

EPA Identification Number New Facility	NPDES Permit Number New Facility	Facility Name Project Macoma	OMB No. 2040-0004 Expires 07/31/2026
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Form 1 NPDES		<b>U.S. Environmental Protection Agency</b> <b>Application for NPDES Permit to Discharge Wastewater</b> <b>GENERAL INFORMATION</b>
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**SECTION 1. ACTIVITIES REQUIRING AN NPDES PERMIT (40 CFR 122.21(F) AND (F)(1))**

<b>Activities Requiring an NPDES Permit</b>	<b>1.1</b>	<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> or has your permitting authority directed you to submit Form 2A?  If yes, STOP. Do NOT complete Form 1. Complete Form 2A. If the facility is also a <b>treatment works treating domestic sewage</b> , you must also complete Form 2S.	1.1.2 Is the facility a <b>sludge-only facility</b> (i.e., a facility that does not discharge wastewater to surface waters)?  If yes, STOP. Do NOT complete Form 1. Complete Form 2S.
	1.1.1	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, STOP. Do NOT complete Form 1. Complete Form 2A. If the facility is also a <b>treatment works treating domestic sewage</b> , you must also complete Form 2S.	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, STOP. Do NOT complete Form 1. Complete Form 2S.
	<b>1.2</b>	<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 type="checkbox"/> Yes → Complete Form 1 and Form 2C. <input checked="" 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 checked="" type="checkbox"/> Yes → Complete Form 1 and Form 2D. <input 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	1.2.6 Is the facility a new or existing <b>treatment works treating domestic sewage</b> that discharges wastewater to surface waters?  <input type="checkbox"/> Yes → Complete Form 1, Form 2S, and any other applicable forms, as directed by your permitting authority. <input checked="" type="checkbox"/> No	

**SECTION 2. NAME, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(F)(2))**

<b>Name, Mailing Address, and Location</b>	<b>2.1</b>	<b>Facility Name</b>		
		Project Macoma		
	<b>2.2</b>	<b>EPA Identification Number</b>		
		New Facility		
	<b>2.3</b>	<b>Facility Contact</b>		
	Name (first and last)	Title	Phone number	
	Todd Pelman	COO and Chief Engineer	(415) 275-0449	
	Email address			
	tp@ebbcarbon.com			

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<b>Name, Mailing Address, and Location Continued</b>	<b>2.4</b>	<b>Facility Mailing Address</b>			
	Street or P.O. box 950 Commercial Street				
	City or town San Carlos		State California	ZIP code 94070	
	<b>2.5</b>	<b>Facility Location</b>			
	Street, route number, or other specific identifier 1301 Marine Drive, Terminal 7				
	County name Clallam County		County code (if known)		
	City or town Port Angeles		State Washington	ZIP code 98363	
	<b>SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(F)(3))</b>				
	<b>SIC and NAICS Codes</b>	<b>3.1</b>	<b>SIC Code(s)</b>	<b>Description (optional)</b>	
		8731		Commercial Physical and Biological Research	
<b>3.2</b>		<b>NAICS Code(s)</b>	<b>Description (optional)</b>		
541715		Research and Development in the Physical, Engineering and Life Sciences (except			
<b>SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(F)(4))</b>					
<b>Operator Information</b>	<b>4.1</b>	<b>Name of Operator</b>			
	Project Macoma, LLC				
	<b>4.2</b>	Is the name you listed in Item 4.1 also the owner?			
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
	<b>4.3</b>	<b>Operator Status</b>			
<input type="checkbox"/> Public—federal <input type="checkbox"/> Public—state <input type="checkbox"/> Other public (specify) _____ <input checked="" type="checkbox"/> Private <input type="checkbox"/> Other (specify) _____					
<b>4.4</b>	<b>Phone Number of Operator</b>				
(415) 275-0449					



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<b>Operator Information Continued</b>	<b>4.5</b>	<b>Operator Address</b>	
	Street or P.O. Box		
	950 Commercial Street		
	City or town San Carlos	State California	ZIP code 94070
		Email address of operator tp@ebbcarbon.com	

<b>SECTION 5. INDIAN LAND (40 CFR 122.21(F)(5))</b>	
<b>Indian Land</b>	<b>5.1</b> Is the facility located on Indian Land? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<b>SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(F)(6))</b>			
<b>Existing Environmental Permits</b>	<b>6.1</b>	<b>Existing Environmental Permits</b> (check all that apply and print or type the corresponding permit number for each)	
	<input type="checkbox"/> NPDES (discharges to surface water) <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)		

<b>SECTION 7. MAP (40 CFR 122.21(F)(7))</b>	
<b>Map</b>	<b>7.1</b> 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"/> CAFO—Not Applicable (See requirements in Form 2B.)

<b>SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(F)(8))</b>	
<b>Nature of Business</b>	<b>8.1</b> Describe the nature of your business.  Ebb Carbon is proposing a temporary pilot-scale marine carbon dioxide removal (mCDR) project at a site within Terminal 7 of the Port in Port Angeles, Washington. The purpose of the proposed pilot project is to operate Ebb Carbon's mCDR technology under real-world conditions, support scientific research through scientific and academic collaborations, and gather additional data to inform future deployments. The ultimate aim of this endeavor is to remove and permanently sequester CO <sub>2</sub> while reducing seawater acidity locally.  Ebb Carbon's mCDR technology removes acid from seawater, generating alkaline-enhanced seawater. Ebb Carbon returns the alkaline-enhanced seawater to the ocean, which enables the ocean to absorb and store additional CO <sub>2</sub> from the atmosphere. The proposed pilot project would intake seawater via a barge moored at the Terminal 7 dock and would pipe the seawater over the existing Terminal 7 pier structures to a modular treatment facility that would process and deacidify the seawater before returning it to Port Angeles Harbor via the barge-based outfall system.

