Scott A. Vance
General Counsel and Chief Ethics Officer
P.O. Box 968, MD PE13
Richland, WA 99352-0968
Ph. 509.377-4650 | F. 509.372.5330
savance@energy-northwest.com

April 30, 2019
GO2-19-076
DIC 1316.13

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: COLUMBIA GENERATING STATION, DOCKET NO. 50-397
2018 ANNUAL ENVIRONMENTAL OPERATING REPORT

Dear Sir or Madam:

This letter is submitted pursuant to Section 5.4.1 of the Columbia Generating Station Environmental Protection Plan (EPP), Appendix B to the Facility Operating License No. NPF-21, which requires Energy Northwest (EN) to submit an Annual Operating Report for the EPP to the Nuclear Regulatory Commission (NRC) for the prior calendar year.

Through this letter, EN is notifying NRC of one nonconformance to the EPP in 2018 and one nonconformance in 2019. The 2018 nonconformance was identified as a failure to notify the NRC of proposed changes to EN's National Pollutant Discharge Elimination System (NPDES) permit, as required in Section 5.4.1 of the EPP. A 2019 nonconformance occurred when EN failed to submit a copy of the modified NPDES permit within 30 days of the issued date of March 19, 2019, pursuant to Section 3.2 of the EPP. This was entered into the Corrective Action Program on 4/25/2019 for resolution (CR #392585).

No other non-routine, non-radiological reports (*See:* EPP Section 5.4.2) were required for 2018 as there were no changes in station design or operation, testing, or experiments that involved an unreviewed environmental question. A summary of the effluent data reported to the State of Washington Department of Health and the Energy Facility Site Evaluation Council (EFSEC) on the monthly discharge monitoring reports is provided as Attachment 1.

EN is submitting the permit application from October 2018 and the modified NPDES permit as Attachments 2 and 3, respectively, to supply the required notifications to the NRC. EN will endeavor to comply with the notification elements of the EPP for applicable future activities.

Should you have any questions or desire additional information regarding this report, please contact RL Phillips at (509) 377-5350.

Executed on the 30th day of April, 2019

Respectfully,

X

Final Approver

Scott A. Vance
General Counsel

Attachments:

1) Summary of Discharge Monitoring Reports
2) NPDES Permit Modification Application, October 2018
3) NPDES Permit No. WA002515-1 Amendment 2, Issued March 19, 2019

cc: NRC Region IV Administrator
NRC NRR Project Manager
NRC Sr. Resident Inspector (988C)
CD Sonada – BPA/1399
WA Horin (Winston & Strawn)

SAV/nb

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RL Phillips	PE03	Docket File	PE20

ATTACHMENT #1

COLUMBIA GENERATING STATION
2018 COOLING WATER BLOWDOWN DISCHARGES

Month	Days of Discharge	pH		Total Residual Halogen (mg/L)	Maximum Total (ug/L)			Discharge Volume (millions of gallons/day)	
		Low	High		Copper [c]	Chromium[d]	Zinc [e]	Average [a]	Maximum [b]
Jan	31	8.3	8.3	<0.1	17	2.2	28	1.7	2.9
Feb	28	8.2	8.3	<0.1	14	<1.0	19	1.7	2.8
Mar	31	8.2	8.4	<0.1	24	2.1	51	1.8	3.0
Apr	30	8.2	8.3	<0.1	12	<1	25	1.74333	2.6
May	31	7.6	8.3	<0.1	14	<1	24	2.3	5.5
Jun	30	8.0	8.4	<0.1	19	1.8	34	1.38667	3.4
Jul	31	8.2	8.2	<0.1	16	1.2	20	2.5	5.1
Aug	31	8.1	8.2	<0.1	12	1.3	13	2.4	4.9
Sep	30	8.1	8.2	<0.1	13	1.1	14	1.7	2.5
Oct	31	7.9	8.4	<0.1	17	1.0	13	2.0	3.9
Nov	30	7.9	8.5	<0.1	14	<0.1	16	2.0	5.0
Dec	31	7.8	8.5	<0.1	17	<0.1	24	1.6	2.6
Permit Limit		6.5	9.0	0.1	(c)	(d)	(e)	5.6	9.4

(a) Average daily discharge for the month
(b) Maximum daily discharge for the month
(c) No permit limit for copper
(d) Chromium limits are: 8.2 ug/L monthly average, 16.4 ug/L daily maximum
(e) Zinc limits are: 53 ug/L monthly average, 107 ug/L daily maximum

ATTACHMENT #2

Please type or print in the unshaded areas only

EPA ID Number *(Copy from Item 1 of Form 1)*
WAD980738488

Form Approved
OMB No. 2040-0086
Approval expires 8-31-98

Form **2C** NPDES

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. Outfall Location

For this outfall, list the latitude and longitude, (degrees, min.xxxx) and name of the receiving water(s)

Outfall Number *(list)*	Latitude		Longitude		Receiving Water *(name)*
	Deg	Min	Deg	Min	
001	***46***	***28.2833***	***119***	***15.7500***	***Columbia River***
002	***46***	***28.4333***	***119***	***19.7167***	***None***
003	***46***	***28.0500***	***119***	***19.8000***	***None***

II. Flows, Sources of Pollution, and Treatment Technologies

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed description in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictoral description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. Outfall No. (list)	2. Operations Contributing Flow		3. Treatment		
	a. OPERATION *(list)*	b. AVERAGE FLOW (*include units*)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001 (a)	***Circulating Cooling Water Blowdown***	***2.44 mgd***	***neutralization, halogenation, discharge to river, sediment disposed onsite***	***2-F, 2-K, 2-E 4A, 5-Q***	
001 (b)	***Radioactive Waste Treatment System Effluent***	***No Discharge***	***filtration, ion exchange, infrequent batch discharge to river***	***1-N, 2-J, 4-A***	
001 (c)	***Standby Service Water***	***No Discharge***	***disinfection, infrequent discharge to river***	***2-H, 4-A***	
002 (d)	***Potable Water Treatment***	***0.020 mgd***	***intermittent discharge to evaporation/ leach pond***	***3-F***	
002 (e)	***Demineralized Water Treatment***	***0.020 mgd***	***discharge to evaporation/ leach pond***	***3-F***	
002 (f)	***Nonrad Plant Equipment***	***<0.002 mgd (estimate)***	***intermittent discharge to evaporation/ leach pond***	***3-F***	

002 (g)	*Building Roof Drains*	*0.002 mgd (estimate)*	*intermittent stormwater runoff to evaporation/ leach pond*	*3-F*	
002 (h)	*HVAC Airwash Drain*	*0.007 mgd (estimate)*	*seasonal discharge to evaporation/ leach pond*	*3-F*	
003 (i)	*Standby Service Water*	*No Discharge*	*intermittent discharge to soil*	*3-F*	
NA (j)	*Sanitary Waste*	*0.021 mgd*	*aerated lagoon, stabilization ponds, intermittent discharge to percolation beds*	*1-F, 3-B, 3-F, 3-G*	
NA (k)	*Fire Protection System Flushes, & other misc. Hydrotesting, Maintenance, and Construction Activities*	*0.003 mgd (estimate)*	*intermittent discharge to soil*	*3-F*	

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☒ **YES** *(complete the following table)* ☐ **NO** *(go to Section III)*

1. OUTFALL NUMBER (list)	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in mgd)*		b. TOTAL VOLUME *(specify with units*		c. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
001	***Radioactive Waste Treatment System Effluent***	***No discharge during permit cycle***	***No discharge***	***No discharge***	***No discharge***	***No discharge***	***No discharge***	***NA***
001	***Standby Service Water***	***No discharge during permit cycle***	***No discharge***	***No discharge***	***No discharge***	***No discharge***	***No discharge***	***NA***
002	***Potable Water Treatment***	***5***	***12***	***0.020***	***0.036***	***2E4 gal***	***3.6E4 gal***	***<1***
002	***Nonrad Plant Equipment***	***1***	***4***	***<0.002 (estimate)***	***0.5 (estimate)***	***2E3 gal (estimate)***	***5E5 gal (estimate)***	***<1***
002	***HVAC Airwash***	***7***	***7***	***0.004 (estimate)***	***0.007 (estimate)***	***4E3 gal (estimate)***	***7E3 gal (estimate)***	***1***
003	***Standby Service Water***	***No discharge during permit cycle***	***No discharge***	***No discharge***	***No discharge***	***No discharge***	***No discharge***	***NA***
NA	***Fire Protection System Flushes, & other misc. Hydrotesting, Maintenance, and Construction Activities***	***1***	***9***	***<0.001 (estimate)***	***0.015 (estimate)***	***1E3 gal (estimate)***	***1.5E4 (estimate)***	***<1***

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ **YES** *(complete Item III-B)* ☐ **NO** *(go to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

☐ **YES** *(complete Item III-C)* ☒ **NO** *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS *(list outfall numbers)*
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading, or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ **YES** *(complete the following table)* ☒ **NO** *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. No	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ **MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAM IS ATTACHED**

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding - Complete one set of tables or each outfall - Annotate the outfall number in the space provided. **NOTE:** Tables V-A, V-B, and V-C are included on separate sheets number V-1 through V-9.

D: Use the space below t list any of the pollutants listed in Tables 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Asbestos (Outfall 001)	***possible leaching or erosion from asbestos cement cooling tower fill*** ***effluent sampled 4/28/10 with following analytical results:*** ***amphibole <0.19 MFL*** ***chrysotile <0.19 MFL*** ***units are in fibers per liter, greater than 10 micrometers*** ***the analytical result is less than the detection limit***		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ **YES** *(list all such pollutants below)* ☒ **NO** *(go to Item VI-B)*

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES *(identify the test(s) and describe their purpose below)* ☒ NO *(go to Section VIII)*

Special Conditions S9, S10, and S11.A.3 require Energy Northwest to conduct Whole Effluent Toxicity (WET) Testing for Outfall 001 discharge. Since the CGS main condenser will be replaced during the 2011 refueling outage (R-20), Energy Northwest petitioned the Energy Facility Site Evaluation Council (EFSEC) to suspend the WET testing requirement and related schedule of compliance. In a letter dated January 15, 2009 EFSEC approved delay of WET Testing until after replacement of the main condenser modules in 2011.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code & no.)*	D. POLLUTANTS ANALYZED *(list)*
Lab/Cor, Inc.	***7619 6th Ave NW, Seattle, WA 98117***	***(206) 781-0155***	***Asbestos***
Anatek Labs, Inc.	***504 E Sprague Ste. D, Spokane, WA 99202***	***(509) 838-3999***	***Volatile/Semivolatile Organics***
Benton-Franklin Health District	***7102 W. Okanogan Place, Kennewick, WA 99336***	***(509) 460-4200***	***BOD, Fecal Coliform***
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	

IX. 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 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.

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
S.E. Khounnala, Environmental & Regulatory Programs Manager	***(509) 377-8639***
C. SIGNATURE *S.E. Khounnala*	D. DATE SIGNED 10/8/18

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*
WAD980738488

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)* 001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand *(BOD)*	***<2.0***						***1***	***mg/l***				
b. Chemical Oxygen Demand *(COD)*	***37***				***27.3***		***3***	***mg/l***				
c. Total Organic Carbon *(TOC)*	***13***				***11.7***		***3***	***mg/l***				
d. Total Suspended Solids *(TSS)*	***33***				***11.8***		***36***	***mg/l***				
e. Ammonia *(as N)*	***0.220***				***0.077***		***36***	***mg/l***				
f. Flow	Value ***7.0***		Value		Value ***2.44***		***981***	***MGD***		Value		
g. Temperature *(winter)*	Value ***To be provided to EFSEC following condenser repl.***		Value		Value ***To be provided to EFSEC following condenser repl.***			°C		Value		
h. Temperature *(summer)*	Value ***Same as above***		Value		Value ***Same as above***			°C		Value		
i. pH	Minimum ***6.8***	Maximum ***8.7***	Minimum	Maximum			***Cont.***	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitation guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'		3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	B. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)	☒	☐	***17.1***		***N/A***		***15.2***		***3***	***mg/L***				
b. Chlorine, Total Residual	☒	☐	***<0.05***		***N/A***		***<0.05***		***3***	***mg/L***				
c. Color	☒	☐	***20***		***N/A***		***13.3***		***3***	***color units***				
d. Fecal Coliform	☒	☐	***11.0***		***N/A***		***6.3***		***3***	***col/100mL***				
e. Fluoride (16984-48-8)	☒	☐	***0.761***		***N/A***		***0.736***		***3***	***mg/L***				
f. Nitrate-Nitrite *(as N)*	☒	☐	***2.39***		***N/A***		***1.98***		***3***	***mg/L***				

