

**FACILITY NAME AND PERMIT NUMBER:**

**Lighthouse Point Water Reclamation Facility, City of Blaine. Permit# WA0022641**

**FORM  
2A  
NPDES**



**NPDES FORM 2A APPLICATION OVERVIEW**

**APPLICATION OVERVIEW**

Form 2A has been developed in a modular format and consists of a “Basic Application Information” packet and a “Supplemental Application Information” packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

**BASIC APPLICATION INFORMATION:**

- A. Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.
- B. Additional Application Information for Applicants with a Design Flow  $\geq$  0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.
- C. Certification.** All applicants must complete Part C (Certification).

**SUPPLEMENTAL APPLICATION INFORMATION:**

- D. Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):
  - 1. Has a design flow rate greater than or equal to 1mgd,
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 3. Is otherwise required by the permitting authority to provide the information.
- E. Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):
  - 1. Has a design flow rate greater than or equal to 1 mgd,
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 3. Is otherwise required by the permitting authority to submit results of toxicity testing.
- F. Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:
  - 1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
  - 2. Any other industrial user that:
    - a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
    - b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
    - c. Is designated as an SIU by the control authority.
- G. Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

**ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)**

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**BASIC APPLICATION INFORMATION**

**PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:**

All treatment works must complete questions A.1 through A.8 of this Basic Application Information Packet.

**A.1. Facility Information.**

Facility Name Lighthouse Point Water Reclamation Facility, City of Blaine

Mailing Address 1200 Yew Ave, Blaine WA 98230

Facility Address (not P.O. Box) 272 Marine Drive, Blaine WA 98230

Location 48.99594 N, 122.75673W  
(Latitude/Longitude as decimal degrees (NAD83/WGS84 )

Telephone Number (360) 332-7183

E-mail address mluttrell@cityofblaine.com

Contact Person Matt Luttrell

Title Lead Operator

UBI Number 91-6001230

**A.2. Applicant Information.** If the applicant is different from the above, provide the following:

Applicant Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Telephone Number ( ) \_\_\_\_\_

E-mail address \_\_\_\_\_

Contact Person \_\_\_\_\_

Title \_\_\_\_\_

Is the applicant the owner or operator (or both) of the treatment works?  owner  operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

facility  applicant

Can the facility obtain broadband internet access for WQWebDMR (<http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html>)?

yes  no

**A.3. Existing Environmental Permits.** Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES WA-0022641 PSD \_\_\_\_\_

UIC \_\_\_\_\_ Other \_\_\_\_\_

RCRA \_\_\_\_\_ Other \_\_\_\_\_

**A.4. Collection System Information.** Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
<u>City of Blaine</u>	<u>5,884</u>	<u>Separate Sanitary</u>	<u>City of Blaine</u>
_____	_____	_____	_____
_____	_____	_____	_____

Total population served 5,884

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**A.5. Indian Country.**

a. Is the treatment works located in Indian Country?

Yes  No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

Yes  No

**A.6. Flow.** Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12<sup>th</sup> month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate 1.54 mgd

	<u>Two Years Ago</u>	<u>Last Year</u>	<u>This Year</u>
b. Annual average daily flow rate	<u>0.67 mgd(2021-2022)</u>	<u>0.68 mgd(2021)</u>	<u>0.66 mgd(2022)</u>
c. Maximum daily flow rate	<u>2.50 mgd</u>	<u>2.50 mgd</u>	<u>2.45 mgd</u>

**A.7. Collection System.** Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

- Separate sanitary sewer 100 %
- Combined storm and sanitary sewer \_\_\_\_\_ %

**A.8. Discharges and Other Disposal Methods.**

a. Does the treatment works discharge effluent to waters of the U.S.?  Yes  No

If yes, list how many of each of the following types of discharge points the treatment works uses:

- i. Discharges of treated effluent 1
- ii. Discharges of untreated or partially treated effluent 0
- iii. Combined sewer overflow points 0
- iv. Constructed emergency overflows (prior to the headworks) 0
- v. Other \_\_\_\_\_ 0

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.?  Yes  No

If yes, provide the following for each surface impoundment:

Location : \_\_\_\_\_  
(Latitude/Longitude as decimal degrees (NAD83/WGS84))

Annual average daily volume discharge to surface impoundment(s) 0 mgd

Is discharge  continuous or  intermittent?

c. Does the treatment works land-apply treated wastewater?  Yes  No

If yes, provide the following for each land application site:

Location : See separate State Permit Application for Reclaimed Water for information about the 3 locations and the amount applied  
(Latitude/Longitude as decimal degrees (NAD83/WGS84))

Number of acres: \_\_\_\_\_

Annual average daily volume applied to site: \_\_\_\_\_ mgd

Is land application  continuous or  intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works?  Yes  No

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If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

If transport is by a party other than the applicant, provide:

Transporter Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Contact Person \_\_\_\_\_

Title \_\_\_\_\_

Telephone Number ( \_\_\_\_\_ ) \_\_\_\_\_

For each treatment works that receives this discharge, provide the following:

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Contact Person \_\_\_\_\_

Title \_\_\_\_\_

Telephone Number ( \_\_\_\_\_ ) \_\_\_\_\_

If known, provide the NPDES permit number of the treatment works that receives this discharge \_\_\_\_\_

Provide the average daily flow rate from the treatment works into the receiving facility. \_\_\_\_\_ mgd

- e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8. through A.8.d above (e.g., underground percolation, well injection):  Yes  No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

\_\_\_\_\_

Annual daily volume disposed by this method: \_\_\_\_\_

Is disposal through this method  continuous or  intermittent?

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**WASTEWATER DISCHARGES:**

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 **once for each outfall** (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. If you answered "no" to question A.8.a, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

**A.9. Description of Outfall.**

- a. Outfall number 01
- b. Location Blaine 98230  
(City or town, if applicable) (Zip Code)  
Whatcom WA  
(County) (State)  
48 degrees, 58 minutes, 46 seconds N 122 degrees 48 minutes, 5  
seconds W  
(Latitude) Provide these as decimal degrees (NAD83/WGS84) (Longitude)
- c. Distance from shore (if applicable) 2400 ft.
- d. Depth below surface (if applicable) 29 ft.
- e. Average daily flow rate 0.65 (2019-2022) mgd
- f. Does this outfall have either an intermittent or a periodic discharge?  Yes  No (go to A.9.g.)  
If yes, provide the following information:  
Number f times per year discharge occurs: \_\_\_\_\_  
Average duration of each discharge: \_\_\_\_\_  
Average flow per discharge: \_\_\_\_\_ mgd  
Months in which discharge occurs: \_\_\_\_\_
- g. Is outfall equipped with a diffuser?  Yes  No

**A.10. Description of Receiving Waters.**

- a. Name of receiving water Semiahmoo Bay, Strait of Georgia
- b. Name of watershed (if known) \_\_\_\_\_  
United States Soil Conservation Service 14-digit watershed code (if known): \_\_\_\_\_
- c. Name of State Management/River Basin (if known): \_\_\_\_\_  
United States Geological Survey 8-digit hydrologic cataloging unit code (if known): \_\_\_\_\_
- d. Critical low flow of receiving stream (if applicable)  
acute \_\_\_\_\_ cfs chronic \_\_\_\_\_ cfs
- e. Total hardness of receiving stream at critical low flow (if applicable): \_\_\_\_\_ mg/l of CaCO<sub>3</sub>

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**A.11. Description of Treatment**

a. What level(s) of treatment are provided? Check all that apply.

