the effluent. The endpoints for these tests were survival and growth (evaluated on the basis of dry weight divided by initial count for biomass and divided by final count for dry weight) at the end of the 7-day exposure.

In the topsmelt test, the highest concentration with no observed effect (NOEC) was 100 percent sample for survival and dry weight and biomass. In the mysid shrimp test the highest concentration with no observed effect (NOEC) was 100 percent for survival and 50 percent for biomass and dry weight. There was no statistically significant difference detected in the ACEC or Chronic Critical Effluent Concentration (CCEC) of 5.46 percent sample for any endpoint in either test.

**Table 7. Summary of results for the chronic toxicity tests.**

Test Species	Endpoint	NOEC <sup>a</sup> (% effluent)	LOEC <sup>b</sup> (% effluent)
Mysid Shrimp	7- day Survival	100	>100
	Biomass	50	100
	Dry Weight	50	100
Pacific Topsmelt	7- day Survival	100	>100
	Biomass	100	>100
	Dry Weight	100	>100

<sup>a</sup>No Observed Effect Concentration, <sup>b</sup>Lowest Observed Effect Concentration

Individual statistical summaries for all tests, copies of the laboratory bench sheets, a copy of the sample check-in form, control QC plots, and chain-of-custody forms are provided in Appendices A through G.

#### 4.0 QA/QC

The samples were received in good condition and within the temperature range specified by WDOE (2008). The toxicity tests met acceptability criteria for performance of control organisms. There were no deviations from the protocol and water quality parameters remained within the ranges specified in the corresponding test method throughout the test.

Results for the reference toxicant tests used to monitor laboratory performance and test organism sensitivity are summarized in Table 8. The results for the reference toxicant tests fell within the acceptable range of mean  $\pm$  two standard deviations of historical test results. The coefficients of variation (CVs) for the tests are also shown in the table. Dilution water control mean and control CV for biomass in both of the chronic tests were within two standard deviations of the historical mean (Appendix E). Based on the reference toxicant and control results, test organisms appeared to be of an appropriate degree of sensitivity.

**Table 8. Reference toxicant test results.**

Species	Date initiated	Endpoint	EC <sub>50</sub>	Acceptable Range	CV (%)
<i>Ceriodaphnia dubia</i>	1/15/2019	48h Survival	14.4 $\mu$ g/L Cu	8.40-23.1 $\mu$ g/L Cu	28.7
Fathead Minnow	1/8/2019	96h Survival	8.14 g/L NaCl	5.36-10.2 g/L NaCl	17.4
Mysid Shrimp	1/22/2019	7d Survival	302 $\mu$ g/L Cu	143-513 $\mu$ g/L Cu	37.5
	1/22/2019	Growth	214 $\mu$ g/L Cu	110-369 $\mu$ g/L Cu	35.5
Pacific Topsmelt	1/22/2019	7d Survival	62.2 $\mu$ g/L Cu	58.0-228 $\mu$ g/L Cu	40.8
	1/22/2019	Growth	57.4 $\mu$ g/L Cu	56.9-173 $\mu$ g/L Cu	30.9

## 5.0 REFERENCES

- Tidepool Scientific Software. 2001-2011. CETIS Comprehensive Environmental Toxicity Information System Software, Version 1.8.4.6.
- USEPA. 2002a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA-821-R-02-012.
- USEPA. 2002b. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition. EPA-821-R-02-014.
- USEPA. 1995. Short-Term Method for Estimating the Chronic Toxicity of Effluents and Receiving Waters to the West Coast Marine and Estuarine Organisms. EPA-600-R-95-136.
- WDOE. 2008. Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria. Washington State Department of Ecology. Water Quality Program. Publication number: WQ-R-95-80, Revised December 2008.

**Appendix A**  
***Ceriodaphnia dubia* Acute Toxicity Test**  
**Statistical Summaries and Raw Bench Sheets**

# CETIS Summary Report

Report Date: 31 Jan-19 10:38 (p 1 of 1)  
 Test Code: 1901-019 | 04-1121-5145

Ceriodaphnia 48-h Acute Survival Test				Rainier Environmental Laboratory	
Batch ID:	05-6087-7625	Test Type:	Survival (48h)	Analyst:	Eric Tollefson
Start Date:	14 Jan-19 13:45	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Mod-Hard Synthetic Water
Ending Date:	16 Jan-19 13:20	Species:	Ceriodaphnia dubia	Brine:	
Duration:	48h	Source:	In-House Culture	Age:	<24h
Sample ID:	10-4453-7399	Code:	19-009	Client:	Port of Olympia Budd Inlet
Sample Date:	14 Jan-19 08:05	Material:	Industrial Effluent	Project:	
Receive Date:	14 Jan-19 09:55	Source:	Port of Olympia Budd Inlet (WA0040533)		
Sample Age:	6h (5.2 °C)	Station:			

Comparison Summary							
Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-6918-7420	48h Survival Rate	100	>100	NA	5.0%	1	Steel Many-One Rank Sum Test

Test Acceptability						
Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-6918-7420	48h Survival Rate	Control Resp	1	0.9 - NL	Yes	Passes Acceptability Criteria

48h Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	4	1	1	1	1	1	0	0	0.0%	0.0%
5.46		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail					
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	1	1	1	1
5.46		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

48h Survival Rate Binomials					
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	5/5	5/5	5/5	5/5
5.46		5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5
25		5/5	5/5	5/5	5/5
50		5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5



**Freshwater Acute  
48 Hour Toxicity Test Data Sheet**

Client: Port of Olympia  
 Sample ID: BACT11419  
 Test #: 1901-019  
 Log-In #: 19-009

Start Date & Time: 11/14/19 1345  
 End Date & Time: 11/18/19 1330  
 Test Organism: Ceriodaphnia dubia

Rep. #	Conc. or Cont. #	Number of Live Organisms			Dissolved Oxygen (mg/L)			pH (units)			Cond (uohm-cm)			Temperature (°C)			Mean Percent Survival
		0	24	48	0	24	48	0	24	48	0	24	48	0	24	48	
1	CON	11	5	5	7.6	7.2	7.3	7.92	7.95	8.04	263	265	262	20.4	19.3	19.4	
2		16	5	5													
3		2	5	5													
4		19	5	5													
1	5.46	1	5	5	7.5	7.1	7.3	7.75	7.92	8.01	318	317	315	20.3	19.8	19.5	
2		15	5	5													
3		8	5	5													
4		12	5	5													
1	12.5	23	5	5	7.5	7.7	7.2	7.60	7.91	7.98	399	402	398	20.3	19.7	19.5	
2		5	5	5													
3		18	5	5													
4		13	5	5													
1	25	17	5	5	7.4	7.8	7.5	7.48	7.92	7.99	533	524	527	20.4	19.7	19.5	
2		3	5	5													
3		22	5	5													
4		1	5	5													
1	50	10	5	5	7.2	7.1	7.4	7.4	7.68	7.91	796	794	795	20.7	19.5	19.5	
2		20	5	5													
3		4	5	5													
4		24	5	5													
1	100	9	5	5	7.4	6.9	7.1	7.26	7.55	7.72	1315	1299	1307	20.8	19.7	19.5	
2		14	5	5													
3		21	5	5													
4		6	5	5													
Technician Initials		gt	gt	gt	gt	gt	gt										

Dilution Water Batch #: MHSN #003 Animal Source: In-house cultures Sample Description: \_\_\_\_\_  
 Test Chamber: RWZ Date Received: \_\_\_\_\_ QA Check: gt  
 Comments: 0 hrs: \_\_\_\_\_  
 24 hrs: \_\_\_\_\_  
 48 hrs: \_\_\_\_\_  
 Rainier Environmental  
 Washington Laboratory  
 5013 Pacific Hwy, E. Suite 20  
 Tacoma, WA 98424

**Appendix B**  
**Fathead Minnow Acute Toxicity Test**  
**Statistical Summaries and Raw Bench Sheets**

# CETIS Summary Report

Report Date: 31 Jan-19 10:44 (p.1 of 1)  
Test Code: 1901-020 | 10-3359-6828

## Fathead Minnow 96-h Acute Survival Test

Rainier Environmental Laboratory

Batch ID: 19-7885-6408 Test Type: Survival (96h) Analyst: Eric Tollefson  
Start Date: 15 Jan-19 14:00 Protocol: EPA/821/R-02-012 (2002) Diluent: Mod-Hard Synthetic Water  
Ending Date: 19 Jan-19 13:35 Species: *Pimephales promelas* Brine:  
Duration: 96h Source: Aquatic Biosystems, CO Age: 5d