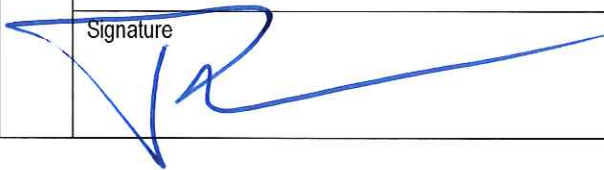
<b>SECTION 9. COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(F)(9))</b>	
<b>Cooling Water Intake Structures</b>	<b>9.1</b> Does your facility use cooling water? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 10.1.
	<b>9.2</b> Identify the source of cooling water. (Note 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.)

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### SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(F)(10))

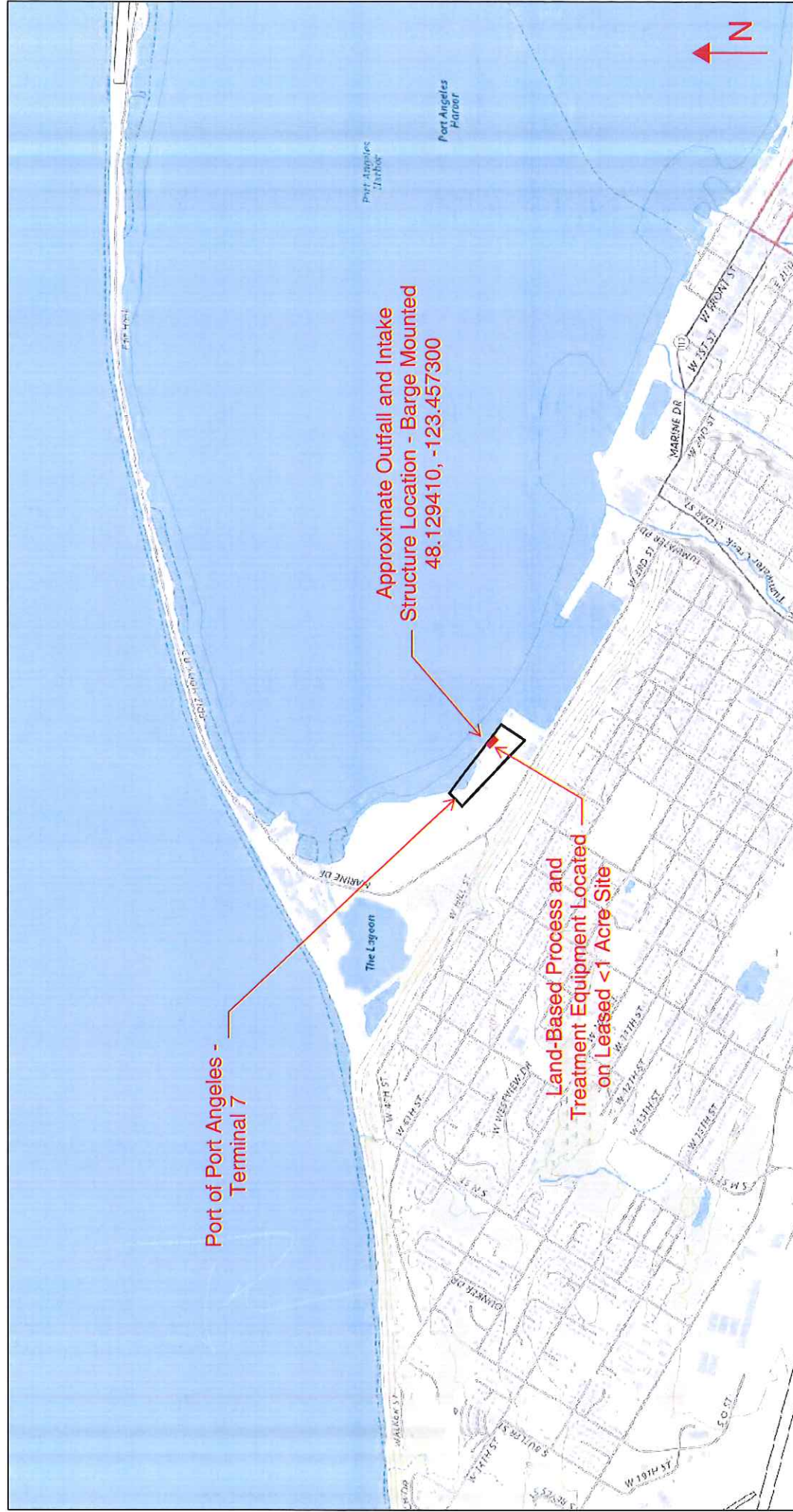
Variance Requests	<b>10.1</b>	Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(m)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)	
	<input type="checkbox"/>	Fundamentally different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

### SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(A) AND (D))

Checklist and Certification Statement	<b>11.1</b>	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.	
		<b>Column 1</b>	<b>Column 2</b>
	<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 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 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
	<b>11.2</b>	Provide the following certification. (See instructions to determine the appropriate person to sign the application.)	
	<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) Todd Pelman		Official title COO and Chief Engineer	
Signature 		Date signed 02/01/2024	



# Ebb Carbon Marine Carbon Dioxide Removal Pilot Project (Project Macoma)




1:22,179

0 500 1,000 2,000 ft  
0 300 600 1,200 m

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems, U.S. Census Bureau TIGER/Line