Primary

Secondary

Advanced

Other. Describe: Activated Sludge and Membrane Filtration

b. Indicate the following removal rates (as applicable):

Design BOD5 removal or Design CBOD5 removal > 95% %

Design SS removal > 95% %

Design P removal \_\_\_\_\_ %

Design N removal \_\_\_\_\_ %

Other \_\_\_\_\_ %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:

Sodium Hypochlorite

If disinfection is by chlorination is dechlorination used for this outfall?  Yes  No

d. Does the treatment plant have post aeration?  Yes  No

**A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than one and one-half years apart.**

Outfall number: 01

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.1	s.u.			
pH (Maximum)	8.3	s.u.			
Flow Rate	2.5	mgd	0.65	mgd	1280
Temperature (Winter)	19.0	deg C	15.2	deg C	645
Temperature (Summer)	23.0	deg C	20.1	deg C	719

\* For pH please report a minimum and a maximum daily value

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Conc.	Units	Number of Samples		

**CONVENTIONAL AND NON CONVENTIONAL COMPOUNDS**

BIOCHEMICAL OXYGEN DEMAND (Report one)	BOD5	15.0	mg/L	2.25	mg/L	366	5210B 21 <sup>st</sup> ed	
	CBOD5	NA	NA	NA	NA	NA		
FECAL COLIFORM		312	#/100 ml	4.5	#/100 ml	368	9222D(M-FC)	
TOTAL SUSPENDED SOLIDS (TSS)		5	mg/L	0.33	mg/L	366	2540D-97	

**END OF PART A.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE**

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**BASIC APPLICATION INFORMATION**

**PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER  
THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).**

**All applicants with a design flow rate  $\geq$  0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).**

**B.1. Inflow and Infiltration.** Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

< 200,000 gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

City-Wide Infiltration and Inflow Rehabilitation Program (completed 2023)

G Street Sewer Improvements Collection System Project (Construction began 2023)

Equalization basin testing and installation of a second equalization basin

**B.2. Topographic Map.** Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

- a. The area surrounding the treatment plant, including all unit processes.
- b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- c. Each well where wastewater from the treatment plant is injected underground.
- d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where the hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

**B.3. Process Flow Diagram or Schematic.** Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g., chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

**B.4. Operation/Maintenance Performed by Contractor(s).**

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor?  Yes  No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone Number: ( ) \_\_\_\_\_

Responsibilities of Contractor: \_\_\_\_\_

**B.5. Scheduled improvements and Schedules of Implementation.** Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

- a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

01

- b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

Yes  No

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c. If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

Implementing optimization strategies as required per Puget Sound Nutrient General Permit. Maximum daily flow rate will remain the same.

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM/DD/YYYY	Actual Completion MM/DD/YYYY
- Begin Construction	<u>01/01/2022</u>	<u>12/31/2025</u>
- End Construction	<u>12/31/2025</u>	<u>12/31/2025</u>
- Begin Discharge	<u>NA/ /</u>	<u>NA/ /</u>
- Attain Operational Level	<u>NA/ /</u>	<u>NA/ /</u>

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained?  Yes  No

Describe briefly: Optimization efforts are mandated by DOE. Optimization/adaptive management period will span from 2022 to 2025. Discharge and operations will continue during this period.

**B.6. EFFLUENT TESTING DATA (GREATER THAN OR EQUAL TO 0.1 MGD ONLY).**

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods (See attachment A). In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 01

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Conc.	Units	Number of Samples		
<b>CONVENTIONAL AND NON CONVENTIONAL COMPOUNDS</b>							
AMMONIA (as N)	34.6	mg/L	6.7	mg/L	42	SM-4500-NH3 G	0.05
CHLORINE (TOTAL RESIDUAL, TRC)	0.22	mg/L	0.03	mg/L	1364	SM-4500-CI-D2000	0.01
DISSOLVED OXYGEN	9.2	mg/L	8.34	mg/L	402	SM4500-O G	0.1
TOTAL KJELDAHL NITROGEN (TKN)	142*	mg/L	10.6	mg/L	402	SM 4500 N Org D	0.250
NITRATE PLUS NITRITE NITROGEN	19.4	mg/L	4.6	mg/L	402	EPA 300.0-N+N	0.05
OIL and GREASE	2.5	mg/L	1.7	mg/L	4	1664	1.4
PHOSPHORUS (Total)	16.9	mg/L	1.8	mg/L	4	SM 4500 PE	0.042
TOTAL DISSOLVED SOLIDS (TDS)	395	mg/L	352	mg/L	4	SM2540C	10
OTHER							

\*The maximum measured value of 142 mg/L during the monitoring period is an outlier and was excluded from the data reported here.

**END OF PART B.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE**

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**BASIC APPLICATION INFORMATION**

**PART C. CERTIFICATION**

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

**Indicate which parts of Form 2A you have completed and are submitting:**

Basic Application Information packet

Supplemental Application Information packet:

Part D (Expanded Effluent Testing Data)

Part E (Toxicity Testing: Biomonitoring Data)

Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

Part G (Combined Sewer Systems)

**ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.**

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 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.

**Permittee**

Name and Title of Responsible Official

Michael Harmon; City Manager

Signature

Telephone number

(360) 410-7871

E-mail address

MHarmon@cityofblaine.com

Date signed

**Co-Permittee (if applicable)**

Name and official title

Signature

Telephone number

( )

E-mail address

Date signed

Upon request of the permitting authority, you must submit any other information necessary to assure wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

**SEND COMPLETED FORMS TO<sup>1</sup>:** Tricia Miller; tricia.miller@ecy.wa.gov

<sup>1</sup>If unknown, contact an Ecology regional wastewater permit coordinator at: [http://www.ecy.wa.gov/programs/wq/permits/permit\\_coord.html](http://www.ecy.wa.gov/programs/wq/permits/permit_coord.html)

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**SUPPLEMENTAL APPLICATION INFORMATION**

**PART D. EXPANDED EFFLUENT TESTING DATA**

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

**Effluent Testing: 1.0 mgd and Pretreatment Works.** If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old. The applicant should also review Attachment A.

Outfall number: 01 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
<b>METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.</b>											
ANTIMONY	0.60	ug/L	3.15	lb/day	0.28	ug/L	1.38	lb/day	4	200.8/TR	0.23-0.40
ARSENIC	3.0	ug/L	11.0	lb/day	1.7	ug/L	7.76	lb/day	4	200.8/TR	0.46
BERYLLIUM	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	200.8/TR	0.12-0.17
CADMIUM	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	200.8/TR	0.09-0.19
CHROMIUM	1.8	ug/L	9.46	lb/day	1.18	ug/L	5.57	lb/day	4	200.8/TR	0.54
COPPER	29.2	ug/L	107.4	lb/day	11.15	ug/L	47.36	lb/day	4	200.8/TR	0.12
LEAD	0.63	ug/L	3.42	lb/day	0.46	ug/L	2.23	lb/day	4	200.8/TR	0.08
MERCURY	0.37	ug/L	2.00	lb/day	0.26	ug/L	1.35	lb/day	4	1631	0.0002
NICKEL	2.20	ug/L	9.76	lb/day	1.45	ug/L	6.81	lb/day	4	200.8/TR	0.15
SELENIUM	0.70	ug/L	3.79	lb/day	0.65	ug/L	3.14	lb/day	4	200.8/TR	0.56
SILVER	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	200.8/TR	0.18-0.64
THALLIUM	0.24	ug/L	1.30	lb/day	0.10	ug/L	0.50	lb/day	4	200.8/TR	0.10
ZINC	120.0	ug/L	610.5	lb/day	97.45	ug/L	475.33	lb/day	4	200.8/TR	0.91
CYANIDE	4.70 *	ug/L	25.5	lb/day	1.74	ug/L	9.29	lb/day	4	D7511-12	0.0025-2.5
TOTAL PHENOLIC COMPOUNDS	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	420.4	0.02-20.0
HARDNESS (AS CaCO3)	119.9	mg/L	NA	NA	102.5	mg/L	NA	NA	4	200.7	0.23
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											

\*The maximum value reported here is flagged as estimated by the laboratory.