Sample ID: 10-8725-0436 Code: 19-009 Client: Port of Olympia Budd Inlet  
Sample Date: 14 Jan-19 08:05 Material: Industrial Effluent Project:  
Receive Date: 14 Jan-19 09:55 Source: Port of Olympia Budd Inlet (WA0040533)  
Sample Age: 30h (5.2 °C) Station:

## Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
15-4570-0211	96h Survival Rate	100	>100	NA	7.15%	1	Steel Many-One Rank Sum Test

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
15-4570-0211	96h Survival Rate	Control Resp	0.975	0.9 - NL	Yes	Passes Acceptability Criteria

## 96h Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	4	0.975	0.9563	0.9937	0.9	1	0.025	0.05	5.13%	0.0%
5.46		4	1	1	1	1	1	0	0	0.0%	-2.56%
12.5		4	0.975	0.9563	0.9937	0.9	1	0.025	0.05	5.13%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	-2.56%
50		4	0.975	0.9563	0.9937	0.9	1	0.025	0.05	5.13%	0.0%
100		4	0.975	0.9563	0.9937	0.9	1	0.025	0.05	5.13%	0.0%

## 96h Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	1	0.9	1	1
5.46		1	1	1	1
12.5		1	1	1	0.9
25		1	1	1	1
50		1	1	0.9	1
100		1	1	0.9	1

## 96h Survival Rate Binomials


C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Dilution Water	10/10	9/10	10/10	10/10
5.46		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	9/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	9/10	10/10
100		10/10	10/10	9/10	10/10


**Rainier Environmental**  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424


**96 Hour Toxicity Test Data Sheet**  
Freshwater 96-hr Acute with Renewal

Client: Port of Olympia  
Sample ID: BACT11419  
Test #: 1901-020  
Rainier Check-In #: 19-009

Start Date & Time: 1/15/19 1400  
End Date & Time: 1/19/19 1335  
Test Organism: Pimephales promelas

Sample Conc. or 	D.O. (mg/L)				pH (mg/L)			
	Init.	24	48	Fin.	Init.	24	48	Fin.
CON	7.7	7.3	7.3	7.8	6.9	7.83	7.68	7.93
5.46	7.6	7.1	7.2	7.8	6.9	7.2	7.41	7.98
12.5	7.6	7.0	7.4	7.8	6.9	7.1	7.74	8.05
25	7.4	6.9	7.1	7.6	7.1	7.2	7.6	8.08
50	7.3	6.8	6.7	7.2	6.8	7.0	7.60	8.16
100	7.0	6.8	6.2	6.9	6.6	6.8	7.54	8.14

Sample Conc. or 	Conductivity $\mu$ S/cm				Test Temperature (°C)			
	Init.	24	48	Fin.	Init.	24	48	Fin.
CON	255	278	263	271	273	283	293	293
5.46	304	321	315	333	325	337	347	357
12.5	389	411	403	448	426	431	447	457
25	538	555	535	567	581	587	595	604
50	796	821	814	833	876	868	877	883
100	1320	1362	1334	1355	1417	1413	1413	1413

Sample Conc. or 	Rep. #	Cont. #	Number of Live Organisms				
			0	24	48	72	96
CON	1	9	10	10	10	10	10
	2	23	10	10	10	10	9
	3	4	10	10	10	10	10
	4	13	10	10	10	10	10
5.46	1	2	10	10	10	10	10
	2	19	10	10	10	10	10
	3	8	10	10	10	10	10
	4	16	10	10	10	10	10
12.5	1	24	10	10	10	10	10
	2	3	10	10	10	10	10
	3	17	10	10	10	10	10
	4	10	10	10	10	10	9
25	1	11	10	10	10	10	10
	2	15	10	10	10	10	10
	3	22	10	10	10	10	10
	4	5	10	10	10	10	10
50	1	12	10	10	10	10	10
	2	21	10	10	10	10	10
	3	6	10	10	10	10	9
	4	18	10	10	10	10	10
100	1	14	10	10	10	10	10
	2	1	10	10	10	10	9
	3	20	10	10	10	10	9
	4	7	10	10	10	10	10

Comments: \_\_\_\_\_  
Animal Source: AB5  
Date Received: 1/15/19  
Date of Hatch: 1/10/19  
QA Check: st

48-Hr, Feeding: ✓

Dilution Water Batch #: MHSW #003  
Test Chamber: RM2

Tech. Initials  
Sample Used:

st st st st  
9-009 19-009

## **Appendix C**

### ***Americamysis bahia* (mysid shrimp) Chronic Test Statistical Summaries and Raw Bench Sheets**

# CETIS Summary Report

Report Date: 31 Jan-19 10:29 (p 1 of 2)  
 Test Code: 1901-022 | 19-4561-7916

## Mysidopsis 7-d Survival, Growth and Fecundity Test

Rainier Environmental Laboratory

Batch ID:	19-0754-6401	Test Type:	Growth-Survival (7d)	Analyst:	Eric Tollefson
Start Date:	15 Jan-19 14:30	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Laboratory Seawater
Ending Date:	22 Jan-19 15:00	Species:	Mysidopsis bahia	Brine:	
Duration:	7d 1h	Source:	Aquatic Biosystems, CO	Age:	7d
Sample ID:	08-9192-5045	Code:	19-009	Client:	Port of Olympia Budd Inlet
Sample Date:	14 Jan-19 08:05	Material:	Industrial Effluent	Project:	
Receive Date:	14 Jan-19 09:55	Source:	Port of Olympia Budd Inlet (WA0040533)		
Sample Age:	30h (5.2 °C)	Station:			

## Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-8058-3667	7d Survival Rate	100	>100	NA	13.1%	1	Steel Many-One Rank Sum Test
03-2735-4240	Mean Dry Biomass-mg	50	100	70.71	27.0%	2	Steel Many-One Rank Sum Test
02-1022-8002	Mean Dry Weight-mg	50	100	70.71	22.5%	2	Steel Many-One Rank Sum Test

## Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
05-9755-4263	Mean Dry Biomass-mg	IC5	51.76	4.206	57.44	1.932	Linear Interpolation (ICPIN)
		IC10	58.28	19.13	66.08	1.716	
		IC15	65.6	29.02	79.72	1.524	
		IC20	73.82	43.76	N/A	1.355	
		IC25	83.06	53.7	N/A	1.204	
		IC40	>100	N/A	N/A	<1	
09-7073-0971	Mean Dry Weight-mg	IC50	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	54.6	12.61	63	1.831	
		IC10	68.23	20.81	82.06	1.466	
		IC15	85.2	38.82	N/A	1.174	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

## 7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	8	0.975	0.9486	1	0.8	1	0.025	0.07071	7.25%	0.0%
5.46		8	0.975	0.9486	1	0.8	1	0.025	0.07071	7.25%	0.0%
12.5		8	0.975	0.9486	1	0.8	1	0.025	0.07071	7.25%	0.0%
25		8	0.975	0.9486	1	0.8	1	0.025	0.07071	7.25%	0.0%
50		8	0.95	0.9154	0.9846	0.8	1	0.03273	0.09258	9.75%	2.56%
100		8	0.8	0.7202	0.8798	0.4	1	0.07559	0.2138	26.73%	17.95%

## Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	8	0.2708	0.2584	0.2831	0.214	0.31	0.01168	0.03304	12.2%	0.0%
5.46		8	0.2813	0.2665	0.296	0.224	0.332	0.01399	0.03958	14.07%	-3.88%
12.5		8	0.285	0.2717	0.2983	0.22	0.324	0.01256	0.03552	12.46%	-5.26%
25		8	0.2655	0.2481	0.2829	0.17	0.306	0.01646	0.04656	17.54%	1.94%
50		8	0.2728	0.2279	0.3176	0.182	0.562	0.04249	0.1202	44.07%	-0.74%
100		8	0.1872	0.165	0.2095	0.102	0.258	0.02108	0.05964	31.85%	30.84%