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Form 2D NPDES			U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater <b>NEW MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL OPERATIONS          THAT HAVE NOT YET COMMENCED DISCHARGE OF PROCESS WASTEWATER</b>		
<b>SECTION 1. EXPECTED OUTFALL LOCATION (40 CFR 122.21(K)(1))</b>					
Outfall Location	<u>1.1</u>	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	Port Angeles Harbor	48.129410	-123.457300
<b>SECTION 2. EXPECTED DISCHARGE DATE (40 CFR 122.21(K)(2))</b>					
Expected Discharge Date	<u>2.1</u>	<b>Month</b>	<b>Day</b>	<b>Year</b>	
		July	1	2024	
<b>SECTION 3. AVERAGE FLOWS AND TREATMENT (40 CFR 122.21(K)(3)(I))</b>					
Average Flows and Treatment	<u>3.1</u>	For each outfall identified under Item 1.1, provide average flow and treatment information. Add additional sheets as necessary.			
		<b>**Outfall Number**</b> 001			
		<b>Operations Contributing to Flow</b>			
		<b>Operation</b>	<b>Average Flow</b>		
		Alkaline Product (see Description in Section 4.1 Attachment)	0.0374 mgd		
		Neutralized Acid (see Description in Section 4.1 Attachment)	0.0374 mgd		
		Pretreatment Reject (see Description in Section 4.1 Attachment)	0.1712 mgd		
			mgd		
			mgd		
		<b>Treatment Units</b>			
		<b>Description</b> (include size, flow rate through each treatment unit, retention time, etc.)	<b>Code from Exhibit 2D-1</b>	<b>Final Disposal of Solid or Liquid Wastes Other Than by Discharge</b>	



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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>		
				mgd		
				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 Exhibit 2D-1</b>	<b>Final Disposal of Solid or Liquid Wastes Other Than by Discharge</b>	
		<b>**Outfall Number**</b>				
		<b>Operations Contributing to Flow</b>				
		<b>Operation</b>		<b>Average Flow</b>		
				mgd		
				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 Exhibit 2D-1</b>	<b>Final Disposal of Solid or Liquid Wastes Other Than by Discharge</b>	

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**SECTION 4. LINE DRAWING (40 CFR 122.21(K)(3)(II))**

Line Drawing	<u>4.1</u>	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 2D-2 at end of instructions for example.)
	<input checked="" type="checkbox"/>	Yes

**SECTION 5. INTERMITTENT OR SEASONAL FLOWS (40 CFR 122.21(K)(3)(III))**

Intermittent or Seasonal Flows	<u>5.1</u>	Except for stormwater runoff, leaks, or spills, are any expected discharges described in Sections 1 and 3 intermittent or seasonal?					
		<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No → SKIP to Section 6.		
	<u>5.2</u>	Provide information on intermittent or seasonal flows for each applicable outfall. Attach additional pages, if necessary.					
	Outfall Number	Operations (list)	Frequency		Rate and Volume		Duration
			Average Days/Week	Average Months/Year	Maximum Daily Discharge	Maximum Total Volume	
			days/week	months/year	mgd	gallons	days
			days/week	months/year	mgd	gallons	days
			days/week	months/year	mgd	gallons	days
	Outfall Number	Operations (list)	Frequency		Rate and Volume		Duration
			Average Days/Week	Average Months/Year	Maximum Daily Discharge	Maximum Total Volume	
			days/week	months/year	mgd	gallons	days
			days/week	months/year	mgd	gallons	days
			days/week	months/year	mgd	gallons	days
	Outfall Number	Operations (list)	Frequency		Rate and Volume		Duration
			Average Days/Week	Average Months/Year	Maximum Daily Discharge	Maximum Total Volume	
		days/week	months/year	mgd	gallons	days	
		days/week	months/year	mgd	gallons	days	
		days/week	months/year	mgd	gallons	days	

**SECTION 6. PRODUCTION (40 CFR 122.21(K)(4))**

Production	<u>6.1</u>	Do any effluent limitation guidelines (ELGs) promulgated by EPA under CWA Section 304 apply to your facility?	
		<input type="checkbox"/>	Yes
		<input checked="" type="checkbox"/>	No → SKIP to Section 7.
	<u>6.2</u>	Provide the following information on applicable ELGs.	
		ELG Category	ELG Subcategory



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Production Continued	<a href="#">6.3</a>	Are the limitations in the applicable ELGs expressed in terms of production (or other measure of operation)? <input type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 7.			
	<a href="#">6.4</a>	Provide an expected measure of average daily production expressed in terms and units of applicable ELGs.			
	Expected Actual Average Daily Production for First Three Years				
	Outfall Number	Year	Operation, Product, or Material	Quantity per Day (note basis if applicable)	Unit of Measure
		Year 1			
		Year 2			
		Year 3			
		Year 1			
		Year 2			
		Year 3			
	Year 1				
	Year 2				
	Year 3				

SECTION 7. EFFLUENT CHARACTERISTICS (40 CFR 122.21(K)(5))		
Effluent Characteristics	See the instructions to determine the parameters and pollutants you are required to monitor and, in turn, the tables you must complete. Note that not all applicants need to complete each table.	
	Table A. Conventional and Non-Conventional Parameters	
	<a href="#">7.1</a>	Are you requesting a waiver from your NPDES permitting authority for any Table A parameters for any of your outfalls? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.3.
	<a href="#">7.2</a>	If yes, indicate the applicable outfalls below or check the appropriate box to indicate that you are requesting a waiver for all outfalls. Attach waiver request and other required information to the application. Outfall number _____ Outfall number _____ Outfall number _____ <input type="checkbox"/> I am requesting a waiver for some pollutants at all outfalls. <input type="checkbox"/> I am requesting a waiver for all pollutants at all outfalls → SKIP to Item 7.4.
	<a href="#">7.3</a>	Have you have provided estimates or actual data for all Table A parameters for 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
	Table B. Certain Conventional and Non-Conventional Pollutants	
	<a href="#">7.4</a>	Have you checked "Believed Present" for all pollutants listed in Table B that are limited directly or indirectly by an applicable ELG? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
<a href="#">7.5</a>	Have you checked "Believed Present" or "Believed Absent" for all remaining pollutants listed in Table B? <input checked="" type="checkbox"/> Yes	