***Part B information to be provided to EFSEC following condenser replacement**

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'		3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	B. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic *(as N)*	☒	☐	*0.824*		*N/A*		*0.811*		*3*	*mg/L*				
h. Oil and Grease	☒	☐	*<1*		*N/A*		*<1*		*3*	*mg/L*				
i. Phosphorus *(as P)*, Total (7723-14-0)	☒	☐	*3.03*		*N/A*		*2.43*		*3*	*mg/L*				
j. Radioactivity														
(1) Alpha, Total	☐	☒			*N/A*									
(2) Bets, Total	☒	☐	*9.56*		*N/A*		*5.29*		*23*	*pCi/L*				
(3) Radium, Total	☐	☒			*N/A*									
(4) Radium 226, Total	☐	☒			*N/A*									
k. Sulfate *(as SO_4)* *(14808-79-8)*	☒	☐	*703*		*N/A*		*627*		*3*	*mg/L*				
l. Sulfide (as S)	☐	☒	*<0.2*		*N/A*		*<0.2*		*3*	*mg/L*				
m. Sulfite *(as SO_3)(14265-45-3)*	☒	☐	~~*<25*~~		~~*N/A*~~*5*				~~*3*~~*0*	*mg/L*				
n. Surfactants	☐	☒			*N/A*									
o. Aluminum, Total (7429-90-5)	☒	☐	*0.185*		*N/A*		*0.152*		*3*	*mg/L*				
p. Barium, Total (7440-39-3)	☒	☐	*0.281*		*N/A*		*0.271*		*3*	*mg/L*				
q. Boron, Total (7440-42-8)	☒	☐	*0.0308*		*N/A*		*0.0302*		*3*	*mg/L*				
r. Cobalt, Total (7440-48-4)	☒	☐	*0.00057*		*N/A*		*0.00021*		*3*	*mg/L*				
s. Iron, Total (7439-89-4)	☒	☐	*0.239*		*N/A*		*0.189*		*3*	*mg/L*				
t. Magnesium, Total (7439-95-4)	☒	☐	*53.1*		*N/A*		*51.7*		*3*	*mg/L*				
u. Molybdenum, Total (7439-98-7)	☒	☐	*0.00726*		*N/A*		*0.00691*		*3*	*mg/L*				
v. Manganese, Total (7439-96-5)	☒	☐	*0.0231*		*N/A*		*0.0202*		*3*	*mg/L*				
w. Tin, Total (7440-31-5)	☒	☐	*<0.001*		*N/A*		*<0.001*		*3*	*mg/L*				
x. Titanium, Total (7440-32-6)	☒	☐	*0.0176*		*N/A*		*0.0106*		*3*	*mg/L*				

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*	OUTFALL NUMBER
WAD980738488	***001***

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant. If you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT						4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS		a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		a. CONCENTRATION	b. MASS	(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1m. Antimony, Total (7440-36-0)	☐	☐	☒	0.00351		N/A		0.00239		3	mg/L				
2M. Arsenic, Total (7440-38-2)	☐	☒	☐	6.80		N/A		6.11		3	µg/L				
3M. Beryllium, Total (7440-41-7)	☐	☐	☒	<0.0005		N/A		<0.0005		3	mg/L				
4M. Cadmium, Total (7440-43-9)	☐	☐	☒	<0.00025		N/A		<0.00025		3	mg/L				
5M Chromium, Total (7440-47-3)	☐	☒	☐	0.00102		N/A		0.00041		3	mg/L				
6M Copper, Total (7440-50-8)	☐	☒	☐	0.00930		N/A		0.00879		3	mg/L				
7M lead, Total (7439-92-1)	☐	☒	☐	0.00074		N/A		0.00028		3	mg/L				
8M Mercury, Total (7439-97-6)	☐	☐	☒	0.00578		N/A		0.00314		3	µg/L				
9M Nickel, Total (7440-02-0)	☐	☒	☐	0.00365		N/A		0.00333		3	mg/L				
10M Selenium, Total (7782-49-2)	☐	☐	☒	1.94		N/A		1.86		3	µg/L				
11M Silver, Total (7440-22-4)	☐	☐	☒	<0.0002		N/A		<0.0002		3	mg/L				
12M Thallium, Total (7440-28-0)	☐	☐	☒	<0.00036		N/A		<0.00036		3	mg/L				
13M Zinc, Total (7440-66-6)	☐	☒	☐	0.0334		N/A		0.0278		3	mg/L				
14M Cyanide, Total (57-12-5)	☐	☐	☒	<0.01		N/A		<0.01		3	mg/L				
15M Phenols, Total	☐	☐	☒	<0.05		N/A		<0.05		3	mg/L				
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764--01-6)	☐	☒	☐	DESCRIBE RESULTS ***We expect Dioxin to be present solely as a result of its presence in the intake water. There is an existing TMDL for Dioxin on the Columbia River.***											

***Part C information to be provided to EFSEC following condenser replacement**

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT						d. NO. OF ANALYSIS	4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☒	☐	☒	<2.5		N/A		<2.5		3	µg/L				
2V. Acrylonitrille (107-13-1)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
3V. Benzene (71-43-2)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
4V. Bis (Chloromethyl) Ether (542-88-1)	☐	☐	☒												
5V. Bromoform (75-25-2)	☒	☒	☐	1.43		N/A		1.14		3	µg/L				
6V. Carbon Tetrachloride (56-23-5)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
7V. Chlorobenzene (108-90-7)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
8V. Chlorodibromomethane (124-48-1)	☒	☐	☐	<0.5		N/A		<0.5		3	µg/L				
9V. Chloroethane (75-00-3)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
11V. Chloroform (67-66-3)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
12V. Dichlorobromoethane (75-27-4)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
13V. Dichlorodifluoromethane (75-71-8)	☐	☐	☒												
14V. 1,1-Dichloroethane (75-27-3)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
15V. 1,2-Dichloroethane (107-06-2)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
16V. 1,1-Dichloroethylene (7535-4)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
17V. 1,2-Dichloropropane (78-87-5)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
18V. 1,3-Dichloropropylene (542-75-6)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
19V. Ethylbenzene (100-41-4)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
20V. Methyl Bromide (74-83-9)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
21V. Methyl Chloride (74-87-3)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				

***Part C information to be provided to EFSEC following condenser replacement**

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EPA I.D. NUMBER *(copy from Item 1 of Form 1)*	OUTFALL NUMBER
WAD980738488	***001***

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT						4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS		a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		a. CONCENTRATION	b. MASS	(1) CONCENTRATION	(2) MASS	
GC/MS - VOLATILE COMPOUNDS *(continued)*															
22 V. Methylene Chloride (75-09-2)	☒	☐	☒	***<2.5***		***N/A***		***<2.5***		***3***	***µg/L***				
23V. 1,1,2,2-Tetra-Chloroethane (79-34-5)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
24V. Tetrachloro-ethylene (127-18-4)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
25V. Toluene (108-88-3)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
26V. 1,2-Trans-Dichloroethylene (156-60-5)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
27V. 1,1,1-Tri-chloroethane (71-55-6)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
28V. 1,1,2-Tri-chloroethane (79-00-5)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
29V. Trichloro-ethylene (79-01-6)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
30V. Trichloro-fluoromethane (75-69-4)	☐	☐	☒												
31V. Vinyl Chloride (75-01-4)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
2A. 2,4-Dichloro-phenol (120-83-2)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
3A. 2,4-Dimethyl-phenol (105-67-9)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
4A. 4,6-Dinitro-O-cresol (534-52-1)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
5A. 2,4-Dinitro-phenol (51-28-5)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
6A. 2-Nitro-phenol (88-75-5)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
7A. 4-Ntro-phenol (100-02-7)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
8A. P-Chloro-M-Cresol (59-50-7)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
9A. Penta-chlorophenol (87-86-5)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
10A. Phenol (108-95-2)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				
11A. 2,4,6-Tri-chlorophenol (88-06-2)	☒	☐	☒	***<0.5***		***N/A***		***<0.5***		***3***	***µg/L***				

***Part C information to be provided to EFSEC following condenser replacement**

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS			a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		a. CONCENTRATION	b. MASS	(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenphthene (83-32-9)	☒	☐	☒	<0.4		N/A		<0.4		3	µg/L				
2B. Acenaphtylene (208-96-8)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
3B. Anthracene (120-12-7)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
4B. Benzidine (92-87-5)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
5B. Benzo (a) Anthracene (56-55-3)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
6B. Benzo (a) Pyrene (50-32-8)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
7B. 3,4-Benzo-fluoranthene (205-99-2)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
8B. Benzo (ghi) Perylene (191-24-2)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
9B. Benzo (k) Fluoranthene (207-08-9)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
12B. Bis (2-Chloroisopropyl) Ether (108-60-1	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
13B. Bis(2-Ethyl-hexyl) Phthalate (117-81-7)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
14 B. 4-Bromo-phenyl Phenyl Ether (101-55-3)	☒	☐	☒	<0.4		N/A		<0.4		3	µg/L				
15B Butyl Benzyl Phthalate (85-68-7)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
16B. 2-Chloro-naphthalene (91-58-7)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
18B. Chrysene (218-01-9)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
19B. Dibenzo (a,h) Anthracene (53-70-3)	☐	☐	☒	<0.5		N/A		<0.5		3	µg/L				
20B. 1,2-Dichloro-benzene (95-50-1)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				
21B. 1,3-Dichloro-benzene (541-73-1)	☒	☐	☒	<0.5		N/A		<0.5		3	µg/L				

***Part C information to be provided to EFSEC following condenser replacement**

 CONTINUE ON PAGE V-7

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*	OUTFALL NUMBER
WAD980738488	*001*

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT							4 *if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS - BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
23B. 3,3'-Dichlorobenzidine (91-94-1)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
24B. Diethyl Phthalate (84-66-2)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
25B. Dimethyl Phthalate (131-11-3)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
26B. Di-N-Butyl Phthalate (84-74-2)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
27B. 2,4-Dinitrotoluene (121-14-2)	☒	☐	☒	*<0.4*		*N/A*		*<0.4*		*3*	*µg/L*				
28B. 2,6-Dinitrotoluene (606-20-2)	☒	☐	☒	*<0.4*		*N/A*		*<0.4*		*3*	*µg/L*				
29B. Di-N-Octyl Phthalate (117-84-0)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
31B. Fluoranthene (206-44-0)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
32B. Fluorene (86-73-7)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
33B. Hexachlorobenzene (118-74-1)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
34B. Hexachlorobutadiene (87-68-3)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
35B. Hexachlorocyclopentadiene (77-47-4)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
36B. Hexachloroethane (67-72-1)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
38B. Isophorone (78-59-1)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
39B. Napthalene (91-20-3)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
40B. Nitrobenzene (98-95-3)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
41B. N-Nitrosodimethylamine (62-75-9)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
42B. N-Nitrosdi-N-Propylamine (621-64-7)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			2. EFFLUENT						d. NO. OF ANALYSIS	3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE *(if available)*			a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
44B. Phenanthrene (85-01-/	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
45B. Pyrene (129-00-0)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
46B. 1,2,4-Trichlorobenzene (120-82-1)	☒	☐	☒	*<0.5*		*N/A*		*<0.5*		*3*	*µg/L*				
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	☐	☐	☒												
2P. α-BHC (319-84-6	☐	☐	☒												
3P. β-Bhc (319-85-7)	☐	☐	☒												
4P. γ-BHC (58-89-9)	☐	☐	☒												
5P. δ-BHC (319-86-8)	☐	☐	☒												
6P. Chlordane (57-74-9)	☐	☐	☒												
7P. 4,4'-DDT (50-29-3)	☐	☐	☒												
8P. 4,4'-DDE (72-55-9)	☐	☐	☒												
9P. 4,4'-DDD (72-54-8)	☐	☐	☒												
10P. Dieldrin (60-57-1)	☐	☐	☒												
11P. α-Endo-sulfan (115-29-7)	☐	☐	☒												
12P. β-Endo-sulfan (115-29-7	☐	☐	☒												
13P. Endosulfan Sulfate (1031-07-8)	☐	☐	☒												
14P. Endrin (72-20-8)	☐	☐	☒												
15P. Endrin Aldehyde (7421-93-4)	☐	☐	☒												
16P. Heptachlor (76-44-8)	☐	☐	☒												

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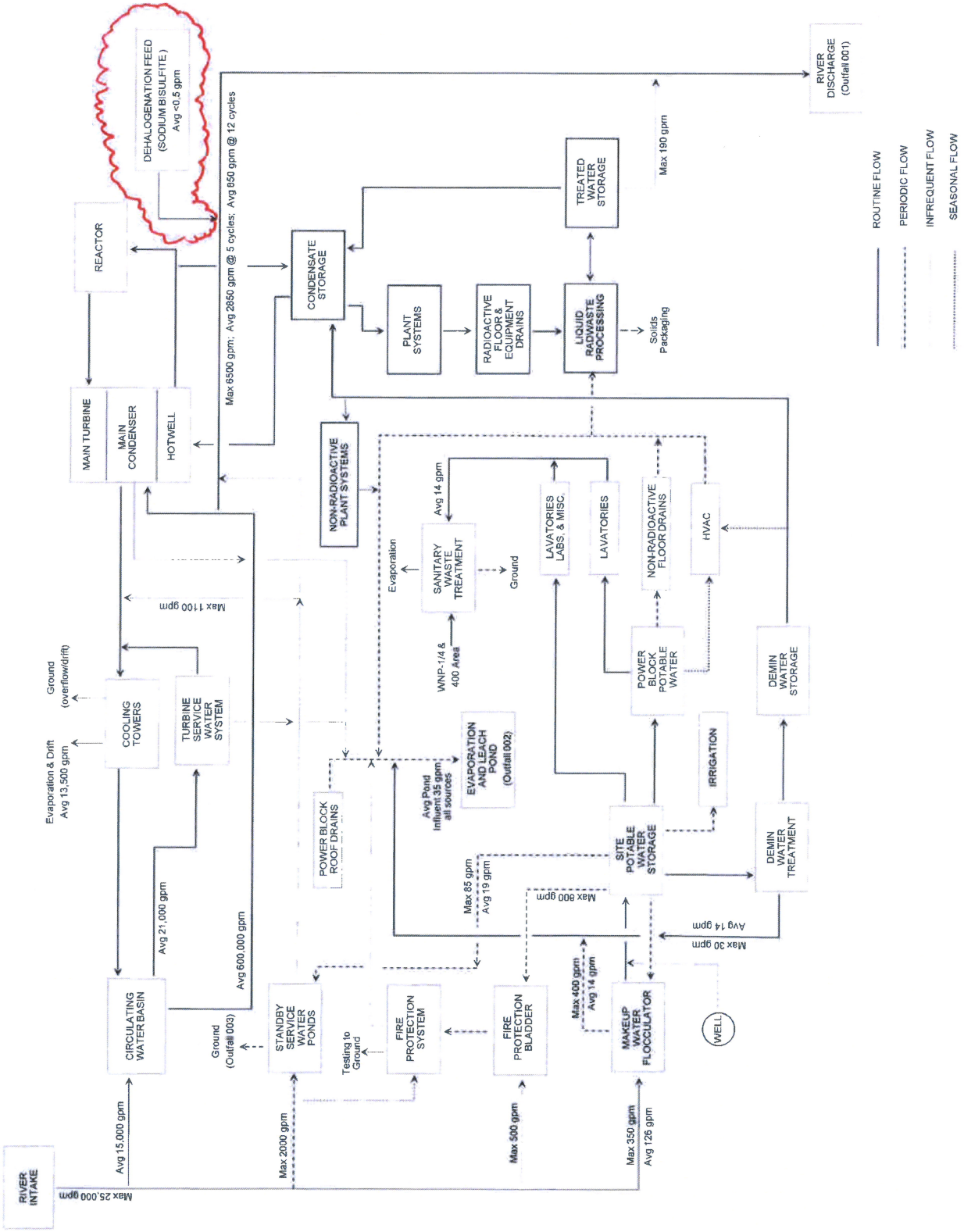
EPA I.D. NUMBER *(copy from Item 1 of Form 1)*	OUTFALL NUMBER
WAD980738488	***001***