## Mean Dry Weight-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	8	0.2791	0.2643	0.2938	0.214	0.3325	0.01394	0.03942	14.13%	0.0%
5.46		8	0.2882	0.2762	0.3003	0.242	0.332	0.01142	0.03229	11.2%	-3.29%
12.5		8	0.2919	0.2826	0.3012	0.248	0.324	0.008792	0.02487	8.52%	-4.59%
25		8	0.2708	0.2577	0.2839	0.2125	0.306	0.01242	0.03513	12.97%	2.96%
50		8	0.2846	0.2426	0.3267	0.2275	0.562	0.03983	0.1127	39.58%	-1.99%
100		8	0.2331	0.2231	0.2431	0.1825	0.258	0.009489	0.02684	11.51%	16.48%

# CETIS Summary Report

Report Date: 31 Jan-19 10:29 (p 2 of 2)  
 Test Code: 1901-022 | 19-4561-7916

## Mysidopsis 7-d Survival, Growth and Fecundity Test

Rainier Environmental Laboratory

### 7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	Dilution Water	1	1	1	1	1	0.8	1	1
5.46		1	1	0.8	1	1	1	1	1
12.5		1	1	1	1	1	1	1	0.8
25		1	1	0.8	1	1	1	1	1
50		1	0.8	1	0.8	1	1	1	1
100		0.8	0.4	0.8	0.6	0.8	1	1	1

### Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	Dilution Water	0.31	0.248	0.214	0.258	0.298	0.266	0.308	0.264
5.46		0.296	0.332	0.224	0.254	0.31	0.242	0.27	0.322
12.5		0.324	0.248	0.28	0.314	0.3	0.31	0.284	0.22
25		0.306	0.286	0.17	0.244	0.298	0.302	0.236	0.282
50		0.262	0.182	0.562	0.198	0.26	0.24	0.24	0.238
100		0.178	0.102	0.146	0.124	0.2	0.246	0.244	0.258

### Mean Dry Weight-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	Dilution Water	0.31	0.248	0.214	0.258	0.298	0.3325	0.308	0.264
5.46		0.296	0.332	0.28	0.254	0.31	0.242	0.27	0.322
12.5		0.324	0.248	0.28	0.314	0.3	0.31	0.284	0.275
25		0.306	0.286	0.2125	0.244	0.298	0.302	0.236	0.282
50		0.262	0.2275	0.562	0.2475	0.26	0.24	0.24	0.238
100		0.2225	0.255	0.1825	0.2067	0.25	0.246	0.244	0.258

### 7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	Dilution Water	5/5	5/5	5/5	5/5	5/5	4/5	5/5	5/5
5.46		5/5	5/5	4/5	5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	5/5	5/5	5/5	5/5	5/5	4/5
25		5/5	5/5	4/5	5/5	5/5	5/5	5/5	5/5
50		5/5	4/5	5/5	4/5	5/5	5/5	5/5	5/5
100		4/5	2/5	4/5	3/5	4/5	5/5	5/5	5/5

## Initial and Final Chemistries

## Seven Day Chronic Saltwater Bioassay

Client: Port of Olympia  
 Sample ID: BACT11419  
 Test No: 1901-022  
 Rainier Check-In #: 19-009 19-015

Start Date & Time: 1/15/19 1430  
 Stop Date & Time: 1/22/19 1500  
 Test species: Americamysis bahia  
19-018

Conc. or % CON	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
pH	8.73	8.18	8.64	7.99	8.51	7.91	8.43	7.95	8.51	8.03	8.55	8.06	8.62	7.95
DO (mg/l)	6.5	5.9	6.0	6.0	6.5	5.7	6.5	5.2	6.6	5.3	6.2	5.3	6.4	5.7
Salinity (ppt)	29.3	29.4	29.6	29.6	29.8	29.7	29.9	30.1	29.5	29.7	29.4	29.5	29.6	30.1
Temperature (°C)	25.5	25.2	25.4	25.5	26.7	26.1	25.7	25.2	25.2	25.4	25.1	26.4	25.6	25.2
5.46	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.57	8.08	8.49	8.01	8.39	7.87	8.32	7.91	8.48	8.05	8.47	8.07	8.64	7.97
	6.4	5.8	6.2	5.8	6.6	5.7	6.3	5.4	6.2	5.2	6.3	5.3	6.4	5.5
	29.5	29.6	29.8	29.7	29.9	29.8	29.9	30.4	29.5	29.4	29.4	29.8	29.6	29.9
12.5	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.44	8.07	8.34	8.01	8.28	7.85	8.22	7.87	8.41	8.01	8.42	8.04	8.53	7.94
	6.4	5.6	6.4	5.7	6.5	5.8	6.4	5.1	6.5	5.2	6.4	5.3	6.5	5.2
	29.4	29.4	29.5	29.6	29.9	29.9	29.9	29.8	29.5	29.8	29.4	29.5	29.6	29.9
25	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.27	8.08	8.17	8.05	8.11	7.84	8.09	7.88	8.37	7.95	8.35	7.91	8.49	7.91
	6.5	5.6	6.2	5.7	6.6	5.7	6.4	5.4	6.5	5.1	6.3	5.2	6.5	5.1
	29.3	29.4	29.3	29.4	29.7	29.7	29.9	30.5	29.7	29.9	29.2	29.3	29.4	30.1
50	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.03	8.10	7.94	8.03	7.93	7.86	7.93	7.81	8.02	7.91	8.11	7.86	8.26	7.88
	6.5	5.6	6.2	5.8	6.6	5.6	6.6	5.2	6.4	5.2	6.4	5.1	6.4	5.4
	29.0	28.8	29.1	29.0	29.7	29.8	29.8	30.2	29.2	29.4	29.0	29.0	29.4	29.6
100	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	7.76	7.98	7.62	7.82	7.69	7.72	7.74	7.78	7.65	7.82	7.85	7.73	7.92	7.81
	6.4	5.7	6.2	5.5	6.6	5.7	6.3	5.1	6.4	5.2	6.5	5.1	6.4	5.8
	28.7	28.5	28.6	28.7	29.5	29.6	29.9	30.1	28.7	29.1	28.6	28.5	29.4	29.5
Tech Initials:														
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Test Chamber: VWR  
 Dilution Water Batch #: AGW # 002

Rainier Environmental  
 Washington Laboratory  
 5013 Pacific Hwy. E., Suite 20  
 Tacoma, WA 98424

QA Check: et

Sample Description: \_\_\_\_\_  
 Organism Source: ABS  
 Date Received: 1/15/19  
 Date of Hatch: 1/18/19

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424

Raw Data Sheet  
Mysid Shrimp  
(*Americamysis bahia*)  
Mysid Survival

Client: Port of Olympia

Test Number: 1901-022

Sample ID: BACT11419

Conc. or (%)	Cont.	Rep.	Days								Mean % Survival
			0	1	2	3	4	5	6	7	
CoN	9	1	5	5	5	5	5	5	5	5	
	23	2	5	5	5	5	5	5	5	5	
	39	3	5	5	5	5	5	5	5	5	
	25	4	5	5	5	5	5	5	5	5	
	42	5	5	5	5	5	5	5	5	5	
	2	6	5	4	4	4	4	4	4	4	
	30	7	5	5	5	5	5	5	5	5	
	4	8	5	5	5	5	5	5	5	5	
5.46	41	1	5	5	5	5	5	5	5	5	
	13	2	5	5	5	5	5	5	5	5	
	25	3	5	5	5	5	5	5	5	5	
	19	4	5	5	5	5	5	5	5	5	
	15	5	5	5	5	5	5	5	5	5	
	21	6	5	5	5	5	5	5	5	5	
	7	7	5	5	5	5	5	5	5	5	
	24	8	5	5	5	5	5	5	5	5	
12.5	37	1	5	5	5	5	5	5	5	5	
	5	2	5	5	5	5	5	5	5	5	
	32	3	5	5	5	5	5	5	5	5	
	43	4	5	5	5	5	5	5	5	5	
	12	5	5	5	5	5	5	5	5	5	
	16	6	5	5	5	5	5	5	5	5	
	47	7	5	5	5	5	5	5	5	5	
	26	8	5	4	4	4	4	4	4	4	
Technician Initials			RL	RL	RL	RL	UT	UT	RL	UT	

Feeding Times: 0 1600 1 830 2 815 3 815 4 800 5 800 6 815  
1545 1545 1530 1400 1400 1600  
1430

