Saanich Peninsula Treatment Plant

Environmental Monitoring Program 2025 Report

Capital Regional District | Parks, Recreation & Environmental Services, Environmental Protection

Prepared by:
Marine Programs

Capital Regional District
625 Fisgard Street, Victoria, BC V8W 2S6
T: 250.360.3000   F: 250.360.3079
www.crd.bc.ca

September 2026

SAANICH PENINSULA TREATMENT PLANT
ENVIRONMENTAL MONITORING PROGRAM
2025 REPORT

EXECUTIVE SUMMARY

The Capital Regional District (CRD) has been operating the Saanich Peninsula Treatment Plant (SPTP) since February 2000. The treatment plant serves North Saanich, Central Saanich and the Town of Sidney, as well as the Victoria International Airport, the Institute of Ocean Sciences and the Tseycum, Tsartlip, and Pauquachin First Nations communities. It is a conventional secondary level wastewater treatment plant (WWTP) which has periodically produced Class A biosolids. The treatment plant discharges un-disinfected secondary effluent into the marine receiving environment (Bazan Bay) through an outfall located approximately 1,580 metres (m) from the shoreline at a depth of 30 m. Residual solids left over from the treatment process are currently disposed of at the Hartland Landfill. The CRD undertakes monitoring to meet provincial and federal regulatory requirements, as well as to assess the impacts of the outfall on the marine environment and human health. Information is often used to inform the CRD's Regional Source Control Program (RSCP) and treatment plant operations. This monitoring is stipulated by the BC Ministry of Environment and Parks (ENV) (formerly BC Ministry of Environment and Climate Change Strategy), through the Municipal Wastewater Regulation (MWR) under the *Environmental Management Act* and the federal Wastewater Systems Effluent Regulations under the *Fisheries Act*.

Historically, the CRD developed the monitoring program in consultation with the Marine Monitoring Advisory Group (MMAG). Subsequently, the long-term monitoring program was revised in collaboration with ENV, and the regular use of the MMAG has been discontinued.

The 2025 Wastewater and Marine Environment Program consisted of the following components:

- daily, weekly and monthly analysis of wastewater for federal and provincial compliance monitoring, treatment plant performance parameters and quarterly analysis for priority substances
- quarterly wastewater toxicity testing
- monthly analysis of biosolids for fecal coliforms and metals
- a semi-annual surface monitoring program, consisting of five sampling days within a 30-day period (5-in-30) once each in summer and winter

The Saanich Peninsula Treatment Plant Liquid Waste Management Plan is currently under review. Initial meetings with the Technical Advisory Committee, including municipal engineers, the Institute of Ocean Sciences (Patricia Bay, Sidney, BC), airport representatives and First Nations, began in 2024 and wrapped up in 2025. Direction on next steps was received from the Saanich Peninsula Wastewater Commission in 2026, with the conclusion being to wait to update the LWMP until other related municipal planning processes have been completed.

WASTEWATER MONITORING

Compliance Monitoring and Treatment Plant Performance

The CRD conducted wastewater monitoring on a regular basis to profile the chemical and physical constituents of influent and effluent, determine concentrations relative to provincial and federal regulatory limits and assess treatment plant performance. Parameters monitored for regulatory compliance were all below the applicable effluent regulatory limits with the exception of a plant upset event in November caused by an upstream discharge releasing a large volume of high strength wastewater to the plant. Influent and effluent quality was within expected ranges and met all treatment plant operating objectives.

Priority Substances

In addition to the compliance and treatment plant performance monitoring, over 600 substances were analyzed in the SPTP influent and effluent on a quarterly basis. These substances were monitored to comprehensively assess potential risks of the wastewater discharge to organisms living in the marine environment around the outfall.

Approximately 54% of substances were detected in more than 50% of the samples, and included most of the conventional parameters, metals, some organics, and high-resolution parameters. Most frequently detected substances were below BC and Canadian Water Quality Guidelines (WQG), even in undiluted effluent. Only enterococci, nitrogen, total and dissolved copper, and total and dissolved zinc exceeded guidelines in undiluted effluent, prior to discharge to the marine receiving environment.

Water quality guidelines must be met outside of the initial dilution zone (IDZ) (an area with a radius of approximately 100 m around the outfall). In order to predict levels at the edge of the IDZ, estimated minimum initial dilution factors were applied to all substance concentrations. All substances were predicted to be below WQG after the application of this dilution factor, including those substances that were above guidelines in undiluted effluent, except for enterococci. As such, impacts of these discharged substances to aquatic life are likely minimal. Surface water monitoring was undertaken to assess the human health and shellfish impacts of the effluent bacteriological exceedances (see Surface Water Monitoring section below).

Toxicity Testing

In 2025, all acute toxicity tests passed with no mortality. Chronic toxicity tests showed no impact on Rainbow trout embryo survival and viability, or on *Ceriodaphnia* reproduction.

BIOSOLIDS MONITORING

No biosolids were produced at the SPTP in 2025. All sludge generated at the facility was disposed of at the Hartland Landfill. The CRD monitored the sludge in 2025 to inform the CRD's RSCP, and all regulated parameters were below Class A biosolids limits.

SURFACE WATER MONITORING

Bacteriology

Surface water (1 m depth) fecal coliform and enterococci concentrations were low at all stations, with geometric means of 2 CFU/100 mL or less. IDZ stations also had low bacteriology concentrations, with geometric means of 3 CFU/100 mL or less, below BC and Health Canada recreational and shellfish guidelines. There were no elevated geometric mean fecal coliform or enterococci concentrations observed at any station, on any sampling date, and no samples that exceeded the Health Canada enterococci single sample guideline of 70 CFU/100 mL.

Overall, results indicate that adverse health effects from recreational primary contact activities and shellfish harvesting are not expected. However, an area of approximately 17.65 km^2 around the outfall is closed for shellfish harvesting, as a standard Fisheries and Oceans Canada procedure near industrial and sanitary wastewater outfalls. Shellfish closures have a minimum radius around an outfall of 300 m, but closure areas are usually larger near bigger urban centres, such as for the SPTP outfall, where there are other potential sources of bacterial contamination (e.g., stormwater discharges, marinas, septic systems, sewage pumps), in addition to the wastewater outfall.

Extended Monitoring

WQG exceedances were observed for boron in the water column surrounding the SPTP outfall at all stations and sampling events, including at the reference station. These exceedances are expected, as boron is naturally occurring in the environment at higher levels. Cadmium also exceeded WQG (BC working water guideline for marine aquatic life) in multiple samples at both outfall and reference stations, which has not been observed in recent years. Copper, nickel and zinc also had some exceedances, however these were single sample values being compared to chronic water quality guidelines. The CRD will continue to monitor metals in waters around the outfall and the reference station to assess environmental significance.

Nutrients

Nutrient content in receiving water is analyzed to provide a qualitative comparison between outfall and reference stations. There were some seasonal patterns in the nutrient results, which were consistent between the reference and the IDZ stations. Results were within the ranges measured in previous years and those of the pre- and post-discharge assessment programs. As was observed in previous monitoring years, high variability, both spatially and temporally, was evident in the data. Fluctuations in nutrient concentrations are attributed to natural variation in the Salish Sea, rather than to an effect from the SPTP discharge.

SEAFLOOR MONITORING

The WMEP monitors the effects of the SPTP wastewater discharge on the seafloor at the end of the outfall once every four years through collection and analysis of sediment at the end of the outfall and at the reference station. Seafloor sampling was conducted in 2024 and will next be conducted in 2028.

OVERALL ASSESSMENT

Based on tests used to monitor effluent quality and surface water in 2025, all components of the Saanich Peninsula Wastewater Treatment Plant were in compliance. As in previous years, influent and effluent quality was within expected ranges and met regulatory limits and operating certificate compliance requirements on all sampling dates with the exception of the November plant upset. Only enterococci exceeded WQG in discharged effluent after factoring in dilution. All other substances for which there are BC or Canadian WQG, met these guidelines when the estimated minimum initial environmental dilution of the effluent was factored in, indicating that the predicted levels of substances in the environment were below concentrations of concern to aquatic life. Surface water fecal coliform and enterococci data confirmed that the discharge to the receiving environment was below thresholds set to protect recreational activities and shellfish consumers. As expected, boron exceeded WQG at every station and sampling depth, including at the reference station, as the natural concentrations of boron are above WQG in the Salish Sea. ENV is working on updating the boron guideline. Cadmium also exceeded the guideline in multiple surface water samples collected at both the outfall and the reference stations. There were also questionable exceedances for copper, nickel and zinc. Staff will continue to monitor and note any ongoing metals exceedances. Surface water nutrient concentrations were within ranges measured in previous monitoring programs and showed no detectable effect from the discharge.

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Terms & Abbreviations

AET	Apparent Effects Threshold
ALK	Alkalinity
AVS	Acid Volatile Sulphide
BC OMRR	Organic Matter Recycling Regulations
BOD	Biochemical Oxygen Demand
CALA	Canadian Association for Laboratory Accreditation
CBOD	Carbonaceous Biochemical Oxygen Demand
CCME	Canadian Council of Ministers of the Environment
CFU	Colony-forming unit
Cl	Chloride
COD	Chemical Oxygen Demand
COND	Conductivity
CRD	Capital Regional District
CSSP	Canadian Shellfish Sanitation Program
ENT	Enterococci
ENV	BC Ministry of Environment and Parks
FC	Fecal Coliform
IDZ	Initial Dilution Zone
LWMP	Liquid Waste Management Program
MMAG	Marine Monitoring Advisory Group
MWR	Municipal Wastewater Regulation
NH_3	Ammonia
NO_2	Nitrite
NO_3	Nitrate
OMRR	Organic Matter Recycling Regulations
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PDBE	Polybrominated diphenyl ethers
PFBS	Perfluorobutanesulfonic acid
PFHpA	Perfluoroheptanoic acid
PFHxA	Perfluorohexanoic acid
PFHxS	Perfluorohexanesulfonic acid
PFNA	Perfluorononanoic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PFoSA	Perfluorooctanesulfonamide
PFPeA	Perfluoropentanoic acid
pH	potential of Hydrogen
PPCP	Pharmaceuticals and personal care products
PSAMP	Puget Sound Ambient Monitoring Program
Q+	Quarterly Plus
QA/QC	Quality Assessment/Quality Control
RSCP	Regional Source Control Program
SAD	Strong Acid Dissociable
SCADA	Supervisory Control and Data Acquisition
SDI	Swartz Dominance Index
SPTP	Saanich Peninsula Treatment Plant
SQG	Sediment quality guidelines
TA	Total abundance
TDP	Total dissolved phosphorus
TKN	Total Kjeldahl nitrogen

TOC	Total organic carbon
TP	Total phosphorus
TR	Taxa richness
TSS	Total Suspended Solids
TWQRP	Technical Water Quality Review Panel
UN NH_3	Unionized Ammonia
US EPA	US Environmental Protection Agency
v/v	Volume per volume
WAD	Weak acid dissociable (WAD) cyanide
WMEP	Wastewater Marine Environment Program
WQG	Water Quality Guidelines
WSER	Wastewater Systems Effluent Regulations
WWTP	Wastewater Treatment Plant

**SAANICH PENINSULA TREATMENT PLANT
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1.0 BACKGROUND

The Capital Regional District's (CRD) Saanich Peninsula Treatment Plant (SPTP) started operations in February 2000, serving North Saanich, Central Saanich and the Town of Sidney, as well as the Victoria International Airport, the Institute of Ocean Sciences and Tseycum, Tsartlip, and Pauquachin First Nations communities. It is a conventional secondary level wastewater treatment plant (WWTP), which has periodically produced Class A biosolids. The treatment facility discharges undisinfected secondary-treated effluent into the marine receiving environment (Bazan Bay) through an outfall located approximately 1,580 m from the shoreline at a depth of 30 m. Residual sludge from the treatment process is currently disposed of at the Hartland Landfill. The Wastewater and Marine Environment Program (WMEP) includes regular monitoring, as stipulated by the BC Ministry of Environment and Parks (ENV) (formerly BC Ministry of Environment and Climate Change Strategy), through the Municipal Wastewater Regulation under the *Environmental Management Act* and the federal Wastewater Systems Effluent Regulations (WSER) under the *Fisheries Act*. The facility operates under a Provincial Operational Certificate (#ME-15445), and the Saanich Peninsula Liquid Waste Management Plan (LWMP) (CRD, 2009a).

The Saanich Peninsula LWMP committed the CRD to carry out a pre- and post-discharge assessment program and to develop a long-term monitoring program. The pre-discharge program was conducted from October 1998 to January 2000. The post-discharge program was initiated in February 2000 (when treatment plant operation began) and completed in February 2001. The results presented in Aquametrix Research Ltd. (2000, 2001a and 2001b) guided the development of the long-term monitoring program in consultation with the Marine Monitoring Advisory Group (MMAG). The MMAG consisted of university and government scientists with expertise in the fields of marine biology, chemistry, toxicology, oceanography and public health. This independent group historically reviewed CRD marine monitoring and assessment programs and made recommendations.

Subsequently, the long-term monitoring program was revised in collaboration with ENV, and the regular use of the MMAG discontinued. This revised program was implemented in January 2013 and is summarized in Table 2.1.

In addition, the initial Technical Water Quality Review Panel (TWQRP) suggested a number of conditions that would prompt a reevaluation of the need for disinfection at the SPTP, one of which was 10 years of plant operation. This reevaluation was initiated in 2011 with the MMAG receiving formal delegation to undertake the review. In 2015, the MMAG confirmed that disinfection continues to be unnecessary to meet recreational water quality guidelines around the outfall and requested that the CRD continue to assess the potential benefits of disinfection to nearby shellfish resources in consultation with First Nation and other shellfish stakeholders. In January 2020, staff advised the Saanich Peninsula Wastewater Commission that installation of disinfection at the SPTP does not appear to present any significant benefit to nearby shellfish resources, as the ongoing surface water bacteriological monitoring indicates that levels around the outfall are well below thresholds to protect shellfish harvesting. Staff therefore recommended that disinfection not be installed at that time. Staff continue to meet with W̱SÁNEĆ First Nations and other shellfish stakeholders to assess potential future disinfection need, as well as to identify other areas on the Saanich Peninsula where shellfish harvesting could be restored but are outside the influence of the SPTP.

The SPTP LWMP is currently under review. Initial meetings with a Technical Advisory Committee, including municipal engineers, the Institute of Ocean Sciences (Pat Bay, Sidney, BC), airport representatives and First Nations were held in 2024 and 2025, with the subsequent direction to wait to update the LWMP until other related municipal and CRD plans have been completed.

2.0 INTRODUCTION

The objectives of the SPTP WMEP are to:

- Comply with federal and provincial wastewater regulations.
- Assess the effects of wastewater discharge on the marine environment and the potential for human health risks (related to the presence of bacteria in surface water).
- Determine waste loads to the marine receiving environment.
- Monitor influent, effluent and sludge quality (both as part of regulatory requirements and to optimize treatment plant performance).
- Supply information to the CRD's RSCP and treatment plant operators.
- Provide scientific guidance to wastewater managers regarding the use of the marine environment for the disposal of municipal wastewater.

This report presents the results of the 2025 SPTP WMEP in one integrated report. The components of the current WMEP are presented in Table 2.1. These components, the parameters that are measured for each, and the sampling frequency were determined based on regulatory requirements (i.e., for compliance monitoring), a review of the pre- and post-discharge assessment programs, similar monitoring and assessment programs, and recommendations of the MMAG. The following sections present summaries of the methods used for sample collection and processing, and for data analysis of each component of the 2025 WMEP. Detailed information can be found in any technical reports and independent consultant reports referred to in the individual sections. Methods were selected for each of these components based on internationally recognized standards, as well as sampling and analytical protocols.

Outfall and reference stations for the sea surface and seafloor components of the WMEP were chosen by the MMAG, following recommendations by the consultant (Aquametrix) that conducted the pre- and post-discharge monitoring program. The reference station was chosen because oceanographic computer modelling indicated that it would be far enough away from the plume effects, while being at a similar depth to the outfall stations.

Table 2.1 SPTP Wastewater and Marine Environment Program Components, Parameters, Frequency and Stations

Component	Parameter	Frequency and Stations
Wastewater Monitoring	Compliance monitoring (CBOD, FC, flow, unionized NH_3, pH @ 15°C, TSS)[1]	Daily to twice per month at the influent and final effluent sampling points[2] federal – every two weeks. Provincial – monthly
	Treatment plant performance (ALK, CBOD, COD, COND, Cl, NH_3, NO_2, NO_3, BOD, TDP, TKN, TP, TSS)[1]	Twice per week to monthly[3] at the influent and final effluent sampling points.
	Influent and effluent priority substances[4]	Quarterly[5] at the influent and effluent sampling points.
	Chronic toxicity testing	Annually at the effluent sampling point (*Ceriodaphnia dubia* survival and reproduction, Rainbow trout embryo-alevin survival and development, echinoderm (*Strongylocentrotus)* fertilization, seven-day Pacific topsmelt survival and growth).
	Acute toxicity testing	Quarterly at the effluent sampling point (Rainbow trout 96-hour LC50, *Daphnia magna* 48-hour LC50).
Sludge Monitoring	Metals, moisture, FC[1]	Monitored monthly for informational purposes.
Surface Water Monitoring	Indicator bacteria (FC, ENT)[1]	10 times a year (5-in-30 samples collected in the winter and in the summer) at 19 stations (14 outfall stations, four IDZ stations and one reference station).
	Nutrients (NH_3, NO_2, NO_3, TDP, TKN, TP), COND, salinity, pH, temperature and TOC[1]	10 times a year (5-in-30 samples collected in the winter and in the summer) at five stations (four IDZ stations and one reference station).
	Metals	Twice yearly (winter and summer) at five stations (four IDZ stations and one reference station).
Seafloor	Particle size analysis, TOC[1], AVS[1] and sediment chemistry[4]	Every four years at two stations[6] (one outfall terminus station and one reference station).
	Benthic community structure (including TA, TR, SDI)[7]	

Notes:

1. ALK – alkalinity, AVS – acid volatile sulphide, CBOD – carbonaceous biochemical oxygen demand, COD – chemical oxygen demand, COND – conductivity, Cl – chloride, FC – fecal coliforms, ENT – enterococci, NH_3 – ammonia, NO_3 – nitrate, NO_2 – nitrite, BOD – biochemical oxygen demand, TDP – total dissolved phosphorus, TKN – total Kjeldahl nitrogen, TOC – total organic carbon, TP – total phosphorus, TSS – total suspended solids
2. Frequency is listed in Appendix A.
3. Frequency depends on the operation of the facility and what the operators need to optimize treatment plant performance.
4. All parameters are listed in Appendix A.
5. January and July additional Q+ sampling conducted one day before and one day after the quarterly sampling event.
6. Conducted in 2024. Next time will be 2028, 2032, etc.
7. TA – total abundance, TR – taxa richness, SDI – Swartz Dominance index

3.0 WASTEWATER MONITORING

3.1 Introduction

The CRD conducts wastewater monitoring on a regular basis at the SPTP to assess compliance with the operational certificate under the LWMP and the federal WSER, to assess treatment plant performance and to profile the physical and chemical constituents of treated wastewater before it is released to the marine receiving environment. These data provide an indication of which components may be of concern in the receiving environment and can be used to direct the efforts of the WMEP and the CRD's RSCP.

Comprehensive wastewater monitoring at the SPTP consists of quarterly composite analyses for all priority substances, supplemented by additional "quarterly plus" (Q+) composite sampling occurring one day before and one day after the quarterly sampling events in January and July. The Q+ monitoring program is intended to increase the precision of the quarterly sampling events for key substances of interest (Appendix A).

The list of priority substances was adapted from the US Environmental Protection Agency (US EPA) National Recommended Water Quality Criteria; Priority Toxic Pollutants list (US EPA, 2002). The CRD reviews its list on a periodic basis to determine the need to delete or add substances depending on new developments in terms of analytical techniques, potential presence in wastewaters and potential effects on human health and the receiving environment, alignment with OceanWise's Pollution Tracker parameters, and upon ENV review. Influent is analyzed for a subset list of substances (Appendix A).

Detailed statistical trend analyses are undertaken every three to five years to quantitatively assess temporal trends in concentrations and loadings of wastewater parameters. In 2012, Golder Associates (Golder, 2013) updated the previous trend assessment to include the 2009-2011 results, expanding the total SPTP dataset from 2000-2011. Results of this assessment were presented in the 2011 annual report (CRD, 2012). The most recent trend assessment was completed in 2017 (Golder, 2019) and included the next three years of wastewater data (2012-2015). Results were included in the 2016 annual report (CRD, 2017). The next trend assessment for the SPTP is planned for the next one to two years.

3.2 Methods

Information on wastewater sampling and analytical methods is presented below and in any independent consultants' reports referenced in the individual sections. Sampling and analytical methods used for each of these components were based on recognized standards and protocols (APHA, 1992; BC MWLAP, 2003). Samples were either collected as composites (i.e., over a 24-hour period) or individual grabs (i.e., discrete one-time) depending on the parameters that were being analyzed.

3.2.1 Compliance Monitoring and Treatment Plant Performance

The CRD operators and sampling technicians regularly monitor effluent quality and flow, as required by the ENV operational certificate under the SPTP LWMP and federal regulations. Table 3.1 presents parameters, effluent regulatory limits, frequency and sampling methods used to assess compliance.

Influent and effluent samples were also collected periodically to assess the efficiency of the treatment plant processes (see Table 2.1 for a list of parameters and monitoring frequency). Flow was measured continuously with a Supervisory Control and Data Acquisition (SCADA) system.

Operators and technicians collected composite influent and effluent samples using on-site automated ISCO™ samplers (http://www.isco.com). Influent samples were collected from a sampling point situated where the wastewater had entered the treatment plant and been screened to <6 mm, but prior to transfer to the settling tanks (i.e., before primary treatment). Effluent samples were collected from a sampling port situated where the final effluent is discharged to the marine receiving environment. Sub-samples (consisting of 400 mL) were collected every 30 minutes and composited into one sample representing the 24-hour period. Laboratory analyses including parameters required by WSER were conducted at Bureau Veritas Laboratories Inc. (Burnaby, BC), and by the CRD Water Quality Lab (Victoria, BC), both Canadian Association for Laboratory Accreditation (CALA) certified labs.

Table 3.1 SPTP Effluent Compliance Monitoring Parameters, Regulatory Limits, Frequency and Sampling Methods

Parameter	Effluent Regulatory Limit	Required Frequency of Monitoring[4]	Sampling Method
CBOD	Provincial – 45 mg/L maximum Federal – 25 mg/L average	Provincial – 2x per week Federal – 2x per month	24-hr composite
TSS[1]	Provincial – 45 mg/L maximum Federal – 25 mg/L average	Provincial – 2x per week Federal – 2x per month	24-hr composite
Flow[1]	27,394 m^3/day (average daily)[2] 56,000 m^3/day (maximum daily)	Continuously	SCADA[3]
pH[1]	6-9	2x per week	Grab
Unionized ammonia[1], pH @ 15°C	Provincial – required, but no limit Federal –1.25 mg/L maximum	Provincial – monthly Federal – 2x per month	24-hr composite
Fecal coliforms	Required, but no limit	Provincial – monthly	Grab
Total residual chlorine	Federal – 0.02 mg/L average	Only when used as part of the treatment process[5]	Grab

Notes:
1 Parameters which are also analyzed in influent.
2 Limit determined on an annual basis = [12,200 m^3/d * (1.0316 $^{\text{calendar year—1999}}$)]
3 SCADA system
4 As described in the operating certificate or the federal WSER.
5 Chlorine was not used as part of the SPTP treatment process in 2024. As such, total residual chlorine was not monitored.
CBOD = carbonaceous biochemical oxygen demand; TSS = total suspended solids; FC = fecal coliforms

3.2.2 Priority Substances

CRD technicians collected influent and effluent samples, using methods similar to those used for compliance parameters, as follows:

- Grab samples (i.e., one-time discrete samples) were collected for the analysis of parameters not suited to composite sampling, such as fecal coliforms, pH, oil and grease, and volatile organic compounds.
- Sampling equipment (i.e., hoses, sieves and carboys) was cleaned thoroughly prior to use by an external private laboratory (SGS AXYS Analytical Services), following trace cleaning procedures, including triple rinses with solvents, acids and distilled water.
- The CRD WMEP automated ISCO™ samplers (different from the on-site SPTP automated ISCO™ samplers used by the operators for the compliance and treatment plant performance monitoring) were used to collect influent and effluent composite samples. Two different samplers were used: one for influent and one for effluent. Sub-samples (consisting of 400 mL) were collected every 30 minutes and composited into one sample representing the 24-hour period.
- Composite samples were collected into a fluorinated, pre-cleaned 20 L carboy and continuously and thoroughly mixed before and during sample splitting to ensure sample homogeneity.

- Grab samples were collected using the ISCO™ sampler manual pumping setting (i.e., at the end of each composite sample interval) and transferred into appropriate sample bottles on site.

Sampling technicians immediately dispatched the samples to qualified laboratories (i.e., certified by the Canadian Association for Laboratory Accreditation) to conduct chemical analyses. These laboratories included both in-house facilities (McLoughlin Point Wastewater Treatment Plant Laboratory, Victoria, B.C.), and external facilities. Bureau Veritas (Burnaby, BC) conducted analyses for conventional parameters including provincially and federally regulated parameters (i.e., pH @ 15°C, unionized ammonia, TSS, CBOD) and priority substances; and SGS AXYS Analytical Services conducted analyses for high-resolution parameters. Laboratory and CRD staff chose analytical methods to ensure that method detection limits were low enough for comparisons to ENV approved (BCMoE&CCS, 2019) and working (BCMoE&CCS, 2025) WQG and the Canadian Council of Ministers of the Environment (CCME 2003) *Canadian Water Quality Guidelines for the Protection of Aquatic Life*.

Wastewater was analyzed for a comprehensive list of priority substances that included conventional parameters (included for the assessment of potential effects on the marine receiving environment and for comparison to the compliance treatment plant performance results), metals, halogenated compounds, polycyclic aromatic hydrocarbons, polybrominated diphenyl ethers, polychlorinated biphenyls, pesticides, pharmaceuticals and personal care products, nonylphenols and fluorinated compounds (Appendix A).

DATA QUALITY ASSESSMENT

The CRD and laboratory staff followed rigorous quality assurance/quality control (QA/QC) procedures for both field sampling and laboratory analyses. Within each batch that was analyzed quarterly (i.e., four batches in 2025 that included samples from McLoughlin Point WWTP), one sample was randomly chosen for laboratory triplicate analysis, one sample was randomly chosen for field triplicate analysis, and one sample for a matrix spike. Both Bureau Veritas and SGS AXYS Analytical also conducted internal QA/QC analyses, including method analyte spikes, method blanks and standard reference materials.

DATA ANALYSIS

Percent frequencies of detection were determined for each substance by adding the number of times the compound was detected, dividing it by the total number of samples collected in the year and multiplying by 100. A frequency of greater than 50% was selected as a percentage above which meaningful statistical analyses could be conducted. For non-detectable results (i.e., less than the method detection limits), one half of the method detection limit was used for calculating the substance mean concentrations. For those substances detected greater than 50% of the time in the effluent, predictions of substance concentrations in the receiving environment were made by dividing maximum substance concentrations in effluent by the estimated minimum initial dilution factor of 153:1 (Hayco, 2005). This estimated minimum initial dilution factor was determined by a receiving environment dye study undertaken December 7-9, 2004, and was determined to occur within approximately 50 m south of the outfall at a depth of 24.4 m at slack tide (Hayco 2005). Predicted environmental concentrations, as well as the original sample concentrations (i.e., without the initial dilution factor), were compared to:

- ENV approved (BCMoE&CCS, 2019) and working (BCMoE&CCS, 2025) WQG;
- CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Lif*e (CCME, 2003); and
- Health Canada guidelines for the protection of human health (Health Canada, 2012).

These comparisons give an indication of the potential for receiving environment effects.

Annual loadings were determined by first calculating the quarterly loadings (January, April, July and October), averaging these values and multiplying by the number of days in the year. Quarterly loadings were calculated by averaging the total flow over the two sampling days and multiplying the average flow by the concentration of each substance measured that quarter. Loadings were calculated only for substances detected in >50% of sampling events.

Substances for which minimum initial dilution and loading calculations were not appropriate were noted as N/A (not applicable). For example, pH, conductivity and hardness do not lend themselves to loading calculations (e.g., pH is a discrete measurement and calculating a loading over time is not appropriate).

3.2.3 Toxicity Testing

Acute toxicity testing refers to the assessment of adverse effects of a substance resulting from either a single exposure or from multiple exposures to a substance in a short period of time (usually less than 24 hours). Acute toxicity testing was conducted by Nautilus Environmental (Burnaby, BC) on a quarterly basis using effluent collected from the SPTP in January, April, July and October. Tests consisted of a 96-hour Rainbow trout single concentration survival test (method EPS 1/RM/13 with the pH stabilization method EPS 1/RM/50) and a 48-hour *Daphnia magna* LC50 (method EPS 1/RM/14). The LC50 test measures the lethal concentration that kills 50% of organisms over the test period.

Chronic toxicity testing refers to the assessment of adverse health effects from repeated exposures, often at lower levels, to a substance over a longer period of time (weeks or years). Chronic toxicity results are reported as either the LC50, which is the concentration at which 50% of the test organisms die during the test period, or as the EC50/EC25, which are the concentrations at which a negative impact is observed on 50% or 25%, respectively, of the organisms in the specified test period (e.g., decreased fertilization or growth). Chronic toxicity testing was conducted by Nautilus Environmental using effluent collected from the SPTP in November and December. Tests consisted of a seven-day *Oncorhynchus mykiss* (Rainbow trout) embryo-alevin (method EPS 1/RM/28), a seven-day *Atherinops affinis* (Topsmelt) survival and growth (method EPA/600/R-95/136), a six-day *Ceriodaphnia* survival and reproduction (method EPS 1/RM/21), and an echinoid fertilization test (method EPS 1/RM/27, EPA/600/R-95/136).

3.3 Results and Discussion

3.3.1 Compliance Monitoring and Treatment Plant Performance

Flow data are presented in Appendix B1. Flow measurements indicate that the mean daily flow in 2025 was slightly lower than that in 2024(9,862 m^3/d in 2025 vs 10,221 m^3/d in 2024). There were no exceedances of the permitted average or maximum daily allowable flow in 2025.

Figure 3.1 presents the SPTP flows from 2011-2025 indicating that flows are not increasing significantly over time. Provincial wastewater compliance monitoring and treatment plant performance monitoring results are summarized in Table 3.2. Federal wastewater compliance parameters are summarized in Table 3.3. The complete raw data sets are presented in Appendices B2 (influent) and B3 (effluent).

In 2025, TSS results in November exceeded the provincial permitted max as well as the monthly federal average after an excessive quantity of sludge was discharged to sewer as a result of an unattended high-strength discharge into he conveyance system by BC Ferries. The initial exceedance was 52.6 mg/L on November 12th, 2025, with TSS remaining elevated until November 25th, 2025, when it was back in compliance. In addition, there was a higher (though still below the permitted max) CBOD value (>34 mg/L) in February 2025, which occurred as a result of another large discharge from BC Ferries. All remaining SPTP effluent results were below provincial and federal regulatory limits.