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS - PESTICIDES *(continued)*															
17P. Heptachlor Expxide (1024-57-3)	☐	☐	☒												
18P. PCB-1242 (53469-21-9)	☐	☐	☒												
19P. PCB-1254 (11097-69-1)	☐	☐	☒												
20P. PCB-1221 (11104-28-2)	☐	☐	☒												
21P. PCB-1232 (11141-16-5)	☐	☐	☒												
22P. PCB-1248 (12672-29-6)	☐	☐	☒												
23P. PCB-1260 (11096-82-5)	☐	☐	☒												
24P. PCB-1016 (12674-11-2)	☐	☐	☒												
25P. Toxa-phene (8001-35-2)	☐	☐	☒												

Attachment to Form 2C, Item II.A
CGS Flow Diagram



WASTEWATER SOURCE DESCRIPTIONS

Columbia Generating Station (CGS)
December 2013
(Updated for NPDES Permit Modification October 2018)

Circulating Cooling Water Blowdown

The main steam condenser and miscellaneous heat exchangers (turbine service water system) are cooled by the non-contact circulating water (CW) system. The recirculating flow is typically about 600,000 gallons per minute (gpm). The heat is rejected to the atmosphere by the evaporative process in six (6) mechanical draft cooling towers. The evaporated water and that lost through drift and blowdown is replenished from the Columbia River at an average rate of about 15,150~~000~~ gpm. Evaporation of the cooling water results in the concentration of dissolved solids. To limit the buildup of dissolved salts, a portion of the cooling water is released to the river as blowdown (to Outfall 001).

Although the blowdown stream is intended to be a relatively constant discharge, several factors can cause variation in the chemical composition of the discharge. The most important factor is the adjustable blowdown rate that determines the concentration factor for dissolved material in the circulating water. Columbia Generating Station (CGS) has typically operated between 5 cycles of concentration (about 2,850~~3000~~ gpm blowdown) and 12 cycles of concentration (about 850~~00~~ gpm blowdown).

The chemical composition of the blowdown is also affected by the circulating water treatment regime. Sulfuric acid is added to help maintain pH in the range of 8.2 to 8.6 for optimal reduction of biofouling and scale. The water is also treated with ~~a polyphosphate blend for corrosion inhibition in mild steel and a phosphonate copolymer (aminomethylene phosphonate or AMPs) that acts as a dispersant to minimize scale formation~~ HEDP (1 hydroxy-ethylidne-1, 1, diphosphonate) and AMPs (amino-trimethylene-phosphonate) copolymer blend that functions as a calcium scale inhibitor and a dispersant. Sodium tolyltriazole, which is a halogen-resistant azole (HRA), is added separately for copper alloy corrosion control.

As detailed in an engineering report (Revision 1, dated September 6, 2018) CGS will be improving the process that inhibits biological fouling of the CW system. The improvement will involve changing from a batch to a continuous halogenation process, with continuous injection of the same halogenation agents (sodium hypochlorite and sodium bromide). CGS will add two additional chemicals to assist the effectiveness of the halogenation, a biodispersant (surfactant) and an antifoaming agent. To prevent the discharge of elevated halogen (i.e., chlorine and bromine derivatives), the dehalogenation agent sodium bisulfite will be continuously added to the blowdown in a controlled manner.

The current batch process for ~~M~~microbiocidal treatment will be retained as a backup procedure in the event of a problem with the effluent total residual halogen (TRH) analyzer or other

problem with the continuous halogenation/dehalogenation system. The batch microbiocidal process involves ~~is provided with~~ additions of sodium hypochlorite and sodium bromide two or three times per week. Upsets in these batch treatments can result in variations in the amount of plant component material that becomes corroded or eroded into the cooling water. Also, concentrations of dissolved material can increase slightly during batch biocide treatment because blowdown is terminated for approximately 10 to 24 hours to allow the halogen residual to decay.

Another factor causing short-term increases in metal concentrations in the cooling water is the periodic dewatering and mechanical cleaning of the condenser tubes during maintenance outages. Higher copper CW concentrations are typical after an outage. Online cooling tower cleaning to remove silt and organic matter can cause some of the material to become resuspended such that the solids concentration in the blowdowm is slightly higher than normal. CW (and blowdown) suspended solids concentrations are also increased during dust storms because the towers act like large air scrubbers. Seasonal increase in makeup water turbidity also results in higher CW suspended solids.

Also affecting the composition of the waste stream at point of entry to the river are the streams that may be introduced into the blowdown line. One of these is processed liquid radwaste which is relatively pure, low conductivity water that is released in batches of about 15,000 gallons at rates of up to 190 gpm. These releases are necessary if the plant storage inventory is full or if the total organic content of the water is too high to be used in the plant. There have been no releases from the liquid radwaste system since September 19, 1998.

Another source of water discharged to the blowdown line is the standby service water (SSW) system (discussed in more detail in the SSW section below). The primary reason for discharging service water is to reduce the concentration of sulfur or chlorides that have the potential to induce corrosion. Other reasons for discharging include the need to perform maintenance on the submerged components in the spray ponds, the need to clean out accumulations of sediments in the ponds, or to reduce suspended solids in the ponds. Infrequently, several million gallons of standby service water might be released to the blowdown line or to the CW system over a period of a couple days to multiple weeks. This water tends to be of lower cycles of concentration than the circulating cooling water.

Periodically the main condenser becomes scaled, reducing plant efficiency to the point that chemical cleaning of the main condenser becomes necessary. Blowdown to the river will be secured and a cleaning agent, Ferroquest™ or equivalent, will be added to the circulating water system. Sodium tolyltriazole will be added for copper metal corrosion protection. After the treated water has circulated a sufficient time to remove most of the scale (estimated to be one or two hours), sodium hydroxide will be added for pH adjustment. At the completion of the cleaning process, if any permit condition is not met (typically copper), circulating water will be pumped to a storage location using temporary pumps and piping. During this pumping process, the concentration of constituents in the circulating water will be reduced by the addition of makeup water from the river. When the circulating water meets all conditions for discharge,

blowdown to the river will be initiated. After the condenser cleaning process is completed, the stored water will be treated as necessary to meet discharge requirements. Following achievement of discharge limits, the water will be pumped back to the circulating water basin at Columbia Generating Station. Sediment from the cleaning process will be analyzed and disposed in accordance with our solid waste control plan.

Stormwater and Miscellaneous Wastes

Runoff from the plant building roofs is routed through the stormwater system to a small pond (Outfall 002) located approximately 1500 feet northwest of the plant. Stormwater collected in the bermed area around the Diesel Fuel Polishing Building is collected in a sump and periodically discharged to Outfall 002. Also routed to the pond are several wastewater streams. The most significant non-rainfall sources are the water treatment systems. Site potable water is prepared by flocculation and filtration of river water. The mixed media filter is periodically cleaned by backwashing with 15,000-25,000 gallons of potable water. This backwash water is discharged through the storm drain system. A side stream of potable water is provided with additional treatment to produce high purity plant process water. The reverse osmosis unit in this treatment train has a reject stream of about 30 gpm when it is producing water with a feed flow rate of 70 gpm. It also has continuous 5 gpm flow through monitoring instrumentation. Both of these streams are routed to the pond.

Other sources of water discharges to the pond are the sump in the plant General Services Bldg (GSB) basement and floor drains in the Diesel-Generator Bldg (DGB). The GSB sump collects water from building equipment drains and area floor drains. Examples of water sources directed to the sump include HVAC units, pump and valve leakage, demineralized water storage tank overflows, and floor washings. A level switch activates the sump pump and causes the collected water to be discharge to the stormwater pond. The DGB floor drains are connected directly to the stormwater pipe. Among the few sources of water in the DGB are the diesel engine cooling jackets from which approximately 3,800 gallons of water treated with a nitrite-based corrosion inhibitor are drained about once per year.

The Turbine-Generator Bldg (TGB) has three non-radioactive sumps that are directed to radwaste processing. The sumps are receiving points for equipment and floor drains in the TGB. The sumps are no longer physically connected to the storm drainage system. The Radwaste and Reactor buildings have air wash units on the fresh air intakes that operate during warm weather months and discharge to the storm drain system.

A proposed transformer yard oil collection would collect stormwater and/or deluge testing water immediately around each transformer and discharge the water directly to the evaporation ponds that will replace the storm drain pond in 2014. This project is currently in the design phase with tentative implementation in 2016.

Operation and testing of the fire protection system is another source of water discharges to the pond. Periodically portions of the system are removed from service for flushing and flow-rate

tests. These batches or several thousand gallons may also be routed to the sanitary waste system or directly to the ground depending on the location and system configuration.

Other discharges to ground may include hydrotesting, maintenance, and construction wastewater discharges. Hydrotesting discharges such as system and component testing, maintenance discharges such as drainage, flushing, and wash down activities, and construction discharges such as compaction, demolition, vacuum truck digging, dust control watering, concrete curing, concrete cutting, including rinsate and etching solutions, and pressure washing activities. Additionally, discharges to ground may also include condensate discharges from heating, ventilation, and air conditioning systems, air compressors, and engines; potable water system testing and flushing, water tank overflows; other miscellaneous discharges such as well sampling purge water, eyewash and safety shower testing, and incidental releases from facilities.

Stormwater runoff from parking lots, support buildings, and other impervious surfaces around GCS are managed by multiple underground injection control (UIC) wells.

Standby Service Water

The SSW system removes reactor decay heat during normal shutdown conditions and provides a heat sink for emergency equipment during a plant transient or accident. The SSW system is a closed-loop circulating water system that draws cooling water from, and returns heated water to an onsite reservoir. This reservoir consists of an interconnected pair of concrete basins (or spray ponds) with a total capacity of 12 million gallons. Water lost to evaporation, drift, and discharges is replenished from the river or from the site potable water system. Dissolved constituents in the SSW are typically 2½ times river concentrations. Microbiological growth is controlled with periodic batch additions of 50% hydrogen peroxide and Busan 77. The service water is also treated with sodium silicate for corrosion inhibition.

On an infrequent basis, the SSW ponds must be drained down for cleaning or for equipment maintenance. Sediments can also be vacuumed from the bottom of the ponds without draining the ponds. The sediments removed from the ponds are placed in the sediment disposal cells in accordance with EFSEC Resolution No. 299. As discussed above, the ponds can also be dewatered by direct discharge to the blowdown line (Outfall 001).

Sanitary Waste

Sanitary waste from CGS, WNP-1/4, and the support facilities is piped to a treatment system that uses aeration lagoons and facultative stabilization ponds. This wastewater treatment facility is located about ½ mile southeast of CGS. Influent averages about 20,000 gallons per day with the higher flows being coincident with the biannual CGS maintenance outage. When the stabilization ponds are full, the treated wastewater is discharge to percolation beds. These discharges are made a few times per year in accordance with EFSEC Resolution No. 300.

Chemical Usage

Water treatment additives used in the systems discussed above and in other water systems is summarized in the attached table.

CGS Water Treatment Chemical Consumption

System and Chemical	Frequency	Annual Use (lb/year)		Description of Use
		Average	Maximum	
Circulating Water/Turbine Service Water				
Sulfuric Acid	Continuous	2,075,000	2,471,000	pH control
Sodium Hypochlorite	Continuous or Batch ~2-3 times/wk	560,000	1,000~~700~~,000	Biocide
Sodium Bromide	Continuous or Batch ~2-3 times/wk	225,000	350~~269~~,000	Biocide
AMPs Copolymer & Polyphosphate Blend (DVS3A002)	Continuous	355,000	450,000	Dispersant and Corrosion Control
Sodium Tolyltriazole (CWT4543)	Continuous	19,800	19,900	Corrosion Control
Ferroquest ™	Periodic	As needed	140,000	Condenser Cleaning
Sodium Hydroxide	Periodic	As needed	13,000	pH control following chemical cleaning
Spectrus BD1500	Continuous	30,000	45,000	Biodispersant (surfactant)
Foamtrol AF1090	Continuous	13,000	25,000	Antifoaming Agent
Spectrus DT1404 (sodium bisulfite)	Continuous	92,000	150,000	Dehalogenation Agent
Standby Service Water				
Hydrogen Peroxide (50%)	Batch – seasonal	250,000	271,000	Biocide
Busan 77	Batch	3,800	5,100	Biocide
N Sodium Silicate	Batch	42,000	58,000	Corrosion Control
Potable Water				
Sodium Hypochlorite (12%)	Semi-continuous	8,000	8,000	Disinfectant
Poly Aluminum Chloride	Continuous	4,400	4,500	Coagulant Aid
Polymer	Continuous	8	9	Filter Aid
Demineralized Water				
Amino Acid F	Semi-continuous	75	80	Silica Analyzer Reagent
Citric Acid/Surfactant Reagent	Semi-continuous	80	85	Silica Analyzer Reagent
Molybdate 3 Reagent	Semi-continuous	100	100	Silica Analyzer Reagent
Silica Standard Solution	Semi-continuous	75	80	Silica Analyzer Reagent
Closed Cooling Loops				
Nalco 39M	Batch as required	500	600	Corrosion Inhibition – Diesel Jacket Water
Sodium Nitrite	Batch as required	As needed	As needed	Corrosion Inhibition – HVAC Chiller & Heater Systems
Sodium Hydroxide	Batch as required	As needed	As needed	pH Control – HVAC Chiller & Heater Systems
Standby Liquid Control				
Borax	Batch as required	300	400	Reactivity Control (Backup)
Boric Acid	Batch as required	300	400	Reactivity Control (Backup)

ATTACHMENT #3

Issuance Date:	September 30, 2014
Amendment #1 Date:	February 8, 2016
Amendment #2 Date:	March 19, 2019
Effective Date:	November 1, 2014
Expiration Date:	October 31, 2019

National Pollutant Discharge Elimination System
Waste Discharge Permit No. WA002515-1

State of Washington
ENERGY FACILITY SITE EVALUATION COUNCIL (EFSEC)
P.O. Box 43172
Olympia, Washington 98504-3172

In compliance with the provisions of:
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
State of Washington Energy Siting Law
Chapter 80.50 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1342 et seq.