QA check UT

Comments: \_\_\_\_\_

Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424

Raw Data Sheet  
Mysid Shrimp  
(*Americamysis bahia*)  
Mysid Survival

Client: Port of Olympia

Test Number: 1901-022

Sample ID: BACT11419

Conc. or ②	Cont.	Rep.	Days								Mean % Survival
			0	1	2	3	4	5	6	7	
25	27	1	5	5	5	5	5	5	5	5	
	48	2	5	5	5	5	5	5	5	5	
	14	3	5	5	5	5	5	4	4	4	
	46	4	5	5	5	5	5	5	5	5	
	20	5	5	5	5	5	5	5	5	5	
	1	6	5	5	5	5	5	5	5	5	
	36	7	5	5	5	5	5	5	5	5	
	23	8	5	5	5	5	5	5	5	5	
50	8	1	5	5	5	5	5	5	5	5	
	29	2	5	5	4	4	4	4	4	4	
	21	3	5	5	5	5	5	5	5	5	
	3	4	5	5	5	5	5	5	5	4	
	40	5	5	5	5	5	5	5	5	5	
	18	6	5	5	5	5	5	5	5	5	
	44	7	5	5	5	5	5	5	5	5	
	10	8	5	5	5	5	5	5	5	5	
100	34	1	5	5	5	5	5	5	4	4	
	17	2	5	4	4	4	4	4	3	3	
	38	3	5	5	5	5	5	5	5	4	
	6	4	5	5	5	5	4	4	4	3	
	22	5	5	5	5	5	5	4	4	4	
	45	6	5	5	5	5	5	5	5	5	
	11	7	5	5	5	5	5	5	5	5	
	28	8	5	5	5	5	5	5	5	5	
Technician Initials			AL	AL	AL	AL	AL	AL	AL	AL	

Feeding Times: 0 1800 1 830 2 815 3 815 4 800 5 800 6 815  
1600 1545 1545 1530 1430 1400 1600

QA check AL

Comments: \_\_\_\_\_

Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424

Raw Data Sheet  
Mysid Weights  
Seven Day Chronic Bioassay

Client: Port of Olympia

Species: Americamysis bahia

Sample ID: BACT11419

Test Number: 1001-022

Conc. or (%)	Cont.	Rep.	pan wt. (gm)	pan + mysid (gm)	mysid wt. (mg)	# mysids	avg. per mysid (mg)	avg. per conc.
CON	9	1	0.04106	0.04261		5		
	23	2	0.04016	0.04140		5		
	39	3	0.03967	0.04074		5		
	25	4	0.03812	0.03941		5		
	42	5	0.03963	0.04112		5		
	2	6	0.03982	0.04115		4		
	30	7	0.03852	0.04006		5		
	4	8	0.03966	0.04098		5		
5.46	41	1	0.04152	0.04300		5		
	13	2	0.04099	0.04265		5		
	25	3	0.03915	0.04027		4		
	19	4	0.04172	0.04299		5		
	15	5	0.04027	0.04182		5		
	31	6	0.03916	0.04037		5		
	7	7	0.04046	0.04281		5		
	24	8	0.04113	0.04274		5		
12.5	37	1	0.04047	0.04209		5		
	5	2	0.03970	0.04094		5		
	32	3	0.03858	0.03998		5		
	43	4	0.04047	0.04204		5		
	12	5	0.04088	0.04238		5		
	16	6	0.03999	0.04154		5		
	47	7	0.03932	0.04074		5		
	26	8	0.04034	0.04144		4		

Tech Initials: AL LT

Date/Time in: 1/22/19 1500  
Date/Time out: 1/23/19 1230

Oven temp. (°C): 62.0  
Oven temp. (°C): 61.0

QA Check: ✓

Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424

Raw Data Sheet  
Mysid Weights  
Seven Day Chronic Bioassay

Client: Port of Olympia

Species: Americamysis bahia

Sample ID: BACT11419

Test Number: 1901-022

Conc. or (%)	Cont.	Rep.	pan wt. (gm)	pan + mysid (gm)	mysid wt. (mg)	# mysids	avg. per mysid (mg)	avg. per conc.
25	27	1	0.04063	0.04155		5		
	48	2	0.04000	0.04143		5		
	14	3	0.04023	0.04108		4		
	46	4	0.03951	0.04073		5		
	20	5	0.03919	0.04068		5		
	1	6	0.04104	0.04255		5		
	36	7	0.03935	0.04053		5		
	33	8	0.04098	0.04239		5		
50	8	1	0.04059	0.04190		5		
	29	2	0.04032	0.04123		4		
	21	3	0.04019	0.04300		5		
	3	4	0.04024	0.04123		4		
	40	5	0.04169	0.04299		5		
	18	6	0.04263	0.04383		5		
	44	7	0.04121	0.04241		5		
	10	8	0.04001	0.04120		5		
100	34	1	0.03904	0.03993		4		
	17	2	0.04085	0.04305	0.04136	2		
	38	3	0.04073	0.04146		4		
	6	4	0.03974	0.04036		3		
	22	5	0.04190	0.04290		4		
	45	6	0.03850	0.03973		5		
	11	7	0.03945	0.04067		5		
	28	8	0.03930	0.04059		5		

Date/Time in: 1/22/19 1500  
Date/Time out: 1/25/19 1230

Oven temp. (°C): 62.0  
Oven temp. (°C): 61.0

QA Check: BT

**Appendix D**  
***Atherinops affinis* (Pacific topsmelt) Chronic Test**  
**Statistical Summaries and Raw Bench Sheets**

# CETIS Summary Report

Report Date: 31 Jan-19 10:29 (p 1 of 2)  
Test Code: 1901-021 | 12-9116-6442

## Pacific Topsmelt 7-d Survival and Growth Test

Rainier Environmental Laboratory

Batch ID: 12-7267-9628	Test Type: Growth-Survival (7d)	Analyst: Eric Tollefson
Start Date: 15 Jan-19 14:40	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 22 Jan-19 14:35	Species: Atherinops affinis	Brine:
Duration: 7d	Source: Aquatic Biosystems, CO	Age: 10d
Sample ID: 09-6209-9954	Code: 19-009	Client: Port of Olympia Budd Inlet
Sample Date: 14 Jan-19 08:05	Material: Industrial Effluent	Project:
Receive Date: 14 Jan-19 09:55	Source: Port of Olympia Budd Inlet (WA0040533)	
Sample Age: 31h (5.2 °C)	Station:	

## Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-4550-8993	7d Survival Rate	100	>100	NA	12.6%	1	Steel Many-One Rank Sum Test
17-9475-8828	Mean Dry Biomass-mg	100	>100	NA	15.0%	1	Dunnett Multiple Comparison Test
00-1885-0223	Mean Dry Weight-mg	100	>100	NA	18.2%	1	Dunnett Multiple Comparison Test

## Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-4550-8993	7d Survival Rate	Control Resp	0.92	0.8 - NL	Yes	Passes Acceptability Criteria
17-9475-8828	Mean Dry Biomass-mg	Control Resp	1.772	0.85 - NL	Yes	Passes Acceptability Criteria
03-4550-8993	7d Survival Rate	PMSD	0.126	NL - 0.25	No	Passes Acceptability Criteria
17-9475-8828	Mean Dry Biomass-mg	PMSD	0.1499	NL - 0.5	No	Passes Acceptability Criteria

## 7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	0.92	0.8791	0.9609	0.8	1	0.04899	0.1095	11.91%	0.0%
5.46		5	1	1	1	1	1	0	0	0.0%	-8.7%
12.5		5	0.96	0.9266	0.9934	0.8	1	0.04	0.08944	9.32%	-4.35%
25		5	1	1	1	1	1	0	0	0.0%	-8.7%
50		5	0.96	0.9266	0.9934	0.8	1	0.04	0.08944	9.32%	-4.35%
100		5	0.96	0.9266	0.9934	0.8	1	0.04	0.08944	9.32%	-4.35%

## Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1.772	1.727	1.816	1.566	1.872	0.05326	0.1191	6.72%	0.0%
5.46		5	1.68	1.641	1.72	1.56	1.842	0.04738	0.1059	6.3%	5.15%
12.5		5	1.829	1.734	1.924	1.536	2.222	0.1137	0.2541	13.9%	-3.23%
25		5	1.818	1.751	1.885	1.666	2.084	0.07984	0.1785	9.82%	-2.62%
50		5	1.724	1.655	1.794	1.442	1.93	0.08314	0.1859	10.78%	2.66%
100		5	1.568	1.5	1.637	1.344	1.784	0.08167	0.1826	11.64%	11.47%