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		<p><b>7.6</b> Have you provided estimated data for those Table B pollutants for which you have indicated are "Believed Present" in your discharge?</p> <p><input checked="" type="checkbox"/> Yes</p>			
Effluent Characteristics Continued		<p><b>Table C. Toxic Metals, Total Cyanide, and Total Phenols</b></p>			
		<p><b>7.7</b> Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table C for all outfalls?</p> <p><input checked="" type="checkbox"/> Yes</p>			
		<p><b>7.8</b> Have you completed Table C by providing estimated data for pollutants you indicated are "Believed Present," including the source of the information, for each applicable outfall?</p> <p><input checked="" type="checkbox"/> Yes</p>			
		<p><b>Table D. Organic Toxic Pollutants (GC/MS Fractions)</b></p>			
		<p><b>7.9</b> Do you qualify for a small business exemption under the criteria specified in the Instructions?</p> <p><input type="checkbox"/> Yes → Note that you qualify at the top of Table D, then SKIP to Item 7.12. <input checked="" type="checkbox"/> No</p>			
		<p><b>7.10</b> Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table D for all outfalls?</p> <p><input checked="" type="checkbox"/> Yes</p>			
		<p><b>7.11</b> Have you completed Table D by providing estimated data for pollutants you indicated are "Believed Present," including the source of the information, for each applicable outfall?</p> <p><input checked="" type="checkbox"/> Yes</p>			
		<p><b>2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD)</b></p>			
		<p><b>7.12</b> 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 effluent from any of your outfalls?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>			
		<p><b>Table E. Certain Hazardous Substances and Asbestos</b></p>			
		<p><b>7.13</b> Have you indicated whether pollutants are "Believed Present" or "Believed Absent" for all pollutants listed in Table E for all outfalls?</p> <p><input checked="" type="checkbox"/> Yes</p>			
		<p><b>7.14</b> Have you completed Table E by reporting the reason the pollutants are expected to be present and available quantitative data for pollutants you indicated are "Believed Present" for each applicable outfall?</p> <p><input checked="" type="checkbox"/> Yes</p>			
		<p><b>Intake Credits, Tables A through E</b></p>			
		<p><b>7.15</b> Are you applying for net credits for the presence of any of the pollutants in Tables A through E for any of your outfalls?</p> <p><input type="checkbox"/> Yes → Consult with your NPDES permitting authority. <input checked="" type="checkbox"/> No</p>			
<p><b>SECTION 8. ENGINEERING REPORT (40 CFR 122.21(K)(6))</b></p>					
Engineering Report		<p><b>8.1</b> Do you have any technical evaluations of your wastewater treatment, including engineering reports or pilot plant studies?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 8.3.</p>			
		<p><b>8.2</b> Have you provided the technical evaluation and all related documents to this application package?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>			
		<p><b>8.3</b> Are you aware of any existing plant(s) whose production processes, wastewater constituents, or wastewater treatment resemble those at your facility?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 9.</p>			



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<b>Engineering Report Continued</b>	<u>8.4</u>	Provide the names and locations of the similar plants.			
		<b>Name of Similar Plant</b>	<b>Location of Similar Plant</b>		

SECTION 9. OTHER INFORMATION (40 CFR 122.21(K)(7))					
<b>Other Information</b>	<u>9.1</u>	Have you attached any optional information that you would like considered as part of the application review process (i.e., material beyond that which you have already noted in the application as being attached)?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 10.			
	<u>9.2</u>	List the additional items and briefly note why you have included them.			
		1.			
		2.			
		3.			
		4.			
	5.				

SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(A) AND (D))					
<b>Checklist and Certification Statement</b>	<u>10.1</u>	In Column 1 below, mark the sections of Form 2D 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 tables, or provide attachments.			
		<b>Column 1</b>	<b>Column 2</b>		
	<input checked="" type="checkbox"/>	Section 1: Expected Outfall Location	<input type="checkbox"/>	w/ attachments (e.g., responses for additional outfalls)	
	<input checked="" type="checkbox"/>	Section 2: Expected Discharge Date	<input type="checkbox"/>	w/ attachments	
	<input checked="" type="checkbox"/>	Section 3: Average Flows and Treatment	<input type="checkbox"/>	w/ attachments	
	<input checked="" type="checkbox"/>	Section 4: Line Drawing	<input checked="" type="checkbox"/>	w/ line drawing	<input checked="" type="checkbox"/> w/ additional attachments
	<input checked="" type="checkbox"/>	Section 5: Intermittent or Seasonal Flows	<input type="checkbox"/>	w/ attachments	
	<input checked="" type="checkbox"/>	Section 6: Production	<input type="checkbox"/>	w/ attachments	
	<input checked="" type="checkbox"/>	Section 7: Effluent Characteristics	<input type="checkbox"/>	w/ Table A waiver request or approval	<input checked="" type="checkbox"/> Table A
			<input checked="" type="checkbox"/>	Table B	<input checked="" type="checkbox"/> Table C
			<input checked="" type="checkbox"/>	Table D	<input checked="" type="checkbox"/> Table E
			<input type="checkbox"/>	w/ other attachments	
<input checked="" type="checkbox"/>	Section 8: Engineering Report	<input checked="" type="checkbox"/>	w/ technical evaluations and related attachments		
<input type="checkbox"/>	Section 9: Other Information	<input type="checkbox"/>	w/ optional information		
<input checked="" type="checkbox"/>	Section 10: Checklist and Certification Statement	<input type="checkbox"/>	w/ attachments		

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Checklist and Certification Statement Continued	<u>10.2</u>	Provide the following certification. (See instructions to determine the appropriate person to sign the application.)	
		<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
		Todd Pelman	COO and Chief Engineer
	Signature	Date signed	
		02/01/2024	