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
<b>VOLATILE ORGANIC COMPOUNDS</b>											
ACROLEIN	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624(pH4)	0.42
ACRYLONITRILE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624(pH4)	0.20-0.56
BENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624,1	0.10-0.23
BROMOFORM	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.26-0.30
CARBON TETRACHLORIDE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.16-0.24
CHLOROBENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.26-0.28
CHLOROBIBROMOMETHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.28-0.28
CHLOROETHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.17-0.34
2-CHLOROETHYLVINYL ETHER	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.29-0.46
CHOLOROFORM	0.70	ug/L	2.71	lb/day	0.36	ug/L	1.64	lb/day	4	624.1	0.25
DICHLOROBROMOMETHANE	0.28	ug/L	1.42	lb/day	0.17	ug/L	0.85	lb/day	3	624.1	0.28
1,1-DICHLOROETHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.18-0.32
1,2-DICHLOROETHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.21-0.38
1,2-DICHLOROETHYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.18-0.34
TRANS-1,2-DICHLOROETHYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.18-0.34
1,1-DICHLOROETHYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.18-0.34
1,2-DICHLOROPROPANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.20-0.22
1,3-DICHLOROPROPYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.24-0.31
ETHYLBENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.24-0.29
METHYL BROMIDE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.23-0.37
METHYL CHLORIDE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.24-0.28
METHYLENE CHLORIDE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.23-0.28
1,1,2,2-TETRACHLORO-	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.31-0.37

FACILITY NAME AND PERMIT NUMBER:

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Outfall number: 01 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
ETHANE											
TETRACHLORO-ETHYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.20-0.24
TOLUENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.20-0.24
1,1,1-TRICHLOROETHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.19-0.26
1,1,2-TRICHLOROETHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.27-0.28
TRICHLORETHYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.20-0.29
VINYL CHLORIDE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	624.1	0.13-0.28
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											
<b>ACID-EXTRACTABLE COMPOUNDS</b>											
P-CHLORO-M-CRESOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.20
2-CHLOROPHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.10
2,4-DICHLOROPHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.20
2,4-DIMETHYLPHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.20
4,6-DINITRO-O-CRESOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.30
2,4-DINITROPHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.50
2-NITROPHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.20
4-NITROPHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.30
PENTA CHLOROPHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.20
PHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.10
2,4,6-TRICHLORO PHENOL	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.10
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer											
<b>BASE-NEUTRAL COMPOUNDS</b>											
ACENAPHTHENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.04
ACENAPHTYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.07
ANTHRACENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05

FACILITY NAME AND PERMIT NUMBER:

**Lighthouse Point Water Reclamation Facility, City of Blaine. Permit# WA0022641**

Outfall number: 01 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
BENZIDINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	9.0
BENZO(A) ANTHRACENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
BENZO(J)FLUORANTHENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.40
BENZO(r,s,t)PENTAPHENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.08-0.30
BENZO(A)PYRENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
3,4 BENZO-FLUORANTHENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.08
BENZO(GHI)PERYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
BENZO(K)FLUORANTHENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.08
BIS (2-CHLOROETHOXY) METHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
BIS (2-CHLOROETHYL)-ETHER	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
BIS (2-CHLOROISOPROPYL) ETHER	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
BIS (2-ETHYLHEXYL) PHTHALATE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.10
4-BROMOPHENYL PHENYL ETHER	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.04
BUTYL BENZYL PHTHALATE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.03
2-CHLORO NAPHTHALENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
4-CHLOROPHENYL PHENYL ETHER	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.04
CHRYSENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
DIBENZO(a,j)ACRIDINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.40
DIBENZO(a,h)ACRIDINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.40
DIBENZO(a,e)PYRENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.50
DIBENZO(a,h)PYRENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.30
DI-N-BUTYL PHTHALATE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.07

**FACILITY NAME AND PERMIT NUMBER:**

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**Outfall number:** 01 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
DI-N-OCTYL PHTHALATE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.02
DIBENZO(A,H) ANTHRACENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
1,2-DICHLORO BENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.28-0.31
1,3-DICHLORO BENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.27-0.29
1,4-DICHLORO BENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.29-0.30
3,3-DICHLORO BENZIDINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.20
DIETHYL PHTHALATE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
DIMETHYL PHTHALATE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
2,4-DINITROTOLUENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.07
2,6-DINITROTOLUENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.09
1,2-DIPHENYLHYDRAZINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
FLUORANTHENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0,05
FLUORENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
HEXACHLORO BENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
HEXACHLOROBUT ADIENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.09
HEXACHLOROCYCLO-PENTADIENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.20
HEXA CHLOROETHANE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.09
INDENO(1,2,3-CD) PYRENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.09
ISOPHORONE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.07
3-METHYL CHOLANTHRENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.40
NAPHTHALENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
NITROBENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
N-NITROSODI-N-PROPYLAMINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.10
N-NITROSODI-METHYLAMINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.30
N-NITROSODI-PHENYLAMINE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05

FACILITY NAME AND PERMIT NUMBER:

**Lighthouse Point Water Reclamation Facility, City of Blaine. Permit# WA0022641**

Outfall number: 01 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
PERYLENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.60
PHENANTHRENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.06
PYRENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05
1,2,4-TRICHLOROBENZENE	ND	ug/L	ND	lb/day	ND	ug/L	ND	lb/day	4	625.1	0.05

Use this space (or a separate sheet) to provide information on other metals requested by the permit writer

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**END OF PART D.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**

FACILITY NAME AND PERMIT NUMBER:

**Lighthouse Point Water Reclamation Facility, City of Blaine. Permit# WA0022641**

**SUPPLEMENTAL APPLICATION INFORMATION**

**PART E. TOXICITY TESTING DATA**

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

**E.1. Required Tests.**

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

chronic       acute

**E.2. Individual Test Data.** Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number: Tests submitted separately and directly to DOE      Test number: \_\_\_\_\_  
 Test number: \_\_\_\_\_

a. Test information.

Test Species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			

b. Give toxicity test methods followed.

Manual title			
Edition number and year of publication			
Page number(s)			

c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.

24-Hour composite			
Grab			

d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each.)

Before disinfection			
After disinfection			
After dechlorination			

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Test number: \_\_\_\_\_ Test number: \_\_\_\_\_ Test number: \_\_\_\_\_

e. Describe the point in the treatment process at which the sample was collected.

Sample was collected:

f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both

Chronic toxicity

Acute toxicity

g. Provide the type of test performed.

Static

Static-renewal

Flow-through

h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.

Laboratory water

Receiving water

i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.

Fresh water

Salt water

j. Give the percentage effluent used for all concentrations in the test series.

k. Parameters measured during the test. (State whether parameter meets test method specifications)

pH

Salinity

Temperature

Ammonia

Dissolved oxygen

l. Test Results.

Acute:

Percent survival in 100% effluent	%	%	%
LC <sub>50</sub>			
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

**FACILITY NAME AND PERMIT NUMBER:**

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Chronic:

NOEC	%	%	%
IC <sub>25</sub>	%	%	%
Control percent survival	%	%	%
Other (describe)			
m. Quality Control/Quality Assurance.			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?	/ /	/ /	/ /
Other (describe)			

**E.3. Toxicity Reduction Evaluation.** Is the treatment works involved in a Toxicity Reduction Evaluation?

Yes  No

If yes, describe: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**E.4. Summary of Submitted Biomonitoring Test Information.** If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

Summary of results: (see instructions)

\_\_\_\_\_  
\_\_\_\_\_

**END OF PART E.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.**

FACILITY NAME AND PERMIT NUMBER:

Lighthouse Point Water Reclamation Facility, City of Blaine. Permit# WA0022641

SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete part F.

GENERAL INFORMATION:

F.1. Pretreatment Program. Does the treatment works have, or is subject to, an approved pretreatment program?

Yes  No

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. 0

b. Number of CIUs. 0

SIGNIFICANT INDUSTRIAL USER INFORMATION::

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

F.4. Industrial Processes. Describe all the industrial processes that affect or contribute to the SIU's discharge.

\_\_\_\_\_

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): \_\_\_\_\_

Raw material(s): \_\_\_\_\_

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharge into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

\_\_\_\_\_ gpd (\_\_\_\_\_ continuous or \_\_\_\_\_ intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

\_\_\_\_\_ gpd (\_\_\_\_\_ continuous or \_\_\_\_\_ intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits  Yes  No

b. Categorical pretreatment standards  Yes  No

If subject to categorical pretreatment standards, which category and subcategory?

\_\_\_\_\_

FACILITY NAME AND PERMIT NUMBER:

**Lighthouse Point Water Reclamation Facility, City of Blaine. Permit# WA0022641**

**F.8. Problems at the Treatment Works Attributed to Waste Discharge by the SIU.** Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes  No If yes, describe each episode.