## Mean Dry Weight-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1.952	1.84	2.064	1.566	2.278	0.1341	0.2998	15.36%	0.0%
5.46		5	1.68	1.641	1.72	1.56	1.842	0.04738	0.1059	6.3%	13.91%
12.5		5	1.916	1.808	2.024	1.536	2.222	0.1293	0.2892	15.09%	1.85%
25		5	1.818	1.751	1.885	1.666	2.084	0.07984	0.1785	9.82%	6.87%
50		5	1.816	1.696	1.937	1.442	2.302	0.1443	0.3226	17.76%	6.94%
100		5	1.636	1.585	1.686	1.416	1.784	0.06038	0.135	8.26%	16.21%

# CETIS Summary Report

Report Date: 31 Jan-19 10:29 (p 2 of 2)  
 Test Code: 1901-021 | 12-9116-6442

## Pacific Topsmelt 7-d Survival and Growth Test

Rainier Environmental Laboratory

### 7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	0.8	1	1	1	0.8
5.46		1	1	1	1	1
12.5		1	1	0.8	1	1
25		1	1	1	1	1
50		1	0.8	1	1	1
100		0.8	1	1	1	1

### Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.786	1.812	1.872	1.566	1.822
5.46		1.682	1.618	1.7	1.56	1.842
12.5		1.536	1.894	1.742	2.222	1.75
25		1.74	2.084	1.666	1.916	1.684
50		1.93	1.842	1.732	1.442	1.676
100		1.344	1.636	1.662	1.784	1.416

### Mean Dry Weight-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	2.233	1.812	1.872	1.566	2.278
5.46		1.682	1.618	1.7	1.56	1.842
12.5		1.536	1.894	2.177	2.222	1.75
25		1.74	2.084	1.666	1.916	1.684
50		1.93	2.302	1.732	1.442	1.676
100		1.68	1.636	1.662	1.784	1.416

### 7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	4/5	5/5	5/5	5/5	4/5
5.46		5/5	5/5	5/5	5/5	5/5
12.5		5/5	5/5	4/5	5/5	5/5
25		5/5	5/5	5/5	5/5	5/5
50		5/5	4/5	5/5	5/5	5/5
100		4/5	5/5	5/5	5/5	5/5



## Initial and Final Chemistries

## Seven Day Chronic Saltwater Bioassay

Client: Port of Olympia  
 Sample ID: BACT11419  
 Test No: 1901-021  
 Rainier Check-In #: 19-009 19-015

Start Date & Time: 1/15/19 1440  
 Stop Date & Time: 1/22/19 1435  
 Test species: Atherinops affinis  
19-018

Conc. or % CON	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
pH	8.75	8.33	8.61	8.26	8.52	8.21	8.47	8.11	8.55	8.21	8.54	8.14	8.64	8.11
DO (mg/l)	6.5	5.9	6.1	5.7	6.5	6.6	6.6	5.9	6.2	5.9	6.8	5.6	6.7	5.7
Salinity (ppt)	29.1	29.0	29.7	29.6	29.7	29.7	29.8	29.9	29.5	29.4	29.5	29.4	29.6	29.7
Temperature (°C)	19.8	19.9	19.6	20.2	19.7	20.0	20.3	19.5	20.4	20.1	19.9	20.2	19.9	19.5
5.46	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.71	8.29	8.50	8.19	8.41	8.17	8.35	8.04	8.52	8.18	8.48	8.09	8.58	8.12
	6.4	5.9	6.2	5.8	6.6	5.5	6.5	5.8	6.4	6.2	6.7	5.4	6.7	5.5
	29.2	29.1	29.7	29.8	29.7	29.6	29.8	30.0	29.5	29.3	29.5	29.4	29.6	29.4
	19.6	19.9	19.8	20.3	19.9	20.2	20.1	19.5	20.3	20.2	19.7	20.3	19.7	19.7
12.5	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.52	8.21	8.34	8.13	8.27	8.20	8.20	8.01	8.37	8.17	8.39	8.09	8.27	8.10
	6.4	5.8	6.3	5.7	6.6	5.7	6.0	5.7	6.5	6.4	6.8	5.6	6.5	5.9
	29.2	29.2	29.6	29.6	29.6	29.6	29.7	29.9	29.4	29.1	29.4	29.4	29.6	29.5
	19.6	19.9	20.1	20.2	19.8	20.2	20.0	19.4	20.3	20.2	19.7	20.1	19.8	19.8
25	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.38	8.13	8.15	8.05	8.08	8.16	8.03	8.08	8.11	8.17	8.15	8.07	8.21	8.05
	6.3	5.7	6.3	5.8	6.6	5.7	6.2	5.8	6.5	6.2	6.7	5.7	6.6	5.8
	29.2	29.3	29.4	29.5	29.5	29.6	29.5	29.6	29.3	29.4	29.2	29.3	29.4	29.5
	19.7	19.8	20.2	20.2	20.0	20.3	20.0	19.4	20.4	20.1	20.1	20.1	19.9	19.8
50	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	8.08	8.08	7.85	7.98	7.85	8.02	7.83	8.03	7.91	8.05	7.98	8.01	8.14	8.02
	6.4	5.8	6.3	5.8	6.7	5.6	6.0	5.7	6.2	6.1	6.6	5.7	6.4	6.2
	29.1	29.3	29.2	29.3	29.3	29.4	29.1	29.2	29.0	29.2	29.9	28.8	29.1	29.2
	19.7	19.6	20.4	20.3	20.1	20.4	20.0	19.4	20.6	20.2	20.0	20.2	19.9	19.7
100	Days													
	0		1		2		3		4		5		6	
	init	final	init	final	init	final	init	final	init	final	init	final	init	final
	7.82	7.98	7.48	7.88	7.57	7.81	7.60	7.95	7.67	8.01	7.72	7.94	8.02	7.88
	6.4	5.8	6.1	5.4	6.7	5.7	6.1	5.8	6.1	6.0	6.5	5.7	6.2	6.1
	29.0	28.7	28.7	28.9	29.0	29.0	28.4	29.3	28.7	29.0	29.4	28.3	28.3	28.5
	19.8	19.5	20.7	20.4	20.1	20.2	19.9	19.4	20.1	20.2	19.4	20.2	19.9	19.7
Tech Initials:	et	et	et	et	et	et	et	et	et	et	et	et	et	et

Rainier Environmental  
 Washington Laboratory  
 5013 Pacific Hwy. E., Suite 20  
 Tacoma, WA 98424

QA Check: et

Test Chamber: RM2

Dilution Water Batch #: ASW #002

## Sample Description:

Organism Source: ABS

Date Received: 1/15/18 #19

Date of Hatch: 1/15/19

Comments:



Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy. E., Suite 20  
Tacoma, WA 98424

Raw Data Sheet  
Pacific Topsmelt  
(*Atherinops affinis*)  
Larval Survival

Client Name: Port of Olympia

Test No.: 1901-022

Sample ID: BACT11419

Conc. or $\emptyset$	Cont.	Rep.	Days								Mean % Survival
			0	1	2	3	4	5	6	7	
CON	14	1	5	5	5	5	4	4	4	4	
	29	2	5	5	5	5	5	5	5	5	
	2	3	5	5	5	5	5	5	5	5	
	19	4	5	5	5	5	5	5	5	5	
	11	5	5	4	4	4	4	4	4	4	
5.46	22	1	5	5	5	5	5	5	5	5	
	1	2	5	5	5	5	5	5	5	5	
	26	3	5	5	5	5	5	5	5	5	
	7	4	5	5	5	5	5	5	5	5	
	18	5	5	5	5	5	5	5	5	5	
12.5	23	1	5	5	5	5	5	5	5	5	
	12	2	5	5	5	5	5	5	5	5	
	3	3	5	5	5	5	5	5	4	4	
	20	4	5	5	5	5	5	5	5	5	
	28	5	5	5	5	5	5	5	5	5	
25	8	1	5	5	5	5	5	5	5	5	
	27	2	5	5	5	5	5	5	5	5	
	6	3	5	5	5	5	5	5	5	5	
	15	4	5	5	5	5	5	5	5	5	
	13	5	5	5	5	5	5	5	5	5	
50	9	1	5	5	5	5	5	5	5	5	
	25	2	5	5	5	4	4	4	4	4	
	4	3	5	5	5	5	5	5	5	5	
	16	4	5	5	5	5	5	5	5	5	
	21	5	5	5	5	5	5	5	5	5	
100	10	1	5	5	5	5	5	5	5	4	
	24	2	5	5	5	5	5	5	5	5	
	5	3	5	5	5	5	5	5	5	5	
	30	4	5	5	5	5	5	5	5	5	
	17	5	5	5	5	5	5	5	5	5	
Tech Initials			BT	AL	AL	AL	BT	BT	AL	BT	