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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETER ESTIMATES (40 CFR 122.21(K)(5)(i))<sup>1</sup>

	Pollutant	Waiver Requested (if applicable)	Units	Effluent Data			Intake Water	
				Maximum Daily Discharge (required)	Average Daily Discharge (if available)	Source of Information (use codes in instructions)	Believed Present? (check only one response per parameter)	
<input type="checkbox"/>	Check here if you have applied to your NPDES 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 Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
2.	Chemical oxygen demand (COD)	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
3.	Total organic carbon (TOC)	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
4.	Total suspended solids (TSS)	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5.	Ammonia (as N)	<input type="checkbox"/>	Concentration Mass	0.03	0.03	Concentration as measured in <sup>±</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
6.	Flow	<input type="checkbox"/>	Rate	0.146	0.146	1 - Engineering Report/Mixing <sup>±</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
7.	Temperature (winter)	<input type="checkbox"/>	°C	20.4	20.4	1 - Engineering Report/Mixing <sup>±</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	Temperature (summer)	<input type="checkbox"/>	°C	20.4	20.4	1 - Engineering Report/Mixing <sup>±</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8.	pH (minimum)	<input type="checkbox"/>	Standard units	9.8	9.8	1 - Engineering Report/Mixing <sup>±</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	pH (maximum)	<input type="checkbox"/>	Standard units	9.8	9.8	1 - Engineering Report/Mixing <sup>±</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

<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 B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(K)(5)(II))<sup>1</sup>**

Pollutant		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present or Limited by an ELG (provide both concentration and mass estimates for each pollutant)				Intake Water	
		Believed Present	Believed Absent	Units	Effluent		Source of Information (use codes in instructions)	Believed Present? (check only one response per item)	
					Maximum Daily Discharge (required)	Average Daily Discharge (if available)			
<input type="checkbox"/>	Check (✓) here if you believe all pollutants listed to be absent from the discharge. You need not complete Table B for the noted outfall <i>unless</i> you have quantitative data available.								
1.	Bromide (24959-67-9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	mg/L <input checked="" type="checkbox"/>	36.8 <input checked="" type="checkbox"/>	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2.	Chlorine, total residual	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3.	Color	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4.	Fecal coliform	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5.	Fluoride (16984-48-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6.	Nitrate-nitrite	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7.	Nitrogen, total organic (as N)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
8.	Oil and grease	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
9.	Phosphorus (as P), total (7723-14-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
10.	Sulfate (as SO <sub>4</sub> ) (14808-79-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	mg/L <input checked="" type="checkbox"/>	3400 <input checked="" type="checkbox"/>	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
11.	Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	



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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(K)(5)(II)) <sup>1</sup>									
Estimated Data for Pollutants Expected to Be Present or Limited by an ELG (provide both concentration and mass estimates for each pollutant)									
Pollutant	Presence or Absence (check one)		Effluent				Intake Water		
	Believed Present	Believed Absent	Units	Maximum Daily Discharge (required)	Average Daily Discharge (if available)	Source of Information (use codes in instructions)	Believed Present? (check only one response per item)		
12. Sulfite (as SO <sub>3</sub> ) (14265-45-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
13. Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
14. Aluminum, total (7429-90-5)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	0.04 <input checked="" type="checkbox"/>	0.04 <input checked="" type="checkbox"/>	Estimated for Olivine neutralization scenarios only.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
15. Barium, total (7440-39-3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
16. Boron, total (7440-42-8)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
17. Cobalt, total (7440-48-4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass	0.07 <input checked="" type="checkbox"/>	0.07 <input checked="" type="checkbox"/>	Estimated for Olivine neutralization scenarios only.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
18. Iron, total (7439-89-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
19. Magnesium, total (7439-95-4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concentration Mass			Estimated for Olivine neutralization scenarios only.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
20. Molybdenum, total (7439-98-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass	895 <input checked="" type="checkbox"/>	895 <input checked="" type="checkbox"/>		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
21. Manganese, total (7439-96-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
22. Tin, total (7440-31-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.21(K)(5)(II)) <sup>1</sup>								
Pollutant		Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present or Limited by an ELG (provide both concentration and mass estimates for each pollutant)				
		Believed Present	Believed Absent	Effluent		Intake Water		
				Units	Maximum Daily Discharge (required)	Average Daily Discharge (if available)	Source of Information (use codes in instructions)	Believed Present? (check only one response per item)
23.	Titanium, total (7440-32-6)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
				Mass				
24.	Radioactivity							
24.1	Alpha, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				<input type="checkbox"/> Yes <input type="checkbox"/> No
				Mass				
24.2	Beta, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				<input type="checkbox"/> Yes <input type="checkbox"/> No
				Mass				
24.3	Radium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				<input type="checkbox"/> Yes <input type="checkbox"/> No
				Mass				
24.4	Radium 226, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concentration				<input type="checkbox"/> Yes <input type="checkbox"/> No
				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. TOXIC METALS, TOTAL CYANIDE, AND TOTAL PHENOLS (40 CFR 122.21(K)(5)(III)(A))<sup>1</sup>