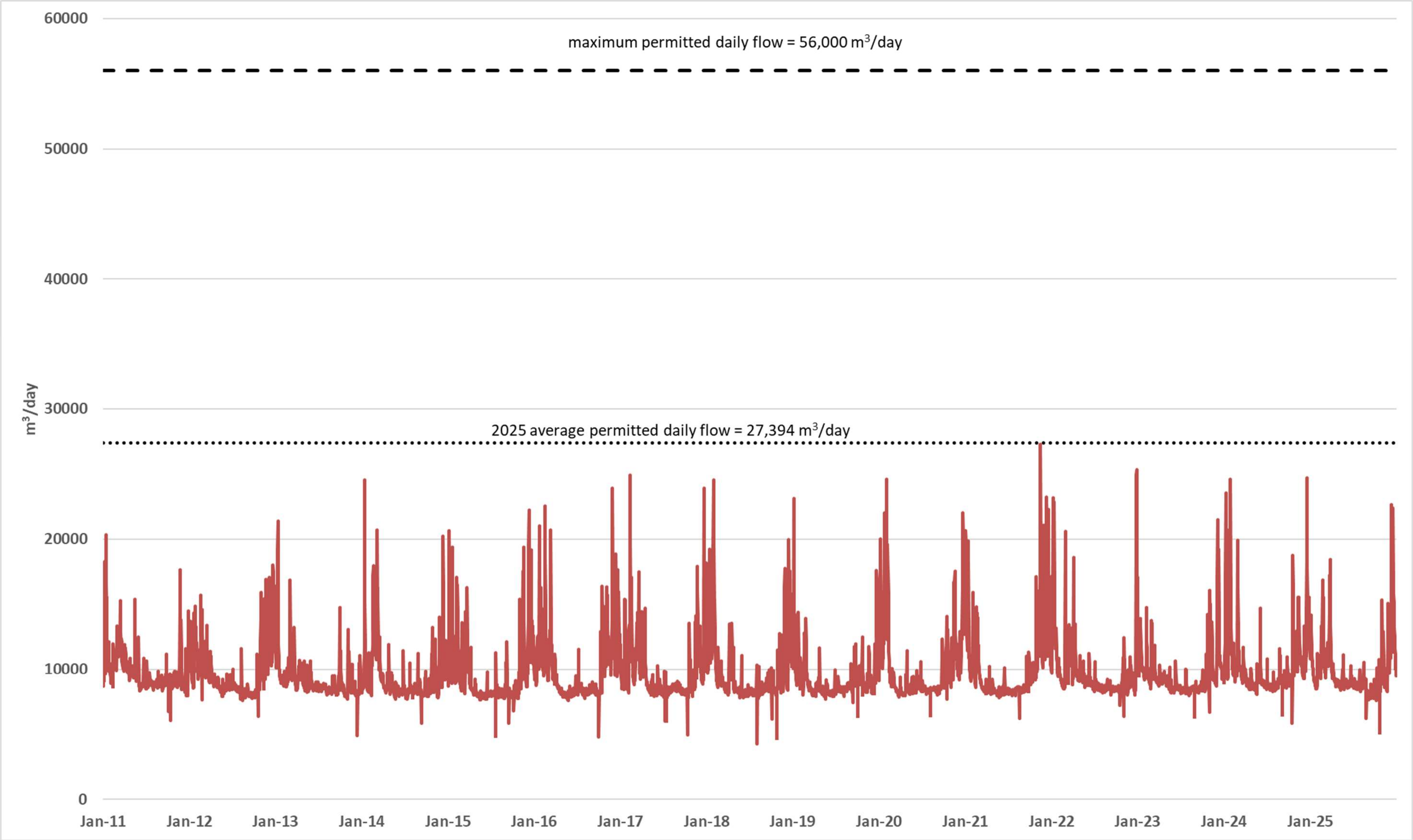

Figure 3.1 SPTP Effluent Flows from 2011-2025

Table 3.2 SPTP 2025 Provincial Compliance Monitoring and Treatment Plant Performance Results

Parameter and Unit	Effluent Regulatory Limit	Influent				Effluent			
		n	Mean	Min	Max	*n*	Mean	Min	Max
CBOD (mg/L)	45 maximum	2	180	180	180	107	4	1.19	>34
TSS (mg/L)	45 maximum	2	147	83	210	24	13	2.6	105
Flow (m^3/d)	27,394 average daily 56,000 maximum daily	---	---	---	---	365	9,862	5,156	22,678
pH (pH units)	6-9	27	7.4	7.2	7.6	27	7.1	6.5	7.4
NH_3 (mg/L N)	required, but no limit	27	33.7	1.3	44.8	27	3.0	0.032	14.4
Fecal coliform (CFU/100 mL)	required, but no limit	3	4,733,333	1,200,000	7,600,000	28	153,409	260	1,400,000
Alkalinity (mg/L)	*	12	207	158	236	13	44	18	72.4
Chloride (mg/L)	*	14	135	82.6	234	14	121	87	176
COD (mg/L)	*	55	547	226	863	55	55	20	247
BOD (mg/L)	*	54	254	108	538	100	13	4	34.4
Nitrate (mg/L N)	*	25	0.15	0.01	2.74	25	14.2	8.52	20.6
Nitrite (mg/L N)	*	26	0.01	0.0025	0	27	1	0.043	2.13
TKN (mg/L N)	*	26	49.9	22.1	66.2	25	6	0.86	18
TP (mg/L P)	*	11	6.5	4.81	8.59	10	4	1.1	12.7

Notes:
CBOD = carbonaceous biochemical oxygen demand, COD = chemical oxygen demand, FC = fecal coliforms, NH_3 = ammonia, BOD = biochemical oxygen demand, TDP = total dissolved phosphorus, TKN = total Kjeldahl nitrogen, TP = total phosphorus, TSS = total suspended solids
Average daily flows limit determined on an annual basis = [12,200 m^3/d * $(1.0316^{\text{calendar year -1999}})$].
* Measured to assess treatment plant performance.
Shaded value indicates exceedance to permitted maximum.

Table 3.3 Saanich Peninsula Treatment Plant Federal Wastewater Compliance Results 2025

Saanich Peninsula Treatment Plant Secondary Effluent				
	CBOD (mg/L)	Unionized Ammonia (mg/L N)	pH @ 15°C	TSS (mg/L)
Federal Limit	25 average	1.25 max		25 average
Number of samples	107	26	26	24
January	3.4	0.03	6.7	5.2
February	6.0	0.1	6.8	13.3
March	1.5	0.1	6.7	2.6
April	3.4	0.1	6.9	8.6
May	5.8	0.1	7.0	18.4
June	4.9	0.1	7.4	12.1
July	3.4	0.1	7.3	7.9
August	4.7	0.1	7.3	10.1
September	2.9	0.1	7.3	9.9
October	4.4	0.1	7.2	10.1
November	7.8	0.1	6.9	57.1
December	4.0	0.1	7.0	9.4

3.3.2 Priority Substances

Almost 600 priority substances were analyzed in the SPTP influent and effluent, including high-resolution parameters. Approximately 54% of these were detected in effluent in greater than 50% of the samples and are listed in Table 3.4. These include most of the conventional variables (TSS, BOD, CBOD, nutrients, etc.), metals, some organics and high-resolution parameters.

Table 3.4 presents annual mean, minimum and maximum effluent concentrations, and loadings of the priority substances detected in greater than 50% of sampling events. The 1:153 estimated minimum initial dilution factor (Hayco, 2005) was applied to the maximum concentrations and the resulting concentrations were then compared to the ENV approved (BCMoE&CCS, 2019) and working (BCMoE&CCS, 2025) WQG, the CCME *Water Quality Guidelines for the Protection of Aquatic Life* (CCME, 2003), and the Health Canada *Guidelines for Canadian Recreational Water Quality* (Health Canada, 2012) to assess predicted environmental concentrations. It should be noted that not all substances (e.g., alkalinity, conductivity, hardness and pH) discharged to the marine receiving environment could be assessed by extrapolating effluent concentrations using predicted minimum initial dilution. These parameters are not suitable for effluent dilution calculations (e.g., pH of 7.0 cannot be divided by estimated minimum initial dilution of 1:153).

The maximum concentrations of most parameters were below guidelines in undiluted effluent (i.e., prior to discharge). Parameters not meeting WQG in undiluted effluent (maximum concentrations) included: enterococci, nitrogen, dissolved and total copper, and dissolved and total zinc (Table 3.4). These exceedances have also been observed in previous years. All results were below WQG after application of the estimated minimum initial dilution factor (i.e., the maximum predicted concentration in the environment), with the exception of enterococci. Effluent concentrations have consistently been below WQG from 2000-2025, after estimated minimum initial dilution has been applied (CRD, 2002-2021). CRD staff will continue to monitor effluent to determine whether exceedances of BC WQG are changing in frequency over time.

3.3.3 Toxicity Testing

Table 3.5 presents the results from the 2025 acute toxicity and chronic toxicity testing. There was no mortality observed for either acute toxicity test (Rainbow trout or *Daphnia*) in any of the samples (January, April, July and October). The 2025 chronic toxicity testing also indicated no impact on Rainbow trout embryo survival and viability, *Ceriodaphnia* reproduction, or echinoid fertilization.

3.4 Overall Assessment

Overall, the 2025 wastewater monitoring results were generally consistent with previous years. TSS exceeded federal and provincial permitted values as a result of a an incident in the conveyance system beyond CRD control. All other compliance limits stipulated under the provincial operational certificate and federal WSER were met, indicating that from an operational perspective, wastewater quality was as expected. In addition, because all priority substances met applicable WQG in the marine receiving environment (following the application of estimated minimum initial dilution factors), with the exception of bacteriological indicators, it is not likely that significant effects on aquatic life will occur as a result of the substances being discharged. The use of an estimated minimum initial dilution factor allows for a conservative (i.e., protective) estimate of potential effects because the predicted average initial factors are actually much higher in the marine receiving environments around the outfall (Hayco, 2005). Direct risk to human health and shellfish harvesting, as a result of the bacteriological indicator exceedances in effluent, was assessed via surface water and water column monitoring in the receiving environment (see Section 5.0).

Table 3.4 Annual Concentrations and Loadings of Frequently Detected Substances (>50% of the time) in SPTP Effluent, 2025

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
Conventionals											
Enterococci	TOT	CFU/100 mL	2	100	1,374,388	123,400	960,000	500	6,275	n/a	35d, 70d
Fecal Coliforms	TOT	CFU/100 mL	2	100	3,038,738	395,300	3,100,000	2,300	20,260	n/a	
Alkalinity - Total - Ph 4.5	TOT	mg/L	1	100	175	73	150	16	1.0	351,378	
Total/SAD Cyanide	TOT	mg/L	0.0025	89	0.003	0.003	0.01	0.003	0.00003	6.59	
Alkalinity - Bicarbonate	TOT	mg/L	1	100	218	88	180	19	1.2	423,077	
Hardness (as CaCO3)	TOT	mg/L	0.5	100	87	82	95	78	0.6	183,159	
Hardness (as CaCO3)	TOT	mg/L	0.5	100	87	82	95	78	0.6	183,159	
SulphateDIS	DIS	mg/L	1	100	31	34	37	32	0.2	125,976	
N - Nh3 (As N)^	TOT	mg/L	0.015	100	11.7	3.0	14.4	0.03	0.09	1,495	19.7
N - Nh3 (As N)- Unionized	TOT	mg/L	0.0005	80	0.027	0.001	0.002	0.001	0.00001	5.15	
N - No2 (As N)	DIS	mg/L	0.005	100	nd	1.34	2.91	0.02	0.02	2,124	
N - No3 (As N)	DIS	mg/L	0.2	100	nd	10	16	0.03	0.1	33,137	
N - No3 + No2 (As N)	DIS	mg/L	0.2	100	nd	11	17	0.05	0.1	37,196	
N - Tkn (As N)	TOT	mg/L	0.4	100	37	11	26	0.86	0.2	56,153	
N - Total (As N)	TOT	mg/L	0.4	100	40	22	26	18	0.2	86,748	3.7a
Organic Carbon	TOT	mg/L	0.5	100	93	24	52	13	0.3	118,149	
P - Po4 - Ortho (As P)	DIS	mg/L	0.015	100	3.2	1.2	2.5	0.1	0.02	4,740	
BOD	TOT	mg/L	2.0	100	167	34	81	5.0	0.5	173,907	
CBOD	TOT	mg/L	2.0	100	151	26	87	3.5	0.6	157,775	
COD	TOT	mg/L	10	100	382	97	253	41	1.7	520,045	
pH	TOT	pH	0	100	7.5	7.39	7.7	6.9	n/a	n/a	7.0-8.7b.c
pH @ 15° C	NoRs	pH	0	100	6.9	6.81	7.1	6.4	n/a	n/a	
TSS^	TOT	mg/L	1.0	100	117	13.27	105	2.6	0.686	134,809	
Conductivity	TOT	µS/cm	2.0	100	845	688	730	640	n/a	n/a	
Sulfide	TOT	mg/L	0.0018	100	0.7	0.0	0.1	0.002	0.0003	64.7	
Chloride	DIS	mg/L	1.0	100	104	102	120	74	0.8	353,834	
Metals Dissolved											
Aluminum	DIS	µg/L	0.5	100	31	13	35	8.1	0.2	45.4	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
Antimony	DIS	µg/L	0.02	100	0.2	0.3	0.3	0.2	0.002	0.560	
Arsenic	DIS	µg/L	0.02	100	0.3	0.3	0.6	0.2	0.004	0.852	12.5a,c
Barium	DIS	µg/L	0.02	100	7.5	7.3	8.2	6.2	0.1	15.68	
Bismuth	DIS	µg/L	0.005	100	0.2	0.1	0.3	0.1	0.0	0.331	
Boron	DIS	µg/L	10	100	137	144	168	90	1.1	255	
Cadmium	DIS	µg/L	0.005	67	0.04	0.01	0.01	0.01	0.0001	0.019	0.12b,c
Calcium	DIS	mg/L	0.05	100	17	20	23	18	0.1	44,247	
Chromium	DIS	µg/L	0.1	100	1.4	1.0	1.3	0.7	0.01	1.82	56b,c
Cobalt	DIS	µg/L	0.005	100	0.3	0.3	0.4	0.3	0.002	0.602	
Copper	DIS	µg/L	0.05	100	20	5.7	11	3.0	0.1	17.1	<2(lt), 3(st)a
Iron	DIS	µg/L	1.0	100	254	123	203	85	1.3	328	
Lead	DIS	µg/L	0.005	100	0.5	0.2	0.3	0.2	0.002	0.574	<2(lt),140(st)a
Lithium	DIS	µg/L	0.5	100	2.7	2.8	3.1	2.2	0.02	5.31	
Magnesium	DIS	mg/L	0.05	100	10	10	12	7.1	0.1	19,362	
Manganese	DIS	µg/L	0.05	100	27	35	41	27	0.3	65.6	100b
Molybdenum	DIS	µg/L	0.05	100	1.2	1.2	2.7	0.6	0.02	3.86	
Nickel	DIS	µg/L	0.02	100	3.5	2.6	4.9	1.6	0.03	5.52	8.3b
Phosphorus	DIS	µg/L	2.0	100	4,229	1,591	2,900	153	19	3,619	
Potassium	DIS	mg/L	0.05	100	16	15	16	10	0.1	27,564	
Selenium	DIS	µg/L	0.04	100	0.3	0.2	0.2	0.1	0.001	0.344	2a
Silicon	DIS	µg/L	50	100	3,196	3,248	4,290	2,830	28.0	7,584	
Silver	DIS	µg/L	0.005	67	0.03	0.01	0.03	0.01	0.0002	0.040	1.5(lt), 3(st)a
Sodium	DIS	mg/L	0.05	100	78	80	91	54	0.6	141,758	
Strontium	DIS	µg/L	0.05	100	78	82	99	72	0.6	185	
Sulfur	DIS	mg/L	3	100	11	11	13	10	0.1	23,094	
Tin	DIS	µg/L	0.2	100	1.0	0.6	0.7	0.5	0.005	1.36	
Uranium	DIS	µg/L	0.002	100	0.02	0.01	0.1	0.0	0.0004	0.058	
Vanadium	DIS	µg/L	0.2	89	0.3	0.3	0.5	0.2	0.003	0.787	
Zinc	DIS	µg/L	0.1	100	34	31	52	23	0.3	65.9	10(lt), 55(st)a
Zirconium	DIS	µg/L	0.1	67	1.4	0.2	0.4	0.1	0.003	0.562	
Metals Total											

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
Aluminum	TOT	µg/L	3	100	168	40	198	12	1.3	207	
Barium	TOT	µg/L	0.05	100	15	8.6	15	6.4	0.1	23.2	
Cadmium	TOT	µg/L	0.005	78	0.16	0.02	0.07	0.01	0.0005	0.081	0.12b,c
Calcium	TOT	mg/L	0.25	100	19	19	23	17	0.1	42,886	
Chromium	TOT	µg/L	0.1	100	3.1	1.2	1.4	1.0	0.01	2.67	56b,c
Cobalt	TOT	µg/L	0.01	100	0.5	0.3	0.3	0.3	0.002	0.661	
Copper	TOT	µg/L	0.1	100	44	8.5	24	3.9	0.2	31.0	<2(lt), 3(st)a
Iron	TOT	µg/L	5	100	515	154	363	98	2.4	492	
Lead	TOT	µg/L	0.02	100	1.4	0.4	0.9	0.2	0.01	1.30	<2(lt),140(st)a
Magnesium	TOT	mg/L	0.25	100	10	8.7	9.4	7.9	0.1	18,463	
Manganese	TOT	µg/L	0.1	100	36	33	38	30	0.2	67.8	100b
Molybdenum	TOT	µg/L	0.05	100	1.8	1.2	2.8	0.6	0.02	3.99	
Nickel	TOT	µg/L	0.1	100	4.3	2.5	4.6	1.5	0.03	5.53	8.3b
Phosphorus	TOT	µg/L	5	100	5,988	1,686	3,020	308	19.7	4,418	
Potassium	TOT	mg/L	0.25	100	15	14	16	10	0.1	26,123	
Selenium	TOT	µg/L	0.04	100	0.4	0.2	0.2	0.1	0.001	0.346	2a
Silver	TOT	µg/L	0.01	78	0.2	0.0	0.1	0.01	0.001	0.095	1.5(lt), 3(st)a
Thallium	TOT	µg/L	0.002	22	0.0	---	---	---	---	---	
Tin	TOT	µg/L	0.2	100	1.4	0.6	0.7	0.5	0.01	1.33	
Zinc	TOT	µg/L	1	100	93	33	48	24	0.3	87.3	10(lt), 55(st)a
Organic Compounds											
Trichloromethane	TOT	µg/L	1	60	1.85	1.28	1.80	1.00	0.01	5.29	
Phenolics											
Total Phenols	TOT	mg/L	0.0015	100	0.04	0.01	0.02	0.002	0.0001	35.9	
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	TOT	µg/L	0.01	100	0.07	0.04	0.1	0.01	0.001	0.232	6a
Benzo[a]pyrene	TOT	µg/L	0.005	60	0.01	0.01	0.02	0.01	0.0001	0.047	
Fluoranthene	TOT	µg/L	0.01	60	0.05	0.02	0.05	0.01	0.0003	0.103	
Fluorene	TOT	µg/L	0.01	80	0.3	0.02	0.04	0.01	0.0003	0.087	12a
High Molecular Weight PAH`s	TOT	µg/L	0.02	60	0.2	0.07	0.1	0.02	0.001	0.330	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
Low Molecular Weight PAH`s	TOT	µg/L	0.01	100	0.7	0.2	0.5	0.06	0.003	0.973	
Naphthalene	TOT	µg/L	0.01	80	0.05	0.03	0.08	0.01	0.001	0.162	1a
Phenanthrene	TOT	µg/L	0.01	100	0.1	0.05	0.12	0.02	0.001	0.26	
Pyrene	TOT	µg/L	0.01	60	0.03	0.02	0.04	0.01	0.0002	0.09	
Total PAH	TOT	µg/L	0.02	100	0.9	0.2	0.6	0.08	0.004	1.28	
Pesticides											
Diethyl Phthalate	TOT	µg/L	0.25	60	2.13	0.58	1.55	0.25	0.01	3.15	
HIGH RESOLUTION PARAMETERS											
Organics											
1,2,3,4-Tetrachlorobenzene	TOT	ng/L	0.012	100	nm	0.03	0.03	0.02	0.0002	0.0001	
1,3,5-Trichlorobenzene	TOT	ng/L	0.0341	100	nm	0.05	0.05	0.05	0.0003	0.0003	
1,7-Dimethylxanthine	TOT	ng/L	5.83	100	23,966	11,150	22,100	204	144	62.4	
Pentachlorobenzene	TOT	ng/L	0.012	100	nm	0.04	0.05	0.03	0.0003	0.0003	
Perfluorobutanoic acid	TOT	ng/L	1.6	100	15	5.06	6.73	3.78	0.04	0.018	
Trans-Chlordane	TOT	ng/L	0.012	100	nm	0.06	0.10	0.02	0.001	0.0004	
Trans-Nonachlor	TOT	ng/L	0.012	100	nm	0.04	0.07	0.01	0.0004	0.0003	
1,2,3-Trichlorobenzene	TOT	ng/L	0.0194	100	nm	0.09	0.09	0.08	0.001	0.001	
1,2,4,5-/1,2,3,5-Tetrachlorobenzene	TOT	ng/L	0.012	100	nm	0.02	0.02	0.01	0.0001	0.0001	
Hormones & Sterols											
Estrone	TOT	ng/L	3.24	100	nd	29	37	21	0.2	0.193	
Nonylphenols	#N/A										
4-n-Octylphenol	TOT	ng/L	0.477	100	nd	2.99	4.24	1.74	0.03	0.011	
4-Nonylphenol Diethoxylates	TOT	ng/L	1.23	100	995	57	87	27	0.6	0.130	
4-Nonylphenol Monoethoxylates	TOT	ng/L	1.49	100	3,090	394	435	352	2.8	0.920	
Np	TOT	ng/L	0.744	100	1,379	88	158	18	1.0	0.212	
PAH											
1-Methylphenanthrene	TOT	ng/L	0.173	100	7.1	3.0	6.8	1.2	0.04	0.016	
Acenaphthene	TOT	µg/L	0.01	100	0.1	0.04	0.1	0.01	0.001	0.232	
Benzo[a]pyrene	TOT	µg/L	0.005	60	0.01	0.01	0.02	0.01	0.0001	0.047	
Benzo[e]pyrene	TOT	ng/L	0.294	75	2.0	0.8	1.5	0.4	0.01	0.004	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
Dibenzothiophene	TOT	ng/L	0.227	100	21	6.0	13	2.3	0.1	0.032	
Fluoranthene	TOT	µg/L	0.01	60	0.05	0.02	0.05	0.01	0.0003	0.103	
Fluorene	TOT	µg/L	0.01	80	0.3	0.02	0.04	0.01	0.0003	0.087	
Naphthalene	TOT	µg/L	0.01	80	0.05	0.03	0.1	0.01	0.001	0.162	
Phenanthrene	TOT	µg/L	0.01	100	0.1	0.1	0.1	0.02	0.001	0.260	
Pyrene	TOT	µg/L	0.01	60	0.03	0.02	0.04	0.01	0.0002	0.090	
PBDE											
Pbde 100	TOT	pg/L	4.03	100	nm	644	1,430	243	9.4	0.005	
Pbde 119/120	TOT	pg/L	4.03	100	nm	7.5	18	2.0	0.1	0.0001	
Pbde 138/166	TOT	pg/L	4.03	100	nm	32	75	8.7	0.5	0.0002	
Pbde 140	TOT	pg/L	4.03	100	nm	8.7	20	2.7	0.1	0.0001	
Pbde 153	TOT	pg/L	4.03	100	nm	252	587	84	3.8	0.002	
Pbde 154	TOT	pg/L	4.03	100	nm	211	487	72	3.2	0.002	
Pbde 155	TOT	pg/L	4.03	100	nm	14	30	5.4	0.2	0.0001	
Pbde 17/25	TOT	pg/L	4.03	100	nm	24	49	10	0.3	0.0002	
Pbde 183	TOT	pg/L	4.03	100	nm	43	103	11	0.7	0.0003	
Pbde 203	TOT	pg/L	30.8	100	nm	33	82	5.0	0.5	0.0002	
Pbde 206	TOT	pg/L	42.1	100	nm	386	1,060	38	6.9	0.003	
Pbde 207	TOT	pg/L	52.2	100	nm	275	726	43	4.7	0.002	
Pbde 208	TOT	pg/L	59.6	100	nm	195	519	27	3.4	0.002	
Pbde 209	TOT	pg/L	40.3	100	nm	12,220	34,500	659	225.5	0.099	
Pbde 28/33	TOT	pg/L	4.03	100	nm	48	106	17	0.7	0.0003	
Pbde 47	TOT	pg/L	4.03	100	nm	3,293	7,270	1,260	47.5	0.023	
Pbde 49	TOT	pg/L	4.03	100	nm	83	190	27	1.2	0.001	
Pbde 51	TOT	pg/L	4.03	100	nm	11	24	3.6	0.2	0.0001	
Pbde 66	TOT	pg/L	4.03	100	nm	63	145	21	1.0	0.0005	
Pbde 71	TOT	pg/L	4.03	100	nm	12	23	5.5	0.2	0.0001	
Pbde 75	TOT	pg/L	4.03	100	nm	5.7	14	1.6	0.1	0.00004	
Pbde 79	TOT	pg/L	4.03	67	nm	2.5	4.0	1.6	0.03	0.00002	
Pbde 85	TOT	pg/L	4.03	100	nm	125	290	41	1.9	0.001	
Pbde 99	TOT	pg/L	4.03	100	nm	3,123	6,980	1,150	45.6	0.022	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
PCB	TOT	pg/L	0.498	100	nm	29	45	13	0.3	0.0001	
PCB	TOT	pg/L	0.498	100	nm	29	45	13	0.3	0.0001	
PCB 10	TOT	pg/L	0.498	100	nm	0.4	0.5	0.3	0.004	0.000002	
PCB 103	TOT	pg/L	0.498	67	nm	0.4	0.7	0.3	0.004	0.000003	
PCB 105	TOT	pg/L	0.498	100	nm	13	26	3	0.2	0.0001	90a
PCB 11	TOT	pg/L	0.498	100	nm	107	173	62	1.1	0.0007	
PCB 110/115	TOT	pg/L	0.498	100	nm	49	94	13	0.6	0.0003	
PCB 114	TOT	pg/L	0.498	100	nm	1.3	2.7	0.4	0.02	0.00001	
PCB 118	TOT	pg/L	0.498	100	nm	31	62	9.0	0.4	0.0002	
PCB 12/13	TOT	pg/L	0.498	100	nm	4.4	7.1	2.3	0.05	0.00003	
PCB 121	TOT	pg/L	0.498	67	nm	0.5	0.8	0.3	0.01	0.000003	
PCB 122	TOT	pg/L	0.498	67	nm	0.5	0.8	0.3	0.01	0.000003	
PCB 123	TOT	pg/L	0.498	100	nm	0.8	1.7	0.3	0.01	0.00001	
PCB 126	TOT	pg/L	0.498	67	nm	0.4	0.6	0.3	0.004	0.000002	
PCB 128/166	TOT	pg/L	0.498	100	nm	7.3	15	2.0	0.1	0.00005	
PCB 129/138/160/163	TOT	pg/L	0.498	100	nm	42	81	13	0.5	0.0003	
PCB 130	TOT	pg/L	0.498	100	nm	2.3	4.3	0.7	0.03	0.00002	
PCB 131	TOT	pg/L	0.498	100	nm	0.8	1.3	0.4	0.01	0.000005	
PCB 132	TOT	pg/L	0.498	100	nm	13	23	4.2	0.2	0.0001	
PCB 133	TOT	pg/L	0.498	67	nm	0.8	1.5	0.3	0.01	0.00001	
PCB 134/143	TOT	pg/L	0.498	100	nm	2.5	4.6	0.7	0.03	0.00002	
PCB 135/151/154	TOT	pg/L	0.498	100	nm	14	26	4.7	0.2	0.0001	
PCB 136	TOT	pg/L	0.498	100	nm	6.7	13	2.1	0.1	0.00004	
PCB 137	TOT	pg/L	0.498	100	nm	2.4	4.6	0.7	0.03	0.00002	
PCB 139/140	TOT	pg/L	0.498	67	nm	1.3	2.5	0.3	0.02	0.00001	
PCB 14	TOT	pg/L	0.498	100	nm	0.6	0.8	0.4	0.01	0.000004	
PCB 141	TOT	pg/L	0.498	100	nm	6.2	12	2.0	0.1	0.00004	
PCB 144	TOT	pg/L	0.498	100	nm	2.3	4.3	0.8	0.03	0.00002	
PCB 146	TOT	pg/L	0.498	100	nm	6.0	11	2.1	0.1	0.00004	
PCB 147/149	TOT	pg/L	0.498	100	nm	28	53	8.6	0.3	0.0002	
Pcb 148	TOT	pg/L	0.498	67	nm	0.4	0.7	0.3	0.00	0.000003	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
PCB 15	TOT	pg/L	0.498	100	nm	11	17	4.9	0.1	0.0001	
PCB 152	TOT	pg/L	0.498	67	nm	1.0	1.7	0.5	0.01	0.000004	
PCB 153/168	TOT	pg/L	0.498	100	nm	40	79	13	0.5	0.0003	
PCB 155	TOT	pg/L	0.498	100	nm	4.9	10	1.6	0.1	0.00003	
PCB 156157	TOT	pg/L	0.498	100	nm	5.8	12	2.0	0.1	0.00004	
PCB 158	TOT	pg/L	0.498	100	nm	3.4	6.3	1.2	0.04	0.00002	
PCB 159	TOT	pg/L	0.498	67	nm	0.9	1.3	0.5	0.01	0.000004	
PCB 16	TOT	pg/L	0.498	100	nm	15	24	7.0	0.2	0.0001	
PCB 164	TOT	pg/L	0.498	100	nm	1.9	3.8	0.5	0.03	0.00001	
PCB 167	TOT	pg/L	0.498	67	nm	1.5	3.3	0.3	0.02	0.00001	
PCB 17	TOT	pg/L	0.498	100	nm	14	25	4.9	0.2	0.0001	
PCB 170	TOT	pg/L	0.498	100	nm	6.7	14	1.7	0.1	0.00005	
PCB 171/173	TOT	pg/L	0.498	67	nm	1.7	3.6	0.3	0.02	0.00001	
PCB 172	TOT	pg/L	0.498	67	nm	1.3	2.6	0.3	0.02	0.00001	
PCB 176	TOT	pg/L	0.498	67	nm	1.0	2.1	0.3	0.01	0.00001	
PCB 177	TOT	pg/L	0.498	100	nm	3.5	6.7	1.4	0.04	0.00002	
PCB 178	TOT	pg/L	0.498	67	nm	2.2	4.6	0.3	0.03	0.00002	
PCB 179	TOT	pg/L	0.498	67	nm	3.4	7.4	0.3	0.05	0.00002	
PCB 18/30	TOT	pg/L	0.498	100	nm	41	64	23	0.4	0.0002	
PCB 180/193	TOT	pg/L	0.498	100	nm	21	44	5.5	0.3	0.0001	
PCB 183/185	TOT	pg/L	0.498	100	nm	4.9	10	1.5	0.1	0.00003	
PCB 184	TOT	pg/L	0.498	67	nm	6.9	14	0.3	0.1	0.00005	
PCB 187	TOT	pg/L	0.498	100	nm	13	27	3.5	0.2	0.0001	
PCB 189	TOT	pg/L	0.498	100	nm	1.6	3.2	0.3	0.02	0.00001	
PCB 19	TOT	pg/L	0.498	100	nm	3.6	6.2	1.9	0.04	0.00002	
PCB 190	TOT	pg/L	0.498	67	nm	1.3	2.6	0.3	0.02	0.00001	
PCB 194	TOT	pg/L	0.498	100	nm	4.7	8.8	2.6	0.06	0.00003	
PCB 195	TOT	pg/L	0.498	67	nm	1.0	2.2	0.3	0.01	0.00001	
PCB 196	TOT	pg/L	0.498	100	nm	1.6	3.1	0.7	0.02	0.00001	
PCB 197/200	TOT	pg/L	0.498	67	nm	1.0	2.0	0.3	0.01	0.00001	
PCB 198/199	TOT	pg/L	0.498	100	nm	5.2	10	2.3	0.07	0.00004	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
PCB 2	TOT	pg/L	0.498	100	nm	12	17	6	0.11	0.0001	
PCB 20/28	TOT	pg/L	0.498	100	nm	38	70	12	0.5	0.0002	
PCB 201	TOT	pg/L	0.498	67	nm	0.6	1.1	0.3	0.01	0.000004	
PCB 202	TOT	pg/L	0.498	67	nm	1.5	3.5	0.3	0.02	0.00001	
PCB 203	TOT	pg/L	0.498	100	nm	3.0	6.0	1.3	0.04	0.00002	
PCB 206	TOT	pg/L	0.498	100	nm	4.1	6.4	2.4	0.04	0.00002	
PCB 207	TOT	pg/L	0.498	67	nm	0.4	0.7	0.3	0.01	0.000003	
PCB 208	TOT	pg/L	0.498	100	nm	1.4	2.2	0.8	0.01	0.00001	
PCB 209	TOT	pg/L	0.498	100	nm	4.5	5.7	2.7	0.04	0.00002	
PCB 21/33	TOT	pg/L	0.498	100	nm	24	53	5.3	0.3	0.0002	
PCB 22	TOT	pg/L	0.498	100	nm	17	31	5.6	0.2	0.0001	
PCB 24	TOT	pg/L	0.498	67	nm	0.5	0.9	0.3	0.01	0.000003	
PCB 25	TOT	pg/L	0.498	100	nm	4.7	8.6	1.6	0.1	0.00003	
PCB 26/29	TOT	pg/L	0.498	100	nm	7.1	13	2.6	0.1	0.00005	
PCB 27	TOT	pg/L	0.498	100	nm	2.1	3.8	0.9	0.03	0.00001	
PCB 3	TOT	pg/L	0.498	100	nm	56	124	18	0.8	0.0002	
PCB 31	TOT	pg/L	0.498	100	nm	40	72	14	0.5	0.0003	
PCB 32	TOT	pg/L	0.498	100	nm	8.8	16	3.2	0.1	0.0001	
PCB 35	TOT	pg/L	0.498	100	nm	3.1	5.6	1.2	0.04	0.00002	
PCB 36	TOT	pg/L	0.498	100	nm	0.8	1.3	0.4	0.01	0.000005	
PCB 37	TOT	pg/L	0.498	100	nm	11	21	3.75	0.1	0.0001	
PCB 4	TOT	pg/L	0.498	100	nm	8.37	12	5.00	0.1	0.00005	
PCB 40/41/71	TOT	pg/L	0.498	100	nm	17	33	4.84	0.2	0.0001	
PCB 42	TOT	pg/L	0.498	100	nm	9.37	18	2.62	0.1	0.0001	
PCB 43	TOT	pg/L	0.498	100	nm	1.32	2.46	0.42	0.02	0.00001	
PCB 44/47/65	TOT	pg/L	0.498	100	nm	386	832	38	5.4	0.003	
PCB 46	TOT	pg/L	0.498	100	nm	2.3	4.4	0.6	0.03	0.00002	
PCB 48	TOT	pg/L	0.498	100	nm	7.6	15	2.16	0.1	0.0001	
PCB 49/69	TOT	pg/L	0.498	100	nm	30	58	8	0.4	0.0002	
PCB 5	TOT	pg/L	0.498	100	nm	1.03	1.51	0.75	0.01	0.00001	
PCB 50/53	TOT	pg/L	0.498	100	nm	4.9	9.0	1.6	0.1	0.00003	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
PCB 52	TOT	pg/L	0.498	100	nm	66	125	20	0.8	0.0004	
PCB 55	TOT	pg/L	0.498	67	nm	0.85	1.70	0.28	0.01	0.00001	
PCB 56	TOT	pg/L	0.498	100	nm	12	23	3.5	0.1	0.0001	
PCB 59/62/75	TOT	pg/L	0.498	100	nm	4.3	8.32	1.0	0.1	0.00003	
PCB 6	TOT	pg/L	0.498	100	nm	6.0	11	3.1	0.1	0.00004	
PCB 60	TOT	pg/L	0.498	100	nm	8.2	16	2.5	0.1	0.0001	
PCB 61/70/74/76	TOT	pg/L	0.498	100	nm	56	108	15	0.7	0.0004	
PCB 63	TOT	pg/L	0.498	100	nm	1.3	2.2	0.5	0.01	0.00001	
PCB 64	TOT	pg/L	0.498	100	nm	16	30	5	0.2	0.0001	
PCB 66	TOT	pg/L	0.498	100	nm	37	62	18	0.4	0.0002	
PCB 67	TOT	pg/L	0.498	100	nm	1.4	2	0.8	0.01	0.00001	
PCB 68	TOT	pg/L	0.498	100	nm	44	96	4.4	0.6	0.0003	
PCB 7	TOT	pg/L	0.498	100	nm	8.7	14	4.9	0.1	0.0001	
PCB 77	TOT	pg/L	0.498	100	nm	2.9	5.6	1.3	0.04	0.00002	
PCB 8	TOT	pg/L	0.498	100	nm	15	34	3.4	0.2	0.0001	
PCB 82	TOT	pg/L	0.498	100	nm	5.4	10	1.4	0.1	0.00004	
PCB 83/99	TOT	pg/L	0.498	100	nm	25	51	6.3	0.3	0.0002	
PCB 84	TOT	pg/L	0.498	100	nm	11	22	2.9	0.1	0.0001	
PCB 85/116/117	TOT	pg/L	0.498	100	nm	8.7	17	2.2	0.1	0.0001	
PCB 86/87/97/108/119/125	TOT	pg/L	0.498	100	nm	112	151	76	1.0	0.001	
PCB 88/91	TOT	pg/L	0.498	100	nm	6.8	13	1.8	0.1	0.00005	
PCB 89	TOT	pg/L	0.498	67	nm	0.7	1.2	0.3	0.01	0.000004	
PCB 9	TOT	pg/L	0.498	100	nm	2.5	3.5	1.7	0.02	0.00001	
PCB 90/101/113	TOT	pg/L	0.498	100	nm	52	99	14	0.6	0.0003	
PCB 92	TOT	pg/L	0.498	100	nm	10	19	3	0.1	0.0001	
PCB 93/95/98/100/102	TOT	pg/L	0.498	100	nm	47	83	16	0.5	0.0003	
PCB 96	TOT	pg/L	0.498	67	nm	0.5	0.8	0.3	0.01	0.000003	
PCB174	TOT	pg/L	0.498	100	nm	41	66	11	0.4	0.0002	
PCB45/51	TOT	pg/L	0.498	100	nm	82	164	9	1.1	0.001	
PCDD											
1,2,3,4,6,7,8-HPCDD	TOT	pg/L	0.243	100	6.4	1.8	5.3	0.4	0.04	0.00001	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
1,2,3,7,8-PECDF	TOT	pg/L	0.243	60	0.3	0.2	0.3	0.2	0.002	0.000001	
OCDD	TOT	pg/L	0.243	100	38	12	37	2	0.2	0.0001	
OCDF	TOT	pg/L	0.243	60	1.1	0.8	2.6	0.2	0.02	0.000005	
Pesticides											
2,4-DDD	TOT	ng/L	0.012	100	nm	0.2	0.2	0.2	0.002	0.001	
4,4-DDE	TOT	ng/L	0.012	100	nm	0.2	0.4	0.05	0.003	0.002	
4,4-DDT	TOT	ng/L	0.012	100	nm	0.04	0.1	0.01	0.0004	0.0003	
ABHC	TOT	ng/L	0.0175	100	nm	0.03	0.04	0.03	0.0003	0.0002	
Aldrin	TOT	ng/L	0.012	100	nm	0.05	0.05	0.04	0.0003	0.0003	
Alpha Chlordane	TOT	ng/L	0.012	100	nm	0.04	0.1	0.02	0.0004	0.0003	
Beta-Hch Or Beta-Bhc	TOT	ng/L	0.0207	100	nm	0.1	0.1	0.1	0.001	0.001	
Dieldrin	TOT	ng/L	0.012	100	nm	0.2	0.3	0.1	0.002	0.001	
Endosulfan Sulfate	TOT	ng/L	0.012	100	nm	0.02	0.02	0.02	0.000	0.0001	
Endrin Aldehyde	TOT	ng/L	0.212	100	nm	0.9	1.7	0.1	0.01	0.007	
HCH, Gamma	TOT	ng/L	0.0172	100	nm	0.1	0.1	0.05	0.001	0.0004	
Heptachlor Epoxide	TOT	ng/L	0.012	100	nm	0.1	0.1	0.02	0.001	0.0004	
Hexachlorobenzene	TOT	ng/L	0.012	100	nm	0.1	0.1	0.04	0.001	0.0005	
Methoxyclor	TOT	ng/L	0.012	100	nm	0.03	0.04	0.02	0.0003	0.0002	
PFOS											
PFBS	TOT	ng/L	0.401	100	2.5	2.6	4.6	1.3	0.03	0.012	
PFDA	TOT	ng/L	0.401	100	nd	0.7	0.8	0.7	0.01	0.003	
PFHpA	TOT	ng/L	0.401	100	1.6	1.2	1.7	0.8	0.01	0.005	
PFHxA	TOT	ng/L	0.401	100	5.1	6.7	7.3	5.5	0.05	0.024	
PFHxS	TOT	ng/L	0.461	100	5.8	3.6	5.0	2.4	0.03	0.015	
PFNA	TOT	ng/L	0.401	100	0.6	0.6	0.7	0.4	0.004	0.002	
PFOA	TOT	ng/L	0.401	100	3.0	4.1	5.4	3.2	0.04	0.015	
PFOS	TOT	ng/L	0.401	100	3.4	4.4	8.0	2.5	0.05	0.021	
PFPeA	TOT	ng/L	0.802	100	7.2	6.5	9.3	4.8	0.06	0.022	
PFPeS	TOT	ng/L	0.403	67	nd	0.5	0.5	0.4	0.003	0.002	
PPCP											
2-Hydroxy-Ibuprofen	TOT	ng/L	15.9	100	17,723	8,790	15,100	2,480	98.7	45.5	