\_\_\_\_\_  
\_\_\_\_\_

**RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:**

**F.9. RCRA Waste.** Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe?

Yes  No (go to F.12)

**F.10. Waste Transport.** Method by which RCRA waste is received (check all that apply):

Truck  Rail  Dedicated Pipe

**F.11. Waste Description.** Give EPA hazardous waste number and amount (volume or mass, specify units).

<u>EPA Hazardous Waste Number</u>	<u>Amount</u>	<u>Units</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

**CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:**

**F.12. Remediation Waste.** Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

Yes (complete F.13 through F.15.)  No

**F.13. Waste Origin.** Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**F.14. Pollutants.** List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary.)

\_\_\_\_\_  
\_\_\_\_\_

**F.15. Waste Treatment.**

a. Is this waste treated (or will be treated) prior to entering the treatment works?

Yes  No

If yes, describe the treatment (provide information about the removal efficiency):

\_\_\_\_\_  
\_\_\_\_\_

b. Is the discharge (or will the discharge be) continuous or intermittent?

Continuous  Intermittent If intermittent, describe discharge schedule.

\_\_\_\_\_

**END OF PART F.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE**

FACILITY NAME AND PERMIT NUMBER:

**Lighthouse Point Water Reclamation Facility, City  
of Blaine. Permit# WA0022641**

**SUPPLEMENTAL APPLICATION INFORMATION**

**PART G. COMBINED SEWER SYSTEMS**

If the treatment works has a combined sewer system, complete Part G.

- G.1. System Map.** Provide a map indicating the following: (may be included with Basic Application Information)
- a. All CSO discharge points.
  - b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).
  - c. Waters that support threatened and endangered species potentially affected by CSOs.
- G.2. System Diagram.** Provide a diagram, either in the map provided in G.1 or on a separate drawing, of the combined sewer collection system that includes the following information.
- a. Location of major sewer trunk lines, both combined and separate sanitary.
  - b. Locations of points where separate sanitary sewers feed into the combined sewer system.
  - c. Locations of in-line and off-line storage structures.
  - d. Locations of flow-regulating devices.
  - e. Locations of pump stations.

**CSO OUTFALLS:**

**Not Applicable**

Complete questions G.3 through G.6 on

**G.3. Description of Outfall.**

- a. Outfall number \_\_\_\_\_
- b. Location \_\_\_\_\_  
 (city or town, if applicable) (Zip Code) \_\_\_\_\_  
 \_\_\_\_\_  
 (County) (State) \_\_\_\_\_  
 \_\_\_\_\_  
 (Latitude) (Longitude) \_\_\_\_\_
- c. Distance from shore (if applicable) \_\_\_\_\_ ft.
- d. Depth below surface (if applicable) \_\_\_\_\_ ft.
- e. Which of the following were monitored during the last year for this CSO?  
 Rainfall                       CSO pollutant concentrations                       CSO frequency  
 CSO flow volume                       Receiving water quality
- f. How many storm events were monitored during the last year? \_\_\_\_\_

**G.4. CSO Events.**

- a. Give the number of CSO events in the last year.  
 \_\_\_\_\_ events ( actual or  approx.)
- b. Give the average duration per CSO event.  
 \_\_\_\_\_ hours ( actual or  approx.)

**FACILITY NAME AND PERMIT NUMBER:**

**Lighthouse Point Water Reclamation Facility, City of Blaine. Permit# WA0022641**

- c. Give the average volume per CSO event.  
\_\_\_\_\_ million gallons ( actual or  approx.)
- d. Give the minimum rainfall that caused a CSO event in the last year  
\_\_\_\_\_ Inches of rainfall

**G.5. Description of Receiving Waters.**

- a. Name of receiving water: \_\_\_\_\_
- b. Name of watershed/river/stream system: \_\_\_\_\_  
United State Soil Conser **Not Applicable** \_\_\_\_\_
- c. Name of State Manager \_\_\_\_\_  
United States Geological Survey 8-digit hydrologic cataloging unit code (if known): \_\_\_\_\_

**G.6. CSO Operations.**

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

\_\_\_\_\_  
\_\_\_\_\_

**END OF PART G.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE.**

Additional information, if provided, will appear on the following pages.

---



Lighthouse Point Water Reclamation Facility

Semiahmoo Bay

Drayton Harbor

Outfall Pipe

**LEGEND**

- Lift Station
- Pump Station
- Department of Ecology Well Construction Location
- Water Main Line
- Sewer Main Line
- Sewer Pressurized Main Line
- Elevation Contour (20 ft interval)
- Streams
- Lighthouse Point Water Reclamation Facility Boundary
- 1/4 mile buffer from facility boundary
- Aquifer Recharge Area - Low recharge potential

IMAGERY SOURCE:  
 ESRI ArcGIS Online Web Service,  
 World Imagery, Maxar, 2022

ELEVATION CONTOUR SOURCE:  
 USGS National Elevation Dataset

SEWER AND UTILITY DATA SOURCE:  
 City of Blaine

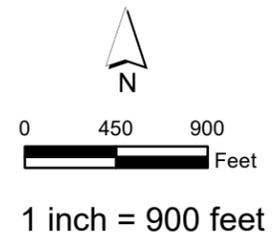


Figure B.2: Topographic Map  
 Wastewater NPDES Permit Application  
 Lighthouse Point Water Reclamation Facility  
 Blaine, Washington

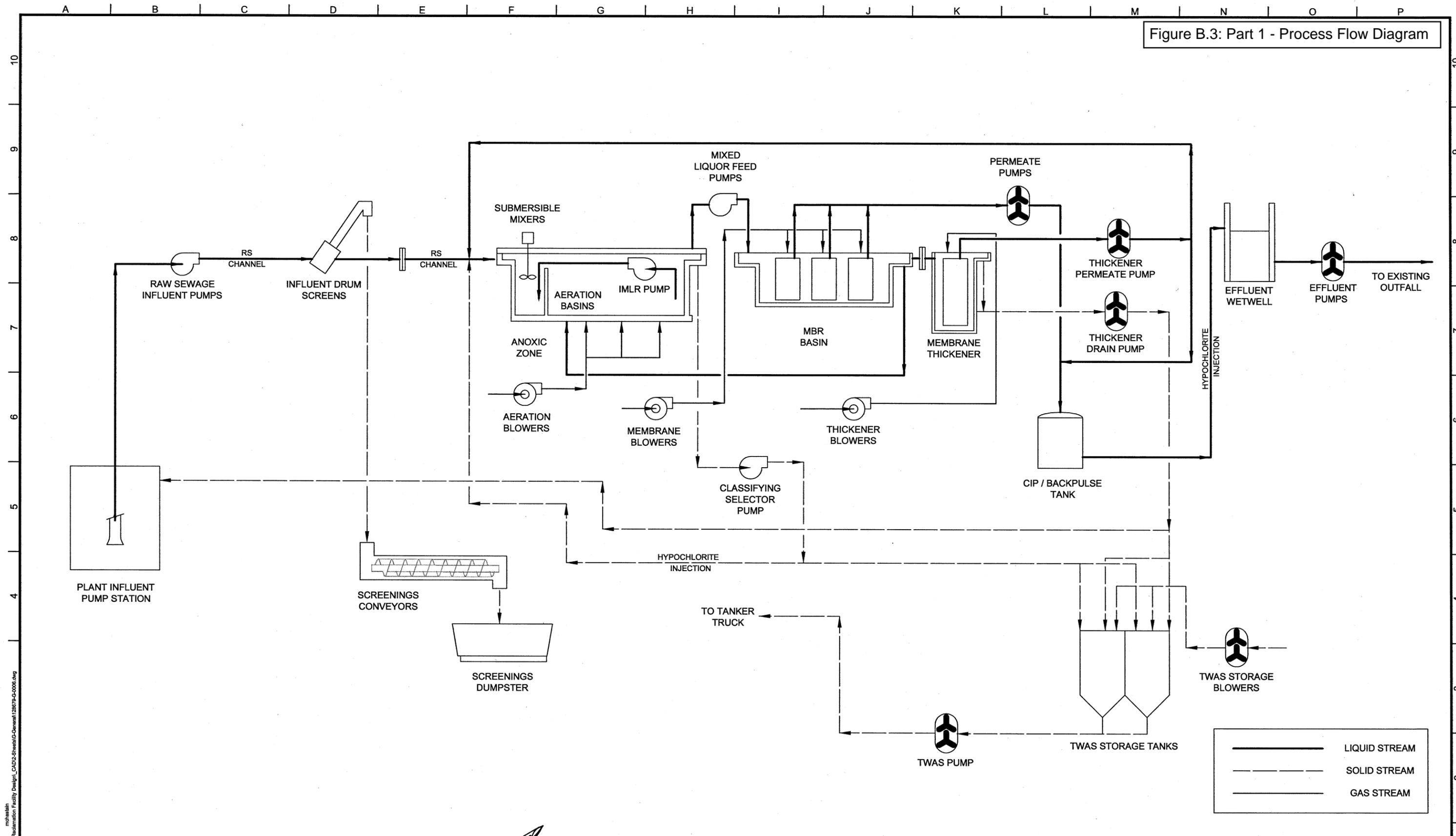
### Figure B.3: Process Flow Diagram or Schematic

See the following three pages for process flow diagram, mass balance, and redundancy of the Lighthouse Point WRF. Backup power sources are identified in Section B-IV of the accompanied State Reclaimed Application.