Energy Northwest's Columbia Generating Station
P.O. Box 968
Richland, Washington 99352-0968

is authorized to discharge in accordance with the Special and General Conditions that follow.

Facility Location:
Latitude: 46.47170
Longitude: 119.33280

Treatment Type: Cooling, disinfection, neutralization (blowdown) Filtration, ion exchange (processed radwaste water)

Industry Type:
Steam-Electric Power Generation

Receiving Water:
Outfall 001: Columbia River (river mile 351.75)
Outfall 002: Ground Water
Latitude: 46.47389
Longitude: 119.32861

SIC Code: 4911

NAICS Code: 221113

Categorical Industry:
40 CFR Part 423 Steam Electric Power Generating Point Source Category

Kathleen Drew, Chair
Energy Facility Site Evaluation Council

Table of Contents

Summary of Permit Report Submittals

Refer to the Special and General Conditions of this permit for additional submittal requirements.

Permit Section	Submittal	Frequency	First Submittal Date
S3.A	Discharge Monitoring Report	Monthly	December 15, 2014
S3.E	Reporting Permit Violations	As necessary	
S3.F	Other Reporting	As necessary	
S4.A	Operations and Maintenance Manual	1/permit cycle	May 1, 2019
S4.A	Operations and Maintenance Manual Update	As necessary	
S4.B	Reporting Bypasses	As necessary	
S5.C	Solid Waste Control Plan	1/permit cycle	May 1, 2019
S5.C	Modification to Solid Waste Plan	As necessary	
S6	Application for Permit Renewal	1/permit cycle	May 1, 2019
S7	Compliance Schedule	As necessary	December 1, 2014
S7.1	Operations and Maintenance Manual (impoundment)	Once	December 1, 2014
S7.2	Notice of completion (impoundment)	Once	May 1, 2015
S7.3	Scope of work	Once	November 1, 2016
S7.4	Engineering report	Once	May 1, 2019
S7.5	Ground Water Quality Assurance Project Plan (QAPP) Update	Twice	May 1, 2015
S8	Non-Routine and Unanticipated Discharges	As necessary	
S9	Spill Plan	1/permit cycle, updates submitted as necessary	May 1, 2019
S10	Stormwater Pollution Prevention Plan	1/permit cycle	November 1, 2015
S11	Outfall Evaluation	1/permit cycle	May 1, 2019
S12.A	Operations and Maintenance Manual (cooling water intake structure (CWIS))	1/permit cycle	November 1, 2015
S12.A	Operations and Maintenance Manual (CWIS) Update	As necessary	
S12.B	Entrainment Characterization Study Design	Once	November 1, 2015
S12.B	Entrainment Characterization Study	Once	May 1, 2019
S12.B	Engineering Analysis	As necessary	
S13.A	Acute Toxicity Effluent Test Results	Quarterly	April 30, 2015
S14.A	Chronic Toxicity Effluent Test Results with Permit Renewal Application	Once	May 1, 2019
G1	Notice of Change in Authorization	As necessary	
G4	Permit Application for Substantive Changes to the Discharge	As necessary	
G5	Engineering Report for Construction or Modification Activities	As necessary	
G7	Notice of Permit Transfer	As necessary	
G10	Duty to Provide Information	As necessary	
G21	Compliance Schedules	As necessary	

Special Conditions

S1. Discharge limits

S1.A. Process wastewater discharges

All discharges and activities authorized by this permit must be consistent with the terms and conditions of this permit.

The discharge of any of the following pollutants more frequently than, or at a level in excess of that identified and authorized by this permit violates the terms and conditions of this permit.

There shall be no discharge of wastewater of radioactive materials in excess of the limitations on radioactive effluents established by the Nuclear Regulatory Commission in the facility operation license and in 10 CFR Parts 20 and 50.

Beginning on the effective date of this permit, the Permittee is authorized to discharge circulating cooling water blowdown, service water system blowdown, and radioactive wastewater treatment system effluent, to the Columbia River at the permitted location subject to complying with the following limits:

Effluent Limits for Circulating Water Blowdown: Outfall 001 Latitude 46.47139 Longitude 119.26250		
Parameter	**Average Monthly [a]**	**Maximum Daily [b]**
Flow	5.6 million gallons/day (mgd)	9.4 (mgd)
Total Residual Halogen (TRH) [c]	Not Applicable	0.1 milligrams/liter (mg/L)
Chromium (Total)	8.2 µg/L	16.4 µg/L
Zinc (Total)	53 µg/L	107 µg/L
Polychlorinated biphenyl compounds (PCBs)	No discharge	No discharge
The 126 priority pollutants (40 CFR 423 Appendix A) contained in chemicals added for cooling tower maintenance, except chromium and zinc	No detectable amount	No detectable amount
	Minimum	**Maximum**
pH [d]	6.5 standard units (SU)	9.0 SU
The effluent limit for acute toxicity is: No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC). The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the acute mixing zone, defined in Section 1.B of this permit. The ACEC equals 11% effluent. See S13 for more information.		

Effluent Limits for Circulating Water Blowdown: Outfall 001 Latitude 46.47139 Longitude 119.26250	
a	Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the discharge value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured.
b	Maximum daily effluent limit is the highest allowable daily discharge. The daily discharge is the average discharge of a pollutant measured during a calendar day. This does not apply to pH or temperature.
c	In the event of an equipment failure, CGS will operate using a batch halogenation process of the cooling water system. When the batch halogenation process is utilized, the circulating water blowdown isolation valves must be closed during biofouling treatments and remain closed until the concentration of total residual halogen is less than 0.1 mg/L for at least 15 minutes.
d	When pH is continuously monitored, excursions between 5.0 and 6.5, or 9.0 and 10.0 will not be considered violations if no single excursion exceeds 60 minutes in length and total excursions do not exceed 7 hours and 30 minutes per month. Any excursions below 5.0 and above 10.0 at any time are violations.

S1.B. Mixing zone authorization

Mixing zone for Outfall 001

The paragraphs below define the maximum boundaries of the mixing zones.

Chronic mixing zone

The width of the chronic mixing zone is limited to a distance of 175 feet (53 meters). The length of the chronic mixing zone extends 100 feet (30 meters) upstream and 308 feet (94 meters) downstream of the outfall. The mixing zone extends from the discharge port to the top of the water surface. The concentration of pollutants at the edge of the chronic zone must meet chronic aquatic life criteria and human health criteria.

Acute mixing zone

The width of the acute mixing zone is limited to a distance of 18 feet (5 meters) in any horizontal direction from the outfall. The length of the acute mixing zone extends 10 feet (3 meters) upstream and 31 feet (9 meters) downstream of the outfall. The mixing zone extends from the discharge port to the top of the water surface. The concentration of pollutants at the edge of the acute zone must meet acute aquatic life criteria.

Available Dilution (dilution factor)	
Acute Aquatic Life Criteria	9
Chronic Aquatic Life Criteria	93
Human Health Criteria - Carcinogen	93
Human Health Criteria - Non-carcinogen	93

S1.C. Process wastewater and stormwater discharges to Outfall 002

Beginning on the effective date of this permit, the Permittee is authorized to discharge stormwater runoff, wastewater from potable and demineralized water production, intake air wash unit blowdown, and water from non-radioactive equipment dewatering, leakage, testing, cleaning, and flushing to ground at the permitted location identified on the cover sheet. The discharge shall not cause a violation of the ground water standards (Chapter 173-200 WAC). Existing and beneficial uses of ground water shall be protected. This authorization expires when the flows identified in this section are redirected to the double-lined impoundment required in S7.2 of this permit.

S1.D Stormwater discharges to ground

Beginning on the effective date of this permit, the Permittee is authorized to discharge stormwater runoff to underground injection control wells identified in the permit application and any amendments to the application approved by EFSEC. The discharge shall not cause a violation of the ground water standards (Chapter 173-200 WAC). Existing and beneficial uses of ground water shall be protected.

S2. Monitoring requirements

S2.A. Monitoring schedule

The Permittee must monitor in accordance with the following schedule and the requirements specified in **Appendix A**.

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
(1) Circulating Water Blowdown: Outfall 001			
Flow	million gallons/day (mgd)	Continuous [1]	Metered/recorded
pH [2, 3, 17]	standard units	Continuous	Metered/recorded
Temperature [4 and 5]	degrees centigrade (°C)	Continuous	Metered/recorded
Turbidity	NTU	Monthly [6]	Grab [7]
Total Residual Halogen (TRH)[16]	milligrams/liter (mg/L)	Continuous[1]	Metered/recorded
Total Residual Halogen	milligrams/liter (mg/L)	2/treatment, as needed[15]	Grab
Copper (Total)	micrograms/liter (µg/L)	Monthly	24-Hour composite [8]
Chromium (Total)	µg/L	Monthly	24-Hour composite [8]
Zinc (Total)	µg/L	Monthly	24-Hour composite [8]
Priority Pollutants (PP) – Total Metals	µg/L; ng/L for mercury	Annually [9]	24-Hour composite Grab for mercury
PP – Volatile Organic Compounds	µg/L	Annually [9]	Grab
PP – Acid-extractable Compounds	µg/L	Annually [9]	24-Hour composite
PP – Base-neutral Compounds	µg/L	Annually [9]	24-Hour composite

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
PP – Dioxin	pg/L	Annually [9]	24-Hour composite
Asbestos	million fibers/liter (MFL)	1/Permit Cycle [10]	Grab
(2) Standby Service Water Discharges to Blowdown Line Outfall 001: Pond to be discharged			
Volume	mgd	Continuous [1] or volume estimate [11]	Metered/estimated
pH	SU	Daily [12]	Grab
(3) Outfall 002 – The Permittee must monitor until flows are redirected to the evaporative pond.			
Chromium (Total)	µg/L	2/year [13]	24-hour composite
Lead (Total)	µg/L	2/year	24-hour composite
Fluoride	mg/L	2/year	24-hour composite
Nitrate-Nitrite (as N)	mg/L	2/year	24-hour composite
Copper (Total)	µg/L	2/year	24-hour composite
Nickel (Total)	µg/L	2/year	24-hour composite
Iron (Total)	µg/L	2/year	24-hour composite
Manganese (Total)	µg/L	2/year	24-hour composite
Zinc (Total)	µg/L	2/year	24-hour composite
Chloride	mg/L	2/year	24-hour composite
Sulfate	mg/L	2/year	24-hour composite
Total Dissolved Solids	mg/L	2/year	24-hour composite
pH	SU	2/year	Grab
Conductivity	µS/cm	2/year	Grab
(4) Evaporative Pond			
Volume	gallons	1/day – recorded but not reported [14]	Calculated [14]
(5) Evaporative Pond Leak Detection System – The Permittee must monitor in accordance with the approved Leak Detection Plan required in S7.1 and report in accordance with S3.			
(6) Permit Renewal Application Requirements – Outfall 001			
Cyanide	µg/L	Once in the last year	Grab
Total Phenolic Compounds	µg/L	Once in the last year	Grab
(7) Whole Effluent Toxicity Testing – Circulating Water Blowdown: Outfall 001			
Acute Toxicity Testing	As specified in Special Condition S13		
Chronic Toxicity Testing	As specified in Special Condition S14		
(8) Cooling water withdrawal			
Flow	million gallons/day (mgd)	Continuous [1]	Metered/recorded

1	Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The Permittee must sample daily when continuous monitoring is not possible.
2	The Permittee must report the instantaneous maximum and minimum pH monthly. Do not average pH values.
3	The Permittee must record and report the: • Number of minutes the pH value measured between 5.0 and 6.5 and between 9.0 and 10.0 for each day. • Total minutes for the month.