Table 3.4, continued

Parameter	State	Units	Detection Limit	% Freq	Influent Concentration (avg)	Effluent Concentration (avg)	Max	Min	Max diluted (153)	Average Eff Load kg/year	WQG
Acetaminophen	TOT	ng/L	43.7	100	nd	48,300	96,600	7.5	631.4	407	
Androstenedione	TOT	ng/L	1.49	100	74	97	189	4.2	1.2	0.537	
Azithromycin	TOT	ng/L	2.54	100	236	197	222	172	1.5	0.753	
Bisphenol A	TOT	ng/L	7.72	100	nd	65	77	54	0.5	0.422	90b
Caffeine	TOT	ng/L	87.5	100	nd	36,730	73,400	69	479.7	310	
Carbamazepine	TOT	ng/L	0.292	100	194	182	240	123	1.6	0.637	
Ciprofloxacin	TOT	ng/L	1.46	100	419	220	220	220	1.4	0.400	
Clarithromycin	TOT	ng/L	0.292	100	81	111	128	93	0.8	0.473	
Dehydronifedipine	TOT	ng/L	0.292	100	3.2	6.2	7.7	4.7	0.1	0.023	
Diltiazem	TOT	ng/L	0.146	100	346	280	314	246	2.1	1.07	
Diphenhydramine	TOT	ng/L	0.583	100	699	567	685	448	4.5	2.47	
Enrofloxacin	TOT	ng/L	0.569	100	nd	0.6	0.6	0.6	0.004	0.002	
Erythromycin-H2O	TOT	ng/L	1.42	100	nd	4.3	4.3	4.3	0.03	0.015	
Fluoxetine	TOT	ng/L	0.146	100	58	45	45	45	0.3	0.181	
Furosemide	TOT	ng/L	3.89	100	1,033	816	878	753	5.7	3.18	
Glyburide	TOT	ng/L	0.777	100	nd	1.4	1.5	1.4	0.01	0.008	
Hydrochlorothiazide	TOT	ng/L	3.89	100	1,865	1,435	1,620	1,250	10.6	5.48	
Ibuprofen	TOT	ng/L	3.89	100	11,569	5,160	8,410	1,910	55.0	26.0	
Miconazole	TOT	ng/L	0.292	100	nd	2.3	3.1	1.4	0.02	0.016	
Naproxen	TOT	ng/L	2.67	100	4,748	2,609	4,590	627	30.0	13.7	
Ofloxacin	TOT	ng/L	1.47	100	44	36	36	36	0.2	0.065	
Sulfamethoxazole	TOT	ng/L	1.02	100	945	636	840	431	5.5	2.88	
Sulfanilamide	TOT	ng/L	5.83	100	nd	55	92	18	0.6	0.243	
Thiabendazole	TOT	ng/L	0.292	100	28	22	32	12	0.2	0.072	
Triclosan	TOT	ng/L	5.83	100	nd	17	23	10	0.2	0.116	
Trimethoprim	TOT	ng/L	0.311	100	337	293	341	244	2.2	1.10	
Warfarin	TOT	ng/L	0.389	100	6.8	3.7	5.1	2.2	0.03	0.012	

Notes on next page

Table 3.4, continued

Notes:

[1] As determined by Hayco (2005)

n/a=not applicable, i.e. parameter does not lend itself to calculating loading, e.g., pH.

nd=not detected

nm=not measured

a=BC Approved Water Quality Guideline; b=BC Working Water Quality Guideline; c=CCME Water Quality Guideline for the protection of Aquatic Life; d=Health Canada Guidelines for Recreational Water Quality; lt=long term; st=short term.

*Concentrations are incorporated into compliance monitoring mean values presented in Table 3.2 and Table 3.3.

^average, max and min for NH_3 and TSS were calculated using available daily/weekly data rather than quarterly data only, in order to increase accuracy.

Shaded cells indicate an exceedance of one or more WQG. Note that this table does not include the results of the compliance and treatment plant performance monitoring, as discussed in Section 3.3.1 and presented in Table 3.2.

Table 3.5 2025 Toxicity Results

Test	Endpoint		
	Pass/Fail	EC50 or LC50 (%v/v)	EC25 or LC25 (%v/v)
Rainbow trout acute toxicity • January • May • August • December	 • pass • pass • pass • pass		
Daphnia magna 48-hour acute mortality • January • May • August • December	 • pass • pass • pass • pass		
7-day Rainbow trout embryo-alevin development		52.6	41.3
Daphnia magna 48-hour acute mortality • January • May • August • December		 • pass • pass • pass • pass	
7-day Topsmelt (*Atherinops affinis*) chronic survival and growth test			
• survival		>100	---
• growth		>100	>100
6-day *Ceriodaphnia* chronic test			
• survival		>100	---
• reproduction		>100	>100
Echinoid fertilization chronic test (*Strongylocentrotus purpuratus*)		>100	>100

Notes:
EC50 = Concentration that causes an observable effect in 50% of the test organisms.
EC25 = Concentration that causes an observable effect in 25% of the test organisms.
LC25 = Lethal Concentration to 25% of organisms in the test duration.
LC50 = Lethal Concentration to 50% of organisms in the test duration.
v/v = volume per volume
-- Not tested

4.0 BIOSOLIDS MONITORING

4.1 Introduction

In the SPTP LWMP, the CRD and its partner municipalities on the Saanich Peninsula made a commitment to implement a biosolids management plan, based on the following specific commitments:

- Pursue an effective and diversified program for the beneficial use of Class A biosolids that incorporates an economically viable and long-term solution.
- Mitigate nuisances associated with the production and application of biosolids, including odour, noise, truck traffic and dust.
- Manage biosolids to ensure that detrimental effects to public health and the environment are avoided.

The SPTP can produce Class A biosolids, in accordance with the pathogen reduction and vector attraction reduction processes in the ENV (BC MoE, 2002) *Organic Matter Recycling Regulations* (BC OMRR). These regulations define process and quality criteria for biosolids production and establish land application and distribution requirements. The regulations are set to protect human and environmental health.

In 2008, the CRD developed the PenGrow program to produce a soil enhancer product from the Class A biosolids. Biosolids were an end product of the sewage treatment process and were produced when solids (i.e., sludge) were treated. The product was cured and stored at the CRD's Hartland Landfill and the PenGrow program was intermittently in production until early 2011.

In July 2011, the PenGrow program was put on hold following CRD Board motions that ended "the production, storage and distribution of biosolids for land application at all CRD facilities and parks", including Hartland Landfill, and indicated the region "does not support the application of biosolids on farmland in the CRD under any circumstances." These restrictions were subsequently relaxed slightly to allow for out of region non-agricultural land application in the short term. CRD staff are currently investigating longer-term beneficial use options for the biosolids and sludge. Until markets for the biosolids can be developed and implemented, all sludge will be disposed of as controlled waste at the Hartland Landfill. The SPTP disposed of 3,753 tonnes of sludge in 2025.

Starting in 2013, the CRD commenced monitoring the sludge to help inform the RSCP on the partitioning behaviour of some wastewater contaminants between the solid and liquid phases of the treatment processes. Metals were of primary interest, as they fall under the RSCP's regulatory regime.

4.2 Methods

Sludge was produced at the SPTP and analyzed on a monthly basis for similar parameters as previous years (Table 4.1).

4.3 Results and Discussion

In 2025, 38 parameters were monitored in the SPTP sludge. For those parameters that are BC OMRR regulated, all results were far below the Class A biosolids limit (Table 4.1), similar to previous years.

4.4 Overall Assessment

No biosolids were produced at the SPTP in 2025. It is unknown if or when production will recommence. However, the sludge monitoring data collected to inform the CRD's RSCP showed that all OMRR regulated parameters continue to be far below Class A biosolids limits. The sludge will continue to be disposed of as controlled waste at the Hartland Landfill until their long-term use is determined.

Table 4.1 SPTP Sludge Monitoring, 2025

Parameter	Units	Class A Biosolids Limit (mg/kg)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Regulated Parameters															
Arsenic	mg/kg dry	75	1.04	0.96	0.81	1.05	0.81	0.65	0.78	1.21	0.69	0.93	1.95	5.31	2.22
Cadmium	mg/kg dry	20	0.514	0.612	0.659	0.868	0.849	0.649	0.751	0.916	0.573	0.715	1.26	0.747	0.824
Chromium	mg/kg dry	1,060	7.67	15.3	10.2	9.54	9.67	10.6	13.8	16	10.2	15.9	20.2	11.4	14.4
Cobalt	mg/kg dry	151	1.21	1.15	0.93	1.08	0.9	1.15	1.08	1.71	0.89	1.26	1.39	0.94	1.12
Copper	mg/kg dry	757	153	181	143	162	159	140	188	322	156	173	223	159	178
Lead	mg/kg dry	505	7.79	7.08	5.66	5.72	6.77	6.25	6.85	9.98	6.44	15.8	9.17	6.47	9.47
Mercury	mg/kg dry	5	0.153	0.255	0.142	0.255	0.214	0.202	0.206	0.307	0.28	0.198	0.237	0.242	0.239
Molybdenum	mg/kg dry	20	3.12	3.37	3.01	3.22	3.43	2.94	3.45	6.14	3.33	4.57	4.78	2.9	3.90
Nickel	mg/kg dry	181	6.54	8.08	10.3	8.24	5.18	5.65	6.68	9.92	5.89	6.64	15.1	9.11	9.19
Selenium	mg/kg dry	14	2	1.97	2.17	2.26	2.06	2.03	1.99	3.3	1.84	2.2	2.53	1.77	2.09
Thallium	mg/kg dry	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vanadium	mg/kg dry	656	5.4	4.5	4.6	4.5	3	2.9	3.1	5.3	2.1	3.2	5.7	3.8	3.7
Zinc	mg/kg dry	1,868	235	275	219	259	259	312	383	601	320	396	368	215	325
Unregulated Parameters															
Aluminum	mg/kg	n/a	1,680	1,430	1,210	1,190	883	976	991	1,420	778	986	1,510	1,050	1,081
Antimony	mg/kg	n/a	0.62	0.63	0.59	0.57	0.63	0.62	0.89	1.57	0.74	0.83	1.55	0.56	0.92
Barium	mg/kg	n/a	32.4	47.8	37.9	44.9	43	34.6	37.6	49.9	32	40.5	37	32.8	35.6
Beryllium	mg/kg	n/a	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bismuth	mg/kg	n/a	15.1	14.6	12.1	13.7	14	13.5	15.1	22.3	13.8	16.5	17.3	12	14.9
Boron	mg/kg	n/a	8.4	11.7	7.5	8	7.8	5.7	5.5	10.7	6.5	5.3	7.4	8.8	7.0
Calcium	mg/kg	n/a	5,930	6,130	5,230	5,360	6,170	5,140	5,720	8,110	5,070	6,090	6,910	4,960	5,758
Iron	mg/kg	n/a	3,400	3,190	2,690	2,640	2,560	1,900	2,390	3,890	1,920	2,280	3,440	2,260	2,475
Lithium	mg/kg	n/a	0.79	0.79	0.5	0.6	<0.5	0.68	0.52	0.68	<0.5	<0.5	0.77	0.66	0.72
Magnesium	mg/kg	n/a	3,440	2,560	2,690	2,740	3,330	2,450	4,120	8,740	4,690	5,940	4,210	2,070	4,228
Manganese	mg/kg	n/a	53.7	50.6	44	42.4	39.9	34.3	41.6	61.9	33.8	49.5	61.6	51.8	49
Moisture	%	n/a	76	78	74	72	73	67	72	75	72	---	74	68	71.3
Phosphorus	mg/kg	n/a	13,100	11,400	11,000	11,400	13,400	9,880	15,400	30,000	19,200	23,100	17,700	9,560	17,390
Potassium	mg/kg	n/a	4,300	3,590	3,410	3,750	4,440	2,580	4,940	10,200	5,810	7,230	5,160	2,700	5,225
Silver	mg/kg	n/a	0.743	0.892	0.765	0.754	0.782	0.833	0.967	1.32	0.794	0.827	1.04	0.775	0.859
Sodium	mg/kg	n/a	336	432	342	347	381	315	450	700	285	389	293	273	310
Soluble (2:1) pH	pH units	n/a	5.73	5.67	5.54	5.7	5.51	5.5	5.64	5.54	5.43	5.4	5.66	5.73	5.56

Table 4.1, continued

Parameter	Units	Class A Biosolids Limit (mg/kg)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Strontium	mg/kg	n/a	20.5	22.7	18.3	18.8	19.8	14	17.3	21.1	14.9	18.9	21.3	16.2	17.8
Tin	mg/kg	n/a	8.68	9.44	8.35	8.72	9.7	9.57	9.82	16.9	9.78	11.2	12.3	9.56	10.7
Titanium	mg/kg dry	n/a	25	21.8	24.8	22.5	17.5	20.3	20.3	46.7	14.2	27.4	27	17.9	21.6
Total Solids	mg/kg dry	n/a	24.2	22.2	26.2	28	26.6	32.7	28.5	24.9	28.1	96.7	26.3	32.4	45.9
Tungsten	mg/kg dry	n/a	0.6	0.56	<0.05	<0.05	0.51	<0.05	0.57	0.85	<0.05	0.5	0.94	<0.05	0.49
Uranium	mg/kg dry	n/a	0.597	0.513	0.471	0.489	0.385	0.358	0.285	0.394	0.219	0.286	0.504	0.462	0.368
WAD Cyanide	µg/kg dry	n/a	0.048	0.14	0.14	0.053	0.066	0.069	0.1	0.067	0.041	0.13	0.093	0.23	0.12
Zirconium	mg/kg dry	n/a	0.93	0.73	0.52	5.03	1.17	1.01	0.89	2.15	1.48	1.65	0.75	1.52	1.35

Notes:
*From Organic Matter Recycling Regulation (B.C. Reg. 18/2002, Schedule 4 Section 3, February 28, 2019), which references Trade Memorandum T-4-93 'Safety Guidelines for Fertilizers and Supplements' (Sept 1997) and contains maximum acceptable metal concentrations based on annual application rates (mg metal/kg product) 4,400 kg/ha – yr.
--- Indicates data not available / sample not collected.

5.0 RECEIVING ENVIRONMENT MONITORING

Receiving environment monitoring is undertaken to assess human health and environmental impacts of the SPTP outfall. In addition, the results are used to verify the environmental concentrations of parameters that are predicted using wastewater concentration data and the 1:153 minimum initial dilution factor determined during the 2004 dye study (Hayco, 2005) (discussed in Section 3.0).

5.1 Introduction

The CRD conducts receiving environment monitoring adjacent to the SPTP wastewater discharge to assess the potential for human health risk for those participating in recreational activities (e.g., swimmers, kayakers) at the surface near the outfall (see Appendix C1 for site coordinates). In addition, monitoring data are used to assess potential risks to shellfish harvesting in the vicinity of the SPTP outfall, although there is no commitment in the LWMP to meet this standard outside of shellfish growing areas. Finally, surface waters are monitored to ensure that the outfall diffuser is functioning as expected and a minimum initial dilution of 153:1 is being achieved.

A review of the SPTP WMEP was conducted in 2011/2012, in partnership with ENV, including the surface water component. As a result of the review, the surface water sampling program was revised. Beginning in 2013, the fecal coliform sampling was switched from monthly to twice yearly, 5-in-30 sampling (Table 2.1) in order to align more closely with the ENV fecal coliform guideline, based on the geometric mean of 5 samples collected in 30 days not exceeding 200 CFU/100 mL. In addition, enterococci were analysed along with fecal coliforms, as they are a more persistent tracer of human waste in the marine environment, with a more direct correlation with adverse human health impacts. Metal and conventional parameter concentrations were also added as extended analyses to the surface water monitoring program (Appendix C2) to confirm environmental concentrations that were previously only predicted by using wastewater data (Section 3.0) and applied minimum initial dilution factors.

5.2 Methods

The CRD sampling technicians sampled surface waters and the water column over two sampling periods (“winter”, i.e., January/February 2025 and “summer”, i.e., June/July 2025) using a 5 m research vessel positioned by global positioning system.

Each sampling period consisted of five individual sampling days occurring over a 30-day period (“5-in-30”). Nineteen stations at different distances from the outfall terminus were sampled. Sampling stations consisted of 14 outfall stations, one reference station located near Sidney Island, and four variable stations located at the edge of the IDZ (Figure 5.1). Station codes describe the distance from the outfall terminus in metres with compass direction (i.e., 100N = 100 m north of the outfall). The variable IDZ stations were selected at the time of sampling based on a computer model prediction (Lorax, 2023) of what depth and direction the effluent plume would most likely be trapped due to tides, current flow and direction. See Appendix C1 for a list of stations and coordinates.

Surface samples were collected at a depth of 1 m using a sampling pole. Sterile wide-mouth bottles were placed in the pole holder with the lid removed, submerged to collection depth, brought to the surface, and then excess water poured off before the lid was screwed on tightly.

IDZ samples and reference station samples were collected at three depths for each station: “top” (1 m below the surface), “middle” (calculated trapping depth from the computer model prediction), and “bottom” (1 m above the seafloor). An open, set, horizontal Van Dorn sampling bottle was deployed to the appropriate depth and closed using a weighted messenger. The bottle was then pulled back to the surface and decanted into the required sample containers. All samples were stored in coolers with ice until delivery to the analytical laboratory.

Surface water samples were analyzed by Bureau Veritas Laboratories Inc. (Burnaby, BC) for various parameters, depending on the sampling site and the sampling day. A larger list of parameters, including metals, was analyzed on a single day of each five-day sampling series and results compared to applicable BC WQG. See Appendix A for the list of surface water parameters and the analytical frequency for each.

Bacteriology results were averaged as geometric means and compared to the provincial and federal recreational enterococci guidelines of 35 CFU/100 mL and to the single sample maximum of 70 CFU/100 mL (BCMoE&CCS, 2019, Health Canada, 2012). In addition, results were compared to Canadian Shellfish Sanitation Program (CSSP) guidelines for shellfish harvesting, which require that the geomean of fecal coliform results not exceed 14 CFU/100 mL and not more than 10% of the samples exceed 43 CFU/100 mL (CSSP, 2019).

IDZ samples were analysed for parameters that reflect the suite of nutrients in the SPTP Wastewater Monitoring Program. Both programs monitor ammonia, total Kjeldahl nitrogen (TKN), nitrate, nitrite, total phosphorus, conductivity, pH, salinity and total organic carbon. While some parameters may not be relevant in the marine receiving environment (e.g., ammonia is measured in wastewater but is primarily found in the ammonium form in marine waters), they are still monitored to allow for direct comparison of the two sets of results. This suite of nutrients has also been monitored since before the SPTP commenced discharging into Bazan Bay, as part of the pre-discharge monitoring program.

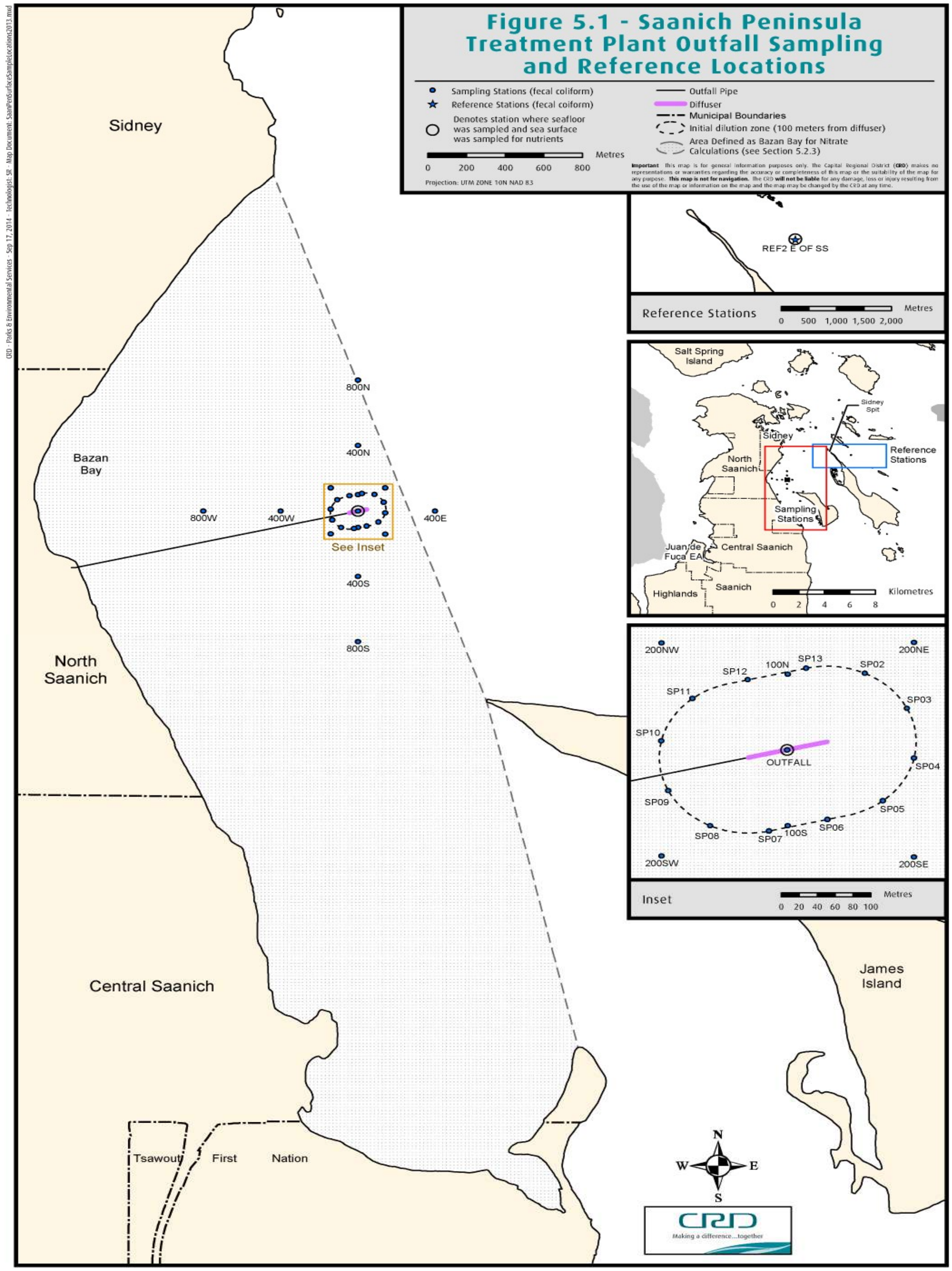

Figure 5.1 SPTP Outfall 2025 Sampling and Reference Locations

5.3 Results and Discussion

Bacteriology

Results show that all stations had very low concentrations of fecal coliforms and enterococci for both the summer and winter 5-in-30 sampling programs (Figure 5.2, Table 5.1, Table 5.2, Table 5.3 and Table 5.4). Figure 5.2 utilizes the maximum value detected for each sampling depth on each sampling event for the calculated geomeans. No single sample or geomean was over the respective human recreation or shellfish harvesting guidelines at the surface water (1 m depth) stations throughout the water column, with a maximum geomean of 2 CFU/100 mL recorded for fecal coliforms and 1 CFU/100mL for enterococci (Table 5.1 and Table 5.2). The IDZ stations had a maximum geomean of 3 CFU/100 mL for fecal coliform and 2 CFU/100 mL for enterococci (Table 5.3 and Table 5.4).

All surface water fecal coliform concentrations were well below the conservatively predicted environmental concentration of 20,260 CFU/100 mL, after the minimal initial dilution (1:153) (Hayco, 2005) was applied to the maximum effluent fecal coliform concentration of 3,100,000 CFU/100 mL (Table 3.4). Similar observations were made for enterococci, where surface water results were well below the 6,275 CFU/100 mL that was predicted using the maximum effluent enterococci concentration of 960,000 CFU/100 mL (Table 3.4) and the 153:1 dilution factor.

These results are generally consistent with previous years and previous studies (CRD, 2002-2023), including Island Health's summer beach sampling program that involves monitoring the nearshore environment in Bazan Bay, targeting beaches that are most commonly used for recreation.

Overall, the bacteriological sampling results, and previous dye study results (Hayco, 2005), indicate that the plume was predominantly trapped below the surface and that adverse health effects from recreational primary contact activities or the consumption of shellfish are not likely. There were no enterococci or fecal coliform geomean results or single sample results that exceeded the BC or Health Canada guidelines for the protection of human health, or the Canadian Shellfish Sanitation Program (CSSP) guidelines for shellfish harvesting. The values in Figure 5.2 use the maximum concentrations for each sampling day and depth to build a "worst case" scenario, (e.g., a geomean of 4 CFU/100mL) for summer middle depth fecal coliform.

As a conservative measure by the federal government, an area of approximately 17.65 km^2 around the outfall is closed for shellfish harvesting, as a standard Fisheries and Oceans Canada procedure near industrial and sanitary wastewater outfalls. Shellfish closures have a minimum radius around an outfall of 300 m, but closure areas are usually larger near bigger urban centres, such as for the SPTP outfall, where there are other potential sources of bacterial contamination (e.g., stormwater discharges, marinas, septic systems, sewage pumps), in addition to the wastewater outfall.

Metals

The extended suite of metals was analyzed at the four IDZ sites and a reference site on one day of sampling for each round of 5-in-30 sampling. Results are detailed in Appendix C2. For those parameters that were detected and had relevant BC and CCME WQG, boron exceeded WQG at every station and every sampling event, including the reference station. This is a common occurrence, as the natural concentrations of boron are above WQG in the Salish Sea. ENV is working on updating the boron guideline. Cadmium exceeded guidelines at most IDZ stations in the summer and at the reference station middle depth in winter. This is the second year with cadmium exceedances, and it will continue to be monitored to determine if it is the beginning of a consistent trend. Copper, nickel and zinc all had one or more exceedances, however these were single samples and the regulatory guideline is for the average of five samples, so a direct comparison cannot be made at this time. These parameters will continue to be monitored for exceedances.