Pollutant (CAS Number, if available)	Presence or Absence (check one)		Estimated Data for Pollutants Expected to Be Present in Discharge (Provide both concentration and mass estimates for each pollutant.)				Intake Water	
	Believed Present	Believed Absent	Effluent		Units	Source of Information (Use codes in Instructions.)	Believed Present? (Check only one response per pollutant.)	
			Maximum Daily Discharge (required)	Average Daily Discharge (if available)				
<input type="checkbox"/> Check (✓) here if you believe all pollutants listed to be absent from the discharge. You need not complete Table C for the noted outfall unless you have quantitative data available.								
1. Antimony, Total (7440-36-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Concentration Mass		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2. Arsenic, Total (7440-38-2)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Concentration Mass		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
3. Beryllium, Total (7440-41-7)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Concentration Mass		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4. Cadmium, Total (7440-43-9)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.05	0.05	ug/L Mass	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Chromium, Total (7440-47-3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.2	0.2	ug/L Mass	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
6. Copper, Total (7440-50-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.3	0.3	ug/L Mass	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
7. Lead, Total (7439-92-1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.2	0.2	ug/L Mass	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
8. Mercury, Total (7439-97-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	.045	.045	ng/L Mass	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
9. Nickel, Total (7440-02-0)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	1	ug/L Mass	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
10. Selenium, Total (7782-49-2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.5	0.5	ug/L Mass	Estimated	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11. Silver, Total (7440-22-4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Concentration Mass		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
12. Thallium, Total (7440-28-0)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Concentration Mass		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
13. Zinc, Total (7440-66-6)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	1	ug/L Mass	Estimated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Cyanide, Total (57-12-5)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Concentration Mass		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
15. Phenols, Total	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Concentration Mass		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

<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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**Estimated Data for Pollutants Expected to Be Present in Discharge**  
(provide both concentration and mass estimates for each pollutant)

Pollutant (CAS Number, if available)	Presence or Absence (check one)		Units	Effluent			Intake Water	
	Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)		
<input checked="" type="checkbox"/> Check here if all pollutants listed in Table D are expected to be absent from your facility's discharge.								
<input type="checkbox"/> Check here if the facility believes it is exempt from Table D reporting requirements because it is a qualified small business. See the instructions for exemption criteria and for a list of materials you must attach to the application.								
<b>Note:</b> If you check either of the above boxes, you do not need to complete Table D for the noted outfall <i>unless</i> you have quantitative data available.								
<b>1. Organic Toxic Pollutants (GC/MS Fraction—Volatile Compounds)</b>								
1.1 Acrolein (107-02-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.2 Acrylonitrile (107-13-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.3 Benzene (71-43-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.4 Bromoform (75-25-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.5 Carbon tetrachloride (56-23-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.6 Chlorobenzene (108-90-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.7 Chlorodibromomethane (124-48-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.8 Chloroethane (75-00-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.9 2-chloroethylvinyl ether (110-75-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.10 Chloroform (67-66-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No
1.11 Dichlorobromomethane (75-27-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass					<input type="checkbox"/> Yes <input type="checkbox"/> No

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Pollutant (CAS Number, if available)	Presence or Absence (check one)		Units	Effluent (provide both concentration and mass estimates for each pollutant)			Intake Water Believed Present? (check only one response per pollutant)
	Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	
1.12 1,1-dichloroethane (75-34-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.13 1,2-dichloroethane (107-06-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.14 1,1-dichloroethylene (75-35-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.15 1,2-dichloropropane (78-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.16 1,3-dichloropropylene (542-75-6)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.17 Ethylbenzene (100-41-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.18 Methyl bromide (74-83-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.19 Methyl chloride (74-87-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.20 Methylene chloride (75-09-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.21 1,1,2,2-tetrachloroethane (79-34-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.22 Tetrachloroethylene (127-18-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.23 Toluene (108-88-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.24 1,2-trans-dichloroethylene (156-60-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No

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Pollutant (CAS Number, if available)		Presence or Absence (check one)		Units	Effluent			Intake Water
		Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	
1.25	1,1,1-trichloroethane (71-55-6)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.26	1,1,2-trichloroethane (79-00-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.27	Trichloroethylene (79-01-6)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
1.28	Vinyl chloride (75-01-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Organic Toxic Pollutants (GC/MS Fraction—Acid Compounds)								
2.1	2-chlorophenol (95-57-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.2	2,4-dichlorophenol (120-83-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.3	2,4-dimethylphenol (105-67-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.4	4,6-dinitro-o-cresol (534-52-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.5	2,4-dinitrophenol (51-28-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.6	2-nitrophenol (88-75-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.7	4-nitrophenol (100-02-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.8	p-chloro-m-cresol (59-50-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
2.9	Pentachlorophenol (87-86-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No



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**TABLE D. ORGANIC TOXIC POLLUTANTS (GAS CHROMATOGRAPHY/MASS SPECTROMETRY OR GC/MS FRACTIONS) (40 CFR 122.21(k)(5)(III)(B))<sup>1</sup>**

Estimated Data for Pollutants Expected to Be Present in Discharge (provide both concentration and mass estimates for each pollutant)									
Pollutant (CAS Number, if available)	Presence or Absence (check one)		Units	Effluent			Intake Water		
	Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)			
								Believed Present?	
2.10 Phenol (108-95-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
2.11 2,4,6-trichlorophenol (88-05-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3. Organic Toxic Pollutants (GC/MS Fraction—Base /Neutral Compounds)									
3.1 Acenaphthene (83-32-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.2 Acenaphthylene (208-96-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.3 Anthracene (120-12-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.4 Benzidine (92-87-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.5 Benzo (a) anthracene (56-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.6 Benzo (a) pyrene (50-32-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.7 3,4-benzofluoranthene (205-99-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.8 Benzo (ghi) perylene (191-24-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.9 Benzo (k) fluoranthene (207-08-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.10 Bis (2-chloroethoxy) methane (111-91-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.11 Bis (2-chloroethyl) ether (111-44-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No		

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Pollutant (CAS Number, if available)		Presence or Absence (check one)		Units	Effluent			Intake Water	
		Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	Believed Present? (check only one response per pollutant)	
3.12	Bis (2-chloroisopropyl) ether (102-80-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.13	Bis (2-ethylhexyl) phthalate (117-81-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.14	4-bromophenyl phenyl ether (101-55-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.15	Butyl benzyl phthalate (85-68-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.16	2-chloronaphthalene (91-58-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.17	4-chlorophenyl phenyl ether (7005-72-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.18	Chrysene (218-01-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.19	Dibenzo (a,n) anthracene (53-70-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.20	1,2-dichlorobenzene (95-50-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.21	1,3-dichlorobenzene (541-73-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.22	1,4-dichlorobenzene (106-46-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.23	3,3-dichlorobenzidine (91-94-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.24	Diethyl phthalate (84-66-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	
3.25	Dimethyl phthalate (131-11-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No	