Parameter	Units & Speciation	Minimum Sampling Frequency	Sample Type
	• Monthly instantaneous maximum and minimum pH. If multiple excursions occur during the day, note the duration for each excursion. If submitting electronic DMRs, include this additional information in the parameter notes.		
4	Temperature grab sampling must occur when the effluent is at or near its daily maximum temperature, which usually occurs in the late afternoon. If measuring temperature continuously, the Permittee must determine and report a daily maximum from half-hour measurements in a 24-hour period. Continuous monitoring instruments must achieve an accuracy of 0.2 degrees C and the Permittee must verify accuracy annually.		
5	The sampling point for temperature is at the Circulating Water Pumphouse (CWP) until monitoring equipment is operational in the River Pumphouse (RP). The Permittee may maintain temperature monitoring equipment at the CWP for use during maintenance and outages of equipment at the RP. The Permittee must inform EFSEC on the monthly report when the RP is operational, and thereafter when reported results contain data from the CWP.		
6	Monthly means once every calendar month.		
7	Grab means an individual sample collected over a fifteen (15) minute, or less, period.		
8	A Grab sample may be substituted for 24-Hour composite sampling until equipment installed as required in Section S7.8 is operational. The Permittee must inform EFSEC on the monthly report of the sample type.		
9	If the Permittee submits engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136, annual monitoring is not required. The Permittee must, at a minimum, sample once in the last year to meet permit renewal application requirements. See Appendix A to identify the specific pollutants in the priority pollutant groups listed.		
10	Asbestos grab sampling must occur once during the permit cycle when the circulating water cooling system is operating at an average number of cycles of concentration and only blowdown is being discharged. Test results must be submitted with the application for permit renewal.		
11	Volumes of batch releases of water for pond draining may be estimated based on level measurements. Feed-and-bleed discharges made directly to the blowdown line must be measured by flow meter.		
12	Prior to commencement of discharges, the Permittee must verify that pH is within specified limits. Measurements must be taken daily while discharge is in progress.		
13	Samples must represent a typical facility discharge to Outfall 002. The Permittee must collect one sample annually between March 15 – May 15 and one sample annually between September 15 – November 15.		
14	Monitor all pond influent flows, add, and report total volume for the month on the discharge monitoring report.		
15	Conduct batch sampling procedure prior to commencing discharge in the event the continuous monitor becomes inoperable for any reason.		
16	Report maximum daily concentration of TRH.		
17	The compliance point for pH is downstream of the dehalogenation tie-in to Outfall 001.		

S2.B. Sampling and analytical procedures

Samples and measurements taken to meet the requirements of this permit must represent the volume and nature of the monitored parameters, including representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

Sampling and analytical methods used to meet the monitoring requirements specified in this permit must conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136 (or as applicable in 40 CFR subchapters N [Parts 400–471] or O [Parts 501-503]) unless otherwise specified in this permit. EFSEC may only specify alternative methods for parameters without limits and for those parameters without an EPA approved test method in 40 CFR Part 136.

S2.C. Flow measurement, field measurement, and continuous monitoring devices

The Permittee must:

1. Select and use appropriate flow measurement, field measurement, and continuous monitoring devices and methods consistent with accepted scientific practices.
2. Install, calibrate, and maintain these devices to ensure the accuracy of the measurements is consistent with the accepted industry standard and the manufacturer's recommendation for that type of device.
3. Calibrate continuous monitoring instruments for the following parameters weekly unless it can demonstrate a longer period is sufficient based on monitoring records. The Permittee:
    a. May calibrate apparatus for continuous monitoring of dissolved oxygen by air calibration.
    b. Must calibrate continuous pH measurement instruments using a grab sample analyzed in the lab with a pH meter calibrated with standard buffers and analyzed within 15 minutes of sampling.
    c. Must calibrate continuous chlorine measurement instruments using a grab sample analyzed in the laboratory within 15 minutes of sampling.
4. Use field measurement devices as directed by the manufacturer and do not use reagents beyond their expiration dates.
5. Calibrate flow-monitoring devices at a minimum frequency of at least one calibration per year.
6. Maintain calibration records for at least three years.

S2.D. Laboratory accreditation

The Permittee must ensure that all monitoring data required by EFSEC for permit specified parameters is prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement.

S2.E. Request for reduction in monitoring

The Permittee may request a reduction of the sampling frequency after twelve (12) months of monitoring. EFSEC will review each request and at its discretion grant the request when it reissues the permit or by a permit modification.

The Permittee must:

1. Provide a written request.
2. Clearly state the parameters for which it is requesting reduced monitoring.
3. Clearly state the justification for the reduction.

S3. Reporting and recording requirements

The Permittee must monitor and report in accordance with the following conditions. Falsification of information submitted to Council is a violation of the terms and conditions of this permit.

S3.A. Reporting

The first monitoring period begins on the effective date of the permit. The Permittee must:

1. Summarize, report, and submit monitoring data obtained during each monitoring period on the electronic Discharge Monitoring Report (DMR) form provided by Ecology within WQWebDMR. Include data for each of the parameters tabulated in Special Condition S2 and as required by the form. Report a value for each day sampling occurred (unless specifically exempted in the permit) and for the summary values (when applicable) included on the electronic form.

   To find out more information and to sign up for WQWebDMR go to: http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html
2. Enter the "no discharge" reporting code for an entire DMR, for a specific monitoring point, or for a specific parameter as appropriate, if the Permittee did not discharge wastewater or a specific pollutant during a given monitoring period.
3. Report single analytical values below detection as "less than the detection level (DL)" by entering < followed by the numeric value of the detection level (e.g. < 2.0) on the DMR. If the method used did not meet the minimum DL and quantitation level (QL) identified in the permit, report the actual QL and DL in the comments or in the location provided.
4. Report the test method used for analysis in the comments if the laboratory used an alternative method not specified in the permit and as allowed in Appendix A.
5. Calculate average values (unless otherwise specified in the permit) using:

a. The reported numeric value for all parameters measured between the agency-required detection value and the agency-required quantitation value.

b. One-half the detection value (for values reported below detection) if the lab detected the parameter in another sample for the reporting period.

c. Zero (for values reported below detection) if the lab did not detect the parameter in another sample for the reporting period.

6. Report single-sample grouped parameters (for example priority pollutants, PAHs, pulp and paper chlorophenolics, TTOs) on the WQWebDMR form and include: sample date, concentration detected, detection limit (DL) (as necessary), and laboratory quantitation level (QL) (as necessary). The Permittee must also submit an electronic PDF copy of the laboratory report using WQWebDMR.

   If the Permittee has obtained a waiver from electronic reporting or if submitting prior to the compliance date, the Permittee must submit a paper copy of the laboratory report providing the following information: date sampled, sample location, date of analysis, parameter name, CAS number, analytical method/number, detection limit (DL), laboratory quantitation level (QL), reporting units, and concentration detected.

   The contract laboratory reports must also include information on the chain of custody, QA/QC results, and documentation of accreditation for the parameter.

7. Ensure that DMRs are electronically submitted no later than the dates specified below, unless otherwise specified in this permit.

   If the Permittee has obtained a waiver, it must ensure that paper forms are postmarked or received by EFSEC no later than the dates specified below, unless otherwise specified in this permit.

8. Submit DMRs for parameters with the monitoring frequencies specified in S2 (monthly, quarterly, annual, etc.) at the reporting schedule identified below. The Permittee must:

   a. Submit **monthly** DMRs by the 15th day of the following month.

   b. Submit **annual DMRs**, unless otherwise specified in the permit, by January 15 for the previous calendar year. The annual sampling period is the calendar year.

   c. Submit **semiannual DMRs**, unless otherwise specified in the permit, by July 15 and January 15 of each year. Semiannual sampling periods are January through June, and July through December.

   d. Submit permit renewal application monitoring data in WQWebDMR as required in Special Condition S2 by 5/1/2019. If the Permittee has

obtained a waiver from EFSEC, it must submit the permit renewal application monitoring data in a report by 5/1/2019.

9. Submit reports to EFSEC online using Ecology's electronic WQWebDMR submittal forms (electronic DMRs) as required above. Send paper reports to:

EFSEC
P.O. Box 43172
Olympia, WA 98504-3172

Department of Ecology
Richland Office
Attn: Columbia Generating Station Monitoring
3100 Port of Benton Blvd.
Richland, WA 99354

S3.B. Records retention

The Permittee must retain records of all monitoring information for a minimum of three (3) years. Such information must include all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. The Permittee must extend this period of retention during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by EFSEC.

S3.C. Recording of results

For each measurement or sample taken, the Permittee must record the following information:

1. The date, exact place, method, and time of sampling or measurement.
2. The individual who performed the sampling or measurement.
3. The dates the analyses were performed.
4. The individual who performed the analyses.
5. The analytical techniques or methods used.
6. The results of all analyses.

S3.D. Additional monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by Special Condition S2 of this permit, then the Permittee must include the results of such monitoring in the calculation and reporting of the data submitted in the Permittee's DMR unless otherwise specified by Special Condition S2.

S3.E. Reporting permit violations

The Permittee must take the following actions when it violates or is unable to comply with any permit condition:

1. Immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance and correct the problem.
2. If applicable, immediately repeat sampling and analysis. Submit the results of any repeat sampling to EFSEC within thirty (30) days of sampling.

a. Immediate reporting

The Permittee must immediately report to the Department of Ecology, EFSEC, and the Department of Health, Drinking Water Program (at the numbers listed below), all:

- Failures of the disinfection system.
- Plant bypasses discharging to a waterbody used as a source of drinking water.

Ecology, Central Regional Office	509-575-2490
EFSEC	360-664-1345
Department of Health, Drinking Water Program	800-521-0323 (business hours) 877-481-4901 (after business hours)

b. Twenty-four-hour reporting

The Permittee must report the following occurrences of noncompliance by telephone, to EFSEC at the telephone number listed above, within 24 hours from the time the Permittee becomes aware of any of the following circumstances:

1. Any noncompliance that may endanger health or the environment, unless previously reported under immediate reporting requirements.
2. Any unanticipated bypass that causes an exceedance of any effluent limit in the permit (See Part S4.B., "Bypass Procedures").
3. Any upset that causes an exceedance of an effluent limit in the permit (See G.15, "Upset").
4. Any violation of a maximum daily or instantaneous maximum discharge limit for any of the pollutants in Section S1.A of this permit.
5. Any overflow prior to the treatment works, whether or not such overflow endangers health or the environment or exceeds any effluent limit in the permit.

c. Report within five days

The Permittee must also submit a written report within five days of the time that the Permittee becomes aware of any reportable event under subparts a or b, above. The report must contain:

1. A description of the noncompliance and its cause.

2. The period of noncompliance, including exact dates and times.
3. The estimated time the Permittee expects the noncompliance to continue if not yet corrected.
4. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
5. If the noncompliance involves an overflow prior to the treatment works, an estimate of the quantity (in gallons) of untreated overflow.

d. Waiver of written reports

EFSEC may waive the written report required in subpart c, above, on a case-by-case basis upon request if the Permittee has submitted a timely oral report.

e. All other permit violation reporting

The Permittee must report all permit violations, which do not require immediate or within 24 hours reporting, when it submits monitoring reports for S3.A ("Reporting"). The reports must contain the information listed in subpart c, above. Compliance with these requirements does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

f. Report Submittal

The Permittee must submit reports to the address listed in S3.

S3.F. Other reporting

a. Spills of Oil or Hazardous Materials

The Permittee must report a spill of oil or hazardous materials in accordance with the requirements of RCW 90.56.280 and chapter 173-303-145 WAC. You can obtain further instructions at the following website: http://www.ecy.wa.gov/programs/spills/other/reportaspill.htm .

b. Failure to submit relevant or correct facts

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to EFSEC, it must submit such facts or information promptly.

S3.G. Maintaining a copy of this permit

The Permittee must keep a copy of this permit at the facility and make it available upon request to EFSEC or Ecology inspectors.

S4. Operation and maintenance

The Permittee must, at all times, properly operate and maintain all facilities or systems of treatment and control (and related appurtenances), which are installed to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes keeping a daily operation logbook (paper or electronic), adequate laboratory controls, and appropriate quality assurance procedures. This provision of the permit requires the Permittee to operate backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of this permit.

S4.A. Operations and maintenance (O&M) manual

a. O&M manual submittal and requirements

The Permittee must:

1. Prepare an O&M Manual for the evaporative pond system and associated piping that meets the requirements of 173-240-150 WAC and submit it to EFSEC for approval by December 1, 2014. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).
2. Submit to EFSEC for review substantial changes or updates to the O&M Manual whenever it incorporates them into the manual. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).
3. Submit to EFSEC the latest version of the evaporative pond and circulating water system O&M Manual with the next application for permit renewal (May 1, 2019).
4. Keep the approved O&M Manual at the permitted facility.
5. Follow the instructions and procedures of this manual.

S4.B. Bypass procedures

This permit prohibits a bypass, which is the intentional diversion of waste streams from any portion of a treatment facility.

EFSEC may take enforcement action against a Permittee for a bypass unless one of the following circumstances (1, 2, or 3) applies.

1. Bypass for essential maintenance without the potential to cause violation of permit limits or conditions.

   This permit authorizes a bypass if it allows for essential maintenance and does not have the potential to cause violations of limits or other conditions of this permit, or adversely impact public health as determined by EFSEC prior to the bypass. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the bypass.

2. Bypass is unavoidable, unanticipated, and results in noncompliance of this permit.

   This permit authorizes such a bypass only if:

   a. Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

   b. No feasible alternatives to the bypass exist, such as:

      - The use of auxiliary treatment facilities.
      - Retention of untreated wastes.
      - Stopping production.
      - Maintenance during normal periods of equipment downtime, but not if the Permittee should have installed adequate backup equipment in the exercise of reasonable engineering judgment to prevent a bypass.
      - Transport of untreated wastes to another treatment facility or preventative maintenance), or transport of untreated wastes to another treatment facility.

   c. The Permittee has properly notified EFSEC of the bypass as required in Special Condition S3.E of this permit.