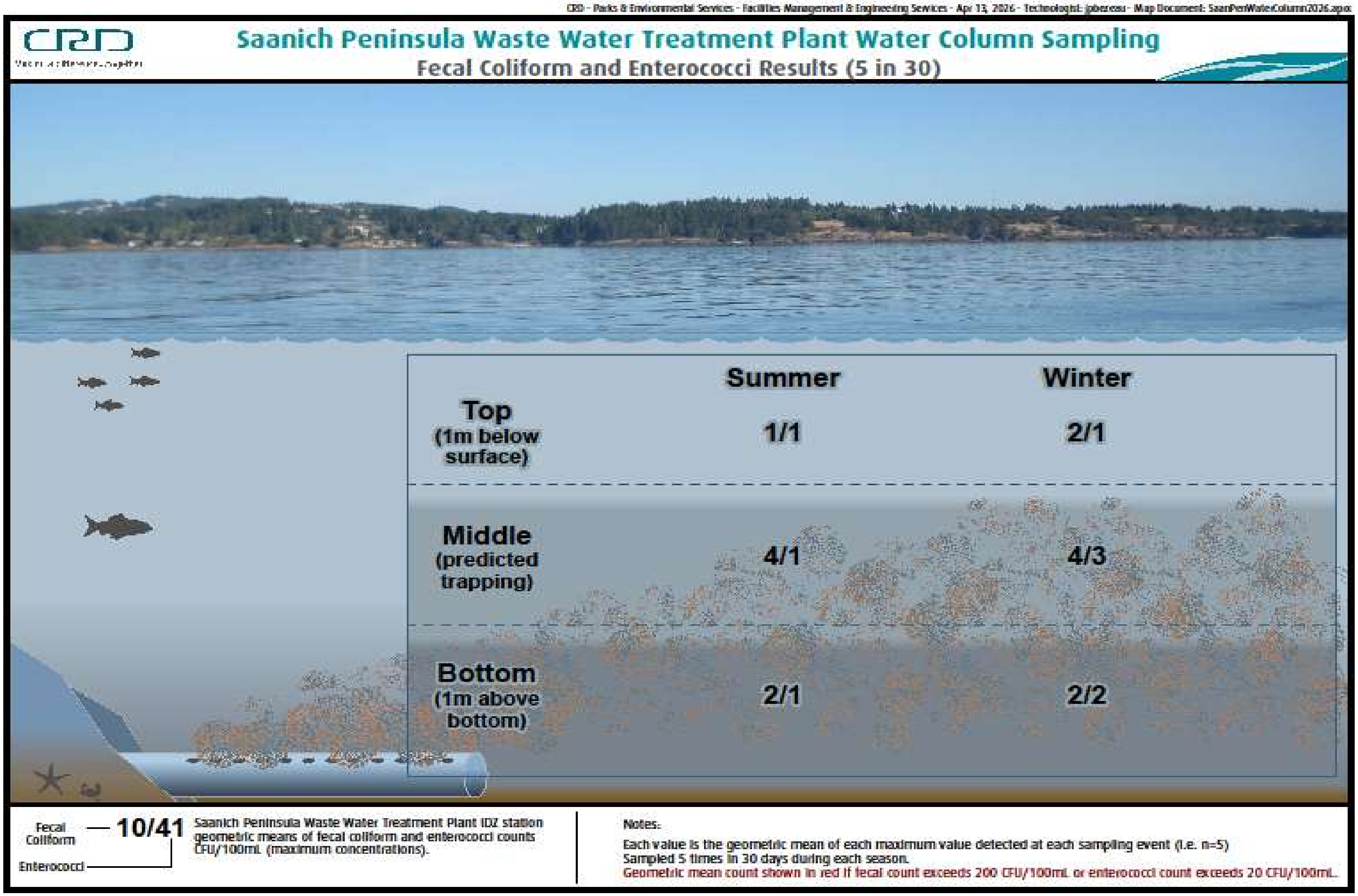

Figure 5.2 SPTP IDZ Sampling, Fecal Coliform and Enterococci Results – 2025 (5-in-30)

Table 5.1 SPTP Surface Sites 5 Sampling Events in 30 Days Fecal Coliform 2025

Station		Winter Fecal Coliforms (CFU/100mL)						Summer Fecal Coliforms (CFU/100mL)					
		1	2	3	4	5	Geomean	1	2	3	4	5	Geomean
Outfall Sites	Outfall	4	<1	<1	6	---	2	2	<1	1	9	<1	1
	100N	<1	<1	<1	<1	---	1	1	<1	<1	<1	<1	1
	100S	3	2	<1	1	---	1	1	<1	<1	13	<1	1
	200NE	6	<1	<1	3	---	1	1	<1	10	1	<1	1
	200NW	2	<1	<1	2	---	1	2	<1	<1	<1	<1	1
	200SE	1	1	<1	1	---	1	1	<1	1	<1	<1	1
	200SW	1	<1	<1	<1	---	1	1	<1	27	2	<1	2
	400E	1	1	<1	6	---	1	3	<1	2	<1	<1	1
	400N	3	1	<1	1	---	1	<1	1	3	<1	<1	1
	400S	<1	5	<1	2	---	1	<1	<1	2	<1	1	1
	400W	<1	<1	1	3	---	1	<1	<1	<1	<1	1	1
	800N	1	<1	<1	2	---	1	<1	<1	<1	<1	<1	<1
	800S	<1	1	<1	<1	---	1	<1	<1	<1	<1	2	1
	800W	3	2	<1	6	---	2	1	<1	<1	<1	<1	1
Reference Site	Reference 2	<1	1	<1	<1	---	1	<1	<1	<1	<1	<1	<1

Notes:
Shaded cells exceed BC Approved WQG = 200 CFU/100 mL (geometric mean over five samples).
<1 replaced with 0.5 for Geomean calculation.
--- Indicates incomplete sampling due to adverse weather conditions.

Table 5.2 SPTP Surface Sites 5 Sampling Events in 30 Days Enterococci 2025

Station		Winter Enterococci (CFU/100mL)						Summer Enterococci (CFU/100mL)					
		1	2	3	4	5	Geomean	1	2	3	4	5	Geomean
Outfall Sites	Outfall	2	<1	<1	1	---	1	1	<1	1	2	<1	1
	100N	<1	<1	<1	1	---	1	1	<1	<1	<1	<1	1
	100S	1	1	<1	2	---	1	1	<1	<1	2	<1	1
	200NE	2	<2	<1	4	---	1	1	<1	2	1	<1	1
	200NW	1	<1	<1	1	---	1	1	<1	<1	<1	<1	1
	200SE	1	1	<1	1	---	1	1	<1	1	<1	<1	1
	200SW	1	<1	<1	<1	---	1	1	<1	1	1	<1	1
	400E	1	1	<1	8	---	1	1	<1	1	<1	<1	1
	400N	1	1	<1	<1	---	1	<1	1	3	<1	<1	1
	400S	<3	1	<1	1	---	1	<1	<1	1	<1	1	1
	400W	<2	<1	1	<1	---	1	<1	<1	<1	<1	1	1
	800N	1	<1	<1	1	---	1	<1	<1	<1	<1	<1	<1
	800S	<1	1	<1	2	---	1	<1	<1	<1	<1	1	1
	800W	1	1	<1	1	---	1	1	<1	<1	<1	<1	1
Reference Site	Reference 2	<2	1	<1	<1	---	1	<1	<1	<1	<1	<1	<1

Notes:
Shaded cells exceed BC Approved WQG = 20 CFU/100 mL (geometric mean over five samples).
<1 replaced with 0.5 for Geomean calculation.
--- Indicates incomplete sampling due to adverse weather conditions.

Table 5.3 SPTP IDZ Sites 5 Sampling Events in 30 Days Fecal Coliform 2025

Station		Winter Fecal Coliforms (CFU/100mL)						Summer Fecal Coliforms (CFU/100mL)					
		Day 1	Day 2	Day 3	Day 4	Day 5	Geomean	Day 1	Day 2	Day 3	Day 4	Day 5	Geomean
Station 1	Top	<1	3	<1	1	---	1	1	<1	<1	<1	<1	1
	Middle	3	1	<1	2	---	1	1	<1	<1	<1	<1	1
	Bottom	3	2	1	2	---	2	4	3	<1	2	<1	1
Station 2	Top	1	1	<1	1	---	1	<1	<1	<1	<1	<1	<1
	Middle	<1	2	1	1	---	1	1	1	19	2	<1	2
	Bottom	4	<1	<1	<1	---	1	3	1	2	<1	<1	1
Station 3	Top	4	1	<1	<1	---	1	<1	<1	<1	<1	<1	<1
	Middle	19	1	<1	<1	---	1	<1	11	1	2	<1	1
	Bottom	6	<1	<1	<1	---	1	<1	<1	1	1	<1	1
Station 4	Top	<1	<1	---	1	---	1	<1	<1	<1	<1	<1	<1
	Middle	2	3	---	3	---	3	1	<1	<1	9	<1	1
	Bottom	<1	1	---	<1	---	1	4	1	4	<1	1	2
Reference	Top	<1	1	<1	<1	---	1	<1	<1	<1	<1	<1	<1
	Middle	1	<1	<1	4	---	1	<1	<1	<1	<1	<1	<1
	Bottom	<1	1	<1	<1	---	1	<1	<1	<1	<1	<1	<1

Notes:
Shaded cells exceed BC Approved WQG = 200 CFU/100 mL (geometric mean over 5 samples).
<1 replaced with 0.5 for Geomean calculation.
--- Indicates incomplete sampling due to adverse weather conditions.

Table 5.4 SPTP IDZ Sites 5 Sampling Events in 30 Days Enterococci 2025

Station		Winter Enterococci (CFU/100mL)						Summer Enterococci (CFU/100mL)					
		Day 1	Day 2	Day 3	Day 4	Day 5	Geomean	Day 1	Day 2	Day 3	Day 4	Day 5	Geomean
Station 1	Top	<1	1	<1	2	---	1	1	<1	<1	<1	<1	1
	Middle	1	8	<1	1	---	1	1	<1	<1	<2	<1	1
	Bottom	1	1	1	1	---	1	1	1	<1	1	<1	1
Station 2	Top	2	1	<1	2	---	1	<1	<1	<1	<1	<1	<1
	Middle	<1	1	1	1	---	1	1	1	3	1	<1	1
	Bottom	2	<1	<1	<1	---	1	1	1	2	<1	<1	1
Station 3	Top	1	1	<1	<3	---	1	<1	<1	<1	<1	<1	<1
	Middle	6	1	<1	<1	---	1	<1	3	2	1	<1	1
	Bottom	1	<1	<1	<4	---	1	<1	<1	1	1	<1	1
Station 4	Top	<1	<1	---	1	---	1	<1	<1	<1	<1	<1	<1
	Middle	4	1	---	1	---	2	1	<1	<1	1	<1	1
	Bottom	<2	2	---	<3	---	1	1	1	1	<1	1	1
Reference	Top	<2	1	<1	<1	---	1	<1	<1	<1	<1	<1	<1
	Middle	2	<1	<1	1	---	1	<1	<1	<1	<1	<1	<1
	Bottom	<1	2	<1	<1	---	1	<1	<1	<1	<1	<1	<1

Notes:
Shaded cells exceed BC Approved WQG = 20 CFU/100 mL (geometric mean over 5 samples).
<1 replaced with 0.5 for Geomean calculation.
--- Indicates incomplete sampling due to adverse weather conditions.

Nutrients

The potential effects of the SPTP discharge on nutrient concentrations in the marine receiving environment were assessed by qualitatively comparing the 2025 IDZ and reference station data. Data are presented in Appendix C3.

The 2025 mean concentrations of nutrients and other measured parameters (i.e., ammonia, TKN, nitrite, nitrate, total phosphorus, dissolved phosphorus), exhibited no consistent (qualitative) differences between outfall and reference stations (Appendix C3). The average concentrations of nutrients in 2025 were also within the ranges measured during the pre- and post-discharge studies (Aquametrix Research Ltd., 2000 and 2001a), and were consistent with recent monitoring years and the concentrations expected in Juan de Fuca Strait. The average surface water result for nitrate was 0.40 mg/L N at both the IDZ and the reference stations. For comparison, ambient nitrate concentrations in the Juan de Fuca Strait area are typically in the order of 0.140-0.420 mg/L N (Lewis, 1974 and 1978, as cited in Harrison *et al.*, 1994).

Figure 5.3 and Figure 5.4 present 2013-2025 total nitrogen and nitrate results from the reference area and outfall monitoring stations. Comparison of this data to the Mackas and Harrison (1997) study of area background concentrations indicates that the monitoring results are well within background concentrations.

Similar to previous years (CRD, 2002-2024), nutrient concentrations in 2025 exhibited high natural spatial and temporal variability, which is typical of the Salish Sea (Mackas and Harrison, 1997). Nutrient concentrations are expected to vary due to seasonal physiochemical and biological cycles in marine waters. From autumn through spring, surface-layer nitrogen concentrations are generally high in the Salish Sea because of reduced stratification, sustained tidal and wind mixing and low phytoplankton productivity. In summer, nitrogen concentrations are much lower, coinciding with low salinity and high temperatures influenced by surface water from the Fraser River freshet (Mackas and Harrison, 1997). Ammonia values show a seasonal variation, with total nitrogen, nitrate and TKN (Figure 5.3 and Figure 5.4, Appendix C3) lower in the summer and higher in the winter and nitrite (Appendix C3) higher in the summer and lower in the winter. 2025 values returned to levels seen in previous years, after abnormally high values in 2024 (CRD, 2025).

Nutrient monitoring results from 2002-2025 have shown no indication of potential for anthropogenic eutrophication due to the outfall. Mackas and Harrison (1997) indicate that the potential for eutrophication of the Salish Sea and Haro straits is low for two reasons: first, high ambient nitrate and ammonia concentrations make total primary productivity relatively insensitive to moderate changes; second, the exchange of water by currents is rapid, and water entering the Salish Sea carries naturally high nutrient concentrations. Natural nitrogen inputs into the straits from estuarine circulation are estimated to be an order of magnitude higher than all anthropogenic and atmospheric inputs combined (Mackas and Harrison, 1997). SPTP outfall loadings of nitrogen-based nutrients to Bazan Bay were approximately 87 tonnes N/year in 2025 (Table 3.4), whereas, the net natural nitrogen input to the Salish Sea estuarine system totals approximately 400-600 tonnes N/day (i.e., 146,000-219,000 tonnes N/year) (Mackas and Harrison, 1997).

Finally, Bazan Bay naturally contains 15-46 tonnes of nitrate alone, if one uses the typical ambient nitrate concentrations in the Juan de Fuca Strait area (0.140-0.420 mg/L N; Lewis 1974, 1978, as cited in Harrison *et al.*, 1994) and an assumed volume of 110,105,000 m^3 (volume calculated for the area enclosed by Sidney to James Island to Cordova Spit; Figure 5.1). Bazan Bay is also well flushed, as is evidenced by the fact that the 2025 surface water nitrate concentrations (Appendix C3) remained within the ambient Juan de Fuca nitrate concentrations. Overall, the 2025 surface water data showed no evidence of any significant effect of the SPTP discharge on nutrients in the Bazan Bay receiving environment.

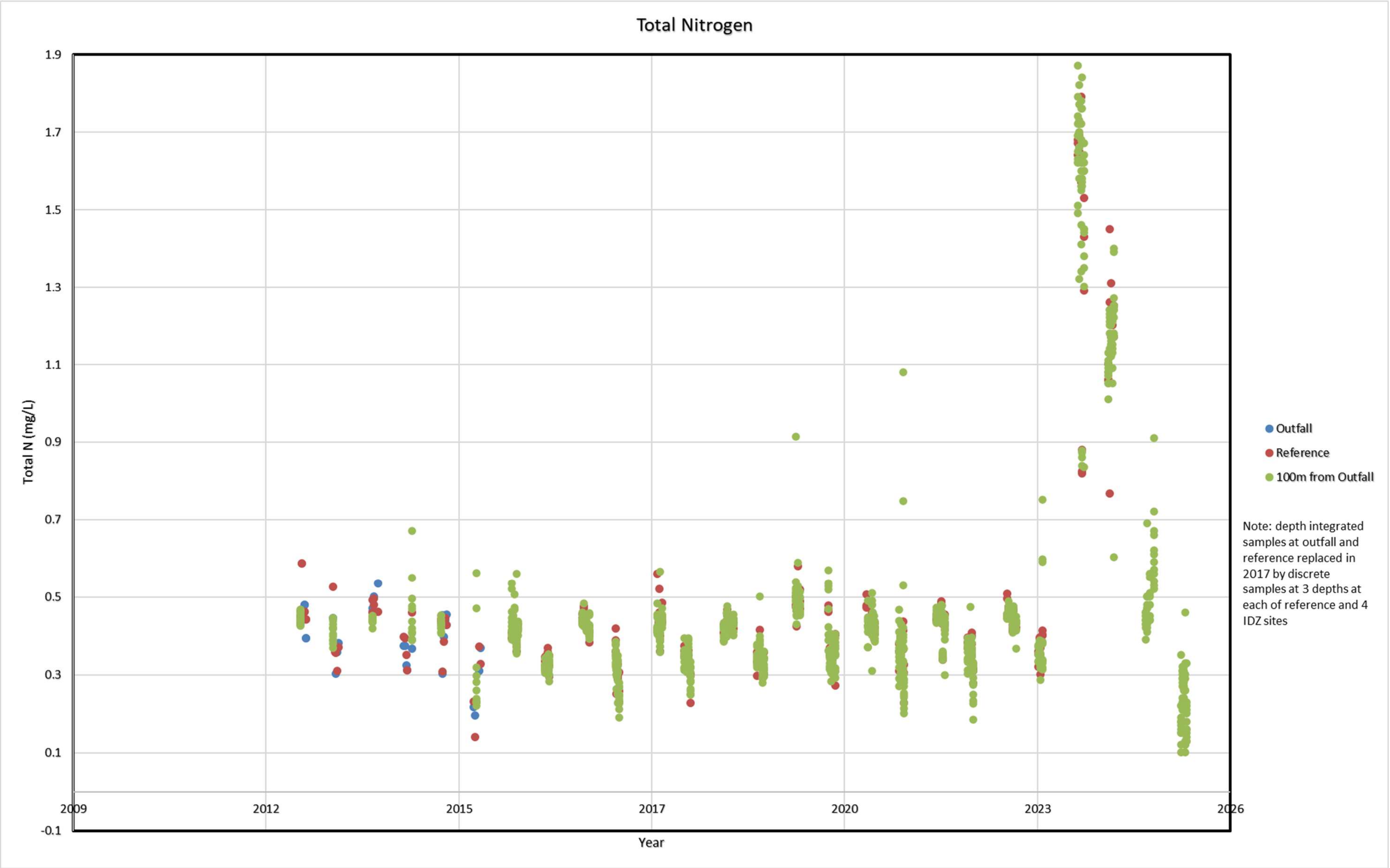

Figure 5.3 SPTP Total Nitrogen Sampling Results 2013-2025

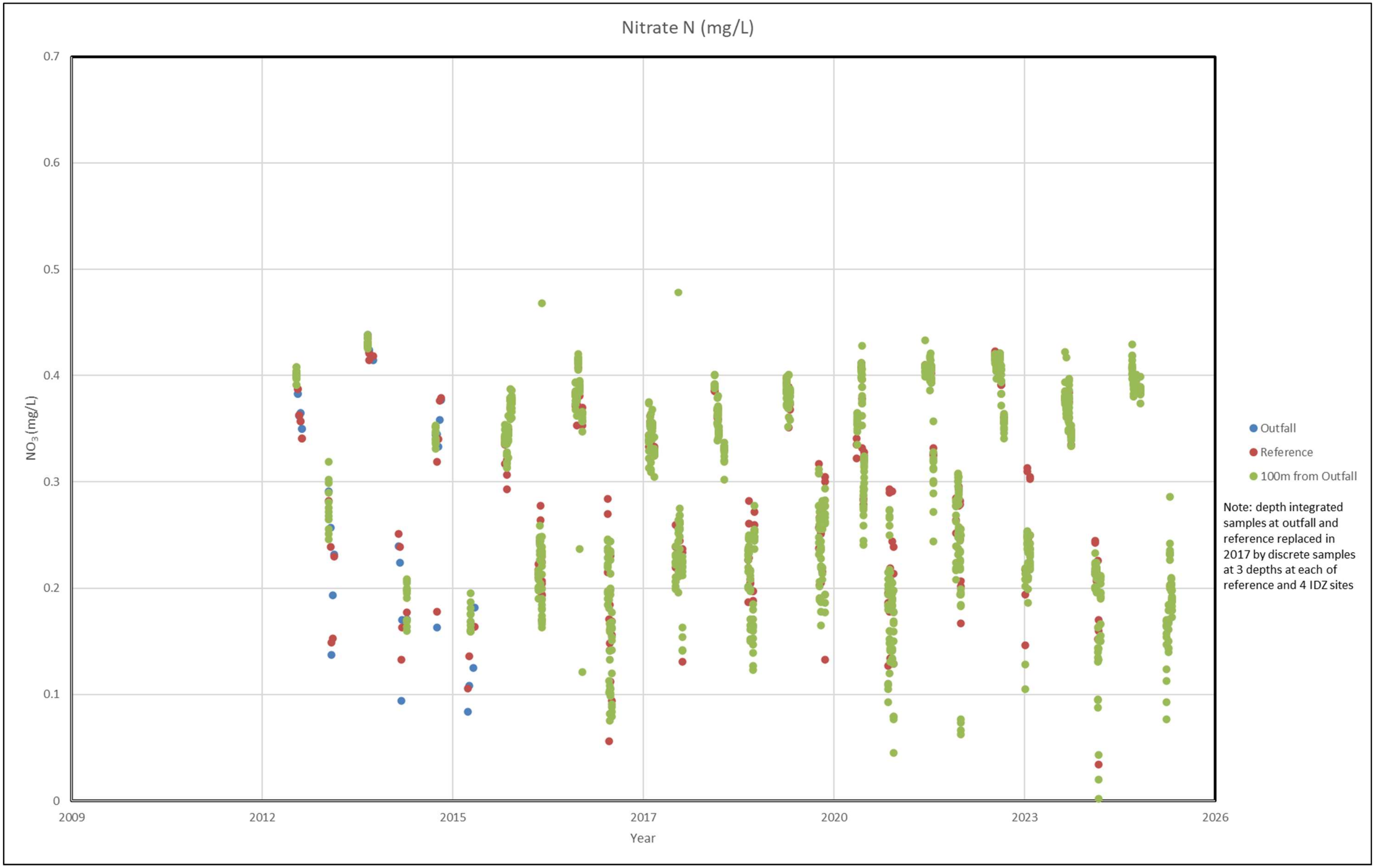

Figure 5.4 SPTP Nitrate Sampling Results 2013-2025

5.4 Overall Assessment

Overall, the 2025 bacteriology results indicated that the outfall plume was predominantly trapped below the ocean surface. In addition, the potential for human exposure to high bacterial concentrations from the wastewater discharge was low around the outfalls, as demonstrated by geometric mean results that were below thresholds used to assess potential human health risks in surface waters. Effects on shellfish consumers were not expected. Most extended analysis monitoring parameters were either non-detect or below applicable WQG, except for boron, cadmium, and some individual high values of copper, nickel and zinc. The CRD will continue to monitor metals in waters around the outfall to assess environmental significance.

The 2025 nutrient results were consistent with previous years and there was no evidence of an effect on nutrient concentrations in the receiving environment from the SPTP discharge. There were no qualitative differences between the reference and IDZ stations, and results were within the ranges measured in previous years and ambient measurements throughout Juan de Fuca Strait and the Strait of Georgia.

6.0 SEAFLOOR MONITORING

The WMEP monitors the effects of the SPTP wastewater discharge on the seafloor at the end of the outfall once every four years through collection and analysis of sediment at the end of the outfall and at the reference station. Seafloor sampling was conducted in 2024 and will be conducted next in 2028.

7.0 OVERALL CONCLUSIONS

Overall, the results of the WMEP monitoring conducted in 2025 did not indicate any significant negative effects from the SPTP discharge on the Bazan Bay receiving environment.

The CRD conducted wastewater monitoring on a regular basis to profile the chemical and physical constituents of influent and effluent. Influent and effluent quality was within expected ranges and met provincial and federal compliance requirements and treatment plant operational objectives with the exception of a non-compliance event triggered by an upstream discharge. All priority substances, for which there are BC and Canadian WQG, met these guidelines after estimated minimum initial dilution of the effluent was factored in, except for bacteriological indicators. This indicates that the substances measured in the effluent were not likely at concentrations high enough to be of concern to aquatic life after discharge to the marine environment.

Effluent toxicity testing resulted in no acute toxicity, and no major impairment to survival and reproductive endpoints.

No biosolids were generated in 2025 but monitoring of dewatered sludge was undertaken to inform the CRD's RSCP. Monitoring results of the SPTP sludge showed that all BC OMRR regulated parameters were far below Class A biosolids limits.

Surface water monitoring was used to assess the human and environmental effects of the SPTP discharge and to confirm the minimum initial dilution factor of 1:153 determined during the 2004 dye study. Results from 2025 showed that all stations had very low concentrations of fecal coliforms and enterococci, even though environmental concentrations were predicted to be higher, based on effluent bacterial concentrations and the 1:153 dilution factor. Bacterial station geometric means were 4 CFU/100 mL (or less) for all stations and depths in 2025 indicating adverse health effects from recreational primary contact activities or shellfish consumption were not expected.

Boron exceeded WQG at all IDZ stations, as well as at the reference station, and is naturally found at high levels in the Salish Sea. Cadmium exceeded guidelines in multiple samples and will be assessed again in 2026. Copper, nickel and zinc were also detected above chronic guidelines but only in single samples.

There was some seasonality (winter vs. summer sampling events) observed in nutrient concentrations in 2025, but these were consistent between the outfall IDZ stations and the reference station. As was observed in previous monitoring years, high temporal and spatial variation was evident in the data. Monitoring results were within the ranges measured in previous monitoring years and in ambient samples collected throughout the Salish Sea. Overall, there was no evidence of nutrient enrichment in the receiving environment resulting from the SPTP discharge.

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APPENDIX A

Parameter List for the Saanich Peninsula
Wastewater and Marine Environment Program 2025

Appendix A Parameter List for the Saanich Peninsula Wastewater and Marine Environment Program 2024

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
CONVENTIONAL VARIABLES				
alkalinity	minimum twice per week to monthly	√		
biochemical oxygen demand	influent - weekly; effluent - 3 times/week	√		
carbonaceous biochemical oxygen demand	minimum 2 times/week	√		
chemical oxygen demand	weekly	√		
chloride	1 time/month	√		
conductivity	4-5 times/month	√		√
cyanide (strong acid dissociable)		√		
cyanide (weak acid dissociable)		√		
fecal coliform	weekly	√	√	√
enterococci			√	√
hardness (as $CaCO_3$)		√		
hardness (as $CaCO_3$), dissolved		√		
ammonia	2-3 times/month	√	√	√
total Kjeldahl nitrogen	2-3 times/month	√	√	√
nitrate	2-3 times/month	√	√	√
nitrite	2-3 times/month	√	√	√
nitrogen, total		√	√	√
oil & grease, mineral		√		
oil & grease, total		√		
organic carbon, total		√	√	√
pH	daily	√	√	√
phosphate, dissolved	1 time/month		√	√

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
phosphate, total	1 time/month		√	√
salinity		√		√
sulphate		√		√
sulphide		√		√
suspended solids, total	daily	√		√
temperature		√		√
METALS TOTAL		√		
aluminum		√	√	
antimony		√	√	
arsenic		√	√	
barium		√	√	
beryllium		√	√	
bismuth			√	
cadmium		√	√	
calcium		√	√	
chromium		√	√	
chromium VI		√	√	
cobalt		√	√	
copper		√	√	
iron		√	√	
lead		√	√	
magnesium		√	√	
manganese		√	√	
mercury		√	√	
molybdenum		√	√	
nickel		√	√	
phosphorus		√	√	

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
potassium		√	√	
selenium		√	√	
silver		√	√	
sodium			√	
thallium		√	√	
tin		√	√	
zinc		√	√	
METALS - OTHER				
dibutyltin		√		
dibutyltin dichloride		√		
monobutyltin		√		
monobutyltin trichloride		√		
tributyltin		√		
tributyltin chloride		√		
methyl mercury		√		
METALS DISSOLVED				
aluminum		√		
antimony		√		
arsenic		√		
barium		√		
beryllium		√		
cadmium		√		
calcium		√		
chromium		√		
cobalt		√		
copper		√		
iron		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
lead		√		
magnesium		√		
manganese		√		
mercury		√		
molybdenum		√		
nickel		√		
phosphorus		√		
potassium		√		
selenium		√		
silver		√		
thallium		√		
tin		√		
zinc		√		
ALDEHYDES				
acrolein		√		
PHENOLIC COMPOUNDS				
total phenols		√		
2-chlorophenol		√		
2,4 & 2,5 -dichlorophenol		√		
2,4,6-trichlorophenol		√		
4-chloro-3-methylphenol		√		
pentachlorophenol		√		
2,4-dimethylphenol		√		
2,4-dinitrophenol		√		
2-methyl-4,6-dinitrophenol		√		
2-nitrophenol		√		
4-nitrophenol		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
4,6-dinitro-2-methylphenol		√		
phenol		√		
2,4-DDD		√		
ORGANOCHLORINE PESTICIDES				
2,4-DDE		√		
2,4-DDT		√		
4,4-DDD		√		
4,4-DDE		√		
4,4-DDT		√		
aldrin		√		
alpha-chlordane		√		
alpha-endosulfan		√		
alpha-HCH		√		
beta-endosulfan		√		
beta-HCH		√		
chlordane		√		
delta-HCH		√		
dieldrin		√		
endosulfan sulphate		√		
endrin		√		
endrin aldehyde		√		
gamma-chlordane		√		
gamma-HCH		√		
heptachlor		√		
heptachlor epoxide		√		
methoxyclor		√		
mirex		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
octachlorostyrene		√		
total endosulfan		√		
toxaphene		√		
POLYCYCLIC AROMATIC HYDROCARBONS				
2-chloronaphthalene		√		
2-methylnaphthalene		√		
acenaphthene		√		
acenaphthylene		√		
anthracene		√		
benzo(a)anthracene		√		
benzo(a)pyrene		√		
benzo(b)fluoranthene		√		
benzo(g,h,i)perylene		√		
benzo(k)fluoranthene		√		
chrysene		√		
dibenzo(a,h)anthracene		√		
fluoranthene		√		
fluorene		√		
indeno(1,2,3-c,d)pyrene		√		
naphthalene		√		
phenanthrene		√		
pyrene		√		
total high molecular weight – PAH		√		
total low molecular weight – PAH		√		
total PAH		√		
SEMIVOLATILE ORGANICS				

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
bis(2-ethylhexyl)phthalate		√		
butylbenzyl phthalate		√		
diethyl phthalate		√		
dimethyl phthalate		√		
di-n-butyl phthalate		√		
di-n-octyl phthalate		√		
MISCELLANEOUS SEMIVOLATILE ORGANICS				
1,2,4-trichlorobenzene		√		
1,2-diphenylhydrazine		√		
2,4-dinitrotoluene		√		
2,6-dinitrotoluene		√		
3,3-dichlorobenzidine		√		
4-bromophenyl phenyl ether		√		
4-chlorophenyl phenyl ether		√		
benzidine		√		
bis(2-chloroethoxy)methane		√		
bis(2-chloroethyl)ether		√		
bis(2-chloroisopropyl)ether		√		
hexachlorobenzene		√		
hexachlorobutadiene		√		
hexachlorocyclopentadiene		√		
hexachloroethane		√		
isophorone		√		
nitrobenzene		√		
N-nitrosodimethylamine		√		