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Pollutant (CAS Number, if available)		Presence or Absence (check one)		Units	Effluent (provide both concentration and mass estimates for each pollutant)			Intake Water
		Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	
3.26	Di-n-butyl phthalate (84-74-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.27	2,4-dinitrotoluene (121-14-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.28	2,6-dinitrotoluene (606-20-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.29	Di-n-octyl phthalate (117-84-0)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.30	1,2-diphenylhydrazine (as azobenzene) (122-66-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.31	Fluoranthene (206-44-0)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.32	Fluorene (86-73-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.33	Hexachlorobenzene (118-74-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.34	Hexachlorobutadiene (87-68-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.35	Hexachlorocyclopentadiene (77-47-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.36	Hexachloroethane (67-72-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.37	Indeno (1,2,3-cd) pyrene (193-39-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.38	Isophorone (78-59-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.39	Naphthalene (91-20-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No



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Pollutant (CAS Number, if available)		Presence or Absence (check one)		Units	Effluent			Intake Water
		Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	
3.40	Nitrobenzene (98-95-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.41	N-nitrosodimethylamine (62-75-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.42	N-nitrosodi-n-propylamine (621-64-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.43	N-nitrosodiphenylamine (86-30-6)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.44	Phenanthrene (85-01-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.45	Pyrene (129-00-0)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
3.46	1,2,4-trichlorobenzene (120-82-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Organic Toxic Pollutants (GC/MS Fraction—Pesticides)								
4.1.	Aldrin (309-00-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.2	$\alpha$ -BHC (319-84-6)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.3	$\beta$ -BHC (319-85-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.4	$\gamma$ -BHC (58-89-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.5	$\delta$ -BHC (319-86-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.6	Chlordane (57-74-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No

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(provide both concentration and mass estimates for each pollutant)

Pollutant (CAS Number, if available)	Presence or Absence (check one)		Units	Effluent			Intake Water
	Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	
4.7 4,4'-DDT (50-29-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.8 4,4'-DDE (72-55-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.9 4,4'-DDD (72-54-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.10 Dieldrin (60-57-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.11 $\alpha$ -endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.12 $\beta$ -endosulfan (115-29-7)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.13 Endosulfan sulfate (1031-07-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.14 Endrin (72-20-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.15 Endrin aldehyde (7421-93-4)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No

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Pollutant (CAS Number, if available)		Presence or Absence (check one)		Units	Effluent (provide both concentration and mass estimates for each pollutant)			Intake Water
		Believed Present	Believed Absent		Maximum Daily Discharge	Average Daily Discharge	Source of Information (use codes in instructions)	
4.16	Heptachlor (76-44-8)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.17	Heptachlor epoxide (1024-57-3)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.18	PCB-1242 (53469-21-9)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.19	PCB-1254 (11097-69-1)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.20	PCB-1221 (11104-28-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.21	PCB-1232 (11141-16-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.22	PCB-1248 (12672-29-6)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.23	PCB-1260 (11096-82-5)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.24	PCB-1016 (12674-11-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No
4.25	Toxaphene (8001-35-2)	<input type="checkbox"/>	<input type="checkbox"/>	Concentration Mass				<input type="checkbox"/> Yes <input type="checkbox"/> No

<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. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(K)(5)(V))<sup>1</sup>

Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
	Believed Present	Believed Absent		
<input checked="" type="checkbox"/> Check (✓) here if you believe all pollutants listed to be absent from the discharge. You need not complete Table E for the noted outfall <i>unless</i> you have quantitative data available.				
1. Asbestos	<input type="checkbox"/>	<input type="checkbox"/>		
2. Acetaldehyde	<input type="checkbox"/>	<input type="checkbox"/>		
3. Allyl alcohol	<input type="checkbox"/>	<input type="checkbox"/>		
4. Allyl chloride	<input type="checkbox"/>	<input type="checkbox"/>		
5. Amyl acetate	<input type="checkbox"/>	<input type="checkbox"/>		
6. Aniline	<input type="checkbox"/>	<input type="checkbox"/>		
7. Benzonitrile	<input type="checkbox"/>	<input type="checkbox"/>		
8. Benzyl chloride	<input type="checkbox"/>	<input type="checkbox"/>		
9. Butyl acetate	<input type="checkbox"/>	<input type="checkbox"/>		
10. Butylamine	<input type="checkbox"/>	<input type="checkbox"/>		
11. Captan	<input type="checkbox"/>	<input type="checkbox"/>		
12. Carbaryl	<input type="checkbox"/>	<input type="checkbox"/>		
13. Carbofuran	<input type="checkbox"/>	<input type="checkbox"/>		
14. Carbon disulfide	<input type="checkbox"/>	<input type="checkbox"/>		
15. Chlorpyrifos	<input type="checkbox"/>	<input type="checkbox"/>		
16. Coumaphos	<input type="checkbox"/>	<input type="checkbox"/>		
17. Cresol	<input type="checkbox"/>	<input type="checkbox"/>		
18. Crotonaldehyde	<input type="checkbox"/>	<input type="checkbox"/>		

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**TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(K)(5)(V))<sup>1</sup>**

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

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TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(k)(5)(v))<sup>1</sup>

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



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

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TABLE E. CERTAIN HAZARDOUS SUBSTANCES AND ASBESTOS (40 CFR 122.21(K)(5)(V))<sup>1</sup>