3. If bypass is anticipated and has the potential to result in noncompliance of this permit.

   a. The Permittee must notify EFSEC at least thirty (30) days before the planned date of bypass. The notice must contain:

      - A description of the bypass and its cause.
      - An analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing.
      - A cost-effectiveness analysis of alternatives including comparative resource damage assessment.
      - The minimum and maximum duration of bypass under each alternative.
      - A recommendation as to the preferred alternative for conducting the bypass.
      - The projected date of bypass initiation.
      - A statement of compliance with SEPA.
      - A request for modification of water quality standards as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated.
      - Details of the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

b. For probable construction bypasses, the Permittee must notify EFSEC of the need to bypass as early in the planning process as possible. The Permittee must consider the analysis required above during preparation of the engineering report or facilities plan and plans and specifications and must include these to the extent practical. In cases where the Permittee determines the probable need to bypass early, the Permittee must continue to analyze conditions up to and including the construction period in an effort to minimize or eliminate the bypass.

c. EFSEC will consider the following prior to issuing an administrative order for this type of bypass:

- If the bypass is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
- If feasible alternatives to bypass exist, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment facility.
- If the Permittee planned and scheduled the bypass to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed bypass and any other relevant factors, EFSEC will approve or deny the request. EFSEC will give the public an opportunity to comment on bypass incidents of significant duration, to the extent feasible. EFSEC will approve a request to bypass by issuing an administrative order under RCW 90.48.120.

S5. Solid wastes

S5.A. Solid waste handling

The Permittee must handle and dispose of all solid waste material in such a manner as to prevent its entry into state ground or surface water.

The Permittee must follow the procedures in EFSEC Resolution No. 299 or the most current resolution pertaining to the disposal of sediments from the cooling water system and double-lined impoundment.

S5.B. Leachate

The Permittee must not allow leachate from its solid waste material to enter state waters without providing all known, available, and reasonable methods of treatment, nor allow such leachate to cause violations of the State Surface Water Quality Standards, Chapter 173-201A WAC, or the State Ground Water Quality Standards, Chapter 173-200 WAC. The Permittee must apply for a permit or permit modification as may be required for such discharges to state ground or surface waters.

S5.C. Solid waste control plan

The Permittee must submit all proposed revisions or modifications to the solid waste control plan to EFSEC for review and approval at least 30 days prior to implementation. The Permittee must comply with the approved solid waste control plan and any modifications once approved. The Permittee must submit an update of the solid waste control plan by May 1, 2019. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

S6. Application for permit renewal or modification for facility changes

The Permittee must submit an application for renewal of this permit by May 1, 2019. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

The Permittee must also submit a new application or supplement at least one hundred eighty (180) days prior to commencement of discharges, resulting from the activities listed below, which may result in permit violations. These activities include any facility expansions, production increases, or other planned changes, such as process modifications, in the permitted facility.

S7. Compliance schedule

By the dates tabulated below, the Permittee must complete the following tasks and submit a report describing, at a minimum:

- Whether it completed the task and, if not, the date on which it expects to complete the task.
- The reasons for delay and the steps it is taking to return the project to the established schedule.

	Tasks	Date Due
Outfall 002		
1.	Submit an Operation and Maintenance (O&M) Manual for the planned double-lined impoundment to EFSEC for review and approval. In addition to the requirements of Chapter 173-240-150 WAC, the O&M Manual must include a leak detection plan to monitor or test for the structural integrity of the impoundment liner.	December 1, 2014
2.	Complete installation of the double-lined impoundment and submit a Notice of Completion to EFSEC.	May 1, 2015
Circulating cooling water system losses		
3.	Submit a scope of work for analysis of circulating cooling water system losses to EFSEC for review and approval.	November 1, 2016

	Tasks	Date Due
	The scope of work must include plans for how the analysis will be conducted. The analysis must include a methodology to estimate the quantity of water losses. The methodology must include a proposal for mounding analysis, as well as recommendations for water quality sampling and water level measurements based on previous findings.	
4.	Submit an approvable engineering report in accordance with Chapter 173-240 WAC for circulating cooling water system losses to EFSEC for review and approval.	May 1, 2019
Groundwater monitoring		
5.	Submit an update to the *Ground Water Quality Study Quality Assurance Project Plan* (QAPP) prepared as a requirement under the previous permit to EFSEC for review and approval. The update must address changes to the QAPP required due to both on-the-ground changes and findings of studies completed to-date.	May 1, 2015
6.	Submit an update to the *Ground Water Quality Study Quality Assurance Project Plan* (QAPP) to EFSEC for review and approval. The update must address the findings of Tasks 1-5 above.	May 1, 2019
Outfall 001 temperature monitoring		
7.	Relocate temperature monitoring and reporting location to the River Pumphouse. Update the O&M Manual to address this change.	November 1, 2015
Outfall 001 composite sampling		
8.	Install sampling equipment capable of collecting 24-Hour composite and grab samples for parameters specified in Section S2 and begin sampling using this method as soon as possible following installation. Update the O&M Manual to address this change.	November 1, 2015

S8. Non-routine and unanticipated discharges

1. Beginning on the effective date of this permit, the Permittee is authorized to discharge non-routine wastewater on a case-by-case basis if approved by EFSEC. Prior to any such discharge, the Permittee must contact EFSEC and at a minimum provide the following information:

   a. The proposed discharge location

b. The nature of the activity that will generate the discharge

c. Any alternatives to the discharge, such as reuse, storage, or recycling of the water

d. The total volume of water it expects to discharge

e. The results of the chemical analysis of the water

f. The date of proposed discharge

g. The expected rate of discharge discharged, in gallons per minute

2. The Permittee must analyze the water for all constituents limited for the discharge and report them as required by subpart 1.e above. The analysis must also include any parameter deemed necessary by EFSEC. All discharges must comply with the effluent limits as established in Special Condition S1 of this permit, water quality standards, and any other limits imposed by EFSEC.

3. The Permittee must limit the discharge rate, as referenced in subpart 1.g above, so it will not cause erosion of ditches or structural damage to culverts and their entrances or exits.

4. The discharge cannot proceed until EFSEC has reviewed the information provided and has authorized the discharge by letter to the Permittee or by an Administrative Order. Once approved and if the proposed discharge is to a municipal storm drain, the Permittee must obtain prior approval from the municipality and notify it when it plans to discharge.

S9. Spill control plan

S9.A. Spill control plan submittals and requirements

The Permittee must:

1. Submit to EFSEC an update to the existing *Oil and Hazardous Substances Spill Prevention, Control and Counter-Measure Plan* by May 1, 2019. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

2. Update the spill plan as needed.

3. Send changes to the plan to EFSEC.

4. Follow the plan and any supplements throughout the term of the permit.

S9.B. Spill control plan components

The spill control plan must include the following:

1. A list of all bulk oil and petroleum products and other materials used and/or stored on-site, which when spilled, or otherwise released into the environment, designate as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) by the procedures set forth in WAC 173-303-070. Include other materials used and/or stored on-site which may become pollutants or cause pollution upon reaching state's waters.

2. A description of preventive measures and facilities (including an overall facility plot showing drainage patterns) which prevent, contain, or treat spills of these materials.
3. A description of the reporting system the Permittee will use to alert responsible managers and legal authorities in the event of a spill.
4. A description of operator training to implement the plan.

The Permittee may submit plans and manuals required by 40 CFR Part 112, contingency plans required by Chapter 173-303 WAC, or other plans required by other agencies, which meet the intent of this section.

S10. Stormwater pollution prevention plan

The Permittee must prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the requirements of this permit. The SWPPP must be submitted to EFSEC by November 1, 2015. The SWPPP and all of its modifications must be signed in accordance with General Condition G1. Retain the SWPPP on-site.

S10.A. Stormwater pollution prevention plan (SWPPP) general requirements

The Permittee must:

1. Provide all known, available, and reasonable methods of prevention, control, and treatment (AKART) of stormwater pollution.
2. Prevent violations of surface water quality, ground water quality, or sediment management standards.
3. Comply with applicable federal technology-based treatment requirements under 40 CFR 125.3.
4. Modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the facility that significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged.
5. Send modifications to the plan to EFSEC.
6. Follow the plan and any supplements throughout the term of the permit.

S10.B. SWPPP components

The Permittee must prepare the SWPPP in accordance with the guidance provided in the *Stormwater Pollution Prevention Planning for Industrial Facilities (Ecy Pub. No. 04-10-030, https://fortress.wa.gov/ecy/publications/SummaryPages/0410030.html)*. The SWPPP may include applicable portions of plans prepared for other purposes at the facility. Plans or portions of plans incorporated into the SWPPP become enforceable requirements of this permit.

The SWPPP must include the following elements:

1. A site map.

2. Assessment and description of existing and potential pollutant sources.
3. A description of the operational best management practices (BMPs).
4. A description of the selected source-control BMPs.
5. When necessary, a description of the erosion and sediment control BMPs.
6. When necessary, a description of the treatment BMPs.
7. An implementation schedule.

S10.C. SWPPP implementation

The Permittee must conduct two inspections per year – one during the wet season (October 1 – April 30) and the other during the dry season (May 1 – September 30).

1. The wet season inspection must be conducted during a rainfall event by personnel named in the SWPPP to verify that the description of potential pollutant sources required under this permit are accurate; the site map as required in the SWPPP has been updated or otherwise modified to reflect current conditions; and the controls to reduce pollutants in stormwater discharges associated with industrial activities identified in the SWPPP are being implemented and are adequate. The wet weather inspection must include observations of the presence of floating materials, suspended solids, oil and grease, discolorations, turbidity, odor, etc. in the stormwater discharge(s).
2. Personnel named in the SWPPP must conduct the dry season inspection. The inspection must determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, noncontact cooling water, or process water to the stormwater system. If an unpermitted, non-stormwater discharge is discovered, the Permittee must immediately notify EFSEC.

S10.D. SWPPP evaluation

The Permittee must evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly implemented in accordance with the terms of the permit or whether additional controls are needed. A record must be maintained summarizing the results of inspections and include a certification, in accordance with General Condition G1, that the facility is in compliance with the plan and in compliance with the permit. The record must identify any incidents of noncompliance.

S11. Outfall evaluation

The Permittee must inspect, every five years, the submerged portion of the outfall line and diffuser to document its integrity and continued function. If conditions allow for a photographic verification, the Permittee must include such verification in the report. By May 1, 2019, the Permittee must submit the inspection report to EFSEC.

S12. Cooling water intake structure

The Permittee must ensure that the cooling water intake structure (CWIS) is designed, operated, and maintained to minimize adverse environmental impact as follows.

S12.A. Operations and maintenance (O&M) manual

The Permittee must, at all times, properly operate and maintain the CWIS including any technology used to minimize impingement and entrainment.

1. O&M manual submittal and requirements

The Permittee must:

a. Prepare an O&M Manual for the CWIS and submit it to EFSEC for approval by November 1, 2015. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).

b. Submit to EFSEC for review substantial changes or updates to the O&M Manual whenever it incorporates them into the manual. The Permittee must submit a paper copy and an electronic copy (preferably as a PDF).

c. Keep the approved O&M Manual at the permitted facility.

d. Follow the instructions and procedures of this manual.

2. O&M manual components

The O&M manual must include:

a. Procedures for evaluating impingement as required in S12.A.3.

b. Procedures for evaluating entrainment as required in S12.A.4.

c. Procedures for reporting any significant impingement or entrainment to EFSEC by telephone at 360-956-2121 within 24 hours.

3. Impingement evaluation

The O&M manual must include procedures for evaluating impingement of any life stages of fish and shellfish on the outer surface of the intake structure, including where feasible:

a. Visual or remote monitoring during times when the cooling water intake structure is operational, at least weekly.

   1. If conditions allow for a photographic verification, the Permittee must include such verification in the inspection.

b. Document inspection dates, findings, and any maintenance performed.

4. Entrainment evaluation

Following completion of the entrainment characterization study required in S12.B, the O&M manual must be revised to include procedures for on-going

evaluation of entrainment of any life stages of fish and shellfish downstream of the outer surface of the intake structure, including where feasible:

a. Visual or remote monitoring during times when the cooling water intake structure is operational, at least weekly.

    1. If conditions allow for a photographic verification, the Permittee must include such verification in the inspection.

b. Document inspection dates, findings, and any maintenance performed.

S12.B. Entrainment Characterization Study

The Permittee must prepare and conduct an entrainment characterization study consistent with the content requirements in 40 CFR 122.21(r) (9).

1. Study design

The Permittee must:

a. Prepare documentation of the proposed entrainment characterization study design and submit it to EFSEC for approval by November 1, 2015. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).

2. Study implementation

The Permittee must:

a. Following EFSEC approval of the study design referenced in S12.B.1, conduct the entrainment characterization study according to the approved design.

b. Submit the final entrainment characterization study to EFSEC by May 1, 2019. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).

3. Engineering analysis

If the final entrainment characterization study report, or any other monitoring, indicates significant entrainment or impingement of federally-listed threatened and endangered species, the Permittee must:

a. Prepare an engineering analysis, including costs and benefits associated with replacement of the intake structure consistent with approvable design criteria.

b. Submit the final engineering analysis report to EFSEC by May 1, 2019. The Permittee must submit a paper copy and an electronic copy (preferably in a portable document format (PDF)).

4. Suspension of Entrainment Characterization Study

If, at any time during the permit term, the Permittee elects to proceed with the above engineering analysis and replace the intake structure with approvable design criteria, the entrainment characterization study can be suspended.

S12.C. Closed-cycle recirculating system

The Permittee must continue to operate a closed-cycle recirculating system as defined at 40 CFR 125.92(c):

1. Monitor closed-cycle operation in accordance with S2.A (8).

S12.D. Endangered Species Act

Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

S13. Acute toxicity

S13.A. Effluent limit for acute toxicity

The effluent limit for acute toxicity is:

No acute toxicity detected in a test concentration representing the acute critical effluent concentration (ACEC).

The ACEC means the maximum concentration of effluent during critical conditions at the boundary of the acute mixing zone, defined in Section S1.B of this permit. The ACEC equals 11% effluent.

S13.B. Compliance with the effluent limit for acute toxicity

Compliance with the effluent limit for acute toxicity means the results of the testing specified in Section C show no statistically significant difference in survival between the control and the ACEC.