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
N-nitrosodi-n-propylamine		√		
N-nitrosodiphenylamine		√		
VOLATILE ORGANICS				
Monocyclic Aromatic Hydrocarbons				
1,2-dichlorobenzene		√		
1,3-dichlorobenzene		√		
1,4-dichlorobenzene		√		
1,2-dibromoethane		√		
1,4-dioxane		√		
benzene		√		
carbon tetrachloride		√		
chlorobenzene		√		
ethylbenzene		√		
styrene		√		
toluene		√		
m & p xylenes		√		
o-xylene		√		
xylenes		√		
Aliphatic				
acrylonitrile		√		
methyl tertiary butyl ether		√		
Chlorinated Aliphatic				
1,1,1,2-tetrachloroethane		√		
1,1,1-trichloroethane		√		
1,1,2,2-tetrachloroethane		√		
1,1,2-trichloroethane		√		
1,1-dichloroethane		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
1,1-dichloroethene		√		
1,2-dichloroethane		√		
1,2-dichloropropane		√		
2-chloroethylvinyl ether		√		
bromomethane		√		
chloroethane		√		
chloroethene		√		
chloromethane		√		
cis-1,2-dichloroethene		√		
cis-1,3-dichloropropene		√		
dibromoethane		√		
dibromomethane		√		
dichlorodifluoromethane		√		
dichloromethane		√		
tetrabromomethane		√		
tetrachloroethene		√		
tetrachloromethane		√		
trans-1,2-dichloroethene		√		
trans-1,3-dichloropropene		√		
trichloroethene		√		
trichlorofluoromethane		√		
vinyl chloride		√		
Trihalomethanes				
bromodichloromethane		√		
bromoform		√		
chlorodibromomethane		√		
tribromomethane		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
trichloromethane		√		
Ketones				
4-methyl-2 pentanone		√		
dimethyl ketone		√		
endrin ketone		√		
methyl ethyl ketone		√		
TERPENES				
alpha-terpineol		√		
TOXICITY				
acute toxicity	quarterly	√		
chronic toxicity	annually	√		
HIGH RESOLUTION ANALYSES				
Nonylphenols				
4-Nonylphenols		√		
4-Nonylphenol monoethoxylates		√		
4-Nonylphenol diethoxylates		√		
Octylphenol		√		
PAHs				
Naphthalene		√		
Acenaphthylene		√		
Acenaphthene		√		
Fluorene		√		
Phenanthrene		√		
Anthracene		√		
Fluoranthene		√		
Pyrene		√		
Benz[a]anthracene		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
Chrysene		√		
Benzo[b]fluoranthene		√		
Benzo[j,k]fluoranthenes		√		
Benzo[e]pyrene		√		
Benzo[a]pyrene		√		
Perylene		√		
Dibenz[a,h]anthracene		√		
Indeno[1,2,3-cd]pyrene		√		
Benzo[ghi]perylene		√		
2-Methylnaphthalene		√		
2,6-Dimethylnaphthalene		√		
2,3,5-Trimethylnaphthalene		√		
1-Methylphenanthrene		√		
Dibenzothiophene		√		
PBDEs		√		
PCBs		√		
Pesticides				
1,3-Dichlorobenzene		√		
1,4-Dichlorobenzene		√		
1,2-Dichlorobenzene		√		
1,3,5-Trichlorobenzene		√		
1,2,4-Trichlorobenzene		√		
1,2,3-Trichlorobenzene		√		
1,2,4,5-/1,2,3,5-Tetrachlorobenzene		√		
1,2,3,4-Tetrachlorobenzene		√		
Pentachlorobenzene		√		
Hexachlorobutadiene		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
Hexachlorobenzene		√		
HCH, alpha		√		
HCH, beta		√		
HCH, gamma		√		
Heptachlor		√		
Aldrin		√		
Octachlorostyrene		√		
Chlordane, oxy-		√		
Chlordane, gamma (trans)		√		
Chlordane, alpha (cis)		√		
Nonachlor, trans-		√		
Nonachlor, cis-		√		
2,4'-DDD		√		
4,4'-DDD		√		
2,4'-DDE		√		
4,4'-DDE		√		
2,4'-DDT		√		
4,4'-DDT		√		
Mirex		√		
HCH, delta		√		
Heptachlor Epoxide		√		
alpha-Endosulphan		√		
Dieldrin		√		
Endrin		√		
beta-Endosulphan		√		
Endosulphan Sulphate		√		
Endrin Aldehyde		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
Endrin Ketone		√		
Methoxychlor		√		
PFOS				
Perfluoroheptanoic Acid (PFHpA)		√		
Perfluorohexanoic Acid (PFHxA)		√		
Perfluorononanoic Acid (PFNA)		√		
Perfluorooctane Sulfonamide (PFOSA)		√		
Perfluorooctanesulfonic acid		√		
Perfluorooctanoic acid (PFOA)		√		
Perfluoropentanoic Acid (PFPeA)		√		
PFBS		√		
PFDoA		√		
PFHxS		√		
PFUnA		√		
PCDD				
1,2,3,4,6,7,8-HPCDD		√		
1,2,3,4,6,7,8-HPCDF		√		
1,2,3,4,7,8,9-HPCDF		√		
1,2,3,4,7,8-HXCDD		√		
1,2,3,4,7,8-HXCDF		√		
1,2,3,6,7,8-HXCDD		√		
1,2,3,6,7,8-HXCDF		√		
1,2,3,7,8,9-HXCDD		√		
1,2,3,7,8,9-HXCDF		√		
1,2,3,7,8-PECDD		√		
1,2,3,7,8-PECDF		√		
2,3,4,6,7,8-HXCDF		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
2,3,4,7,8-PECDF		√		
2,3,7,8-TCDD		√		
2,3,7,8-TCDF		√		
OCDD		√		
OCDF		√		
TOTAL HEPTA-DIOXINS		√		
TOTAL HEPTA-FURANS		√		
TOTAL HEXA-DIOXINS		√		
TOTAL HEXA-FURANS		√		
TOTAL PENTA-DIOXINS		√		
TOTAL PENTA-FURANS		√		
TOTAL TETRA-DIOXINS		√		
TOTAL TETRA-FURANS		√		
PPCPs				
2-Hydroxy-Ibuprofen		√		
Acetaminophen		√		
Azithromycin		√		
Bisphenol A		√		
Caffeine		√		
Carbadox		√		
Carbamazepine		√		
Cefotaxime		√		
Ciprofloxacin		√		
Clarithromycin		√		
Clinafloxacin		√		
Cloxacillin		√		
Dehydronifedipine		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
Digoxigenin		√		
Digoxin		√		
Diltiazem		√		
Diphenhydramine		√		
Enrofloxacin		√		
Erythromycin-H2O		√		
Flumequine		√		
Fluoxetine		√		
Furosemide		√		
Gemfibrozil		√		
Glipizide		√		
Glyburide		√		
Hydrochlorothiazide		√		
Ibuprofen		√		
Lincomycin		√		
Lomefloxacin		√		
Miconazole		√		
Naproxen		√		
Norfloxacin		√		
Norgestimate		√		
Ofloxacin		√		
Ormetoprim		√		
Oxacillin		√		
Oxolinic Acid		√		
Penicillin G		√		
Penicillin V		√		
Roxithromycin		√		

Appendix A, continued

Parameter	Compliance Monitoring and Treatment Plant Performance	Wastewater Priority Substances	Receiving Environment	
	Influent and Effluent Sampling Frequency	Sampled Quarterly	5 Samples in 30 Days (summer and winter) 1st day	5 Samples in 30 Days (summer and winter) 2nd 5th day
Sarafloxacin		√		
Sulfachloropyridazine		√		
Sulfadiazine		√		
Sulfadimethoxine		√		
Sulfamerazine		√		
Sulfamethazine		√		
Sulfamethizole		√		
Sulfamethoxazole		√		
Sulfanilamide		√		
Sulfathiazole		√		
Thiabendazole		√		
Triclocarban		√		
Triclosan		√		
Trimethoprim		√		
Tylosin		√		
Virginiamycin		√		
Warfarin		√		
PFAS		√		

APPENDIX B

Wastewater Monitoring

Appendix B1 Saanich Peninsula Treatment Plant Effluent Flow (m^3) in 2025

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	10,805	10,888	10,298	10,425	8,824	9,195	8,842	8,747	8,367	8,296	15,351	10,027
2	10,896	11,095	10,167	10,118	8,852	9,048	9,010	8,325	8,051	8,413	11,496	9,808
3	14,187	10,092	9,884	9,822	8,568	8,965	8,873	8,289	8,050	8,090	9,710	9,707
4	13,237	9,574	9,762	9,539	9,014	8,806	8,848	8,891	7,955	7,741	9,166	12,043
5	12,960	9,488	9,684	9,292	9,082	8,985	8,531	8,717	7,710	8,070	9,433	12,943
6	11,822	9,604	9,482	10,417	8,646	8,807	8,869	9,198	7,655	8,153	12,923	11,099
7	11,248	9,668	9,302	10,371	8,727	8,536	9,270	8,808	7,958	7,870	10,873	10,844
8	10,983	9,915	11,604	9,987	8,567	8,990	8,903	8,786	8,083	7,564	9,532	14,337
9	10,469	10,295	11,397	9,707	8,657	9,071	8,753	8,480	7,863	10,095	9,285	14,064
10	10,713	10,160	10,800	9,413	8,395	8,942	8,833	8,828	7,997	8,021	9,165	22,678
11	10,143	9,736	10,949	9,285	8,724	8,895	8,742	9,005	7,973	8,421	8,719	17,110
12	10,084	9,596	11,537	9,085	8,751	8,921	8,473	8,901	7,812	8,701	8,608	13,162
13	9,900	9,417	10,991	9,302	8,760	8,766	8,724	8,954	7,720	8,681	10,077	11,404
14	9,535	9,290	10,545	9,297	8,540	8,567	8,998	9,518	8,829	8,492	9,367	12,039
15	9,374	9,600	12,082	9,049	8,735	8,884	8,776	10,561	8,057	8,080	9,405	18,275
16	9,265	12,707	11,636	9,069	9,151	9,052	8,869	9,458	7,972	7,944	9,513	19,593
17	9,120	13,332	10,892	8,936	10,017	8,702	8,830	9,246	7,995	7,802	9,018	22,373
18	8,963	11,834	10,497	8,952	8,697	8,713	8,848	9,329	7,972	9,271	8,771	16,876
19	9,094	12,895	10,217	8,653	9,922	9,185	8,409	9,161	7,818	10,756	8,672	15,034
20	9,046	11,673	10,500	8,933	9,117	8,762	8,666	9,150	8,556	8,947	8,602	15,789
21	8,829	12,809	11,926	9,206	11,138	10,277	8,895	9,145	8,108	8,321	8,392	15,044
22	8,831	16,482	11,723	8,818	9,778	9,356	8,872	9,039	8,180	5,156	8,287	14,017
23	8,712	16,863	14,456	8,806	8,764	9,346	8,820	8,732	8,093	8,136	10,118	13,244
24	8,627	15,090	17,224	9,043	8,435	9,192	8,985	8,947	7,923	8,933	9,093	12,463
25	8,499	15,537	15,605	8,730	8,887	9,476	8,819	9,237	7,933	8,387	11,830	11,411
26	8,771	12,891	13,992	8,734	8,998	9,380	8,423	6,207	7,834	10,091	12,123	11,575
27	8,650	11,529	18,450	8,892	8,812	9,153	8,641	7,884	7,735	9,024	15,078	11,161
28	8,549	10,770	13,297	9,144	8,831	8,708	8,914	7,815	7,912	9,410	11,690	10,094
29	8,481	---	11,793	8,904	8,948	8,802	9,911	7,857	9,226	9,882	10,139	11,027
30	8,756	---	11,433	8,921	8,835	9,072	9,968	7,614	8,537	8,823	9,815	9,667
31	11,214	---	10,777	---	9,156	---	8,839	7,731	---	10,720	---	9,466
TOTAL Flow (m3/day)	309,765	322,829	362,902	278,850	278,322	270,549	275,153	270,561	241,875	266,289	304,248	418,374
Average	9,992	11,530	11,707	9,295	8,978	9,018	8,876	8,728	8,062	8,590	10,142	13,496
Maximum	14,187	16,863	18,450	10,425	11,138	10,277	9,968	10,561	9,226	10,756	15,351	22,678
Minimum	8,481	9,290	9,302	8,653	8,395	8,536	8,409	6,207	7,655	5,156	8,287	9,466
n	31	28	31	30	31	30	31	31	30	31	30	31
											Annual Average	**9,862**

Appendix B2 Compliance and Treatment Plant Performance Influent Results 2025

Date 2025	ALK	BOD	CBOD	CL	COD	FC	NH_3	Unionized NH_3	NO_2	NO_3	TKN	PO_4	pH	pH@15	TSS
units	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2-Jan	---	202	---	---	622	---	---	---	---	---	---	---	---	---	---
7-Jan	---	---	---	---	---	---	27	---	0.01	0.20	41	4.8	7.5	---	---
9-Jan	---	222	---	---	423	---	---	---	---	---	---	---	---	---	---
14-Jan	---	190	180	120	429	1,200,000	43.00	0.10	---	---	49	---	7.5	7.0	83
16-Jan	---	220	180	200	589	7,600,000	1	0.00	<0.005	<0.02	58	---	7.4	6.9	210
16-Jan	---	248	---	---	509	---	---	---	---	---	---	---	---	---	---
17-Jan	---	---	---	---	---	5,400,000	2	---	<0.005	---	---	---	7.5	---	---
21-Jan	203	---	---	83	---	---	38	---	0.02	<0.025	49	---	7.2	---	---
23-Jan	---	256	---	---	690	---	---	---	---	---	---	---	---	---	---
30-Jan	---	280	---	---	570	---	---	---	---	---	---	---	---	---	---
4-Feb	---	---	---	---	---	---	33	---	0.01	<0.025	41	5.5	7.2	---	---
6-Feb	---	264	---	---	481	---	---	---	---	---	---	---	---	---	---
13-Feb	---	468	---	---	863	---	---	---	---	---	---	---	---	---	---
18-Feb	177	---	---	101	---	---	26	---	0.01	0.03	31	---	7.3	---	---
19-Feb	---	---	---	---	513	---	---	---	---	---	---	---	---	---	---
27-Feb	---	196	---	---	428	---	---	---	---	---	---	---	---	---	---
4-Mar	---	---	---	---	---	---	40	---	0.02	0.03	62	8.6	7.5	---	---
6-Mar	---	538	---	---	688	---	---	---	---	---	---	---	---	---	---
13-Mar	---	203	---	---	422	---	---	---	---	---	---	---	---	---	---
17-Mar	199	---	---	90	---	---	27	---	0.01	<0.025	42	---	7.2	---	---
20-Mar	---	233	---	---	476	---	---	---	---	---	---	---	---	---	---
26-Mar	---	157	---	---	351	---	---	---	---	---	---	---	---	---	---
3-Apr	---	254	---	---	461	---	---	---	---	---	---	---	---	---	---
8-Apr	---	---	---	---	---	---	31	---	0.01	<0.025	61	4.9	7.3	---	---
10-Apr	---	251	---	---	494	---	---	---	---	---	---	---	---	---	---
16-Apr	---	313	---	---	565	---	---	---	---	---	---	---	---	---	---
22-Apr	209	---	---	113	---	---	37	---	0.01	0.12	66	---	7.3	---	---
24-Apr	---	201	---	---	630	---	---	---	---	---	---	---	---	---	---
1-May	---	299	---	---	634	---	---	---	---	---	---	---	---	---	---
6-May	---	---	---	---	---	---	39	---	0.07	2.74	54	6.7	7.5	---	---
8-May	---	283	---	---	569	---	---	---	---	---	---	---	---	---	---
14-May	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-May	---	263	---	---	598	---	---	---	---	---	---	---	---	---	---
20-May	217	---	---	134	---	---	32	---	0.015	<0.025	49	---	7.6	---	---
22-May	---	234	---	---	582	---	---	---	---	---	---	---	---	---	---
29-May	---	349	---	---	626	---	---	---	---	---	---	---	---	---	---
3-Jun	---	---	---	---	---	---	42	---	<0.01	<0.025	60	6.8	7.2	---	---

Date 2025	ALK	BOD	CBOD	CL	COD	FC	NH_3	Unionized NH_3	NO_2	NO_3	TKN	PO_4	pH	pH@15	TSS
units	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
5-Jun	---	277	---	---	599	---	---	---	---	---	---	---	---	---	---
12-Jun	---	281	---	---	561	---	---	---	---	---	---	---	---	---	---
17-Jun	223	---	---	178	---	---	38	---	0.01	<0.025	62	---	7.5	---	---
19-Jun	---	312	---	---	586	---	---	---	---	---	---	---	---	---	---
26-Jun	---	259	---	---	628	---	---	---	---	---	---	---	---	---	---
3-Jul	---	269	---	---	682	---	---	---	---	---	---	---	---	---	---
8-Jul	---	---	---	---	---	---	39	---	<0.01	<0.025	62	6.7	7.5	---	---
10-Jul	---	278	---	---	647	---	---	---	---	---	---	---	---	---	---
17-Jul	---	313	---	---	765	---	---	---	---	---	---	---	---	---	---
22-Jul	236	---	---	234	---	---	44	---	0.01	<0.025	59	---	7.4	---	---
24-Jul	---	325	---	---	711	---	---	---	---	---	---	---	---	---	---
31-Jul	---	244	---	---	552	---	---	---	---	---	---	---	---	---	---
5-Aug	---	---	---	---	---	---	39	---	<0.01	0.05	24	7.8	7.4	---	---
7-Aug	---	228	---	---	593	---	---	---	---	---	---	---	---	---	---
14-Aug	---	259	---	---	579	---	---	---	---	---	---	---	---	---	---
19-Aug	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Aug	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Aug	222	---	---	203	---	---	41	---	0.01	0.05	22	---	7.4	---	---
21-Aug	---	277	---	---	580	---	---	---	---	---	---	---	---	---	---
28-Aug	---	243	---	---	558	---	---	---	---	---	---	---	---	---	---
4-Sep	---	261	---	---	587	---	---	---	---	---	---	---	---	---	---
9-Sep	---	---	---	---	---	---	41	---	<0.01	<0.025	50	6.6	7.3	---	---
11-Sep	---	220	---	---	564	---	---	---	---	---	---	---	---	---	---
18-Sep	---	246	---	---	586	---	---	---	---	---	---	---	---	---	---
23-Sep	220	---	---	106	---	---	40	---	<0.01	<0.025	48	---	7.5	---	---
25-Sep	---	234	---	---	565	---	---	---	---	---	---	---	---	---	---
2-Oct	---	249	---	---	546	---	---	---	---	---	---	---	---	---	---
7-Oct	---	---	---	---	---	---	45	---	0.01	<0.025	64	7.2	7.4	---	---
9-Oct	---	262	---	---	528	---	---	---	---	---	---	---	---	---	---
16-Oct	---	277	---	---	662	---	---	---	---	---	---	---	---	---	---
21-Oct	210	---	---	106	---	---	39	---	0.02	<0.025	58	---	7.2	---	---
23-Oct	---	224	---	---	557	---	---	---	---	---	---	---	---	---	---
30-Oct	---	218	---	---	485	---	---	---	---	---	---	---	---	---	---
4-Nov	---	---	---	---	---	---	35	---	<0.01	<0.025	49	5.8	7.5	---	---
6-Nov	---	249	---	---	499	---	---	---	---	---	---	---	---	---	---
13-Nov	---	263	---	---	526	---	---	---	---	---	---	---	---	---	---
18-Nov	212	---	---	103	---	---	37	---	<0.01	<0.025	55	---	7.5	---	---
20-Nov	---	259	---	---	525	---	---	---	---	---	---	---	---	---	---
27-Nov	---	178	---	---	360	---	---	---	---	---	---	---	---	---	---

Appendix B2, continued

Date 2025	ALK	BOD	CBOD	CL	COD	FC	NH_3	Unionized NH_3	NO_2	NO_3	TKN	PO_4	pH	pH@15	TSS
units	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-Dec	---	108	---	---	226	---	---	---	---	---	---	---	---	---	---
24-Dec	---	225	---	---	387	---	---	---	---	---	---	---	---	---	---
31-Dec	---	207	---	---	531	---	---	---	---	---	---	---	---	---	---
Mean	207	254	180	135	547	4,733,333	34	0.052	0.012	0.152	50	6.5	7.4	6.9	147
Min	158	108	180	83	226	1,200,000	1.3	0.003	0.003	0.010	22	4.8	7.2	6.9	83
Max	236	538	180	234	863	7,600,000	45	0.10	0.1	2.7	66	8.6	7.6	7.0	210
n	12	54	2	14	55	3	27	2	26	25	26	11	27	2.0	2.0

Notes:
ALK-alkalinity
BOD-total biochemical oxygen demand
COD-chemical oxygen demand
CL-chloride
COND-conductivity
NH_3-ammonia
UNION NH_3-unionized ammonia
NO_3-nitrate
NO_2-nitrite
TDP-total dissolved phosphorus
TP-total phosphorous
TKN-total Kjeldahl nitrogen
CBOD-carbonaceous biochemical oxygen demand
TRC-total residual chlorine
TSS-total suspended solids

Appendix B3 Compliance and Treatment Plant Performance Effluent Results 2025

Date 2025	ALK	BOD	CBOD	CL	COD	FC	NH_3	Unionized NH_3	NO_2	NO_3	TKN	PO_4	pH	pH@15	TSS
units	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
permitted max			45										6 9		45
1-Jan	---	6	<2.38	---	---	---	---	---	---	---	---	---	---	---	---
2-Jan	---	6	<2.38	---	47	---	---	---	---	---	---	---	---	---	---
7-Jan	33	---	'---	---	---	6,500	<0.1	<0.1	0.05	14	2.03	2.7	7.3	7.0	6.9
8-Jan	---	7.2	<2.56	---	---	---	---	---	---	---	---	---	---	---	---
9-Jan	---	7.7	2.7	---	40	---	---	---	---	---	---	---	---	---	---
14-Jan	---	5.0	3.5	120	41	7,100	0.05	<0.0005	0.29	16	0.86	---	6.9	6.4	3.6
15-Jan	---	10.2	3.6	---	---	---	---	---	---	---	---	---	---	---	---
16-Jan	---	4.0	5.0	110	47	1,300	0.06	<0.0005	0.12	14.9	0.9	---	7.1	6.6	2.8
16-Jan	---	11.1	4.0	---	47	---	---	---	---	---	---	---	---	---	---
17-Jan	---	---	---	---	---	260	0.03	---	0.17	---	---	---	7.3	---	---
21-Jan	24	---	---	87	---	61,000	0.46	<0.1	0.20	17.3	2.4	---	6.7	6.7	7.4
22-Jan	---	10.7	<3	---	---	---	---	---	---	---	---	---	---	---	---
23-Jan	---	10.7	3.9	---	42	---	---	---	---	---	---	---	---	---	---
29-Jan	---	11.0	6.1	---	---	---	---	---	---	---	---	---	---	---	---
30-Jan	---	11	7	---	49	---	---	---	---	---	---	---	---	---	---
4-Feb	---	---	---	---	---	9,900	<0.1	<0.1	0.14	11.9	2.8	12.7	6.6	6.5	10.6
5-Feb	---	19.5	13	---	---	---	---	---	---	---	---	---	---	---	---
6-Feb	---	9.5	6	---	39	---	---	---	---	---	---	---	---	---	---
12-Feb	---	11.3	12	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb	---	>33.6	>34	---	247	---	---	---	---	---	---	---	---	---	---
18-Feb	36	---	---	99	---	59,000	0.14	<0.1	0.34	14.0	2.1	---	7.1	7.0	16.0
19-Feb	---	9.4	4.4	---	---	---	---	---	---	---	---	---	---	---	---
19-Feb	---	8.7	4.5	---	51	---	---	---	---	---	---	---	---	---	---
26-Feb	---	6.9	<3	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb	---	4.8	<3	---	33	---	---	---	---	---	---	---	---	---	---
4-Mar	---	---	---	---	---	5,000	<0.1	<0.1	0.10	14.6	1.7	3.5	6.9	6.9	2.6
5-Mar	---	5.7	<3	---	---	---	---	---	---	---	---	---	---	---	---
6-Mar	---	6.5	<3	---	33	---	---	---	---	---	---	---	---	---	---
12-Mar	---	8.3	<3	---	---	---	---	---	---	---	---	---	---	---	---
13-Mar	---	5.8	<3	---	29	---	---	---	---	---	---	---	---	---	---
17-Mar	39	---	---	94	---	13,000	<0.1	<0.1	0.07	17.1	1.6	---	6.9	6.5	---
19-Mar	---	8.6	<3	---	---	---	---	---	---	---	---	---	---	---	---
20-Mar	---	8.3	<3	---	31	---	---	---	---	---	---	---	---	---	---
25-Mar	---	6.1	<2.99	---	---	---	---	---	---	---	---	---	---	---	---
26-Mar	---	6.4	<2.99	---	20	---	---	---	---	---	---	---	---	---	---
2-Apr	---	7.3	<2.4	---	---	---	---	---	---	---	---	---	---	---	---
3-Apr	---	5.8	<2.4	---	45	---	---	---	---	---	---	---	---	---	---
8-Apr	---	---	---	---	---	65,000	<0.1	<0.1	0.14	16.1	2.3	3.0	6.9	7.1	6.5
9-Apr	---	8.5	3.8	---	---	---	---	---	---	---	---	---	---	---	---
10-Apr	---	7.9	3.6	---	49	---	---	---	---	---	---	---	---	---	---
15-Apr	---	8.9	3.0	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr	---	12.2	3.5	---	50	---	---	---	---	---	---	---	---	---	---
22-Apr	18	---	---	115	---	17,000	0.52	<0.1	0.22	18.6	3.2	---	6.5	6.6	10.6
23-Apr	---	12.1	4	---	---	---	---	---	---	---	---	---	---	---	---
24-Apr	---	13.3	4.9	---	41	---	---	---	---	---	---	---	---	---	---
30-Apr	---	14.5	5.5	---	---	---	---	---	---	---	---	---	---	---	---
1-May	---	15.8	5.5	---	59	---	---	---	---	---	---	---	---	---	---
6-May	---	---	---	---	---	290,000	2.82	<0.1	0.38	18.1	5.0	4.3	7.0	6.9	18.4
7-May	---	17.4	6.0	---	---	---	---	---	---	---	---	---	---	---	---
8-May	---	18.6	6.1	---	64	---	---	---	---	---	---	---	---	---	---
14-May	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Date 2025	ALK	BOD	CBOD	CL	COD	FC	NH_3	Unionized NH_3	NO_2	NO_3	TKN	PO_4	pH	pH@15	TSS
units	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
permitted max			45										6 9		45
14-May	---	19.3	7.3	---	---	---	---	---	---	---	---	---	---	---	---
15-May	---	18.4	6.3	---	74	---	---	---	---	---	---	---	---	---	---
20-May	47	---	---	133	---	92,000	4.68	<0.1	0.52	17.2	6.6	---	7.1	7.0	---
20-May	---	>19.7	7.8	---	---	---	---	---	---	---	---	---	---	---	---
22-May	---	14.4	4.7	---	27	---	---	---	---	---	---	---	---	---	---
28-May	---	14.4	3.1	---	---	---	---	---	---	---	---	---	---	---	---
29-May	---	13.9	5.1	---	63	---	---	---	---	---	---	---	---	---	---
3-Jun	---	---	---	---	---	39,000	14.40	0.132	2.13	8.8	18.2	1.7	7.4	7.5	12.8
3-Jun	---	21.0	7.3	---	---	---	---	---	---	---	---	---	---	---	---
5-Jun	---	21.1	5.9	---	64	---	---	---	---	---	---	---	---	---	---
11-Jun	---	16.6	3.6	---	---	---	---	---	---	---	---	---	---	---	---
12-Jun	---	18.8	3.8	---	49	---	---	---	---	---	---	---	---	---	---
17-Jun	63	---	---	131	---	1,400,000	6.82	<0.1	1.58	10.7	12.0	---	7.3	7.2	11.4
17-Jun	---	>23.3	6.4	---	---	---	---	---	---	---	---	---	---	---	---
19-Jun	---	>23.8	5.6	---	67	---	---	---	---	---	---	---	---	---	---
25-Jun	---	>20.8	3.1	---	---	---	---	---	---	---	---	---	---	---	---
26-Jun	---	>21.2	3.7	---	59	---	---	---	---	---	---	---	---	---	---
2-Jul	---	11.1	4.1	---	---	---	---	---	---	---	---	---	---	---	---
3-Jul	---	10.0	3.4	---	66	---	---	---	---	---	---	---	---	---	---
8-Jul	---	---	---	---	---	290,000	9.32	<0.1	0.81	8.5	12.3	6.3	7.4	7.3	8.4
9-Jul	---	10.9	3.0	---	---	---	---	---	---	---	---	---	---	---	---
10-Jul	---	12.8	3.1	---	50	---	---	---	---	---	---	---	---	---	---
16-Jul	---	14.4	3.3	---	---	---	---	---	---	---	---	---	---	---	---
17-Jul	---	17.1	4.0	---	41	---	---	---	---	---	---	---	---	---	---
22-Jul	72	---	---	170	---	150,000	7.17	<0.1	1.77	---	10.1	---	7.3	7.3	7.4
23-Jul	---	18.0	<3	---	---	---	---	---	---	---	---	---	---	---	---
24-Jul	---	23.6	3.8	---	47	---	---	---	---	---	---	---	---	---	---
30-Jul	---	22.6	4.2	---	---	---	---	---	---	---	---	---	---	---	---
31-Jul	---	21.2	3.6	---	48	---	---	---	---	---	---	---	---	---	---
5-Aug	---	---	---	---	---	27,000	5.74	<0.1	1.58	9.8	8.8	1.2	7.3	7.3	12.7
6-Aug	---	13.1	3.5	---	---	---	---	---	---	---	---	---	---	---	---
7-Aug	---	16.1	4.9	---	54	---	---	---	---	---	---	---	---	---	---
13-Aug	---	15.6	3.2	---	---	---	---	---	---	---	---	---	---	---	---
14-Aug	---	17.6	<3	---	50	---	---	---	---	---	---	---	---	---	---
19-Aug	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Aug	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Aug	63	---	---	176	---	2,900	6.09	<0.1	1.57	10.0	8.1	---	7.4	7.3	7.5
20-Aug	---	10.5	4.4	---	---	---	---	---	---	---	---	---	---	---	---
21-Aug	---	>19.9	9.9	---	80	---	---	---	---	---	---	---	---	---	---
27-Aug	---	8.6	2.7	---	---	---	---	---	---	---	---	---	---	---	---
28-Aug	---	34.4	7.3	---	67	---	---	---	---	---	---	---	---	---	---
3-Sep	---	16.6	3.3	---	---	---	---	---	---	---	---	---	---	---	---
4-Sep	---	16.8	3.1	---	59	---	---	---	---	---	---	---	---	---	---
9-Sep	---	---	'---	---	---	83,000	8.83	<0.1	1.68	10.1	11.0	1.1	7.4	7.4	9.6
10-Sep	---	9.2	<3	---	---	---	---	---	---	---	---	---	---	---	---
11-Sep	---	10.6	3.0	---	44	---	---	---	---	---	---	---	---	---	---
17-Sep	---	15.3	<3	---	---	---	---	---	---	---	---	---	---	---	---
18-Sep	---	15.4	3.3	---	55	---	---	---	---	---	---	---	---	---	---
23-Sep	60	---	---	102	---	90,000	5.95	<0.1	2.13	11.5	7.1	---	7.2	7.1	10.2
24-Sep	---	8.5	3.9	---	---	---	---	---	---	---	---	---	---	---	---
25-Sep	---	11.2	4.4	---	45	---	---	---	---	---	---	---	---	---	---
1-Oct	---	17.9	5.1	---	---	---	---	---	---	---	---	---	---	---	---

Date 2025	ALK	BOD	CBOD	CL	COD	FC	NH_3	Unionized NH_3	NO_2	NO_3	TKN	PO_4	pH	pH@15	TSS
units	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
permitted max			45										6 9		45
2-Oct	---	18.4	5.1	---	52	---	---	---	---	---	---	---	---	---	---
7-Oct	---	---	---	---	---	1,300,000	5.05	<0.1	1.47	11.9	---	---	7.3	7.3	12.2
8-Oct	---	18.7	4.5	---	---	---	---	---	---	---	---	---	---	---	---
9-Oct	---	21.5	5.2	---	61	---	---	---	---	---	---	---	---	---	---
15-Oct	---	18.2	3.6	---	---	---	---	---	---	---	---	---	---	---	---
16-Oct	---	20.5	3.6	---	62	---	---	---	---	---	---	---	---	---	---
21-Oct	46	---	---	99	---	8,500	3.30	<0.1	0.54	13.1	6.1	---	7.1	7.1	8.0
22-Oct	---	20.8	3.5	---	---	---	---	---	---	---	---	---	---	---	---
23-Oct	---	21.0	4.1	---	40	---	---	---	---	---	---	---	---	---	---
29-Oct	---	12.8	5.7	---	---	---	---	---	---	---	---	---	---	---	---
30-Oct	---	10.5	3.7	---	34	---	---	---	---	---	---	---	---	---	---
4-Nov	---	---	---	---	---	47,000	<0.1	<0.1	0.04	16.7	2.2	3.9	7.1	7.0	9.2
5-Nov	---	12.1	6.4	---	---	---	---	---	---	---	---	---	---	---	---
6-Nov	---	7.8	3.4	---	45	---	---	---	---	---	---	---	---	---	---
12-Nov	---	14.9	8.3	---	---	---	---	---	---	---	---	---	---	---	---
13-Nov	---	>19.8	12.4	---	129	---	---	---	---	---	---	---	---	---	---
18-Nov	33	---	---	109	---	29,000	0.19	<0.1	0.27	20.6	10.2	---	6.9	6.8	105
19-Nov	---	29.4	11.9	---	---	---	---	---	---	---	---	---	---	---	---
20-Nov	---	25.9	11.4	---	124	---	---	---	---	---	---	---	---	---	---
26-Nov	---	13.8	5.3	---	---	---	---	---	---	---	---	---	---	---	---
27-Nov	---	12.7	3.4	---	53	---	---	---	---	---	---	---	---	---	---
2-Dec	---	---	---	---	---	110,000	<0.1	<0.1	0.11	17.7	2.6	---	7.1	7.0	11.0
3-Dec	---	15.4	3.7	---	---	---	---	---	---	---	---	---	---	---	---
4-Dec	---	14.8	4.6	---	44	---	---	---	---	---	---	---	---	---	---
9-Dec	32	---	---	145	---	62,000	0.24	<0.1	0.38	14.2	2.1	---	6.9	6.9	7.8
10-Dec	---	10.8	3.1	---	---	---	---	---	---	---	---	---	---	---	---
11-Dec	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Dec	---	15.0	3.4	---	49	---	---	---	---	---	---	---	---	---	---
11-Dec	---	---	---	---	---	30,000	---	---	---	---	---	---	---	---	---
17-Dec	---	9.2	3.9	---	---	---	---	---	---	---	---	---	---	---	---
18-Dec	---	8.4	<3	---	46	---	---	---	---	---	---	---	---	---	---
23-Dec	---	8.3	5.6	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec	---	10.8	5.5	---	44	---	---	---	---	---	---	---	---	---	---
30-Dec	---	12.8	4.4	---	---	---	---	---	---	---	---	---	---	---	---
31-Dec	---	11.7	4.0	---	36	---	---	---	---	---	---	---	---	---	---
Mean	43.6	13.2	4.6	120.7	55	153,409	3.0	0.049	1	14	6	4.0	7.1	7.0	13.3
Min	18.0	4.0	1.2	87.0	20	260	0.032	0.00025	0.043	8.5	0.9	1.1	6.5	6.4	2.6
Max	72	34	>34	176	247	1,400,000	14	0.132	2	21	18	13	7	8	105
n	13	100	108	14	55	28	27	26	27	25	25	10	27	26	24

Notes:
ALK-alkalinity
BOD-total biochemical oxygen demand
COD-chemical oxygen demand
CL-chloride, COND-conductivity
NH_3-ammonia
Union NH_3-unionized ammonia
NO_3-nitrate
NO_2-nitrite
TDP-total dissolved phosphorus
TP-total phosphorus
TKN-total Kjeldahl nitrogen
CBOD- carbonaceous biochemical oxygen demand
UN NH_3-unionized ammonia
TSS-total suspended solids
Shaded value indicates exceedance to permitted maximum.