Pollutant	Presence or Absence (check one)		Reason Pollutant Believed Present in Discharge	Available Quantitative Data (specify units)
	Believed Present	Believed Absent		
76. Vanadium	<input type="checkbox"/>	<input type="checkbox"/>		
77. Vinyl acetate	<input type="checkbox"/>	<input type="checkbox"/>		
78. Xylene	<input type="checkbox"/>	<input type="checkbox"/>		
79. Xylenol	<input type="checkbox"/>	<input type="checkbox"/>		
80. Zirconium	<input type="checkbox"/>	<input type="checkbox"/>		

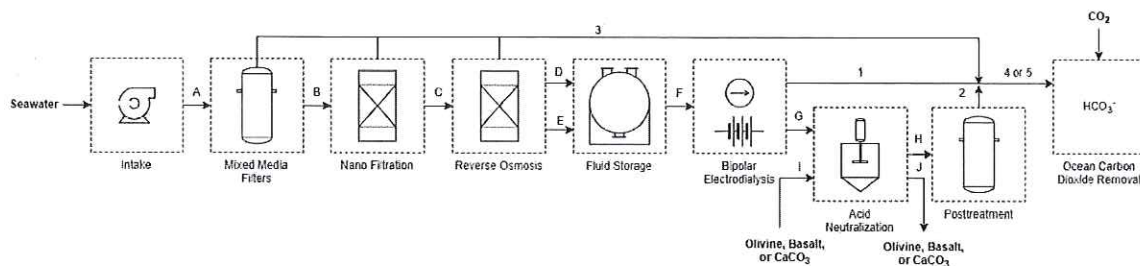
<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

## Form 2D Attachment

### Process Flow Diagram, Effluent Flow and Effluent Water Quality

The proposed Project Macoma, LLC facility would produce three process streams, as shown schematically in the Process Flow Diagram (Figure 1). Typically, the three process streams would be discharged as a combined flow through the outfall. However, Project Macoma, LLC may operate the pilot facility, for limited durations, discharging only one or two of the component flow streams. These atypical operational strategies would provide additional data to Project Macoma, LLC and further the understanding of potential impacts of the discharge to water chemistry/water quality. Each individual process stream is summarized as follows:

1. Outfall Stream 1 Alkaline Product – Saltwater solution with enhanced alkalinity produced via the bipolar electrodialysis (BPED) process.
2. Outfall Stream 2 Neutralized Acid – The acidic process stream produced via the BPED process is neutralized followed by post-neutralization settling and filtration. Neutralization may be achieved using mafic rocks (i.e., Olivine or basalt) or calcium carbonate ( $\text{CaCO}_3$ ).
3. Outfall Stream 3 Pretreatment Reject – Saltwater reject from various filtration pretreatment steps. Most of this stream is comprised of nanofiltration (NF) membrane reject, but the process stream also includes flushes of other pretreatment processes as part of routine maintenance.



**Figure 1. Process Flow Diagram**

The dilution and water chemistry modeling discussed in the Port Angeles Mixing Analysis Technical Memorandum (included as an attachment to the Engineering Report) evaluated five discharge scenarios (and sub-scenarios) that reflect different combinations of process flow streams. Predicted effluent flow, pH, temperature, and density are summarized in Table 1 for the proposed scenarios. Table 1 also identifies anticipated frequency and duration for routine, maintenance, and scientific (targeted data collection) operating scenarios.



**Table 1. Effluent Flow and Water Quality Summary**

Scenario	Frequency	Duration	Discharge Flow (L/hr.)	Temperature (deg C)	Density (kg/m <sup>3</sup> )	pH (s.u.)
<b>Scientific Operations</b>						
Scenario 1a – Alkaline Product Only (13.9 pH)	Not discharged – See Section 5.3		5,900	30.0	1,072	13.9
Scenario 1b – Alkaline Product Only (13.5 pH)	A few times per month	Single tidal cycle	5,900	30.0	1,028	13.5
Scenario 5b – All 3 Process Flows (CaCO <sub>3</sub> neutralization) <sup>1</sup>	1 or 2 times over project lifetime	Single tidal cycle	38,800	20.4	1,038	12.1
<b>Maintenance Operations</b>						
Scenario 2a – Neutralized Acid Only (with Olivine)	Weekly	< 8 hours	5,900	30.0	1,020	2.3
Scenario 2b – Neutralized Acid Only (with CaCO <sub>3</sub> )	Weekly	< 8 hours	5,900	30.0	1,028	8.1
Scenario 3 – Pretreatment Reject Only	Weekly	< 8 hours	27,000	17.0	1,042	7.1
Scenario 4a – Neutralized Acid (with Olivine) + Pretreatment Reject	Weekly	< 8 hours	32,900	19.3	1,038	6.4
Scenario 4b – Neutralized Acid (with CaCO <sub>3</sub> ) + Pretreatment Reject	Weekly	< 8 hours	32,900	19.3	1,039	6.8
<b>Routine Operations</b>						
Scenario 5a – All 3 Process Flows (with Olivine neutralization) <sup>1</sup>	Daily	50% Operating Capacity	38,800	20.4	1,037	9.8

<sup>1</sup>Scenarios 5a and 5b assume contribution of the alkaline product at a pH of 13.9 (Scenario 1a).

L/hr. = liters per hour; deg C = degree Celsius; s.u = standard units

Anion/cation and trace metals data used in the chemistry modeling are based on grab samples collected by Ebb Carbon near the proposed discharge location. Some water quality parameters were estimated or assumed as discussed in the Mixing Analysis Technical Memorandum. The water quality data included in Form 2D, Tables A, B, and C reflect estimated water quality for the typical discharge scenario with all process streams (Scenario 5a). The proposed Ebb Carbon processes are not anticipated to concentrate toxic parameters present in the ambient Port Angeles Harbor waters.