Brief narrative description of the diagram:

The Lighthouse Point WRF liquid treatment process (summarized in Figure 3-1) includes fine screening, activated sludge treatment, ultra-filtration via MBR, and chlorine disinfection. Disinfected effluent is either pumped to the outfall or used as reclaimed water. If pumped to the outfall, water is dechlorinated prior to discharge. If utilized for reclaimed water, chlorine contact time is achieved during conveyance to the Semiahmoo golf course/Glen Eagle Villa Condos as residence time in the pipe exceeds 30 minutes.

Figure B.3: Part 1 - Process Flow Diagram



	LIQUID STREAM
	SOLID STREAM
	GAS STREAM

**BROWN AND CALDWELL**  
SEATTLE, WASHINGTON

DESIGNED: RTK  
DRAWN: MDH  
CHECKED: SJV  
CHECKED: JDB

APPROVED: *[Signature]* DATE: 1/27/08

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

EXTERNAL REFERENCE FILES

BWRP-TBK-1000.dwg
WESTBROOK-KRISTINA.dwg
VANLOO-STEVE.dwg

**KARLSTINA L. WESTBROOK**  
PROFESSIONAL ENGINEER  
EXPIRES 11/22/2007

**STEPHEN J. VAN LOO**  
PROFESSIONAL ENGINEER  
EXPIRES 12/31/2007

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

**CITY OF BLAINE, WASHINGTON**

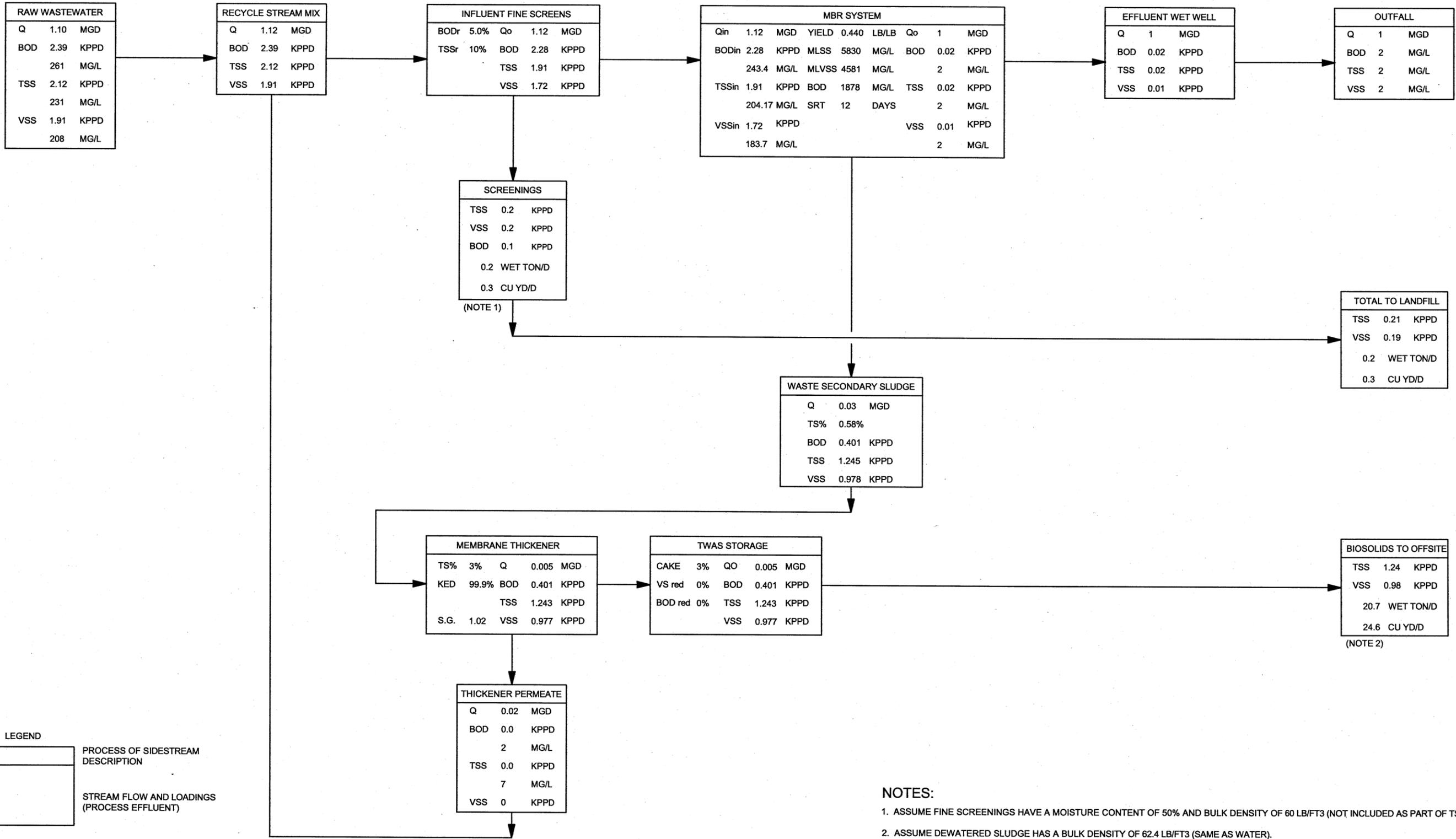
**BLAINE LIGHTHOUSE POINT WATER RECLAMATION FACILITY**

FLOW DIAGRAM  
LIQUID PROCESS

FILENAME	128679-G-006
BC PROJECT NUMBER	128679
CLIENT PROJECT NUMBER	
DRAWING NUMBER	000-G-006
SHEET NUMBER	6 OF 325

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Figure B.3: Part 2 - Mass Balance



**LEGEND**

PROCESS OF SIDESTREAM DESCRIPTION

STREAM FLOW AND LOADINGS (PROCESS EFFLUENT)

**NOTES:**

1. ASSUME FINE SCREENINGS HAVE A MOISTURE CONTENT OF 50% AND BULK DENSITY OF 60 LB/FT<sup>3</sup> (NOT INCLUDED AS PART OF TSS ANALYSIS).

2. ASSUME DEWATERED SLUDGE HAS A BULK DENSITY OF 62.4 LB/FT<sup>3</sup> (SAME AS WATER).

**BROWN AND CALDWELL**  
SEATTLE, WASHINGTON

DESIGNED: K.L.W., S.J.V.  
DRAWN: MDH  
CHECKED: S.J.V.  
CHECKED: JOB  
APPROVED: [Signature] DATE: 1/27/08  
APPROVED: [Signature] DATE: [Blank]

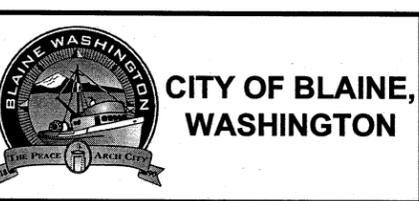
LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

EXTERNAL REFERENCE FILES

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TAM-PATRICIA.dwg



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ZONE	REV.	DESCRIPTION	BY	DATE	APP.