Appendix B4 Influent and Effluent Priority Substance Concentrations 2025

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Enterococci	TOT	CFU/100 mL	1100000	440	7900000	32000	1400000	6100	3300000	5200
Fecal Coliforms	TOT	CFU/100 mL	5600000	940	---	---	---	---	---	7200
Alkalinity - Total - Ph 4.5	TOT	mg/L	---	---	210	32	220	46	250	34
Chloride	DIS	mg/L	---	---	85	100	150	170	100	120
Total/SAD Cyanide	TOT	mg/L	0.002	0.001	0.002	0.002	0.002	0.002	0.002	<0.0005
WAD Cyanide	TOT	mg/L	0.001	0.001	0.002	0.001	0.001	0.002	0.002	<0.0005
Hardness (as CaCO3)	DIS	mg/L	76.8	92.9	70.2	81.9	90.8	111	82.9	102
Sulphate	DIS	mg/L	---	---	28	33	39	43	27	43
Alkalinity - Bicarbonate	TOT	mg/L	---	---	260	39	270	56	310	41
Alkalinity - Carbonate	TOT	mg/L	---	---	<1	<1	<1	<1	<1	<1
Alkalinity - Hydroxide	TOT	mg/L	---	---	<1	<1	<1	<1	<1	<1
Alkalinity - Phenolphthalein - Ph 8.3	TOT	mg/L	---	---	<1	<1	<1	<1	<1	<1
Hardness (as CaCO3)	TOT	mg/L	86	94.6	73.5	79.7	102	116	100	95.3
N - No2 (As N)	DIS	mg/L	<0.005	0.12	<0.005	2.07	<0.005	2.33	<0.005	0.0675
N - No3 (As N)	DIS	mg/L	---	---	<0.02	12	<0.02	12.4	<0.02	15.7
N - No3 + No2 (As N)	DIS	mg/L	---	---	<0.02	14.1	<0.02	14.7	<0.02	15.8
P - Po4 - Ortho (As P)	DIS	mg/L	---	---	3.9	4.3	3.7	4.1	3.9	2.9
N - Nh3 (As N)	TOT	mg/L	1.4	0.033	1.8	0.052	1.2	0.23	1.4	0.068
N - Nh3 (As N)- Unionized	TOT	mg/L	---	---	0.0032	<0.0005	0.0033	<0.0005	0.005	0.00059

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
N - Tkn (As N)	TOT	mg/L	---	---	48.4	<0.2	59	2.43	57	<0.2
N - Total (As N)	TOT	mg/L	---	---	48.4	12.7	59	17.1	56.6	15.8
Organic Carbon	TOT	mg/L	---	---	150	16	110	19	130	10
Oil & Grease, Mineral	TOT	mg/L	<2	<2	2.3	<2	5.4	<2	<2	<2
Oil & grease, total	TOT	mg/L	9.4	1	24	<1	42	<1	79	<1
BOD	TOT	mg/L	---	---	290	13	310	24	380	5.4
CBOD	TOT	mg/L	---	---	300	6.7	370	6.7	330	2.8
COD	TOT	mg/L	---	---	731	78	528	66	581	34
pH @ 15° C	NoRs	pH	---	---	6.81	6.67	6.99	6.74	7.1	7.5
pH	TOT	pH	7.25	7.03	7.29	6.98	7.65	7.27	7.61	7.06
TSS	TOT	mg/L	---	---	240	10	340	8.8	350	2
Sulfide	TOT	mg/L	0.018	1.1	0.82	0.013	3.2	0.024	1.7	0.028
Tetrabromomethane	TOT	µg/L	---	---	<50	<50	<50	<50	<50	<50
4-Methyl-2-Pentanone	TOT	µg/L	---	---	<10	<10	<10	<10	<10	<10
Dimethyl Ketone	TOT	µg/L	---	---	77	<15	76	16	45	<15
Endrin Ketone	TOT	ng/L	---	---	---	<0.0185	---	<0.0652	---	<0.0164
Isophorone	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Aluminum	TOT	µg/L	<0.0099	<0.0099	<0.005	<0.0099	<0.005	<0.005	<0.0099	<0.00099
Aluminum-D	DIS	µg/L	0.0256	0.0077	0.0284	0.0047	0.0042	0.0021	0.0187	0.0074
Antimony	TOT	µg/L	---	---	0.002	<0.001	---	---	---	---
Antimony-D	DIS	µg/L	2.25	2.54	2.44	2.63	2.94	3.41	2.42	2.15
Arsenic	TOT	µg/L	---	---	0.002	<0.001	---	---	---	---
Arsenic-D	DIS	µg/L	14.3	13.9	17	17	17.1	18.2	16.7	13.5
Barium	TOT	µg/L	---	---	0.51	<0.05	0.39	<0.05	<0.05	0.054
Barium-D	DIS	µg/L	66.7	81.2	61.9	70.9	88	111	65.6	76.8
Beryllium	TOT	µg/L	---	---	0.003	0.008	---	---	---	---
Beryllium-D	DIS	µg/L	14.6	13.7	16	16.6	19.6	18.7	17.2	12.6
Bismuth-D	DIS	µg/L	5.89	4.86	6.48	5.61	16.3	7.6	8.31	6.35
Boron-D	DIS	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Cadmium	TOT	µg/L	---	---	0.004	0.012	---	---	---	---
Cadmium-D	DIS	µg/L	15.8	18.5	14.9	17.6	19.2	23.6	20.3	23.2
Calcium	TOT	mg/L	---	---	<0.001	<0.001	---	---	---	---
Calcium-D	DIS	mg/L	9.03	11.4	8	9.21	10.4	12.5	7.81	10.7
Chromium	TOT	µg/L	---	---	<0.001	<0.001	---	---	---	---
Chromium III	TOT	mg/L	0.0247	0.0242	0.0349	0.0155	0.125	0.0115	0.0329	0.0124
Chromium VI	TOT	mg/L	0.31	0.24	1.01	1.47	1.17	0.68	1.41	0.35
Chromium-D	DIS	µg/L	74.6	94.4	61.1	77.7	92.8	128	93.4	103
Cobalt	TOT	µg/L	0.319	0.306	0.388	0.37	0.472	0.331	0.285	0.274
Cobalt-D	DIS	µg/L	13.6	5.14	16.5	5.79	15.2	9.88	20.8	7.16

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Copper	TOT	µg/L	30.2	7.32	29.7	7.62	21.8	4.51	19.5	4.06
Copper-D	DIS	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibutyltin	TOT	µg/L	199	62.2	494	81.1	407	83.9	420	62.8
Dibutyltin Dichloride	TOT	µg/L	21.5	26.3	23.1	26.7	35.6	31.3	31.4	23
Iron	TOT	µg/L	0.005	0.0025	0.0084	0.0033	0.0065	<0.0019	0.0075	<0.0019
Iron-D	DIS	µg/L	18.2	18.7	16.4	16.9	21.1	25.1	26.3	21.2
Lead	TOT	µg/L	0.775	2.08	1.37	1.07	0.443	0.787	9.73	7.23
Lead-D	DIS	µg/L	9.86	11.6	7.92	9.09	12	13	8.46	10.3
Lithium-D	DIS	µg/L	0.0028	<0.002	<0.002	<0.002	0.0037	<0.002	<0.002	0.0022
Magnesium	TOT	mg/L	2.79	1.7	2.62	2.42	2.68	2.31	3.23	1.79
Magnesium-D	DIS	mg/L	0.0055	<0.002	0.0054	<0.002	0.0032	<0.002	0.0069	<0.002
Manganese	TOT	µg/L	0.124	0.0077	0.0502	0.0096	0.0057	0.0056	0.0322	<0.005
Manganese-D	DIS	µg/L	0.215	0.218	0.284	0.268	0.214	0.29	0.17	0.253
Mercury	TOT	µg/L	<0.5	<0.5	1.08	<0.5	0.61	<0.5	1.57	0.62
Mercury-D	DIS	µg/L	0.303	0.296	0.384	0.254	0.29	0.263	0.327	0.354
Methyl Mercury	TOT	ng/L	0.32	<0.2	0.68	0.32	0.6	0.22	0.32	0.45
Molybdenum	TOT	µg/L	36.1	41.8	38.1	46.9	116	35.9	14.8	37.8
Molybdenum-D	DIS	µg/L	163	179	206	215	189	214	134	110
Monobutyltin	TOT	µg/L	0.24	0.12	0.72	0.14	---	---	---	<0.1
Monobutyltin Trichloride	TOT	µg/L	0.156	0.026	0.151	0.0216	0.128	0.0183	0.244	0.012
Nickel	TOT	µg/L	1.01	0.27	1.87	1.61	1.07	0.7	4.02	0.35

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Nickel-D	DIS	µg/L	3670	3810	3270	3210	2590	2690	2840	3550
Phosphorus	TOT	µg/L	0.465	0.291	0.511	0.366	0.488	0.35	0.599	0.253
Phosphorus-D	DIS	µg/L	0.328	0.212	0.252	0.268	0.213	0.295	0.245	0.23
Potassium	TOT	mg/L	49.3	8.34	37.3	11.3	45.6	8.81	60.9	4.73
Potassium-D	DIS	mg/L	0.384	0.283	0.379	0.245	0.356	0.258	0.468	0.327
Selenium	TOT	µg/L	537	91.5	1010	105	461	99.5	464	71.4
Selenium-D	DIS	µg/L	23.8	10.7	35.7	11.6	169	11.4	28.8	9.61
Silicon-D	DIS	µg/L	0.186	0.149	0.333	0.202	0.102	0.0911	0.348	0.124
Silver	TOT	µg/L	32.5	25.8	32.9	26.8	43.3	32.9	45.6	23.4
Silver-D	DIS	µg/L	0.557	0.255	0.7	0.389	1.68	0.302	0.43	0.157
Sodium-D	DIS	mg/L	0.63	0.48	1.06	0.55	0.59	0.65	0.86	0.36
Strontium-D	DIS	µg/L	184	19.6	165	16.8	148	17.5	258	15.7
Sulfur-D	DIS	mg/L	1.45	0.321	1.65	0.427	1.52	0.37	5.93	0.172
Thallium	TOT	µg/L	0.041	<0.03	0.0313	0.0037	0.0641	0.0046	0.0952	<0.0019
Thallium-D	DIS	µg/L	2.03	0.43	1	0.47	1.05	0.59	0.89	0.34
Tin	TOT	µg/L	1.33	2.08	1.12	1.03	0.797	0.783	8.64	6.47
Tin-D	DIS	µg/L	3580	3720	4710	5040	5140	4600	5990	3030
Titanium-D	DIS	µg/L	0.241	0.141	0.219	0.172	0.229	0.18	0.165	0.141
Tributyltin	TOT	µg/L	3.83	1.68	3.21	2.49	3.05	2.67	4.88	1.5
Tributyltin Chloride	TOT	µg/L	0.416	0.012	0.034	0.019	0.101	0.017	0.077	<0.01
Uranium-D	DIS	µg/L	10.3	11.9	11.1	12.1	10	13.1	8.2	14
Vanadium-D	DIS	µg/L	6230	3870	6100	5010	7260	4900	7100	2910
Zinc	TOT	µg/L	93.1	42.1	106	48.6	114	39.5	163	36.3
Zinc-D	DIS	µg/L	0.316	0.14	0.258	0.152	0.221	0.145	0.318	0.13
Zirconium-D	DIS	µg/L	<0.0099	<0.0099	<0.005	<0.0099	<0.005	<0.005	<0.0099	<0.00099

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
1,1,1,2-Tetrachloroethane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	TOT	µg/L	---	---	<2	<2	<2	<2	<2	<2
Nitrobenzene	TOT	µg/L	---	---	<0.25	<0.25	<0.25	0.38	<0.25	<0.25
N-nitrosodimethylamine	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
N-Nitrosodi-N-Propylamine	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Benzene	TOT	µg/L	---	---	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Ethylbenzene	TOT	µg/L	---	---	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Toluene	TOT	µg/L	---	---	1.1	<0.4	2.6	0.7	1.3	<0.4
Xylenes	TOT	µg/L	---	---	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
1,2,3,4-Tetrachlorobenzene	TOT	ng/L	---	---	---	0.059	---	-999	---	0.031
1,3,5-Trichlorobenzene	TOT	ng/L	---	---	---	0.051	---	-999	---	0.045
1,4-Dioxane	TOT	µg/L	---	---	<1.2	0.25	<1	<0.14	<1.6	<0.1
1,7-Dimethylxanthine	TOT	ng/L	---	---	37600	1440	35600	119	41300	79
37CL-2,3,7,8-TCDD	TOT	%Recov	---	---	75.6	71.5	90.4	83.3	76.6	74.2
Acrolein	TOT	µg/L	---	---	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8
Acrylonitrile	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Delta-Hch Or Delta-Bhc	TOT	ng/L	---	---	---	<0.0124	---	<0.0652	---	<0.0235

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Dibromomethane	TOT	µg/L	---	---	<2	<2	<2	<2	<0.9	<0.9
N-nitrosodiphenylamine	TOT	µg/L	---	---	---	---	---	---	<1	<1
Pentachlorobenzene	TOT	ng/L	---	---	---	0.077	---	-999	---	0.042
Perfluorobutanoic acid	TOT	ng/L	---	---	6.32	10.4	11.6	47.2	<6.39	5.06
Tetrachloromethane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trans-Chlordane	TOT	ng/L	---	---	---	0.034	---	<0.0652	---	0.02
Trans-Nonachlor	TOT	ng/L	---	---	---	0.021	---	<0.0652	---	0.015
Tribromomethane	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Trichloromethane	TOT	µg/L	---	---	3.4	1.5	2.7	1.1	2.5	<1
1,2-diphenylhydrazine	TOT	µg/L	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2,4-dinitrotoluene	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2,6-dinitrotoluene	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
3,3-dichlorobenzidine	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Bromophenyl Phenyl Ether	TOT	µg/L	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-Chlorophenyl Phenyl Ether	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Hexachlorocyclopentadiene	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Hexachloroethane	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Alpha-Terpineol	TOT	µg/L	---	---	13.6	<5	12.1	<5	9.3	<5
1,1,1-trichloroethane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	TOT	ng/L	---	---	---	0.092	---	-999	---	0.036
1,2,4,5-/1,2,3,5-Tetrachlorobenzene	TOT	ng/L	---	---	---	0.038	---	-999	---	0.027
1,2,4-trichlorobenzene	TOT	µg/L	---	---	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2,4-trichlorobenzene	TOT	ng/L	---	---	---	0.252	---	-999	---	0.104
1,2-dibromoethane	TOT	µg/L	---	---	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-dichlorobenzene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	TOT	ng/L	---	---	---	0.346	---	-999	---	0.306
1,2-dichloroethane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	TOT	ng/L	---	---	---	0.228	---	-999	---	0.189

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
1,4-dichlorobenzene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	TOT	ng/L	---	---	---	23	---	-999	---	10.7
Bromodichloromethane	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Bromomethane	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Chlorobenzene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Chloroethane	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Chloroethene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Cis-1,2-Dichloroethene	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Cis-1,3-dichloropropene	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Dichloromethane	TOT	µg/L	---	---	---	---	---	---	<2	<2
Hexachlorobutadiene	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Hexachlorobutadiene	TOT	ng/L	---	---	---	0.568	---	-999	---	0.103
M & P Xylenes	TOT	µg/L	---	---	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Methyl Ethyl Ketone	TOT	µg/L	---	---	<50	<50	<50	<50	<50	<50
Methyl Tertiary Butyl Ether	TOT	µg/L	---	---	<4	<4	<4	<4	<4	<4

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
O-Xylene	TOT	µg/L	---	---	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Styrene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trans-1,2-Dichloroethene	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Trans-1,3-Dichloropropene	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Trichloroethene	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	TOT	µg/L	---	---	<4	<4	<4	<4	<4	<4
17 beta-Estradiol 3-benzoate	TOT	ng/L	---	---	<3.2	<0.812	<0.96	<0.878	<2.94	<0.819
Allyl Trenbolone	TOT	ng/L	---	---	<1.71	<0.406	<3.59	<0.439	<1.47	<0.409
Androstenedione	TOT	ng/L	---	---	250	5.48	274	5.64	291	4.48
Androsterone	TOT	ng/L	---	---	-999	<94.8	<86.2	<28.8	<73.4	<38.4
Desogestrel	TOT	ng/L	---	---	<178	<42.2	<92.9	<91.3	<306	<85.2
Mestranol	TOT	ng/L	---	---	<242	<34	<77.9	<22	<191	<20.5
Norethindrone	TOT	ng/L	---	---	<4.44	<1.35	<3	<1.1	<3.67	<1.02
Norgestrel	TOT	ng/L	---	---	<44.6	<2.57	34.4	<1.1	<17.3	<1.04
Progesterone	TOT	ng/L	---	---	12.8	1.06	61.8	0.7	21	<0.409
Testosterone	TOT	ng/L	---	---	105	<0.521	55	0.53	77.2	<0.409

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Total Phenols	TOT	mg/L	---	---	0.058	0.0031	0.063	0.0032	0.05	0.002
2,4 + 2,5 Dichlorophenol	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Tribromophenol	TOT	%	---	---	95	90	133	113	89	84
2-Chlorophenol	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	TOT	µg/L	---	---	<1	<1	<1	<1	<1	<1
Pentachlorophenol	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	TOT	µg/L	---	---	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2,4-dinitrophenol	TOT	µg/L	---	---	<6.5	<6.5	<6.5	<6.5	7.6	<6.5
2-Methyl-4,6-Dinitrophenol	TOT	µg/L	---	---	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Nitrophenol	TOT	µg/L	---	---	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Phenol	TOT	µg/L	---	---	18.8	<2.5	21.6	<2.5	13.2	<2.5
2,4,6-trichlorophenol	TOT	µg/L	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Conductivity	TOT	µS/cm	---	---	860	620	1100	960	930	700
17 alpha-Dihydroequilin	TOT	ng/L	---	---	<8.01	<2.03	<3.46	<2.2	<7.34	<2.05
17 alpha-Estradiol	TOT	ng/L	---	---	<32	<8.12	<16.4	<8.78	<29.4	<8.19
17 alpha-Ethinyl-Estradiol	TOT	ng/L	---	---	<20	<5.08	<5.49	<5.49	<18.4	<5.12
17 beta-Estradiol	TOT	ng/L	---	---	20.8	<4.06	12.2	5.28	<14.7	<4.09

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Equilenin	TOT	ng/L	---	---	<2.06	<0.585	<0.439	<0.439	<1.47	<0.517
Equilin	TOT	ng/L	---	---	<8.01	<2.03	<2.2	<2.2	<7.34	<2.05
Estriol	TOT	ng/L	---	---	214	<10.5	208	<9.93	268	<9.5
Estrone	TOT	ng/L	---	---	47.3	17.1	48.2	62	65.6	11.4
4-Nitrophenol	TOT	µg/L	---	---	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
4-n-Octylphenol	TOT	ng/L	---	---	<5.76	1.48	<35.5	<11.9	<5.92	<2.36
4-Nonylphenol Diethoxylates	TOT	ng/L	---	---	637	90.5	1950	662	932	85.6
4-Nonylphenol Monoethoxylates	TOT	ng/L	---	---	3260	349	32300	1980	4550	103
Np	TOT	ng/L	---	---	1820	29.4	626	120	1060	113
1-Methylphenanthrene	TOT	ng/L	---	---	10.7	0.954	13.5	0.845	13.6	0.477
2,3,5-trimethylnaphthalene	TOT	ng/L	---	---	36.4	3.58	43.6	3.53	20.6	0.825
2,6-dimethylnaphthalene	TOT	ng/L	---	---	23.2	1.63	41.9	0.919	16.4	<1.16
2-Chloronaphthalene	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2-Methylnaphthalene	TOT	µg/L	---	---	0.15	<0.01	0.07	<0.01	0.28	<0.01
2-Methylnaphthalene	TOT	ng/L	---	---	35.4	5.28	23.9	1.99	32.2	2.94
Acenaphthene	TOT	µg/L	---	---	0.14	<0.01	0.041	<0.01	0.1	0.011
Acenaphthene	TOT	ng/L	---	---	44.8	7.93	41.6	6.15	103	9.23

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Acenaphthylene	TOT	µg/L	---	---	0.21	<0.01	0.011	<0.01	0.015	<0.01
Acenaphthylene	TOT	ng/L	---	---	1.04	0.296	0.764	0.329	0.957	0.285
Anthracene	TOT	µg/L	---	---	<0.01	<0.01	<0.01	<0.01	0.037	<0.01
Anthracene	TOT	ng/L	---	---	3.3	<0.135	3.3	<0.24	4.65	<0.993
Benzo(B)Fluoranthene + Benzo(J)Fluoranthene	TOT	µg/L	---	---	<0.01	<0.01	<0.01	<0.01	0.051	<0.01
Benzo(K)Fluoranthene	TOT	µg/L	---	---	0.016	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]anthracene	TOT	µg/L	---	---	<0.01	<0.01	<0.01	<0.01	0.011	<0.01
Benzo[a]anthracene	TOT	ng/L	---	---	3.7	0.485	4.21	<0.0813	4.91	<0.109
Benzo[a]pyrene	TOT	µg/L	---	---	0.039	<0.005	<0.005	<0.005	0.047	<0.005
Benzo[a]pyrene	TOT	ng/L	---	---	2.25	<0.23	1.83	<0.169	2.93	<0.496
Benzo[b]fluoranthene	TOT	µg/L	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	TOT	ng/L	---	---	2.81	<0.147	3.62	0.505	4.06	<0.213
Benzo[e]pyrene	TOT	ng/L	---	---	2.76	0.302	4.97	<0.159	3.84	<0.506
Benzo[ghi]perylene	TOT	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[ghi]perylene	TOT	ng/L	---	---	3.21	0.223	1.77	<0.245	3.64	<0.277
Benzo[J,K]Fluoranthenes	TOT	ng/L	---	---	2.58	<0.16	2.21	<0.11	3.12	<0.423
Chrysene	TOT	µg/L	---	---	0.021	<0.01	<0.01	<0.01	0.037	<0.01

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Chrysene	TOT	ng/L	---	---	7.05	0.758	13.5	0.521	11.4	0.326
dibenzo(a,h)anthracene	TOT	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
dibenzo(a,h)anthracene	TOT	ng/L	---	---	<0.31	<0.259	3.57	<0.339	0.579	<0.156
Dibenzothiophene	TOT	ng/L	---	---	22.3	1.49	32.2	1.77	43	1.17
Fluoranthene	TOT	µg/L	---	---	0.036	<0.01	0.05	<0.01	0.12	<0.01
Fluoranthene	TOT	ng/L	---	---	48.1	9.43	56.9	7.58	105	4.79
Fluorene	TOT	µg/L	---	---	0.049	<0.01	<0.01	<0.01	0.31	0.028
Fluorene	TOT	ng/L	---	---	31.7	2.45	35.1	2.29	65.7	<0.297
High Molecular Weight PAH`s	TOT	µg/L	---	---	0.15	<0.02	0.098	<0.02	0.33	<0.02
Indeno(1,2,3-C,D)Pyrene	TOT	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Indeno(1,2,3-C,D)Pyrene	TOT	ng/L	---	---	2.49	<0.186	5.75	<0.255	2.45	<0.249
Low Molecular Weight PAH`s	TOT	µg/L	---	---	0.82	<0.05	0.37	<0.05	1.2	0.077
Naphthalene	TOT	µg/L	---	---	0.12	<0.01	0.078	0.018	0.13	0.012
Naphthalene	TOT	ng/L	---	---	251	8.66	60.7	4.2	113	5.24
Perylene	TOT	ng/L	---	---	0.66	<0.228	<0.442	<0.169	1.14	<0.564
Phenanthrene	TOT	µg/L	---	---	0.12	<0.01	0.15	0.012	0.31	0.026
Phenanthrene	TOT	ng/L	---	---	157	9.51	194	11	355	13.6

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Pyrene	TOT	µg/L	---	---	0.035	<0.01	0.048	<0.01	0.068	<0.01
Pyrene	TOT	ng/L	---	---	27	3.21	32.4	3.51	46.6	2.05
Total PAH	TOT	µg/L	---	---	0.97	<0.05	0.47	<0.05	1.5	0.077
PBDE 10	TOT	pg/L	---	---	---	<1.55	---	<1.47	---	<1.12
PBDE 100	TOT	pg/L	---	---	---	522	---	237	---	98.9
PBDE 105	TOT	pg/L	---	---	---	<1.94	---	<1.47	---	<1.47
PBDE 116	TOT	pg/L	---	---	---	<2.79	---	<1.47	---	6.5
PBDE 119/120	TOT	pg/L	---	---	---	6.24	---	3.14	---	1.99
PBDE 12/13	TOT	pg/L	---	---	---	<1.55	---	<1.47	---	<1.12
PBDE 126	TOT	pg/L	---	---	---	<1.55	---	<1.47	---	<1.12
PBDE 128	TOT	pg/L	---	---	---	<4.02	---	<2.53	---	<1.68
PBDE 138/166	TOT	pg/L	---	---	---	23.3	---	11.4	---	3.57
PBDE 140	TOT	pg/L	---	---	---	9.3	---	3.58	---	1.14
PBDE 15	TOT	pg/L	---	---	---	3.74	---	2.09	---	<1.12
PBDE 153	TOT	pg/L	---	---	---	255	---	96.3	---	40.7
PBDE 154	TOT	pg/L	---	---	---	217	---	77.3	---	34.6
PBDE 155	TOT	pg/L	---	---	---	14.7	---	6.15	---	3.32

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PBDE 17/25	TOT	pg/L	---	---	---	26.3	---	13.1	---	12.9
PBDE 181	TOT	pg/L	---	---	---	<1.69	---	<1.47	---	<1.62
PBDE 183	TOT	pg/L	---	---	---	32.4	---	13.9	---	5.82
PBDE 190	TOT	pg/L	---	---	---	<2.84	---	<2.53	---	<2.9
PBDE 203	TOT	pg/L	---	---	---	24.8	---	14	---	5.78
PBDE 206	TOT	pg/L	---	---	---	164	---	126	---	30.4
PBDE 207	TOT	pg/L	---	---	---	217	---	163	---	55.6
PBDE 208	TOT	pg/L	---	---	---	129	---	105	---	<30.4
PBDE 209	TOT	pg/L	---	---	---	2920	---	1090	---	1280
PBDE 28/33	TOT	pg/L	---	---	---	52.1	---	26.5	---	9.99
PBDE 30	TOT	pg/L	---	---	---	<2.69	---	<1.47	---	<1.12
PBDE 32	TOT	pg/L	---	---	---	<1.96	---	<1.47	---	<1.12
PBDE 35	TOT	pg/L	---	---	---	<1.55	---	<1.47	---	<1.12
PBDE 37	TOT	pg/L	---	---	---	1.87	---	<1.47	---	<1.12
PBDE 47	TOT	pg/L	---	---	---	3130	---	1330	---	576
PBDE 49	TOT	pg/L	---	---	---	68	---	29.6	---	12.7
PBDE 51	TOT	pg/L	---	---	---	9.29	---	4.44	---	2.09

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PBDE 66	TOT	pg/L	---	---	---	45.8	---	24.7	---	12.9
PBDE 7	TOT	pg/L	---	---	---	1.86	---	1.8	---	1.89
PBDE 71	TOT	pg/L	---	---	---	9.93	---	3.66	---	4.42
PBDE 75	TOT	pg/L	---	---	---	4.19	---	2.04	---	<1.21
PBDE 77	TOT	pg/L	---	---	---	<1.55	---	<1.47	---	<1.12
PBDE 79	TOT	pg/L	---	---	---	1.94	---	<1.47	---	4.14
PBDE 8/11	TOT	pg/L	---	---	---	<1.55	---	<1.47	---	<1.12
PBDE 85	TOT	pg/L	---	---	---	97.7	---	41.9	---	13.7
PBDE 99	TOT	pg/L	---	---	---	2760	---	1130	---	465
Decachloro Biphenyl	TOT	pg/L	---	---	---	2.18	---	2	---	<-999
PCB	TOT	pg/L	---	---	---	4.48	---	5.77	---	4.8
PCB 10	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	0.295
PCB 103	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.554
PCB 104	TOT	pg/L	---	---	---	<0.311	---	0.765	---	<0.273
PCB 105	TOT	pg/L	---	---	---	8.14	---	4.54	---	3.56
PCB 106	TOT	pg/L	---	---	---	<0.311	---	<0.364	---	<0.66
PCB 107	TOT	pg/L	---	---	---	1.68	---	0.636	---	<0.6

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 11	TOT	pg/L	---	---	---	106	---	76.3	---	40.5
PCB 110/115	TOT	pg/L	---	---	---	33.6	---	18.3	---	9.71
PCB 111	TOT	pg/L	---	---	---	<0.311	---	3.2	---	1.26
PCB 112	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.443
PCB 114	TOT	pg/L	---	---	---	0.865	---	0.779	---	<0.772
PCB 118	TOT	pg/L	---	---	---	21	---	9.86	---	7.16
PCB 12/13	TOT	pg/L	---	---	---	4.07	---	2.17	---	1.11
PCB 120	TOT	pg/L	---	---	---	<0.311	---	<0.357	---	<0.836
PCB 121	TOT	pg/L	---	---	---	0.323	---	<0.294	---	<0.533
PCB 122	TOT	pg/L	---	---	---	0.36	---	<0.348	---	<0.734
PCB 123	TOT	pg/L	---	---	---	0.375	---	0.483	---	<0.701
PCB 126	TOT	pg/L	---	---	---	<0.311	---	<0.553	---	<1.09
PCB 127	TOT	pg/L	---	---	---	<0.311	---	<0.583	---	<1.01
PCB 128/166	TOT	pg/L	---	---	---	3.33	---	2.39	---	1.16
PCB 129/138/160/163	TOT	pg/L	---	---	---	26.8	---	14.3	---	9.94
PCB 130	TOT	pg/L	---	---	---	1.7	---	0.885	---	<0.589
PCB 131	TOT	pg/L	---	---	---	0.504	---	1.52	---	<0.592

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 132	TOT	pg/L	---	---	---	7.5	---	3.61	---	2.22
PCB 133	TOT	pg/L	---	---	---	0.648	---	1.37	---	<0.646
PCB 134/143	TOT	pg/L	---	---	---	1.15	---	0.555	---	<0.584
PCB 135/151/154	TOT	pg/L	---	---	---	7.73	---	4.59	---	2.39
PCB 136	TOT	pg/L	---	---	---	3	---	1.57	---	0.92
PCB 137	TOT	pg/L	---	---	---	1.18	---	0.769	---	<0.633
PCB 139/140	TOT	pg/L	---	---	---	0.756	---	0.508	---	<0.556
PCB 14	TOT	pg/L	---	---	---	1.25	---	0.777	---	0.703
PCB 141	TOT	pg/L	---	---	---	3.78	---	1.87	---	1.39
PCB 142	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.606
PCB 144	TOT	pg/L	---	---	---	1.2	---	0.651	---	<0.517
PCB 145	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.439
PCB 146	TOT	pg/L	---	---	---	3.89	---	2.11	---	0.89
PCB 147/149	TOT	pg/L	---	---	---	17.2	---	7.71	---	5.13
PCB 148	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.513
PCB 15	TOT	pg/L	---	---	---	7.19	---	8.09	---	3.31
PCB 150	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.459

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 152	TOT	pg/L	---	---	---	5.74	---	5.73	---	3.57
PCB 153/168	TOT	pg/L	---	---	---	23.9	---	13.8	---	9.32
PCB 155	TOT	pg/L	---	---	---	3.04	---	2.45	---	0.974
PCB 155L	TOT	%Recov	---	---	---	54.4	---	54	---	50.9
PCB 156157	TOT	pg/L	---	---	---	3.1	---	2.49	---	1.04
PCB 158	TOT	pg/L	---	---	---	2.18	---	1.07	---	<0.591
PCB 159	TOT	pg/L	---	---	---	0.817	---	<0.357	---	3.6
PCB 16	TOT	pg/L	---	---	---	9.56	---	14.2	---	5.75
PCB 161	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.601
PCB 162	TOT	pg/L	---	---	---	0.325	---	<0.331	---	<0.684
PCB 164	TOT	pg/L	---	---	---	1.35	---	1.1	---	<0.492
PCB 165	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.629
PCB 167	TOT	pg/L	---	---	---	0.896	---	0.464	---	1.33
PCB 169	TOT	pg/L	---	---	---	<0.311	---	<0.38	---	<0.915
PCB 17	TOT	pg/L	---	---	---	7.55	---	9.48	---	3.5
PCB 170	TOT	pg/L	---	---	---	4.43	---	2.79	---	1.83
PCB 171/173	TOT	pg/L	---	---	---	1.23	---	0.677	---	<0.656