Feeding Times: 0 1 830 2 815 3 815 4 800 5 800 6 815  
1600 1545 1545 1530 1430 1400 1600

Comments: \_\_\_\_\_ QA Check BT

Rainier Environmental  
Washington Laboratory  
5013 Pacific Hwy., E. Suite 20  
Tacoma, WA 98424

Fish Weights  
Seven Day Chronic Bioassay

Client: Port of Olympia

Species: A. affinis

Sample ID: BACT11419

Test No: 1901-022

Conc. or %	cont. #	rep.	pan wt. (gm)	pan + fish (gm)	fish wt. (mg)	# fish	avg. per fish (mg)	avg. per conc. (mg)
CON	14	1	0.04088	0.04981		4		
	29	2	0.04094	0.05000		5		
	2	3	0.04026	0.04962		5		
	19	4	0.04087	0.04870		5		
	11	5	0.03946	0.04857		4		
5.46	22	1	0.04055	0.04896		5		
	1	2	0.04121	0.04930		5		
	26	3	0.04020	0.04870		5		
	7	4	0.04016	0.04796		5		
	18	5	0.03970	0.04891		5		
12.5	23	1	0.04060	0.04928		5		
	12	2	0.04109	0.05056		5		
	3	3	0.03957	0.04828		4		
	20	4	0.04020	0.05131		5		
	28	5	0.04061	0.04936		5		
25	8	1	0.03978	0.04848		5		
	27	2	0.03990	0.05032		5		
	6	3	0.04009	0.04842		5		
	15	4	0.04073	0.05031		5		
	13	5	0.04013	0.04855		5		
50	9	1	0.04065	0.05030		5		
	25	2	0.04096	0.05017		5		
	4	3	0.04320	0.05186		5		
	16	4	0.03987	0.04708		5		
	21	5	0.04049	0.04887		5		
100	10	1	0.03965	0.04637		4		
	24	2	0.04069	0.04887		5		
	5	3	0.03877	0.04708		5		
	30	4	0.04046	0.04932		5		
	17	5	0.03981	0.04689		5		

Tech Initials: AK U

Date/Time in: 1/22/19 1435  
Date/Time out: 1/25/19 1230

Oven temp. (°C): 62.0  
Oven temp. (°C): 61.0

QA check U

## **Appendix E**

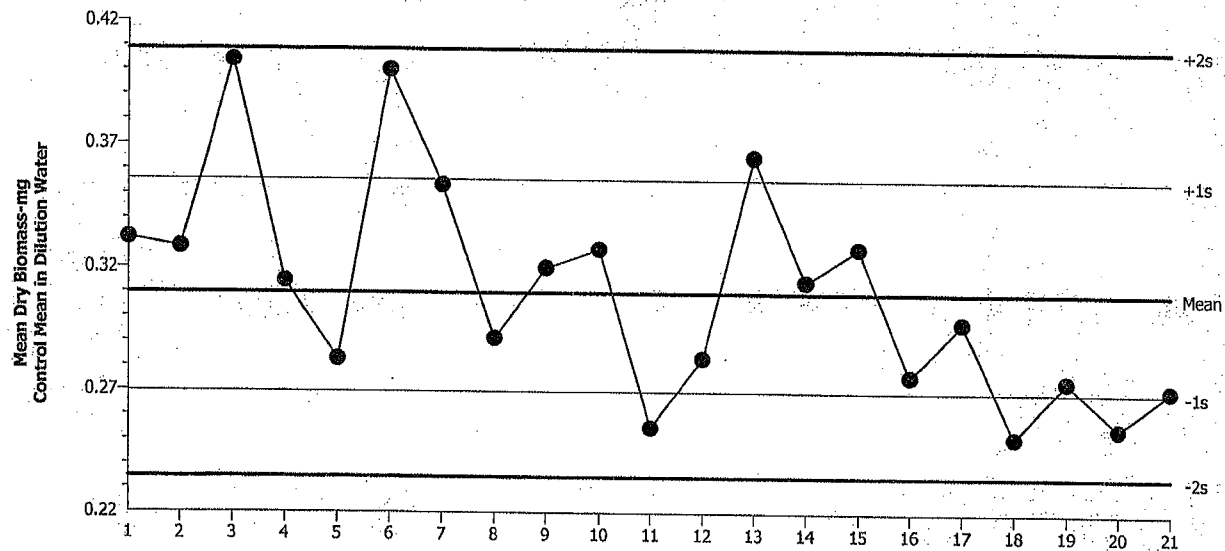
### **Control QC Plots**

## CETIS QC Plot

Report Date: 31 Jan-19 09:58 (1 of 1)

Mysidopsis 7-d Survival, Growth and Fecundity Test			Rainier Environmental Laboratory
Test Type: Growth-Survival (7d)	Organism: Mysidopsis bahia (Atlantic Mysid)	Material: All Materials	
Protocol: EPA/821/R-02-014 (2002)	Endpoint: Mean Dry Biomass-mg	Source: All SampleID Sources	

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 0.3097      Count: 20      -1s Warning Limit: 0.2697      -2s Action Limit: 0.2348  
 Sigma: NA      CV: 14.90%      +1s Warning Limit: 0.3558      +2s Action Limit: 0.4087

## Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jan	12	0.3318	0.02205	0.4962			13-0956-5809	
2			23	0.3283	0.01855	0.4197			12-4994-3335	
3			30	0.404	0.09425	1.917	(+)		07-4890-8751	
4		Feb	6	0.3145	0.004753	0.1099			15-9271-5498	
5			13	0.2827	-0.02705	-0.6592			11-5292-9920	
6		Apr	10	0.4	0.09025	1.845	(+)		16-7032-4951	
7			17	0.3537	0.04395	0.9574			00-6311-7030	
8			24	0.2913	-0.01845	-0.443			09-7033-1592	
9		May	22	0.32	0.01025	0.235			03-4358-0277	
10			22	0.3275	0.01775	0.4021			16-6434-2177	
11		Jul	17	0.2552	-0.05455	-1.398	(-)		14-6083-7526	
12			18	0.2833	-0.02645	-0.6439			13-3742-2562	
13			24	0.365	0.05525	1.184	(+)		19-7358-0544	
14		Aug	7	0.3145	0.004753	0.1099			18-7047-1829	
15			7	0.328	0.01825	0.4131			14-8890-7355	
16		Oct	9	0.2762	-0.03355	-0.8271			07-1589-2435	
17			9	0.2978	-0.01195	-0.2838			10-7122-2080	
18		Nov	6	0.2513	-0.05845	-1.509	(-)		02-6362-2800	
19			6	0.2742	-0.03555	-0.8795			12-1382-8215	
20	2019	Jan	15	0.2552	-0.05455	-1.398	(-)		11-0052-6789	
21			15	0.2708	-0.03895	-0.9695			19-4561-7916	

## Mysidopsis 7-d Survival, Growth and Fecundity Test

Rainier Environmental Laboratory

Test Type: Growth-Survival (7d)

Organism: Mysidopsis bahia (Atlantic Mysid)