BLAINE LIGHTHOUSE POINT WATER RECLAMATION FACILITY

GENERAL MASS BALANCE FOR DESIGN ANNUAL AVERAGE FLOW AND LOADING CONDITIONS

FILENAME	128679-G-0011
BC PROJECT NUMBER	128679
CLIENT PROJECT NUMBER	
DRAWING NUMBER	000-G-011
SHEET NUMBER	11 OF 325

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 mchaahab  
 New Blaine Logo.jpg

Equivalent Design Population	4,624	8,981
Wastewater Flows (mgd)		
Annual Average	0.62	1.10
Average Dry Weather	0.50	0.92
Average Wet Weather	0.72	1.20
Maximum Month	1.17	1.54
Maximum Day	2.66	2.90
Maximum Hour	2.86	3.10
BOD Loading (lb/d)		
Annual Average	1,380	2,400
Peak Month	1,780	3,060
Peak Day	3,150	5,260
TSS Loading (lb/d)		
Annual Average	1,200	2,120
Peak Month	1,690	3,000
Peak Day	3,530	6,120

Equivalent Design Population	8,981
<b>Influent Pump Station</b>	
Large Influent Pumps	
Number (Note 4)	1 + 1
Type	Non-Clog Centrifugal
Horsepower, each	25
Capacity, each (mgd)	3.1
Small Influent Pumps	
Number (Note 4)	1 + 1
Type	Non-Clog Centrifugal
Horsepower, each	7.5
Capacity, each (mgd)	1.1

<b>Influent Screenings</b>	
Rotating Drum Screens	
Number (Note 4)	1 + 1
Horsepower, each	3
Capacity, each (gpm)	2,150
Shaftless Screw Conveyor	
Number	2
Horsepower, each	3

<b>Aeration Basins</b>	
Number	2
Total Volume (gal)	374,000
Design MLSS (mg/L)	4,000-7,000
SRT	12
Internal Mixed Liquor Recirc. Rate (mgd) (Note 1)	1 - 4.6
Recirc. Pumps	
Number Per Basin	1
Type	Axial Flow
Horsepower, each	4.3
Capacity, each (gpm)	1,800
Anoxic Cell	
Number Per Basin	1
Volume Per Cell (gal)	52,000
Mixers	
Number Per Basin	1
Horsepower, each	2.7
Large Blowers	
Number (Note 4)	2 + 1
Type	Multi-Stage Centrifugal
Horsepower, each	125
Capacity, each (scfm)	1565

<b>Small Blowers</b>	
Number	2
Type	Multi-Stage Centrifugal
Horsepower, each	50
Capacity, each (scfm)	520
Classifying Selector Pump	
Number	1
Type	Non-Clog Centrifugal
Horsepower, each	5
Capacity, each (gpm)	650
Aeration Basin Drain Pump	
Number	1
Type	Non-Clog Centrifugal
Horsepower, each	7.5
Capacity, each (gpm)	950

<b>Membrane Filtration Basins</b>	
Number (Note 5)	4 - 1
Volume Per Basin (gal) (Note 2)	18,500
Cassettes per basin (filled/available space)	3/4
Modules per cassette (filled/available space)	46/48
Design MLSS (mg/L)	6,000-10,000
RAS Flow Ratio (%) (Note 3)	300
Mixed Liquor Feed Pumps	
Number (Note 4)	2 + 1
Type	Non-Clog Centrifugal
Horsepower, each	30
Capacity, each (mgd)	4.64
Blowers	
Number (Note 4)	1 + 1
Type	Multi-Stage Centrifugal
Horsepower, each	100
Capacity, each (scfm)	3237
Permeate Pumps	
Number (Note 5)	4 - 1
Type	Rotary Lobe
Horsepower, each	25
Capacity, each (gpm)	753
HOCL Pumps	
Number (Note 4)	1 + 1
Type	Hose
Capacity, each (gpm)	0.6 - 14.4
Citric Acid Pumps	
Number (Note 4)	1 + 1
Type	Peristaltic
Capacity, each (gpm)	0.2 - 5.9
CIP/Backpulse Tank	
Number	1
Volume (gal)	3,000
Air Compressors	
Number (Note 4)	1 + 1
Horsepower, each	5
Capacity, each (acfm)	17
Membrane Filtration Drain Pump	
Number	1
Type	End Suction Centrifugal
Horsepower	3
Capacity	590 gpm

<b>Membrane Thickeners Basins</b>	
Number	1
Volume Per Basin (gal)	8,410
Cassettes per basin (filled/available space)	1/1
Modules per cassette (filled/available space)	24/48
Target MLSS (mg/L)	30,000
Blowers	
Number (Note 4)	1 + 1
Type	Multi-Stage Centrifugal
Horsepower, each	30
Capacity, each (scfm)	355
Thickener Drain Pumps	
Number	1
Type	Rotary Lobe
Horsepower, each	20
Capacity, each (gpm)	300
Thickener Permeate Pumps	
Number	2
Type	Rotary Lobe
Horsepower, each	5
Capacity, each (gpm)	28.5
HOCl Pumps	
Number	1
Type	Peristaltic
Capacity, each (gpm)	0.1 - 1.8
TWAS Storage	
Number of Tanks	2
Volume Per Tank (gal)	23,000
Blowers	
Number	2
Type	Positive Displacement
Horsepower, each	20
Capacity, each (scfm)	290
TWAS Pumps	
Number (Note 4)	1 + 1
Type	Rotary Lobe
Horsepower, each	15
Capacity, each (gpm)	200
TWAS Tank Recirculation Pumps	
Number	2
Type	Non-Clog Centrifugal
Horsepower	15
Capacity	1464 gpm
Effluent Pump Station	
Effluent Pumps	
Number	2 + 1
Type	Rotary Lobe
Horsepower, each	75
Initial Capacity, each (gpm, psi) (Note 6)	940, 80
Future Capacity, each (gpm, psi) (Note 6)	1155, 35
Disinfection System	
HOCl Storage Tank	
Number	2
Volume, each (gal)	1,600
Effluent Disinfection Pumps	
Number	1 + 1
Type	Peristaltic
Capacity, each (gph)	0.4 - 6.0

**NOTES:**

1. THE INTERNAL MIXED LIQUOR RECIRCULATION RATE IS FLOW PACED AT 200% OF THE INFLUENT FLOW, UP TO 4.6 MGD.
2. MEMBRANE TANK VOLUME SHOWN IS FOR THE LIQUID VOLUME NOT ACCOUNTING FOR THE DISPLACEMENT VOLUME OF THE MEMBRANE MODULES.
3. RAS FLOW RATIO FROM MEMBRANE BASINS TO AERATION BASINS IS 300% OF THE PEAK WEEK INFLUENT FLOW RATE OF 2.32 MGD. THE RATIO CHANGES BASED ON THE INCOMING FLOW RATE AND THE NUMBER OF CONSTANT SPEED MIXED LIQUOR FEED PUMPS.
4. X+X INDICATES DUTY PLUS STANDBY EQUIPMENT/BASINS.
5. 4-1 MEANS NORMALLY ALL UNITS ARE REQUIRED TO RUN BUT THE SYSTEM CAN HANDLE ONE UNITS TO BE DOWN FOR 1 TO 2 DAYS.
6. THE INITIAL CAPACITY OF THE EFFLUENT PUMP STATION IS PRESSURE LIMITED AND SHALL NOT EXCEED A MAXIMUM OF 80 PSI AT THE PUMPS. THE FUTURE CAPACITY OF THE EFFLUENT PUMP STATION WILL BE ACHIEVED BY REPLACING THE EFFLUENT PIPELINE ALONG SEMIAHMOO SPIT.