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 172	TOT	pg/L	---	---	---	0.885	---	0.728	---	<0.74
PCB 175	TOT	pg/L	---	---	---	<0.311	---	<0.353	---	<0.698
PCB 176	TOT	pg/L	---	---	---	0.623	---	0.432	---	<0.652
PCB 177	TOT	pg/L	---	---	---	2.24	---	1.23	---	0.89
PCB 178	TOT	pg/L	---	---	---	1.28	---	1	---	<0.771
PCB 179	TOT	pg/L	---	---	---	2.02	---	0.783	---	<0.664
PCB 18/30	TOT	pg/L	---	---	---	22.3	---	20.1	---	31.9
PCB 180/193	TOT	pg/L	---	---	---	13.1	---	7.57	---	5.24
PCB 181	TOT	pg/L	---	---	---	<0.311	---	2.65	---	1.86
PCB 182	TOT	pg/L	---	---	---	<0.311	---	<0.346	---	<0.638
PCB 183/185	TOT	pg/L	---	---	---	2.88	---	2.96	---	0.952
PCB 184	TOT	pg/L	---	---	---	4.75	---	1.98	---	0.939
PCB 186	TOT	pg/L	---	---	---	<0.311	---	<0.312	---	<0.639
PCB 187	TOT	pg/L	---	---	---	5.95	---	4.17	---	2.03
PCB 188	TOT	pg/L	---	---	---	<0.311	---	1.58	---	0.776
PCB 189	TOT	pg/L	---	---	---	<0.311	---	<0.46	---	<1.26
PCB 19	TOT	pg/L	---	---	---	2.06	---	3.08	---	1.29

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 190	TOT	pg/L	---	---	---	1.07	---	2.93	---	<0.829
PCB 191	TOT	pg/L	---	---	---	<0.311	---	<0.421	---	<0.774
PCB 192	TOT	pg/L	---	---	---	<0.311	---	<0.425	---	<0.783
PCB 194	TOT	pg/L	---	---	---	3.81	---	2.96	---	<0.977
PCB 195	TOT	pg/L	---	---	---	0.867	---	<0.588	---	<0.454
PCB 196	TOT	pg/L	---	---	---	1.21	---	1.24	---	<0.46
PCB 197/200	TOT	pg/L	---	---	---	0.691	---	0.409	---	<0.775
PCB 198/199	TOT	pg/L	---	---	---	2.56	---	1.73	---	1.43
PCB 2	TOT	pg/L	---	---	---	1.55	---	3.97	---	2.36
PCB 20/28	TOT	pg/L	---	---	---	30.6	---	22.6	---	12.9
PCB 201	TOT	pg/L	---	---	---	<0.311	---	<0.435	---	<0.752
PCB 202	TOT	pg/L	---	---	---	0.953	---	0.775	---	<0.43
PCB 203	TOT	pg/L	---	---	---	1.86	---	0.978	---	<0.868
PCB 204	TOT	pg/L	---	---	---	<0.311	---	<0.451	---	<0.46
PCB 205	TOT	pg/L	---	---	---	<0.311	---	<0.668	---	<1.18
PCB 206	TOT	pg/L	---	---	---	1.28	---	1.02	---	<1.11
PCB 207	TOT	pg/L	---	---	---	<0.311	---	<0.427	---	<0.566

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 208	TOT	pg/L	---	---	---	0.58	---	0.946	---	<1.25
PCB 209	TOT	pg/L	---	---	---	2.18	---	2	---	<1.26
PCB 21/33	TOT	pg/L	---	---	---	19.4	---	6.75	---	2.31
PCB 22	TOT	pg/L	---	---	---	15.3	---	11.3	---	3.55
PCB 23	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	0.842
PCB 24	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.273
PCB 25	TOT	pg/L	---	---	---	2.9	---	2.85	---	1.45
PCB 26/29	TOT	pg/L	---	---	---	6.04	---	4.06	---	2.67
PCB 27	TOT	pg/L	---	---	---	1.39	---	1.07	---	1.13
PCB 3	TOT	pg/L	---	---	---	2.47	---	5.79	---	3.62
PCB 31	TOT	pg/L	---	---	---	32.9	---	21.3	---	9.67
PCB 32	TOT	pg/L	---	---	---	5.85	---	5.16	---	2.12
PCB 34	TOT	pg/L	---	---	---	1.65	---	<0.294	---	11.4
PCB 35	TOT	pg/L	---	---	---	4.24	---	2.86	---	0.781
PCB 36	TOT	pg/L	---	---	---	2.01	---	<0.294	---	<0.404
PCB 37	TOT	pg/L	---	---	---	7.12	---	6.23	---	2.6
PCB 38	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	5.12

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 4	TOT	pg/L	---	---	---	6.68	---	7.06	---	4.32
PCB 40/41/71	TOT	pg/L	---	---	---	12.5	---	7.76	---	3.39
PCB 42	TOT	pg/L	---	---	---	6.63	---	3.87	---	1.68
PCB 43	TOT	pg/L	---	---	---	0.959	---	0.414	---	<0.33
PCB 44/47/65	TOT	pg/L	---	---	---	45.9	---	268	---	20.4
PCB 46	TOT	pg/L	---	---	---	1.21	---	1.42	---	0.457
PCB 48	TOT	pg/L	---	---	---	5.06	---	2.94	---	1.38
PCB 49/69	TOT	pg/L	---	---	---	17.9	---	13.1	---	5.11
PCB 5	TOT	pg/L	---	---	---	1.3	---	0.965	---	1.59
PCB 50/53	TOT	pg/L	---	---	---	2.7	---	2.49	---	1.03
PCB 52	TOT	pg/L	---	---	---	42.9	---	20.6	---	13
PCB 54	TOT	pg/L	---	---	---	<0.311	---	0.6	---	<0.328
PCB 55	TOT	pg/L	---	---	---	0.525	---	0.532	---	<0.499
PCB 56	TOT	pg/L	---	---	---	10	---	5.69	---	3.49
PCB 57	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.465
PCB 58	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.422
PCB 59/62/75	TOT	pg/L	---	---	---	2.46	---	1.07	---	0.828

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 6	TOT	pg/L	---	---	---	4.68	---	3.19	---	1.64
PCB 60	TOT	pg/L	---	---	---	6.14	---	3.47	---	1.96
PCB 61/70/74/76	TOT	pg/L	---	---	---	45.7	---	19.3	---	9.24
PCB 63	TOT	pg/L	---	---	---	1.78	---	2.87	---	<0.576
PCB 64	TOT	pg/L	---	---	---	12.3	---	7.15	---	4.54
PCB 66	TOT	pg/L	---	---	---	31.2	---	10.7	---	13.5
PCB 67	TOT	pg/L	---	---	---	0.854	---	0.346	---	<0.481
PCB 68	TOT	pg/L	---	---	---	2.89	---	26.5	---	1.86
PCB 7	TOT	pg/L	---	---	---	4.43	---	8.44	---	11.8
PCB 72	TOT	pg/L	---	---	---	0.369	---	<0.294	---	<0.471
PCB 73	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.306
PCB 77	TOT	pg/L	---	---	---	1.7	---	1.88	---	0.81
PCB 78	TOT	pg/L	---	---	---	<0.311	---	<0.316	---	<0.703
PCB 79	TOT	pg/L	---	---	---	12.5	---	<0.355	---	<0.747
PCB 8	TOT	pg/L	---	---	---	11.3	---	5.33	---	2.36
PCB 80	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.55
PCB 81	TOT	pg/L	---	---	---	<0.311	---	0.529	---	2.8

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB 82	TOT	pg/L	---	---	---	3.43	---	1.81	---	0.764
PCB 83/99	TOT	pg/L	---	---	---	14.9	---	6.66	---	6.83
PCB 84	TOT	pg/L	---	---	---	7.31	---	4.72	---	2.2
PCB 85/116/117	TOT	pg/L	---	---	---	5.92	---	3.18	---	3.06
PCB 86/87/97/108/119/125	TOT	pg/L	---	---	---	122	---	12.1	---	82.3
PCB 88/91	TOT	pg/L	---	---	---	4	---	2.02	---	2.81
PCB 89	TOT	pg/L	---	---	---	0.523	---	<0.294	---	<0.495
PCB 9	TOT	pg/L	---	---	---	5.83	---	6.01	---	2.7
PCB 90/101/113	TOT	pg/L	---	---	---	32.7	---	15.6	---	16.8
PCB 92	TOT	pg/L	---	---	---	5.26	---	2.72	---	2.64
PCB 93/95/98/100/102	TOT	pg/L	---	---	---	25.5	---	14.3	---	7.61
PCB 94	TOT	pg/L	---	---	---	<0.311	---	0.317	---	<0.469
PCB 96	TOT	pg/L	---	---	---	<0.311	---	<0.294	---	<0.273
PCB-108 + 124	TOT	pg/L	---	---	---	0.873	---	<0.359	---	<0.635
PCB174	TOT	pg/L	---	---	---	74	---	2.23	---	41.9
PCB-205L	TOT	%Recov	---	---	---	70.4	---	80.8	---	202
PCB39	TOT	pg/L	---	---	---	1.32	---	3.83	---	0.922

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PCB45/51	TOT	pg/L	---	---	---	5.94	---	72.3	---	3.25
Dichloro Biphenyls	TOT	pg/L	---	---	---	143	---	109	---	49.7
Heptachloro Biphenyls	TOT	pg/L	---	---	---	39.4	---	21.9	---	7.27
Hexachloro Biphenyls	TOT	pg/L	---	---	---	114	---	56.6	---	38.1
Monochloro Biphenyls	TOT	pg/L	---	---	---	6.95	---	9.74	---	<-999
Nonachloro Biphenyls	TOT	pg/L	---	---	---	1.28	---	1.97	---	<-999
Octachloro Biphenyls	TOT	pg/L	---	---	---	11.3	---	8.09	---	1.43
Pentachloro Biphenyls	TOT	pg/L	---	---	---	165	---	97.4	---	30.2
Tetrachloro Biphenyls	TOT	pg/L	---	---	---	219	---	469	---	64.3
Trichloro Biphenyls	TOT	pg/L	---	---	---	160	---	131	---	16.3
PCB Teq 3	TOT	pg/L	---	---	0.269	0.0197	0.455	0.0282	0.211	0.0237
PCB Teq 4	TOT	pg/L	---	---	0.591	0.387	0.79	0.435	0.561	0.383
PCBs Total	TOT	pg/L	---	---	---	863	---	906	---	207
1,2,3,4,6,7,8-HPCDD	TOT	pg/L	---	---	12.2	0.73	21.4	0.722	12.3	0.919
1,2,3,4,6,7,8-HPCDF	TOT	pg/L	---	---	1.43	0.237	1.34	0.289	0.932	0.217
1,2,3,4,7,8,9-HPCDF	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217
1,2,3,4,7,8-HXCDD	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
1,2,3,4,7,8-HXCDF	TOT	pg/L	---	---	<0.21	<0.221	0.236	<0.246	<0.218	<0.217
1,2,3,6,7,8-HXCDD	TOT	pg/L	---	---	0.731	<0.221	1.08	<0.246	0.584	<0.217
1,2,3,6,7,8-HXCDF	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217
1,2,3,7,8,9-HXCDD	TOT	pg/L	---	---	0.324	<0.221	0.406	<0.246	<0.218	<0.217
1,2,3,7,8,9-HXCDF	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217
1,2,3,7,8-PECDD	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217
1,2,3,7,8-PECDF	TOT	pg/L	---	---	0.36	0.235	0.343	0.355	0.286	0.24
2,3,4,6,7,8-HXCDF	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217
2,3,4,7,8-PECDF	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217
2,3,7,8-TCDD	TOT	pg/L	---	---	<0.21	<0.221	<0.23	<0.246	<0.218	<0.217
2,3,7,8-TCDF	TOT	pg/L	---	---	0.215	<0.221	0.292	<0.246	<0.218	<0.217
HEPTA-DIOXINS	TOT	pg/L	---	---	21.3	1.38	34.3	1.21	21	1.44
Hepta-Furans	TOT	pg/L	---	---	2.62	<0.221	2.49	0.289	1.83	0.217
HEXA-DIOXINS	TOT	pg/L	---	---	5.64	<0.221	8.83	<0.246	4.13	<0.217
HEXA-FURANS	TOT	pg/L	---	---	0.903	<0.221	1.53	<0.246	<0.218	<0.217
OCDD	TOT	pg/L	---	---	59.7	6.12	92.2	2.84	54.9	3.24
OCDF	TOT	pg/L	---	---	1.77	<0.221	2.29	0.283	1.44	0.26

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Penta-Dioxins	TOT	pg/L	---	---	1.02	<0.221	2.77	<0.246	0.956	<0.217
Penta-Furans	TOT	pg/L	---	---	0.93	0.235	1.5	0.355	0.286	0.24
Tetra-Dioxins	TOT	pg/L	---	---	0.319	<0.221	1.06	<0.246	0.295	<0.217
Tetra-Furans	TOT	pg/L	---	---	0.413	<0.221	5.79	1	0.269	<0.217
2,4-DDD	TOT	ng/L	---	---	---	0.314	---	0.184	---	0.132
2,4-DDE	TOT	ng/L	---	---	---	0.006	---	<0.0652	---	<0.0111
2,4-DDT	TOT	ng/L	---	---	---	0.019	---	0.134	---	0.044
4,4-DDD	TOT	ng/L	---	---	---	0.035	---	<0.0652	---	0.027
4,4-DDE	TOT	ng/L	---	---	---	0.108	---	<0.0652	---	0.076
4,4-DDT	TOT	ng/L	---	---	---	0.025	---	<0.0652	---	<0.0177
ABHC	TOT	ng/L	---	---	---	0.018	---	<0.0652	---	0.09
Aldrin	TOT	ng/L	---	---	---	0.071	---	0.067	---	0.042
Alpha Chlordane	TOT	ng/L	---	---	---	0.029	---	<0.0652	---	0.013
Alpha-Endosulfan	TOT	ng/L	---	---	---	<0.0091	---	<0.0652	---	0.012
Beta-Endosulfan	TOT	ng/L	---	---	---	<0.032	---	<0.0652	---	<0.0111
Beta-Hch Or Beta-Bhc	TOT	ng/L	---	---	---	0.073	---	<0.0652	---	0.073
Bis(2-Chloroethoxy)Methane	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Bis(2-Chloroethyl)Ether	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Bis(2-Chloroisopropyl)Ether	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Cis-Nonachlor	TOT	ng/L	---	---	---	0.014	---	<0.0652	---	<0.0111
Dieldrin	TOT	ng/L	---	---	---	0.141	---	0.113	---	0.109
Endosulfan Sulfate	TOT	ng/L	---	---	---	0.012	---	<0.0652	---	0.026
Endrin	TOT	ng/L	---	---	---	<0.0281	---	<0.0652	---	<0.024
Endrin Aldehyde	TOT	ng/L	---	---	---	0.322	---	0.145	---	<0.0375
HCH, Gamma	TOT	ng/L	---	---	---	0.136	---	0.11	---	0.067
Heptachlor	TOT	ng/L	---	---	---	<0.0035	---	<0.0652	---	<0.0111
Heptachlor Epoxide	TOT	ng/L	---	---	---	0.024	---	<0.0652	---	0.03
Hexachlorobenzene	TOT	ng/L	---	---	---	0.082	---	<0.0652	---	0.063
Methoxyclor	TOT	ng/L	---	---	---	0.031	---	<0.0652	---	<0.0111
Mirex	TOT	ng/L	---	---	---	<0.0069	---	<0.0652	---	<0.0171
Oxychlordane	TOT	ng/L	---	---	---	0.024	---	<0.0652	---	<0.0111
3:3 FTCA	TOT	ng/L	---	---	<1.86	<1.55	<1.88	<1.82	<6.39	<1.69
4:2 FTS	TOT	ng/L	---	---	<1.86	<1.55	<1.88	<1.82	<6.39	<1.69
5:3 FTCA	TOT	ng/L	---	---	<11.6	<9.69	<11.7	<11.3	<39.9	<10.6

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
6:2 FTS	TOT	ng/L	---	---	<1.67	<1.4	4.71	<1.64	<5.76	<1.53
7:3 FTCA	TOT	ng/L	---	---	<11.6	<9.69	<11.7	<11.3	<39.9	<10.6
8:2 FTS	TOT	ng/L	---	---	<1.58	<1.32	<1.59	<1.54	<5.43	<1.44
ADONA	TOT	ng/L	---	---	<1.86	<1.55	<1.88	<1.82	<6.39	<1.69
HFPO-DA	TOT	ng/L	---	---	<1.86	<1.55	<1.88	<1.82	<6.39	<1.69
MeFOSAA	TOT	ng/L	---	---	<0.464	0.647	---	---	---	---
N-EtFOSA	TOT	ng/L	---	---	<1.3	<1.09	-999	<1.27	<4.47	<1.18
N-EtFOSAA	TOT	ng/L	---	---	0.509	<0.388	0.535	<0.454	<1.6	<0.423
N-EtFOSE	TOT	ng/L	---	---	<4.64	<3.88	<4.69	<4.54	<16	<4.23
NFDHA	TOT	ng/L	---	---	<0.927	<0.776	<0.938	<0.908	<3.19	<0.846
N-MeFOSA	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423
NMeFOSAA	TOT	ng/L	---	---	---	---	<0.469	1.86	<1.6	<0.423
N-MeFOSE	TOT	ng/L	---	---	<4.64	<3.88	<4.69	<4.54	<16	<4.23
PFBS	TOT	ng/L	---	---	1.47	1.65	0.967	1.11	<1.6	3.56
PFDA	TOT	ng/L	---	---	0.578	0.939	0.575	1.05	<1.6	0.886
PFDoA	TOT	ng/L	---	---	<0.371	<0.31	<0.375	<0.363	<1.28	<0.339
PFDoS	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PFDS	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423
PFEESA	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423
PFHpA	TOT	ng/L	---	---	1.02	1.93	1.49	3.51	<1.6	1.98
PFHpS	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423
PFHxA	TOT	ng/L	---	---	3.86	10.2	4.18	14.5	2.63	8.75
PFHxS	TOT	ng/L	---	---	4.59	2.62	2.46	2.36	1.94	3.54
PFMBA	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423
PFMPA	TOT	ng/L	---	---	<0.927	<0.776	<0.938	<0.908	<3.19	<0.846
PFNA	TOT	ng/L	---	---	<0.464	0.651	0.766	0.683	<1.6	0.758
PFNS	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423
PFOA	TOT	ng/L	---	---	2.12	7.82	2.43	5.67	2.47	6.61
PFOS	TOT	ng/L	---	---	2.98	2.59	3.37	2.01	3.29	5.64
PFOSA	TOT	ng/L	---	---	<0.464	1.22	<0.469	0.525	<1.6	<0.423
PFPeA	TOT	ng/L	---	---	2.8	10.9	4.91	27.3	3.68	12.1
PFPeS	TOT	ng/L	---	---	<0.466	<0.39	0.481	<0.456	<1.6	<0.425
PFTeDA	TOT	ng/L	---	---	<0.464	<0.388	<1.64	<0.454	<1.6	<0.423
PFTrDA	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
PFUnA	TOT	ng/L	---	---	<0.464	<0.388	<0.469	<0.454	<1.6	<0.423
Bis(2-Ethylhexyl)Phthalate	TOT	µg/L	---	---	5.9	<5	10.1	<5	<5	<5
Butylbenzyl Phthalate	TOT	µg/L	---	---	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Diethyl Phthalate	TOT	µg/L	---	---	2.43	<0.25	4.44	0.62	2.12	<0.25
Dimethyl Phthalate	TOT	µg/L	---	---	<0.25	<0.25	0.4	<0.25	<0.25	<0.25
Di-N-Butyl Phthalate	TOT	µg/L	---	---	<2.5	<2.5	<5	<5	9.2	11.3
Di-N-Octyl Phthalate	TOT	µg/L	---	---	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
2-Hydroxy-Ibuprofen	TOT	ng/L	---	---	33600	3770	23300	904	44800	147
Acetaminophen	TOT	ng/L	---	---	235000	7.27	112000	11.7	215000	5.8
Azithromycin	TOT	ng/L	---	---	296	273	249	340	778	202
Bisphenol A	TOT	ng/L	---	---	114	75.8	155	144	91.3	<9.18
Caffeine	TOT	ng/L	---	---	131000	744	99600	55.6	133000	44.7
Carbadox	TOT	ng/L	---	---	<2.4	<0.609	<1.02	<0.659	<2.2	<0.957
Carbamazepine	TOT	ng/L	---	---	348	357	290	432	350	238
Cefotaxime	TOT	ng/L	---	---	<23.8	<6.03	<12.4	<7.58	<35	16.1
Ciprofloxacin	TOT	ng/L	---	---	659	303	659	436	790	235
Clarithromycin	TOT	ng/L	---	---	84.6	98	158	165	50.6	87.1

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Clinafloxacin	TOT	ng/L	---	---	<8	<2.3	<5.27	<2.68	<11.8	<4.16
Cloxacillin	TOT	ng/L	---	---	<12	<3.05	<4.32	<3.29	<11	<3.07
D2-Virginiamycin M1	TOT	%Recov	---	---	50.9	112	40.9	106	37.8	51.2
D3-Carbadox	TOT	%Recov	---	---	163	147	123	116	105	108
D3-Digoxigenin	TOT	%Recov	---	---	137	123	117	118	48.6	83.4
D3-Lincomycin	TOT	%Recov	---	---	180	169	195	156	114	129
D3-Ofloxacin	TOT	%Recov	---	---	59.2	54.3	49.9	67.6	60.5	54.6
D5-Miconazole	TOT	%Recov	---	---	78.7	70.1	99.9	62.4	119	43.9
Dehydronifedipine	TOT	ng/L	---	---	2.82	15.6	3.78	10.7	3.7	3.8
Digoxigenin	TOT	ng/L	---	---	<6.01	<1.52	<2.24	<1.65	<5.85	<2.55
Digoxin	TOT	ng/L	---	---	<24	<6.09	<24.2	<6.59	<22	<6.14
Diltiazem	TOT	ng/L	---	---	443	379	438	449	524	272
Diphenhydramine	TOT	ng/L	---	---	1240	735	1240	471	1560	253
Enrofloxacin	TOT	ng/L	---	---	<2.4	<0.726	1.51	2.06	<2.2	<0.614
Erythromycin-H2O	TOT	ng/L	---	---	26.2	12.8	13.3	6.34	<5.51	3.51
Flumequine	TOT	ng/L	---	---	<1.2	<0.305	<0.33	<0.329	<1.1	<0.307
Fluoxetine	TOT	ng/L	---	---	41.9	43.4	58.8	46.7	55.5	34.1

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Furosemide	TOT	ng/L	---	---	1130	584	1410	971	1180	347
Gemfibrozil	TOT	ng/L	---	---	39.4	19.8	67.4	61	7.33	4.15
Glipizide	TOT	ng/L	---	---	<3.2	<0.812	<0.799	<0.953	<2.94	<0.819
Glyburide	TOT	ng/L	---	---	<3.2	1.76	2.97	3.43	<2.94	1.52
Hydrochlorothiazide	TOT	ng/L	---	---	2270	1990	2230	2320	2430	1360
Ibuprofen	TOT	ng/L	---	---	18300	885	10400	190	24900	21.8
Lincomycin	TOT	ng/L	---	---	<2.4	0.614	1.84	3.23	<2.2	<0.614
Lomefloxacin	TOT	ng/L	---	---	<2.4	<0.609	<0.659	<0.659	<2.2	<0.614
Miconazole	TOT	ng/L	---	---	5.07	1	17	0.774	3.26	0.335
Naproxen	TOT	ng/L	---	---	8830	990	7640	187	9610	69.8
Norfloxacin	TOT	ng/L	---	---	<9.99	<2.03	<11	6.74	10.4	<4.2
Norgestimate	TOT	ng/L	---	---	<6.01	<1.52	<1.65	<1.65	<5.51	<1.54
Ofloxacin	TOT	ng/L	---	---	21.1	24.8	38.3	32.5	427	38.3
Ormetoprim	TOT	ng/L	---	---	<0.601	<0.152	<0.485	<0.165	<0.551	<0.154
Oxacillin	TOT	ng/L	---	---	<6.01	<1.52	<1.65	<1.65	<5.51	<1.54
Oxolinic Acid	TOT	ng/L	---	---	<2.4	<0.609	<0.659	<0.659	<2.2	<0.614
Penicillin G	TOT	ng/L	---	---	12.4	<3.05	<3.3	3.57	<11	<3.07

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Penicillin V	TOT	ng/L	---	---	<6.01	<1.89	<1.65	<1.65	<5.51	<3.58
Roxithromycin	TOT	ng/L	---	---	3.25	2.49	<3.75	0.311	1.28	0.489
Sarafloxacin	TOT	ng/L	---	---	<12	<3.05	<3.3	<3.29	<11	<3.07
Sulfachloropyridazine	TOT	ng/L	---	---	<2.4	<0.609	<0.687	<0.659	<2.2	<1.17
Sulfadiazine	TOT	ng/L	---	---	<2.4	<0.609	1.55	<0.659	<2.2	<0.614
Sulfadimethoxine	TOT	ng/L	---	---	<1.2	<0.305	<0.555	<0.329	<1.1	<0.307
Sulfamerazine	TOT	ng/L	---	---	<2.4	<0.609	<0.659	<0.659	<2.2	<0.655
Sulfamethazine	TOT	ng/L	---	---	3.74	<0.609	10.6	<1.21	13	<0.709
Sulfamethizole	TOT	ng/L	---	---	<2.4	<0.609	<0.966	<1.12	<3.97	<0.614
Sulfamethoxazole	TOT	ng/L	---	---	1480	326	2130	319	1850	272
Sulfanilamide	TOT	ng/L	---	---	59.6	87	79	81.5	56.8	71.2
Sulfathiazole	TOT	ng/L	---	---	<6.01	<1.52	<1.87	<1.65	<5.51	<1.54
Thiabendazole	TOT	ng/L	---	---	35	32.1	36.3	27.6	20.7	16.9
Triclocarban	TOT	ng/L	---	---	2.72	0.887	2.33	<0.477	1.98	<0.409
Triclosan	TOT	ng/L	---	---	26.8	8.6	18	11.9	23.9	<6.14
Trimethoprim	TOT	ng/L	---	---	346	325	389	386	441	228
Tylosin	TOT	ng/L	---	---	<2.4	1.79	4.9	1.49	<2.2	1.79

Appendix B4, continued

Parameter	State	Units	Jan 16 2025		Apr 18 2025		Jul 2 2025		Oct 17 2025	Oct 23 2025
			Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly	Influent Quarterly	Effluent Quarterly
Virginiamycin	TOT	ng/L	---	---	<3.92	<0.803	<9.56	<0.659	<19.7	<1.21
Warfarin	TOT	ng/L	---	---	4.7	3.32	4.28	5.12	5.79	3.2

Notes:
--- not analyzed

APPENDIX C

Surface Water / IDZ Monitoring

Appendix C1 SPTP Surface Water Stations

		Latitude	Longitude
Surface Water Stations	Outfall	48°37.3978	-123°23.1511'
	100N	48°37.4302	-123°23.1511'
	100S	48°37.3654	-123°23.1506'
	200NE	48°37.4440	-123°23.8221'
	200NW	48°37.4433	-123°23.2202'
	200SE	48°37.3522	-123°23.8160'
	200SW	48°37.3522	-123°23.2195'
	400E	48°37.3983	-123°22.5556'
	400N	48°37.5274	-123°23.1518'
	400S	48°37.2682	-123°23.1500'
	400W	48°37.3972	-123°23.3462'
	800N	48°38.5701	-123°23.1529'
	800S	48°37.1391	-123°23.1488'
	800W	48°37.3965	-123°23.5417'
	Reference 2	48°38.5496	-123°19.1139'
IDZ Stations	SP02	48°37.7179	-123°23.1816'
	SP03	48°37.6930	-123°23.1431'
	SP04	48°37.6576	-123°23.1365'
	SP05	48°37.6272	-123°23.1647'
	SP06	48°37.6137	-123°23.2149'
	SP07	48°37.6052	-123°23.2682'
	SP08	48°37.6088	-123°23.3218'
	SP09	48°37.6337	-123°23.3602'
	SP10	48°37.6691	-123°23.3668'
	SP11	48°37.6995	-123°23.3386'
	SP12	48°37.7130	-123°23.2884'
	SP13	48°37.7215	-123°23.2351'

Appendix C2 SPTP IDZ Sites Extended Sampling Results (one sampling day each season) 2025

		Aluminum (µg/L)		Antimony (µg/L)		Arsenic (µg/L)		Barium (µg/L)		Beryllium (µg/L)		Bismuth (µg/L)		Boron (µg/L)		Cadmium (µg /L)		Calcium (mg/L)		Chromium (µg/L)		Cobalt (µg/L)	
		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer
WQ Guidelines						12.5 µg/L *+#								1200 µg/L *		0.12 µg/L+							
Station 1	Top	28.5	28.8	<0.5	<0.5	2.13	1.55	9	7.9	<0.5	<0.5	<0.5	<0.5	3800	3470	0.031	0.122	351	328	<0.5	1.14	<0.05	<0.05
	Middle	28.3	30.4	<0.5	<0.5	1.88	1.45	8.5	9	<0.5	<0.5	<0.5	<0.5	3630	3900	0.055	0.179	331	349	0.53	1.61	<0.05	0.15
	Bottom	33.3	86	<0.5	<0.5	2.01	1.91	8.1	9.3	<0.5	<0.5	<0.5	<0.5	3810	3840	0.051	0.295	340	371	<0.5	1.96	<0.05	0.296
Station 2	Top	21.6	29.4	<0.5	<0.5	1.94	1.71	9.3	9.4	<0.5	<0.5	<0.5	<0.5	3830	4040	0.024	0.123	353	355	<0.5	2.15	<0.05	0.12
	Middle	34.5	32.7	<0.5	<0.5	2.14	1.75	10.4	8.5	<0.5	<0.5	<0.5	<0.5	4070	3960	0.023	0.111	355	363	<0.5	2.19	<0.05	0.088
	Bottom	26.1	83.8	<0.5	<0.5	1.89	1.83	8.4	9.2	<0.5	<0.5	<0.5	<0.5	3780	4040	0.047	0.292	332	338	0.73	2.1	<0.05	0.272
Station 3	Top	21.4	70.8	<0.5	<0.5	1.85	1.58	8.3	8.1	<0.5	<0.5	<0.5	<0.5	3840	3640	0.05	0.241	337	331	<0.5	1.9	<0.05	0.318
	Middle	29.8	28.2	<0.5	<0.5	2.11	1.04	8.8	8.9	<0.5	<0.5	<0.5	<0.5	3870	3500	0.061	0.06	338	329	<0.5	1.06	<0.05	0.06
	Bottom	39.7	54.3	<0.5	<0.5	1.87	1.53	8.1	9.7	<0.5	<0.5	<0.5	<0.5	3630	3670	<0.01	0.135	304	335	0.5	2.79	<0.05	0.135
Station 4	Top	---	24.1	---	<0.5	---	1.64	---	8.9	---	<0.5	---	<0.5	---	3540	---	0.032	---	334	---	1.15	---	<0.05
	Middle	---	55.3	---	<0.5	---	1.69	---	9.9	---	<0.5	---	<0.5	---	3910	---	0.05	---	331	---	1.56	---	<0.05
	Bottom	---	60.7	---	<0.5	---	1.35	---	10.1	---	<0.5	---	<0.5	---	4180	---	0.062	---	356	---	1.63	---	<0.05
Reference 2	Top	43.1	23.6	<0.5	<0.5	2.15	1.16	8.3	8.9	<0.5	<0.5	<0.5	<0.5	3630	4160	0.094	0.036	336	351	0.58	0.84	<0.05	<0.05
	Middle	28.2	35.9	<0.5	<0.5	2.36	1.42	8.7	9.2	<0.5	<0.5	<0.5	<0.5	3820	3840	0.773	0.029	343	349	0.55	1	<0.05	<0.05
	Bottom	43.2	20.3	<0.5	<0.5	1.8	1.26	9.1	10.1	<0.5	<0.5	<0.5	<0.5	3810	3810	0.029	0.041	338	353	<0.5	2.16	<0.05	<0.05
Average of IDZ Stations	Top	23.8	38.3	<0.5	<0.5	1.97	1.62	8.87	8.58	<0.5	<0.5	<0.5	<0.5	3,823	3,673	0.130	0.095	347	337	1.04	0.38	0.242	<0.05
	Middle	30.9	36.7	<0.5	<0.5	2.04	1.48	9.23	9.08	<0.5	<0.5	<0.5	<0.5	3,857	3,818	0.040	0.050	341	343	1.57	0.40	0.186	<0.05
	Bottom	33.0	71.2	<0.5	<0.5	1.92	1.66	8.20	9.58	<0.5	<0.5	<0.5	<0.5	3,740	3,933	0.042	0.055	325	350	3.06	0.33	0.170	0.06