If the test results show a statistically significant difference in survival between the control and the ACEC, and EFSEC has not determined the test result to be anomalous under Section D, and the test is otherwise valid, the result is a violation of the effluent limit for acute toxicity. The Permittee must immediately conduct the additional testing described in Section D.

The Permittee must determine the statistical significance by conducting a hypothesis test at the 0.05 level of significance (Appendix H, EPA/600/4-89/001). If the difference in survival between the control and the ACEC is less than 10%, the Permittee must conduct the hypothesis test at the 0.01 level of significance.

S13.C. Compliance testing for acute toxicity

The Permittee must:

1. Perform the acute toxicity tests with 100% effluent, the ACEC, and a control, or with a full dilution series.

2. Conduct quarterly acute toxicity testing on the final effluent. Testing must begin by January 1, 2015. Quarters means January through March, April through June, July through September, and October through December.
3. Submit a quarterly written report to EFSEC within 45 days of sampling and starting no later than April 30, 2015. Each subsequent report is due on April 30th, July 30th, October 30th, and January 30th of each year. Further instructions on testing conditions and test report content are in Section E below.
4. The Permittee must perform compliance tests using each of the species and protocols listed below on a rotating basis:

Acute Toxicity Tests	Species	Method
Fathead minnow 96-hour static-renewal test	*Pimephales promelas*	EPA-821-R-02-012
Daphnid 48-hour static test	*Ceriodaphnia dubia, Daphnia pulex,* or *Daphnia magna*	EPA-821-R-02-012

S13.D. Response to noncompliance with the effluent limit for acute toxicity

If a toxicity test conducted under Section C determines a statistically significant difference in response between the ACEC and the control, using the statistical test described in Section B, the Permittee must begin additional testing within one week from the time of receiving the test results. The Permittee must:

1. Conduct one additional test each week for four consecutive weeks, using the same test and species as the failed compliance test.
2. Test at least five effluent concentrations and a control to determine appropriate point estimates. One of these effluent concentrations must equal the ACEC. The results of the test at the ACEC will determine compliance with the effluent limit for acute toxicity as described in Section B.
3. Return to the original monitoring frequency in Section C after completion of the additional compliance monitoring.

Anomalous test results: If a toxicity test conducted under Section C indicates noncompliance with the acute toxicity limit and the Permittee believes that the test result is anomalous, the Permittee may notify EFSEC that the compliance test result may be anomalous. The Permittee may take one additional sample for toxicity testing and wait for notification from EFSEC before completing the additional testing. The Permittee must submit the notification with the report of the compliance test result and identify the reason for considering the compliance test result to be anomalous.

If EFSEC determines that the test result was not anomalous, the Permittee must complete all of the additional monitoring required in this section. Or,

If the one additional sample fails to comply with the effluent limit for acute toxicity, then the Permittee must complete all of the additional monitoring required in this section. Or,

If EFSEC determines that the test result was anomalous, the one additional test result will replace the anomalous test result.

If all of the additional testing in S13.D.1 and 2 complies with the permit limit, the Permittee must submit a report to EFSEC on possible causes and preventive measures for the transient toxicity event, which triggered the additional compliance monitoring. This report must include a search of all pertinent and recent facility records, including:

a. Operating records
b. Monitoring results
c. Inspection records
d. Spill reports
e. Weather records
f. Production records
g. Raw material purchases
h. Pretreatment records, etc.

If the additional testing in this section shows another violation of the acute toxicity limit, the Permittee must submit a Toxicity Identification/Reduction Evaluation (TI/RE) plan to EFSEC within sixty (60) days after the sample date (WAC 173-205-100(2)).

S13.E. Sampling and reporting requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee must collect grab samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.

3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.

4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Subsection C and the Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and*

Whole Effluent Toxicity Test Review Criteria. If EFSEC determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.

5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Section A or pristine natural water of sufficient quality for good control performance.
6. The Permittee must chemically dechlorinate final effluent samples for whole effluent toxicity testing with sodium thiosulfate just prior to test initiation. Do not add more sodium thiosulfate than is necessary to neutralize the chlorine. Provide in the test report the calculations to determine the amount of sodium thiosulfate necessary to just neutralize the chlorine in the sample.

S14. Chronic toxicity

S14.A. Testing

The Permittee must:

1. Conduct chronic toxicity testing on final effluent once per quarter in the year prior to submission of the application for permit renewal.
2. Submit the results to EFSEC May 1, 2019 (with the permit renewal application).
3. Conduct chronic toxicity testing on a series of at least five concentrations of effluent and a control. This series of dilutions must include the acute critical effluent concentration (ACEC). The ACEC equals 11% effluent. The series of dilutions should also contain the CCEC of 1% effluent.
4. Compare the ACEC to the control using hypothesis testing at the 0.05 level of significance as described in Appendix H, EPA/600/4-89/001.
5. Perform chronic toxicity tests with all of the following species and the most recent version of the following protocols:

Freshwater Chronic Test	Species	Method
Fathead minnow survival and growth	*Pimephales promelas*	EPA-821-R-02-013
Water flea survival and reproduction	*Ceriodaphnia dubia*	EPA-821-R-02-013

S14.B. Sampling and reporting requirements

1. The Permittee must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Reports must contain bench sheets and reference toxicant results for test methods. If the lab provides the toxicity test data in electronic format for entry into Ecology's database, then the Permittee must send the data to Ecology along with the test report, bench sheets, and reference toxicant results.

2. The Permittee must collect grab samples for toxicity testing. The Permittee must cool the samples to 0 - 6 degrees Celsius during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.
3. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication No. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*.
4. All toxicity tests must meet quality assurance criteria and test conditions specified in the most recent versions of the EPA methods listed in Section C. and the Ecology Publication no. WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. If Ecology determines any test results to be invalid or anomalous, the Permittee must repeat the testing with freshly collected effluent.
5. The laboratory must use control water and dilution water meeting the requirements of the EPA methods listed in Subsection C. or pristine natural water of sufficient quality for good control performance.
6. The Permittee must chemically dechlorinate final effluent samples for whole effluent toxicity testing with sodium thiosulfate just prior to test initiation. Do not add more sodium thiosulfate than is necessary to neutralize the chlorine. Provide in the test report the calculations to determine the amount of sodium thiosulfate necessary to just neutralize the chlorine in the sample.

General Conditions

G1. Signatory requirements

1. All applications, reports, or information submitted to EFSEC must be signed and certified.

   a. In the case of corporations, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

      - A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or
      - The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
      - In the case of a partnership, by a general partner.
      - In the case of sole proprietorship, by the proprietor.
      - In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

      Applications for permits for domestic wastewater facilities that are either owned or operated by, or under contract to, a public entity shall be submitted by the public entity.

2. All reports required by this permit and other information requested by EFSEC must be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to EFSEC.

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under paragraph G1.2, above, is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of

paragraph G1.2, above, must be submitted to EFSEC prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section must make 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 gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering 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."

G2. Right of inspection and entry

The Permittee must allow an authorized representative of EFSEC, upon the presentation of credentials and such other documents as may be required by law:

1. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
2. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
3. To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
4. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

G3. Permit actions

This permit may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon EFSEC's initiative. However, the permit may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR 122.62, 122.64 or WAC 173-220-150 according to the procedures of 40 CFR 124.5.

1. The following are causes for terminating this permit during its term, or for denying a permit renewal application:
   a. Violation of any permit term or condition.
   b. Obtaining a permit by misrepresentation or failure to disclose all relevant facts.
   c. A material change in quantity or type of waste disposal.

d. A determination that the permitted activity endangers human health or the environment, or contributes to water quality standards violations and can only be regulated to acceptable levels by permit modification or termination.

e. A change in any condition that requires either a temporary or permanent reduction, or elimination of any discharge or sludge use or disposal practice controlled by the permit.

f. Nonpayment of fees assessed pursuant to RCW 90.48.465.

g. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.

2. The following are causes for modification but not revocation and reissuance except when the Permittee requests or agrees:

a. A material change in the condition of the waters of the state.

b. New information not available at the time of permit issuance that would have justified the application of different permit conditions.

c. Material and substantial alterations or additions to the permitted facility or activities which occurred after this permit issuance.

d. Promulgation of new or amended standards or regulations having a direct bearing upon permit conditions, or requiring permit revision.

e. The Permittee has requested a modification based on other rationale meeting the criteria of 40 CFR Part 122.62.

f. EFSEC has determined that good cause exists for modification of a compliance schedule, and the modification will not violate statutory deadlines.

g. Incorporation of an approved local pretreatment program into a municipality's permit.

3. The following are causes for modification or alternatively revocation and reissuance:

a. When cause exists for termination for reasons listed in 1.a through 1.g of this section, and EFSEC determines that modification or revocation and reissuance is appropriate.

b. When EFSEC has received notification of a proposed transfer of the permit. A permit may also be modified to reflect a transfer after the effective date of an automatic transfer (General Condition G7) but will not be revoked and reissued after the effective date of the transfer except upon the request of the new Permittee.

G4. Reporting planned changes

The Permittee must, as soon as possible, but no later than one hundred eighty (180) days prior to the proposed changes, give notice to EFSEC of planned physical alterations or additions to the permitted facility, production increases, or process modification which will result in:

1. The permitted facility being determined to be a new source pursuant to 40 CFR 122.29(b)
2. A significant change in the nature or an increase in quantity of pollutants discharged.
3. A significant change in the Permittee's sludge use or disposal practices. Following such notice, and the submittal of a new application or supplement to the existing application, along with required engineering plans and reports, this permit may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any pollutants not previously limited. Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by this permit constitutes a violation.

G5. Plan review required

Prior to constructing or modifying any wastewater control facilities, an engineering report and detailed plans and specifications must be submitted to EFSEC for approval in accordance with chapter 173-240 WAC. Engineering reports, plans, and specifications must be submitted at least one hundred eighty (180) days prior to the planned start of construction unless a shorter time is approved by EFSEC. Facilities must be constructed and operated in accordance with the approved plans.

G6. Compliance with other laws and statutes

Nothing in this permit excuses the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

G7. Transfer of this permit

In the event of any change in control or ownership of facilities from which the authorized discharge emanate, the Permittee must notify the succeeding owner or controller of the existence of this permit by letter, a copy of which must be forwarded to EFSEC.

1. Transfers by Modification
   Except as provided in paragraph (2) below, this permit may be transferred by the Permittee to a new owner or operator only if this permit has been modified or revoked and reissued under 40 CFR 122.62(b)(2), or a minor modification made under 40 CFR 122.63(d), to identify the new Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.
2. Automatic Transfers
   This permit may be automatically transferred to a new Permittee if:
   a. The Permittee notifies EFSEC at least thirty (30) days in advance of the proposed transfer date.
   b. The notice includes a written agreement between the existing and new Permittees containing a specific date transfer of permit responsibility, coverage, and liability between them.

c. EFSEC does not notify the existing Permittee and the proposed new Permittee of its intent to modify or revoke and reissue this permit. A modification under this subparagraph may also be minor modification under 40 CFR 122.63. If this notice is not received, the transfer is effective on the date specified in the written agreement.

G8. Reduced production for compliance

The Permittee, in order to maintain compliance with its permit, must control production and/or all discharges upon reduction, loss, failure, or bypass of the treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

G9. Removed substances

Collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must not be resuspended or reintroduced to the final effluent stream for discharge to state waters.

G10. Duty to provide information

The Permittee must submit to EFSEC, within a reasonable time, all information which EFSEC may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee must also submit to EFSEC upon request, copies of records required to be kept by this permit.

G11. Other requirements of 40 CFR

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

G12. Additional monitoring

EFSEC may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G13. Payment of fees

The Permittee must submit payment of fees associated with this permit as assessed by EFSEC.

G14. Penalties for violating permit conditions

Any person who is found guilty of willfully violating the terms and conditions of this permit is deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars ($10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of a waste discharge permit may incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars ($10,000) for every such violation. Each and every such violation is a separate and distinct offense, and in case of a continuing violation, every day's continuance is deemed to be a separate and distinct violation.

G15. Upset

Definition – "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limits if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset.
2. The permitted facility was being properly operated at the time of the upset.
3. The Permittee submitted notice of the upset as required in Special Condition S3.E.
4. The Permittee complied with any remedial measures required under S3.E of this permit.

In any enforcement action the Permittee seeking to establish the occurrence of an upset has the burden of proof.

G16. Property rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

G17. Duty to comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

G18. Toxic pollutants

The Permittee must comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

G19. Penalties for tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two (2) years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this condition, punishment shall be a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.

G20. Reporting requirements applicable to existing manufacturing, commercial, mining, and silvicultural dischargers

The Permittee belonging to the categories of existing manufacturing, commercial, mining, or silviculture must notify EFSEC as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
    a. One hundred micrograms per liter (100 μg/L).
    b. Two hundred micrograms per liter (200 μg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony.
    c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
    d. The level established by the Director in accordance with 40 CFR 122.44(f).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels:"
    a. Five hundred micrograms per liter (500μg/L).
    b. One milligram per liter (1 mg/L) for antimony.
    c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
    d. The level established by the Director in accordance with 40 CFR 122.44(f).

G21. Compliance schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than fourteen (14) days following each schedule date.