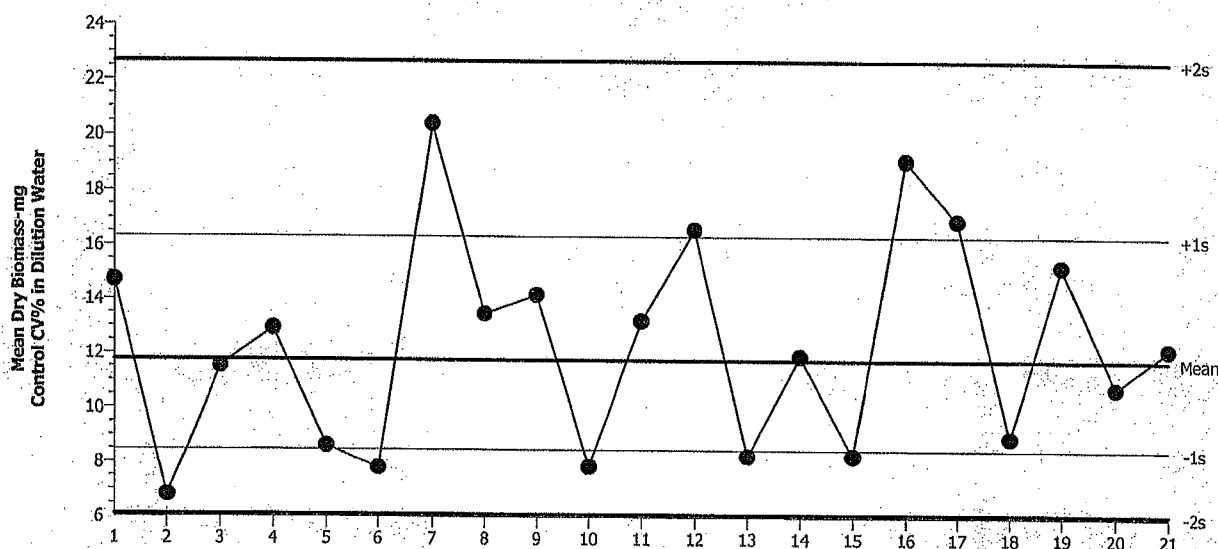
Material: All Materials

Protocol: EPA/821/R-02-014 (2002)

Endpoint: Mean Dry Biomass-mg

Source: All SampleID Sources

## Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 11.76

Count: 20

-1s Warning Limit: 8.474

-2s Action Limit: 6.104

Sigma: NA

CV: 38.80%

+1s Warning Limit: 16.33

+2s Action Limit: 22.67

## Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jan	12	14.7	2.937	0.6794			13-0956-5809	
2			23	6.804	-4.959	-1.669	(-)		12-4994-3335	
3			30	11.52	-0.2435	-0.06377			07-4890-8751	
4		Feb	6	12.93	1.167	0.2883			15-9271-5498	
5			13	8.613	-3.15	-0.9504			11-5292-9920	
6		Apr	10	7.797	-3.966	-1.254	(-)		16-7032-4951	
7			17	20.41	8.647	1.68	(+)		00-6311-7030	
8			24	13.47	1.707	0.413			09-7033-1592	
9		May	22	14.17	2.407	0.5675			03-4358-0277	
10			22	7.86	-3.903	-1.229	(-)		16-6434-2177	
11		Jul	17	13.22	1.457	0.3559			14-6083-7526	
12			18	16.58	4.817	1.046	(+)		13-3742-2562	
13			24	8.248	-3.515	-1.082	(-)		19-7358-0544	
14		Aug	7	11.91	0.1465	0.03774			18-7047-1829	
15			7	8.265	-3.498	-1.076	(-)		14-8890-7355	
16		Oct	9	19.09	7.327	1.476	(+)		07-1589-2435	
17			9	16.93	5.167	1.11	(+)		10-7122-2080	
18		Nov	6	8.935	-2.828	-0.8385			02-6362-2800	
19			6	15.24	3.477	0.7894			12-1382-8215	
20	2019	Jan	15	10.77	-0.9935	-0.269			11-0052-6789	
21			15	12.2	0.4365	0.1111			19-4561-7916	

## Pacific Topsmelt 7-d Survival and Growth Test

Rainier Environmental Laboratory

Test Type: Growth-Survival (7d)

Organism: Atherinops affinis (Topsmelt)

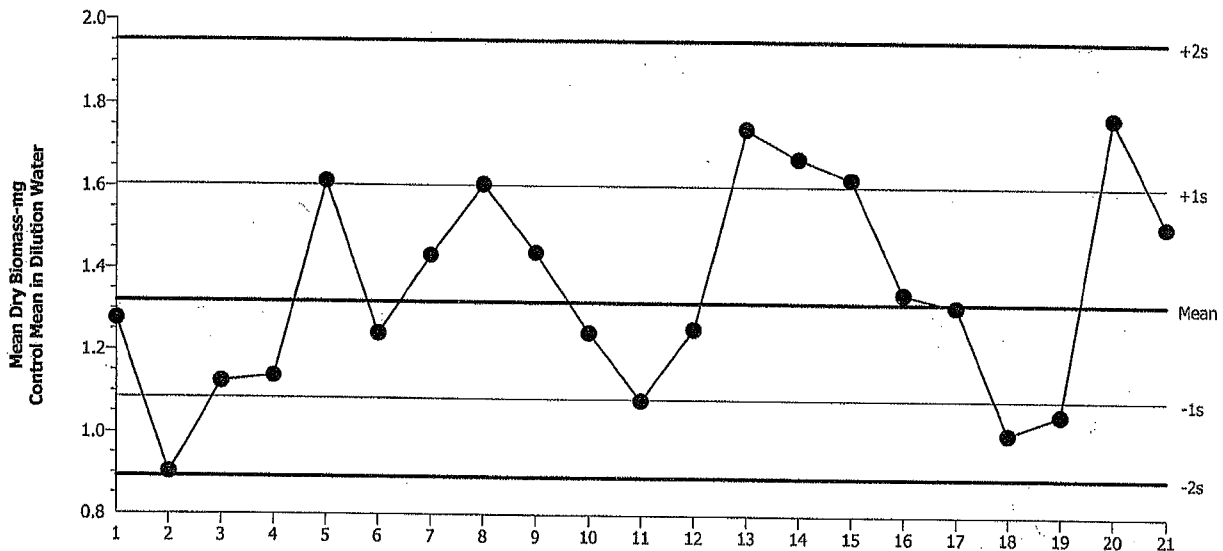
Material: All Materials

Protocol: EPA/600/R-95/136 (1995)

Endpoint: Mean Dry Biomass-mg

Source: All SampleID Sources

Pacific Topsmelt 7-d Survival and Growth Test



Mean: 1.32

Count: 20

-1s Warning Limit: 1.085

-2s Action Limit: 0.8925

Sigma: NA

CV: 21.60%

+1s Warning Limit: 1.605

+2s Action Limit: 1.952

## Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Dec	13	1.276	-0.04409	-0.1736			08-3475-1090	
2	2018	Jan	12	0.9024	-0.4177	-1.944	(-)		16-4142-4648	
3			23	1.124	-0.1961	-0.8217			02-2399-6462	
4			30	1.138	-0.1821	-0.7584			03-6099-1331	
5		Feb	6	1.614	0.2939	1.027	(+)		20-0631-8824	
6			13	1.242	-0.07809	-0.3116			05-9883-8439	
7		Apr	10	1.434	0.1139	0.4229			03-1357-9054	
8			17	1.607	0.2869	1.005	(+)		18-4412-2459	
9		May	15	1.441	0.1209	0.4478			17-2586-9782	
10			22	1.245	-0.07509	-0.2993			12-3844-9182	
11		Jul	17	1.082	-0.2381	-1.016	(-)		09-8504-8675	
12			18	1.256	-0.06409	-0.2543			10-4662-8894	
13			24	1.744	0.4239	1.423	(+)		16-1702-2885	
14		Aug	7	1.673	0.3529	1.211	(+)		09-7724-5826	
15			7	1.623	0.3029	1.056	(+)		17-5259-0288	
16		Oct	9	1.343	0.02291	0.08792			00-5989-7908	
17			9	1.313	-0.00709	-0.02752			15-6204-9791	
18		Nov	6	1.003	-0.3171	-1.404	(-)		17-1235-9313	
19			6	1.05	-0.2701	-1.17	(-)		06-2948-8818	
20	2019	Jan	15	1.772	0.4519	1.504	(+)		12-9116-6442	
21			15	1.51	0.1899	0.6868			04-2771-4020	

## Pacific Topsmelt 7-d Survival and Growth Test

Rainier Environmental Laboratory

Test Type: Growth-Survival (7d)

Organism: Atherinops affinis (Topsmelt)