Figure B.3: Part 3 - Identification of Redundant Units

<b>Odor Control System</b>	
Small Exhaust Fan	
Number	2
Type	Centrifugal
Horsepower, each	20
Capacity, each (scfm)	2,475
Large Exhaust Fan	
Number	2
Type	Centrifugal
Horsepower, each	50
Capacity, each (scfm)	6,500
Large Odor Removal Unit	
Number	1
Type	Activated Carbon Bed
Capacity, each (scfm)	13,000
Small Odor Removal Unit	
Number	1
Type	Activated Carbon Bed
Capacity, each (scfm)	8,200
<b>Process Water System</b>	
Pumps	
Number (Note 4)	2 + 1
Type	Vertical Multi-stage
Horsepower, each	25
Capacity, each (gpm)	300
<b>Utility Water System</b>	
Air-Gap Tank	
Number	1
Volume (gal)	350
Pumps	
Number	1
Type	Vertical Multi-stage
Horsepower, each	15
Capacity, each (gpm)	40

**BROWN AND CALDWELL**  
SEATTLE, WASHINGTON

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" - SCALE ACCORDINGLY)

EXTERNAL REFERENCE FILES  
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VANLOO-STEVE.dwg



REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE



**CITY OF BLAINE, WASHINGTON**

BLAINE LIGHTHOUSE POINT WATER RECLAMATION FACILITY  
GENERAL  
PROCESS DESIGN DATA

FILENAME  
128679-G-008  
BC PROJECT NUMBER  
128679  
CLIENT PROJECT NUMBER  
DRAWING NUMBER  
**000-G-008**  
SHEET NUMBER  
8 OF 325

# ATTACHMENT A

## EFFLUENT CHARACTERIZATION FOR PERMIT APPLICATION

This attachment is used in conjunction with Section V, Parts A, B, and C of EPA Application Form 2C, and Parts A.12, B.6, and D of EPA application Form 2A. It specifies effluent characterization requirements of the Department of Ecology and analytical procedure and detection and quantitation levels for some parameters. For new permit applications, analyze your wastewater for all parameters required by the application and any additional pollutants or groups of pollutants with an X in the left column. Existing Permittees should compile the data from the last year's data for parameters routinely measured. If you are a primary industry category with effluent guidelines you may have some mandatory testing requirements (see Table 2C-2 Form 2C). If you are a municipal POTW, EPA has identified mandatory testing requirements, which depend upon the design flow (see EPA Form 2A).

Ecology added this attachment to the application in order to reduce the number of analytical "non-detects" in required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost. The applicant must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for application required monitoring unless:

- Another permit condition specifies other methods, detection levels, or quantitation levels.
- The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136.

If the applicant uses an alternative method, as allowed above, it must report the test method, DL, and QL in the application. If the applicant is unable to obtain the required DL and QL in its effluent due to matrix effects, the applicant must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.

Form 2C Ref. #	Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
10	<b>Conventional (Part A)</b>			
a.	Biochemical Oxygen Demand	SM5210-B		2 mg/L
	Soluble Biochemical Oxygen Demand	SM5210-B <sup>3</sup>		2 mg/L
b.	Chemical Oxygen Demand	SM5220-D		10 mg/L
c.	Total Organic Carbon	SM5310-B/C/D		1 mg/L
d.	Total Suspended Solids	SM2540-D		5 mg/L
e.	Total Ammonia (as N)	SM4500-NH3-B and C/D/E/G/H		20
f.	Flow	Calibrated device		
	Dissolved oxygen	SM4500-OC/OG		0.2 mg/L
	Temperature (max. 7-day avg.)	Analog recorder or Use micro-recording devices known as thermistors		0.2° C
i.	pH	SM4500-H <sup>+</sup> B	N/A	N/A
10	<b>Nonconventional (Part B)</b>			
	Total Alkalinity	SM2320-B		5 mg/L as CaCO <sub>3</sub>
b.	Chlorine, Total Residual	SM4500 Cl G		50.0
c.	Color	SM2120 B/C/E		10 color units
d.	Fecal Coliform	SM 9221E,9222	N/A	Specified in method - sample aliquot

Form 2C Ref. #	Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
				dependent
e.	Fluoride (16984-48-8)	SM4500-F E	25	100
f.	Nitrate + Nitrite Nitrogen (as N)	SM4500-NO3-E/F/H		100
g.	Nitrogen, Total Kjeldahl (as N)	SM4500-N <sub>org</sub> B/C and SM4500NH <sub>3</sub> -B/C/D/EF/G/H		300
	Soluble Reactive Phosphorus (as P)	SM4500-P E/F/G	3	10
i.	Phosphorus, Total (as P)	SM 4500 PB followed by SM4500-PE/PF	3	10
h.	Oil and Grease (HEM) (Hexane Extractable Material)	1664 A or B	1,400	5,000
	Salinity	SM2520-B		3 practical salinity units or scale (PSU or PSS)
	Settleable Solids	SM2540 -F		500 (or 1.0 mL/L)
k.	Sulfate (as mg/L SO <sub>4</sub> )	SM4110-B		0.2 mg/L
l.	Sulfide (as mg/L S)	SM4500-S <sup>2</sup> F/D/E/G		0.2 mg/L
m.	Sulfite (as mg/L SO <sub>3</sub> )	SM4500-SO3B		2 mg/L
	Total Coliform	SM 9221B, 9222B, 9223B	N/A	Specified in method - sample aliquot dependent
	Total dissolved solids	SM2540 C		20 mg/L
	Total Hardness	SM2340B		200 as CaCO <sub>3</sub>
o.	Aluminum, Total (7429-90-5)	200.8	2.0	10
p.	Barium Total (7440-39-3)	200.8	0.5	2.0
	BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes)	EPA SW 846 8021/8260	1	2
q.	Boron Total (7440-42-8)	200.8	2.0	10.0
r.	Cobalt, Total (7440-48-4)	200.8	0.05	0.25
s.	Iron, Total (7439-89-6)	200.7	12.5	50
t.	Magnesium, Total (7439-95-4)	200.7	10	50
u.	Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
v.	Manganese, Total (7439-96-5)	200.8	0.1	0.5
	NWTPH Dx <sup>4</sup>	Ecology NWTPH Dx	250	250
	NWTPH Gx <sup>5</sup>	Ecology NWTPH Gx	250	250
w.	Tin, Total (7440-31-5)	200.8	0.3	1.5
x.	Titanium, Total (7440-32-6)	200.8	0.5	2.5
<sup>10</sup>	<b>Metals, Cyanide and Total Phenols (Part C)</b>			
1M.	Antimony, Total (7440-36-0)	200.8	0.3	1.0

Form 2C Ref. #	Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL) <sup>1</sup> µg/L unless specified	Quantitation Level (QL) <sup>2</sup> µg/L unless specified
2M.	Arsenic, Total (7440-38-2)	200.8	0.1	0.5
3M.	Beryllium, Total (7440-41-7)	200.8	0.1	0.5
4M.	Cadmium, Total (7440-43-9)	200.8	0.05	0.25
	Chromium (hex) dissolved (18540-29-9)	SM3500-Cr EC	0.3	1.2
5M.	Chromium, Total (7440-47-3)	200.8	0.2	1.0
6M.	Copper, Total (7440-50-8)	200.8	0.4	2.0
7M.	Lead, Total (7439-92-1)	200.8	0.1	0.5
8M.	Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
9M.	Nickel, Total (7440-02-0)	200.8	0.1	0.5
10M.	Selenium, Total (7782-49-2)	200.8	1.0	1.0
11M.	Silver, Total (7440-22-4)	200.8	0.04	0.2
12M.	Thallium, Total (7440-28-0)	200.8	0.09	0.36
13M.	Zinc, Total (7440-66-6)	200.8	0.5	2.5
14M.	Cyanide, Total (57-12-5)	335.4	5	10
	Cyanide, Weak Acid Dissociable	SM4500-CN I	5	10
	Cyanide, Free Amenable to Chlorination (Available Cyanide)	SM4500-CN G	5	10
15M.	Phenols, Total	EPA 420.1		50
10	<b>Acid Compounds</b>			
1A.	2-Chlorophenol (95-57-8)	625	1.0	2.0
2A.	2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
3A.	2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4A.	4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6,-dinitrophenol)	625/1625B	1.0	2.0
5A.	2,4 dinitrophenol (51-28-5)	625	1.0	2.0
6A.	2-Nitrophenol (88-75-5)	625	0.5	1.0
7A.	4-nitrophenol (100-02-7)	625	0.5	1.0
8A.	Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
9A.	Pentachlorophenol (87-86-5)	625	0.5	1.0
10A.	Phenol (108-95-2)	625	2.0	4.0
11A.	2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0
10	<b>Volatile Compounds</b>			
1V.	Acrolein (107-02-8)	624	5	10
2V.	Acrylonitrile (107-13-1)	624	1.0	2.0
3V.	Benzene (71-43-2)	624	1.0	2.0
5V.	Bromoform (75-25-2)	624	1.0	2.0
6V.	Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
7V.	Chlorobenzene (108-90-7)	624	1.0	2.0
9V.	Chloroethane (75-00-3)	624/601	1.0	2.0