Appendix A

LIST OF POLLUTANTS WITH ANALYTICAL METHODS, DETECTION LIMITS AND QUANTITATION LEVELS

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and 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 Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to EFSEC with appropriate laboratory documentation.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology's Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

EFSEC added this appendix to the permit in order to reduce the number of analytical "non-detects" in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

CONVENTIONAL PARAMETERS

Pollutant & CAS No. ***(if available)***	**Recommended Analytical Protocol**	**Detection (DL)[1]** ***µg/L unless specified***	**Quantitation Level (QL)[2]** ***µg/L unless specified***
Biochemical Oxygen Demand	SM5210-B		2 mg/L
Soluble Biochemical Oxygen Demand	SM5210-B [3]		2 mg/L
Chemical Oxygen Demand	SM5220-D		10 mg/L
Total Organic Carbon	SM5310-B/C/D		1 mg/L
Total Suspended Solids	SM2540-D		5 mg/L
Total Ammonia (as N)	SM4500-NH3-B and C/D/E/G/H		20
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		0.2º C
pH	SM4500-H^+ B	N/A	N/A

NONCONVENTIONAL PARAMETERS

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)[1] µg/L unless specified	Quantitation Level (QL)[2] µg/L unless specified
Total Alkalinity	SM2320-B		5 mg/L as CaCO3
Bromide (24959-67-9)	EPA 300.0		500
Chlorine, Total Residual	SM4500 Cl G		50.0
Color	SM2120 B/C/E		10 color units
Fecal Coliform	SM 9221E,9222	N/A	Specified in method - sample aliquot dependent
Fluoride (16984-48-8)	SM4500-F E	25	100
Nitrate + Nitrite Nitrogen (as N)	SM4500-NO3- E/F/H		100
Nitrogen, Total Kjeldahl (as N)	SM4500-N_{org}B/C and SM4500NH_3-B/C/D/EF/G/H		300
Soluble Reactive Phosphorus (as P)	SM4500- PE/PF	3	10
Phosphorus, Total (as P)	SM 4500 PB followed by SM4500-PE/PF	3	10
Oil and Grease (HEM)	1664 A or B	1,400	5,000
Radioactivity			
Alpha, Total	SM 7110 B		
Beta, Total	SM 7110 B		
Radium, Total	SW 7500-Ra C		
Salinity	SM2520-B		3 practical salinity units or scale (PSU or PSS)
Settleable Solids	SM2540 -F		500 (or 0.1 mL/L)
Sulfate (as mg/L SO_4)	SM4110-B		200
Sulfide (as mg/L S)	SM4500-S^2F/D/E/G		200
Sulfite (as mg/L SO_3)	SM4500-SO3B		2000
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 CaCO3
Aluminum, Total (7429-90-5)	200.8	2.0	10
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
Boron Total (7440-42-8)	200.8	2.0	10.0
Cobalt, Total (7440-48-4)	200.8	0.05	0.25
Iron, Total (7439-89-6)	200.7	12.5	50
Magnesium, Total (7439-95-4)	200.7	10	50
Molybdenum, Total (7439-98-7)	200.8	0.1	0.5
Manganese, Total (7439-96-5)	200.8	0.1	0.5
NWTPH Dx [4]	Ecology NWTPH Dx	250	250
NWTPH Gx [5]	Ecology NWTPH Gx	250	250

Pollutant & CAS No. (if available)	Recommended Analytical Protocol	Detection (DL)[1] µg/L unless specified	Quantitation Level (QL)[2] µg/L unless specified
Tin, Total (7440-31-5)	200.8	0.3	1.5
Titanium, Total (7440-32-6)	200.8	0.5	2.5

PRIORITY POLLUTANTS

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL) [2] *µg/L unless specified*
METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total (7440-36-0)	200.8	0.3	1.0
Arsenic, Total (7440-38-2)	200.8	0.1	0.5
Beryllium, Total (7440-41-7)	200.8	0.1	0.5
Cadmium, Total (7440-43-9)	200.8	0.05	0.25
Chromium (hex) dissolved (18540-29-9)	SM3500-Cr EC	0.3	1.2
Chromium, Total (7440-47-3)	200.8	0.2	1.0
Copper, Total (7440-50-8)	200.8	0.4	2.0
Lead, Total (7439-92-1)	200.8	0.1	0.5
Mercury, Total (7439-97-6)	1631E	0.0002	0.0005
Nickel, Total (7440-02-0)	200.8	0.1	0.5
Selenium, Total (7782-49-2)	200.8	1.0	1.0
Silver, Total (7440-22-4)	200.8	0.04	0.2
Thallium, Total (7440-28-0)	200.8	0.09	0.36
Zinc, Total (7440-66-6)	200.8	0.5	2.5
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
Phenols, Total	EPA 420.1		50

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL) [2] *µg/L unless specified*
ACID COMPOUNDS			
2-Chlorophenol (95-57-8)	625	1.0	2.0
2,4-Dichlorophenol (120-83-2)	625	0.5	1.0
2,4-Dimethylphenol (105-67-9)	625	0.5	1.0
4,6-dinitro-o-cresol (534-52-1) (2-methyl-4,6,-dinitrophenol)	625/1625B	1.0	2.0
2,4 dinitrophenol (51-28-5)	625	1.0	2.0
2-Nitrophenol (88-75-5)	625	0.5	1.0
4-nitrophenol (100-02-7)	625	0.5	1.0
Parachlorometa cresol (59-50-7) (4-chloro-3-methylphenol)	625	1.0	2.0
Pentachlorophenol (87-86-5)	625	0.5	1.0
Phenol (108-95-2)	625	2.0	4.0

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL) [2] *µg/L unless specified*
2,4,6-Trichlorophenol (88-06-2)	625	2.0	4.0

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL) [2] *µg/L unless specified*
VOLATILE COMPOUNDS			
Acrolein (107-02-8)	624	5	10
Acrylonitrile (107-13-1)	624	1.0	2.0
Benzene (71-43-2)	624	1.0	2.0
Bromoform (75-25-2)	624	1.0	2.0
Carbon tetrachloride (56-23-5)	624/601 or SM6230B	1.0	2.0
Chlorobenzene (108-90-7)	624	1.0	2.0
Chloroethane (75-00-3)	624/601	1.0	2.0
2-Chloroethylvinyl Ether (110-75-8)	624	1.0	2.0
Chloroform (67-66-3)	624 or SM6210B	1.0	2.0
Dibromochloromethane (124-48-1)	624	1.0	2.0
1,2-Dichlorobenzene (95-50-1)	624	1.9	7.6
1,3-Dichlorobenzene (541-73-1)	624	1.9	7.6
1,4-Dichlorobenzene (106-46-7)	624	4.4	17.6
Dichlorobromomethane (75-27-4)	624	1.0	2.0
1,1-Dichloroethane (75-34-3)	624	1.0	2.0
1,2-Dichloroethane (107-06-2)	624	1.0	2.0
1,1-Dichloroethylene (75-35-4)	624	1.0	2.0
1,2-Dichloropropane (78-87-5)	624	1.0	2.0
1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene) (542-75-6) [6]	624	1.0	2.0
Ethylbenzene (100-41-4)	624	1.0	2.0
Methyl bromide (74-83-9) (Bromomethane)	624/601	5.0	10.0
Methyl chloride (74-87-3) (Chloromethane)	624	1.0	2.0
Methylene chloride (75-09-2)	624	5.0	10.0
1,1,2,2-Tetrachloroethane (79-34-5)	624	1.9	2.0
Tetrachloroethylene (127-18-4)	624	1.0	2.0
Toluene (108-88-3)	624	1.0	2.0
1,2-Trans-Dichloroethylene (156-60-5) (Ethylene dichloride)	624	1.0	2.0
1,1,1-Trichloroethane (71-55-6)	624	1.0	2.0
1,1,2-Trichloroethane (79-00-5)	624	1.0	2.0
Trichloroethylene (79-01-6)	624	1.0	2.0

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
VOLATILE COMPOUNDS			
Vinyl chloride (75-01-4)	624/SM6200B	1.0	2.0

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene (83-32-9)	625	0.2	0.4
Acenaphthylene (208-96-8)	625	0.3	0.6
Anthracene (120-12-7)	625	0.3	0.6
Benzidine (92-87-5)	625	12	24
Benzyl butyl phthalate (85-68-7)	625	0.3	0.6
Benzo(*a*)anthracene (56-55-3)	625	0.3	0.6
Benzo(b)fluoranthene (3,4-benzofluoranthene) (205-99-2)[7]	610/625	0.8	1.6
Benzo(j)fluoranthene (205-82-3)[7]	625	0.5	1.0
Benzo(k)fluoranthene (11,12-benzofluoranthene) (207-08-9)[7]	610/625	0.8	1.6
Benzo(r,s,t)pentaphene (189-55-9)	625	0.5	1.0
Benzo(*a*)pyrene (50-32-8)	610/625	0.5	1.0
Benzo(*ghi*)Perylene (191-24-2)	610/625	0.5	1.0
Bis(*2-chloroethoxy)*methane (111-91-1)	625	5.3	21.2
Bis(*2-chloroethyl*)ether (111-44-4)	611/625	0.3	1.0
Bis(*2-chloroisopropyl*)ether (39638-32-9)	625	0.3	0.6
Bis(*2-ethylhexyl*)phthalate (117-81-7)	625	0.1	0.5
4-Bromophenyl phenyl ether (101-55-3)	625	0.2	0.4
2-Chloronaphthalene (91-58-7)	625	0.3	0.6
4-Chlorophenyl phenyl ether (7005-72-3)	625	0.3	0.5
Chrysene (218-01-9)	610/625	0.3	0.6
Dibenzo (a,h)acridine (226-36-8)	610M/625M	2.5	10.0
Dibenzo (a,j)acridine (224-42-0)	610M/625M	2.5	10.0
Dibenzo(a-*h*)anthracene (53-70-3)(1,2,5,6-dibenzanthracene)	625	0.8	1.6
Dibenzo(a,e)pyrene (192-65-4)	610M/625M	2.5	10.0
Dibenzo(a,h)pyrene (189-64-0)	625M	2.5	10.0

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
3,3-Dichlorobenzidine (91-94-1)	605/625	0.5	1.0
Diethyl phthalate (84-66-2)	625	1.9	7.6
Dimethyl phthalate (131-11-3)	625	1.6	6.4
Di-n-butyl phthalate (84-74-2)	625	0.5	1.0
2,4-dinitrotoluene (121-14-2)	609/625	0.2	0.4
2,6-dinitrotoluene (606-20-2)	609/625	0.2	0.4

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Di-n-octyl phthalate (117-84-0)	625	0.3	0.6
1,2-Diphenylhydrazine (*as Azobenzene*) (122-66-7)	1625B	5.0	20
Fluoranthene (206-44-0)	625	0.3	0.6
Fluorene (86-73-7)	625	0.3	0.6
Hexachlorobenzene (118-74-1)	612/625	0.3	0.6
Hexachlorobutadiene (87-68-3)	625	0.5	1.0
Hexachlorocyclopentadiene (77-47-4)	1625B/625	0.5	1.0
Hexachloroethane (67-72-1)	625	0.5	1.0
Indeno(*1,2,3-cd*)Pyrene (193-39-5)	610/625	0.5	1.0
Isophorone (78-59-1)	625	0.5	1.0
3-Methyl cholanthrene (56-49-5)	625	2.0	8.0
Naphthalene (91-20-3)	625	0.3	0.6
Nitrobenzene (98-95-3)	625	0.5	1.0
N-Nitrosodimethylamine (62-75-9)	607/625	2.0	4.0
N-Nitrosodi-n-propylamine (621-64-7)	607/625	0.5	1.0
N-Nitrosodiphenylamine (86-30-6)	625	0.5	1.0
Perylene (198-55-0)	625	1.9	7.6
Phenanthrene (85-01-8)	625	0.3	0.6
Pyrene (129-00-0)	625	0.3	0.6
1,2,4-Trichlorobenzene (120-82-1)	625	0.3	0.6

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
DIOXIN			
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (176-40-16) (2,3,7,8 TCDD)	1613B	1.3 pg/L	5 pg/L

PRIORITY POLLUTANTS (continued)

Pollutant & CAS No. *(if available)*	Recommended Analytical Protocol	Detection (DL)[1] *µg/L unless specified*	Quantitation Level (QL)[2] *µg/L unless specified*
PESTICIDES/PCBs			
Aldrin (309-00-2)	608	0.025	0.05
alpha-BHC (319-84-6)	608	0.025	0.05
beta-BHC (319-85-7)	608	0.025	0.05
gamma-BHC (58-89-9)	608	0.025	0.05
delta-BHC (319-86-8)	608	0.025	0.05
Chlordane (57-74-9) [8]	608	0.025	0.05
4,4'-DDT (50-29-3)	608	0.025	0.05
4,4'-DDE (72-55-9)	608	0.025	0.05[10]
4,4' DDD (72-54-8)	608	0.025	0.05
Dieldrin (60-57-1)	608	0.025	0.05
alpha-Endosulfan (959-98-8)	608	0.025	0.05
beta-Endosulfan (33213-65-9)	608	0.025	0.05
Endosulfan Sulfate (1031-07-8)	608	0.025	0.05
Endrin (72-20-8)	608	0.025	0.05
Endrin Aldehyde (7421-93-4)	608	0.025	0.05
Heptachlor (76-44-8)	608	0.025	0.05
Heptachlor Epoxide (1024-57-3)	608	0.025	0.05
PCB-1242 (53469-21-9) [9]	608	0.25	0.5
PCB-1254 (11097-69-1)	608	0.25	0.5
PCB-1221 (11104-28-2)	608	0.25	0.5
PCB-1232 (11141-16-5)	608	0.25	0.5
PCB-1248 (12672-29-6)	608	0.25	0.5
PCB-1260 (11096-82-5)	608	0.13	0.5
PCB-1016 (12674-11-2) [9]	608	0.13	0.5
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, or 5) x 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 https://fortress.wa.gov/ecy/publications/publications/97602.pdf

5. NWTPH Gx - Northwest Total Petroleum Hydrocarbons Gasoline Extended Range – see https://fortress.wa.gov/ecy/publications/publications/97602.pdf

6. 1, 3-dichloroproylene (mixed isomers) You may report this parameter as two separate parameters: cis-1, 3-dichlorpropropene (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.

   PCB 1016 & PCB 1242 – You may report these two PCB compounds as one parameter called PCB 1016/1242.