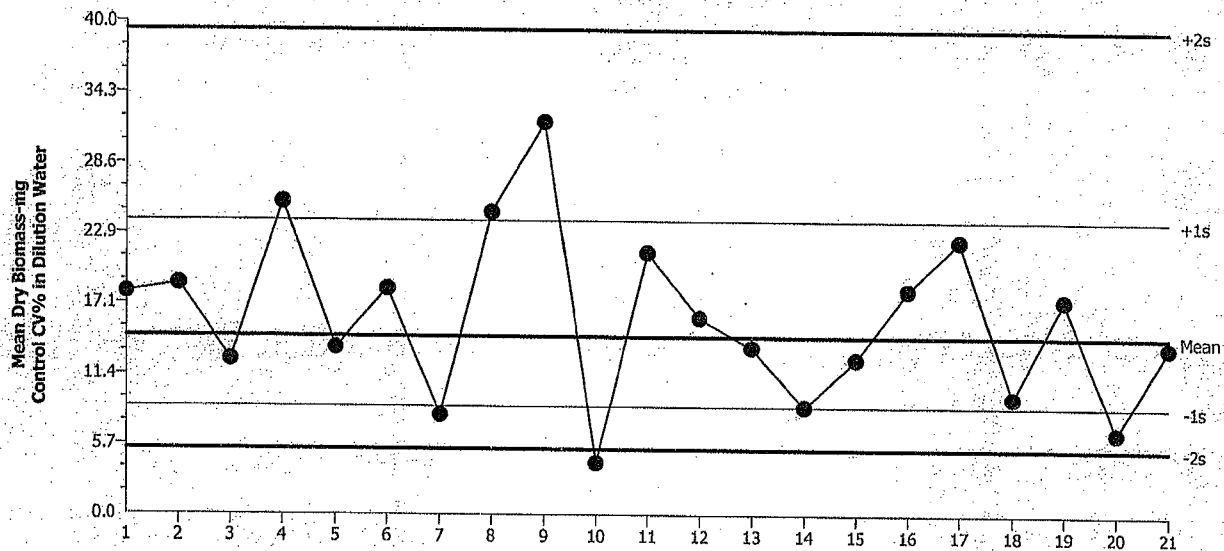
Material: All Materials

Protocol: EPA/600/R-95/136 (1995)

Endpoint: Mean Dry Biomass-mg

Source: All SampleID Sources

## Pacific Topsmelt 7-d Survival and Growth Test



Mean: 14.53

Count: 20

-1s Warning Limit: 8.823

-2s Action Limit: 5.359

Sigma: NA

CV: 64.60%

+1s Warning Limit: 23.92

+2s Action Limit: 39.38

## Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Dec	13	18.02	3.493	0.4322			08-3475-1090	
2	2018	Jan	12	18.72	4.193	0.5086			16-4142-4648	
3			23	12.61	-1.917	-0.2838			02-2399-6462	
4			30	25.41	10.88	1.121	(+)		03-6099-1331	
5		Feb	6	13.6	-0.9269	-0.1322			20-0631-8824	
6			13	18.32	3.793	0.4653			05-9883-8439	
7		Apr	10	8.127	-6.4	-1.165	(-)		03-1357-9054	
8			17	24.59	10.06	1.056	(+)		18-4412-2459	
9		May	15	31.97	17.44	1.582	(+)		17-2586-9782	
10			22	4.227	-10.3	-2.476	(-)	(-)	12-3844-9182	
11		Jul	17	21.32	6.793	0.7694			09-8504-8675	
12			18	16.02	1.493	0.1962			10-4662-8894	
13			24	13.66	-0.8669	-0.1234			16-1702-2885	
14		Aug	7	8.826	-5.701	-0.9994			09-7724-5826	
15			7	12.71	-1.817	-0.268			17-5259-0288	
16		Oct	9	18.27	3.743	0.4598			00-5989-7908	
17			9	22.28	7.753	0.8578			15-6204-9791	
18		Nov	6	9.595	-4.932	-0.8318			17-1235-9313	
19			6	17.47	2.943	0.37			06-2948-8818	
20	2019	Jan	15	6.722	-7.805	-1.546	(-)		12-9116-6442	
21			15	13.72	-0.8069	-0.1146			04-2771-4020	

**Appendix F**  
**Sample Check-In Sheet**



Sample Check-In Information

Client: Port of Olympia

Tests Performed: MY-C, AA-C, Cd-A, PP-A  
Test ID No(s): 1901-019, 1901-020, 1901-021, 1901-022

Sample ID:	BACT 11/4/19	BACT 11/6/19	BACT 11/8/19	
Log-in No. (10-xxxx):	9 009	19 015	19 018	
Sample Collection Date & Time:	11/4/19 0805	11/6/19 0840	11/8/19 0950	
Sample Receipt Date & Time:	11/4/19 0955	11/6/19 0950	11/8/19 1109	
Check-in Temperature (°C)	5.2	5.5	5.6	
Temperature OK?	(Y) N	(Y) N	(Y) N	Y N
DO (mg/L)	5.1	5.1	5.2	
pH (units)	7.04	7.09	7.17	
Conductivity (µS/cm)	1223	1406	1377	
Salinity (ppt)	0.6	0.7	0.7	
Tit. Vol / Sam. Vol / Alkalinity (mg/L)*	2.7 / 1.5 / 1540	2.3 / 1.5 / 1460	2.7 / 1.5 / 1540	1 1
Tit. Vol. / Sam. Vol. / Hardness (mg/L)* <sup>a</sup>	2.1 / 1.5 / 1420	2.7 / 1.5 / 1540	2.4 / 1.5 / 1480	1 1
Total Chlorine (mg/L)	0.03	<0.03	<0.03	
Total Ammonia Nitrogen (mg/L)	2.3	1.8	2.0	
Technician Initials	AL	AL	AL	

\* = mg/L as CaCO<sub>3</sub>, <sup>a</sup> = Measured for freshwater samples only, NA = Not Applicable,  
N/A = Not Measured

Freshwater Tests:

Control/Dilution Water Source: test type: CD-A 8.2 (DMW) MHW Other: 003 Alkalinity: 64 Hardness: 88

Control/Dilution Water Source: test type: 8.2 (DMW) MHW Other: 003 Alkalinity: 64 Hardness: 88

Additional Control? Y N = 003 Alkalinity: 64 Hardness: 88

Marine Tests:

Control/Dilution Water Source: test type: MY-C ART SW NAT SW Alkalinity: 92 Salinity: 29.1

Control/Dilution Water Source: test type: ART SW NAT SW Alkalinity: 92 Salinity: 29.1

Additional Control? Y N = 003 Alkalinity: 92 Salinity: 29.1

Sample Salted w/ artificial salt? Y N If yes, what ppt? 003 test type: 003

Sample salted w/brine? Y N If yes, what ppt? 003 test type: 003

Comments: Temperature for grab sample must be 0-20°C if received within 1 hour of collection time, 0-12°C if effluent received within

4 hours of collection time, and 0-6°C for all other samples.

Sample Description:

COC Complete? Y or N  
1 Y 2 Y 3 Y

Filtration? Y N N

Pore Size: 0.2  
Organisms or Debris

Aeration? Y N N

Length of Time: 0.5

Final DO: 5.1

Final pH: 7.1

Hardness Adjustment? Y N N

If adjusted, please see worksheet for details.

Sub-samples for additional chemistry:

QC Check: AL

**Appendix G**  
**Chain-of-Custody Forms**

**Washington**  
5013 Pacific Highway East, Suite 20  
Fife, WA 98424  
Phone: 252 072 8900

Date 1 Page 1 of 1

Receipt Temperature (°C)

Sample Collection By:

ANALYSES REQUIRED

Report to:

Invoice To:

Company

Company

Address

Address

City/State/Zip

City/State/Zip

Contact

Contact

Phone

Phone

Email

Email

SAMPLE ID

DATE

TIME

MATRIX

CONTAINER TYPE

NO. OF CONTAINERS

COMMENTS

Receipt Temperature (°C)

1

RACT11619

1-16-19

0840

H2O

submersibles

1

X

Furthend Acute

X

Daphnia Acute

X

Mytilus Chronic

X

Top smelt Chronic

SS

2

3

4

5

6

7

8

9

10

PROJECT INFORMATION

SAMPLE RECEIPT

RELINQUISHED BY (CLIENT)

RELINQUISHED BY (COURIER)

Client:

Total No. of Containers

(Signature)

(Time)

(Signature)

(Time)

PO No.:

Received Good Condition?

(Printed Name)

(Date)

(Printed Name)

(Date)

Shipped Via:

Matches Test Schedule?

(Company)

(Company)

SPECIAL INSTRUCTIONS/COMMENTS:

RECEIVED BY (COURIER)

RECEIVED BY (LABORATORY)

(Signature)

(Time)

(Signature)

(Time)

(Printed Name)

(Date)

(Signature)

(Date)

(Company)

(Company)

19-015

**Washington**  
5013 Pacific Highway East, Suite 20  
Fife, WA 98424  
Phone 253.872.8808

## Chain of Custody

Date 7-17-18 Page 1 of 1

[illegible]