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10V.	2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0
11V.	Chloroform (67-66-3)	624 or SM6210B	1.0	2.0
8V.	Dibromochloromethane (124-48-1)	624	1.0	2.0
20B.	1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
21B.	1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
22B.	1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
12V.	Dichlorobromomethane (75-27-4)	624	1.0	2.0
14V.	1,1-Dichloroethane (75-34-3)	624	1.0	2.0
15V.	1,2-Dichloroethane (107-06-2)	624	1.0	2.0
16V.	1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
17V.	1,2-Dichloropropane (78-87-5)	624	1.0	2.0
18V.	1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) <sup>6</sup>	624	1.0	2.0
19V.	Ethylbenzene (100-41-4)	624	1.0	2.0
20V.	Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0
21V.	Methyl chloride (74-87-3) (Chloromethane)	624	1.0	2.0
22V.	Methylene chloride (75-09-2)	624	5.0	10.0
23V.	1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
24V.	Tetrachloroethylene (127-18-4)	624	1.0	2.0
25V.	Toluene (108-88-3)	624	1.0	2.0
26V.	1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
27V.	1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0
28V.	1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
29V.	Trichloroethylene (79-01-6)	624	1.0	2.0
31V.	Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0
10	<b>Base/Neutral Compounds (compounds in bold are Ecology PBTs)</b>			
	1B. Acenaphthene (83-32-9)	625	0.2	0.4
	2B. Acenaphthylene (208-96-8)	625	0.3	0.6
	3B. Anthracene (120-12-7)	625	0.3	0.6
	4B. Benzidine (92-87-5)	625	12	24
	15B. Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
	5B. Benzo(a)anthracene (56-55-3)	625	0.3	0.6
	7B. Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2) <sup>7</sup>	610/625	0.8	1.6
	<b>Benzo(j)fluoranthene (205-82-3) <sup>7</sup></b>	625	0.5	1.0
	9B. Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9) <sup>7</sup>	610/625	0.8	1.6

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	<b>Benzo(r,s,t)pentaphene (189-55-9)</b>	625	0.5	1.0
6B.	Benzo(a)pyrene (50-32-8)	610/625	0.5	1.0
8B.	Benzo(ghi)Perylene (191-24-2)	610/625	0.5	1.0
10B.	Bis(2-chloroethoxy)methane (111-91-1)	625	5.3	21.2
11B.	Bis(2-chloroethyl)ether (111-44-4)	611/625	0.3	1.0
12B.	Bis(2-chloroisopropyl)ether (39638-32-9)	625	0.3	0.6
13B.	Bis(2-ethylhexyl)phthalate (117-81-7)	625	0.1	0.5
14B.	4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
16B.	2-Chloronaphthalene (91-58-7)	625	0.3	0.6
17B.	4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
18B.	Chrysene (218-01-9)	610/625	0.3	0.6
	<b>Dibenzo (a,h)acridine (226-36-8)</b>	610M/625M	2.5	10.0
	<b>Dibenzo (a,j)acridine (224-42-0)</b>	610M/625M	2.5	10.0
19B.	Dibenzo(a-h)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
	<b>Dibenzo(a,e)pyrene (192-65-4)</b>	610M/625M	2.5	10.0
	<b>Dibenzo(a,h)pyrene (189-64-0)</b>	625M	2.5	10.0
23B.	3,3-Dichlorobenzidine (91-94-1)	605/625	0.5	1.0
24B.	Diethyl phthalate (84-66-2)	625	1.9	7.6
25B.	Dimethyl phthalate (131-11-3)	625	1.6	6.4
26B.	Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
27B.	2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
28B.	2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4
29B.	Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
30B.	1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	1625B	5.0	20
31B.	Fluoranthene (206-44-0)	625	0.3	0.6
32B.	Fluorene (86-73-7)	625	0.3	0.6
33B.	Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
34B.	Hexachlorobutadiene (87-68-3)	625	0.5	1.0
35B.	Hexachlorocyclopentadiene (77-47-4)	1625B/625	0.5	1.0
36B.	Hexachloroethane (67-72-1)	625	0.5	1.0
37B.	Indeno(1,2,3-cd)Pyrene (193-39-5)	610/625	0.5	1.0
38B.	Isophorone (78-59-1)	625	0.5	1.0
	<b>3-Methyl cholanthrene (56-49-5)</b>	625	2.0	8.0
39B.	Naphthalene (91-20-3)	625	0.3	0.6
40B.	Nitrobenzene (98-95-3)	625	0.5	1.0

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41B.	N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
42B.	N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0
43B.	N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0
	<b>Perylene (198-55-0)</b>	625	1.9	7.6
44B.	Phenanthrene (85-01-8)	625	0.3	0.6
45B.	Pyrene (129-00-0)	625	0.3	0.6
46B.	1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6
10	<b>Dioxin</b>			
	2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16) (2,3,7,8 TCDD)	1613B	1.3 pg/L	5 pg/L
10	<b>Pesticides/PCBs</b>			
1P.	Aldrin (309-00-2)	608	0.025	0.05
2P.	alpha-BHC (319-84-6)	608	0.025	0.05
3P.	beta-BHC (319-85-7)	608	0.025	0.05
4P.	gamma-BHC (58-89-9)	608	0.025	0.05
5P.	delta-BHC (319-86-8)	608	0.025	0.05
6P.	Chlordane (57-74-9) <sup>8</sup>	608	0.025	0.05
7P.	4,4'-DDT (50-29-3)	608	0.025	0.05
8P.	4,4'-DDE (72-55-9)	608	0.025	0.0510
9P.	4,4' DDD (72-54-8)	608	0.025	0.05
10P.	Dieldrin (60-57-1)	608	0.025	0.05
11P.	alpha-Endosulfan (959-98-8)	608	0.025	0.05
12P.	beta-Endosulfan (33213-65-9)	608	0.025	0.05
13P.	Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
14P.	Endrin (72-20-8)	608	0.025	0.05
15P.	Endrin Aldehyde (7421-93-4)	608	0.025	0.05
16P.	Heptachlor (76-44-8)	608	0.025	0.05
17P.	Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
18P.	PCB-1242 (53469-21-9) <sup>9</sup>	608	0.25	0.5
19P.	PCB-1254 (11097-69-1)	608	0.25	0.5
20P.	PCB-1221 (11104-28-2)	608	0.25	0.5
21P.	PCB-1232 (11141-16-5)	608	0.25	0.5
22P.	PCB-1248 (12672-29-6)	608	0.25	0.5
23P.	PCB-1260 (11096-82-5)	608	0.13	0.5
24P.	PCB-1016 (12674-11-2) <sup>9</sup>	608	0.13	0.5
25P.	Toxaphene (8001-35-2)	608	0.24	0.5

1. Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by

the procedure given in 40 CFR part 136, Appendix B.

2. Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to  $(1, 2, \text{ or } 5) \times 10^n$ , where n is an integer. (64 FR 30417).  
ALSO GIVEN AS:  
The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).
3. Soluble Biochemical Oxygen Demand method note: First, filter the sample through a Millipore Nylon filter (or equivalent) - pore size of 0.45-0.50 um (prep all filters by filtering 250 ml of laboratory grade deionized water through the filter and discard). Then, analyze sample as per method 5210-B.
4. NWTPH Dx - Northwest Total Petroleum Hydrocarbons Diesel Extended Range – see <http://www.ecy.wa.gov/biblio/97602.html>
5. NWTPH Gx - Northwest Total Petroleum Hydrocarbons Gasoline Extended Range – see <http://www.ecy.wa.gov/biblio/97602.html>
6. 1, 3-dichloroproylene (mixed isomers) You may report this parameter as two separate parameters: cis-1, 3-dichloropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).
7. Total Benzofluoranthenes - Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzofluoranthenes.
8. Chlordane – You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 0.025/0.050.
9. PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.
10. An X placed in this box means you must analyze for all pollutants in the group. This may be in addition to NPDES application requirements.

*To request ADA accommodation including materials in a format for the visually impaired, call the Water Quality Program at Ecology, 360-407-6600. Persons with impaired hearing may use the Washington Relay Service at 711. Persons with a speech disability may call TTY at 877-833-6341.*