Notes:
Shaded cells indicate exceedance to BC WQG
* = BC Approved Water Quality Guideline
+ = BC Working Water Quality Guideline
# = CCME Water Quality Guideline for the Protection of Aquatic Life

		Copper (µg/L)		Iron (µg/L)		Lead (µg/L)		Lithium (µg/L)		Magnesium (mg/L)		Manganese (µg/L)		Mercury (µg/L)		Molybdenum (µg/L)		Nickel (µg/L)		Potassium (mg/L)	
		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer
WQ Guidelines		2 µg/L (mean of 5 samples) or 140 µg/L (max) *												0.02 (µg/L) *				7.1 µg/L *			
Station 1	Top	<0.5	<0.5	48	19	<0.05	<0.05	145	145	1060	1020	2.28	2.59	<0.0019	<0.0019	9.88	8.08	1.12	<0.2	328	309
	Middle	<0.5	0.6	37	83	<0.05	0.076	138	159	987	1090	1.36	3.36	<0.0019	<0.0019	8.75	9.31	0.8	0.3	310	329
	Bottom	<0.5	1.22	50	48	<0.05	0.216	144	153	1050	1120	2.13	4.78	<0.0019	<0.0019	9.17	9.8	0.89	0.5	323	344
Station 2	Top	<0.5	<0.5	35	37	<0.05	<0.05	143	160	1050	1140	2.41	3.02	<0.0019	<0.0019	8.96	9.4	0.91	0.7	326	354
	Middle	<0.5	<0.5	54	33	<0.05	<0.05	152	163	1110	1120	2.39	2.85	<0.0019	<0.0019	9.48	9.06	1.38	0.22	342	348
	Bottom	<0.5	0.95	47	29	<0.05	0.19	140	153	1020	1060	2.53	3.9	<0.0019	0.0022	8.45	8.19	1.05	0.5	318	331
Station 3	Top	0.56	1.05	35	66	<0.05	0.253	144	147	1050	1060	2.4	4.08	<0.0019	<0.0019	9.87	9.48	0.67	0.34	326	316
	Middle	<0.5	<0.5	41	25	0.069	0.057	146	146	1040	1050	2.19	2.71	<0.0019	0.002	10.4	8.3	0.47	0.3	329	316
	Bottom	6.24	0.51	62	60	<0.05	0.194	134	153	946	1080	2	3.69	<0.0019	<0.0019	8.9	8.97	1.55	0.52	294	328
Station 4	Top	---	<0.5	---	22	---	<0.05	---	140	---	1070	---	2.62	---	<0.0019	---	8.49	---	<0.2	---	315
	Middle	---	<0.5	---	51	---	<0.05	---	146	---	1090	---	3.05	---	<0.0019	---	8.54	---	0.47	---	324
	Bottom	---	<0.5	---	73	---	0.051	---	154	---	1120	---	3.43	---	<0.0019	---	9.6	---	0.28	---	338
Reference 2	Top	0.79	<0.5	59	22	0.168	<0.05	135	153	1010	1100	2.22	2.64	<0.0019	<0.0019	9.75	9.22	5.4	<0.2	319	325
	Middle	5.48	<0.5	66	13	<0.05	<0.05	143	160	998	1110	2.31	2.58	<0.0019	<0.0019	9.34	9.1	21.1	<0.2	312	336
	Bottom	0.81	<0.5	56	21	0.308	<0.05	139	152	1050	1070	2.51	2.33	<0.0019	<0.0019	9.86	8.52	0.78	0.57	331	320
Average of IDZ Stations	Top	<0.5	0.49	39	36	0.246	<0.05	144	148	1,053	1,073	2.36	3.08	<0.0019	<0.0019	9.57	8.86	<0.2	0.43	327	324
	Middle	<0.5	0.51	44	48	0.147	0.111	145	154	1,046	1,088	1.98	2.99	<0.0019	<0.0019	9.54	8.80	0.30	0.32	327	329
	Bottom	<0.5	0.35	53	53	0.109	0.077	139	153	1,005	1,095	2.22	3.95	<0.0019	<0.0019	8.84	9.14	0.35	0.59	312	335

Notes:
Shaded cells indicate exceedance to BC WQG
* = BC Approved Water Quality Guideline
+ = BC Working Water Quality Guideline
# = CCME Water Quality Guideline for the Protection of Aquatic Life

		Selenium (µg/L)		Silicon (µg/L)		Silver (µg/L)		Strontium (µg/L)		Sulfur (mg/L)		Thallium (µg/L)		Tin (µg/L)		Titanium (µg/L)		Vanadium (µg/L)		Zinc (µg/L)	
		Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer
WQ Guidelines		2 µg/L *				0.5 µg/L max+ or 1.5 µg/L (mean of 5 samples) or 3 µg/L (max) *														1 µg/L (mean of 5 samples) *	
Station 1	Top	<0.5	<0.5	1690	<1000	<0.05	<0.05	7370	6430	848	718	<0.05	<0.05	<1	<1	6.1	<5	4.23	2.52	9.6	<3
	Middle	<0.5	<0.5	1540	1020	<0.05	<0.05	6990	6950	771	751	<0.05	<0.05	<1	<1	<5	<5	5.77	2.58	27.3	<3
	Bottom	<0.5	<0.5	1550	1160	0.057	<0.05	7000	7090	795	800	<0.05	0.056	<1	<1	<5	<5	6.84	3.17	<3	<3
Station 2	Top	<0.5	<0.5	1700	<1000	0.132	<0.05	7140	7320	801	799	<0.05	<0.05	<1	<1	<5	<5	7.28	2.81	6.8	<3
	Middle	<0.5	<0.5	1710	1100	<0.05	<0.05	7630	7100	877	787	<0.05	<0.05	<1	<1	<5	<5	7.68	2.46	8.4	<3
	Bottom	<0.5	<0.5	1610	1020	<0.05	<0.05	7010	6650	813	735	<0.05	0.055	<1	<1	<5	<5	7.55	2.79	<3	<3
Station 3	Top	<0.5	<0.5	1600	<1000	<0.05	0.069	7110	6540	817	735	<0.05	<0.05	<1	<1	<5	<5	7.89	2.07	7.1	<3
	Middle	<0.5	<0.5	1600	<1000	<0.05	<0.05	7250	6730	879	734	<0.05	<0.05	<1	<1	<5	<5	8.24	1.9	5.1	<3
	Bottom	<0.5	<0.5	1430	<1000	<0.05	<0.05	6820	6820	764	759	<0.05	<0.05	<1	<1	<5	<5	7.7	2.36	<3	<3
Station 4	Top	---	<0.5	---	<1000	---	<0.05	---	6670	---	736	---	<0.05	---	<1	---	<5	---	2.07	---	<3
	Middle	---	<0.5	---	<1000	---	<0.05	---	6660	---	764	---	<0.05	---	<1	---	<5	---	2.12	---	<3
	Bottom	---	<0.5	---	1140	---	<0.05	---	6990	---	811	---	<0.05	---	<1	---	<5	---	2.13	---	<3
Reference 2	Top	<0.5	<0.5	1560	<1000	<0.05	<0.05	7070	6880	794	744	<0.05	<0.05	1.3	<1	<5	<5	6.6	1.84	13	<3
	Middle	<0.5	<0.5	1600	<1000	<0.05	<0.05	7020	7020	812	741	<0.05	<0.05	<1	<1	<5	<5	7.39	2.56	15.7	<3
	Bottom	<0.5	<0.5	1560	1050	<0.05	<0.05	7160	6880	853	766	<0.05	<0.05	<1	<1	<5	<5	8.67	2.47	8.4	<3
Average of IDZ Stations	Top	<0.5	<0.5	<1000	635	<0.05	<0.05	7,207	6,740	822	747	<0.05	<0.05	<1	<1	<5	<5	0.50	2.37	2.0	<3
	Middle	<0.5	<0.5	765	963	<0.05	<0.05	7,290	6,860	842	759	<0.05	<0.05	0.5100	<1	<5	<5	1.10	2.27	3.3	<3
	Bottom	<0.5	<0.5	780	1220	<0.05	<0.05	6,943	6,888	791	776	<0.05	<0.05	<1	<1	6.2	6.2	1.17	2.61	1.5	<3

Notes:
Shaded cells indicate exceedance to BC WQG
* = BC Approved Water Quality Guideline
+ = BC Working Water Quality Guideline
# = CCME Water Quality Guideline for the Protection of Aquatic Life

Appendix C3 SPTP IDZ Sites Nutrient Monitoring Results (first to fifth day of sampling) 2025

NH3 mg/L 2025							
	BC Approved WQG 23 33 mg/L N (average over 5 samples) or 3.4 5.0 mg/L N (maximum)						
		Winter					Average
Reference	Top	0.081	0.048	0.061	0.082	---	0.068
	Middle	0.081	0.032	0.058	0.075	---	0.062
	Bottom	0.078	0.052	0.057	0.080	---	0.067
Station 1	Top	0.078	0.040	0.056	0.070	---	0.061
	Middle	0.076	0.056	0.079	0.065	---	0.069
	Bottom	0.082	0.054	0.063	0.077	---	0.069
Station 2	Top	0.068	0.051	0.063	0.084	---	0.067
	Middle	0.070	0.056	0.066	0.079	---	0.068
	Bottom	0.077	0.054	0.055	0.071	---	0.064
Station 3	Top	0.069	0.054	0.055	0.079	---	0.064
	Middle	0.083	0.050	0.046	0.075	---	0.064
	Bottom	0.073	0.039	0.054	0.080	---	0.062
Station 4	Top	0.080	0.046	---	0.072	---	0.066
	Middle	0.076	0.048	---	0.072	---	0.065
	Bottom	0.068	0.040	---	0.073	---	0.060
		Summer					Average
Reference	Top	0.077	0.083	0.076	0.077	0.075	0.078
	Middle	0.078	0.075	0.086	0.074	0.077	0.078
	Bottom	0.071	0.071	0.089	0.071	0.081	0.077
Station 1	Top	0.086	0.081	0.078	0.062	0.076	0.077
	Middle	0.086	0.085	0.088	0.060	0.070	0.078
	Bottom	0.086	0.086	0.075	0.061	0.075	0.077
Station 2	Top	0.069	0.073	0.090	0.063	0.086	0.076
	Middle	0.086	0.083	0.095	0.075	0.076	0.083
	Bottom	0.092	0.078	0.080	0.068	0.074	0.078
Station 3	Top	0.074	0.075	0.080	0.071	0.087	0.077
	Middle	0.080	0.087	0.098	0.071	0.082	0.084
	Bottom	0.082	0.086	0.095	0.068	0.076	0.081
Station 4	Top	0.076	0.068	0.092	0.061	0.073	0.074
	Middle	0.086	0.080	0.090	0.069	0.074	0.080
	Bottom	0.089	0.081	0.074	0.065	0.077	0.077

Notes:
WQG calculated from BC Approved Water Quality Guidelines Summary Report, Table 26E (long-term/average) and Table 26F (short-term acute/maximum). Values used for calculations are 30ppt salinity, 10°C, and pH of 8.
--- indicates sample not collected due to inclement weather

Appendix C3, continued

PO_4 Phosphate Total mg/L 2025							
		Winter					Average
Reference	Top	0.087	0.085	0.091	0.087	---	0.074
	Middle	0.084	0.088	0.086	0.088	---	0.075
	Bottom	0.085	0.088	0.088	0.087	---	0.073
Station 1	Top	0.088	0.085	0.086	0.086	---	0.075
	Middle	0.070	0.088	0.086	0.088	---	0.073
	Bottom	0.092	0.089	0.084	0.084	---	0.075
Station 2	Top	0.091	0.087	0.085	0.086	---	0.075
	Middle	0.091	0.089	0.088	0.084	---	0.080
	Bottom	0.086	0.086	0.090	0.087	---	0.074
Station 3	Top	0.084	0.089	0.090	0.088	---	0.076
	Middle	0.091	0.087	0.089	0.088	---	0.107
	Bottom	0.088	0.089	0.090	0.086	---	0.075
Station 4	Top	0.090	0.089	---	0.088	---	0.075
	Middle	0.086	0.089	---	0.084	---	0.075
	Bottom	0.082	0.086	---	0.087	---	0.074
		Summer					Average
Reference	Top	0.038	0.039	0.062	0.059	0.060	0.054
	Middle	0.042	0.057	0.065	0.066	0.065	0.062
	Bottom	0.047	0.060	0.066	0.065	0.062	0.059
Station 1	Top	0.039	0.081	0.060	0.059	0.055	0.056
	Middle	0.046	0.053	0.065	0.060	0.059	0.060
	Bottom	0.044	0.055	0.067	0.060	0.059	0.053
Station 2	Top	0.022	0.043	0.060	0.056	0.059	0.055
	Middle	0.048	0.052	0.066	0.071	0.060	0.056
	Bottom	0.048	0.052	0.065	0.060	0.060	0.067
Station 3	Top	0.028	0.044	0.061	0.058	0.059	0.054
	Middle	0.048	0.170	0.065	0.061	0.062	0.062
	Bottom	0.052	0.054	0.065	0.062	0.061	0.062
Station 4	Top	0.036	0.040	0.061	0.060	0.064	0.057
	Middle	0.048	0.048	0.065	0.060	0.065	0.061
	Bottom	0.050	0.049	0.067	0.062	0.063	0.065

Appendix C3, continued

Total Suspended Solids mg/L 2025							
		Winter					Average
Reference	Top	2.1	14.0	24.0	1.2	---	10.3
	Middle	1.6	10.0	25.0	5.6	---	10.6
	Bottom	<1.1	10.0	29.0	8.4	---	12.0
Station 1	Top	3.8	6.8	20.0	1.6	---	8.1
	Middle	2.8	10.0	22.0	4.0	---	9.7
	Bottom	1.6	4.0	20.0	3.6	---	7.3
Station 2	Top	<1.1	3.2	28.0	<1	---	8.1
	Middle	<1.1	7.2	18.0	<1	---	6.6
	Bottom	<1	1.6	34.0	<1	---	9.2
Station 3	Top	6.3	1.2	28.0	1.2	---	9.2
	Middle	3.0	2.4	21.0	5.6	---	8.0
	Bottom	<1.1	2.8	36.0	2.0	---	10.3
Station 4	Top	4.1	1.6	---	1.6	---	2.4
	Middle	1.7	6.0	---	2.4	---	3.4
	Bottom	<1.1	16.0	---	1.2	---	5.9
		Summer					Average
Reference	Top	26.0	45.0	1.6	25.0	1.6	19.8
	Middle	23.0	31.0	2.0	30.0	1.6	17.5
	Bottom	21.0	27.0	1.6	27.0	1.2	15.6
Station 1	Top	20.0	28.0	2.4	27.0	5.6	16.6
	Middle	22.0	38.0	2.0	19.0	4.0	17.0
	Bottom	19.0	38.0	1.6	24.0	2.0	16.9
Station 2	Top	35.0	34.0	2.0	16.0	2.8	18.0
	Middle	23.0	26.0	2.0	15.0	1.6	13.5
	Bottom	21.0	24.0	4.0	13.0	3.6	13.1
Station 3	Top	20.0	26.0	1.6	16.0	2.0	13.1
	Middle	19.0	12.0	1.2	15.0	2.4	9.9
	Bottom	26.0	19.0	3.2	31.0	1.6	16.2
Station 4	Top	26.0	16.0	1.2	12.0	1.6	11.4
	Middle	23.0	19.0	2.8	24.0	2.4	14.2
	Bottom	22.0	53.0	1.6	37.0	3.2	23.4

Appendix C3, continued

TKN mg/L 2025							
		Winter					Average
Reference	Top	<0.1	0.100	<0.1	0.240	---	0.110
	Middle	<0.1	<0.1	<0.1	<0.2	---	0.063
	Bottom	<0.1	<0.1	<0.1	<0.2	---	0.063
Station 1	Top	<0.1	0.100	0.150	0.520	---	0.205
	Middle	<0.1	0.110	<0.1	<0.2	---	0.078
	Bottom	<0.1	<0.1	0.160	0.230	---	0.123
Station 2	Top	<0.1	<0.1	0.170	<0.2	---	0.093
	Middle	<0.1	0.110	<0.1	0.230	---	0.110
	Bottom	<0.1	<0.1	<0.1	0.330	---	0.120
Station 3	Top	<0.1	<0.1	0.110	<0.2	---	0.078
	Middle	<0.1	<0.1	<0.1	0.270	---	0.105
	Bottom	<0.1	<0.1	<0.1	0.280	---	0.108
Station 4	Top	<0.1	<0.1	---	<0.2	---	0.067
	Middle	<0.1	0.290	---	0.200	---	0.180
	Bottom	<0.1	<0.1	---	<0.2	---	0.067
		Summer					Average
Reference	Top	<0.1	<0.1	<0.1	<0.1	<0.1	0.050
	Middle	<0.1	<0.1	<0.1	<0.2	<0.1	0.060
	Bottom	<0.1	<0.1	<0.1	<0.1	<0.1	0.050
Station 1	Top	<0.1	<0.1	<0.1	0.100	<0.1	0.060
	Middle	0.180	0.110	<0.1	<0.1	<0.1	0.088
	Bottom	<0.1	<0.1	<0.1	<0.1	0.140	0.068
Station 2	Top	<0.1	<0.1	<0.1	<0.1	<0.1	0.050
	Middle	<0.1	0.140	<0.1	<0.1	<0.1	0.068
	Bottom	<0.1	0.140	<0.1	<0.1	<0.1	0.068
Station 3	Top	<0.1	<0.1	<0.1	<0.1	<0.1	0.050
	Middle	<0.1	0.110	<0.1	<0.1	<0.1	0.062
	Bottom	<0.1	0.140	<0.1	0.110	<0.1	0.080
Station 4	Top	<0.1	0.130	<0.1	<0.1	<0.1	0.066
	Middle	<0.1	0.120	<0.1	<0.1	<0.1	0.064
	Bottom	<0.1	<0.1	<0.1	0.260	<0.1	0.092

Appendix C3, continued

Sulphate mg/L 2025							
		Winter					**Average**
Reference	Top	2,200	2,200	2,300	2,300	---	2,250
	Middle	2,200	2,200	2,300	2,400	---	2,275
	Bottom	2,200	2,200	2,300	2,300	---	2,250
Station 1	Top	2,200	2,200	2,400	2,300	---	2,275
	Middle	2,200	2,200	2,300	2,300	---	2,250
	Bottom	2,200	2,200	2,300	2,300	---	2,250
Station 2	Top	2,200	2,300	2,300	2,200	---	2,250
	Middle	2,200	2,200	2,200	2,300	---	2,225
	Bottom	2,100	2,200	2,400	2,300	---	2,250
Station 3	Top	2,200	2,200	2,300	2,300	---	2,250
	Middle	2,300	2,300	2,300	2,300	---	2,300
	Bottom	2,200	2,200	2,300	2,400	---	2,275
Station 4	Top	2,200	2,300	---	2,400	---	2,300
	Middle	2,200	2,200	---	2,400	---	2,267
	Bottom	2,200	2,200	---	2,300	---	2,233
		Summer					**Average**
Reference	Top	1,900	2,000	2,200	2,100	2,200	2,080
	Middle	2,000	2,200	2,200	2,100	2,200	2,140
	Bottom	2,000	2,300	2,200	2,100	2,200	2,160
Station 1	Top	2,000	2,200	2,100	2,200	2,200	2,140
	Middle	2,100	2,200	2,100	2,200	2,200	2,160
	Bottom	2,100	2,200	2,100	2,200	2,300	2,180
Station 2	Top	2,000	2,200	2,100	2,300	2,300	2,180
	Middle	2,200	2,200	2,200	2,200	2,200	2,200
	Bottom	2,100	2,300	2,100	2,200	2,200	2,180
Station 3	Top	2,000	2,100	2,100	2,200	2,200	2,120
	Middle	2,100	2,100	2,100	2,200	2,300	2,160
	Bottom	2,000	2,200	2,300	2,300	2,300	2,220
Station 4	Top	2,000	2,100	2,200	12	2,200	1,702
	Middle	2,000	2,100	2,100	2,200	2,300	2,140
	Bottom	2,000	2,200	2,200	2,200	2,200	2,160

Appendix C3, continued

Nitrate Nitrogen mg/L 2025							
	BC Approved WQG 3.7 mg/L (average over 5 samples)						
		Winter					Average
Reference	Top	0.431	0.389	0.404	0.377	---	0.400
	Middle	0.422	0.392	0.396	0.388	---	0.400
	Bottom	0.417	0.390	0.414	0.389	---	0.403
Station 1	Top	0.405	0.395	0.401	0.389	---	0.398
	Middle	0.418	0.396	0.389	0.383	---	0.397
	Bottom	0.401	0.387	0.400	0.388	---	0.394
Station 2	Top	0.408	0.380	0.392	0.386	---	0.392
	Middle	0.407	0.392	0.396	0.382	---	0.394
	Bottom	0.402	0.383	0.392	0.386	---	0.391
Station 3	Top	0.429	0.390	0.395	0.386	---	0.400
	Middle	0.407	0.392	0.400	0.399	---	0.400
	Bottom	0.397	0.393	0.397	0.383	---	0.393
Station 4	Top	0.414	0.392	---	0.374	---	0.393
	Middle	0.410	0.392	---	0.389	---	0.397
	Bottom	0.419	0.394	---	0.385	---	0.399
		Summer					Average
Reference	Top	0.144	0.139	0.213	0.195	0.179	0.174
	Middle	0.163	0.187	0.223	0.220	0.198	0.198
	Bottom	0.177	0.214	0.237	0.220	0.189	0.207
Station 1	Top	0.113	0.150	0.232	0.197	0.173	0.173
	Middle	0.157	0.169	0.242	0.204	0.187	0.192
	Bottom	0.154	0.179	0.286	0.210	0.192	0.204
Station 2	Top	0.076	0.143	0.203	0.200	0.183	0.161
	Middle	0.147	0.161	0.236	0.203	0.188	0.187
	Bottom	0.164	0.170	0.233	0.209	0.189	0.193
Station 3	Top	0.093	0.144	0.200	0.199	0.179	0.163
	Middle	0.165	0.184	0.227	0.203	0.190	0.194
	Bottom	0.169	0.170	0.232	0.209	0.191	0.194
Station 4	Top	0.124	0.140	0.202	0.199	0.214	0.176
	Middle	0.165	0.167	0.233	0.203	0.208	0.195
	Bottom	0.170	0.168	0.232	0.204	0.213	0.197

Appendix C3, continued

Nitrite Nitrogen mg/L 2025							
		Winter					Average
Reference	Top	<0.002	<0.002	<0.002	<0.002	---	0.001
	Middle	<0.002	<0.002	<0.002	<0.002	---	0.001
	Bottom	<0.002	<0.002	<0.002	<0.002	---	0.001
Station 1	Top	0.003	<0.002	<0.002	<0.002	---	0.001
	Middle	0.002	<0.002	<0.002	0.002	---	0.002
	Bottom	0.002	<0.002	<0.002	<0.002	---	0.001
Station 2	Top	<0.002	<0.002	<0.002	<0.002	---	0.001
	Middle	0.002	<0.002	<0.002	<0.002	---	0.001
	Bottom	0.002	<0.002	<0.002	<0.002	---	0.001
Station 3	Top	0.002	<0.002	<0.002	0.003	---	0.002
	Middle	0.002	<0.002	<0.002	<0.002	---	0.001
	Bottom	0.002	<0.002	<0.002	<0.002	---	0.001
Station 4	Top	<0.002	<0.002	---	<0.002	---	0.001
	Middle	0.002	<0.002	---	<0.002	---	0.001
	Bottom	0.002	<0.002	---	<0.002	---	0.001
		Summer					Average
Reference	Top	0.003	0.003	0.004	0.004	0.004	0.003
	Middle	0.003	0.004	0.004	0.003	0.004	0.003
	Bottom	0.003	0.004	0.004	0.004	0.004	0.004
Station 1	Top	0.003	0.004	0.003	0.004	0.003	0.003
	Middle	0.004	0.004	0.004	0.004	0.004	0.004
	Bottom	0.003	0.004	0.003	0.004	0.004	0.004
Station 2	Top	0.003	0.003	0.004	0.004	0.004	0.004
	Middle	0.004	0.007	0.005	0.004	0.004	0.005
	Bottom	0.004	0.004	0.004	0.004	0.004	0.004
Station 3	Top	0.003	0.004	0.004	0.004	0.004	0.004
	Middle	0.003	0.006	0.004	0.004	0.004	0.004
	Bottom	0.004	0.003	0.004	0.004	0.004	0.004
Station 4	Top	0.003	0.003	0.004	0.004	0.003	0.003
	Middle	0.004	0.004	0.004	0.004	0.003	0.004
	Bottom	0.003	0.004	0.004	0.004	0.003	0.004

Appendix C3, continued

Salinity 2025							
		Winter					Average
Reference	Top	30.2	29.9	30.4	30.2	---	30.2
	Middle	30.5	30.0	30.7	30.2	---	30.4
	Bottom	30.8	30.0	30.7	30.4	---	30.5
Station 1	Top	30.4	29.9	30.4	30.2	---	30.2
	Middle	30.5	29.9	30.4	30.2	---	30.3
	Bottom	30.5	30.1	30.7	30.2	---	30.4
Station 2	Top	30.4	29.9	30.4	30.2	---	30.2
	Middle	30.6	29.9	30.4	30.2	---	30.3
	Bottom	30.6	30.2	30.3	30.2	---	30.3
Station 3	Top	30.4	29.9	30.2	30.1	---	30.2
	Middle	30.4	29.9	30.4	30.2	---	30.2
	Bottom	30.5	30.2	30.7	30.3	---	30.4
Station 4	Top	30.3	29.8	---	30.1	---	30.1
	Middle	30.6	29.9	---	30.1	---	30.2
	Bottom	30.5	30.2	---	30.2	---	30.3
		Summer					Average
Reference	Top	27.8	29.3	30.9	32.0	30.7	30.1
	Middle	27.9	30.3	31.0	32.3	30.7	30.4
	Bottom	28.0	30.8	31.0	32.3	30.6	30.5
Station 1	Top	27.9	29.7	30.3	31.8	30.4	30.0
	Middle	28.0	30.0	30.9	>42	30.6	29.9
	Bottom	28.1	30.4	31.1	32.2	30.7	30.5
Station 2	Top	27.8	29.5	30.5	32.0	30.6	30.1
	Middle	28.0	30.2	31.0	32.0	30.6	30.4
	Bottom	28.1	30.1	31.0	32.2	30.6	30.4
Station 3	Top	27.8	29.7	30.7	32.0	30.6	30.2
	Middle	28.1	30.3	31.0	32.0	29.2	30.1
	Bottom	28.1	30.3	31.0	32.3	30.7	30.5
Station 4	Top	27.9	29.5	30.9	31.1	30.7	30.0
	Middle	28.0	30.3	31.2	32.0	30.8	30.5
	Bottom	28.1	30.3	31.2	32.1	31.0	30.5

Appendix C3, continued

N Nitrogen Total mg/L 2025							
		Winter					Average
Reference	Top	0.470	0.490	0.470	0.620	---	0.513
	Middle	0.460	0.460	0.480	0.560	---	0.490
	Bottom	0.410	0.450	0.460	0.570	---	0.473
Station 1	Top	0.430	0.500	0.550	0.910	---	0.598
	Middle	0.440	0.500	0.450	0.560	---	0.488
	Bottom	0.430	0.420	0.560	0.620	---	0.508
Station 2	Top	0.420	0.480	0.560	0.530	---	0.498
	Middle	0.460	0.500	0.440	0.610	---	0.503
	Bottom	0.390	0.450	0.480	0.720	---	0.510
Station 3	Top	0.450	0.470	0.510	0.570	---	0.500
	Middle	0.440	0.450	0.500	0.670	---	0.515
	Bottom	0.460	0.470	0.440	0.660	---	0.508
Station 4	Top	0.450	0.410	---	0.540	---	0.467
	Middle	0.460	0.690	---	0.590	---	0.580
	Bottom	0.440	0.430	---	0.520	---	0.463
		Summer					Average
Reference	Top	0.170	0.240	0.250	0.120	0.150	0.186
	Middle	0.150	0.180	0.310	0.290	0.160	0.218
	Bottom	0.200	0.300	0.270	0.170	0.210	0.230
Station 1	Top	0.180	0.230	0.210	0.300	0.200	0.224
	Middle	0.350	0.290	0.240	0.290	0.160	0.266
	Bottom	0.120	0.280	0.310	0.120	0.330	0.232
Station 2	Top	0.150	0.240	0.210	0.260	0.220	0.216
	Middle	0.150	0.310	0.290	0.100	0.130	0.196
	Bottom	0.220	0.320	0.260	0.210	0.140	0.230
Station 3	Top	0.100	0.210	0.280	0.130	0.180	0.180
	Middle	0.190	0.300	0.320	0.260	0.230	0.260
	Bottom	0.220	0.310	0.230	0.330	0.130	0.244
Station 4	Top	0.170	0.270	0.270	0.120	0.160	0.198
	Middle	0.180	0.290	0.240	0.120	0.250	0.216
	Bottom	0.160	0.220	0.300	0.460	0.170	0.262

Appendix C3, continued

Sulfide mg/L 2025							
		Winter					Average
Reference	Top	0.002	<0.0018	<0.0018	<0.0018	---	0.0011
	Middle	0.002	<0.0018	<0.0018	<0.0018	---	0.0013
	Bottom	0.002	<0.0018	<0.0018	<0.0018	---	0.0013
Station 1	Top	0.002	<0.0018	0.004	<0.0018	---	0.0018
	Middle	<0.0018	<0.0018	0.002	<0.0018	---	0.0012
	Bottom	<0.0018	<0.0018	0.003	<0.0018	---	0.0014
Station 2	Top	<0.0018	0.005	0.003	<0.0018	---	0.0025
	Middle	<0.0018	0.002	0.003	<0.0018	---	0.0018
	Bottom	<0.0018	<0.0018	0.003	<0.0018	---	0.0014
Station 3	Top	<0.0018	<0.0018	<0.0018	<0.0018	---	0.0009
	Middle	0.002	<0.0018	0.002	<0.0018	---	0.0015
	Bottom	0.002	<0.0018	<0.0018	<0.0018	---	0.0013
Station 4	Top	<0.0018	<0.0018	---	<0.0018	---	0.0009
	Middle	<0.0018	<0.0018	---	<0.0018	---	0.0009
	Bottom	0.002	<0.0018	---	<0.0018	---	0.0014
		Summer					Average
Reference	Top	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Middle	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Bottom	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
Station 1	Top	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Middle	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Bottom	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
Station 2	Top	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Middle	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Bottom	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
Station 3	Top	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Middle	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Bottom	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
Station 4	Top	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009
	Middle	0.002	<0.0018	<0.0018	<0.0018	<0.0018	0.0012
	Bottom	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	0.0009

Appendix C3, continued

Total Organic Carbon mg/L 2025							
		Winter					Average
Reference	Top	1.20	1.30	1.20	1	---	1.2
	Middle	1.10	1.40	1.10	1	---	1.2
	Bottom	1.10	1.10	1.20	1	---	1.2
Station 1	Top	1.20	1.30	1.20	1	---	1.3
	Middle	1.10	1.20	1.00	1	---	1.2
	Bottom	1.20	1.30	1.10	1	---	1.2
Station 2	Top	1.20	1.40	1.20	1	---	1.3
	Middle	1.10	1.10	1.30	1	---	1.2
	Bottom	1.10	1.20	1.20	1	---	1.2
Station 3	Top	1.40	1.10	1.10	1	---	1.2
	Middle	1.10	1.20	1.10	1	---	1.2
	Bottom	1.20	1.30	1.20	1	---	1.2
Station 4	Top	1.00	1.20	---	1	---	1.2
	Middle	1.10	1.30	---	1	---	1.2
	Bottom	1.10	1.30	---	1	---	1.2
		Summer					Average
Reference	Top	1.4	1.20	1.50	1.50	1.60	1.4
	Middle	1.4	1.10	1.50	1.60	1.50	1.4
	Bottom	1.7	1.00	1.50	1.10	1.50	1.4
Station 1	Top	1.6	1.40	1.40	1.40	1.70	1.5
	Middle	1.6	1.10	1.30	1.40	1.60	1.4
	Bottom	1.8	1.10	1.30	1.40	1.50	1.4
Station 2	Top	2.2	1.20	1.60	1.50	1.50	1.6
	Middle	1.7	1.10	1.50	1.60	1.60	1.5
	Bottom	1.5	1.20	1.50	1.50	1.60	1.5
Station 3	Top	2.0	1.10	1.50	1.40	1.60	1.5
	Middle	1.5	1.20	1.40	1.50	1.50	1.4
	Bottom	1.6	1.10	1.50	1.40	1.50	1.4
Station 4	Top	1.9	1.20	1.50	1.50	1.50	1.5
	Middle	1.5	1.10	1.40	1.40	1.50	1.4
	Bottom	1.5	1.10	1.40	1.40	1.50	1.4

Notes:
+data points excluded due to outlier results